ICT TEACHER HAND BOOK
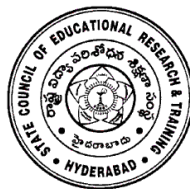
(Computer Education)

Class : VII

**State Council of Educational Research & Training,
Andhra Pradesh, Hyderabad.**

Foreword

Information Communication Technology (ICT) is one of the rapidly changing area in domain of learning. The main purpose of introducing ICT in schools is to help the students to make use of different ICT tools in enhancing their learning. The ICT education helps the students to face the challenges of 21st century and attain the millennium developmental goals in education. ICT also helps in reducing the digital divide among the rural and urban students.

As per the UNESCO "technology can be powerful education multiplier, but we must know how to use it. It is not enough to install technology into classrooms- it must be integrated into learning. Nothing can be substitute for a good teacher. It is not technology itself that empowers people- empowerment comes from skills and knowledge".

The teachers have become more critical than ever- the challenge is how to enable teachers not only to overcome the technology barriers but also to empower them to integrate appropriate technology into the teaching and learning process.

This handbook contains the required content in using the different tools and linking then with other subjects i.e. Mathematics, Science, Social Science and languages.

The SCERT, A.P, Hyderabad appreciates the efforts of the content experts and other team members in developing these ICT handbooks. We also acknowledge the C-DAC, Hyderabad for sharing their content related to software security in the preparation of these handbooks.

We hope, the teacher may find this handbook useful and transact it in the classroom to enhance the learning levels of the students and also infuse confidence among them as they were not left behind in using technology on par with other students who are studying in corporate schools.

Date: 24.05.2014

Director

SCERT AP Hyderabad

Class - VII

CONTENTS

Instructions to Teachers

The main purpose of introducing ICT in school syllabus is the help the children to understand how to make use of ICT tools in enhancing their learning.

- This material is meant for teacher only. Hence, the teacher should read, understand and add their experience while transacting the same to students.

- Prepare a year plan in advance keeping in view of the number of periods available under computer education.

- Read all the topics given in the handbook and prepare thoroughly before start teaching.

- Refer relevant material and consult the experts in case of any doubts.

- Before going to practices, the theory/ content should be explained to students then only demo and practice sessions should be taken up.

- All abbreviations must be thoroughly practised by the teacher before teaching.

- Update your knowledge in software and hardware in addition to the latest ICT tools. Use internet to update the knowledge in the given topics.

- Ensure all children get equal opportunities in practices.

- There will be two periods in a week for ICT subject, accordingly, teacher has to plan for transaction.

- Few projects are given at the end of the handbook. All students should do these projects. In addition to these, you may consult your colleagues and identify some more projects and assign to your students.

Assessment :

Children performance should be assessed at the end of each summative based on the indicators given below:

- Students are able to operate and use the ICT tools.

- Students are able to learn subject-wise content by using ICT tools.

There is no written test the children performance should be assessed through observation based on their participation and their ability in using the ICT tools in their learning.

Assessment Indicators

In addition to grading the qualitative Indicators are to be written in the students' progress report under Computer Education. The following are the indicators:

A1   Students can use all the tools of the ICT and can use them effectively in their learning.

A2   Students can use all the tools of the ICT and able to use them in their learning.

B1   Students are able to use the different tools of ICT and able to use most of them in their learning.

B2   Students are able to use the different tools of ICT and use some of them in their learning.

C1   Students are able to use the ICT tools and able to use few of them in their learning.

C2   Students are able to some of the ICT tools and try to use them in their learning.

D1   Students are able to identify the ICT tools and try to use a few of them in their learning.

D2   Students are able to identify some of the ICT tools but they are unable to use them in their learning.

Note: The computer education is linked with Work Education and made a single paper under other curricular subject areas. Hence, out of 50 marks, 25 marks each are to be allotted to Work Education and Computer Education.

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Introduction

Information and Communication Technology (ICT)

The field of Information and Communication Technology (ICT) is evolving at such a pace, where concepts, technology and terminology are continuously changing. ICT helps to bridge the digital divide among the students of various socio economic and other geographical barriers. Information and Communication Technology (ICT) is universally acknowledged as an important catalyst for social transformation and national progress.

Information and communication technology which is a by-product of science and technology explosion has revolutionized the world of learning. It is very essential to integrate the IT with education in order to have the advantage of ICT education.

Around the world, policymakers and educators have high hopes for ICT in the classroom as a springboard to students "21st century skills"—that combines the competencies of problem solving, critical thinking and managing their own learning is needed for success in the global workplace.

Information and Communication Technology (ICT) has dominated in every walks of life affecting right from bus & railway reservations, hotel industry, online money transfers , bill payments, in class room teaching and learning process, distance education, e-learning and film making etc..

The learning activities through ICT make a difference. Students are much more likely to learn to solve real-world problems and collaborate productively with their peers, if their learning activities are carefully designed to offer opportunities.

The aim of 21st Century education is being redefined. It is not only for employment generation but also to create a better world through understanding and development of human qualities.

In this context, the Government of India has announced 2010 – 2020 as the decade of Innovation. For which reasoning and critical thinking skills are essential. And these skills are to be inculcated at the school level for which ICT tools and techniques should be integrated into class room instructions right from the primary education level, so that the children develop the required skills. In this matter the web is an open source and the child should know how to grab it.

According to UNESCO education is important to achieve the Millennium Development goals; the following are reasons for which the ICT in education is a key aspect. i.e., '*More people would grow and develop; More people would learn and know; More people would be equal and just; More children would survive and live; More mothers would be healthier; More people would be able to combat illness; More people would think of the future; More people would work together.*"

The purpose of this material is to create awareness and practice among the student and teacher communities with a "diverse set of technological tools, resources used to communicate, create, disseminate, store, and manage information." These technologies include computers, internet, broadcasting technologies (radio and television) and telephony.

The relevant and contemporary content, lucid language, attractive illustrations and constructive exercises make the learning of computers more meaningful and enriching.

The journey of the student starts right from the ICT tools available in and around such as Radio, Tape recorder, TV, mobile and Computer. The students of primary level learn to draw by using MS & Tux Paint, learn to type small words, sentences, paragraphs, making documents by using typing tutor and MS Word. Moving away a little from these applications, the students can learn MS Excel for mathematical calculations & graphs and MS PowerPoint for making subject wise presentations. Further the students learn the concepts of Data Base Management System (DBMS), Internet, Networking and computer languages, maintaining the computers and its peripherals. The students are also introduced to learn about the Antivirus, Computer security and privacy and open source software technologies.

This material is useful in acquiring the concepts in a better way which make the student journey in learning more fruitful and engrossing. It has been developed in tune with the guidelines given by NCF-2005 and with various activity based methods. This will lay down a path to create interest to take up high level computer education courses in future and career.

The government had initiated Computer Education and Computer Aided Learning in selected Primary, Upper Primary and High Schools. A huge number of teachers in the State already had been trained to use computers in their regular class room transactions and a lot of computer aided learning material also has been developed and supplied to schools.

As part of Education Technology policy, the Education Department of Andhra Pradesh has been developing a large quantity of material in the form of Audio (Radio Programs under Vindam Nerchukundam), Audio and Video based programs (SIET and SAP Net) and Computer based programs(CDs) in collaboration with NGOs.

The Objectives of the ICT in School Education

- To inculcate the ICT skills among the students of government schools.

- To bridge the digital divide between rural and urban students.

- To create computer awareness and literacy among students and teachers.

- To provide ICT environment in the schools to make teaching-learning process an effective and interesting

- To train the teachers on computer syllabi, emerging information and communication technologies.

- To develop confidence in students to use computers in future.

- Student-centered pedagogies that promote personalized and powerful learning for students;

- Extending learning beyond the classroom in ways most relevant to knowledge-building and problem-solving in today's world; and

- ICT integration into pedagogy in ways that support learning goals. It is important to note that ICT use is not a goal in itself, but a tool to broaden and deepen learning opportunities.

Teaching Learning Process

The ICT material has been developed from class 1 to class 10. The teacher can act as a facilitator to help the students in their learning process. In every Unit the teacher explains the concepts and students do the activities/projects with ICT tools and finely able to integrate with their subjects.

Academic standards and Assessment

Academic Standards

- The students are able to operate and use the ICT tools

- Students are able to learn subject wise contents through the ICT tools

Assessment Process

At the end of the each chapter exercises and projects have been given. On the basis of the students performance appropriate grade may be awarded in summative assessment.

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Chapter - 1   What is ICT

Learning Objectives

In this chapter you will be able to understand about ;

✧ The Information and Communication Technology.

Information and Communications Technology (ICT)

Information and communication technology or (ICT) is often used as an extended synonym for information technol®ogy (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommun-ications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.

The phrase ICT had been used by academic researchers since the 1980s, but it became popular after it was used in a report to the UK government by Dennis Stevenson in 1997 and in the revised National Curriculum for England, Wales and Northern Ireland in 2000.

The term ICT is now also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. There are large economic incentives (huge cost savings due to elimination of the telephone network) to merge the audio-visual, building management and telephone network with the computer network system using a single unified system of cabling, signal distribution and management.

The term Info communications is used in some cases as a shorter form of information and communication(s) technology. In fact Info communications is the expansion of telecommunications with information processing and content handling functions on a common digital technology base. For a comparison of these and other terms.

Technological capacity of ICT

The world's technological capacity to store information grew from 2.6 (optimally compressed) Exabyte in 1986 to 15.8 in 1993, over 54.5 in 2000, and to 295 (optimally compressed) Exabyte in 2007. This is the informational equivalent to 404 billion CD-ROM in 2007. Piling them up would create a stack from the earth to the moon and a quarter of this distance beyond (with 1.2 mm thickness per CD). The world's technological capacity to receive information through one-way broadcast networks was 432 Exabyte of (optimally compressed) information in 1986, 715 (optimally compressed) Exabyte in 1993, 1.2 (optimally compressed) zettabytes in 2000, and 1.9 zettabytes in 2007. The world's effective capacity to exchange information through two-way telecommunication networks was 281 petabytes of (optimally compressed) information in 1986, 471 petabytes in 1993, 2.2 (optimally compressed) Exabyte in 2000, and 65 (optimally compressed) Exabyte in 2007. The world's technological capacity to compute information with humanly guided general-purpose computers grew from 3.0×10^8 MIPS in 1986, to 6.4×10^{12} MIPS in 2007

Mobile Hub – the next version of ICT

The Mobile Web refers to access to the world wide web, i.e. the use of browser-based Internet services, from a handheld mobile device, such as a Smartphone, a feature phone or a tablet computer, connected to a mobile network or other wireless network.

Traditionally, access to the Web has been via fixed-line services on large-screen laptops and desktop computers. However, the Web is becoming more accessible by portable and wireless devices. An early 2010 ITU (International Telecommunication Union) report said that with the current growth rates, web access by people on the go — via laptops and smart mobile devices – is likely to exceed web access from desktop computers within the next five years. The shift to mobile Web access has been accelerating with the rise since 2007 of larger multi touch smart phones, and of multi touch tablet computers since 2010. Both platforms provide better Internet access, screens, and mobile browsers- or application-based user Web experiences than previous generations of mobile devices have done. Web designers may work separately on such pages, or pages may be automatically converted as in Mobile Wikipedia.

