UNIT 1

Introduction To Computer

Structure

1.1 Introduction
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1.10 The applications of computers in Tourism Industry.

Learning Objectives

After studying this unit, the student will be able to understand

- What is a computer,
- Its terminology, components, and different types
- Usage of computer in tourism industry
1.1 Introduction

Science is one of the greatest blessings in modern life. Scientific advancement has led to many important inventions. One of them is the computer. About a decade back, a computer was seen as a wonder machine. A few years later, this wonderful machine came closer to us as the Personal Computer (PC) entered the household scene. A computer is a machine that is able to take information (input), do some work on or make changes to the information, to make new information (output). They are now very powerful machines that are able to do billions of calculations every second. Most people have used a personal computer in their home or at work. Computers are useful for many different jobs where automatic functions are useful.

A person (called a user) can control a computer by telling it to do things. Some ways of controlling a computer are with a keyboard, mouse, buttons, and touch screen. Some advanced computers can also be controlled with voice commands or hand gestures. Computers can be designed to do anything with information. Computers are used to control factories, which in the past were controlled by humans. They are also in homes, where they are used for things such as listening to music, reading the news, and writing. Modern computers are electronic machines. A computer is only useful if it has both hardware and software. Hardware is the physical parts the computer is made of - for example keyboard, mouse, screen, tower. Software is the computer programs (mathematical instructions). Software uses the hardware by taking input and changing it into useful output.

Computers are able to do billions of calculations each second. They can do mathematical arithmetic very quickly but computers do not really "think". They only follow the instructions in their software programs. Computer programs are designed or written by computer programmers. Computer programs can be written in the computer’s own language called machine code. Machine Code has only a few instructions and is based on logic and Mathematical arithmetic. Today, programmers usually write programs using a programming language like C++, Java or BASIC. These programming languages can be translated into machine code later using a program called a compiler.

1.2 Meaning and Definition of Computer

Meaning: The word computer originated from “Computare” (Latin word), which means “to Count”. Compute means “calculating machine” to calculate. It was invented initially for the use of calculator.

Computer is a device, usually electronic, that processes data according to a set of instructions. The digital computer stores data in discrete units and
performs arithmetical and logical operations at very high speed. Most computers have four separate components, a central processing unit, a memory device, input and output. Mouse, Keyboard, Monitor and Printer are all devices which be used to operate a computer. Quite amazingly, computers work entirely using the binary system, storing and operating everything through the combination of patterns of 1 and 0 or off and on.

Definitions

1. A computer is a high-speed electronic device which follows instructions and is capable of performing arithmetic and logical operations.

2. A computer is an electronic device used to process data, converting the data into information that is useful to people.

3. A computer is an electronic device that accepts input and processes it according to instructions and displays the output in required manner.

4. An electronic device that is capable of (1) accepting, storing, and logically manipulating data or text that is input and (2) processing and producing output (results or decisions) on the basis of stored programs of instructions.

1.3. Historical Evolution of Computers

The computer as we know it today had its beginning with a 19th century English mathematics professor name Charles Babbage. He designed the Analytical Engine and it was this design that the basic framework of the computers of today are based on.
Generally speaking, computers can be classified into three generations. Each generation lasted for a certain period of time, and each gave us either a new and improved computer or an improvement to the existing computer.

Generations of Computers

The different generations of computer systems are:

1. **First Generation (1945-1954)**: The first generations of computers were marked by the use of vacuum tubes for the electronic components. The features are.
   1. Limited [input output operations] storage capacity.
   2. Slow input and output operations
   3. Continuous maintenance is required
   4. Large and generate a lot of heat
   5. Very expensive.

2. **Second Generation (1955-64)**: In this generation transistors are used in place of vacuum tubes for the electronic components. The features are.
   1. Faster than I generation.
   2. Required less power to operate
   3. Increased storage capacity
4. The language COBOL was developed.

5. The system were smaller in size and generated less heat compared to I generation.

3. **Third Generation (1965-74)**: In this generation IC’s (Integrated circuits) are used in the construction of computer. IC’s were smaller in size, less power consuming and less expensive.

   1. Faster than previous generation.

   2. Improved Input and output devices.

   3. Better storage devices

   4. Increased speed and reliability.

   5. Increased internal memory capacity.

4. **Fourth Generation (1975-89)**: The fourth generation computers were made using very large scale. Integration technology (VLSI), Tens of thousands of components were packed on a single chip that leads to the development of micro processor. The features are.

   1. For their reduction is size.

   2. Applications are developed by users.

   3. Development of personal computers.

   4. Increasing lost of software.

   5. The systems are compact, fast and reliable.

5. **Fifth Generation Computers (1990 onwards)**: During this generation very large integration technology gave away to ultra large integration technology that leads to the development of micro processor chip with several million electronic components on each powerful laptops, note book pc’s are the other development. During this period advance storage technology such as micro floppy’s, (CD’s, DVD’s etc) was also increased, this period also witnessed huge growth in internet usage particularly the popularity of the World Wide Web (WWW) and e-mail.

   On the software side effort is being directed at developing languages scope of new generation computer languages like C++, Java are developed during this period. Developments of user friendly operating systems like Windows, Linux are the other developments during this period.
1.4: **Computer Terminology Abbreviations & Definitions**

- AI - Artificial Intelligence
- API - Application Program Interface
- ASP - Active Server Pages
- AVI - Audio Video Interleave
- BIOS - Basic Input Output System
- CAD - Computer Aided Design
- CAM - Computer Aided Manufacturing
- CD - Compact Disc
- CPU - Central Processing Unit
- CRS – Computer Reservation System
- DHTML - Dynamics Hyper Text Markup Language
- DBMS – Data Base Management Systems
- DOS - Disk Operating System
- DVD - Digital Versatile Disc
- GB - Giga Bytes
- HDD - Hard Disk Drive
- HTML - Hyper Text Markup Language
- ICMP - Internet Control Message Protocol
- IIS - Internet Information Server
- I/O - Input Output
- KBPS - Kilo Bytes per Second
- LAN - Local Area Network
- LCD - Liquid Crystal Display
- MB - Mega Bytes
- MODEM - MOdulator and DEModulator
- MS – Micro Soft
• ODBC - Open Data Base Connectivity
• OMR - Optical Mark Reader
• OS - Operating System
• PC - Personal Computer
• PLC - Programmable Logic Controller
• PPP - Peer to Peer Protocol
• RAM - Random Access Memory
• RDP - Remote Desktop Protocol
• ROM - Read Only Memory
• RTOS - Real Time Operating System
• SAM - Security Access Manager
• SAP - Service Access Point, Systems Applications Products
• SISD - Single Instruction Single Data
• TCP - Transmission Control Protocol
• % USB - Universal Serial Bus
• WAN - Wide Area Network
• WWW - World Wide Web

**Computer Terminology Main Definitions**

• **Access**: To call up information out of storage.

• **Random access**: A technique that permits stored information to be directly retrieved, regardless of its location on the storage medium.

• **Sequential access**: A technique for retrieving stored information that requires a sequential search through one item after another on the storage medium.

• **Anti Virus Software**: A program designed to look for and destroy viruses that may infect the Memory of a computer or files stored on a computer.

• **Browser**: A software program used for viewing Internet websites. Popular programs include Microsoft Internet Explorer, Mozilla, Opera, Firefox and Netscape Navigator.
• **CPU**: A central processing unit (CPU), is the hardware within a computer system or Smartphone which carries out the instructions of a computer program by performing the basic arithmetical, logical, and input/output operations of the system.

• **CD-ROM**: An acronym derived from compact disc-read-only memory. A form of optical storage. One compact disc can hold up to 250,000 text pages; it can also be used to store graphics, sound, and video.

• **Clipboard**: A holding area in memory where information that has been copied or cut (text, graphics, Sound, or Video) can be stored until the information is inserted elsewhere.

• **Data**: Information consisting of letters, numbers, symbols, sound, or images—in a form that can be processed by a computer.

• **Desktop Publishing (DTP)**: A system that processes the text and graphics and, by means of page layout software and a laser printer, produces high-quality pages suitable for printing or in-house reproduction.

• **E-mail**: The term e-mail refers to the transfer of messages or documents between users connected by an electronic network. The term is also used to refer to the message that is being transmitted in this way. The original form—E-mail—is rarely seen except at the beginning of a sentence, and industry professionals now commonly write the word without a hyphen.

• **File Transfer Protocol (FTP)**: A set of guidelines or standards that establish the format in which files can be transmitted from one computer to another.

• **Gigahertz (GHz)**: A measurement used to identify the speed of the central processing unit. One gigahertz is equal to 1 billion cycles per second.

• **Hard Disk**: A rigid type of magnetic medium that can store large amounts of information.

• **Hardware**: The physical components of a computer: the central processing unit, the display screen, the keyboard, the disk drive, the modem, the mouse, and the printer.

• **Home Page**: The main page for a Web site established by an organization or an individual; it usually serves as the entrance for a series of related pages.
• **Information Processing**: The coordination of people, equipment, and procedures to handle information, including the storage, retrieval, distribution, and communication of information. The term information processing embraces the entire field of processing words, figures, graphics, video, and voice input by electronic means.

• **Input Device**: A hardware component (such as a mouse, a keyboard, or a microphone) that lets the user input information.

• **Internet**: A system that links existing computer networks into a worldwide network. The Internet may be accessed by means of commercial online services (such as America Online) and Internet service providers.

• **Kilobyte**: A measurement of the storage capacity of a device. One kilobyte represents 1024 bytes. Kilobyte may be abbreviated K or KB; however, KB is the clearer abbreviation since K also stands for the metric prefix kilo (meaning 1000).

• **Mail Merge**: The process of taking information from a database and inserting it into a form letter or other document in order to customize the document for an individual recipient. For example, mail merge can be used to create the inside address and the salutation for a form letter.

• **Memory**: The part of a computer that stores information.

• **Random-Access Memory (RAM)**: The temporary memory that allows information to be stored randomly and accessed quickly and directly (without the need to go through intervening data).

• **Read-Only Memory (ROM)**: The permanent memory of a computer; a set of instructions that has been built into the computer by the manufacturer and cannot be accessed or changed by the user.

• **Motherboard**: The computer’s main circuit board, which contains the central processing unit, the memory, and expansion slots for additional circuit boards called adapters or cards.

• **Mouse**: A hand-operated electronic device used to move a cursor or pointer on the display screen. Mostly used with microcomputers.

• **MS-DOS**: Derived from Microsoft disk operating system. An operating system used on the first IBM and IBM-compatible microcomputers.
• **Network**: A system of interconnected computers.

• **Local area networks (LANs)**: Use cable to connect a number of computers within the same location or in close proximity.

• **Wide area networks (WANs)**: Use telephone lines or other telecommunications devices to link computers in widely separated locations.

• **Operating System (OS)**: Software that manages the internal functions and controls the operations of a computer.

• **Output Device**: A hardware component (such as a monitor, a printer, or a sound speaker) that delivers the results of computer operations to the user.

• **Print Preview**: A software feature that reduces the pages of a document so that a full page (or two facing pages) can be seen on the screen before being printed. This feature permits the user to spot and correct problems in format and page breaks.

• **Scanner**: An input device that can copy a printed page into a computer’s memory, thus doing away with the need to type the copy. A scanner can also convert artwork and photographs into a digital format and store these in memory.

• **Software**: The instructions that a computer needs to perform various functions. The term software means the same as program.

• **Spreadsheet**: A program that provides a worksheet with rows and columns to be used for calculations and the preparation of reports.

• **Uninterruptible Power Supply (UPS)**: A battery-powered backup system that provides enough electricity to a computer during a power outage (or, in most cases, a brownout or power surge) so that the user can save files before shutting down the computer.

• **Web Site**: One or more related pages created by an individual or an organization and posted on the World Wide Web.

### 1.5. Components of Computers

Computers are indispensable to work, home management, and entertainment in modern life. Knowing their parts and how they work together can help in diagnosing problems. Though they all use the same components, a laptop combines these parts into one compact unit while a desktop separates them into separate hardware pieces.
The computer system has basically divided into two main Components which when both makes a computer system. These are

- Hardware
- Software
- Users / People

**Hardware**

The personal computer consists of multiple computer hardware or multiple devices linked together to create a whole working machine. Some of the hardware are external such as keyboards, printers and mouse that is connected via cable or other methods. These hardware need to be installed via a software program before it can run. They increase the efficiency of the personal computer, and do tasks such as business, design, entertainment and more. We can categories Hardware components in four broad categories.

**i. Input Devices** : Before a computer can process your data, you need some method to input the data into the machine. The device you use will depend on what form this data takes (be it text, sound, artwork, etc.).

- **Keyboard** : The computer keyboard is used to enter text information into the computer, as when you type the contents of a report. The keyboard can also be used to type commands directing the computer to perform certain actions. Commands are typically chosen from an on-screen menu using a mouse, but there are often keyboard shortcuts for giving these same commands.

![Keyboard](image)

**Fig 1.3 Keyboard**

- **Mouse** : The mouse pointing device sits on your work surface and is moved with your hand. In older mice, a ball in the bottom of the mouse rolls on the surface as you move the mouse, and internal rollers sense the ball movement and transmit the information to the computer via the cord of the mouse.
• **Touch Pad**: Most laptop computers today have a touch pad pointing device. You move the on-screen cursor by sliding your finger along the surface of the touch pad. The buttons are located below the pad, but most touch pads allow you to perform “mouse clicks” by tapping on the pad itself.

![Fig 1.4 Touch Pad](image)

• **Scanner**: A scanner is a device that images a printed page or graphic by digitizing it, producing an image made of tiny pixels of different brightness and color values which are represented numerically and sent to the computer. Scanners scan graphics, but they can also scan pages of text which are then run through OCR (Optical Character Recognition) software that identifies the individual letter shapes and creates a text file of the page’s contents.

![Fig 1.5 Scanner](image)

• **Magnetic strip Reader**: Magnetic strips are built into many plastic cards such as check guarantee cards, cash-point cards and personal identity cards. The magnetic strip on the back of the card can hold the personal details of the card owner and, with the necessary PIN, will allow access to secure information e.g. bank account details. Data stored on the strip is scanned and input into a computer system by a magnetic stripe reader.
ii. **Output Devices**: Similarly, after the computer has processed your data, you often need to produce output of the results. This output could be a display on the computer screen, hardcopy on printed pages, or even the audio playback of music you composed on the computer.

**Monitor**: The monitor is the primary output device. The monitor is a hardware device which physically connects to the video card. The monitor allows information and current status to be visually outputted similar to a TV. Traditional monitors are made up of Cathode Ray Tube (CRT). The LCD (Liquid Control Display) consumes less electricity compared to CRT monitors. The actual display you see the words, pictures, and data on. There are two main types: analog and digital. Even touch screens, which replace the mouse, the actual video portion is still only an output device.

**Ink Jet Printer**: For hardcopy (printed) output, you need some kind of printer attached to your computer (or available over a network). The most common type of printer for home systems is the color ink jet printer. These
printers form the image on the page by spraying tiny droplets of ink from the print head. The printer needs several colors of ink (cyan, yellow, magenta, and black) to make color images. Some photo-quality ink jet printers have more colors of ink.

• **Laser Printer**: A laser printer produces good quality images by the same technology that photocopiers use. A drum coated with photosensitive material is charged, then an image is written onto it by a laser (or LEDs) which makes those areas lose the charge. The drum then rolls through toner (tiny plastic particles of pigment) that is attracted to the charged areas of the drum. The toner is then deposited onto the paper, and then fused into the paper with heat. Most laser printers are monochrome (one color only, usually black), but more expensive laser printers with multiple color toner cartridges can produce color output.
• **Sound Output**: Computers also produce sound output, ranging from simple beeps alerting the user, to impressive game sound effects, to concert quality music. The circuitry to produce sound may be included on the motherboard, but high quality audio output from a PC usually requires a sound card in one of the expansion slots, connected to a set of good quality external speakers or headphones.

![Sound Output](image1)

**iii. CPU (Central Processing Unit)**: A central processing unit (CPU), also referred to as a central processor unit, is the hardware within a computer system or smart phone which carries out the instructions of a computer program by performing the basic arithmetical, logical, and input/output operations of the system. The term has been in use in the computer industry at least since the early 1960s. The form, design, and implementation of CPUs have changed over the course of their history, but their fundamental operation remains much the same.

On large machines, CPUs require one or more printed circuit boards. On personal computers and small workstations, the CPU is housed in a single silicon chip called a microprocessor. Since the 1970s the microprocessor class of CPUs has almost completely overtaken all other CPU implementations. Modern CPUs are large scale integrated circuits in packages typically less than four centimeters square, with hundreds of connecting pins. Two typical components of a CPU are the arithmetic logic unit (ALU), which performs arithmetic and logical operations, and the control unit (CU), which extracts instructions from memory and decodes and executes them, calling on the ALU when necessary.
Not all computational systems rely on a central processing unit. An array processor or vector processor has multiple parallel computing elements, with no one unit considered the "center". In the distributed computing model, problems are solved by a distributed interconnected set of processors.

Fig 1.11 C.P.U (Control Processing Unit)

iv. Memory: There are two types of memories associated with the computer.

(i) The internal memory or the Primary Storage Unit
(ii) The external memory or the Auxiliary Storage Unit.

1. Internal or Primary Memory

The primary or internal storage is a most essential part of all computers. It holds instructions and intermediate and final results of processing. When instructions are entered into the computer system, the control unit sends them to the primary storage to interpret and process. Results obtained by processing the instructions are again placed in the primary storage. When the control unit comes across an instruction for display or print it sends the results to the corresponding output device like VDU or printer.

The computer cannot function without the primary storage unit. The CPU can only access the primary memory & not the external memory. Hence to process instructions/data that are stored in the Auxiliary memory, they are first brought to the main memory form where it processed. The internal storage area is made up of several small storage areas called locations or cells. Each of these locations can store a fixed number of bits called word length of that particular storage unit. Each location or word has a unique number to it which is called as address.
The internal memory is divided into two categories:

1. **Ram (Random Access Memory)**

   Every CPU requires a primary storage memory. This memory is used to temporarily store the programs as well as the data which is being processed. The primary memory is called RAM. RAM stands for Random Access Memory. When CPU is doing some processing it requires working space to store the input instruction, intermediate results and output. This working space is provided by primary storage. To make the processing faster access to this memory must be random.

   Random Access Memory is the temporary storage device for programs and data for the CPU to process. This memory keeps all the instructions and data in an orderly fashion. It helps the processor to act on these instruction and data. It is like table space available for working where you keep files, documents, etc. to be used. RAM is a volatile type of memory. Information stored in RAM can be changed or erased. If power is switched off, the information stored in RAM is lost.

2. **Rom (Read Only Memory)**

   As the name suggests “Read Only Memory” is only for reading information stored once and for all. The information stored in ROM is not lost when the power is switched off. One cannot write into ROM.

   The most common and essential routines, which control the working of a PC are stored in ROM. ROM is a non-volatile memory. The contents will be available even when we switch on the computer. ROM chips are normally supplied with the PC. We cannot change the contents of ROM.

**There are various types of ROM available. They are**

1. **Prom (Programrable Read Only Memory)**

   This Prom chips are custom made for the user by manufacturer and user determines what data and instructions that are to be recorded on them. The problem is that once the data is recorded in can’t erased.

2. **Eprom (Electronically Programmable Read Only Memory)**

   It is a ROM where data and instructions are recorded and can be erased using UV-rays and new data can be recorded.

3. **Eeprom (Electronically Erasable and Programable Read Only Memory)**

   Here the changes are made electrically under software control. The disk advantage is that the cost is very high compared to ROM chip.
2. Secondary Memory

It is also termed as backing unit or external or auxiliary storage device. Those are used to store the additional information which is required rarely by the computer. Hence, such devices are termed as backing or secondary storage devices. There are various types of storage devices available in the market. They are:

1. **Floppy Disks**: As we have cassette drive in a music system, we have a floppy drive in a personal computer. Personal computer can have one floppy drive or two floppy drives. It is just like having a music system with one tape deck or two tape decks. A floppy disk is a magnetic media on which data is stored. The device that helps us stores the data on floppies, or read the data from floppies, is called Floppy Disk Drive. The floppy disk drive is normally situated in the system unit of a personal computer.

Floppy disks are significantly different from conventional disks. The floppy disks are made of Mylar and are flexible. They are also small. They are also small. The most common varieties are 13.3cm (51/4 in) in diameter. Floppies are often distinguished as single side or double sided, depending on whether the recording can be done on one or both the sides. The amounts of information that can be stored on these floppies also differ. In this respect they are distinguished as single density or double density. A double sided double density (DSDD) floppy can hold 360 KB of information. The hole at the centre is to allow the spindle to lock the floppy so that it can rotate. The index hole is used to recognize the starting sector of any track.

2. **Hard Disks**: By using cassette we would have problem that to open any file we should have to follow the sequence i.e. we have open one after the other but that drawback can be overcome by using hard disk. The Hard disk drive is a non-removable magnetic media. The Hard disk is magnetic media which is sealed in a contamination free jacket. We cannot remove this disk. The main advantage of having a hard disk drive is the space available.

The hard disks are also called Winchester Drives. When this technology was being developed IBM used the code name for the Project as “Winchester” for this technology development assignment. Just as the floppy the hard disk’s area is also divided into tracks and sectors. In floppies we have only one or two magnetic surface and a suitable number of magnetic heads. These heads write and read the data from several magnetic surfaces.

3. **CD-Rom Drives**: CD-ROM Drives make use of, Computer Disks. This disks use laser technology to store information on it. A user cannot store information on this disk as it is roughly known as CD-ROMD disk. The capacities
of this CD’s are very certain movies and Multimedia Clip arts available on compact Disks.

• **Software**: The instructions or programs that are required to operate the hardware from the software. Computer software tells the computer hardware what to do and how to do it. This analogue is similar to human mind telling the body to walk, run, sit, etc.

**On the basis of this we can conclude that**

1. Computer hardware cannot function without software.
2. Computer software instructs the hardware about functions to be performed.
3. Computer system works on the basis of the instructions provided. These instructions are prepared by the humans.

Actually the set of instructions given by us to computers is a program. This classical definition of the term program is:

A program is a detailed set of humanly prepared instructions that directs the computer to function in a specific manner to produce the desired result.

There are different types of software.

**They are classified according to the functions they perform**

1. System software
2. Application software

1. **System Software**: The software which is directly related to hardware or the system is called as System software. It includes the operation system, languages like BASIC, COBOL, FORTRAN, etc, the system software is the bare minimum software required to run the computer.

2. **Application Software It is of two types**

   1. **Ready-made application software’s**: Ready-made software’s are used for specific application like Database management, spread sheet analysis etc

   **Ex**: lotus, Dbase, WordStar, print shop, ms-office etc.

   There are many Ready-made application software’s available. We can only use the facilities offered by these software’s. We cannot change it as per our requirement.
2. Tailor-made application software’s: Custom-made applications are like tailor made shirts. The tailor takes exact measurements and then how he designs and stitches a shirt. Likewise Custom-made Application software’s are per specific requirement in mind, application. Application software’s are developed. The custom made programs are created for specific use. They are not common usage programs. They provide flexibility. We can change and modify the programs when our requirements change.

- Users / People: People are also part of the computing process. Computers were designed by people and occasionally require maintenance by people. The people who are using the computer system are known as computer users. Ex. Data Entry Operator, Programmers, System Analyst, Web Master etc.

1.6. Types of Computers

Computers are broadly classified into three major categories based on the operating principle they are.

1. Analog Computers
2. Digital Computers
3. Hybrid Computers.

1. Analog Computers: This type of computers operates by measuring i.e. directly measuring the physical parameters rather than by counting. They best suited to give measurable quantities on mathematical analogy.

Ex: Radar, Thermometer, Speedometer, voltage, current, pressure temp, length, weight etc.

2. Digital Computers: This type of computer operation is based on electrical signals, by electrical components, which are of two states—ON and OFF. These computers are suited for handling various types of application. Accuracy is very high

Ex: Calculator, digital watches etc.

3. Hybrid Computers: Hybrid computer is a combination of Digital and Analog computers. Nowadays these computers are used in banks, petrol pumps etc. E.g: Modems.

- The Shapes of Computers Today (Classification of Computers)

The capability of a computer depends upon the amount of data that can be stored in the main or internal memory, the speed of the internal operation and
number of functions a computer can perform at a time. Based on this they are classified as below.

1. **Super Computers** : Super computers are the most powerful computers in terms of processing. These are used to process huge amounts of data. They are useful for problems requiring complex calculations. They can perform more than one trillion calculations per second. Because of their size and cost, supercomputers are rarely used. They are typically used by large organizations such as universities, government agencies and very large business organizations. They cost millions of dollars.

   **Ex** : Cray T90, PARAM, etc.

2. **Mainframe Computers** : The largest type of computers in common use is “Mainframe computers”. They have many terminals or PCs connected to them, handle massive amounts of input, output and storage. These are commonly used in corporations and government agencies where we need frequent access to the same data. These are used as e-commerce servers, handling transactions over the internet. They support up to 50,000 users simultaneously. In traditional mainframe environment each user works at a computer terminal and a terminal is a monitor and keyboard connected to a mainframe. There are two types of terminals dumb terminal and intelligent terminal.

3. **Mini Computers** : Minicomputers are smaller than mainframes but larger than microcomputers. They usually have multiple terminals. These are used as network servers and Internet servers to handle hundreds of PCs connected to it.

4. **Work Stations** : These are powerful single user computers that are used by engineers, scientists and graphic artists. Like minicomputers workstations are also used as network and Internet servers.

5. **Micro-Computer** : These are the smallest general purpose computer systems available in the market. They are also called Personal Computers (PC’s). IBM released the first micro computer in the year 1981 named IBMPC. These are again classified into below types;

   i. **Desktop Models** : A desktop system is a full size computer which doesn’t occupy much of the desk space, but it is too big to carry. The main case of these computer (CPU) is placed horizontally below the monitor or vertically any side of the monitor.

   ii. **Notebook Computers or Laptops** : The shape of a notebook computer is approximately 8 X 11 inches. It fits into a briefcase. They have built in keyboard and touchpad which works like a mouse. Because of their size
they have smaller displays, memory and less storage capacity than normal PC. These are used by the people who need portable computing outside the office or away from home.

iii. Network Computers: Network computers are less powerful version of PC’s, with minimum processing power, memory and storage. These are connected to a network, internet. The advantages of these computers are.

- Providing Data Security
- Centralized Software.
- Limited Upgrades
- Reduced Threat of Viruses.

iv. Hand Held Personal Computers: These computers introduced in the year 1990. These are also called “Palmtop computers”. These are three types.