The distinction between mobile Web applications and native applications is anticipated to become increasingly blurred, as mobile browsers gain direct access to the hardware of mobile devices (including accelerometers and GPS chips), and the speed and abilities of browser-based applications improve. Persistent storage and access to sophisticated user interface graphics functions may further reduce the need for the development of platform-specific native applications.

Mobile Web access today still suffers from inter-operability and usability problems. Interoperability issues stem from the platform fragmentation of mobile devices, mobile operating systems, and browsers. Usability problems are centered around the small physical size of the mobile phone form factors (limits on display resolution and user input/operating). Despite these shortcomings, many mobile developers choose to create apps using Mobile Web. A June 2011 research on mobile development found Mobile Web the third most used platform, trailing Android and IOS.

Summary

In this chapter you have learnt about the ICT and its next version.

Teacher Activity

1. Display the available ICT devices to the students at the school.

Key Words

✧ Andriod

✧ Chips

✧ Wikipedia

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Types of Microprocessors

Learning Objectives

In this chapter you will be able to understand about ;

✧ The various models of Microprocessors.

Introduction

By understanding about the Microprocessors you will be able to judge the best computer you would like to purchase or work with.

Microprocessor

A microprocessor incorporates the functions of a computer's central processing unit (CPU) on a single integrated circuit (IC), or at most a few integrated circuits. It is a multipurpose, programmable device that accepts digital data as input, processes it according to instructions stored in its memory, and provides results as output. It is an example of sequential digital logic, as it has internal memory. Microprocessors operate on numbers and symbols represented in the binary numeral system.

The advent of low-cost computers on integrated circuits has transformed modern society. General-purpose microprocessors in personal computers are used for computation, text editing, multimedia display, and communication over the Internet. Many more microprocessors are part of embedded systems, providing digital control over myriad objects from appliances to automobiles to cellular phones and industrial process control.
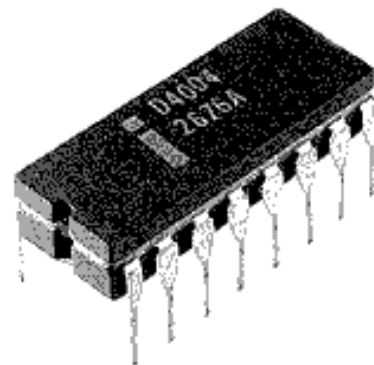
Microprocessor

Origins

During the 1960s, computer processors were constructed out of small and medium-scale IC's—each containing from tens to a few hundred transistors. These were placed and soldered onto printed circuit boards, and often multiple boards were interconnected in a

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chassis. The large number of discreet logic gates used more electrical power—and therefore produced more heat—than a more integrated design with fewer ICs. The distance that signals had to travel between ICs on the boards limited a computer's operating speed.

In the NASA Apollo space missions to the moon in the 1960s and 1970s, all onboard computations for primary guidance, navigation and control were provided by a small custom processor called "The Apollo Guidance Computer". It used wire wrap circuit boards whose only logic elements were three-input NOR gates.

The integration of a whole CPU onto a single chip or on a few chips greatly reduced the cost of processing power. The integrated circuit processor was produced in large numbers by highly automated processes, so unit cost was low. Single-chip processors increase reliability as there are many fewer electrical connections to fail. As microprocessor designs get faster, the cost of manufacturing a chip (with smaller components built on a semiconductor chip the same size) generally stays the same.

Microprocessors integrated into one or a few large-scale ICs the architectures that had previously been implemented using many medium- and small-scale integrated circuits. Continued increases in microprocessor capacity have rendered other forms of computers almost completely obsolete (see history of computing hardware), with one or more microprocessors used in everything from the smallest embedded systems and handheld devices to the largest mainframes and supercomputers.

The first microprocessors emerged in the early 1970s and were used for electronic calculators, using binary-coded decimal (BCD) arithmetic on 4-bit words. Other embedded uses of 4-bit and 8-bit microprocessors, such as terminals, printers, various kinds of automation etc., followed soon after. Affordable 8-bit microprocessors with 16-bit addressing also led to the first general-purpose microcomputers from the mid-1970s on.

Since the early 1970s, the increase in capacity of microprocessors has followed Moore's law; this originally suggested that the number of components that can be fitted onto a chip doubles every year. With present technology, it is actually every two years, and as such Moore later changed the period to two years.

Embedded applications

Thousands of items that were traditionally not computer-related include microprocessors. These include large and small household appliances, cars (and their accessory equipment units), car keys, tools and test instruments, toys, light switches/dimmers and electrical circuit breakers, smoke alarms, battery packs, and hi-fi audio/visual components (from DVD players to phonograph turntables). Such products as cellular telephones, DVD video system and HDTV broadcast systems fundamentally require consumer devices with powerful, low-cost, microprocessors. Increasingly stringent pollution control standards effectively require automobile manufacturers to use microprocessor engine management systems, to allow optimal control of emissions over widely varying operating conditions of an automobile. Non-programmable controls would require complex, bulky, or costly implementation to achieve the results possible with a microprocessor.

A microprocessor control program (embedded software) can be easily tailored to different needs of a product line, allowing upgrades in performance with minimal redesign of the product. Different features can be implemented in different models of a product line at negligible production cost.

Microprocessor control of a system can provide control strategies that would be impractical to implement using electromechanical controls or purpose-built electronic controls. For example, an engine control system in an automobile can adjust ignition timing based on engine speed, load on the engine, ambient temperature, and any observed tendency for knocking—allowing an automobile to operate on a range of fuel grades.

Types of Computers

Personal Computers (PC) :
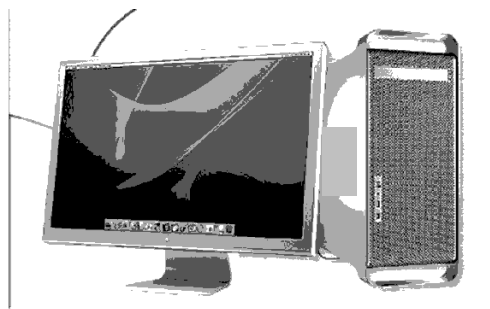
Mainframe : Computers with large Hard Drives, lots of Memory (RAM), multiple CPU's running together, does lots of computing depending upon the speed of processors used and memory used.
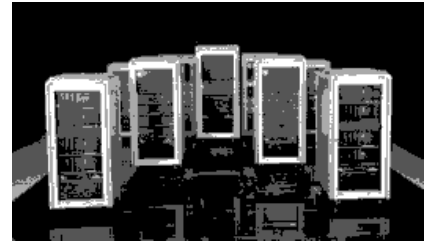
Super Computer : A computer with lots of processors, ALUs (Arithmetic logic unit), Memory (RAM), etc. Usually in scientific research work. Capability of 14,000 micro computers.

Laptop: Compact, portable version of a PC. Usually in a notebook shape.

Micro Computer: A very small computer, usually used in cameras. A **microcomputer** (sometimes shortened to **micro**) is a computer with a microprocessor as its central processing unit.

Another general characteristic of these computers is that they occupy physically small amounts of space when compared to mainframe and minicomputers.

PDA: Personal Digital Assistant or Palmtop

A **Personal Digital Assistant (PDA)** is a handheld computer, but has become much more versatile over the years. PDAs are also known as **small computers** or **palmtop computers**. PDAs have many uses: calculation, use as a clock and calendar, accessing the Internet, sending and receiving E-mails, video recording, typewriting and word processing, used as an address book, making and writing on spreadsheets, scanning bar codes, use as a radio or stereo, playing computer games, recording survey responses, and Global Positioning

System (GPS). Newer PDAs also have both color screens and audio capabilities, enabling them to be used as mobile phones (smart phones), web browsers, or portable media players. Many PDAs can access the Internet, intranets or extranets via Wi-Fi, or Wireless Wide-Area Networks (WWANs). Many PDAs employ touch screen technology.

Analog, Digital & Hybrid Computers
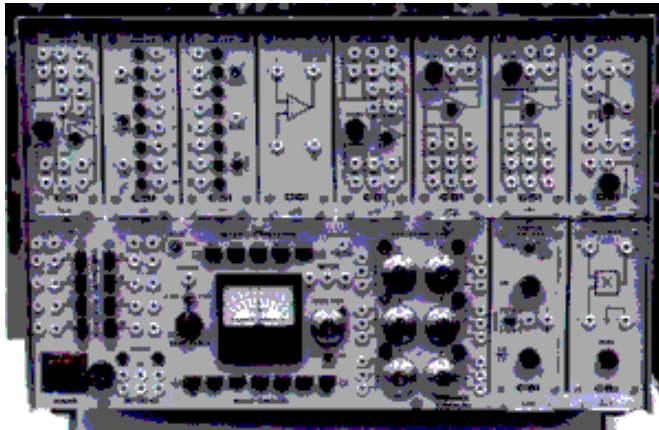
Analog: They calculate physical quantities, eg. Ammeter, voltage meter, etc. They are old, out dated computers. An analog computer is a device that performs computations using continuous physical variables which are analogs of the actual items being computed. Analog computers might, for example, use the continuous rotation of gears or the angular movements of mechanical or electromechanical parts to perform computations.

Digital: That uses binary digits for processing. eg. Personal Computers. A computer that stores data in terms of digits (numbers) and proceeds in discrete steps from one state to the next. The states of a digital computer typically involve binary digits which may take the form of the presence or absence of magnetic markers in a storage medium on-off
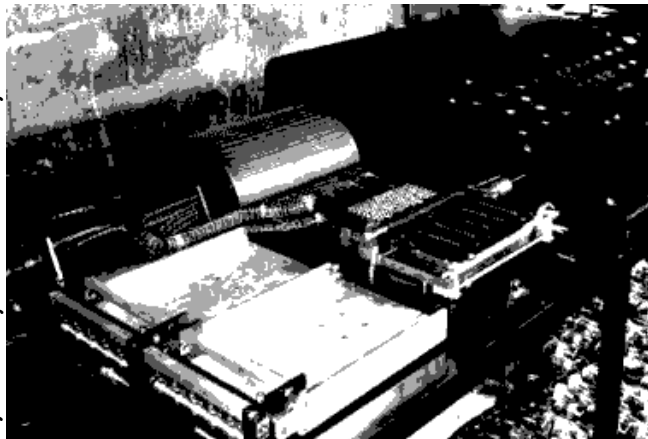
switches or relays. In digital computers, even letters, words and whole texts are represented digitally. Unlike analog computers, digital computers can only approximate a continuum by assigning large numbers of digit to a state description and by proceeding in arbitrarily small steps.

Hybrid: They comprise the best of capabilities of digital and analog computers. Hybrid computers are computers that comprise features of <u>analog computers</u> and <u>digital computers</u>. The digital component normally serves as the controller and provides <u>logical operations</u>, while the analog component normally serves as a solver of <u>differential equations</u>.
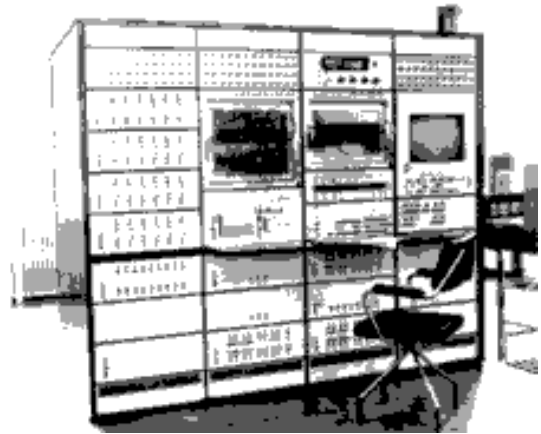
Summary

In this chapter you have learnt the history of Microprocessor.

Teacher Activity

Collect the colour pictures of various computers and show them to students.

Student Activity

1. Collection of varios types of computer pictures from news papers & magagines.

2. Category wise album preparation.

Key Words

✧ Mainframe

✧ Super Computer

✧ PDA (Personal Digital Assistant)

✧ Analog, Hybrid

✳✳✳✳✳

Learning Objectives

In this chapter you will be able to understand about ;

✦ Understand what Modem is?

✦ History of Modem,

✦ Types of Modems.

Introduction

By understand about the modem you will gain knowledge on how computers are connected with other computer by Internet.

A modem (modulator-demodulator) is a device that modulates an analog carrier signal to encode digital information, and also demodulates such a carrier signal to decode the transmitted information. The goal is to produce a signal that can be transmitted easily and decoded to reproduce the original digital data. Modems can be used over any means of transmitting analog signals, from light emitting diodes to radio. The most familiar example is a voice band modem that turns the digital data of a personal computer into modulated electrical signals in the voice frequency range of a telephone channel. These signals can be transmitted over telephone lines and demodulated by another modem at the receiver side to recover the digital data.

Modems are generally classified by the amount of data they can send in a given unit of time, usually expressed in bits per second (bit/s, or bps), or bytes per second (b/s). Modems can alternatively be classified by their symbol rate, measured in baud. The baud unit denotes symbols per second, or the number of times per second the modem sends a new signal. For example, the ITU V.21 standard used audio frequency shift keying with two possible frequencies corresponding to two distinct symbols (or one bit per symbol), to carry 300 bits per second using 300 baud. By contrast, the original ITU V.22 standard, which was able to transmit and receive four distinct
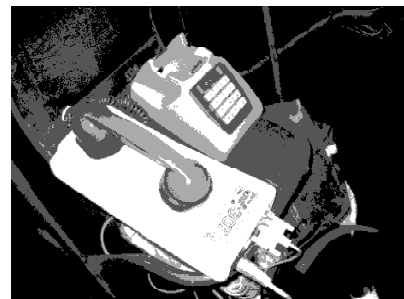
symbols (two bits per symbol), handled 1,200 bit/s by sending 600 symbols per second (600 baud) using phase shift keying.

History

News wire services in 1920s used multiplex devices that were modems by definition, but the modem function was incidental to the multiplexing function, so they are not commonly included in the history of modems.

Modems grew out of the need to connect teleprinters over ordinary phone lines instead of more expensive leased lines which had previously been used for current loop–based teleprinters and automated telegraphs. In 1942, IBM adapted this technology to their unit record equipment and were able to transmit punched cards at 25 bits/second.[citation needed]

Mass-produced modems in the United States began as part of the SAGE air-defense system in 1958 (the year the word modem was first used), connecting terminals at various airbases, radar sites, and command-and-control centers to the SAGE director centers scattered around the U.S. and Canada. SAGE modems were described by AT&T's Bell Labs as conforming to their newly published Bell 101 dataset standard. While they ran on dedicated telephone lines, the devices at each end were no different from commercial acoustically coupled Bell 101, 110 baud modems.

In the summer of 1960 the name Data-Phone was introduced to replace the earlier term digital subset. The 202 Data-Phone was a half-duplex asynchronous service that was marketed extensively in late 1960. In 1962 the 201A and 201B Data-Phones were introduced. They were synchronous modems using two-bit-per-baud phase-shift keying (PSK). The 201A operated half-duplex at 2,000 bit/s over normal phone lines, while the 201B provided full duplex 2,400 bit/s service on four-wire leased lines, the send and receive channels running on their own set of two wires each.

The famous Bell 103A dataset standard was also introduced by AT&T in 1962. It provided full-duplex service at 300 bit/s over normal phone lines. Frequency-shift keying was used with the call originator transmitting at 1,070 or 1,270 Hz and the answering modem transmitting at 2,025 or 2,225 Hz. The readily available 103A2 gave an important boost to the use of remote low-speed terminals such as the KSR33, the ASR33, and the IBM 2741. AT&T reduced modem costs by introducing the originate-only 113D and the answer-only 113B/C modems.

The Smart modem and the rise of BBSes

The next major advance in modems was the Hayes Smart modem, introduced in 1981. The Smart modem was an otherwise standard 103A 300-bit/s modem, but it was attached to a small controller that let the computer send it commands. The command set included instructions for picking up and hanging up the phone, dialing numbers, and answering calls. The basic Hayes command set remains the basis for computer control of most modern modems.

Prior to the Hayes Smart modem, dial-up modems almost universally required a two-step process to activate a connection. The user had to manually dial the remote number on a standard phone handset and then plug the handset into an acoustic coupler. Hardware add-ons, known simply as dialers, were used in special circumstances, and generally operated by emulating someone dialing a handset.

With the Smart modem, the computer could dial the phone directly by sending the modem a command, thus eliminating the need for an associated phone instrument for dialing and the need for an acoustic coupler. The Smart modem instead plugged directly into the phone line, greatly simplifying setup and operation. Terminal programs that maintained lists of phone numbers and sent the dialing commands became common.

The Smart modem and its clones also aided the spread of bulletin board systems (BBSs) because it was the first low-cost modem that could answer calls. Modems had previously been typically either the call-only, acoustically coupled models used on the client side, or the much more expensive, answer-only models used on the server side.

Almost all modern modems can inter-operate with fax machines. Digital faxes, introduced in the 1980s, are simply a particular image format sent over a high-speed (commonly 14.4 kbit/s) modem. Software running on the host computer can convert any image into fax format, which can then be sent using the modem. Such software was at one time an add-on, but has since become largely universal.

Soft modem

A Win modem or soft modem is a stripped-down modem that replaces tasks traditionally handled in hardware with software. In this case the modem is a simple interface
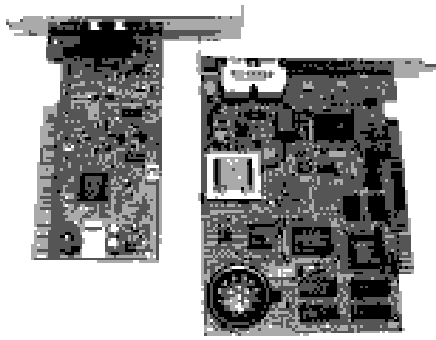
designed to act as a digital-to-analog and an analog-to-digital converter. Soft modems are cheaper than traditional modems because they have fewer hardware components. However, the software generating and interpreting the modem tones to be sent to the soft modem uses many system resources. For online gaming, this can be a real concern. Another problem is the lack of cross-platform compatibility, meaning that non-Windows operating systems (such as Linux) often do not have an equivalent driver to operate the modem.

Broadband

ADSL (Asymmetric Digital Subscriber Line) modems, a more recent development, are not limited to the telephone's voice band audio frequencies. Some ADSL modems use coded orthogonal frequency division modulation (DMT, for Discrete Multi Tone; also called COFDM, for digital TV in much of the world).

DSL modems utilize a property that standard twisted-pair telephone cable can be used for short distances to carry much higher frequency signals than what the cable is actually rated to handle. This is also why DSL modems have a distance limitation. Standard voice and slower 56 kilobit modem communications are possible over many kilometers of cable, but the higher frequencies used by DSL are attenuated and DSL's maximum performance gradually declines as the cable length increases.

Cable modems use a range of frequencies originally intended to carry RF television channels, and can coexist on the same single cable alongside standard RF channel signals. Multiple cable modems attached to a single cable can use the same frequency band, using a low-level media access protocol to allow them to work together within the same channel. Typically, uplink and downlink signals are kept separate using frequency division multiple access.

For a single-cable distribution system, the return signals from customers require special bidirectional amplifiers or reverse path amplifiers that can send specific customer frequency bands upstream to the cable plant amongst the other downstream frequency bands.

New types of broadband modems are beginning to appear, such as double way[disambiguation needed] satellite and power line modems.

Broadband modems should still be classified as modems, since they use complex waveforms to carry digital data. They are more advanced devices than traditional dial-up modems as they are capable of modulating/demodulating hundreds of channels simultaneously.

Many broadband modems include the functions of a router, such as Ethernet and WiFi, and other features such as DHCP, NAT and firewalls.

When broadband technology was introduced, networking and routers were unfamiliar to consumers. However, many people knew what a modem was because Internet access was still commonly done through dial-up. Due to this familiarity, companies started selling broadband modems using the familiar term "modem", rather than vaguer ones such as "adapter," "transceiver," or "bridge."
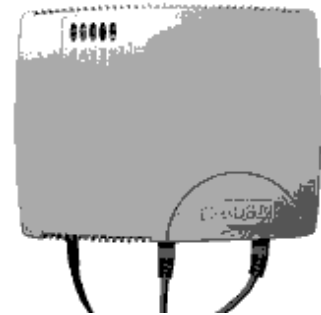
Summary

In this chapter you have learnt about;

✧ Modems ✧ History of Modems ✧ Types of Modems.

Teacher Activity

1. Collection & showing of various types of modems (used or new)

2. Demonstration of connection a modem.

Student Activity

Observe and record the types of modems used in the market.

Key Words

✧ Modem ✧ Data-Phone ✧ Smart Modem

✧ Soft Modem ✧ Broadband ✧ DSL

✧ ADSL

✶✶✶✶✶

Chapter - 4   Multimedia and its uses

Learning objectives

In this chapter you will be able to understand about;

     ✧ Multimedia

     ✧ Usage of Multimedia in various sectors.

Introduction

By understanding about Multimedia you can use it for your learning and entertainment purpose.

Multimedia

Multimedia is media and content that uses a combination of different content forms. This contrasts with media that use only rudimentary computer displays such as text-only or traditional forms of printed or hand-produced material. Multimedia includes a combination of text, audio, still images, animation, video, or interactivity content forms.

Examples of individual content forms combined in multimedia

Text   Audio   Still Images

Animation   Video Footage   Interactivity

Multimedia is usually recorded and played, displayed, or accessed by information content processing devices, such as computerized and electronic devices, but can also be part of a live performance. Multimedia devices are electronic media devices used to store and experience multimedia content. Multimedia is distinguished from mixed media in fine art; by including audio, for example, it has a broader scope. The term "rich media" is synonymous for interactive multimedia. Hypermedia can be considered one particular multimedia application.

Categorization of multimedia

Multimedia may be broadly divided into linear and non-linear categories. Linear active content progresses often without any navigational control for the viewer such as a cinema presentation. Non-linear uses interactivity to control progress as with a game or self-paced computer based training. Hypermedia is an example of non-linear content.

Multimedia presentations can be live or recorded. A recorded presentation may allow interactivity via a navigation system. A live multimedia presentation may allow interactivity via an interaction with the presenter or performer.

Major characteristics of multimedia

Multimedia presentations may be viewed by person on stage, projected, transmitted, or played locally with a media player. A broadcast may be a live or recorded multimedia presentation. Broadcasts and recordings can be either analog or digital electronic media technology. Digital online multimedia may be downloaded or streamed. Streaming multimedia may be live or on-demand.