- Personal Digital Assistants (PDA’s): These are the smallest portable computers, with an appointment book size. These are less powerful used to taking notes, which display telephone numbers and addresses etc.
- Cellular Phones: These are nothing but cellular phone with PC features. These are useful to check and send e-mail and faxes over the phone and used to access to Web.
- H/PC Pro Devices: It uses latest technology. They have full size keyboard and color displays. They provide long battery life.

1.7. Characteristics/Features of Computers

Let us identify the major characteristics of computer. These can be discussed under the headings of speed, accuracy, diligence, versatility and memory.

- Speed: As you know computer can work very fast. It takes only few seconds for calculations that we take hours to complete. Suppose you are asked to calculate the average monthly income of one thousand persons in your neighborhood. Computer takes few minutes to process this huge amount of data and give the result. It can perform millions (1,000,000) of instructions and even more per second. Therefore, we determine the speed of computer in terms of microsecond (10-6 part of a second) or nano-second (10-9 part of a second).
- Accuracy: Suppose someone calculates faster but commits a lot of errors in computing. Such result is useless. There is another aspect. Suppose
you want to divide 15 by 7. You may work out up to 2 decimal places and say the dividend is 2.14. I may calculate up to 4 decimal places and say that the result is 2.1428. Someone else may go up to 9 decimal places and say the result is 2.142857143. Hence, in addition to speed, the computer should have accuracy or correctness in computing. The degree of accuracy of computer is very high and every calculation is performed with the same accuracy. The accuracy level is determined on the basis of design of computer. The errors in computer are due to human and inaccurate data.

• **Diligence**: A computer is free from tiredness, lack of concentration, fatigue, etc. It can work for hours without creating any error. If millions of calculations are to be performed, a computer will perform every calculation with the same accuracy. Due to this capability it overpowers human being in routine type of work.

• **Versatility**: It means the capacity to perform completely different type of work. You may use your computer to prepare payroll slips. Next moment you may use it for inventory management or to prepare electric bills.

• **Power of Remembering**: Computer has the power of storing any amount of information or data. Any information can be stored and recalled as long as you require it, for any numbers of years. It depends entirely upon you how much data you want to store in a computer and when to lose or retrieve these data.

• **NoIQ**: Computer is a dumb machine and it cannot do any work without instruction from the user. It performs the instructions at tremendous speed and with accuracy. It is you to decide what you want to do and in what sequence. So a computer cannot take its own decision as you can.

• **No Feeling**: It does not have feelings or emotion, taste, knowledge and experience. Thus it does not get tired even after long hours of work. It does not distinguish between users.

• **Storage**: The Computer has an in-built memory where it can store a large amount of data. You can also store data in secondary storage devices such as floppies, which can be kept outside your computer and can be carried to other computers.

### 1.8. Uses of Computer

The uses of computers are universal. Computers are used in applications ranging from running a farm, diagnosing a disease, and designing to constructing and launching a space vehicle. Because the development of computers has been largely the work of scientists, it is natural that a large body of computer
applications serves the scientist. The uses of computers today in business, science, education, schools, classrooms, hospitals, medicine, health care, military, agriculture, law enforcement, at home and in our everyday lives.

- **Education**: Getting the right kind of information is a major challenge as is getting information to make sense. College students spend an average of 5-6 hours a week on the internet. Research shows that Computers can significantly enhance performance in learning. Students exposed to the internet say they think the web has helped them improve the quality of their academic research and of their written work. One revolution in education is the advent of distance learning. This offers a variety of internet and video-based online courses.

- **Health and Medicine**: Computer technology is radically changing the tools of medicine. All medical information can now be digitized. Software is now able to compute the risk of a disease. Mental health researchers are using computers to screen troubled teenagers in need of psychotherapy. A patient paralyzed by a stroke has received an implant that allows communication between his brain and a computer; as a result, he can move a cursor across a screen by brainpower and convey simple messages.

- **Science**: Scientists have long been users of it. A new adventure among scientists is the idea of a “collaboratory”, an internet based collaborative laboratory, in which researchers all over the world can work easily together even at a distance. An example is space physics where space physicists are allowed to band together to measure the earth’s ionosphere from instruments on four parts of the world.

- **Business**: Business clearly sees the interest as a way to enhance productivity and competitiveness. Some areas of business that are undergoing rapid changes are sales and marketing, retailing, banking, stock trading, etc. Sales representatives not only need to be better educated and more knowledgeable about their customer’s businesses, but also must be comfortable with computer technology. The internet has become a popular marketing tool. The world of cyber cash has come to banking – not only smart cards but internet banking, electronic deposit, bill paying, online stock and bond trading, etc.

- **Recreation and Entertainment**: Our entertainment and pleasure-time have also been affected by computerization. For example.
  
i. In movies, computer generated graphics give freedom to designers so that special effects and even imaginary characters can play a part in making movies, videos, and commercials.

  ii. In sports, computers compile statistics, sell tickets, create training programs and diets for athletes, and suggest game plan strategies based on the competitor’s past performance.
• **Government**: Various departments of the Government use computer for their planning, control and law enforcement activities. To name a few – Traffic, Tourism, Information & Broadcasting, Education, Aviation and many others.

• **Defence**: There are many uses of computers in Defence such as.

  1. They are also used on Intercontinental Ballistic Missiles (ICBMs) that uses GPS and Computers to help the missile get to the target.

  2. Computers are used to track incoming missiles and help slew weapons systems onto the incoming target to destroy them.

  3. Computers are used in helping the military find out where all their assets are (Situational Awareness) and in Communications/Battle Management Systems.

  4. Computers are used in the logistic and ordering functions of getting equipments to and around the battlefield.

  5. Computers are used in tanks and planes and ships to target enemy forces, help run the platform and more recently to help diagnose any problems with the platforms.

  6. Computers help design and test new systems.

• **Recording Information**: Official statistics keepers and some scouts use computers to record statistics, take notes and chat online while attending and working at a sports event.

• **Sports**: Computers are becoming increasingly common in sports applications. They have numerous roles to play but can be identified as a major mechanism for easing the burden associated with data gathering and information processing. This information in turn can be used for developing a greater knowledge and understanding of sport. Computers make the statistics easy to keep track of player statistics. The Equipment developers of various Sport companies have been taking the support of Computers to design safer equipments i.e., Shoes, Helmets, Pads, Protective Face Gear, and Mouth Pieces to help reduce sportsmen injuries.

**Block Diagram of Computer**

A computer can process data, pictures, sound and graphics. They can solve highly complicated problems quickly and accurately.
The block diagram of a computer mainly consists three parts Input Unit, Output Unit and CPU.

- **Input Unit**: Computers need to receive data and instruction in order to solve any problem. Therefore we need to input the data and instructions into the computers. The input unit consists of one or more input devices. Keyboard is the one of the most commonly used input device. Other commonly used input devices are the mouse, floppy disk drive, magnetic tape, etc. All the input devices perform the following functions.
  - Accept the data and instructions from the outside world.
  - Convert it to a form that the computer can understand.
  - Supply the converted data to the computer system for further processing.

- **Output Unit**: The output unit of a computer provides the information and results of a computation to outside world. Printers, Visual Display Unit (VDU) are the commonly used output devices. Other commonly used output devices are floppy disk drive, hard disk drive, and magnetic tape drive.

- **Central Processing Unit**: The control unit and ALU of the computer are together known as the Central Processing Unit (CPU). The CPU is like brain performs the following functions.
  - It performs all calculations.
  - It takes all decisions.
• It controls all units of the computer..

• **Arithmetic Logical Unit**: All calculations are performed in the Arithmetic Logic Unit (ALU) of the computer. It also does comparison and takes decision. The ALU can perform basic operations such as addition, subtraction, multiplication, division, etc and does logic operations via, >, <, =, ‘etc. Whenever calculations are required, the control unit transfers the data from storage unit to ALU once the computations are done, the results are transferred to the storage unit by the control unit and then it is send to the output unit for displaying results.

• **Control Unit**: It controls all other units in the computer. The control unit instructs the input unit, where to store the data after receiving it from the user. It controls the flow of data and instructions from the storage unit to ALU. It also controls the flow of results from the ALU to the storage unit. The control unit is generally referred as the central nervous system of the computer that control and synchronizes its working.

• **Storage/Memory Unit**: The storage unit of the computer holds data and instructions that are entered through the input unit, before they are processed. It preserves the intermediate and final results before these are sent to the output devices. It also saves the data for the later use. The various storage devices of a computer system are divided into two categories.

1. **Primary Storage**

   Stores and provides very fast. This memory is generally used to hold the program being currently executed in the computer, the data being received from the input unit, the intermediate and final results of the program. The primary memory is temporary in nature. The data is lost, when the computer is switched off. In order to store the data permanently, the data has to be transferred to the secondary memory.

2. **Secondary Storage**

   Secondary storage is used like an archive. It stores several programs, documents, data bases etc. The programs that you run on the computer are first transferred to the primary memory before it is actually run. Whenever the results are saved, again they get stored in the secondary memory. The secondary memory is slower and cheaper than the primary memory. Some of the commonly used secondary memory devices are Hard disk, CD, etc.,
1.9. Role of Computers / IT in different Service Sectors

Information Technology (IT) revolution takes place everywhere. Organisations implementing IT are able to provide better services and thereby able to improve their businesses manifold. In earlier days IT has enormously been used in manufacturing sector regarding product designing and development, product modification etc. Now-a-days the importance of IT has been strongly felt and applied in the services sector.

- **Hospitals**: The hospital management is taking place with the application of IT. Starting from the reception by recording a patient’s name, the IT has been used everywhere in an hospital. A patient’s record comprising his name, age, sex, disease found, blood group, height, weight, blood pressure level, etc. has been maintained as database in a computer in the hospital. So whenever the patient arrives his previous record can be verified. Similarly when the surgeries take place, the hospitals use computers and specialized software for judgement of diseases/problems and for curing the diseases. For billing purposes also the computers have been used widely in hospitals.

- **Pharmaceuticals**: Because of the increase in competition, IT has also been applied in pharmaceutical shops. Whenever any medicine enters the shop, all the information related to the medicine – its name, quantity, manufacturing date, expiry date, its content, price and other information can be entered into a computer system. Whenever the sales take place, computerized billing would be provided to the customers. The bill would carry plenty of information for the benefit of customers indicating the name of the medicine, quantities purchased by them, its price, manufacturing and expiry date. Whenever any medicine has been sold the software created would also give indications to the manager/supervisor of a pharmaceutical shop related to the number of quantities sold, number of quantities available in the shop and the computer also warn them regarding the date of expiry.

- **Educational Institutions**: The Government of India has come out with a statement stating that Information Technology (IT) is India’s tomorrow. Hence the educational institutions have to use IT for teaching the children. Latest hardware and software can be used and the latest computer languages and packages have to be taught to the students. It is not enough if student of computer science alone has been taught about IT, but also the students of other disciplines have to be taught about IT. Because, the application of IT takes place everywhere.

- **Share Business**: Gone are the days when stock brokers use to shout at the trading hall of a stock exchange quoting their price. Now-a-days
with the help of computer terminal and internet connection, purchasing and selling of share takes place everywhere. A client can look at the transactions taking place through the computers. The volume of the shares traded and the turnover has got consistently improved because of the online share trading.

- **Banking**: Tremendous improvement has taken place in the Indian banking sector because of the IT revolution. All the private and foreign banks have gone for 100 percent computerization. At a rapid fast, the government owned nationalized banks are also improving their number of computerized branches. With the help of computerization, the transaction takes place at a faster rate and the waiting time of a customer in a queue is getting minimized. E-Banking is emerging in the Indian banking sector. The banks provide the facility of internet banking, phone and mobile banking with the help of IT. All the branches of a bank are networked. The networking also takes place between two or more branches in order to provide easy accessibility for a customer. The cost incurred on infrastructure, furniture and employees has got decreased because of the application of IT.

- **Advertising Agencies**: ‘Creativity’ is the slogan chanted in Ad Agencies. Creativity involves doing things differently. Things can be done differently with the help of IT. The Ad Agencies use lot of software for creating advertisements. Lot of animations and graphics can be done using IT tools.

- **Market Research Agencies**: Marketing Research (MR) agencies involve in lot of research activities starting from research survey on product development till distribution and measurement of customer response. Gone are the days of manual analysis of data. The MR agencies use sophisticated statistical software packages for data analysis and interpretation. Some of the statistical software packages are created by their own for customized problems. Hence, application of IT tools take place in full swing at MR agencies.

- **Railways**: The Indian Railways has the proud of being the ‘largest employer’. The application of IT, has provided various benefits for the Indian Railways and its passengers. With the issue of computerized railway tickets, the errors have been minimized. A passenger can book the train ticket from any part of the country. A passenger can also book the train ticket at his convenient place, as the online reservation system has been introduced.

- **Hotels**: Today, most hospitality businesses in hotels, motels, food service, and beverage operations are using computers to record, report, and analyze the effectiveness of internal operations. One must learn basic accounting concepts to understand not only the necessary information needed as input to a computer system, but also the output of information the computer is capable of providing. Knowing what an average check is for a food service operation is
one thing, but knowing how it is determined gives a greater insight as to how it can be changed. This simple analogy rings true for the great majority of developed ratios, percentages, units, and dollar values that can be generated through computer analysis.

1.10. The Applications of Computers in Tourism Industry

In today’s world, Tourism does not merely mean a vacation, a source of entertainment, or a way of expending one’s knowledge but tourism in the recent years has emerged as one of the important social-economic sector of nation. It is now recognized as an industry providing substantial support to the economics of country. Tourism promotes national Integration and International Understanding. It also helps in improvisation of infrastructure, creates more opportunities of employment and most importantly provides foreign exchanging.

Computer has made its entry in the field of tourism in a big way. In fact, computers are in use in some way or the other in various branches of tourism since the early sixties. Be it travel agencies, hotels, Airlines or recently even in the Railways, Computers have played a key role in making the task of providers of travel services an easy affair. Not only this, through home terminals, computers are undertaking, among other jobs, the planning of vacations for an individual and his family. Computer applications are used in:

(i) Airlines

In the airline industry, many different systems interact in order to ensure that planes stay on schedule and that they fly safely. Nearly all of these systems rely on computers to some degree. Computers are involved in everything from the passenger’s initial travel arrangements to the functioning of an airport and the airplanes that fly into it.

• Passenger Services : When you book a flight, regardless of the method, your reservation information is processed and stored by the airline’s computer system. If you book this online, your registration information is directly stored with the company. If you book your flight over the phone, a customer service representative will enter this information for you. This computer-based reservation system allows you to easily modify travel arrangements at any airport, and even to use multiple airline companies over the course of a single trip.

• Airport Services : Many aspects of an airport rely heavily on computers. Security screening machines such as X-rays may not make use of personal computers, but they do rely on computer technology for a great deal of their operations. Furthermore, computers are necessary for the use of pre-screening measures such as the current U.S. counter-terrorism efforts.
• **Air Traffic**: Computers are crucial to an airport’s air traffic control services. While the communication between air traffic controllers and pilots occurs through radio, the system by which this communication is synthesized with radar and weather data is based on computers. Computers allow air traffic controllers to visualize and track the location of planes in the air, and then instruct pilots as to the correct course of action.

• **Plane Mechanics**: An airplane depends on computers for a number of essential flight functions. The autopilot, which many modern airplanes are equipped with, frequently employs a computer. This relieves the pilots of many in-flight tasks, allowing the plane to process navigational data and flight control systems. Computerized “fly-by-wire” technology, which many airplanes have, transmits pilot or autopilot signals to a computer. This allows planes to respond to subtle atmospheric variables and make other adjustments easily. Additionally, some airplanes have wing flaps that can be controlled by a computer. Others have power systems that can be regulated by computer. Finally, computers are central to the efficient communication and recording of an airplane’s flight data. Such data is vital to air traffic controllers, and greatly assists in the event of an emergency situation.

• **Computer Reservation System (CRS)**: A computer reservations system or central reservation system (CRS) is a computerized system used to store and retrieve information and conduct transactions related to air travel. Originally designed and operated by airlines, CRSs were later extended for the use of travel agencies. Major CRS operations that book and sell tickets for multiple airlines are known as global distribution systems (GDS). Airlines have divested most of their direct holdings to dedicated GDS companies, who make their systems accessible to consumers through Internet gateways. Modern GDSs typically allow users to book hotel rooms and rental cars as well as airline tickets. They also provide access to railway reservations and bus reservations in some markets, although these are not always integrated with the main system.

(ii) **Cargo**

Cargo (or freight) is goods or produce transported, generally for commercial gain, by ship or aircraft, although the term is now extended to intermodal train, van or truck. In modern times, containers are used in most long-haul cargo transport. The main aim of the loading computer being to ensure that the vessel always departs the berth with adequate stability for the voyage. If this situation can be achieved quickly, costly delays can be eliminated and safety criteria are complied with.

The system should ideally be interlinked with the shore side base to enable data transmissions on, unit weights/tonnages/or special stow arrangements.
The Computer would permit the location and respective weights of cargo/units to be entered quickly and provide values of limiting ‘KG’ and ‘GM’ together with deadweights at respective draughts/displacements. It would also have the capability to provide a printed record of the state of loading and show a visual warning in the event of an undesirable stability condition or overload occurring. Distribution of the ship’s tank weights, stores and consumables affecting final calculations and total displacement would also be identifiable within the completed calculations.

(iii) Hotels

The Hospitality Industry has vast applications of computers; some other major applications are given as under.

- **Role of Computers in Front Office Area** : Front Office is the name given to all officers situated in the front of the house that is the lobby such offices where the guest is received provided information, his luggage is handled, his accounts are settled at departure and his problems, complaints and suggestions are looked after.

**Reservation**

The reservation system handles all reservation and related activates within hotel. This sub system allows for individual tour, group, conference and miscellaneous group booking to be made for many date in the future. The hotels, their sales offices and Central Reservation Offices are linked through a Central Reservation System (CRS) for an effective and real time management of room inventory.

1. **Guest History** : Complete guest history maintenance module with relevant information such as guest visit details, guest revenue details, personal details, company/travel agent details, likes and dislikes guest complaints etc.

2. **Registrations** : This portion provides the facility to check in the guest who has reservation with the hotels or walk in guest. One has the facility to manage the information of the guest through: change guest information, room transfer amend stay etc.

3. **Reports** : It helps to produce various reports like arrival list, departure list, in house guest list etc.

4. **Guest Account, Departure & Payment** : Day to day transaction related to check out, settlement, link rooms Delink rooms, folio transfer, advance collected, commission to agent, foreign exchange entry etc can be done through this option.
5. Front Desk: Check room status and availability and allot rooms.

- **Role of Computers in Back Office Area:** The invisible area of operations in any hotel is its back office. It is a hub of lot of activities, accounting and administration being the most prominent of them. Back office controls the entire cash flows, finance, taxation, vendor development & management, innovations etc. Larger hotels or franchises in a chain may have more elements set up in a hotel back office than smaller independently run hotels, which sometimes might not have a back office at all.

1. **Financial Management**

There are many softwares available in the market for the purpose of maintaining accounts such as TALLY, BUSSY, Account Manager, etc. The most widely accepted is the TALLY. In a Hotel financial operations these soft ware’s provides the following functions for accounting procedure:

- Maintaining ledger & journals
- Preparing balance sheet, profit & loss a/c.
- Ratio Analysis
- Maintaining funds & cash flow statement
- Preparing reports

Computers are playing key role in the preparation of the balance sheet, income statement and statement of cash flows, which are the most important financial statements to a hotel.

2. **Inventory Control**

Computerization has revolutionized inventory management, as technologies ranging from automatic scanners to radio frequency identification chips now allow businesses to track their inventory from the moment a company buys it wholesale to the moment the products leave the building in the hands of a customer.

3. **Profit & Loss Statement Accounts**

A financial statement that summarizes the revenues, costs and expenses incurred during a specific period of time - usually a fiscal quarter or year. These records provide information that shows the ability of a company to generate profit by increasing revenue and reducing costs. The P&L statement is also known as a “statement of profit and loss”, an “income statement” or an “income and expense statement”. Computers have been supporting a lot to back office accountants in the preparation of these accounts.
4. Credit Card Verifications

A credit card is a payment card issued to users as a system of payment. It allows the cardholder to pay for goods and services based on the holder’s promise to pay for them. The issuer of the card creates a revolving account and grants a line of credit to the consumer (or the user) from which the user can borrow money for payment to a merchant or as a cash advance to the user. A credit card terminal is a type of a Point of sale (POS) terminal that can do transactions with a credit card.

They allow a merchant to insert, swipe, or key in manually the required credit card information and transmit such data to the merchant service provider for authorization and then later on the transfer the fund to the merchant. The whole activity can function with the help of the computers only.

(iv) Travel Agencies

A travel agency is a private retailer or public service that provides tourism related services to the public on behalf of suppliers such as airlines, car rentals, cruise lines, hotels, railways, and package tours. In addition to dealing with ordinary tourists most travel agencies have a separate department devoted to making travel arrangements for business travelers and some travel agencies specialize in commercial and business travel only. There are also travel agencies that serve as general sales agents for foreign travel companies, allowing them to have offices in countries other than where their headquarters are located.

Uses of Computers in Travel Agencies

1. Know the Ropes

While computers have made many once-complicated tasks easier for the average traveler, professionals will always possess insider information and expertise. Meanwhile, as travel-comparison sites continue to add more options, they become more complicated. Hidden fees, restrictions, expiring discount fares, and a limited selection of airlines — only ones that pay commissions show up on most travel sites — can all be frustrating factors in online booking.

2. Solve problems

Travel agents can keep on top of issues like lost luggage and delays. Because of their ties to the industry, they can typically talk to airline customer service reps more effectively (and calmly) than you can — they do it all the time. And if you’re stranded by bad weather with your fellow travelers, your travel agent might find you a way out faster.
3. Book multiple things

Travel agencies don’t just handle flights. They can also help you get the best hotel, car rental, and travel insurance.

4. Provide more information

Agents can tell you what documentation you need for international flights and where to get it, explain local laws and regulations at your destination, point out the can’t-miss hotspots, and inform you of discounts, and they’re a great all-around source for travel advice.

5. Manage complex itineraries

If booking a nonstop domestic weekend trip for a family isn’t trouble enough, try doing it for a week-long international vacation that involves multiple destinations and modes of transportation. Now imagine having to tweak the itinerary later because someone gets sick or your schedule changes. Leaving that mess to an agent means you can enjoy your journey instead of stressing over it. Time, especially on vacation, is money.

(v) Railways

The Indian Railways is the most favored form of travel. The computerization of the railway services was introduced a few years back. The software package used in ticketing and other customer services has been specially designed and developed for the Indian Railways and the railways itself provides the training required for operating the package to its employees.

Uses of Computer in Railways

- Tracking, scheduling, monitoring and reporting railway traffic.
- Design of railway track systems and railway vehicles.
- Managing Railway construction projects.
- Pricing and ticketing.
- Monitoring Track lines

Administrative Matters

- Accounting and financial controls
- Statutory records and reports
- Financial reports and taxation requirements
- Letter writing, staff records, payroll.
Managing Carriage of Goods

- Recording and tracking movement of goods, pricing, invoicing.
- Accident and incident records and statistical analysis.

(vi) Internet: Key to Future Tourism

Internet is the latest and fastest way to gain information and also conduct business. The direct booking on the various CRS is possible over the internet. Internet is not only easy to access but it is also very easy to use since it is graphic oriented and uses very few than keyboard command. While browsing the Internet for any information you can take the help of the search engines, such as Yahoo.com or others, and type in your subject of search. The process of searching will take up a few minutes and various categories, websites and webpage for the topic will be displayed to you.

The Advantages of the Internet as a Marketing Tool

The Internet is widely recognised as an extremely valuable marketing tool. It is generally held that the Internet offers substantial advantages over traditional means of communication: reduced costs of information exchange; increased speed of information transfer and retrieval; increased customer involvement in and control of transactions; and greater flexibility of using the marketing mix. Its main business uses include communications (both internal and external), market research, customer services, market penetration, product development, cost savings through process reengineering, direct marketing, advertising and product delivering. The following paragraphs examine the main features of the Net, in comparison with conventional media and with relevance to marketing, as an effective and efficient communications means.

1. Addressability

The Internet has the unique quality that, through its addressability, can transform the prominent marketing communication paradigm from one-to-many to one-to-one or from broadcasting to narrowcasting. The traditional media, such as print, radio and television, follow a passive one-to-many communication model, whereby a company reaches many current and potential customers through the broadcasting of the same message.

2. Interactivity

Another feature of the Net that distinguishes itself from traditional communication media is its ability to respond to user inputs, i.e. interactivity. The Internet is capable of giving feedback in response to the actions users perform on the computer, resulting in the sense of engagement with the computer. This
two-way dialogue forms an important component of relationship marketing, and is an important factor in building customer loyalty. Customers are effortlessly communicate with companies to find product information and conduct transactions with a few keystrokes while companies can easily contact customers to clarify their needs or inform them of new products. Features such as Email, web forms and Java applets positively encourage marketers to interact with consumers.

3. Flexibility

The Web is a much more flexible marketing medium than the traditional mass media. A web page can be considered as an electronic billboard, electronic advertisement, or electronic catalogue that provides information on products or services plus contact information for interested consumers. But a virtual advertisement or catalogue is much flexible than a physical advertisement or catalogue. It can gather fresh and updated information based on the direct feedback received from consumers. A virtual catalogue can be gradually developed and organised based on the actual interest of consumers. It can also keep consumers constantly informed of the company’s new product offerings, latest price changes and sales promotion initiatives.

4. Accessibility

As a communication medium, the area in which the Internet has overwhelming advantage over any other media is its permanent exposure and global market reach. The Net greatly improves, both spatially and temporally, the information availability and user interaction. With an effective web site, a company is on business on a global spectrum 24 hours a day, 365 days a year. Any web user in the world can access its marketing information at any time that is convenient for him. This extends greatly the place and time utility of companies which traditionally rely on distribution channel members to perform. The round the clock accessibility is extremely important especially in international trade where business is conducted across different time zones.

Internet is providing to be fast and easy, due to the graphical interface used. It is also providing to be cost effective as say in the case of faxing a file overseas it will be easy to just e-mail the file as an attachment with an e-mail message. We can say that very soon Internet will be the way to conduct travel business, and so keep abstract of the latest happenings on Internet. Get to know the internet better as it will shape the tourism future.

Conclusion

Computers are rapidly changing and changing the world we live in. We used to talk about the changes made in one generation. In general, a computer
is a machine which accepts information, processes it and returns new information as output. As you become familiar with software and hardware you will have a better understanding of technology for business and for your home. Technology is the vast field and learning it will be a lifelong process.