Multimedia games and simulations may be used in a physical environment with special effects, with multiple users in an online network, or locally with an offline computer, game system, or simulator.

The various formats of technological or digital multimedia may be intended to enhance the users' experience, for example to make it easier and faster to convey information Or in entertainment or art, to transcend everyday experience.

Enhanced levels of interactivity are made possible by combining multiple forms of media content. Online multimedia is increasingly becoming object-oriented and data-driven, enabling applications with collaborative end-user innovation and personalization on multiple forms of content over time. Examples of these range from multiple forms of content on Web sites like photo galleries with both images (pictures) and title (text) user-updated, to simulations whose co-efficient, events, illustrations, animations or videos are modifiable, allowing the multimedia "experience" to be altered without reprogramming. In
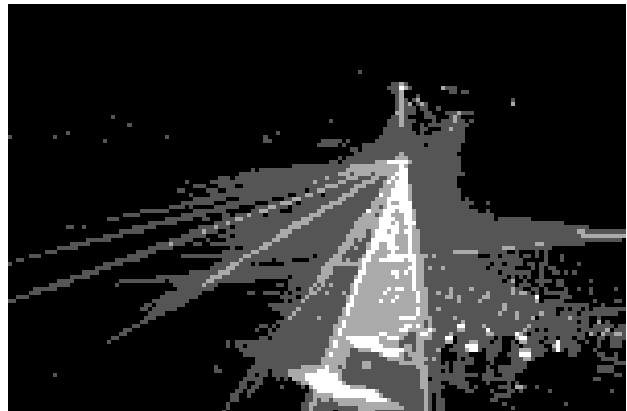
addition to seeing and hearing, Haptic technology enables virtual objects to be felt. Emerging technology involving illusions of taste and smell may also enhance the multimedia experience.

Terminology

History of the term

The term multimedia was coined by singer and artist Bob Goldstein (later 'Bobb Goldsteinn') to promote the July 1966 opening of his "LightWorks at L'Oursin" show at Southampton, Long Island. Goldstein was perhaps aware of a British artist named Dick Higgins, who had two years previously discussed a new approach to art-making he called "intermedia."

On August 10, 1966, Richard Albarino of Variety borrowed the terminology, reporting: "Brainchild of song scribe-comic Bob ('Washington Square') Goldstein, the 'Light works' is the latest multi-media music-cum-visuals to debut as discothèque fare." Two years later, in 1968, the term "multimedia" was re-appropriated to describe the work of a political consultant, David Sawyer, the husband of Iris Sawyer—one of Goldstein's producers at L'Oursin.

In the intervening forty years, the word has taken on different meanings. In the late 1970s, the term referred to presentations consisting of multi-projector slide shows timed to an audio track. However, by the 1990s 'multimedia' took on its current meaning.

In the 1993 first edition of McGraw-Hill's Multimedia: Making It Work, Tay Vaughan declared "Multimedia is any combination of text, graphic art, sound, animation, and video that is delivered by computer. When you allow the user – the viewer of the project – to control what and when these elements are delivered, it is interactive multimedia. When you provide a structure of linked elements through which the user can navigate, interactive multimedia becomes hypermedia."

The German language society, Gesellschaft für deutsche Sprache, decided to recognize the word's significance and ubiquitousness in the 1990s by awarding it the title of 'Word of the Year' in 1995. The institute summed up its rationale by stating "[Multimedia] has become a central word in the wonderful new media world"

In common usage, multimedia refers to an electronically delivered combination of media including video, still images, audio, text in such a way that can be accessed interactively. Much of the content on the web today falls within this definition as understood by millions. Some computers which were marketed in the 1990s were called "multimedia" computers because they incorporated a CD-ROM drive, which allowed for the delivery of several hundred megabytes of video, picture, and audio data. That era saw also a boost in the production of educational multimedia application CD-ROMs.

Usage / Application

Multimedia finds its application in various areas including, but not limited to, advertisements, art, education, entertainment, engineering, medicine, mathematics, business, scientific research and spatial temporal applications. Several examples are as follows:

Creative industries

Creative industries use multimedia for a variety of purposes ranging from fine arts, to entertainment, to commercial art, to journalism, to media and software services provided for any of the industries listed below. An individual multimedia designer may cover the spectrum throughout their career. Request for their skills range from technical, to analytical, to creative.

Commercial uses

Much of the electronic old and new media used by commercial artists is multimedia. Exciting presentations are used to grab and keep attention in advertising. Business to business, and interoffice communications are often developed by creative services firms for advanced multimedia presentations beyond simple slide shows to sell ideas or liven-up training. Commercial multimedia developers

may be hired to design for governmental services and nonprofit services applications as well.

Entertainment and fine arts

In addition, multimedia is heavily used in the entertainment industry, especially to develop special effects in movies and animations. Multimedia games are a popular pastime and are software programs available either as CD-ROMs or online. Some video games also use multimedia features. Multimedia applications that allow users to actively participate instead of just sitting by as passive recipients of information are called Interactive Multimedia. In the Arts there are multimedia artists, whose minds are able to blend techniques using different media that in some way incorporates interaction with the viewer. One of the most relevant could be Peter Greenaway who is melding Cinema with Opera and all sorts of digital media. Another approach entails the creation of multimedia that can be displayed in a traditional fine arts arena, such as an art gallery. Although multimedia display material may be volatile, the survivability of the content is as strong as any traditional media. Digital recording material may be just as durable and infinitely reproducible with perfect copies every time.

Education

In Education, multimedia is used to produce computer-based training courses (popularly called CBTs) IMLOs (Interactive multimedia learning objects) and reference books like encyclopedia and almanacs. A CBT lets the user go through a series of presentations, text about a particular topic, and associated illustrations in various information formats. Edutainment is the combination of education with entertainment, especially multimedia entertainment.

Learning theory in the past decade has expanded dramatically because of the introduction of multimedia. Several lines of research have evolved (e.g. Cognitive load, Multimedia learning, and the list goes on). The possibilities for learning and instruction are nearly endless.

The idea of media convergence is also becoming a major factor in education, particularly higher education. Defined as separate technologies such as voice (and

telephony features), data (and productivity applications) and video that now share resources and interact with each other, synergistically creating new efficiencies, media convergence is rapidly changing the curriculum in universities all over the world. Likewise, it is changing the availability, or lack thereof, of jobs requiring this savvy technological skill.

The English education in middle school in China is well invested and assisted with various equipments. In contrast, the original objective has not been achieved at the desired effect. The government, schools, families, and students spend a lot of time working on improving scores, but hardly gain practical skills. English education today has gone into the vicious circle. Educators need to consider how to perfect the education system to improve students' practical ability of English. Therefore an efficient way should be used to make the class vivid. Multimedia teaching will bring students into a class where they can interact with the teacher and the subject. Multimedia teaching is more intuitive than old ways; teachers can simulate situations in real life. In many circumstances teachers don't have to be there, students will learn by themselves in the class. More importantly, teachers will have more approaches to stimulating students' passion of learning.

Summary

In this chapter you have learnt about the Multimedia and its utility in Education and various platforms.

Teacher Activity

1. Collection and maintenance of Multimedia CD's library.

2. Demonstration of Multimedia CD's duly explains the components of video, text, pictures, audio etc.,

Student Activity

1. Name any five Multimedia CD's available in School.

2. Take a Multimedia CD and categorize the components i.e., video, audio, pictures, text etc.,

Key Words

- Multimedia
- Interactivity
- Combination
- CBTs
- IMLOs
- Encyclopedia

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Chapter - 5   Legal and ethical aspects of information technology

Learning Objectives

In this chapter you will be able to understand about ;

✧ Understand Internet ethics.

✧ Internet ethics for Children

Internet ethics to children means it is one easy way to think about behaviour for using internet. Children should be aware that they should be honest, respect the rights and property of others on Internet.

Accept that the Internet is not a free zone

The World Wide Web is a place where the values in the broadest sense must take part in determining content and services. This is a classification that Internet is not something apart from universal culture, but increasingly a basic component of it.

Sensitivity to National and Local Cultures
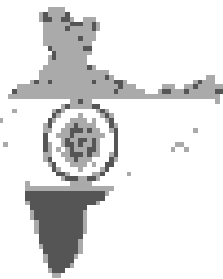
It belongs to all there is no barrier of national and local cultures. It cannot be subject to one set of values like local TV channel, local newspaper, we have to accommodate multiplicity of usage. Children should follow some rules while they are on internet, there are some do's and do not's on internet.

While Doing School Work

Internet must be used to gain knowledge and to do school work. We must not copy the information without consent of original owner and sometimes the copyright issues may arise and will be punished.

While using e-mail and Chatting over Internet

Internet must be used for communication with family, friends and known members. Children should not use Internet chatting or communicating with strangers and also forwarding the e-mails from

strangers. Sitting long hours on Internet continuously might be costly affair to your family as Internet resources and the Internet bandwidth available on chargeable basis.

Pretending to be someone else

Children must not use Internet to pretend as someone else & fool others by hiding your identity. Similarly do not want others to pretend as someone else by hiding their true identity & communicate.

Using Bad Language

Children must not use rude or bad language while using email, chatting, blogging and social networking. We need to respect others views and should not criticize anyone on Internet.

Hide Personal Information

Children should hide their personal information from strangers like home address, Telephone numbers, hobbies and should not give personal photographs etc. these might be the resources for strangers to misuse and can be shared to others without your concern.

While Downloading

Internet is used to learn about the music, video and games by listening to it, and learning how to play games. We must not use it for downloading them or share the copyrighted material. The same should be taught to children and they must be aware about the importance of copyrights and issues of copyright.

Tips for Internet Usage

Do's :

- Do use the Internet to help your knowledge and to do a school work

- Do use the Internet for communication with family and friends

- Do use the Internet for listening the music, video, learning how to play instruments etc.

- Do use the Internet to gain the knowledge

Don't :

- Don't use the Internet to copy the information and say it is your own

- Don't use the Internet to communicate with strangers

- Don't use the Internet to make strangers as your friends

- Don't pretend someone else and try to fool others

- Don't waste the resources like people, capacity and computers

- Don't destroy the integrity of computer-based information

- Don't disrupt the intended use of internet

- Don't give personal information like address, names, passwords etc.

Summary

In this chapter you have learnt about the ethics of Internet.

Teacher Activity

1. Teacher should plan a role play an do's and don'ts.

2. Ensuring participation of all the students in roleplay.

3. Observe & record the students use of internet.

4. Organise competition like essay writing, Eloution, Puzzle game etc.,

Student Activity

1. Should participate in roleplay, essay writing, and the competition.

2. Observation & recording of websites mentioned in news papers & T.V.

Key Words

✧ Free Zone   ✧ Internet ethics

✧ Copy right   ✧ Identity

✵✵✵✵✵

# Chapter - 6   Organizing Files and Folders

Learning Objectives

In this chapter you will be able to understand about ;

- ✦ Organise data using folders

- ✦ Find files and folders

- ✦ Create shortcuts

Concept of Files and Folders

You would have already learnt about the concepts of files and folders. Here is a small recap. Information in a computer is stored in the form of files. These files can be arranged in an organised manner with the help of folders.
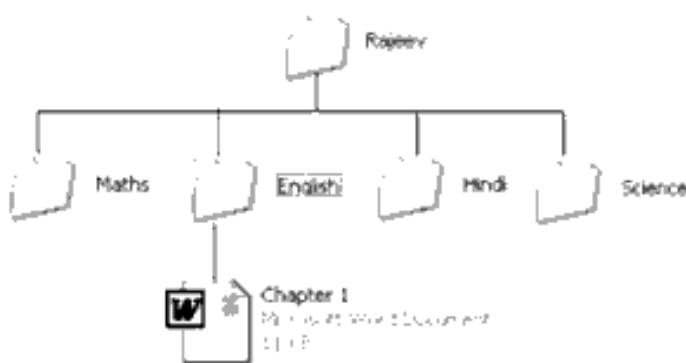
A folder can contain files and other related folders. Folders created within a folder are called subfolders.

For example, you can create a folder by your name and have subfolders for different subjects. Within each subject folder, you can have files of that particular subject.

Finding Files and Folders

There are times when you require certain files that you had created long time back. You may not even remember where you saved those files in the hard disk. For such situations, you can use the Search option provided by Windows XP.

The *Search* option in Windows XP helps you to locate files and folders in your computer.

To open the Search pane,

1.   Click the *Search* icon 🔍 Search on the toolbar.

The Search Companion pane is displayed

2. Click the All files and folders option

3. Specify the name of the file or folder you want to search

4. Select the computer or drive or folder where the search has to happen.

5. Click the Search button.

    The results are displayed in the right pane

Creating Shortcuts

Shortcuts are the easy and quick way to open applications without using the *Start* menu. You can create shortcuts for any number of programs and place them on the desktop or the quick launch bar for easy use. A shortcut is actually a link to the physical location where the application resides.

Shortcuts for Applications

You can create shortcuts for frequently used applications and place them on the desktop.

Whenever you want to open the application, you can simply double-click the shortcut instead of opening it using the *Start* menu. The shortcut for the application will always be available on the desktop.

To create shortcut for applications,

1. Click the *Start* button on the taskbar.

2. Choose the *All Programs* option.

3. Select and right-click the application for which you want a shortcut.

4. Click the *Create Shortcut* option.

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The shortcut for the application will be placed on the *All Programs* menu list. Drag the shortcut to the desktop. The arrow in the icon indicates that it is a shortcut.

Shortcuts for Documents or Files

As you can create shortcuts for applications, you can also create shortcuts for documents and other files. In Windows XP, you can create shortcuts for a file, program, folder, printer or a computer.

To create shortcut for documents or files,

1. Open My Computer.

2. Double-click the drive where the file is placed.

3. Select and right-click the file for which you want a shortcut.

4. Choose the *Send to* option.

A submenu is displayed.

5. Click the *Desktop (create shortcut)* option.

Startup Programs

Startup programs are programs that open automatically each time you start Windows. To make a program start automatically on your system, it should be added to the Startup folder.

The Startup folder displays a menu list of information about the programs added to it.

For example, to check your mails as soon as you start your computer, you can create a shortcut for Microsoft Outlook in the Startup folder.

To add a program to the *Startup* menu,

1. Create a shortcut for the program.

2. Drag the shortcut to the *Startup* option on the *All Programs* submenu.

Summary

The information in the computer is stored in the form of files. Files can be arranged in an organised manner by using folders.

The *Search* option in used to find files and folders.

Shortcuts are the easy and quick way to open applications without using the *Start* menu.

Teacher Activity

1.   Show casing the creation of folders & files.

2.   Use of folders & Files.

3.   Creating of Short Cuts.

Student Activity

1.   Creating folders & files.

2.   Use of folders & files.

Test Your Knowledge

1.   _____ is used to arrange files in an organised manner.

2.   The _____ option is used to search a file or folder.

3.   _____ contains the link to the physical location where the application resides.

4.   The _____ option in Windows XP helps you to locate files and folders in your computer.

Key Words

✦ Pane   ✦ Folder   ✦ Sub-Folder

✦ Shortcut   ✦ Submenu   ✦ Right-Click

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Chapter - 7   Working with Folders

Learning objectives

In this chapter you will be able to understand about ;

✧ Rename files and folders

✧ Copy and move files and folders

✧ Select multiple files and folders

✧ Delete files and folders

✧ Empty the Recycle Bin

✧ Restore a file from the Recycle

Introduction

Windows allows you to change file names. Windows also allows you to copy, move and delete files and folders. Such actions performed on files are called file operations. These actions can be performed on folders also. All these operations can be performed by using either *My Computer* or *Windows Explorer*.

Renaming Files and Folders

Changing the names of files or folders is called renaming. In the previous class, you had created a text file having your friends' names and addresses. The name of the file is "New Text Document". Suppose you want the file name to be changed to "Addresses".

To rename a file

1. Select the "New Text Document" file.

2. Click the *File* menu.

3. Click the *Rename* option

The file name "New Text Document" is highlighted

4. Type the name "Addresses".

5. Press the *Enter* key.

The file name changes to "Addresses".

Alternatively,

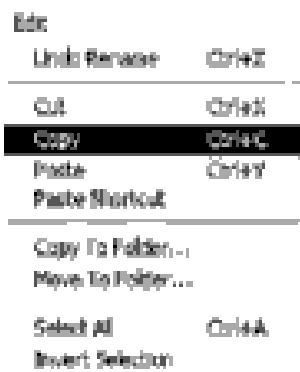1. Right-click the file.

A pop-up menu appears.

1. Click the *Rename* option as shown

Suppose you now want to change the name of your folder to "MyFolder". Renaming a folder is similar to renaming a file.

You can use any of the above methods to rename the folder.

Copying a File or Folder

You now know how to create a folder and then, create a file in it. Suppose you want to make a copy of the text file "Addresses" on the desktop.

You can copy files and folder using *My Computer* or *Windows Explorer*. To copy the file by using *Windows Explorer*:

1. Open the *Windows Explorer* window.

2. Select the file "Addresses".

3. Click the *Edit* menu.

4. Click the *Copy* option

5. Select the *Desktop* icon in the left pane of the window.

6. Click the *Edit* menu.

7. Click the *Paste* option.

Your file has now been copied to the desktop.

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Moving Files and Folders

Your folder is currently in the C: drive. Suppose you want it to be moved to the *My Documents* folder.

To move files or folders by using *Windows Explorer*:

1. Select the "My Folder" folder.

2. Click the *Edit* Menu.

3. Click the *Cut* option.

4. Select the *My Documents* folder.

5. Click the *Edit* menu.

6. Click the *Paste* option.
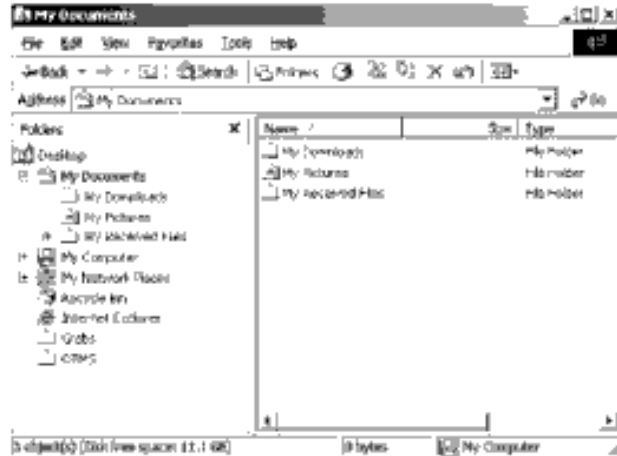
Now, the *My Folder* has been moved to the *My Documents* folder

Selecting Multiple Folders and Files

Consider the following situation.

You have created a new folder called "My Pictures" under the My Documents folder. You also created a number of drawings in Paint and saved the pictures under this folder.

You want to make a copy of all these pictures on the desktop. But it is very time-consuming to copy the files one by one. Windows helps you by allowing you to copy or move multiple files at the same time. For this, you must know how to select multiple files.

To select all files and folders within a folder:

1. Open the folder. The contents of the folder appear in the right pane.

2. Click the *Edit* menu.

3. Click the *Select All* option

All the files within the "My Pictures" folder are selected as shown
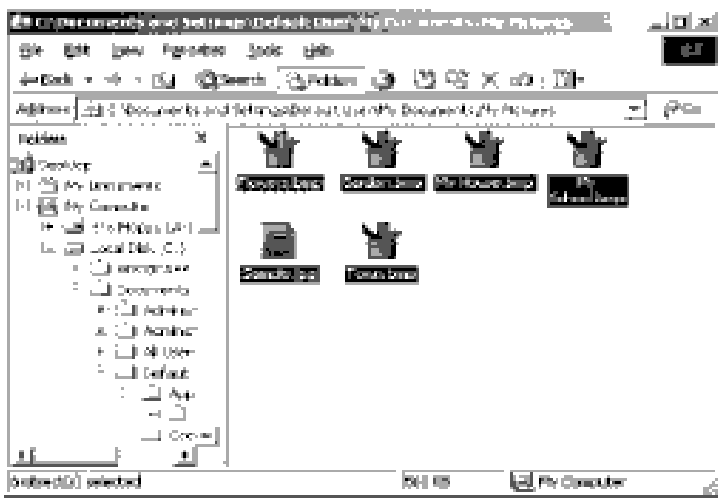
Now, you have to use the *Copy* and *Paste* options only once to copy the pictures to the desktop.

Consider a situation where you do not want to select all the files but want to select the last three files. The *Shift* key can used to select consecutive files and folders.

To select consecutive files by using the *Shift* key

1. Click the first item to be selected, in this case, the file "My House".

2. Press and hold the *Shift* key.

3. Click the last item to be selected, in this case, the file "Town".

All the files between the first and the last item you clicked are selected. The selected files and folder are shown as Windows also provides an option to select all the files and folder within a particular folder.
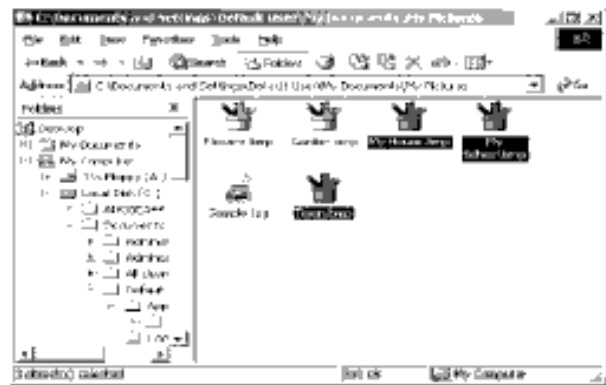
You just saw how to select consecutive files from a folder. Windows also allows you to select non-consecutive files in a folder. This is possible by using the *Ctrl* key.

To select multiple files by using the *Ctrl* key
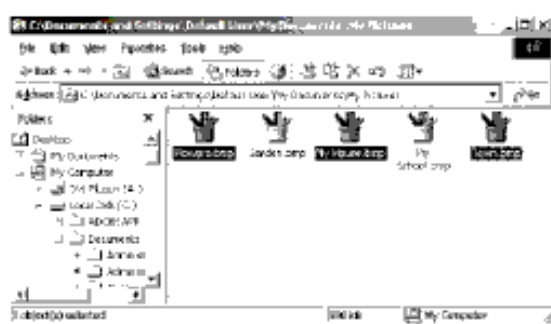
1. Click the first item to be selected.