In the field of tourism, the computer has made entry in a big way. A computer is a managerial tool capable of processing large volumes of data rapidly. It can perform basic arithmetic functions and logical operations in a fraction of a second. Computers are capable of repeating programmed instructions almost endlessly without an error, and maintaining a vast data base of stored information for possible future use. Today computers are extensively used in almost all branches of the travel industry. The various high tech information and communication technologies are in use in the tourism sector around the world. They are used for tourism product development, marketing, distribution and training of tourism sector personnel. These technologies are so indispensable in order to find out and satisfy the ever-changing demands for tourism products.

**Short Answer Type Questions**

1. Define “Computer”.
2. Expand “CAD” & “CAM”?
3. Name the types of “ROM”?
4. What is “CRS”?
5. Write the names of computer categories?

**Long Answer Type Questions**

1. Write the significance of computers in today’s society?
2. Describe briefly about the historical evolution of computers.
3. Explain in detail about the types of Memory.
4. What are the general uses of computers in different Sectors?
5. How computers influence the Travel Agency operations?
UNIT 2

Ms - Office

Structure

2.1 Introduction to MS-Office
2.2 Origin of MS-Office
2.3 Components of MS-Office
2.4 Main Features of MS-Office
2.5 Importance & Advantages of MS-Office
2.6 Introduction to MS-Word
2.7 MS-Word Documents Preparation
2.8 Using Word Commands

Learning Objectives

After studying this unit, the student will be able to

• Learn about different component of Microsoft Office
• Understand how to set the page layouts in word document
• Learn about how to work with images in word document
• Learn various short cut keys present in MS-word
2.1 Introduction to MS-Office

Microsoft Office is an office suite of desktop applications, servers and services for the Microsoft Windows and Mac OS X operating systems, introduced by Microsoft on August 1, 1989. Initially a marketing term for a bundled set of applications, the first version of Office contained Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. Microsoft Office was introduced by Microsoft in 1989 for Mac OS, with a version for Windows in 1990. Initially a marketing term for a bundled set of applications, the first version of Office contained Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. Additionally, a “Pro” (Professional) version of Office included Microsoft Access and Schedule Plus.

Over the years, Office applications have grown substantially closer with shared features such as a common spell checker, OLE data integration and Microsoft Visual Basic for Applications scripting language. Microsoft also positions Office as a development platform for line-of-business software under the Office Business Applications (OBA) brand. Office is reported to now be used by over a billion people worldwide. The current versions are Office 2013 for Windows, released on October 11, 2012; and Office 2011 for Mac OS X, released October 26, 2010. On 24 October 2012, the RTM final code of Office 2013 Professional Plus has been released to TechNet and MSDN subscribers for download. On 15 November 2012, the 60-day trial version of Office 2013 Professional Plus was released for download.

Definition

Suite of products developed by Microsoft Corporation that includes Microsoft Word, Excel, Access, Publisher, PowerPoint, and Outlook. Each program serves a different purpose and is compatible with other programs included in the package. The suite of programs is compatible with both the Windows and Macintosh operating system. Microsoft Office is the most common form of software used all over the world.

2.2 Origin of MS-Office

Microsoft Office is a productivity suite developed for Windows and Macintosh systems. It is available in several editions, each of which includes multiple applications. All Office editions include the three standard programs, Word, Excel, and PowerPoint.

The first version of Microsoft Office was actually released for the Macintosh in 1989. The Windows version followed one year later in 1990. Over the past two decades, Microsoft has released new versions of Office
roughly every two to three years. Starting with Office 95, Microsoft began offering multiple editions of Office, such as Standard, Professional, and Small Business editions. Newer versions of Office are available in “Home and Student” and Professional editions.

Since the first version of Office was released, Microsoft has continued to develop Office for both the Windows and Macintosh platforms. However, beginning with Office 98 for Mac, Microsoft has developed distinctly different versions of Office for Mac and Windows. Therefore, while the programs perform the same functions, the user interface of Office programs on Mac and Windows systems may look different. Fortunately, most file formats saved by Office programs are cross platform, meaning they can be opened on Macintosh or Windows computers.

### 2.3. Components of MS-Office

Depending on the version Microsoft Office, we have different components. The small business version adds desktop publishing power with Microsoft Publisher. The professional version adds the Access database, while the Ultimate Edition includes all of the office products. The core components of MS-OFFICE are as follows.

**Desktop applications**

1. **Word**

   Microsoft Word is a word processor and was previously considered the main program in Office. Its proprietary DOC format is considered a de facto standard, although Word 2007 can also use a new XML-based, Microsoft Office-optimized format called .DOCX, which has been standardized by Ecma International as Office Open XML and its SP2 update supports PDF and a limited ODF. Word is also available in some editions of Microsoft Works. It is available for the Windows and Mac platforms. The first version of Word, released in the autumn of 1983, was for the MS-DOS operating system and had the distinction of introducing the mouse to a broad population.

2. **Excel**

   Microsoft Excel is a spreadsheet program that originally competed with the dominant Lotus 1-2-3, but eventually outsold it. It is available for the Windows and Mac platforms. Microsoft released the first version of Excel for the Mac in 1985, and the first Windows version (numbered 2.05 to line up with the Mac and bundled with a standalone Windows run-time environment) in November 1987.
3. Outlook/Entourage

Microsoft Outlook (not to be confused with Outlook Express) is a personal information manager and e-mail communication software. The replacement for Windows Messaging, Microsoft Mail, and Schedule+ starting in Office 97, it includes an e-mail client, calendar, task manager and address book.

4. PowerPoint

Microsoft PowerPoint is a presentation program for Windows and Mac. It is used to create slideshows, composed of text, graphics, and other objects, which can be displayed on-screen and shown by the presenter or printed out on transparencies or slides.

Other desktop applications (Windows version only)

- **Microsoft Access**: Database manager

- **Microsoft InfoPath**: An application to design rich XML-based forms.

- **Microsoft OneNote**: Note-taking software for use with both tablet and conventional PCs.

- **Microsoft Project**: Project management software to keep track of events and to create network charts and Gantt charts (not bundled in any Office suite).

- **Microsoft Publisher**: Desktop publishing software mostly used for designing brochures, labels, calendars, greeting cards, business cards, newsletters, and postcards.

Server applications

- **Microsoft SharePoint**: Collaboration server installation of InfoPath Forms Services.

- **Microsoft Office Groove Server**: Centrally managing all deployments of Microsoft Office Groove in the enterprise.

- **Microsoft Office Project Server**: Project management server.

- **Microsoft Office Project Portfolio Server**: Allows creation of a project portfolio, including Workflows, hosted centrally.
2.4. Main Features of MS-Office

The main features of MS-OFFICE are as follows

1. **Touch everywhere**: The new Office responds to touch as naturally as it does to keyboard and mouse. One can swipe their finger across the screen or pinch and zoom to read documents and presentations.

2. **Inking**: Use a stylus to create content, take notes and access features. Handwrite email responses and convert them automatically to text. Stylus can also be used as a laser pointer when presenting. One can also add colour to their content and erase mistakes with ease.

3. **Apps**: OneNote and Lync represent the first new Windows 8 style applications for Office. These applications are designed to deliver touch-first experiences on a tablet. A new radial menu in OneNote makes it easy to access features with finger.

4. **SkyDrive**: Office saves documents to SkyDrive by default, which means content is always available across all devices tablet, PC and phone. Documents are also available offline and sync on reconnecting.

5. **New subscription services**: The new Office is available as a cloud-based subscription service, which means consumers will automatically get future upgrades in addition to exciting cloud services including Skype world minutes and extra Sky Drive storage. Subscribers receive multiple installs for everyone in the family and across their devices.

6. **Stay connected**: Follow people, teams, documents and sites in SharePoint. View and embed pictures, videos and Office content in activity feeds to stay current and updated.

7. **Skype**: The new Office comes with Skype, which gives 60 minutes of Skype world minutes every month. Integrate Skype contacts into Lync and call or instant message anyone on Skype.

8. **Reading, markup**: The Read Mode in Word provides a modern and easy-to-navigate reading experience that automatically adjusts for large and small screens. Zoom in and out of content, stream videos within documents, view revision marks and use touch to turn pages.

9. **Digital note-taking**: Digital note taking helps keep notes handy in the cloud and across multiple devices with OneNote. One can take notes with touch, pen or keyboard, or use them together and switch easily back and forth.
10. Meetings: PowerPoint features a new Presenter View that privately shows your current and upcoming slides, presentation time, and speaker notes in a single glance. While presenting, one can zoom, mark up and navigate slides with touch and stylus. Lync includes multiparty HD video with presentations, shared OneNote notebooks and a virtual whiteboard for collaborative brainstorming.

2.5. Importance & Advantages of MS-Office

In 1990, a new concept was created by Microsoft Corporation to merge different software applications into a suite package allowing users to navigate and share resources between applications. Microsoft Office Suite 3.1 was introduced, tested and released for certain government offices. In 1997, Microsoft produced its first official suite office application package Microsoft Office Suite 97 for the public, which literally changed the way desktop applications were used in a business or home environment. The followings are the point wise elements contain the importance of MS-OFFICE in general.

1. Suite Features

The basic MS Office suite package has the following applications: MS Word (Word Processing), MS Excel (Spreadsheet and Accounting), and MS Power Point (Presentations), MS Access (Database Creation and Management and MS Front Page (Web Development) These applications are marketed for home use, professional use (small business) and enterprise use (for workgroups larger than 15 people). Microsoft’s strategy, which is an important aspect of using these integrated suite packages, was to make the basic menu systems look the same so users can be comfortable when using different applications. Familiarity with the menu systems gained more users.

2. Integrated Concept

An important factor of MS Office Suite is the integration of software applications in the suite package, but yet allows each software program to keep its own identity. For example, Mail Merge can be performed with MS Word, but it captures information from the mail file in Microsoft Outlook to create a mail out or bin label sheet. You can take a spreadsheet a place it into MS Word or integrate an Excel chart inside a PowerPoint slide.

3. Workgroup Management

Sometimes, six or eight people must work on a project at the same time. MS Office Suite package management allows a group of people to work within the software at the same time to combine notes, theory and projects developed by opening different sections of the document. Workgroup
management integration can be found in all the Microsoft MS Office Suite applications. This important feature keeps files from being lost and placed in different directories. Every workgroup individual has the same point of reference with different editing privileges in the document.

4. Third Party Software Applications

You can integrate third party software into MS Office Suite. An example of third party software integration is financial reports generated from QuickBooks into MS Excel. Other example is the ACT1 relational database program, which integrates customer information into MS Outlook and MS Access.

5. Use of Templates

MS Office Suite has pre-made templates that range from business report templates, presentation templates, Excel accounting templates and Web design templates. Templates can guide novices who are not familiar with the MS Office Suite application or help professionals create applications to suit their needs. Time is saved in most cases because the template is already designed and ready to be used. MS Office suite also integrates into the MS Office Suite website, which will enable you to download more templates for MS Office.

6. Real Time Updates

Updates are of critical importance when using the MS Access model. MS Office Suite has a feature that automatically connects to Microsoft’s servers when Microsoft software engineers finish an MS office update. If the application that you are working in has a new update, you’re able to initialize the update from while working in the application. The update is usually code to update a program or flag the program for deletion. Real-time updates are ideal because instead of the user searching for an update every month, updates are automatically provided for them.

Advantages of MS-Office

Microsoft Office, also known as MS Office, is a popular software suite featuring many desktop publishing programs. It comes with everything that may come into use in a classic office setting, hence the name. Computer users have the option of several different Microsoft Office suites intended for students, home users, small businesses and corporations. What you choose depends on your own circumstances.

1. Universal Software

Unlike some other kinds of software, Microsoft Office is the industry standard when it comes to desktop publishing. Whenever a document is required, it is always required in the Microsoft Word format with very few exceptions. In order to stay current with industry trends, MS Office is a must.
2. Complete Software Suite

Microsoft Office comes with many different kinds of software, all of which help with desktop publishing. If you are looking to write a letter to a client, Microsoft Word is the right software to use. You could employ Microsoft Publisher to help create a business brochure, or you could use MS Excel for your client database. This software suite has everything you need for running your business.

3. Most Businesses Have a Use for It

Nearly any type of business can find a use for the Microsoft Office suite of software programs. For instance, a pet groomer could use MS Publisher to create fliers and other advertisements to post around town. Corporations can use MS Word for internal memos and publications. Since so many different kinds of people and companies find use of this software, it has become a popular list of programs.

4. Ease of Use

MS Office is well known for being easy to use. Each program comes with helpful features so you can achieve nearly any goal. You can do anything you can imagine with this software, both for personal and business use. They also have extensive help files built into the programs if you get stuck.

5. Online Support from Microsoft

Microsoft’s website consists of hundreds of pages devoted to support for their MS Office products. The site has free templates available for Microsoft software, and troubleshooting if you ever run into a problem. Automatic updates help keep your software bug-free so that it is always working at top form.

6. Online Tutorials

Besides the help that you get from Microsoft online, there are other websites devoted to help and tutorials. If you want to learn how to make a cool postcard, bloggers and webmasters will show you how. Since this software is so common, there are many websites online that can help you.

2.6. Introduction to MS-Word

Microsoft Word is a word processor designed by Microsoft. It is a well-known word processor package in the world. This package is mainly used for data entry in various business, Private, Public and Govt. organizations. In this we can create Documents, Letters, and Statements in an attractive way. It was first released in 1983 under the name Multi-Tool Word for Xenix systems. Subsequent versions were later written for several other platforms including
IBM PCs running DOS (1983), the Apple Macintosh (1984), the AT&T Unix PC (1985), Atari ST (1986), SCO UNIX, OS/2, and Microsoft Windows (1989). It is a component of the Microsoft Office software system; it is also sold as a standalone product and included in Microsoft Works Suite. The current versions are Microsoft Office Word 2010 for Windows and Microsoft Office Word 2011.

Definition

MS-Word is a software package that helps you to create, edit, format and print a document. It is quite flexible and easy to use. It is one of the most popular word-processors for Windows. It has number of menus and commands that are user friendly. It provides the facility to save the document automatically after pressing save commands. It has options of spell and grammar checking and mail merge which is not available in other word processing software’s.

Main Features

1. It allows the user to enter, manage, edit, delete and modify the text easily.

2. It is easy to copy a part of text within the document or into other document using copy/cut and paste using export facility.

3. We can easily search or find selected text in a huge document.

4. It allows the user to insert pictures, graphs and charts etc graphical items in the middle of the text.

5. It allows the user to define header and footer that is automatically printed on each page while printing.

6. We may easily format the text, paragraph according to our choice.

7. Super script and sub script options of font are used to type formulas of Mathematical equations and chemical reactions etc.

8. We may use bullets and numbering to the text.

9. We can set margins according to our need and we may select the paper size using page setup.

10. It provides a facility called mail merge used to send a text to more members automatically merging with data source.

11. The macro of ms word is used to perform a task by pressing a key or using run command automatically.
12. Table option is used to enter tabular data and used to sum columns, rows and we may format or sort the data of a table.

13. Facility of checking spelling is available in work. The miss spelt words and grammar mistakes can be corrected easily.

Advantages of MS-Word/Word Processing

Word processing packages have many advantages they are:

1. **Scrolling**

A work document may have much number of pages but the screen has capacity to display one page at a time. The document window contains horizontal and vertical scroll bars with these we may move up and down, left and right.

2. **Word Wrap**

This facility allows the user to type the text continuously without pressing enter key. When the cursor reached to the last character position on the right margin it jumps to the beginning of the next line, in case of the last word is beyond the right margin the word automatically shifts to the beginning of the next line.

3. **Margination**

It is used to set left, right, top and bottom margins. It contains default margin settings. If we want to proceed with default settings there is no need to specify at this setting.

4. **Pagination**

This is a text formatting command used to define the no of lines accommodated in each page.

5. **Hard and soft return**

While entering text continuously at the end of each line the text is jumped to next line with pressing enter key this is called soft return and when enter key is pressed the cursor moves to next line, it is called hard return.

2.7. MS-Word: Documents Preparation

Entering into M.S. Word

There are 3 Methods to enter M.S. Word.

1. Click on Start à Programs à M.S. Word.
2. Click on Start à Programs à M.S. Office à M.S. Word.
3. Double click on M.S. word icon if it exists on the Screen.

**Closing M.S. Word**

Click on file à close or “X” of menu bar to come out from file.

Click on file à Exit or “X” of title bar to come out from M.S. Word.

**Opening an old File**

To open an old file click on file à open or “then a window appears on the Screen select the drive and folder in look in box. Click on required file and click on open.

When we enter M.S. Word it automatically opens a file with a name Document1 and it displays like below.

![Fig 2.1 Microsoft Word](image)

**Parts of a Word Window**

The word window contains below parts

1. **Title Bar**: It is located at the top of the window. It contains filename and software name.
2. Menu Bar: It contains menus like file, edit, view, format, tools, tables etc.,

3. Ruler: The Ruler is used to set margins and tabs.

4. Scroll Bars: It has two scroll bars Horizontal Scroll bar and Vertical scroll bar used to scroll the document horizontally and vertically.

5. Status Bar: It displays the various states like page, section, no of pages, line, column no. and other states of document.

6. Document Area: It is the place or area at which we have to type text or design our document.

7. Tool Bars: There are many toolbars available in M.S. Word. These are used as short cut keys by default two toolbars “Standard” and “Formatting” will be displayed on the Screen.

If you hold your mouse over any of the icons in the menu bars or toolbars, you will see a quick description of what those buttons do. If you can’t see any of the toolbars mentioned in this article (mainly the Standard and Formatting toolbars), you may have to instruct Word to show them by clicking View then Toolbars and putting a tick by any toolbars you want to show. If you can’t see any of the buttons mentioned below on your toolbar, look for the More Options button at the edge of the screen. This is the More Options button which will allow you to select which buttons you do or don’t want to display.

Using Templates

You can save yourself some time by using some basic Templates and Wizards to help you construct your document. From the File menu, click New and select the option for Word Templates. You can select from a range of document types including letters, brochures and memos, all laid out ready for you to insert your own text. You can also choose to use Wizards that work by asking you questions about the document you wish to write.

Working With Text

To select a piece of text you have typed, you need to highlight it by holding the left mouse button and dragging your mouse over the words. Alternatively, if you double-click a word, that word is selected, and if you triple-click anywhere on a line, the whole line will be selected. You can change the look and layout of your selected text using the Formatting toolbar at the top of the screen. Some of the buttons can be pressed on or off, while others have a drop-down menu activated by pressing the button next to them, giving you a choice of options.
You can use the Font bar to select different types of font styles, and the Font Size number bar to make the text smaller or larger.

![Font options](image)

You can choose to make highlighted text **Bold** and *Italic* or *Underlined*. You can also justify and align the text using the Align buttons.

Use the Bullets buttons to insert numbering or bullet points before the text. You can also indent the text forward or back. Choose the color of the text by clicking on the small drop-down arrow by the side of the color button. If you change the color without highlighting any text first, then any text you have already written will stay the same colour but any text you type now will have this new colour. To change the colour of existing text, highlight it first then click the font button.

- Problems
- Icon
- Interior Paints
- Selected

Select some text and you can then *Cut*, *Copy* and *Paste* it using the Edit menu or the buttons. Select the text, choose Copy then move your cursor to where you want the text to go, then Paste. A copy of the original text will now appear. If you choose *Cut* instead of *Copy* the original text will be moved rather than copied.

The Format menu allows you to change things like columns, bullets or numbering.

Click on File then Page Setup to adjust margins, the layout of your page and its orientation (Portrait or Landscape).

You can check the spelling of your text by clicking on the Tools menu and selecting Spelling and Grammar, or by clicking the button. You can choose to ignore any words found by the spellchecker, or replace them with an alternative spelling.
From the View menu select Toolbars and you will be able to select which toolbars you want to work with. These are many different menus which provide you with easy access to tools for tasks such as drawing, creating tables and working with pictures.

To undo any mistakes you have made, press the button. If you then want to redo the action you previously did, press the button.

**Inserting Graphics**

From the Insert menu, select Picture then From File. You can then browse to the location of an image file on your hard drive. When you have selected the one you want, click Insert to place it in your document.

To insert Clip Art into your document click on the Insert menu, Picture then Clip Art. Select the graphic you want from the galleries available and click Insert to place it in your document.

To resize an image, click once to select it then click and drag the handles that appear around the edges of the image. If you use the corner handles the proportions of the image will stay the same as you resize it.

**Printing Your Work**

You can preview your work to see how it will look when printed. Choose File then Print Preview or click the button. To return to the normal view click Close.

You can select your printing options (such as which pages to print and how many copies to make) by clicking on File then Print. To print your work immediately without making any changes to your standard settings, press the button.

**Saving Your Work/file/document**

When you want to save your work, choose File then Save As. You will be asked to give your document a name, and should you need to you can also change the filetype from its default setting (Word Document) to save as a text file or Web page instead.

When saving the same document later, you do not have to use Save As each time, instead you can select File then Save, or just click on the button.

**When You Have Finished**

Once your work is saved, you can close the document by clicking on File then Close. You may be asked if you want to save any changes you have
made. Click Yes if you have made any changes to your document since the last time you saved it.

To start another document, click on File then New or press the button. To open an existing file such as the one you have just saved, click File then Open or press the button. Locate the file you want and click Open.

To exit Word completely, use the X (Close) button at the top-right of the window.

There is a lot more to discover in Word and it is a powerful program.

**Open File**

To continue working on a file you previously saved, you must open the file. To open the file
- Click on File.
- Highlight Open.
- Press left mouse button.
- Find the folder you saved in the Look In field. You can also type in the name of the document in the File Name field.
- Click on Open.
- The file you saved should now appear.

**Bold, Underline, and Italicize**

You can bold, underline, or italicize when using Word. You also can combine these features — in other words — you can bold, underline, and italicize a single piece of text. First highlight the text you wish to format, the click the appropriate formatting button on the format toolbar.

- **B** - Bold button
- **I** - Italicize button
- **U** - Underline

**Highlighting Text**

Highlighting is useful when wanting to emphasize important information. Word provides a button on the Formatting toolbar that lets you highlight text in a document using the mouse. With this highlighting feature, you can select and highlight specific text in a document with a variety of colors. To use this feature
• Click the Highlight button on the Formatting toolbar.
• Select the desired color by clicking on the arrow on the right hand side. Yellow is the default color.
• When the Highlight button is activated, the I-beam pointer displays with a pen attached.
• Continue selecting text you want highlighted and when completed, click once on the Highlight button to deactivate it.

Changing Font Color

Word also provides a button on the Formatting toolbar that lets you change text color in a document using the mouse. This feature lets you select specific text in a document and change the font color. To use this feature:

• Select the text you want to change the color of.
• Click the Text button on the Formatting toolbar.
• Select the desired color by clicking on the arrow on the right hand side.
• When completed, click once on the Text button to deactivate it.

Cut and Paste

You can cut (delete) text from one area of the document and save that text so it can be pasted elsewhere in the document. When you cut text, it is stored on the Clipboard. Information stored on the Clipboard stays there until new information is either cut or copied. Each time you execute Cut or Copy, you replace the old information on the Clipboard with whatever you just cut or copied. You can paste Clipboard information as often as you like.

Cutting and Pasting by Using the Standard Toolbar:

• Highlight the text you wish to cut or copy.
• Click on Edit, then select cut or copy.
• Click on Edit, and then select paste.

Cutting by Using the Icon

• Highlight text you want to cut.
• Click on the Cut icon.
• The text is now on the clipboard.
Coping by Using the Icon

- Highlight the text you want to copy.
- Click on the Copy icon.

Pasting by Using the Icon

- Place the cursor where you want to paste the text.
- Click on the Paste icon.

Using AutoText Cut and Copy

Using AutoText Cut and Copy both store information on the Clipboard. Each time you store new information on the Clipboard, the old information is lost. If you wish to store text permanently so you can use it repeatedly, use AutoText.

- Type the text you wish to permanently store.
- Highlight the text you typed in to store.
- Click on Insert. Highlight AutoText.
- Highlight New. Create AutoText dialog box appears. Microsoft Word suggests a name. The suggestion is displayed on the screen. Change the name or keep the suggested name by clicking on OK.
- If you type a shortcut key (example if I typed Janann Nicholson as the text, and in as the name, when I type in and hit the F3 key, Janann Nicholson will appear).
- If you choose the whole name (example, if I typed Janann Nicholson as the text, and saved it as Janann Nicholson, when I begin typing my name, it will guess that is what you are typing. It will display the name above the typing. To automatically insert it without finishing the actual typing, click the enter key).
- Click anywhere in the text area to remove the highlighting.

Note: Whenever you need the text, use the F3 or Enter key.

Inserting Text

To insert text, you must be in the Insert mode. To check to see whether you are in the Insert mode, look at the Status bar, located at the very bottom of the screen. Look at the right side of the Status bar. If the letters “OVR” are gray, you are in the Insert mode. If the letters “OVR” are black, you are in the Overtype mode.
To change to the Insert mode:

Double click on the letters “OVR.” The letters “OVR” should now be gray.

Alternative Method

• Go to the Menu bar.
• Click on Tools. Highlight Options at the bottom of on the drop-down menu.
• Press Enter.
• Click on the Edit tab. The Overtype Mode box should be blank. If the box is blank, click on OK.
• If the Overtype Mode box is not blank, click on the box to remove the checkmark.
• Then click on OK.

To Overtype

You can type over the current text (replace the current text with new text). However, you must be in the Overtype mode. Do the following to change to the Overtype mode.
• Double-click on “OVR” on the Status bar.
• The letters “OVR” should now be black.

Spell check

MS Word includes the capability to check the spelling and grammar of a document. In old days reader checked the spelling of his document file manually but in MS Word it is done automatically. Spell checker not only check the spelling but correct is also by the use of inbuilt dictionary in MS Word. It also gives suggestions about the different words if any error occurs in these.

Check Spelling Checking and correction is very useful feature of MS-Word. It helps the user to produce error-free document spelling checking is done with the help of internally Available Dictionaries. In Addition to internally available dictionary, user can also create a personal dictionary there are two ways to check spelling and grammar

i. Word can automatically check spelling and grammatical errors as you type the text

ii. After treating the Document, you can have the word to search the document for spelling and grammatical errors.

Mail Merge

In our daily life many applications require documents, letters containing similar text and a common layout to be sent to a number of persons.

The mail merge feature merges documents containing similar information with some differences (like names, addresses) in a very quick and easy way.

The basic steps in mail-merge process are as follows

Step 1 : Choose a document type and main document

Step 2 : Connect to a data file and select records

To start the mail merges process

1. Start Word.

2. A blank document opens by default. Leave it open. If you close it, the next step won’t work.

3. On the Tools menu, point to Letters and Mailings, and then click Mail Merge.
4. The Mail Merge task pane opens. By using hyperlinks in the task pane, you navigate through the mail-merge process.