2. Press and hold the *Ctrl* key.

3. Click each of the items to be selected.

The selected files and folder are shown as

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Deleting Files and Folders

Windows allows you to delete files and folders on your computer. Deleting files that you no longer need frees disk space and also keeps your data well organised.

For example, if you want to delete the file "Addresses" from the folder "My Folder":

1. Select the file you want to delete.

2. Click the *File* menu.

3. Click the *Delete* option.

A dialog box appears where it asks for confirmation before deleting the file.

The Recycle Bin :

The Recycle Bin holds all the deleted items. When a file or folder is deleted, it is deleted from the folder or drives and stored in the Recycle Bin.

1. Double-click the *Recycle Bin* icon

2. The Recycle Bin window is displayed

To restore a file or folder back to its original location,

1. Select the file or folder.

2. Click the *File* menu.

3. Click the *Restore* option.

Alternatively, right-click the file or folder and click the *Restore* option on the shortcut menu.

To restore all the items, Click the *Restore all items* option from the left pane.
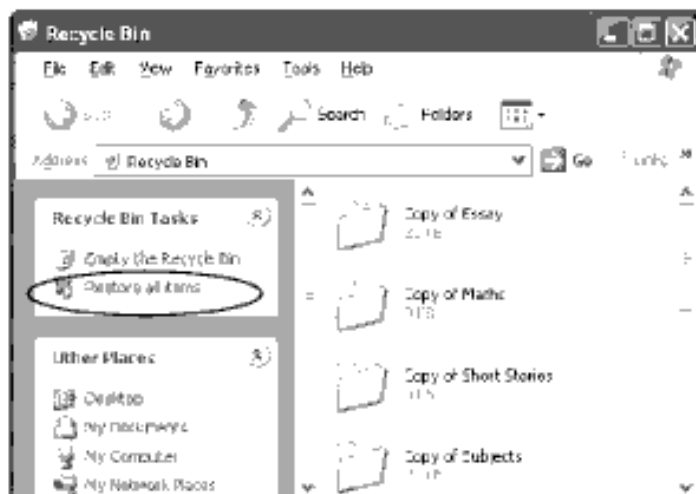
To delete a file or folder permanently from the Recycle Bin, perform the following steps,

1. Select the file or folder.

2. Click the *File* menu.

3. Click the *Delete* option.

Alternatively, select the file and press the *Delete* key.

A warning dialog box is displayed asking for confirmation before deleting a file or folder.

If you really want to delete the file or folder, click *Yes*. Otherwise, click *No*.

To empty the Recycle Bin,

1. Click the *Empty the Recycle Bin* option on the left pane.

A warning dialog box is displayed asking for the confirmation.

If you want to empty the Recycle Bin, click *yes*. Otherwise, click *No*.

Sharing a Folder

A folder is a means of organising programs and documents on a disk and can hold both files and additional folders within it. Folders can contain different types of files such as documents, music, pictures and programs. Windows XP allows you to share a folder on the network. Sharing allows other users to access the folder on your computer through the network.

To share a folder,

1. Click the Start button.

2. Click the My Computer option.

3. Double-click the drive where the folder is placed.

4. Select and right-click the folder that has to be shared.

Select this option to share the folder on the network
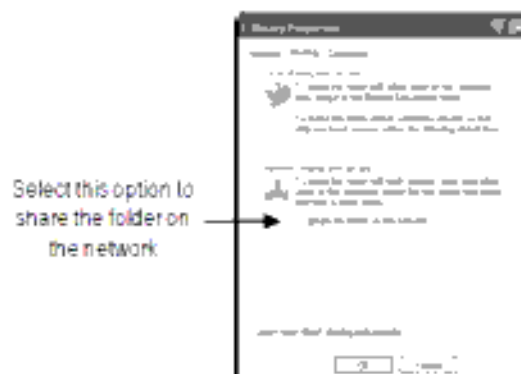
5. Click the *Sharing and Security* option on the shortcut menu.

The *Properties* dialog box of the folder is displayed

6. Select the *Share this folder on network* checkbox.

   If you do not want the network users to make any changes to this folder, clear the *Allow network users to change my file* checkbox.

7. Click the *Apply* button, and then click the *OK* button.

   You can also change the shared name of the folder. To change the name of the folder on the network, enter a new name in the *Share Name* text box. This will not change the name of the folder on your computer, but will only the name as others will see.

Summary

You can rename, copy, move or delete a folder using Windows Explorer.
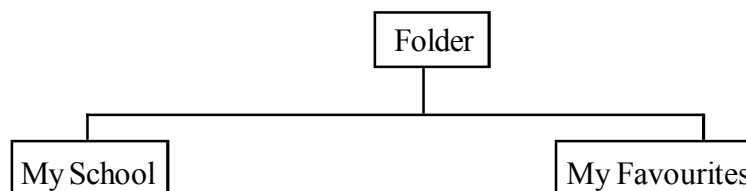
Teacher Activity

Demonstrate the creation, rename, copy, move, etc., of folders & files.

Student Activity

I Student should create & use all options as hands on practice under the guidance of teacher.

II Lab Work

```
                    ┌──────────┐
                    │  Folder  │
                    └────┬─────┘
            ┌────────────┴────────────┐
      ┌──────────┐              ┌──────────────┐
      │My School │              │My Favourites │
      └──────────┘              └──────────────┘
```

1. Create a folder in the C:.

2. Rename the folder as "My Folder".

3. Create two folders under "My Folder" namely, "My School" and "My Favourites".

4. Create two Text documents under the folder "My School" and rename it as "Marklist" and "Friendslist" respectively.

5. Create a Paint file under the "My Favourites" folder and rename it as "Favourite Pictures".

6. Move the Favourite Picture" file from the "My Favourite" folder to the "My School" folder.

7. Copy the "Friendlist" file from the "My Favourite" folder to the "My School" folder.

8. Make a copy of the "Friendlist" file in the "My Favourites" folder.

9. Delete the "Friendslist" document in the "My School" folder.

10. Open the Recycle Bin and restore and deleted file.

11. Permanently delete the copy of the "Friendlist" file in the "My Favourites" folder.

12. Share the folder "My Folder".

Test Your Knowledge

Fill in the Blanks

1. You can change the name of your folder using the _____ option.

2. The _____ option is used to copy a file from one place to another.

3. To select the files successively the _____ key is used.

4. When a file is deleted from a folder, they are moved to the _____.

5. The _____ option is used to delete all the files and folders in the Recycle Bin.

6. Data, information and other resources can be shared across machines by sharing the _____.

True or False

1. You cannot delete a folder, if it is going to hold few files.   (   )

2. You can change the name of a folder or file.   (   )

3. The *Ctrl* key is used to select the files and folders that are consecutive.(   )

4. The *Select All* option is used to select all the files and folders.   (   )

Key Words

✧ Mutliple Files   ✧ Recycle Bin   ✧ Sharing

✶✶✶✶✶

Learning Objectives

In this chapter you will be able to understand about ;

- ✧ Open an existing presentation
- ✧ Add new slides
- ✧ Insert pictures

Opening an Existing Presentation

You now have to open your file to continue with preparing the presentation. The saved file has to be opened again. The steps to open an existing presentation are:

1. Click the *Office Button*.

2. Click the *Open* option.

The *Open* dialog box appears as shown
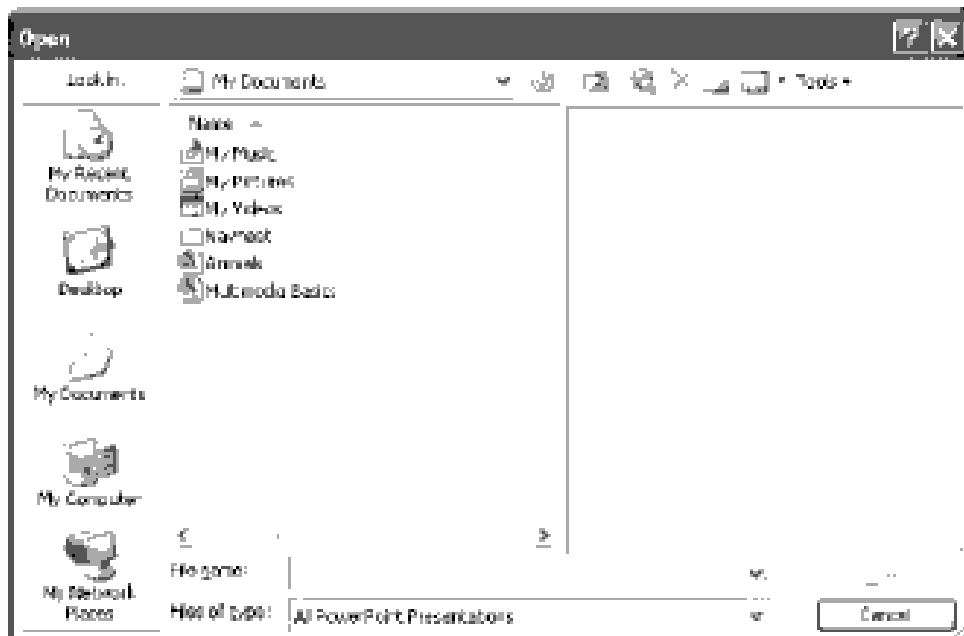
3. Select the file to be opened. The file name you select will appear in the *File name* box. In this case, the filename is "Animals".
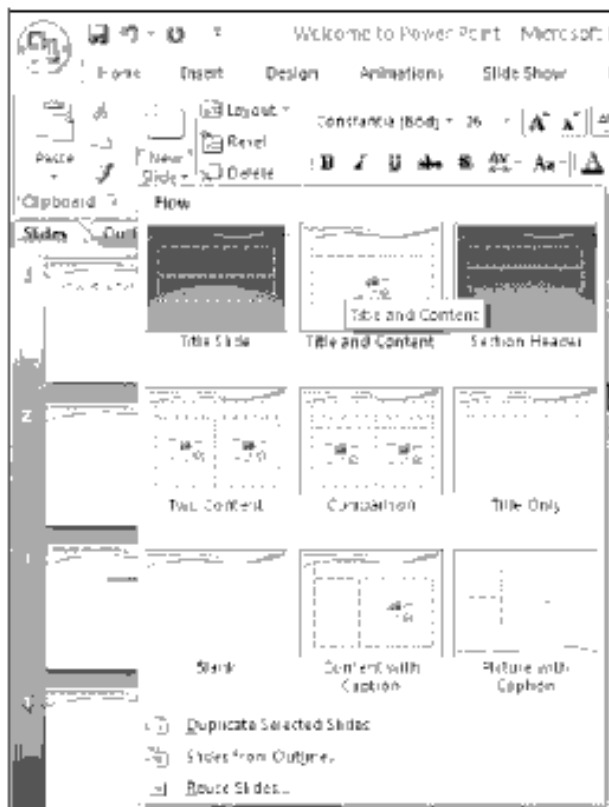
4. Click the *Open* button.

Adding New Slides

Now you have to add the second slide. To add a new slide:

Now you have to add the second slide.