**Step 1: Choose a document type and main document**

Choose the type of document you want to merge information into. The Mail Merge task pane opens with a question about what type of merged document you are creating. After you choose, click next at the bottom of the task pane. If you have fax support up on your computer and a fax modem installed, you will also see Faxes in the list of document types. Choose the main document you want to use. If your main document is already open, or you are starting with a blank document, you can click. Use the current document. Otherwise, click Start from a template or Start from existing document, and then locate the template or document that you want to use.

**Step 2: Connect to a data file and select records.**

Connect to the data file. In this step in the mail-merge process, you connect to the data file where the unique information that you want to merge into your documents is stored. If you keep complete up-to-date information in your Microsoft Office Outlook® Contacts list, that is an excellent data file to use for customer letters or e-mail messages, just click Select from Outlook contacts in the task pane, and then choose your Contacts folder. If you have a Microsoft Office Excel worksheet or a Microsoft Office Access database that contains your customer information, click Use an existing list, and then click Browse to locate the file. If you don’t have a data file yet, click Type a new list, and then use the form that opens to create your list. The list is saved as a mailing database file that you can reuse. Choose the records in the data file that you want to use. After you connect to the data file that you want to use or create a new data file, the Mail Merge Recipients dialog box opens. You can select a subset of record for your mail merge by sorting or filtering the list.

**Macros**

A macro is a shortcut to a task you do repeatedly. Think about the Centre align operation. You first highlight the word you want centered, then click the centre icon in the toolbar. This is a macro. It’s the short way of performing the centre task.

But you don’t have to do it that way. There is a longer way. You can centre your text by clicking **Format** from the menu bar. When the menu drops down, click **Paragraph**. You’ll get a dialogue box popping up. Click the down arrow in the **Alignment** box, and then click on **centre**. Click **OK** on the dialogue box and your text is centered. That’s the long way round. Clicking the centre icon on the toolbar is much easier - it’s a very useful Macro built in to Microsoft Word.
2.8. Using Word Commands

Word has a built-in command List Commands, which produces a table of all the Word commands with their current key and menu assignments. However, it does not list the commands using their actual names; nor does it include descriptions of what the commands actually do. There are many shortcuts for common functions in Microsoft Word. These shortcuts or commands can come in handy when typing a report or term paper. It is a good idea to try some of these functions before you actually begin a project. If the desired function involves a section of text (words you have typed) you will need to highlight the text before typing the command. For instance, to BOLD a word or words you must highlight them first.

For other commands, you may simply need to place the cursor at a specific place. For instance, if you want to insert a footnote, you simply need to place the cursor in the relevant position.

**Ctrl-N** : When you already have one document on the screen, this will open a new document.

**Ctrl-O** : When you highlight a file, this will open it.

**Ctrl-S** : Will save any changes you make to the text (it’s a good idea to save work frequently).

**Ctrl-A** : Will highlight all of the text in your document.*

**Ctrl-C** : Will copy all of the text you highlight.

**Ctrl-X** : Will cut all of the text you highlight.

**Ctrl-V** : Will paste all of the text that you copy or cut.

**Ctrl-1** : Will single-space the document.

**Ctrl-2** : Will double-space the document.

**Ctrl-B** : Will turn highlighted text into **boldface**.

**Ctrl-I** : Will italicize highlighted text.

**Ctrl-U** : Will underline highlighted text.

**Ctrl-Z** : Will undo any previous changes you make to the text prior to saving it.

**Ctrl-F** : Will find specific words & phrases in whatever document you have open.
Ctrl-P : Will open the print window.

Ctrl-W : Will close the window or document that you are working on.

Ctrl-Q : Will quit the MS Word program.

Be sure to save all of your work before you quit

To highlight text, click the cursor to the beginning of the text, hold down the mouse button, and drag the cursor through the text you want to highlight, or hold down the shift key and use the arrow keys. Any highlighted text will be deleted if you hit the delete or return/enter keys, which is why Ctrl-Z (undo) is such a valuable command. While there are several other commands, these are the most commonly used when writing a paper. You can also access these commands by clicking File or Edit on the toolbar menu, but it’s far too much of a pain. Using these keyboard commands rather than messing with the mouse will save valuable time.

Short Answer type Questions

1. Define MS-Office.
2. What is “Skype”?
3. Write any two features of “MS-Word”.
4. Write the difference between scroll Bars and Status Bars.
5. What is Mail Merge?

Long Answer Type Questions

1. What are the components of MS-Office? Explain?
2. Describe the main features of MS-Office.
3. Write the advantages of Word Processing.
4. Mention about the using of Word Commands.
UNIT 3

Ms – Excel & Power Point

Structure

3.1 Introduction to MS-Excel
3.2 Components
3.3 Uses and Advantages
3.4 Main Functions
3.5 Operation Procedures
3.6 Introduction to MS-Power Point
3.7 Preparation of MS-Excel Sheets
3.8 Excel Command Practices
3.9 Power Point Presentation
3.10 Power Point Commands

Learning Objectives

After studying this unit, the student will be able to

- Understand about MS-Excel
- Know about components, uses and advantages of MS-Excel.
- Understand about MS-Powerpoint.
- Know about preparation, excel command and presentations.
3.1 Introduction to MS-Excel

Accounting is one of the most popular and dynamic areas of interest in our society. Accounting is used to know, understand, and analyze the numbers. It helps to handle financial transactions for regular people, businesses, government agencies, and international monetary relationships. Accounting can be resumed as the system used to identify, record, and document the monetary transactions of any kind.

Microsoft Excel is a spreadsheet application developed by Microsoft for Microsoft Windows and Mac OS X. It features calculation, graphing tools, pivot tables, and a macro programming language called Visual Basic for Applications. It has been a very widely applied spreadsheet for these platforms, especially since version 5 in 1993, and it has replaced Lotus 1-2-3 as the industry standard for spreadsheets. Excel forms part of Microsoft Office. The current versions are 2010 for Microsoft Windows and 2011 for Mac OS X.

Microsoft Excel has the basic features of all spreadsheets, using a grid of cells arranged in numbered rows and letter-named columns to organize data manipulations like arithmetic operations. It has a battery of supplied functions to answer statistical, engineering and financial needs. In addition, it can display data as line graphs, histograms and charts, and with a very limited three-dimensional graphical display. It allows sectioning of data to view its dependencies on various factors for different perspectives (using pivot tables and the scenario manager).

It has a programming aspect, Visual Basic for Applications, allowing the user to employ a wide variety of numerical methods, for example, for solving differential equations of mathematical physics, and then reporting the results back to the spreadsheet. It also has a variety of interactive features allowing user interfaces that can completely hide the spreadsheet from the user, so the spreadsheet presents itself as a so-called application, or decision support system (DSS), via a custom-designed user interface, for example, a stock analyzer, or in general, as a design tool that asks the user questions and provides answers and reports. In a more elaborate realization, an Excel application can automatically poll external databases and measuring instruments using an update schedule, analyze the results, make a Word report or Power Point slide show, and e-mail these presentations on a regular basis to a list of participants.

Definition

Software developed and manufactured by Microsoft Corporation that allows users to organize, format, and calculate data with formulas using a spreadsheet system broken up by rows and columns. Microsoft Excel usually
comes bundled with Microsoft Office and is compatible with other applications offered in the suite of products.

Historical Background

Microsoft originally marketed a spreadsheet program called Multiplan in 1982, which was very popular on CP/M systems, but on MS-DOS systems it lost popularity to Lotus 1-2-3. This promoted development of a new spreadsheet called Excel which started with the intention to ‘do everything 123 does and do it better.

The first version of Excel was released for the Mac in 1985 and the first Windows version was released in November 1987. Lotus was slow to bring 1-2-3 to Windows and by 1988 Excel had started to outsell 1-2-3 and helped Microsoft achieve the position of leading PC software developer. This accomplishment, dethroning the king of the software world, solidified Microsoft as a valid competitor and showed its future of developing graphical software.

Microsoft pushed its advantage with regular new releases, every two years or so. The current version for the Windows platform is Excel 11, also called Microsoft Office Excel 2003. The current version for the Mac OS X platform is Microsoft Excel 2004.

Main Features

Excel is a Microsoft office application. Excel is mainly used for making calculations and mathematical works. Microsoft excel is a spread sheet application in which no of sheets we can add as per our requirements. In a single sheet, it consists of rows and columns and cells. Every cell has different address. In excel sum, product, subtraction, division and many mathematical, logical functions are available with this application. Other features tables, charts, clip art etc. you can find with Excel. It basically used for payroll, accounts, mathematical and for other business purposes.

Features of Excel

1. Hyperlink: We can link one file to another file or page with the use of Excel.

2. Clip art: In this we can add images and also audio, video clips can be added here.

3. Charts: With charts, we can clearly shown products evaluation to the clients. For example which product sale is more or less in this month.
4. **Tables**: Tables are created with different fields e.g. - name, age, address, roll no so we add a table to fill these values.

5. **Functions**: Mathematical Add, subtract, div, multiply. LOGICAL: Average, Sum, Mod, Product.

6. **Images and Backgrounds**: In this we add images and backgrounds in sheet.

7. **Macros**: Macros are used for recording events for further use.

8. **Database**: We can add database from other sources with data feature.

9. **Sorting and Filter**: In sorting we can sort our data and also filter our data so that repetitions will be removed.

10. **Data Validations**: In data tools there are data validations consolidate etc are used.

11. **Grouping**: In this we can use group, ungroup subtotal etc.

12. **Page layout**: In this themes, colors, sheets, margins, size, backgrounds, breaks, print, titles, sheets height, width, scaling, gridness, headings, views, bring to front of font or back alignment etc will be used.

### 3.2. Components of MS-Excel

Microsoft Excel is spreadsheet software. However, it does much more than simple spreadsheets. Excel has components with built-in formulas for statistics, finance and other calculations. These data can be displayed in a chart or graph in Excel. The user can then analyze the data and model scenarios to achieve the desired outcome for a problem or project. Microsoft Excel has various components to make calculating, analyzing and displaying data more efficient.

1. **Charts/Graphs**

   Microsoft Excel is known by many to be an efficient way of creating charts and graphs. The user can create charts and graphs ranging from bar and column charts to scatter charts and even stock graphs. When the underlying data are changed, the chart changes also without any additional effort from the user. In addition, users can change chart types with ease also. The user only has to click twice, and the chart is changed without adjusting the underlying data.
2. Formulas

Because it is innately spreadsheet software, Excel has many in-built formulas. The types of formulas readily available range from simple calculations to statistical formulas to complex engineering calculations. For example, psychology students often must perform Z-tests and standard deviations on sets of data. The formulas for these calculations are in Excel and do not require the student to perform numerous steps to arrive at a solution. The built-in formulas save users hours in calculation time.

3. Analysis

What-if analysis and modeling are available in some of the most recent versions of Microsoft Excel. The modeling allows users to test various scenarios while keeping some data static. Users can also set a certain goal that they would like to attain from the data. Excel will manipulate the data to show the user how to attain the goal. Excel will also check for duplicate data and consolidate it appropriately. This helps ensure that the analysis is as accurate as possible.

4. Data Gathering

Another component of Microsoft Excel is its ability to gather data from different sources. Excel can import data from a company-wide enterprise system. An enterprise system is one that can hold and manipulate data for larger organizations such as Coca-Cola or Home Depot. Excel can also import data from a simple text file, another Microsoft Office program, such as Access, or other database systems. It is unnecessary for the user to retype or re-enter information.

3.3. Uses and Advantages

Microsoft Excel is spreadsheet software used to calculate financial, statistical and engineering information, and is used in a wide range of places, from individual households to Fortune 500 companies. The components of Excel are cells, spreadsheets and workbooks. Workbooks contain spreadsheets and spreadsheets contain cells. Therefore, thousands of cells are in a spreadsheet and two or more spreadsheets make up a workbook. The features Excel offers make it possible for the user to save time when calculating formulas, creating charts and graphs, and sharing and securing information.

1. Calculations

Microsoft Excel is handy when performing calculations. The software contains built-in formulas for basic math, statistics and even engineering functions. Calculations that may require several iterations to arrive at an answer only require entering a few basic formula components for Excel to calculate the final answer.
In addition, the time needed to get the answer is greatly reduced by using Microsoft Excel.

2. Create Graphs/Charts

Microsoft Excel can also be used to create charts and graphs. The data entered into a spreadsheet can feed the many types of graphs available in Excel. Microsoft Excel has the capability to create pie charts, bar graphs, 3-D graphs and even scatter grams. Creating these types of charts on paper would be very time consuming, if not impossible for some types of graphs. Excel also contains wizards (step-by-step instructions) to guide the user in creating the type of graph he needs.

3. Spreadsheet Linking

Several spreadsheets can be linked to one another using Excel. For example, if sales department data is in one spreadsheet and marketing data is in another, the two spreadsheets can be linked without retyping the information. Link the information by calculating the cells of one spreadsheet with the cells of another. The final result will be the combination of the sales data and the marketing data. Be aware that if the information in one spreadsheet is changed, the final result will also change.

4. Formatting

Excel has another feature that allows the user to format cells. The cell formatting feature is especially handy for understanding performance. In Excel, the cells can be formatted to display a certain way if there is a certain result. For example, if the financial goal is to be 10 percent under the budget, but the current result is 1 percent over budget, then the cell can be formatted to display in red. On the other hand, if the result is 12 percent under budget, it can be formatted to display in green.

5. Secure Information

Excel can also protect information. There is a cell locking feature in Excel that prevents other users from changing the information in the cell. Additionally, the entire worksheet or workbook can be password protected. If there are parts of the workbook that should not be seen, place a password on those parts of the workbook or the entire workbook itself.

6. Integration with Other Software

Microsoft Excel can also be integrated with other software. Excel data can be imported into Microsoft Access, and Access data can be exported into Excel. Microsoft Word and PowerPoint use Excel to create tables within their
documents. If a table, chart or graph is created in Excel, it can be copied and pasted into Microsoft Word and PowerPoint.

**Advantages**

CEO World Magazine lists Microsoft Excel as one of the top spreadsheet programs available. Available individually or as part of the Microsoft Office suite of productivity software, Excel gives users a large variety of tools that they can use to make their data more flexible and useful.

1. **Manage Data**

   Those with large lists of information frequently take advantage of Microsoft Excel to make the mountain of data more manageable. Users of Excel 2007 or 2010 enjoy spreadsheets with up to one million rows and 16,000 columns. Excel gives users the ability to import external data into either an existing Excel workbook or a new one. Operators can sort and filter data in numerous ways, and can add summaries and subtotals. Additionally, users can add formulas to the workbook to analyze the data. Excel 2010 includes enhanced search features that allow users to define searches by keyword.

2. **Pivot Tables**

   A tool that allows operators to view summaries of large amounts of data and easily manipulate the information in various configurations, a Pivot Table can help users find answers to queries. Excel’s Pivot Table function includes a Pivot Chart feature; letting users instantly create charts based upon the table by hitting the “F11” key on the user’s computer keyboard. Additionally, Microsoft has created a downloadable add-in for Excel 2010 called Power Pivot that enhances pivot table capabilities such as sharing and collaboration.

3. **HTML Renderings**

   Excel Services, part of Microsoft Office SharePoint Service for Excel 2010, lets operators share the spreadsheet securely with other collaborators. SharePoint turns the spreadsheet into an HTML file, letting other users access it using a Web browser. Users still maintain the ability to utilize common Excel features such as sorting and filtering. Excel Services also adds web development tools such as a JavaScript Object Model.

4. **Compatibility**

   Because of its standing as one of the most widely used spreadsheet programs, Microsoft Excel users rarely find issues with sending an Excel file to clients or associates who do not also utilize the program. While popular in businesses, the program also gets used in colleges and universities around the world.
5. Integration with Microsoft Word

Microsoft also produces one of the most popular word-processing programs available: Microsoft Word. Excel users have the advantage of a spreadsheet program designed to smoothly integrate with Word and the other programs in the Microsoft Office suite. For instance, Word users have the ability to insert an Excel spreadsheet directly into a document. After it’s activated, an Excel spreadsheet appears within the Word document. While working on the spreadsheet Excel tools are available to the user. Clicking outside of the spreadsheets brings the operator back to Word mode.

3.4 Main Functions

Microsoft Excel is a data-management program that is used to create and format spreadsheets, analyze and share the information within those spreadsheets, and make charts, graphs and PivotTables. With advanced tools from Microsoft, users can easily share all their information through email, a company Intranet or the Internet.

1. Spreadsheets

Microsoft Excel has the ability to host huge spreadsheets up to one million rows by 16,000 columns. The data can be in a multitude of formats—numbers, dates, text, general, currency, time, percentages, fractions and scientific.

2. Math

There are over 50 math and trigonometry functions in Excel. For example, Microsoft Excel can round numbers up and down, work with matrices, determine square roots and sines and do basic addition, subtraction, multiplication and division.

3. Charts

Depending on your needs and data, Excel can create different charts for you. These include column, pie, bar, area, scatter, line, stock, surface, bubble and radar charts.

4. PivotTables

PivotTables let you quickly change how you view your data. After creating a worksheet, you can simply “drag and drop” the columns to new
positions and Excel will make changes automatically so that calculated rows change without having to figure out the new formulas yourself.

5. Macros

Macros allow users to create small custom programs to automate certain repetitive tasks. The macro basically records your keystrokes and mouse clicks and then lets you use them again later to do the same task.

6. Holding Data

Microsoft Excel can even be used as a flat-file database. It’s very useful for simple functions, like keeping track of addresses and phone numbers.

3.5. Operation Procedures of Excel

Starting Excel

If you have an icon on the desktop for Excel, then all you have to do is double-click it to open Excel. Alternatively, click the Start button and then select All Programs, Microsoft Office, and Microsoft Excel.

You can start Excel by

1. Double-clicking on the Microsoft Excel application icon. This application is usually in a folder called Excel. An alias for this icon appears on the desktop of the computers in the Student Micro Computer facility.

When we enter Excel the Opening Screen is displayed like below.

![Fig 3.2 Excel Opening Screen](image)

When you open Excel from a desktop icon or from the Start menu, a new empty workbook (consisting of three worksheets) will be displayed on your screen. If you double-click on an existing Excel file from inside the Windows Explorer window, then Excel will open and display the selected file on your screen.

**Standard Toolbar**

The Standard toolbar, located beneath the menu bar, has buttons for commonly performed tasks like adding a column of numbers, printing, sorting, and other operations. Excel let’s you customize the toolbar or even display multiple toolbars at the same time. The Standard Excel XP toolbar appears in the figure below.
Formatting toolbar

The Formatting toolbar, located beneath the Standard toolbar bar, has buttons for various formatting operations like changing text size or style, formatting numbers and placing borders around cells.

Formula bar

The formula bar is located beneath the toolbar at the top of the Excel worksheet. Use the formula bar to enter and edit worksheet data. The contents of the active cell always appear in the formula bar. When you click the mouse in the formula bar, an X and a check mark appear. You can click the check icon to confirm and completes editing, or the X to abandon editing.
Name box

The Name box displays the reference of the selected cells.

Row and column headings

Letters and numbers identify the rows and columns on an Excel spreadsheet. The intersection of a row and a column is called a cell. Use row and column headings to specify a cell's reference. For example, the cell located where column B and row 7 intersect is called B7.

Worksheet tabs

An Excel workbook consists of multiple worksheets. Use the worksheet tabs at the bottom of the screen to navigate between worksheets within a workbook.

Working with Excel documents

Opening and Closing Documents

To open an existing Excel workbook, choose Open from the File menu or click the Open tool on the toolbar.

Excel will display the Open dialog box, which is similar in appearance and function to the Save As dialog box. It contains a File Name: box for you to type a file name or file specification, a Look In: box to designate a location, and a drop-down menu of file types.

![Image of Open dialog box]

**Fig 3.6 Opening & Closing Documents**
To open a file, select the appropriate location by clicking on the down pointing arrow next to the Look In: selection box. Excel will display all Excel files found there. Select the file you wish to open and click Open to open the file.

**Saving a Document**

The lower right corner of the active cell has a small box called a Fill Handle. Your mouse changes to a cross-hair when you are on the Fill Handle. The Fill Handle helps you copy data and create series of information. For example, if you type January in the active cell and then drag the Fill Handle over four cells, Excel automatically inserts February, March, April and May.

To save an untitled Excel workbook, from the File menu choose Save As or click the Save button on the toolbar (shown at right). The Excel Save As dialog box is the same as the Open dialog box above except it is labeled “Save As”

The Save As dialog box contains a text box for you to type a specific filename, a “Save File as Type:” box to save your workbook in a different format that other programs can read, a selection box to designate the folder and drive in which to save the file, and a “Places Bar” that offers other locations to save your file.

**Difference between Save As and Save**

Notice on the File menu there is a Save command and a Save As command. Use Save to save an existing workbook with the same name in the same location. Use Save As when you want to save a file with a different name or save it in a different location. For example, suppose you are working on a workbook called BUDGET.XLS. After you edit the workbook, you should save it again using the Save command. The Save command will replace the copy on the hard drive with what is in memory (what you see on your screen). At the end of the day, you might want to save a copy of the file on a diskette to take home. Choose Save As and select the proper drive in the Save As dialog box. This will create another copy of the file on your diskette.

**Creating a New Workbook**

The lower right corner of the active cell has a small box called a Fill Handle. Your mouse changes to a cross-hair when you are on the Fill Handle. The Fill Handle helps you copy data and create series of information. For example, if you type January in the active cell and then drag the Fill Handle over four cells, Excel automatically inserts February, March, April and May.

If you are already in Excel and you want to create a new workbook, choose New from the File menu or click the New tool on the toolbar. If you
choose New from the file menu the Task Pane will open on the right side of the Excel worksheet. To create a blank workbook, click Blank Workbook in the Task Pane, and a new workbook opens.

![Fig 3.7 Creating a New Work Book](image)

**Entering and Editing Data**

**Entering Data**

You can enter text, numbers and dates in an Excel worksheet. In Excel's terminology, numbers and dates are called values and text is referred to as a label. To enter data of any type, click on the cell you want to contain that data, and then type the information you want in the cell. When you begin typing, your data also appears in the formula bar. When you have finished typing the data for the active cell, press the Return or Enter key.

**Editing Data**

The easiest way to edit the contents of a cell is to select the cell and then retype the entry. The new entry replaces the old contents. For example, to change the number in cell B6 to 199, select cell B6, type 199 and press Return. This method works well with numbers, but is more difficult when editing long text labels or formulas.

The formula bar gives you more flexibility while editing. When the mouse pointer moves into the formula bar, it changes shape to an I-beam, signifying that you can enter or edit text. Text in the active cell appears in the formula bar and you can edit it there. Use the mouse to select the text you want to change in
the formula bar and then type the new text. Excel automatically replaces what is selected. Don’t forget to press the Return key when you finish editing a cell.

You can also edit labels and values directly in cells. Double-click on the cell you want to edit. This puts an insertion point in the cell. Edit the contents of that cell the same way you would using the formula bar.

**Moving the Active Cell**

Cell selection and movement around the worksheet are similar operations in Excel. To select a given cell or make it active, simply click on that cell. Use the mouse or the arrow keys to move around the worksheet. For example, if you press the right arrow key twice you move two cells to the right. Refer to the table below for additional information on using the keyboard to navigate a worksheet.

<table>
<thead>
<tr>
<th>To move</th>
<th>Press this key</th>
</tr>
</thead>
<tbody>
<tr>
<td>One cell left</td>
<td>Left Arrow</td>
</tr>
<tr>
<td>One cell right</td>
<td>Right Arrow</td>
</tr>
<tr>
<td>One cell up</td>
<td>Up Arrow</td>
</tr>
<tr>
<td>One cell down</td>
<td>Down Arrow</td>
</tr>
<tr>
<td>To top of worksheet (cell A1)</td>
<td>Control Home</td>
</tr>
<tr>
<td>To last cell containing data</td>
<td>Control End</td>
</tr>
<tr>
<td>To end of data in a column</td>
<td>Control Down Arrow</td>
</tr>
<tr>
<td>To beginning of data in a column</td>
<td>Control Up Arrow</td>
</tr>
<tr>
<td>To end of data in a row</td>
<td>Control Right Arrow</td>
</tr>
<tr>
<td>To beginning of data in a row</td>
<td>Control Left Arrow</td>
</tr>
</tbody>
</table>

**Formatting Data**

- **Changing formats using the toolbar**

  In Excel, you can change text fonts and styles in the worksheet. Excel has a Formatting toolbar to simplify basic formatting tasks. The Formatting toolbar appears in the figure below.
The formatting toolbar has several tools you can use to change formats. The B button makes cells bold, I button italicize cells and the U button underlines. Use these buttons to turn formats off as well as on. For example, if cells are bold and you want to turn off that format, select the cells and click the B button. The toolbar also has buttons to change font and size.

**Font tab in Format Cells**

The formatting toolbar offers quick access to varying text formats. For a more complete selection of formatting options, use the Font tab in the Format Cells dialog box.

In the Font section you can select Font, Size, Style, Color and Effects. Notice the Preview area in the dialog box. This shows a preview of the font and style you select before you click the OK button.

**Changing column widths by dragging column borders**

You can change column widths by dragging column borders with the mouse. Move the mouse pointer to the right hand border of the column you
wish to change. The mouse pointer will change shape to a left and right pointing arrow as seen below.

![Mouse Pointer Image]

Click and drag the mouse to adjust the column width. Note that when you are adjusting the width in this way, a numeric width indicator appears in the upper left part of the formula bar.

**Formulas**

To build a formula, first select the cell in which you want the results to appear. In Excel, all formulas start with the `=` sign. After the `=` sign, type the cells you want to add or subtract along with the mathematical operation you wish to perform. For example, to add the January sales in the worksheet below, the formula would be `=B3+B4+B5`. If you want to subtract February Widget Sales from January Widget sales, the formula would be `=B3-C3`.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Widgets</td>
<td>98</td>
<td>39</td>
<td>40</td>
<td>140</td>
<td>240</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Figures</td>
<td>122</td>
<td>18</td>
<td>50</td>
<td>150</td>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Digets</td>
<td>56</td>
<td>52</td>
<td>60</td>
<td>150</td>
<td>260</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Building many formulas can quickly become tedious. Fortunately, the **Copy** command described earlier also works with formulas.

**Copying Formulas**

The easiest way to copy a formula is with the Fill Handle in the lower right corner of the cell. Create your initial formula and then position the mouse on the Fill Handle. When the mouse changes shape to a cross-hair, press and drag over the adjacent cells you want to copy the formula to.
Closing Excel

1. Click on close Button \( \times \) which is located on menu Bar or click on file à close to come out from current file.