To add a new slide

1. Click the *Home tab*.

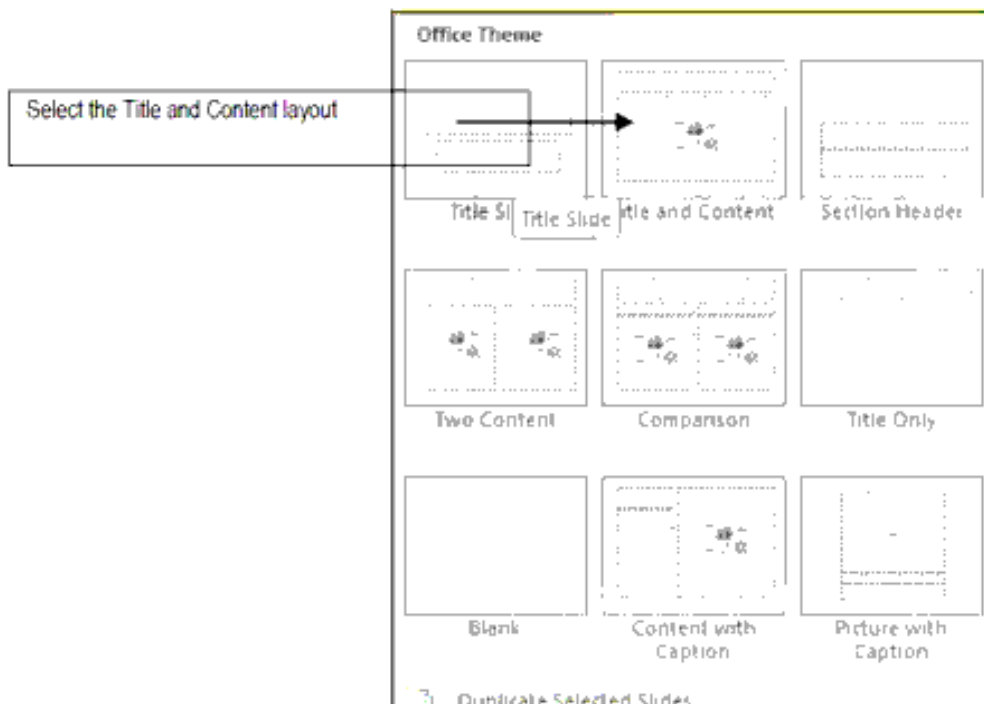2. Click the *New Slide* option from the slide group.

The *Office Theme* pane is displayed as shown in Figure. This task pane contains a list of slide layouts. You can select a slide with the layout you require.

For example, the first slide that you used is called the *Title Slide.* It is used to type titles for presentations.

The new slide you are going to add must contain the list of domestic animals. For this, you can use the *Title and Content* slide layout. This slide will contain one heading and will allow you to type some text in the form of points.

To add the *Title and Content* slide, select that slide from the *Office Theme* pane as shown

Select the Title and Content layout

Office Theme

Title Sl / Title Slide / Title and Content / Section Header

Two Content / Comparison / Title Only

Blank / Content with Caption / Picture with Caption

3. Duplicate Selected Slides

Now, you can type the heading 'Domestic Animals' in the placeholder for the title. Then, you can type the list of domestic animals in the next placeholder of the slide. The names of the domestic animals are displayed in the form of a bulleted list.

After typing, your new slide will look like

Domestic Animals

- Cow
- Buffalo
- Sheep
- Goat
- Dog
- Cat

Inserting Pictures

Suppose you want to add a new slide about "The Cow" and insert a picture of the cow in the slide. You can type the text in the text placeholder and add the picture in the clip art placeholder
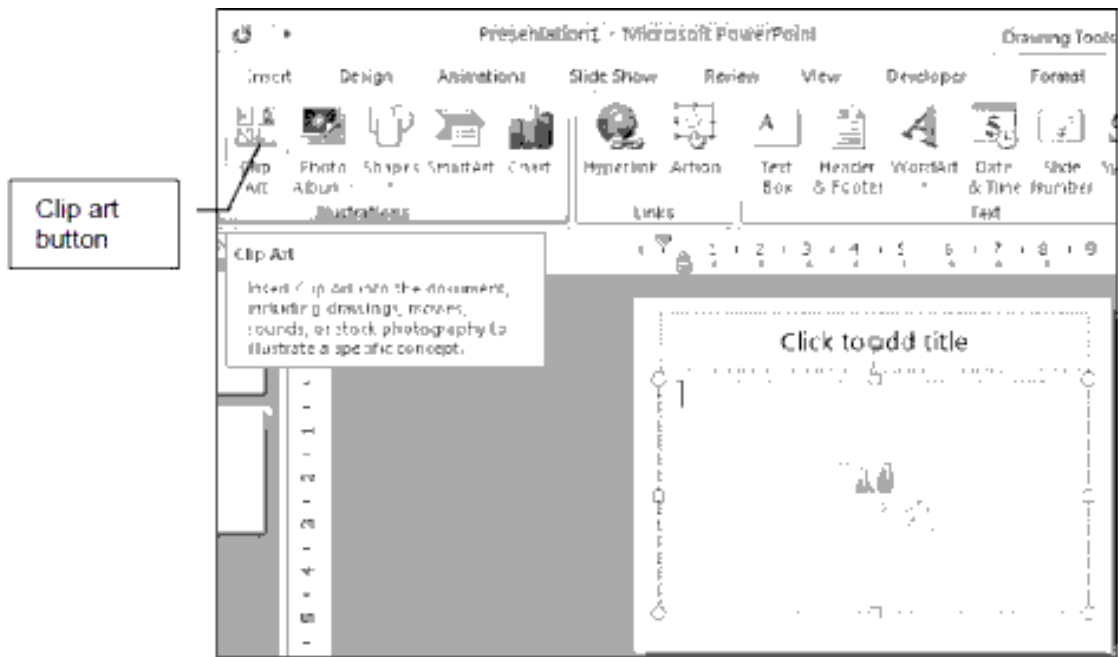
To add a picture to this slide

1. Double-click the clip art button.

The Clip Art task pane appears. It shows you a list of clip arts present in your computer. It also has a *Search text* box where you can type a word as a hint. Using this hint, PowerPoint will select clip arts from your system whose name matches with that of the search text and displays them in the list box below.

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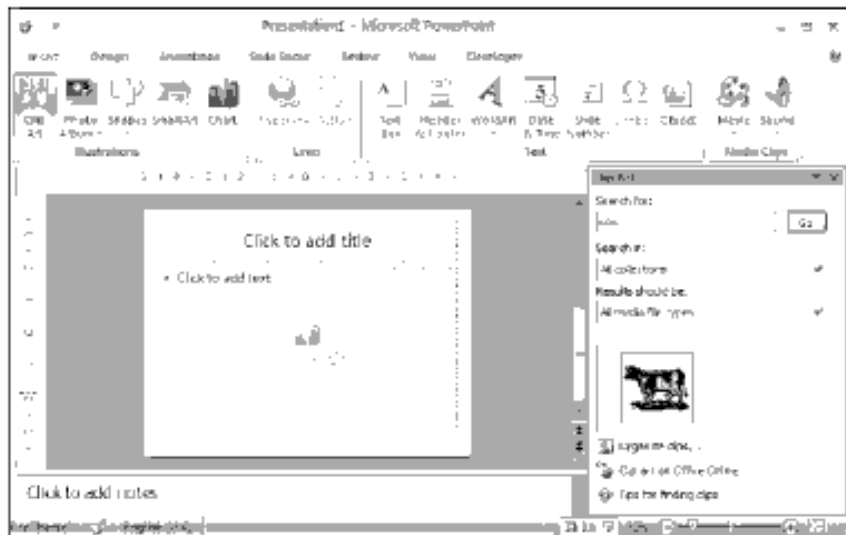
You now want the picture of a cow.

2. So, type the text "cow" in the *Search for* text box.

3. Click the go button.

4. List of pictures related to the search are displayed.

5. Select the required picture.

6. The Picture is inserted to the slide.

Now, the picture of the cow gets inserted in the clip art placeholder as shown.

You can create the other slides in your presentation, which deal with wild animals as shown

Wild Animals	**The Tiger**
• Tiger	• The tiger is a ferocious animal.
• Lion	• It is a carnivore.
• Fox	• It is India's National animal.
• Bear	
• Wolf	
• Cheetah	

Summary

To open an existing presentation; Click the Open option on the Office button.

You can insert clip arts into your slides.

Teacher Activity

Demonstration of slide Presentation.

Student Activity

I   1.   Make a slide Presentation related to your text book (one slide).

2.   Learn to use all options available.

II   Lab Work

1. Create a new presentation "Air Pollution" with the following slides.

AIR POLLUTION

By <Name>

What is Air Pollution

- Presence of harmful gases in the air.
- Presence of higher level of carbon dioxide in the atmosphere
- Presence of solid particles in the atmosphere

Causes of Air Pollution

- Industrial Smoke and Dust.
- Veguckes
- Volcanoes
- Forest Fires

The Sun

- Respiratory problems like bronchitis.
- Allergies
- Fatigue

2. Start PowerPoint and create a presentation with the following slides:

The Solar System

The Sun

- One among millions of stars in the sky
- Provides us with heat and light.
- All planets including the Earth revolve around the sun.

The Planets

- Mercury
- Venus
- Earth
- Mars
- Jupiter
- Saturn
- Uranus
- Neptune
- Pluto

The Earth

- The Earth is the third planet from the sun.
- It is the planet which supports life.
- Three-fourth of the Earth is covered with water.

3. Insert a picture of the Earth in the last slide.

4. Save the file.

5. Exit PowerPoint

Test Your Knowledge

Fill in the blanks

1. The _____ option on the Office button is used to open an existing presentation.

2. The _____ option is used for inserting a new slide.

3. To insert clip arts in the clip art placeholder, you must _____ it.

Key Words

    ✦ Insert

    ✦ Drag

    ✦ Clipart

    ✦ Presentation

*****

Chapter -9   Introduction to Microsoft Excel

Learning Objectives

In this chapter you will be able to understand about ;

- ✧ Appreciate the need for Excel

- ✧ Start Excel

- ✧ Create a new workbook

- ✧ Identify the parts of an Excel window

- ✧ Display, move and hide toolbars

- ✧ Use keyboard and right-click shortcuts

- ✧ Enter and edit labels and values

- ✧ Select a range of cells

- ✧ Save a workbook

- ✧ Close a workbook

- ✧ Exit Excel

Microsoft Excel

Excel is a software package, which can be used to store, organise, calculate and analyse data. It can do all kinds of mathematical calculations. The tasks that you can perform with it range from preparing a simple invoice to creating elaborate 3-D charts to managing an accounting ledger for a company. The primary document that you use in Excel to enter, store and work with data is called a worksheet.

Worksheet

A worksheet is divided into rows and columns that intersect to form **cells**. A worksheet is also called a spreadsheet or a sheet, in short. All worksheets, whether they are on paper or in a computer program, have certain components in common. Figure 1 shows a worksheet that has the names of students along with their marks in various subjects.
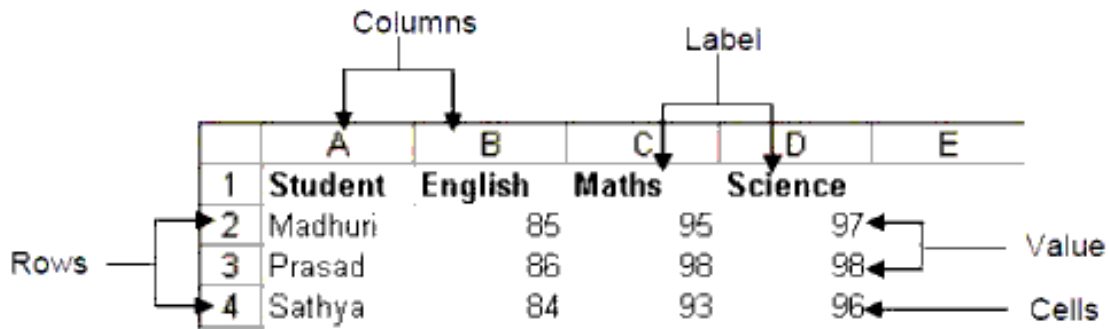
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Figure 1

The commonly used terms used in Excel are explained below.