2. Click on close Button that is located on Title Bar or Click on file à exit to come out from MS-EXCEL.

3.6. Introduction to MS-Power Points

Microsoft PowerPoint is a presentation program developed for the Microsoft Windows and Mac OS computer operating systems. Being widely used by businesspeople, educators, and trainers, it is among the most prevalent forms of persuasion technology: according to its vendor, Microsoft Corporation, some 30 million presentations are made with PowerPoint every day.

In Microsoft PowerPoint, as in most other presentation software, text, graphics, movies, and other objects are positioned on individual pages or “slides”. The “slide” analogy is a reference to the slide projector, a device which has become somewhat obsolete due to the use of PowerPoint and other presentation software. Slides can be printed, or (more usually) displayed on-screen and navigated through at the command of the presenter. Transitions between slides can be animated in a variety of ways, as can the emergence of elements on a slide itself. The overall design of a presentation can be controlled with a master slide; and the overall structure, extending to the text on each slide, can be edited using a primitive outliner. Presentations can be saved and run in any of the file formats.

Definition

PowerPoint is a software package created by Microsoft. Users create a presentation with a series of slides. It is easy to import documents from other types of software such as Microsoft Word and import it into PowerPoint. Presentations are created in a series of PowerPoint slides, using available templates or starting from a blank page. Users can import audio, video, graphics and text into PowerPoint to make interesting and dynamic presentations.

Origin

Microsoft PowerPoint is the name of a proprietary commercial presentation program developed by Microsoft. Today, it is used in a cross-section of different professions and has been a tool for presentations in the board room or classroom. The origins of PowerPoint software can be traced to the mid 1980s, but the program gained in popularity after being acquired by Microsoft and technology evolved.
Originally designed for the Macintosh computer, the initial release was called “Presenter”, developed by Dennis Austin and Thomas Rudkin of Forethought, Inc. In 1987, it was renamed to “PowerPoint” due to problems with trademarks, the idea for the name coming from Robert Gaskins. In August of the same year, Forethought was bought by Microsoft for $14 million USD ($28.6 million in present-day terms), and became Microsoft’s Graphics Business Unit, which continued to develop the software further. PowerPoint was officially launched on May 22, 1990, the same day that Microsoft released Windows 3.0.

PowerPoint changed significantly with PowerPoint 97. Prior to PowerPoint 97, presentations were linear, always proceeding from one slide to the next. PowerPoint 97 incorporated the Visual Basic for Applications (VBA) language, underlying all macro generation in Office 97, which allowed users to invoke pre-defined transitions and effects in a non-linear movie-like style without having to learn programming.

PowerPoint 2000 (and the rest of the Office 2000 suite) introduced a clipboard that could hold multiple objects at once. Another change was that the Office Assistant was changed to be less intrusive. As of 2012, various versions of PowerPoint claim ~95% of the presentation software market share, having been installed on at least 1 billion computers; the frequency of use in presentations had been estimated at around 350 per second globally.

Main Features

PowerPoint is the presentation software of the Microsoft Office software suite. One of the most widely used office programs, PowerPoint has applications for personal use, academics and business. It is highly customizable; you can edit PowerPoint presentations to be as personal or professional as you want. PowerPoint has a relatively simple user interface which you can easily pick up. However, mastering each of its functions will allow you to create impressive presentations to engage your audience.

1. Design

The design features of PowerPoint allow you to customize the appearance and format of the slides. PowerPoint typically comes with a set of preloaded themes for you to choose from. These can range from simple color changes to complete format layouts with accompanying font text. Themes can be applied through the whole presentation or a single slide. Using the page setup allows you to optimize the presentation for the display size; for instance, you should use a larger screen ratio when displaying on a projector compared to a computer screen.
2. Animation

PowerPoint animation is divided between slide transitions and element animation. Using slide transition adds an effect when switching slides during a slide show. You can edit the transition effect and timing, as well as opt for an on-click or automatic transition between slides. Element animation adds movement and sounds to the objects within the slide. For example, if you’re constructing a photo gallery as a slide show, you can choose which pictures enter the slide first, how they enter and add a sound as they enter.

3. Presentation

The presentation function of PowerPoint is largely designed to accommodate public speaking. PowerPoint comes with a built-in notes function; when printing out presentation slides, you can add presenter notes beside each slide as accompanying content. This is useful to clarify points in the slide without sacrificing the slide’s readability. As of the 2007 version of PowerPoint, you can pre-record narration for a presentation. PowerPoint also has a rehearsal function as well, allowing you or your team to practice your timing and monitor the length of your presentation.

4. Integration

PowerPoint is compatible with all other software in the Microsoft Office suite; you can export slides into Word documents or use Excel charts within your presentation. In addition to image and audio support, PowerPoint 2007 also has video-integration functionality; you can embed videos within a presentation for easy playback without exiting the program. You can also export presentation files to an online interface for multi-user remote editing and presentation practice.

Uses

Microsoft PowerPoint is an industry standard for creating slides that go with presentations. Educational, corporate and religious organizations, among others, can use PowerPoint as a tool to convey visual information in an easily digestible format to individuals or groups. Presentations may be shared on an overhead projector, via email or removable media or shown on a computer. The uses for PowerPoint are limited only by the imagination.

1. Church Services

PowerPoint presentations are frequently used to set a spiritual tone during church services, and can assist a congregation with hymn lyrics, Bible scriptures, graphic elements or photographic images to illustrate a sermon. Important announcements for upcoming events can be shown before or after each service
to keep the congregants informed. Church personnel can design a unique theme for specific holidays or religious celebrations, or utilize one of the many online companies that specialize in creating stock slides or looped-motion graphics. PowerPoint presentations for church use may be projected on one or more screens, depending on the shape and size of the sanctuary.

2. Classroom

PowerPoint can be used in an educational setting to teach a lesson or concept or to present information or a procedure to students in a workshop or seminar. Students can view a PowerPoint presentation individually or share a computer with others. They can also present book reports and other homework assignments on PowerPoint slide format. PowerPoint can help keep parents informed with updates at open houses and other parent/teacher events, while teachers can enjoy the ease of use at which PowerPoint presentations can be recycled. This is handy for those lessons that a teacher may use every year.

3. Electronic Portfolio

Designers and artists who wish to showcase their work to garner new clients or interest in their art can use PowerPoint to create a cohesive and polished electronic portfolio. A slide can feature a single visual image or multiple graphics. An electronic portfolio can also be sent via email, as opposed to pre-electronic days when an artist or designer would have to create a printed portfolio and drop it off or schedule an appointment for viewing.

Advantages

Microsoft PowerPoint has long been the workhorse of the presentation software market. With each new release, the advantages of Microsoft PowerPoint continue to increase. It provides anyone with the need to present information creatively and professionally with the ability to develop presentations quickly, easily and effectively.

1. User Interface

Microsoft’s Office Fluent has significantly improved the PowerPoint user interface to make it easier to create, present and share presentations. The workspace is less cluttered and access to the many features of the application is easier to accomplish. This will speed up your ability to develop presentations from beginning to end.

2. Create Diagrams

The Smart Art diagram tool has long been an advantage of Microsoft PowerPoint, but since the release of PowerPoint 2007, the tool has become
even more valuable. You can convert bulleted lists to diagrams and easily update existing diagrams. The types of diagrams available is extensive making it easier to find a chart to effectively illustrate your point.

3. Reuse Content

The PowerPoint slide libraries allow you to reuse content between different presentations. For example, when putting together sales presentations for different clients, you don’t have to recreate statistical slides that will apply to different clients. You can easily access previously used slides and insert them into your new presentation. If you make changes to the slide, they will automatically be updated in the slide library.

4. Create Consistency

With the document themes, you can easily change the appearance of the entire document with one click. When you change a theme, you apply consistent color, style and fonts across the slides in your presentation. This improves your ability to develop consistent and professional presentations.

5. Secure Presentations

By adding a digital signature to your presentation, you can prevent anyone else from changing the contents of your document without your consent. You can also use content controls to create PowerPoint templates that other users in your organization can use. You can prevent them from changing designated parts of the presentation while giving open access to other portions.

6. Reduce File Size

The Microsoft Office PowerPoint XML format significantly reduces the size of files while also improving your ability to recover data from damaged files. Smaller files are important to maximizing storage capacity and to improving your ability to share your files across multiple platforms.

3.7. Preparation of MS-Excel Sheets

Microsoft Excel is a spreadsheet program for Windows and Macintosh computers. It is part of the Microsoft Office suite, which includes other productivity programs, such as Word and PowerPoint. Though Excel is developed by Microsoft, the first version of the program was released for the Macintosh in 1985. It wasn’t until 1987, when Microsoft introduced Windows 3.0, that Excel was made available for Windows. Since then, Microsoft has supported the program on both platforms, releasing updates about every two years.

Some other popular spreadsheet programs include IBM Lotus 1-2-3 (for Windows) and the AppleWorks spreadsheet program (for the Mac).
However, Microsoft Excel has led the spreadsheet market for many years and continues to be the most popular spreadsheet program for both businesses and consumers.

**Definition**

A spreadsheet is a sheet of paper that shows accounting or other data in rows and columns; a spreadsheet is also a computer application program that simulates a physical spreadsheet by capturing, displaying, and manipulating data arranged in rows and columns. The spreadsheet is one of the most popular uses of the personal computer.

**Introductory Note**

1. **Creating Worksheets**

    You can set the number of worksheets that a workbook will generate by default by navigating to the “Tools->Options->General” menus. The number of individual worksheets that you can add to your workbook file is only constrained by your computer’s memory. You can add individual worksheets by right-clicking on an existing worksheet tab and selecting “Insert.” You also have options to delete, move, rename and copy existing sheets using this menu.

2. **Entering Worksheet Data**

    Click the cell that you wish to enter data into and begin typing. You can enter text, numbers, formulas and images into cells. You can format the data in cells by clicking options on the tool bar at the top of your screen, the “Format->Cells” menu, or by right-clicking the cell and selecting a format option. Font, size, color and justification are examples of the formats applicable to worksheet cell data.

3. **Navigating Worksheets**

    Click the tabs in the bottom border of your screen to move between individual worksheets. You can group individual sheets together by holding the control key and clicking the individual sheet tabs with your mouse. Grouping individual sheets allows you to edit and update related information quickly and accurately. You can also format and print grouped sheets quickly and conveniently.

4. **Consolidating Worksheets**

    Consolidate data between multiple worksheets using the “Consolidation” option from the “Data” menu. You can have a separate worksheet of expenses for each month of the year and consolidate the 12 separate sheets into a single annual expense sheet using this option. Changes to expenses on any of the monthly sheets will update the annual consolidation sheet automatically. A consolidated
worksheet can reside within the same workbook as the dependent worksheets or stand alone in a separate workbook file.

5. Worksheet Benefits

Excel worksheets allow you to create, import, analyze and report on large amounts of data quickly and accurately. Microsoft Office Excel 2007 supports individual worksheets up to 1 million rows by 16,000 columns featuring a range of arithmetic, statistical, financial and engineering functions. Worksheets also support charts and graphics that enable analysis, communication and collaboration of diverse data sets.

Uses

A modern spreadsheet file consists of multiple worksheets (usually called by the shorter name sheets) that make up one workbook, with each file being one workbook. A cell on one sheet is capable of referencing cells on other, different sheets, whether within the same workbook or even, in some cases, in different workbooks.

Spreadsheets share many principles and traits of databases, but spreadsheets and databases are not the same thing. A spreadsheet is essentially just one table, whereas a database is a collection of many tables with machine-readable semantic relationships between them. While it is true that a workbook that contains three sheets is indeed a file containing multiple tables that can interact with each other, it lacks the relational structure of a database.

Spreadsheets and databases are interoperable—sheets can be imported into databases to become tables within them, and database queries can be exported into spreadsheets for further analysis.

A spreadsheet program is one of the main components of an office productivity suite, which usually also contain a word processor, a presentation program, and a database management system. Programs within a suite use similar commands for similar functions.

Usually sharing data between the components is easier than with a non-integrated collection of functionally equivalent programs. This was particularly an advantage at a time when many personal computer systems used text-mode displays and commands, instead of a graphical user interface.
Functions

Spreadsheets usually contain a number of supplied functions, such as arithmetic operations (for example, summations, averages and so forth), trigonometric functions, statistical functions, and so forth. In addition there is often a provision for user-defined functions. In Microsoft Excel these functions are defined using Visual Basic for Applications in the supplied Visual Basic editor, and such functions are automatically accessible on the worksheet. In addition, programs can be written that pull information from the worksheet, perform some calculations, and report the results back to the worksheet. In the figure, the name sq is user-assigned, and function sq is introduced using the Visual Basic editor supplied with Excel.

Preparation Procedure

Spreadsheet programs such as Microsoft Excel are very valuable, and the skills needed to create and maintain those spreadsheets are very much in demand. Learning how to prepare common spreadsheets, such as company budgets and inventory lists, can boost your career prospects or help you be more effective in the job you currently hold.

Instructions

1. Decide what type of spreadsheet you need to create. If you are just learning how to use a spreadsheet program, creating a document you can actually use can be a big help.
2. Download a template for the type of spreadsheet you wish to create. You can find spreadsheet templates designed for inventory lists, family budgets, invoices and other common types of documents. If you use Microsoft Excel, you can download those templates directly from the Microsoft Office website.

3. Open your spreadsheet program and navigate to the spreadsheet template you just downloaded. Notice how the total columns have already been created, and that they update each time a new value is entered in the relevant cells.

4. Enter the information you wish to change from the standard template. For instance, a budget template might include categories you do not need, while omitting categories you do need. Replace the contents of those cells with your own information. Locate the totals on the spreadsheet, and be careful not to replace the contents of those cells. The total cells contain formulas, and if you enter new data in them the spreadsheet will not work properly. Instead, change the contents of the cells above the totals, and watch how the total updates each time a new value is entered.

5. Save the finished spreadsheet to your hard drive or network share. Make any necessary changes to the spreadsheet as new data is received.

3.8. Excel Command Practices

Microsoft Excel commands are grouped on menus. Menu names appear on the menu bar displayed across the top of the application window. Different types of sheets have different menu bars. For example, if you are working with a chart, you will see the chart menu. Some commands display a submenu. Submenus are indicated by a black triangle following the command name. Submenus contain additional, related commands.

When you choose a command name that is followed by an ellipsis (...), Microsoft Excel displays a dialog box so you can enter more information or select options before carrying out the command. In addition to choosing commands from menus, you can also choose commands from shortcut menus, by clicking toolbars buttons through keyboard. There are several equivalent ways to execute a command.

Characteristics

In Excel, commands have the following characteristics

- They perform actions in the same way that users do.
- They can do anything a user can do (subject to the limits of the interface used), such as altering Excel settings, opening, closing, and editing documents, initiating recalculations, and so on.
• They can be set up to be called when certain trapped events occur.
• They can display dialog boxes and interact with the user.
• They can be linked to control objects so that they are called when some action is taken on that object, such as left-clicking.
• They are never called by Excel during a recalculation.
• They cannot be called by functions during a recalculation.

Use of Prompt Commands

Knowing how to use the command prompt can be a huge asset to any computer user. Basically, it allows you to manually manipulate and retrieve data and information from within your computer. However, if you’re not sure about how to find it, or what exactly to do with it, it can be intimidating. However, with a list of commands, you can open up a large amount of options when using the command prompt.

1. To load up the command prompt, begin by clicking “start.” Click “run.”

2. In the “run” text box, type “cmd” without the quotation marks. This will open the command prompt. Alternatively, if that does not work, click start, then “search.” When the search window opens, click the “all files and folders” option.

3. Do a search for “cmd.exe” without the parenthesis.

4. Double click the “cmd.exe” icon to open the command prompt.

5. When you’re done using the command prompt, simply type “exit” and hit enter, or just click the “X” in the top, right hand corner of the window.

Keyboard Commands

Locate the list of the keyboard commands by consulting the help option on the computer. Look for the “keyboard shortcuts.” You can refer to this help whenever you are uncertain of a particular keyboard command. You can also find Microsoft and Macintosh keyboard shortcuts on the Internet.

1. Look at the menu commands and search for the corresponding keyboard commands. Each command will have a keyboard command next to it in parenthesis. For example, at the right side of the Copy command, you will find Ctrl+C as the keyboard command.
2. Use the keyboard command by pressing the initial key followed by the second. To use the Copy command on a PC, press down and hold the Ctrl key and then hit the C key.


4. Print a document. Hit Ctrl+P.

5. Restart the system. Press Ctrl+Alt+Del. All three keys must be held down for this command to work.

6. Learn how to launch the Start menu. Press Ctrl+Esc.

7. Switch between open Windows applications. Press down Alt, and then hit Tab repeatedly until you have the application you want.

8. Undo the last action that you have taken. Press Ctrl+Z.

9. Redo the last action that you have taken. Press Ctrl+Y.

### 3.9. PowerPoint Presentation

PowerPoint is a program to help create and present presentations. This handout introduces the basic features of Microsoft PowerPoint and covers the basics of creating simple presentations and editing and formatting the PowerPoint slides.

**Definition**

A PowerPoint presentation is a presentation created using Microsoft PowerPoint software. The presentation is a collection of individual slides that contain information on a topic. PowerPoint presentations are commonly used in business meetings and for training and educational purposes.

**Main Features**

PowerPoint is part of the Microsoft Office Suite and serves as the Suite’s presentation and slide show tool. Users familiar with other Microsoft products, such as Word and Excel, will find many similarities in PowerPoint’s menus, toolbars and buttons. Companies use PowerPoint to create an electronic version of a slide show, filling in information slide-by-slide, adding photos, charts, text and even movie clips. PowerPoint gives the organization complete control over how the slides appear, including the ability to add a logo, how quickly the slides move and branding/color ability.

**Use of PowerPoint**

PowerPoint is a component of the Microsoft Office package that is used for presentations. Animation, graphics and compelling information combine
to create a presentation that engages and enlightens the audience. Here’s how to use PowerPoint effectively in your next presentation.

**Instructions**

1. Open Microsoft PowerPoint. The first item presented is a slide. It contains a title (large box) and subtitle (smaller box) section.

2. Type “The First Presentation” in the “Title” section. Under it—the “Subtitle” section—type your name. This is the first slide of the presentation.

3. Insert an additional slide with the “Title and Content” layout. As an example, type “Buy a Car” in the “Title” section. Type “Finance” and “Size” in the “Content” section. After each topic in the “Content” section, hit the “Enter” key. This ensures that each topic has a bullet point.

4. Insert a new slide with the “Title and Content” layout. In the “Title” section, type “Finance.” Click in the “Content” section and go to “Insert” and “Clip Art.” Double-click on any picture of money to insert it into the slide.

5. Insert another slide with the “Comparison” layout. Type “Size” in the “Title” section. Type “Large” in the left heading title and “Small” in the right heading title. Under each section, type the benefits of having a large car as compared to a small car.

6. Press the F5 key to view the presentation, which PowerPoint also calls the “Slide Show.” Press the down arrow key to advance to the next slide.

**Create Power Point Presentation**

The PowerPoint software program allows you to create slide presentations that can be viewed on any computer. While some graphic artists specialize in developing compelling presentations, anyone can develop a PowerPoint slide presentation that is attractive and readable. Follow these steps to develop your own slide show.

**Instructions**

1. Open your PowerPoint program. When the dialog box opens, click on the “Blank Presentation” option.

2. Choose an “AutoLayout” format. Begin with the title slide layout, which is the first one on the left. Click “OK,” and you will have a title slide to work with.

3. Add text to your slide by clicking in the title text box and typing a title. Do the same thing in the subtitle box.
4. Create another slide by clicking the “New Slide” button on the
Common Tasks toolbar. When the AutoLayout dialog box appears, choose a
layout for this slide. Keep adding new slides until your presentation is complete.

5. Move from slide to slide by clicking the button on the lower-right
corner of the PowerPoint window. Clicking the button with the upward-pointing
arrows will take you to the previous slide, and clicking the button with the
downward-pointing arrows will take you to the next slide.

6. Save your presentation. Click the “File” menu and then click “Save As.” A dialog box will appear, and you’ll be able to type in a name for your
presentation. The presentation will be saved to your hard drive.

Starting a Presentation

Start PowerPoint by either of two methods

1. Go to the Start menu. Choose Programs and then click on Microsoft
PowerPoint.

2. Double-click the icon of any PowerPoint document. When you
double-click a PowerPoint document, PowerPoint opens with the document
already loaded.

A PowerPoint presentation consists of slides that can contain text,
graphics, charts, and other data types. When you start PowerPoint, you can
start with a blank presentation, or you can begin from a template or use the
AutoContent Wizard. The AutoContent Wizard is series of step-by-step
instructions designed to assist you. The Template button accesses slide templates
to help create a consistent, professional look for your slide presentation.
Choose **Blank Presentation** if you want to start with a clean slate. This method is recommended because it provides the most flexibility and lets you focus on content first rather than appearance.

After you choose Blank Presentation, select the layout of your slides from the New Slide dialog box. Choose from slides with titles and bullets, titles only, titles and clip art, and other options. For example, choose the Title Slide and click OK.

![Click to add title](image)

**Fig 3.13 Click To Add Title**

### Save a PowerPoint Presentation

Changes you make to a document are not saved to disk until you issue a Save command. Saving is quick and easy, and you should save often to minimize the loss of your work. PowerPoint has two save commands, Save and Save As, that work similarly. Both commands are on the File menu.

**Save**

When you save a new presentation for the first time, PowerPoint displays a dialog box similar to the Open dialog box. Select the disk in which to save the presentation and specify a name for the file. When you save an existing document that you have been editing, the newly saved version replaces the older version.

**Save As**

This command displays a dialog box where you can choose a document name and destination folder or disk. Use the Save As command whenever you
want to save a copy of the current document with a different name or in a different folder or disk. The newly saved copy becomes the active document. A presentation is normally saved as *name.ppt* file type. However, PowerPoint Show with the extension of *name.pps* is also a useful file type so that your file is able to run regardless of OS. You can also create your own template and save it as *pot* file.

**Explore the PowerPoint Interface**

Besides the usual window components, the PowerPoint window has several unique elements, identified in the figure below.

![Fig 3.14 Slide View Area](image)

**Fig 3.14 Slide View Area**

**Standard Toolbar**

The Standard toolbar, located beneath the menu bar, has buttons for commonly performed tasks like printing, saving, inserting clip art, and other operations. You can customize the toolbar or even display multiple toolbars at the same time.

![Fig 3.15 Standard Toolbar](image)

**Fig 3.15 Standard Toolbar**
Formatting toolbar

The Formatting toolbar, located beneath the Standard toolbar bar, or possible to the side of it, has buttons for various formatting operations like changing text size or style, changing alignment, formatting bullets, and animation.

![Fig 3.16 Formatting Toolbar](image)

Drawing Toolbar

The Drawing toolbar on the bottom of the PowerPoint window contains drawing and text tools for creating graphics.

![Fig 3.17 Drawing Toolbar](image)

PowerPoint Views

PowerPoint has three different views. Normal View provides a comprehensive view for each slide with notes and outline. Slide Sorter View displays multiple slides and lets you quickly change their order in the presentation. Finally, the Slide Show view is also called preview. It is used to run the whole presentation. Use the three buttons at the bottom left of the window to change slide views. For example, you can switch from Normal view to Slide Sorter view by clicking one of these buttons.

Slide Background

Choose Background from the Format menu to change a slide’s background color or gradient. Click on the color rectangle near the bottom of the dialog box, and select either More Colors or Fill Effects. As shown in the Colors and Fill Effects dialog boxes below, you can change the color, gradient, texture, or pattern, or you can use a picture file.
Fig 3.18 Background

Fig 3.19 Colour

Fig 3.20 File Effect
Again, if you want this background to apply to all slides, make sure you select Mater/Slide Master from the View menu before making the change. Click on the Apply button when you are done.

**Insert the Clip Arts and Objects**

**Creating Charts**

PowerPoint’s Chart tool is located on the Standard toolbar. Click the Chart tool to create a graph in your presentation. PowerPoint activates a data worksheet with labels and numbers. Change these labels and numbers to reflect your data. If you do not want to graph a certain row or column, double-click it and PowerPoint will remove that data from the chart. When you are through entering data in the worksheet, close it.

![Fig 3.21 Creating Chart](image)

**Tip:** It is efficient to choose a “Chart” layout for a new slide of chart.

**To do this**

- Click on the Insert menu and choose New Slide.
- In the layout dialogue box, choose the “Chart” layout. Click OK.
- In the PowerPoint working window, double click the chart place holder to activate the edit mode.
• Enter the data from the table below into the data sheet on the screen and watch the change of the chart.

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin</td>
<td>700</td>
<td>500</td>
<td>600</td>
</tr>
<tr>
<td>Dallas</td>
<td>200</td>
<td>400</td>
<td>600</td>
</tr>
<tr>
<td>Houston</td>
<td>300</td>
<td>400</td>
<td>550</td>
</tr>
</tbody>
</table>

The chart border will change and the chart toolbar will appear at the top of the screen. The chart toolbar includes buttons for changing chart type, inserting gridlines and legends, and additional chart features. For example, if you want to change a column chart to a horizontal bar chart, choose that chart type from the Chart Type tool.

**Drawing Tools**

PowerPoint has a set of drawing tools used to place lines, shapes, figures, WordArt, and text on a slide. PowerPoint’s drawing tools are similar to drawing tools in other graphics programs. To use these tools, make sure you are in Slide View. Use the Auto Shapes tool (shown below) to create regular shapes like stars, polygons, triangles, and other shapes.

*Fig 3.22 Drawing Tools*

If you draw something on a slide and want to delete it, click on the object and press the Delete key. PowerPoint has a collection of clip art that you
can use in your presentation. Select the slide you want the clip art on, and choose Picture/Clip Art from the Insert menu. Choose the category you want and select a clip art image. You can also use the Copy and Paste procedures described earlier to paste clip art into PowerPoint from other programs. For example, if you have created your own logo in Adobe Illustrator, you can copy the image and paste it into a PowerPoint presentation. PowerPoint also lets you insert Microsoft Excel charts, Microsoft Word tables, pictures in separate files and other objects.

### 3.10. PowerPoint Commands

Below are some of the basic commands for PowerPoint. We do not cover all the commands within PowerPoint only the ones you will need to understand for using PowerPoint for Worship Services or Sermon Outlines.

**(i) View Options**

![View Options](image)

**Fig 3.23 View Option**

**Note**: While this tutorial contains some basic PowerPoint commands, it does not cover all the PowerPoint commands. We explain only the commands needed to understand the use of PowerPoint for Worship Services or Sermon Outlines.

1. **Outline View**

   Clicking this tab displays the outline pane. This view shows an outline of the text on each page.

2. **Slide View**

   Clicking this tab displays the slide view pane. This view shows a thumbnail of each slide in a presentation.
3. Normal View

Clicking this icon causes the window to be displayed in normal view. This is the best view when using an extended desktop.

4. Slide Sorter View

Clicking this icon causes the window to display thumbnails of each slide within a presentation. To change the order of a slide in slide sorter view, hold down the left mouse button on the slide to be moved and drag to the new location. We do not use this view while setting up songs but rather use it when sorting or rearranging announcements.

5. Slide Show

Clicking this icon begins playing the presentation. When on an extended desktop system, the presentation will be displayed on the second screen and the primary monitor will display the outline view. From this point on you must use your keyboard to move through the slides. Use the Up/Down arrows or type in a slide number and hit enter.

(ii) Drawing Toolbar

![Drawing Toolbar](image)

1. Draw Menu

Clicking Draw displays the draw menu. The draw menu provides options for creating, grouping, nudging, aligning, rotating and changing objects.

2. Select Object

The cursor allows you to select objects. Click this icon, then click an object using the left mouse button.

3. Text Box

To draw a text box, click this icon, hold down the left mouse button on the starting point and drag. Use this command to create text for your announcements or sermon notes.
4. Font Color

To apply color to text, select the text then click this icon. To change the color, click the arrow located beside the icon. Use this to change the color of the font for announcements or sermon notes. We suggest not using this command for our songs as it will override the color scheme settings.

5. Object Shadow

This places a shadow on a selected object or text. This is the shadow we suggest using with songs. It will adapt to the slide color scheme settings and provides greater control than the shadow text command.

(iii) Formatting Toolbar

1. Font

The font name is displayed here. To change the font, click the arrow located to the right of the field and make a selection from the options provided. The songs are all formatted using Halvett Black Condensed which we have found to be the most readable font for music. For a download link to the Halvett Black Condensed font please see the online tutorial.

2. Font Size

The font size is displayed here in points. To change the font size, click the arrow located to the right of the field and make a selection from the options provided. You can also type a number in the box. If the font at 36 points trails onto the next line, reduce the font size to 35 (or smaller if required).

3. Font Options

These buttons change the font to bold, italic and underline.

4. Shadow Text

We suggest not using this option as it has limited control and overrides the color scheme settings.
5. Aligning Text

Use these buttons to align your text.

(iv) Picture Toolbar

2. Brightness: Increase/decrease brightness in selected photo.
3. Crop: This allows you to change the size of an inserted photo.
4. Format Picture: Displays a window, providing options for cropping, image control, position sizing, and borders.
5. Set Transparent Color: Allows you to set a transparent color for the selected picture. This is a good tool for placing your church logo on announcements or welcome pages.

(v) Insert Menu

Fig 3.26 Picture Toolbar

Fig 3.27 Insert Menu
Slides from Files

The insert Slides from Files command allows you to insert an individual song file or announcement. This is ideal for bringing PowerPoint slides in from another file.

(vi). Slide Show Menu

1. Set Up Show.

This option allows you to configure PowerPoint to show the slide show through the projector when in extended desktop mode. This process is described in detail under Display Slide Show On. Slide Shows can also be set to loop forever for announcements.

2. Slide Transitions

This command allows you to change the slide transitions between announcements or sermons. We suggest not using slide transitions in your song lists as it tends to distract from worship.

(vii) Format Menu

1. Slide Color Scheme.

This option allows you to change the default color of the text and shadows for a song list. This process is described in detail in the Slide Color Scheme tutorial: Slide Color Scheme.
2. Background

This option allows you to change the default background for the music list. This process is described in the following tutorials: Using Image Vine Worship Photo Templates & Custom Jpeg Backgrounds.

**Short Answer type Questions**

1. Define MS-Excel.
2. When did the first version of Excel was released.
3. What is power point presentation?
4. Name the types of view options.
5. Write any three Drawing Tools.

**Long Answer Type Questions**

1. Describe the main features of Excel?
2. Write the uses of MS-Excel.
3. What are the advantages of MS-Power point?
4. Write a brief note on MS-Excel Sheet?
5. Explain about the uses of power point presentation?
UNIT 4: Networking

Structure

4.1 Introduction to Networking.
4.2 Types of Networking.
4.3 Network Topology.
4.4 Understudy LAN.
4.5 Main Features.
4.6 LAN Networks.
4.7 Understudy WAN.
4.8 Networks of WAN.

Learning Objectives

After studying this unit, the student will be able to

• Understand the various types of networking
• Understand the features of local area network
• Understand the functioning of wide area network
• Understand the differences between LAN and WAN
4.1 Introduction to Networking

A computer network, or simply a network, is a collection of computers and other hardware interconnected by communication channels that allow sharing of resources and information. Where at least one process in one device is able to send/receive data to/from at least one process residing in a remote device, then the two devices are said to be in a network.

A network is a group of devices connected to each other. Networks may be classified into a wide variety of characteristics, such as the medium used to transport the data, communications protocol used, scale, topology, benefit, and organizational scope. A network enables users to share files and resources, such as printers, as well as send messages electronically (e-mail) to each other.

Today, computer networks are the core of modern communication. All modern aspects of the Public switched telephone network (PSTN) are computer-controlled, and telephony increasingly runs over the Internet Protocol, although not necessarily the public Internet.

The scope of communication has increased significantly in the past decade, and this boom in communications would not have been possible without the progressively advancing computer network. Computer networks and the technologies needed to connect and communicate through and between them, continue to drive computer hardware, software, and peripherals industries. This expansion is mirrored by growth in the numbers and types of users of networks, from the researcher to the home user.

Computer networks fall into two main types: client/server networks and peer-to-peer networks. A client/server network uses one or more dedicated machines (the server) to share the files, printers, and applications. A peer-to-peer network allows any user to share files with any other user and doesn’t require a central, dedicated server.

Definition

A computer network is a group of computers that shares information across wireless or wired technology. Computer networks used to only be available for corporations but they are affordable for small businesses and individuals.
The primary purpose of a computer network is to share resources

- You can play a CD music from one computer while sitting on another computer.
- You may have a computer that doesn’t have a DVD or BluRay (BD) player. In this case, you can place a movie disc (DVD or BD) on the computer that has the player, and then view the movie on a computer that lacks the player.
- You may have a computer with a CD/DVD/BD writer or a backup system but the other computer(s) doesn’t (don’t) have it. In this case, you can burn discs or make backups on a computer that has one of these but using data from a computer that doesn’t have a disc writer or a backup system.
- You can connect a printer (or a scanner, or a fax machine) to one computer and let other computers of the network print (or scan, or fax) to that printer (or scanner, or fax machine).
- You can place a disc with pictures on one computer and let other computers access those pictures.
- You can create files and store them in one computer, then access those files from the other computer(s) connected to it.

Components

There are different components of a network. Following are the basic components of network.
1. **Server**: Powerful computers that provide services to the other computers on the network.

2. **Client**: Computer that uses the services that a server provides. The client is less powerful than server.

3. **Media**: A physical connection between the devices on a network.

4. **Network Adopter**: Network adopter or network interface card (NIC) is a circuit board with the components necessary for sending and receiving data. It is plugged into one of the available slots on the PC and transmission cable is attached to the connector on the NIC.

5. **Resources**: Anything available to a client on the network is considered a resource. Printers, data, fax devices and other network devices and information are resources.

6. **User**: Any person that uses a client to access resources on the network.

8. **Protocols**: These are written rules used for communications. They are the languages that computers use to talk to each other on a network.

**Importance**

Data networks are important to all contemporary organizations because they provide faster, easier access to any message or data that can be represented and stored in digital format. For example, when your colleagues and predecessors research an issue relevant to your organization and share their data and conclusions with you in a data format your computer recognizes, you can copy key information from their report into your own, saving yourself significant amounts of time (of course, you’re always sure to give credit where it’s due). If the
colleague whose work you’re relying on works in the same cubicle as you and they remember where they’ve stored the relevant report, a network may not offer significant advantages since you can turn to him or her and ask for the file on a CD or USB flash drive. However, in many organizations, large distances separate co-workers, and data sharing becomes a significant logistical problem in the absence of a network.

In addition to data sharing, computer networks also enable resource sharing, an important consideration in all budget-conscious organizations. Rather than buying one printer for every employee and replacing them when they wear out, an organization with a network can buy a single printer, connect it to the network, and configure it in such a way that every computer user in the organization can print to it. The initial cost of a networked printer is usually more than the cost of a single desktop printer, but when considering costs on a per-user basis, the average cost of the networked printer is often much less than the cost of buying a printer for every employee.

While some networked devices such as printers, scanners, and fax machines have predetermined, specialized functions, you can also network and share generic, unspecialized computing power in the form of servers. Servers are large, powerful computers that can handle resource-intensive tasks more efficiently than desktop computers. As with the networked printer, the initial outlay for a server is more than that for a desktop computer, but across the organization, it’s often cheaper to run the server-based version of a program since individual users won’t need expensive, high-performance desktop and laptop computers. Servers can also deploy software to other networked machines at a lower cost.

**Advantages**

- Networks allow data transmission among far areas also within local areas.
- Networks allow different users share the processing characteristics of different computers.
- Network allows users to share common set of data files and software stored in a main system.
- Network allows users to share common hardware resources such as printers, fax machines, modem etc.
- The cost of computing is reduced to each user as compared to the development and maintain of each single computer system.
Roles and Responsibilities

Networks also vary considerably in terms of the roles and responsibilities of the computers on that network and the relationships that tie those machines together. A computer totally disconnected from other devices is typically referred to as a standalone machine. When several computers are interconnected, but no computer occupies a privileged position, the network is usually referred to as a peer-to-peer network. In this type of network, every computer can communicate with all the other machines on the network, but in general each one stores its own files and runs its own applications.

With a client-server network, one or more servers will perform critical functions on behalf of the other machines (the clients) on the network. These functions might include user authentication, data storage, and the running of large, shared, resource-intensive applications such as databases and client relationship management (CRM) software. Typically, both peer-to-peer and client-server networks rely on a shared Internet connection for access to external resources of these basic network structures.

4.2. Types of Networking

Computer network systems usually connect two—or more than two—computer networks for communication, file sharing, and data sharing purposes. Computer devices such as printers, scanners, and hubs can also be shared across networks. Computer users can connect to a network system inside their homes, across the street, down the block, across country, and even around the world. Types of networks include wide area networks (WANs) and local area networks (LANs). Both of these network types can be wired or wireless. There are also both public and private wide and local area networks. The Internet is an example of a WAN. LANs are usually installed in homes and offices.

1. Local Area Network

A LAN, or local area network, is a connection of computer systems within a building or offices close together. Local area networks can be as broad as connecting computers within a public school district, or as small as linking multiple computers inside a household. LANs are inexpensive compared to the other types of network systems and can use either wired or wireless connections. LANs operate within a relatively small area, but they can connect to larger network systems and greatly expand their reach.
2. Wide Area Network

A WAN, or wide area network, covers an entire geographical area, such as a state, region, or entire country. A wide area network can be self-contained, but always connects with other LAN and MAN network systems (see next section for explanation of MANs). WANs utilize expensive computer networking equipment and are operated by large telecommunications companies and large corporations that need to share a network in a specific area. For instance, a large pharmaceutical chain would use a WAN to gather prescription information from their customers. A customer would fill a prescription from one location and—through a WAN—their information can be transferred to any other store, worldwide.

3. Metropolitan Area Network
A metropolitan area network (MAN) is a network that connects two or more local area networks or campus area networks together but does not extend beyond the boundaries of the immediate town/city. Routers, switches and hubs are connected to create a metropolitan area network. Many local area networks within cities are often linked to a metropolitan area network through a high-speed Internet connection, such as one that runs over fiber-optic cable. Cable television providers or government entities operate metropolitan area networks. MANs can act as significant links between smaller local area networks and much larger wide area networks.

4. Storage Area Network

A SAN, or a storage area network, is a variation of a local area network. The purpose of a storage area network is to store large amounts of data, which can then be transferred at a high rate of speed. Businesses commonly use storage area networks. Multimedia companies often benefit from using a SAN, because they need to store large amounts of data for video editing.

4.3 Network Topology

Network topology is the arrangement of the various elements (links, nodes, etc.) of a computer or biological network. Essentially, it is the topological structure of a network, and may be depicted physically or logically. Physical topology refers to the placement of the network’s various components, including device location and cable installation, while logical topology shows how data flows within a network, regardless of its physical design. Distances between nodes, physical interconnections, transmission rates, and/or signal types may differ between two networks, yet their topologies may be identical.

1. Point-to-point

The simplest topology is a permanent link between two endpoints. Switched point-to-point topologies are the basic model of conventional telephony. The value of a permanent point-to-point network is unimpeded communications between the two endpoints. The value of an on-demand point-to-point connection is proportional to the number of potential pairs of subscribers.

2. Bus

In local area networks where bus topology is used, each node is connected to a single cable. Each computer or server is connected to the single bus cable. A signal from the source travels in both directions to all machines connected on the bus cable until it finds the intended recipient. If the machine address does not match the intended address for the data, the machine ignores the data. Alternatively, if the data matches the machine address, the data is
accepted. Since the bus topology consists of only one wire, it is rather inexpensive to implement when compared to other topologies. However, the low cost of implementing the technology is offset by the high cost of managing the network. Additionally, since only one cable is utilized, it can be the single point of failure. If the network cable is terminated on both ends and when without termination data transfer stop and when cable breaks, the entire network will be down.

![Bus Network Topology](image)

**Fig 4.5 Bus Network Topology**

**Linear bus**

The type of network topology in which all of the nodes of the network are connected to a common transmission medium which has exactly two endpoints (this is the ‘bus’, which is also commonly referred to as the backbone, or trunk) — all data that is transmitted between nodes in the network is transmitted over this common transmission medium and is able to be received by all nodes in the network simultaneously.

**Distributed bus**

The type of network topology in which all of the nodes of the network are connected to a common transmission medium which has more than two endpoints that are created by adding branches to the main section of the transmission medium — the physical distributed bus topology functions in exactly the same fashion as the physical linear bus topology (i.e., all nodes share a common transmission medium).

**3. Star**

In local area networks with a star topology, each network host is connected to a central hub with a point-to-point connection. In Star topology every node (computer workstation or any other peripheral) is connected to central node called hub or switch. The switch is the server and the peripherals are the clients. The network does not necessarily have to resemble a star to be classified as a star network, but all of the nodes on the network must be connected.
to one central device. All traffic that traverses the network passes through the central hub. The hub acts as a signal repeater. The star topology is considered the easiest topology to design and implement. An advantage of the star topology is the simplicity of adding additional nodes. The primary disadvantage of the star topology is that the hub represents a single point of failure.

Extended star

A type of network topology in which a network that is based upon the physical star topology has one or more repeaters between the central node (the ‘hub’ of the star) and the peripheral or ‘spoke’ nodes, the repeaters being used to extend the maximum transmission distance of the point-to-point links between the central node and the peripheral nodes beyond that which is supported by the transmitter power of the central node or beyond that which is supported by the standard upon which the physical layer of the physical star network is based.

Distributed Star

A type of network topology that is composed of individual networks that are based upon the physical star topology connected in a linear fashion – i.e., ‘daisy-chained’ – with no central or top level connection point (e.g., two or more ‘stacked’ hubs, along with their associated star connected nodes or ‘spokes’).

4. Ring

A network topology that is set up in a circular fashion in which data travels around the ring in one direction and each device on the right acts as a repeater to keep the signal strong as it travels. Each device incorporates a receiver for the incoming signal and a transmitter to send the data on to the next device in
the ring. The network is dependent on the ability of the signal to travel around
the ring.

![Fig 4.7 Ring Network Topology](image)

5. Tree

The type of network topology in which a central ‘root’ node (the top
level of the hierarchy) is connected to one or more other nodes that are one
level lower in the hierarchy (i.e., the second level) with a point-to-point link
between each of the second level nodes and the top level central ‘root’ node,
while each of the second level nodes that are connected to the top level central
‘root’ node will also have one or more other nodes that are one level lower in
the hierarchy (i.e., the third level) connected to it, also with a point-to-point link,
the top level central ‘root’ node being the only node that has no other node
above it in the hierarchy (The hierarchy of the tree is symmetrical.) Each node in
the network having a specific fixed number, of nodes connected to it at the next
lower level in the hierarchy, the number, being referred to as the ‘branching
factor’ of the hierarchical tree.

![Fig 4.8 Tree Network Topology](image)
4.4. Understudy LAN

A **local area network (LAN)** is a computer network that interconnects computers in a limited area such as a home, school, computer laboratory, or office building using network media. The defining characteristics of LANs, in contrast to wide area networks (WANs), include their usually higher data-transfer rates, smaller geographic area, and lack of a need for leased telecommunication lines.

**Definition**

A **local area network (LAN)** supplies networking capability to a group of computers in close proximity to each other such as in an office building, a school, or a home. A LAN is useful for sharing resources like files, printers, games or other applications and also useful for sharing Internet access among computers.

![Fig 4.9 Local Area Network](image)

**Historical Background:**

The increasing demand and use of computers in universities and research labs in the late 1960s generated the need to provide high-speed interconnections between computer systems. A 1970 report from the Lawrence Radiation Laboratory detailing the growth of their “Octopus” network gave a good indication of the situation. Cambridge Ring was developed at Cambridge University in 1974 but was never developed into a successful commercial product.

Ethernet was developed at Xerox PARC in 1973–1975, and filed as U.S. Patent 4,063,220. In 1976, after the system was deployed at PARC. ARCNET was developed by Data point Corporation in 1976 and announced in 1977. It had the first commercial installation in December 1977 at Chase Manhattan Bank in New York.
Characteristics

- Limited geographic operation
- High speed data transfer rates
- Full time connectivity to local services
- Generally lower in cost than a WAN
- Cabling is primary transmission medium

Hardware & Software Components

The hardware components of a LAN consist of

- PCs/workstations and servers
- Network Interface Card (NIC)
- Cabling and connectors, for example, coaxial cable and BNC connector, Unshielded Twisted Pair (UTP) and RJ-45 connector
- Hub, concentrator, and more complicated network devices such as Bridge, LAN Switch and Router

The software components of a LAN can be grouped into two categories

1. Inside PCs/workstations and servers

   - NIC Drivers
   - Network Operating System for servers, for example, Novell® Netware 4.1 or Microsoft Windows® NT
   - Network Operating System for clients (PCs/workstations), for example, Novell® Netware 4.1 client or Microsoft Windows® 95
   - Networking protocol software, for example, TCP/IP, Novell® IPX
   - Application software, for example, emails, Internet Web Browser.

2. Inside network devices (Hub/Bridge/LAN Switch/Router)

   - Network Management Software, for example, Simple Network Management Protocol (SNMP), Remote Network Monitoring (RMC)
   - Forwarding/routing & control software, for examples, transparent bridging, spanning tree and IP routing software.
4.5. Main Features

1. Sharing of files, Programs and Peripherals: Any software, files or programs usually occupy valuable disk space and especially when they are not most needed. Erasing it would mean going through the time consuming process of instilling or occupying it back on to the disk. So a LAN proves its advantage over the single user system. The expensive Software and the not so frequently used Software, files and programs can be stored into one computer from which any user can retrieve the desired file, program or software as and when required, and place it back into its original place, when finished with it. There is also the facility of more than one user using one particular software, simultaneously, sitting at their respective computers.

2. Productivity: In term of productivity LAN acts as an advantage to the organization in which is setup. Using LAN there is faster, accurate and precise communication among the users of the various departments. This helps in a most efficient functioning of the office thus leading to better productivity.

3. Communication: Where the key personnel is located over distributed areas face to face meetings, desk delivery of memos and messages are not convenient. The LAN can make your computer work like an intercom by which messages can be sent to all computers in the office or just a few selected group of computers. The E-Mail for instance, in which a LAN is used by the user to leave the written messages to each other computers files. Sending messages through LAN is instantaneous and there is lesser chance of losing messages.

4. Management: The LAN takes care of the management of the computer resources, so that everyone of the users gets their fare share of the disk space. It sees to it that the software is shared amongst them smoothly. Addition and removal of nodes/systems is done with a minimum of fuss, so that none of the users are put into any kind of inconvenience. The LAN not only helps an office to extract the minimum power of the computer, but also combines the power of every node in the setup and makes the functioning of the office more efficient.

4.6. LAN Networks

A LAN or local area network is a group of computers that are linked together and share Internet access, file access, applications, storage and utilize connected hardware such as printers and scanners.

1. Wired Networks

The most common local area networks are created using Ethernet cables to link the computers. Ethernet cables running from each computer’s Ethernet
port are connected to a router or hub that links the computers together in the LAN network.

2. Wireless Networks

Local area networks can also be created wirelessly. Using a wireless Ethernet card, computer users can connect to devices capable of transmitting wireless Internet or network data.

3. Large and Small Networks

Local area networks can be as small as linking two computers in a home office together or as large as hundreds or thousands of employees connected in an office building.

4. Router

A router is a network device that can connect and send information from one computer to another and in doing so, creates the local area network. A router can be either wireless, wired or a hybrid combination of wired and wireless.

5. Repeater

For those using a wireless local area network, repeaters can be used to extend the range of the wireless signal. A repeater works by receiving the wireless signal from the router and rebroadcasting the signal to connect wireless networks at a greater distance.

Network Cables

Network cable is simple and functional in design and construction. Over the decades, it has evolved as technology has advanced in speed and volume used on home and business networks. All network cable from every era performs the same function of transporting data from one machine to another. From the earliest examples of coaxial cable on token ring networks to the modern Ethernet use, the function has always been sending and receiving information.

1. Coaxial Cable

Coaxial cable was the cable of choice in the beginning of the computer networking era. Networks were set up like a large ring, and each computer took turns sending data when the one before it was done. This was slow and inefficient by modern standards.

2. Twisted Pair

Twisted-pair cables, commonly used in homes as Ethernet cables, are used to wire computer networks. Twisted-pair cables are comprised of three to six twisted pairs of wires, used for signal transmission. Satellite systems also use
phone wire, which is another form of unshielded twisted-pair (UTP) cable. In the case of satellite television, Ethernet cables are employed to network-equipped decoders with computer networks, so that subscribers can view decoder details and make remote programming changes. Phone wires are needed in many cases when ordering premium pay-per-view content. This data is sent to the provider during the nightly data download for billing.

3. Straight through Cables

This category of network cables is referred to as patch cables, Ethernet cables, straight through cables or just by the name of their type, such as Cat5 or Cat6. Those types refer to the category (Cat), and a number meaning what speed and twist type they are. In general, the higher the number, the faster transfer rate supported by the cable. Each is terminated with a clear end called a RJ45 plug; the order of wires is the same on each end or 'straight through,' which gives the cable its name.

4. Crossover Cables

Where straight through cables are designed to connect computers to switches or routers, crossover cables are designed to connect two individual computers to each other. To facilitate this, the two wires that transmit are switched with the two wires that receive at one end. When computer A sends out data, it goes straight into the receive connection of computer B, and when computer B transmits, the data goes straight into the receive connection of computer A.

5. Fiber Optic Cables

Fiber Optic cables are strands of specially coated fiberglass that carry data in the form of pulses of light. The cables are always installed in pairs so there is one path for transmission and another for reception. Although fiber is still more expensive than copper, there are several good reasons to use it in most locations; it is much faster than copper, and it is not susceptible to electrical interference.

LAN Network Requirements

Creating a local area network is becoming more common in homes and small businesses. The basic requirements for a LAN are inexpensive hardware components and some software configurations on the computers. A home network is used to combine one or several machines. The network may even extend to wireless, where laptops are used to connect. However, to start the LAN setup, there are only some basic requirements.
1. Router or Hub

The router or hubs are two types of hardware components in which the traffic is merged and computers are connected. A hub is just a central device, and the data is not filtered. Data is broadcast with no controls. However, a router is a more intelligent machine that routes data packets and sends them to the right section of the network. Routers can also be used as firewall protection from the Internet. Because routers have become relatively inexpensive, they are preferred over hubs.

2. Connection Method

The two most popular connection methods are hard wiring using ethernet cables or using wireless technologies. Most desktop networks use ethernet cables. These are inexpensive products that directly connect the network card of the computer to the router. Wireless technologies are used most often for laptops. However, to use a wireless network, the administrator needs to set up a wireless router.

3. Network Cards

Network cards are hardware components added to machines that allow them to communicate. Network cards are used in any type of network. Wireless network cards are usually installed with any laptop purchase. However, hard wire network cards are also available for these machines. Network cards are inserted into a slot on a desktop that connects to the computer’s motherboard. These are connected to the rest of the network using ethernet cables that attach to the back of the card.

4. Operating System Setup

The hardest part of a network design is setting up the software and operating system. The operating system needs to recognize the network card in the machine. It needs to have a protocol configured. The typical protocol on a network is TCP/IP. TCP/IP creates a unique address for the machine. The operating system retrieves an IP address from a server, or it can be defined in the network settings.

5. Security

Security is a major concern for any network administrator. The administrator of a small home network does not need to implement much security on the network. Most home networks are peer-to-peer, allowing users to share files without permissions. Larger networks require security. This is done by creating a domain and forcing users to login to a server before accessing networking resources.
LAN Protocols

LAN protocols are distinguished by their capability to efficiently deliver data over shorter distances, such as a few hundred feet, through various mediums, such as copper cabling. Different protocols exist for different purposes and exist in different “layers” of the “Open Systems Interconnect,” or OSI, model. Typically when using the word “LAN” to describe a protocol, the intent is to describe lower level, or physical, layers. Some of the most common LAN protocols are “Ethernet,” “Token Ring” and “Fiber Distributed Data Interface,” or “FDDI.”

“Ethernet” is by far the most common type of LAN protocol. It is found in homes and offices throughout the world and is recognizable by its common “CAT5” copper cable medium. It uses a switch or hub to which all systems connect to exchange data.

“Token Ring” is an older LAN technology that is not prevalent anymore. The basic premise of “Token Ring” is a single “token” is passed from system to system, or through a hub, and only the intended recipient reads the token. “FDDI” defines how LAN traffic is transmitted over fiber cabling. Fiber cabling is used when longer distances, usually between floors or buildings, are required, or where heightened security is required.

Types of LAN Network

1. The Basic LAN

The basic type of LAN is connected by Ethernet cables to a router or hub (modern routers usually integrate hubs). A router allows all computers connected to it to access a high-speed modem connected to the router. Each computer has an IP (Internet Protocol) address, but a computer on the other side of the Internet will only see the router’s IP address. This, and a router’s built-in firewall, creates a safer environment for accessing the Internet.

2. Wired LAN Speeds and Connections

A wired connection has two common connection standards: 100BASE-T and 1000BASE-T. The first one transfers data at up to 100 megabits per second (Mb/s), and the second one transmits at 1000 Mb/s or 1 gigabit per second (Gb/s). The second one is also known as Gigabit Ethernet. Most modern motherboards integrate this into their circuitry, rather than requiring the user to obtain an Ethernet card. Ethernet cables can run hundreds of feet without losing signal quality.
3. Wireless LAN

Another standard in the mix is wireless Ethernet. This allows you to cut out cables altogether. You can transmit data through walls, floors and ceilings without having to drill holes. It is handier for people who use laptops and other mobile devices, since they can just turn on the device and have access to the network without plugging everything in. However, the transfer speeds are not as fast. The fastest protocol, 802.11n, moves data at up to 300 Mb/s. Wireless Ethernet is also susceptible to interference from devices such as a microwave or cordless phone.

4. Corporate LANs

Wired LAN connections are capable of even higher speeds, although these are usually limited to corporate environments. 10 Gigabit Ethernet enters the picture here, as does Fibre Channel, which is popular in Hollywood’s digital post-production facilities dealing with editing and special effects.

4.7 Wide Area Network (WAN)

A Wide Area Network (WAN) is a network that covers a broad area (i.e., any telecommunications network that links across metropolitan, regional, or national boundaries) using private or public network transports. Business and government entities utilize WANs to relay data among employees, clients, buyers, and suppliers from various geographical locations. In essence, this mode of telecommunication allows a business to effectively carry out its daily function regardless of location.

The Internet can be considered a WAN as well, and is used by businesses, governments, organizations, and individuals for almost any purpose imaginable. Related terms for other types of networks are personal area networks (PANs), local area networks (LANs), campus area networks (CANs), or metropolitan area networks (MANs) which are usually limited to a room, building, campus or specific metropolitan area (e.g., a city) respectively. We use Wide Area network (WAN) in those cases where LAN cannot be used.

When more than two computers are involved in the application, a switched communication facility is used to enable all the computers to communicate with one other at different times. When the computers are located in different sites, public carries facilities must be used. As a result the network we get is known as wide area network. You can simply define WAN as any form of network (public, private) that covers a wide geographical area is known as WAN.
Definition

(Wide Area Network) A long-distance communications network that covers a wide geographic area, such as a state or country. The telephone companies and cellular carriers deploy WANs to service large regional areas or the entire nation. Large enterprises have their own private WANs to link remote offices, or they use the Internet for connectivity. Of course, the Internet is the worlds largest WAN.

Characteristics of WAN

Followings are the major characteristics of WAN.

1. Communication Facility

For a big company spanning over different parts of the country the employees can save long distance phone calls and it overcomes the time lag in overseas communications. Computer conferencing is another use of WAN where users communicate with each other through their computer system.

2. Remote Data Entry

Remote data entry is possible in WAN. It means sitting at any location you can enter data, update data and query other information of any computer attached to the WAN but located in other cities. For example, suppose you are sitting at Madras and want to see some data of a computer located at Delhi, you can do it through WAN.

3. Centralised Information

In modern computerised environment you will find that big organisations go for centralised data storage. This means if the organisation is spread over many cities, they keep their important business data in a single place. As the data are generated at different sites, WAN permits collection of this data from different sites and save at a single site.

WAN Requirements

• Minimize bandwidth costs
• Maximize efficiency
• Maximize performance
• Support new/emerging applications
• Maximize availability
• Minimize management and maintenance
Advantages of WAN

- Covers a large geographical area so long distance businesses can connect on the one network
- Shares software and resources with connecting workstations
- Messages can be sent very quickly to anyone else on the network. These messages can have pictures, sounds, or data included with them (called attachments).
- Expensive things (such as printers or phone lines to the internet) can be shared by all the computers on the network without having to buy a different peripheral for each computer.
- Everyone on the network can use the same data. This avoids problems where some users may have older information than others.
- Share information/files over a larger area
- large network cover

Disadvantages Of WAN

- Are expensive and generally slow
- Need a good firewall to restrict outsiders from entering and disrupting the network
- Setting up a network can be an expensive and complicated experience. The bigger the network the more expensive it is.
- Security is a real issue when many different people have the ability to use information from other computers. Protection against hackers and viruses adds more complexity and expense.
- Once set up, maintaining a network is a full-time job which requires network supervisors and technicians to be employed.
- Information may not meet local needs or interests
- Vulnerable to hackers or other outside threats

Types of WAN Connections are

PSTN

Public Switch Telephone Network features are (a) Low Speed (b) Restricted bandwidth allocation (c) Analog Nature of Transmission (d) widespread availability. Basically designed for Telephone but
can be use for data communication with the help of the MODEM. The cost of setting up this type of WAN is high usually coz connection lasts for a considerable time, but can be obtained at a short notice.

**PSDN**

Public Switch Data Networks and the feature are (a) High Reliability (b) High Quality of connection (c) Provide high and low speed at appropriate costs. It is used for network connection provided for connecting computer of one organization to other organizations.

**Value Added Service**

This is used when a provider processes, stores and manipulates the data that is to be carried on to the network this is called adding value to the data. Companies in the same lines use this type of WAN. In India Videsh Sanchar Nigam Ltd. is one such organization using this type of WAN.

**Integrated Services Digital Network**

These are basically used for Digital Transmission for the integration of Voice, Video and Data transmission with the Help of Switching and message technique. (Message technique does not require a dedicated path (Like in Circuit Technique) between the sender and receiver, the Destination address is appended to the data which passing from one node to the other in a network reaches the Destination.)

**Private Networks**

This, as the name suggests, are used by the private (basically Leased) network owners, as a link to be served by the network. They can use it for High-Speed Data Transfer or for large quantity of Data transfer.

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4.8 Networks of WAN

WAN networks are established often by seeking help from telecomm departments who provide the facility of leased lines. Router is connected to the LAN at one side and a hub is attached at the other end. This is an expensive way of establishing WAN (Wide Area Network) network. WAN (Wide Area Network) networks are often established using circuit switching method. A circuit switching network is established when at the one end a node and on the other end a terminal is physically connected to each other for further communication. The most common physical network nodes are switches, hub and a modem. Whereas a terminal is a physical device that does the basic communication, for example like a telephone, call answering machine or a printer sometimes.
The data travels through the use of network protocols. The protocols are the defined rules which guide the information transfer. The purpose of protocols is to detect the errors. The following are the main elements in building of WAN network.

1. Ensure High-Band with Modem Provides Internet Connection

You will need a high-speed bandwidth modem that always has Internet access. Before constructing your WAN, verify that your modem works. Select either a DSL or cable modem. These modem services are inexpensive and easy to set up. Contact your phone company or an Internet service provider (ISP) to get DSL service. The Phone Company or ISP will send out a technician to your home or office to install and configure the DSL line. You will also receive a package that contains the following: modem, Ethernet cable, software, and instructions on how to install and configure the DSL modem. Contact your cable company if you want to get the cable modem. The cable company will send out a technician to ensure you’ll have Internet access.

2. Network Devices Needed for a WAN Network

Use a router that has switching technology. Switching technology allows you to connect multiple computers or other wireless devices, such as PDA (personal digital assistants) and smart phones to your WAN. Get a wireless router that has “N technology,” which is the fastest speed on the market. Wireless N is also backwards compatible, meaning that if you have a PC that transmits data at the 802.11 B standard, the router will transmit data at that speed. Ensure that each device that will connect to the WAN has wireless capacities. Some devices will have built-in wireless adapters. However, you might have to install wireless cards in older personal computers. Then, install the card’s software so that the WAN will be able to recognize the device.

3. Set up the Host PC for the WAN

You must set up one of your computers as the host. This is the system on which you will install the software and configure your WAN. Use an Ethernet cable to connect the modem to the router. Then, connect another Ethernet cable from the router to your host PC. Your next step is to install the router software to set up your WAN. This will allow your devices to wirelessly communicate with each other. In addition, each wireless device can access the Internet.

Primary WAN Protocols

A WAN, or Wide Area Network, is a digital computer network that encompasses a large physical area. Thus it can be distinguished from other networks like personal area networks (PANs) and local area networks (LANs)
that span the area encompassing only small rooms or, at most, a couple of buildings. Usually a WAN is hosted or transmitted by a large service carrier such as a telephone company or Internet service provider. There are a number of WAN protocols or systems by which computers or devices within a WAN are connected.

1. Frame Relay

A Frame Relay protocol establishes a private network using a carrier’s network. This might be convenient for small companies and groups that wish to interconnect computers and devices while keeping them closed off from the general public. This involves the use of permanent virtual circuits (PVCs), which set up a site that the individual members of that circuit can tap into without additional circuitry. What’s more, a PVC allows its owner to set up a WAN the way he likes—for example, you can set which sites connect to which others and who gets access to each network resource.

2. PPP

A point-to-point protocol (PPP) makes use of a series of individual circuits connecting devices to each other one-by-one. Almost every dial-up Internet connection makes use of PPP. It is useful especially on very large scales because errors in individual circuits can be monitored and individual links can be severed without impairing the entire system. However, for small, tight-knit networks, PPP is less cost-effective than frame relay, as it requires investing in circuitry for each individual connection between devices. PPP is known for making use of other protocols for authentication purposes, chiefly PAP (password authentication protocol) and CHAP (challenge handshake authentication protocol).

3. HDLC

HDLC, or High-Level Data Link Control, is another protocol that connects computers on a point-to-point basis like PPP, meaning that it finds the configuration of least complexity to connect two independent devices together within the WAN. HDLC is the most common type of protocol used for Internet connections. Unlike PPP, it usually doesn’t make use of any authentication protocols for individual devices within the network.

Setup of Wireless WAN

Setting up a Wide Area Network (WAN) may seem like a complicated process, but it’s actually easy. A WAN only consists of three simple components: a modem, wireless router and network adapter. Although there are many wireless routers and adapters to choose from, they all come with easy to follow installation
software that will walk you through the steps of setting up your network on your computer. Setting the hardware up is as easy as connecting a few cables and plugging in the power chords.

**Instructions**

1. Connect your broadband modem to the cable outlet and plug in the power cable.

2. Connect your wireless router to the modem. Insert an ethernet cable into the first “input” on your wireless router. Insert the other end into the “output” on your modem.

3. Install the software that came with your wireless router on your computer. During the installation, the software will walk you through the steps of creating your wireless network and password.

4. Install your wireless adapter. Follow the instructions that came with your wireless adapter to install it on your computer. After the installation is complete, your network adapter will detect the router and ask you to connect. If your computer has a built-in wireless connection, it will automatically detect the wireless signal and prompt you to connect.

**Differences between WAN & LAN**

**WAN**

- WAN (Wide Area Network) is a computer network that covers a broad area (i.e., any network whose communications links cross metropolitan, regional, or national boundaries.

- Internet is the best example of a WAN.

- WANs (like the Internet) are not owned by any one organization but rather exist under collective or distributed ownership and management.

- WANs tend to use technology like ATM, Frame Relay and X.25 for connectivity over the longer distances WANs have a lower data transfer rate as compared to LANs.

- Have a large geographical range generally spreading across boundaries and need leased telecommunication lines.

- Computers connected to a wide-area network are often connected through public networks, such as the telephone system. They can also be connected through leased lines or satellites.
LAN

- LAN (Local Area Network) is a computer network covering a small geographic area, like a home, office, or group of buildings.
- Network in an organisation can be a LAN.
- Typically owned, controlled, and managed by a single person or organization.
- LANs have a high data transfer rate.
- Have a small geographical range and do not need any leased telecommunication lines.
- One LAN can be connected to other LANs over any distance via telephone lines and radio waves.

Short Answer type Questions

1. What is computer network?
2. Expand “LAN & WAN”.
3. Define “Network cables”.
4. What is “PPP”?

Long Answer Type Questions

1. Write a brief note on characteristics and components of a computer network.
2. Explain about the various network topologies.
3. Describe the main features of LAN.
4. Write the advantages and disadvantages of WAN.
UNIT 5

Internet & CRS

Structure

5.1 Introduction to Internet
5.2 History & Development of Internet
5.3 Advantages & Disadvantages of Internet
5.4 Functions of Internet
5.5 Role of Internet in Tourism Industry
5.6 Browsing Internet
5.7 Google Search
5.8 E-Mail
5.9 Computer Reservation System & Practices

Learning Objectives

After studying this unit, the student will be able to

- Understand about features of internet
- Understand the function and role of internet
- Know how to browse the internet
- Know how to operates different emails
5.1. Introduction to Internet

By the turn of the century, information, including access to the Internet, will be the basis for personal, economic, and political advancement. The popular name for the Internet is the information superhighway. Whether you want to find the latest financial news, browse through library catalogs, exchange information with colleagues, or join in a lively political debate, the Internet is the tool that will take you beyond telephones, faxes, and isolated computers to a burgeoning networked information frontier.

The Internet supplements the traditional tools you use to gather information. Data Graphics, News and correspond with other people. Used skillfully, the Internet shrinks the world and brings information, expertise, and knowledge on nearly every subject imaginable straight to your computer.

The Internet links are computer networks all over the world so that users can share resources and communicate with each other. Some computers have direct access to all the facilities on the Internet such as the universities. And other computers, e.g. privately-owned ones, have indirect links.

Through a commercial service provider, who offers some or all of the Internet facilities. In order to be connected to Internet, you must go through service suppliers. Many options are offered with monthly rates. Depending on the option chosen, access time may vary.

The Internet is what we call a Meta network, that is, a network of networks that spans the globe. It’s impossible to give an exact count of the number of networks or users that comprise the Internet, but it is easily in the thousands and millions respectively. The Internet employs a set of standardized protocols which allow for the sharing of resources among different kinds of computers that communicate with each other on the network.

These standards, sometimes referred to as the Internet Protocol Suite, are the rules that developers adhere to when creating new functions for the Internet.

The Internet is also what we call a distributed system; there are no central archives. Technically, no one runs the Internet. Rather, the Internet is made up of thousands of smaller networks. The Internet thrives and develops as its many users find new ways to create, display and retrieve the information that constitutes the Internet.
Definition

The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to serve billions of users worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless and optical networking technologies. The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support email.

5.2. History & Development of the Internet

The history of the Internet began with the development of electronic computers in the 1950s. The public was first introduced to the Internet when a message was sent from computer science Professor Leonard Kleinrock’s laboratory at University of California, Los Angeles (UCLA), after the second piece of network equipment was installed at Stanford Research Institute (SRI). This connection not only enabled the first transmission to be made, but is also considered to be the first Internet backbone.

This began the point-to-point communication between mainframe computers and terminals, expanded to point-to-point connections between computers, and then early research into packet switching. Packet switched networks such as ARPANET, Mark I at NPL in the UK, CYCLADES, Merit Network, Tymnet, and Telenet, were developed in the late 1960s and early 1970s using a variety of protocols. The ARPANET in particular led to the development of protocols for internetworking, where multiple separate networks could be joined together into a network of networks.
In 1982, the Internet protocol suite (TCP/IP) was standardized and the concept of a world-wide network of fully interconnected TCP/IP networks called the Internet was introduced. Access to the ARPANET was expanded in 1981 when the National Science Foundation (NSF) developed the Computer Science Network (CSNET) and again in 1986 when NSFNET provided access to supercomputer sites in the United States from research and education organizations. Commercial Internet service providers (ISPs) began to emerge in the late 1980s and early 1990s. The ARPANET was decommissioned in 1990. The Internet was commercialized in 1995 when NSFNET was decommissioned, removing the last restrictions on the use of the Internet to carry commercial traffic.

Since the mid-1990s, the Internet has had a revolutionary impact on culture and commerce, including the rise of near-instant communication by electronic mail, instant messaging, Voice over Internet Protocol (VoIP) “phone calls”, two-way interactive video calls, and the World Wide Web with its discussion forums, blogs, social networking, and online shopping sites. The research and education community continues to develop and use advanced networks such as NSF’s very high speed Backbone Network Service (BNS), Internet2, and National Lambda Rail. Increasing amounts of data are transmitted at higher and higher speeds over fiber optic networks operating at 1-Gbit/s, 10-Gbit/s, or more.

The Internet’s takeover over the global communication landscape was almost instant in historical terms: it only communicated 1% of the information flowing through two-way telecommunications networks in the year 1993, already 51% by 2000, and more than 97% of the telecommunicated information by 2007. Today the Internet continues to grow, driven by ever greater amounts of online commerce, entertainment, and social networking.

Components of internet

Browser

A Web Browser is a program or piece of software which enables a person to easily access the internet and surf to various ip addresses and websites (WWW). There are many different browsers; some popular ones are called Internet Explorer, Mozilla Firefox, Safari and Google Chrome.

FTP

“File Transfer Protocol” is the most common method of transferring files between computers via the Internet. They can be shared through hosts such as rapidshare.com or through programs such as Utorrent or Filezilla.
World Wide Web

This is largest, fastest growing, part of the Internet, the part for which Internet browsers like Netscape’s Navigator and Microsoft’s Explorer were designed. Business is the leading factor fueling the rapid growth of the Web making information, advertising, and product ordering readily available to everyone with Web access.

Chat

IRC (Internet Relay Chat) is used for live discussions on the Internet. Some programs include MSN and Skype.

Search Engines

These tools are really a part of the World Wide Web and are often used when looking for information because the Web has grown so large and is without any inherent organizational structure. E.g: Google.

Uses of Internet

The Internet is a continually growing organism of information that is constantly morphing into new ways of communicating. Whether you want to send a quick note to someone, buy the newest products or find old friends, the Internet is the place to go.

1. Email

People use the Internet to send each other private messages called emails. These messages can contain text, pictures, video or links to websites that the author wants to share. One of the convenient features of emails, as opposed to traditional letter mailing, is that emails can be sent and received instantly; there is no need to wait days or weeks for the letter to arrive.

2. Business

The Internet is commonly used to buy, sell and advertise products. All of the major companies traded on the New York Stock Exchange have their own websites and many medium to small companies do as well. These sites provide information to consumers about products and services without ever leaving home.

3. Social Networking

Another reason people use the Internet is for social networking. Sites like Facebook, MySpace and Twitter give people the opportunity to connect with old friends and new acquaintances in a fast and convenient format. Now there is no reason to lose connection with your high school friends because you moved away for college. They are as close as the click of a mouse.
4. Communication

The Internet helps students develop their computer skills. It can also help students with their writing skills. In some forms, the Internet can help students with critical thinking skills. Students are faced with more information than they could ever use or need. This requires them to sort through the information and decide what is most important and relevant.

5.3. The Advantages & Disadvantages of Internet

The Internet is an extraordinary entertainment and learning tool that may be utilized in a number of modes to increase the ability of a user to collect information. The principal components of the Internet are the World Wide Web (WWW) and e-mail. With the passage of time, the Internet has become the most effective business tool in the contemporary world. It can be described as a global meeting place where people from every corner of the world can come simultaneously.

The advantages of Internet

Following are the advantages provided by the Internet

1. Information

The biggest benefit offered by the Internet is information. It functions as a valuable resource of information. You can find any type of information on any subject with the help of the search engines like Yahoo and Google.
2. Communication

The primary goal of the Internet is communication. It has done extremely well in this field, however the development process is still going on to make it more dependable and quick. By sending an e-mail, we can contact a person who is physically present thousand miles away within the fraction of a second’s time.

3. Entertainment

Internet functions as a popular medium of entertainment. A wide variety of entertainment including video games, music, movies, chat room, news and others can be accessed through the Internet.

4. E-commerce

E-commerce is the idea that is implemented for any form of commercial strategy or business transactions that entails transmission of data from one corner of the world to another. E-commerce has become a fantastic option through which you can shop anything.

5. Formation of communities

Internet helps in formation of communities or forums. Here a number of people can participate in different types of debates and discussions express their views and gather valuable knowledge.

6. Services

A variety of services are offered via Internet, for example job searching, online banking, buying movie tickets, hotel reservations and consultation services etc. When you avail these services offline, they become more expensive.

The Disadvantages of Internet

Following are the disadvantages of Internet

1. Spamming

Spamming denotes distribution of unsolicited e-mails in large numbers. They are meaningless and they unnecessarily block the whole system. These activities are treated as illegal.

2. Theft of personal details

While using the Internet, there is high probability that your personal details like name, address and credit card number may be accessed by con artists and used for fraudulent purposes.
3. Pornography

Pornography is definitely harmful for your children. There are numerous pornographic sites available over the Internet and watching any of those can have very bad influence on the mental health of your children.

4. Virus threat

Virus is a program that interrupts the usual operation of your personal computer system. PCs linked to the Internet have high probability of virus attacks and as a result of this your hard disk can crash, giving you a lot of trouble.

5.4. Functions of Internet

The Internet is a global system of interconnected computer networks that interchange data by packet switching using the standardized Internet Protocol Suite (TCP/IP). It is a “network of networks” that consists of millions of private and public, academic, business, and government networks of local to global scope that are linked by copper wires, fiber-optic cables, wireless connections, and other technologies. The following are the main functions of Internet.

1. E-mail

Electronic mail, commonly referred to as email or e-mail, is a method of exchanging digital messages from an author to one or more recipients. Modern email operates across the Internet or other computer networks. Some early email systems required that the author and the recipient both be online at the same time, in common with instant messaging. Today’s email systems are based on a store-and-forward model. Email servers accept, forward, deliver and store messages. Neither the users nor their computers are required to be online simultaneously; they need connect only briefly, typically to an email server, for as long as it takes to send or receive messages.

2. File-sharing

File sharing is the practice of distributing or providing access to digitally stored information, such as computer programs, multimedia (audio, images and video), documents, or electronic books. It may be implemented through a variety of ways. Common methods of storage, transmission and dispersion include manual sharing utilizing removable media, centralized servers on computer networks, World Wide Web-based hyperlinked documents, and the use of distributed peer to peer networking.

3. Instant Messaging

Instant messaging (IM) is a form of communication over the Internet that offers quick transmission of text-based messages from sender to receiver. In push
mode between two or more people using personal computers or other devices, along with shared clients, instant messaging basically offers real-time direct written language-based online chat. The user’s text is conveyed over a network, such as the Internet. It may address point-to-point communications as well as multicast communications from one sender to many receivers. More advanced instant messaging allows enhanced modes of communication, such as live voice or video calling, video chat and inclusion of hyperlinks to media.

4. Internet Fax

Internet fax, e-fax, or online fax is a general term which refers to the use of the Internet to send a document fax, rather than using only phone networks (traditional faxing) with a fax machine. The term “Internet fax” encompasses “web fax” and “email fax,” along with VoIP fax, which refers to the use of Voice over IP to send a fax.

5. World Wide Web

The World Wide Web (also referred to as WWW or W3) is the fastest growing area of the Internet. While gopher was an important step in allowing users to “browse” through the Internet’s vast resources, the World Wide Web has raised excitement about the Internet to new heights. With a web browser, one can view web pages that may contain text, images, videos, and other multimedia, and navigate between them via hyperlinks.

6. Voice over IP

Voice over IP (VoIP, abbreviation of voice over Internet Protocol) commonly refers to the communication protocols, technologies, methodologies, and transmission techniques involved in the delivery of voice communications and multimedia sessions over Internet Protocol (IP) networks, such as the Internet. Other terms commonly associated with VoIP are IP telephony, Internet telephony, voice over broadband (VoB), broadband telephony, IP communications, and broadband phone.

7. Mobile over IP

MoIP, or mobile communications over internet protocol, is the mobilization of peer-to-peer communications including chat and talk using internet protocol via standard mobile communications applications including 3G, GPRS, Wifi as well as Wimax. Unlike mobile VoIP, MoIP is not a VoIP program made accessible from mobile phones or a switchboard application using VoIP in the background. It is rather a native mobile application on users’ handsets and used to conduct talk and chat over the internet connection as its primary channel.
5.5. **Role of Internet in Tourism Industry**

The tourism industry has been among the first to capitalize on new technology. Because it is an Information-rich industry, it depends on finding and developing new means to distribute travel and hospitality products and services, marketing information to consumers, and providing comfort and convenience to travelers. Also, consumers are constantly seeking new sources of information to help them make decisions before purchasing travel services to make their trips more satisfying. Much more travelers use the Internet to plan and book their trips in the recent years. It is not surprising that travel and hospitality e-commerce is among the top four growth categories, second only to finance and insurance services.

The Hospitality and Tourism industry was one of the earliest to go online. Since travel had few geographical boundaries, and, thanks to the widespread adoption of e-tickets, which airlines aggressively pushed, the airlines faced none of the logistical issues of online product retailers such as shipping and variable tax-collection schemes, the travel industry was uniquely suited for the Web. As the travel industry took off in the late 1970s and early 1980s, five major components came to comprise what this report will call the travel supply chain: Providers, Distributors, Travel Agents, Charge Card companies, and Travelers.

1. **Providers**

   Airlines, hotels and transportation companies; these entities invested in products (planes, properties, vehicles) and services for travelers.

2. **Distributors**

   Computer Reservations Systems5 (CRSs); technology companies that consolidated supplier information, inventory and pricing data, and provided a way to electronically search, book and issue tickets and documents.

3. **Travel Agents**

   Using CRSs, provided leisure and business travelers with onestopshopping guidance and pricing and schedule advice to make reservations, issue tickets and provide ancillary services such as passport processing or currency conversion.

4. **Charge Card companies**

   Played a role by making purchasing more convenient and secure for consumers, and by providing corporate buyers consolidated transaction data about their company’s activities, which helped them with purchasing decisions and policy tracking.
5. Travelers

The end-user or customer, who may be leisure and/or corporate traveler, or a travel planner who books trips for an employee to take.

In addition, there are many matters involved in the selection and organisation of a holiday: gathering tour information, preparing the holiday package, confirming holiday information, actually having the holiday (including shopping for things and paying for them – not always easy in a foreign country), and sharing the holiday experience with other people during the holiday and once arriving back home.

Thus, it might be very difficult to manage all the people and matters precisely, and much of this potential complexity is about interaction through or using information; information management becomes an important consideration (figure 1). One can deduce that information management will be important in the tourism industry, especially when one anticipates the consequences of the Internet – the most recent innovation in conveying information and sharing information between different parties.

Fig 5.3 Relation between tourism and Internet

The use of the Internet for communicating and transacting with customers has been growing rapidly in the worldwide tourism industry. However, there is a large variation in the intensity of the use of e-commerce in the Travel and Tourism industry. While the Internet usage varies across countries, even within a country there are large variations among enterprises. These variations are mainly due to the impact of several factors associated with the internal and external environment of the enterprise. Tourists and travel agents alike turn to the Web as their first source of information on a potential destination for themselves or their clients, and they use e-mail for fast, efficient and inexpensive communication to have their questions answered and their impressions confirmed.

The WWW has been utilized as a means of communication widely over the past decade in Travel and Tourism industry. It has been instrumental in helping the tourism sector to expand its markets across the Continents’ and has played a major role in helping the growth of the industry. The web is a cost effective means for enterprises for Travel and Tourism sector. According to O’connor
(1999), the main advantages that the internet provides as a market medium for Travel and Tourism sector are.

- The global market reach
- The customers who access the websites are much more interested rather than in a conventional marketing communication where the message is targeted indiscriminately.
- The websites are not affected by capacity constraints.
- The possibility of two way communication offered by the Internet Quicker response to customer’s information based needs.

Use of the Internet by the Travel Agencies

Many travel agencies have developed an Internet presence by posting a website, with detailed travel information. Full travel booking sites are often complex, and require the assistance of outside travel technology solutions providers such as Travelocity. More and more tourists use the Internet websites to book and/or get useful informations.

These companies use travel service distribution companies who operate Global Distribution Systems (GDS), such as Sabre Holdings, Amadeus, Galileo and World span, to provide up to the minute, detailed information on tens of thousands of flight, hotel, and car rental vacancies. Some online travel sites allow visitors to compare hotel and flight rates with multiple companies for free. They often allow visitors to sort the travel packages by amenities, price, and or proximity to a city or landmark. Travel agents have applied dynamic packaging tools to provide fully bonded (full financial protection) travel at prices equal to or lower than a member of the public can book online. As such, the agencies’ financial assets are protected in addition to professional travel agency advice.

All travel sites that sell hotels online work together with numerous outside travel agents. Once the travel site sells a hotel, one of the supplying travel agents is contacted and will try to get a confirmation for this hotel. Once confirmed or not, the customer is contacted with the result. This means, that booking a hotel on a travel website will not get you an instant answer. Only some of the hotels on a travel website can be confirmed instantly (which is normally marked as such on each site). As different travel websites work with different suppliers together, each site has different hotels that it can confirm instantly. Some examples of such online travel websites that sell hotel rooms are Expedia, Orbitz and Tripadvisor.

There are also Internet travel agencies. These are Web sites that expand traditional agents’ offerings. In addition to selling regular travel services such as air tickets and hotel rooms, they also offer travel tips, destination information
and other services. Many large traditional agencies such as American Express and Liberty Travel have extended their shops to the virtual marketplace. Portal travel sites such as AOL and Yahoo! link customers looking for travel services to sites that may appear on their portals, but generally are powered by one of the big Internet travel agencies listed below. The last category for Internet travel agencies is bidding sites, such as Priceline. There, deep discount travel is available, but the travel provider’s brand (usually an airline) is hidden until the purchase is complete.

The rise of online retail travel is taking place at a time when the distribution function in tourism is changing in many ways. It is growing rapidly and will undoubtedly develop and change greatly in the future. It has provided an opportunity for non-tourism organisations such as Microsoft to enter the tourism market, and in doing so, to create competition for traditional high street travel agents.

5.6. Browsing Internet

Browsing is a kind of orienting strategy. It is supposed to identify something of relevance for the browsing organism. When used about human beings it is a metaphor taken from the animal kingdom. It is used, for example, about people browsing open shelves in libraries or browsing databases or the Internet. In Library and information science it is an important subject, both purely theoretically and as applied science aiming at designing interfaces which supports browsing activities for the user.

Definition of Browsing

Exploration of the World Wide Web by following one interesting link to another, usually with a definite objective but without a planned search strategy. In comparison ‘surfing’ is exploration without a definite objective or search strategy, and ‘searching’ is exploration definite in both objective and strategy.

Definition of Browser

An internet browser is the program that you use to access the internet and view web pages on your computer. Some common internet browser examples include:

- Microsoft Internet Explorer (Internet Explorer Home Page)
- Mozilla Firefox (Download Firefox)
- AOL Explorer (AOL Explorer Home Page)
- Apple Safari
- Opera
The History of the Internet Browser

The World Wide Web, the first internet browser, was developed in 1990, on Christmas day by Tim Berners-Lee. The browser was mostly released to those who worked in the physics industry. NCSA Mosaic, which became the first popular web browser to be used, later became known as Netscape Navigator. Later on Netscape Navigator changed its name to the Communicator.

Features

The Internet browser has come a long way as technology has developed, and can now do other functions besides just browsing the World Wide Web. An individual can see the history of the last pages that were visited; the history can also be modified so that the past history cannot be accessed. Users can also bookmark their favorite pages so that they can easily return to them later.

Components

When a web browser is activated, a preset web page known as the “Start” or “Home” page appears. Usually, it is the Internet service provider that provides the default home page. However, it can easily be changed to suit the preferences of the user. The toolbar of the web browser is found on top and allows for easier navigation. Although web browsers have different tools, common functions include the back, forward, and home buttons.

Function

The job of an Internet browser is to display websites that you visit on the web. Internet browsers can display both graphics and texts. An Internet browser is a must for all of those who wish to surf the Internet to view websites.

1. Uniform Resource Identifier:

In order for a web browser to function, the uniform resource identifier (URI) must be known by the user. The URI is a serious of characters that are used to name the resource found online. The URI is used as the address of the website and usually begins with http: This particular prefix functions as a way of identifying the content as a part of hypertext transfer protocol. For local files, the URI can appear as a file. In order to avoid confusion, only one particular location can be assigned to a specific URI.

Types of Internet Browsers

There are a variety of web browsers available on the Internet. The most popular browsers are Internet Explorer, and Mozilla Firefox. Others include Netscape navigator and Opera. All of these Internet browsers are free to download via their websites.
Security

Information can easily be intercepted by outsiders if it is not scrambled or encrypted. To improve security, most web browsers already have built in features in case there is a breach. For example, security alerts are messages that inform the user of potential harm when entering a website. Such security also safeguards against phishing, or the act of trying to get personal or financial information using e-mail. In these situations, the web browser checks the website sending the message for any previous problems.

The security settings of the web can be changed by going into the Internet options under the “Tools” section in the toolbar. It is here that the list of features can be activated or deactivated according to the preferences of the user.

5.7. Google’s Search

Google Search (or Google Web Search) is a web search engine owned by Google Inc. Google Search is the most-used search engine on the World Wide Web, receiving several hundred million queries each day through its various services. The order of search results on Google’s search-results pages is based, in part, on a priority rank called a “Page Rank”. Google Search provides many options for customized search, using Boolean operators such as: exclusion (“-xx”), alternatives (“xx OR yy”), and wildcards (“x * x”).

The main purpose of Google Search is to hunt for text in publicly accessible documents offered by web servers (in formats such as HTML, PDF, etc.), as opposed to other data, such as with Google Image Search. Google Search was originally developed by Larry Page and Sergey Brin in 1997. Google Search provides at least 22 special features beyond the original word-search capability.

These include synonyms, weather forecasts, time zones, stock quotes, maps, earthquake data, movie show times, airports, home listings, and sports scores. There are special features for dates, including ranges (70.73), prices, temperatures, money/unit conversions (“10.5 cm in inches”), calculations (“3*4+sqrt(6)-pi/2”), package tracking, patents, area codes, and language translation of displayed pages. In June 2011, Google introduced “Google Voice Search” and “Search by Image” features for allowing the users to search words by speaking and by giving images.

The frequency of use of many search terms has reached such a volume that they may indicate broader economic, social and health trends. Data about the frequency of use of search terms on Google (available through Google Ad words, Google Trends, and Google Insights for Search)
Tourism and Travel Techniques

Fig 5.4 Google

Have been shown to correlate with flu outbreaks and unemployment levels and provide the information faster than traditional reporting methods and government surveys.

Definition

A keyword search is defined as a word or string of words you type in a search engine like Google to look for certain stories, articles or images on the Internet.

Types of Search Engines

There are three types of search engines

- Crawler-based (or spider-based),
- Human-powered directories and
- Hybrid search engines.

1. Crawler-Based

This type of search engine is created automatically and works by “crawling” through the information on the World Wide Web. You just type in the keywords that you want on a search engine like Google and a list of websites is created. Then you can sift through all the articles to find the most significant or relevant ones you need. Most people use this type of search engine.

2. Human-Powered

This type of search engine is exactly what it means. It only works well enough if people actually input the information into a special directory. A search within this type only looks for matches within that directory. Yahoo, MSN and AltaVista are types of human-powered directories.
3. Hybrid Search

This type of search engine is a cross between crawler-based and human-powered directories. When you search using the hybrid method, both types (crawler and human powered) are featured in the results.

Functions of the Search Engines

Since the inception of the Internet, people have been storing and posting large amounts of easily accessible data online. The Internet now has an immeasurable amount of valuable information. Search engines are necessary for locating, sorting, storing and ranking the value of that information on the web. Popular search engines like Google, Yahoo and Bing find relevant information and present it to users.

In order to efficiently find a specific bit of data, it’s important for you to know the four main functions of the search engines.

1. Crawling

The crawler, or web spider, is a vital software component of the search engine. It essentially sorts through the Internet to find website addresses and the contents of a website for storage in the search engine database. Crawling can scan brand new information on the Internet or it can locate older data. Crawlers have the ability to search a wide range of websites at the same time and collect large amounts of information simultaneously. This allows the search engine to find current content on an hourly basis. The web spider crawls until it cannot find any more information within a site, such as further hyperlinks to internal or external pages.

2. Indexing

Once the search engine has crawled the contents of the Internet, it indexes that content based on the occurrence of keyword phrases in each individual website. This allows a particular search query and subject to be found easily. Keyword phrases are the particular group of words used by an individual to search a particular topic.

The indexing function of a search engine first excludes any unnecessary and common articles such as “the,” “a” and “an.” After eliminating common text, it stores the content in an organized way for quick and easy access. Search engine designers develop algorithms for searching the web according to specific keywords and keyword phrases. Those algorithms match user-generated keywords and keyword phrases to content found within a particular website, using the index.
3. Storage

Storing web content within the database of the search engine is essential for fast and easy searching. The amount of content available to the user is dependent on the amount of storage space available. Larger search engines like Google and Yahoo are able to store amounts of data ranging in the terabytes, offering a larger source of information available for the user.

4. Results

Results are the hyperlinks to websites that show up in the search engine page when a certain keyword or phrase is queried. When you type in a search term, the crawler runs through the index and matches what you typed with other keywords. Algorithms created by the search engine designers are used to provide the most relevant data first. Each search engine has its own set of algorithms and therefore returns different results.

Search Engine Components

There are three components to a search engine: Collection; Database; Search Interface

1. Collection

   - “Robot”, “Spider”, or “Worm” wanders, brings back resources, sorts, indexes, and creates the database.

   - Alternately, webmasters can contact search engine owners/operators to add their sites to the database.

2. Database

   - When using a search engine, you are actually searching the database, not “the Internet”.

3. Search Interface

   - This component is the interface between the end-user and the database.

   - Some engines allow for complex strategy development with Boolean operators, phrase and proximity searching, and nesting. Others are simple keyword searches.

   - Some mega tools (meta-search engines) search multiple engine databases simultaneously with a single interface.
Google’s Search Engine Home Page

Google’s home page is extremely clean and simple, loads quickly, and delivers arguably the best results of any search engine out there, mostly due to its Page Rank technology and massive listings (more than 8 billion at the time of this writing).

How to use Google’s search engine

- **Be specific**: Google is not an “intuitive” search engine (unfortunately, there aren’t any!), and therefore cannot read your mind. Try to be as concise as possible; instead of “jeans”, try “Levi 501 jeans”.

- **Search for phrases**: For example, if you’re searching for a specific quote, type in “to be or not to be”. Google will search for the entire phrase just how it appears in between the quotes. For more information on how use phrases in your searches, check out Looking for a Specific Phrase.

- **Be selective**: Use “common words”, such as and, if, not and numbers ONLY if you want them included in the search. Google excludes them otherwise. If you want them included, use a phrase search by putting quotations around your search query, or include the common word by putting a space and a plus sign right in front of it. For example, if you are looking for the season five DVD of “Sex and the City”, type in “sex and the city dvd season +5”.

- **Exclude extra results**: If you want to narrow down your searches even further, focus your search by placing a “-” (negative sign) in front of words you want to avoid. For example, if you’re searching for “coffee” and want to avoid Starbucks, you would type in “coffee -Starbucks” (without quotes).

5.8. E-mail

Electronic mail, commonly referred to as email or e-mail, is a method of exchanging digital messages from an author to one or more recipients. Modern email operates across the Internet or other computer networks. Some early email systems required that the author and the recipient both be online at the same time, in common with instant messaging. Today’s email systems are based on a store-and-forward model. Email servers accept, forward, deliver and store messages. Neither the users nor their computers are required to be online simultaneously; they need connect only briefly, typically to an email server, for as long as it takes to send or receive messages.
Historically, the term electronic mail was used generically for any electronic document transmission. For example, several writers in the early 1970s used the term to describe fax document transmission. As a result, it is difficult to find the first citation for the use of the term with the more specific meaning it has today.

![Fig 5.5 E-Mail](image)

An Internet email message consists of **three components**, the message envelope, the message header, and the message body. The message header contains control information, including, minimally, an originator’s email address and one or more recipient addresses. Usually descriptive information is also added, such as a subject header field and a message submission date/time stamp. Originally a text-only (7-bit ASCII and others) communications medium, email was extended to carry multi-media content attachments, a process standardized in RFC 2045 through 2049. Collectively, these RFCs have come to be called Multipurpose Internet Mail Extensions (MIME).

**Email ID**

Having an email address in today’s world is essential to communication. An email address allows users to communicate with family and friends, send resumes for employment online, receive receipts for online purchases, and create memberships and accounts with different websites. There are many email service providers to choose from. Some of the most popular email providers are Yahoo!, Gmail and Hotmail.

Internet access is everywhere, with many public places offering free Wi-Fi for any personal computer, making communication with others much easier and faster. Creating an email ID is a free way to stay in touch with family and friends. Free email accounts are available from many of the top providers. If you don’t already have an email ID, you may easily create one with a few keys strokes and clicks of a mouse.
Creating an E-Mail ID

Instructions

1. Turn on the computer and connect to the Internet using the web browser provided on your computer.

2. Type the web address for the website you wish to use in order to create your email ID. There are a number of different websites to use, if you don’t have a website in mind go to a search engine and type in the words “free email.” The search will yield plenty of email providers from which to choose.

3. Click the “Register for Account” or “Sign Up” button to begin creating your ID. These choices are located on the main page underneath the login and password areas.

4. Enter your personal information requested by the email service provider.

5. Enter a “user name”—or email ID—and a password. When you have decided on an email ID, click the button next to it that says “Check Availability.” If the email ID you have chosen isn’t available you will be offered available options, but you may try a different ID. Password requirements vary; follow the instructions of the provider.

6. Click “submit.” You will be redirected to your new email inbox.

How to Create a New Gmail ID?

Instructions

1. Launch your Web browser and navigate to gmail.com

2. Click on the “Create an Account” button. You can also click “About Gmail” and “New Features” to find additional information about the Gmail service.

3. Fill out the information on the “Create a New Google Account” page as accurately as possible. You will have to provide your first and last name, your gender and your birthday.

4. Choose your desired Gmail account ID, a password, a security question for the password and the answer for it.

5. Enter a user verification code that consists of both text and numerals and agree to the terms of service and privacy policy.

6. Click “Next.” If the username you have chosen is not available, Google will prompt you to enter another ID.
7. You will then be asked to verify your account. After doing this, your account will be created.

Fig 5.6 G-Mail google

How does E-mail Work?

E-mail is an asynchronous form of communication, meaning that the person whom you want to read your message doesn’t have to be available at the precise moment you send your message. This is a great convenience for both you and the recipient. On the other hand, the telephone, which is a synchronous communication medium, requires that both you and your listener be on the line at the same time in order for you to communicate (unless you leave a voice message). It will be impossible to discuss all the details of the many e-mail packages available to Internet users.

Fortunately, however, most of these programs share basic functionality which allows you to

- Send and receive mail messages
- Save your messages in a file
- Print mail messages
- Reply to mail messages
- Attach a file to a mail message

5.9. Computer Reservation System & Practices

A computer reservations system or central reservation system (CRS) is a computerized system used to store and retrieve information and conduct transactions related to air travel. Originally designed and operated by airlines, CRSs were later extended for the use of travel agencies. Major CRS operations that book and sell tickets for multiple airlines are known as global distribution systems (GDS). Airlines have divested most of their direct holdings to dedicated
GDS companies, who make their systems accessible to consumers through Internet gateways. Modern GDSs typically allow users to book hotel rooms and rental cars as well as airline tickets. They also provide access to railway reservations and bus reservations in some markets, although these are not always integrated with the main system.

**Definition**

Any of several proprietary computer systems allowing real-time access to different fares (Airline, Rail, Bus, Cruise and Hotel), schedules, seating availability, offering the capability of booking reservations and generating tickets.

Computer Reservation System was first used in the 1950s by the Airlines who are till date viewed as pioneers in this area. Subsequently, all Airlines used the CRS, which is at present, indispensable to all Airlines, none of which can function without CRS.

**Advantages**

A Central Reservation System (CRS) is software used within the tourism industry for the purposes of marketing and sales. This type of system is used by travel companies for booking airline, train and bus tickets, but its principle application is for accommodation providers. In a highly competitive industry, a hotel’s website is its most powerful marketing tool — an integrated central reservation system helps to convert browsers into customers.

1. **Flexibility**

Central reservation systems can be accessed by individual consumers, travel agencies and call center staff. Travel agencies can be assigned personal log-on codes, which automatically generate any special negotiated rates or commission. Information can easily be updated, and the CRS can be tailored to suit the individual accommodation provider’s requirements.
For example, he can decide exactly what information is to be included, add graphics and maps, and adapt colors, fonts and heading styles to match the existing website design. The system can be programmed to automate features such as customer loyalty programs and group booking discounts. The CRS can also be integrated with other software packages, such as web design or data analysis programs.

2. Distribution Benefits

With a CRS, accommodation providers can market and sell their products around the globe, 24 hours a day, seven days a week. Most modern systems have multi-lingual and currency conversion capability for bookings from around the world. Customers can pay online instantly, which reduces the risk of their having second thoughts and not booking. This form of sales technique can also generate additional revenue by encouraging consumers to purchase extra goods and services, such as champagne, excursions and car rentals.

3. Cost-cutting

A central reservation system reduces staff wages, since bookings are processed automatically online, rather than the company having to employ people to take bookings over the telephone or by mail. Internet selling also cuts costs by eliminating the need to print and distribute marketing brochures, write letters and pay commission to third-party agencies.

4. Increased Efficiency

A central reservation system includes tools that enable the accommodation provider to monitor activity on his website. Real-time reporting shows the number of hits, and how many were converted to actual bookings. This builds a profile of customer behavior and identifies sales trends - information that can be used for strategic planning purposes. Promotional campaigns can be coded to monitor their effectiveness. The customer database generated through sales can also be used for targeting future marketing campaigns.

5. Customer Benefits

Central reservation systems offer an effective and time-saving search tool for the customer, who can refine a search for accommodation by issues such as date, location, hotel rating and features. It is easy to make comparisons between different accommodations, and to instantly check pricing and availability. A CRS also allows customers to take advantage of special offers and promotions, and to add on “extras” such as attraction tickets, airport transfers and meal deals to their booking. Online booking is often more economical, since the accommodation provider does not have to pay commission to a booking agent. It is also easy to retrieve, change or cancel bookings via the CRS.
However, its potential as quickly realized and it is now being used as a versatile system, by the

- Hospitality Industry
- Travel Agencies
- Car-hiring services

This technology works by using special kind of computers and leased telephone lines. The respective travel/tour/hotels, etc. are connected on-line to the central Host computer system or CRS. The Host computer is always a main-frame with enormous data-base attached. The main frame host polls each terminal every second to see whether any message has been received.

Therefore, in the system, it is possible for Airlines, Hotels, Tour operators, travel agents to remain connected to each other. This system has contributed a great deal in the following areas

- Increased sales volume
- Providing precise information
- Selling the product efficiently
- Increase in profitability

However all the big companies are today facing challenges and have begun selectively migrating processes from their legacy mainframe platforms to service oriented architectures (SOA). By utilizing high performance, lower cost open systems platforms in an SOA approach, they further improve their capacity to cost effectively handle a fast-rising “look-to-book” ratio, i.e., the number of shopping transactions compared to actual purchases. The explosive growth of this ratio was driven initially by the creation and utilization of robotic software and, more recently, by the rapid growth of consumers’ multisite shopping behavior on the Internet.

**Features of CRS**

The huge advancements made in technology have transformed several aspects of modern life, and this includes the way bookings are made in the tourism industry. Most accommodations, air travel, train travel and road travel can now be set up through online booking systems. The main advantage to using an online booking system is the relatively fast and easy processing of customer requirements. Online reservations can be made by simply feeding dates, times, specific seat types or room requirements into an online site to get a confirmed booking.
1. Speed and Flexibility

The main features of an online booking system include flexibility in choosing the product or service the customer wants. It also involves speed in getting immediate confirmation of the booking. Changes can be made at any time during the process or at a later date, after the process is completed. Customers are able to research what is available and find the best options to match their requirements. For example, a family of four will require at least two rooms, a suite or a rental apartment with two bedrooms. Rather than doing a phone-around to find out what is available — which is extremely time consuming — researching and bookings can be completed online with the minimum of fuss and with timely efficiency.

2. Precise Data

When customers make use of an online booking system for their accommodation and travel arrangements, for example, merchants are in a position to have precise head-count data readily available. This is also useful for stores to track sales, know what is in stock at all times and restock without any delays in the process. Precise data avoids problems of over-booking or under-booking. Online booking systems can also be set up to record new customer data that the sales team can use for their promotional activities.

3. Protection against Fraud

Online booking systems are designed to protect merchants against no-shows and against possible fraud. The system will require payment in advance or a credit card guarantee to validate the reservation. Online booking sites vary in the customer information they require, which may include email addresses, website registration, physical addresses and contact numbers. The software is designed to trace and capture IP addresses to guard against fraud. In the event of a no-show, the merchant is able to deduct a pre-specified amount as a penalty fee.

4. Avoids Customer Disappointment

To a large extent, online booking systems help customers avoid disappointment — particularly in the travel sector — due to non-availability of seats or rooms. Because an online booking system offers the customer flexibility, bookings can be made well in advance — even several months in advance — for seats on airplanes, trains or coaches. Accommodation arrangements can also be made far in advance to avoid last-minute panics and disappointments. The flexibility of the system means change is possible should something unforeseen happen.
Procedures of Reservation Through Computer

This reservation can be made by the Tourist easily if he/she has basic operational knowledge of computers. To understand the reservation system following areas are being discussed.

1. Making a Reservation
2. Delete a Reservation
3. Checking Reservation status
4. Check out & return
5. Advance reservations
6. Same day reservations

1. Making a Reservation

(i) Enter the Web Page “Computer Reservation System” (CRS) by clicking ‘CSC Mobile Computer Service’ link under “Facilities Booking” section of “School Services” within CityU e-Portal.

(ii) Click the ‘Reserve Notebook’ button from the menu bar in the upper screen.

There are 3 classes of users

Class A : Users can make reservation 2 days in advance
Class B : Users can make reservation 1 day in advance
Class C : Users can make to-day in advance

- Click the corresponding ‘Reserve’ button from the panel if the desired reservation date and session is available for reservation.
- Click the ‘Reservation’ button in the window to confirm the reservation.
- Click the ‘Close’ button in the “Reservation Completed Successfully” window.
- Click the ‘Logout’ button from the menu bar in the CRS Web page to log out.

2. Delete a Reservation

- Enter the Web Page “Computer Reservation System” (CRS) by clicking ‘CSC Mobile Computer Service’ link under “Facilities Booking” section of “School Services” within CityU e-Portal.
• Click the ‘Amend My Reservation’ button from the menu bar in the upper screen.

• From the “My Notebook PC Reservation(s)” panel showing information on reference ‘Confirm’ button to confirm the cancellation. The corresponding point added due to reservation will not be deducted system cancellation is made.

• Click the ‘Logout’ button from the menu bar in the CRS Web page to log out of the system and complete the process.

3. Check Reservation Status

• Enter the Web Page “Computer Reservation System” (CRS) by clicking ‘CSC Mobile Computer service’ link under “Facilities Booking” section of “School Services” within CityU-e-Portal.

• Click the ‘Check Status’ button from the menu bar in the upper screen.

• From the “My Notebook PC Reservation Account” panel, you can find information on reservation account, type of student, user class, priority point, number of reservations made, validity (from and to), status and the ‘Reservation History’ button. Click the button if you want to examine the reservation history. If you do so, the “Notebook PC History” window will be displayed showing the information on reservation date, reservation session, check out time, return time, status as well as point(s) added. Then, click the ‘Close’ button to close the window.

• From the “My Loan History” (including those without reservation) panel, you can find the information on reference number, session date, time, stock type, stock number, points(s) added, check out time, return and return status.

• Click the ‘Logout’ button from the menu bar in the CRS Web page to log out of the system and complete the process.

4. Procedures on Check out and Return

Check Out

• Place your ID card on the smart card reader (Mobile Computer Service Counter) staff may ask for further identification, if necessary. Enter your password through the keyboard at the Counter as informed by the voice message.
• Collect a notebook with its accessories and a hand-carrying bag.
• Check the notebook and its accessories quickly before leaving the Counter.
• Carry out the further inspection Return
• Turn on the computer in a Windows environment.
• Leave the Counter only after hearing the voice message “thank you for using our service”, indicates that the return record has been cleared by the counter staff.

If the return procedures are successfully completed, corresponding record will be cleared and electronic mail will be sent to you.

5. Advance Reservations

You can make reservations via the Internet, by personal computer or mobile telephone.

(a) Date of Start of acceptance of advance reservations: February 25, 2005 (tentative for instance).

(b) Reservation period: from 9:00 AM one month before the day of admission to 12 midnight two days before; advance reservations will not be accepted on the day before or on the day of the visit/event.

(c) Advance reservations will be accepted for about 20 percent of the seating capacity.

(d) No more than two advance reservations will be accepted from the same visitor for the same day.

6. Same-day Reservations

Through the same-day reservation service, you can make reservations for pavilions and certain other facilities after entering the site. To do so, hold your ticket up to the special reservation terminal installed on the ground of the pavilion or other facility and reserve the earliest time.

i. No more than one same-day reservation will be accepted from the same visitor.

ii. Visitors will be able to make another same-day reservation after the event.

Same-day reservation cannot be cancelled


**Short Answer Type Questions**

1. Define “Internet”.

2. In which year the Internet Protocol Suite was standardize.

3. What is Internet Fax?

4. What do you mean by “E-MAIL”?

5. Expand “CRS” and “GDS”.

**Long Answer Type Questions**

1. Write the importance of Internet Services in our daily life.

2. Explain in detail about the advantages and disadvantages of Internet.

3. How the Internet influence the Tourism industry.

4. Write a brief note on Google’s Search.

5. Describe the main features of “CRS”.