✧ **Cell** – The intersection of a row and column.

✧ **Row** – A horizontal group of cells in a worksheet. There are 65536 rows in an Excel worksheet. The row number identifies each row.

✧ **Column** – A vertical group of cells in a worksheet. There are 256 columns in an Excel worksheet. The letters ranging from A to IV are used to identify each column.

✧ **Label** – Identifies information on the spreadsheet. For example, in Figure1, the labels in column A identify the student names and the labels in row 1 identify the subjects. The headings of rows and columns and any other text entry are called labels.

✧ **Value** – Refers to the data in the worksheet. For example, in Figure 1, the marks of the students are the values.

✧ **Cell Address** – Identifies a cell. Every cell has an address. The column letter followed by its row number forms the cell address.

For example, in Figure 1, A1 is the cell address of the cell that has the heading "Student". Here A represents the column letter and 1 represents the row number. A few other examples of cell addresses are B1, C2, D12, etc.

✧ **Cell Range** – A cell range is a group of continuous cells. For example, A1:A4 is a cell range. Excel uses a „**:** to denote a range of cells. Operations can be performed on a range of cells.

Workbook

Any worksheet you create is stored in a workbook. A workbook refers to the file created in Excel. Just as your notebook contains several pages, similarly an Excel workbook can contain several worksheets.
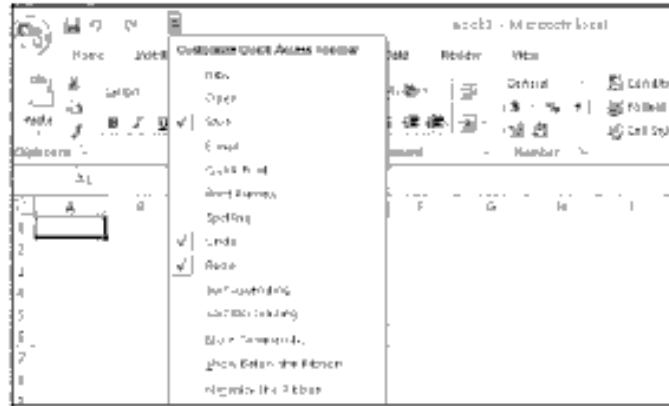
When you start Excel, a workbook is automatically created and displayed. By default, this workbook is called "Book1" and contains three worksheets named as Sheet1, Sheet2 and Sheet3. You can change the name of the sheets. You can insert more sheets, if you want to. There can be a maximum of 256 worksheets in a workbook.

Advantages of using an Electronic Spreadsheet

An electronic spreadsheet is similar to a paper spreadsheet. However, there are distinct advantages of using an electronic spreadsheet as compared to a paper worksheet. The advantages are as follows.

✧ **Fast Calculation:** Complex mathematical calculations, that have to be done on a huge volume of data, can be done very easily and quickly.

✧ **Automatic Recalculation:** This is a very useful feature of an electronic spreadsheet. You can specify a formula for performing calculations. Whenever a value referred to in the formula is changed, the result changes automatically. You do not have to perform the calculation again.

✧ **Creation of Graphs:** The data stored in a spreadsheet can be represented in the form of graphs. Graphs help you to understand and analyse the data better.

✧ **Auto Recovery:** This feature protects your data. A major portion of the data can be recovered when there is an unexpected power-cut or your computer fails for some reason. This feature ensures that you do not lose much data in such circumstances.

✧ **Storage:** Data entered in worksheets can be stored for future usage.

✧ **Linking:** Excel allows you to work with more than one worksheet at a time and these worksheets can be linked with each other.

Starting Excel

Consider the following situation.

Your teacher has to prepare the marks statement of the students. Let us see how this can be done in Excel. The first step would be to start Excel.

To start Excel

1. Click the *Start* button.

2. Choose the *Programs* option.

3. Click Microsoft Office.

4. Click the *Microsoft Excel* 2007 option

A new workbook is displayed on the screen.

Creating Workbooks

If the Excel window is already open, then you can create a new workbook in the following manner.

1. Click the *Office Button*.

2. Click the *New* option.

The *New Workbook* task pane appears on the right side of the screen

3. Click the *Blank Workbook* option.

4. Click Create Button.

A new workbook appears on the screen.

## Interface Elements of an Excel Window

When you start Excel, it opens an Excel window with a blank worksheet as shown

Office Button
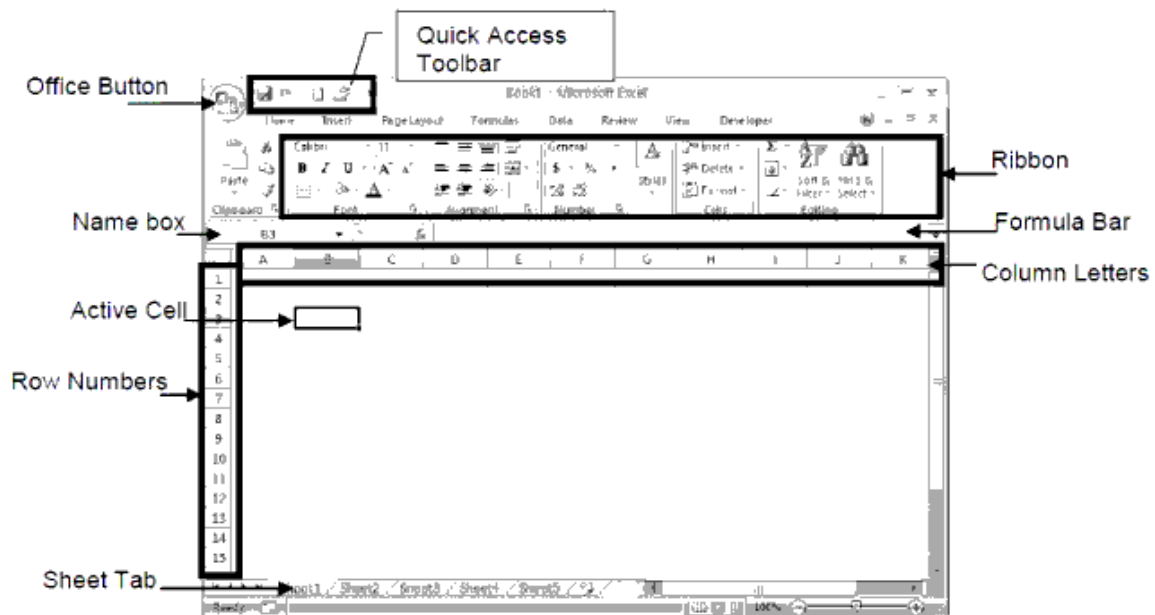
The Office button, when clicked, displays a drop-down list with a number of options, such as New, Open, Save, Save As and Print. The options in the Office button list are very similar to those in the File menu in the previous versions of Excel.

Ribbon It is a strip of buttons and icons located above the work area in Microsoft Excel 2007. The buttons are grouped under various tabs. Refer the figure given below for the terms used to access options in Excel 2007.

Tabs
Font Group
Dialog Box Launcher
Buttons
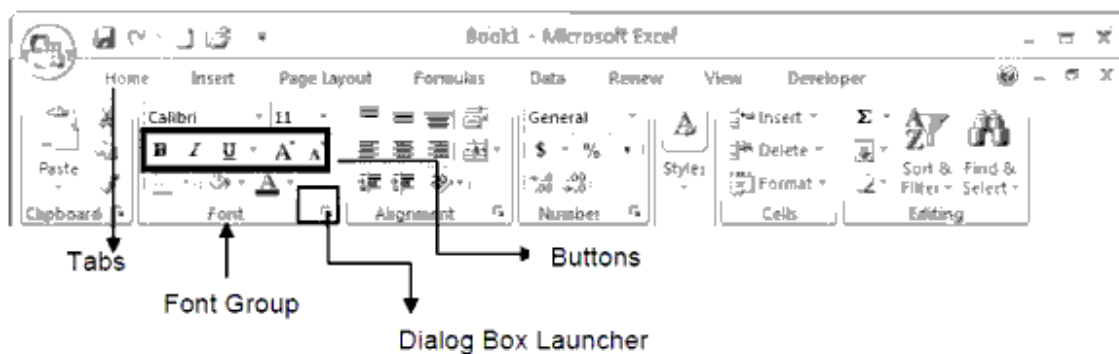
Name Box

It displays the name of the active cell or the cell reference.

Formula Bar

It displays the contents of the active cell and is located above the worksheet. It can also be used for entering or editing data, labels and formulae.

Column Letters

Columns in a worksheet are displayed vertically. Each column is identified by a letter called column letter in the column header.

Row Numbers

Rows in a worksheet are displayed horizontally. Each row is identified by a number called row number in the row header.

Active Cell

Data is entered into the active cell with a black outline. A cell is identified by the alphabet of the column and the numerical tab of the row.

Sheet Tab

It is present at the bottom of the worksheet. It indicates the name of the worksheet.

Using Keyboard and Right-click Shortcuts

You have earlier learnt about the various keyboard shortcuts for frequently used commands in Office. These shortcuts can be used in Excel also. Table 1 lists the keyboard shortcuts you have learnt before.

Key Combination	Use
Ctrl + N	To Create a new workbook
Ctrl + O	To open an existing workbook
Ctrl + S	To save the current workbook
Ctrl + X	To cut the contents of the selected cell (s)
Ctrl + C	To copy the contents of the selected cell (s)
Ctrl + V	To paste the contents that were previously cut or copied
Ctrl + Z	To undo the action previously done
Ctrl + Y	To redo the action previously undone
Ctrl + A	To select the contents of the entire worksheet

Table - 1

You can quickly access some of the above-mentioned commands through a right-click also. When you right-click on a cell, the following pop-up menu appears you can select the required command from the pop-up menu.
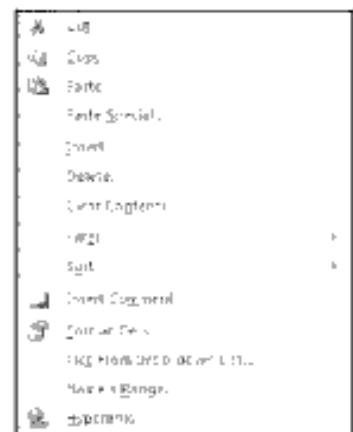
Entering Labels and Values

Once you create a workbook, you can start entering data. To organise the data in your worksheet, you can add headings (that is, labels) to rows or columns before you enter the actual data. The data entered in a cell can be a label, value or formula.

Now, you have to start preparing the marks statement. First, you have to type the labels - "Student", "English", "Maths" and "Science" for the columns.

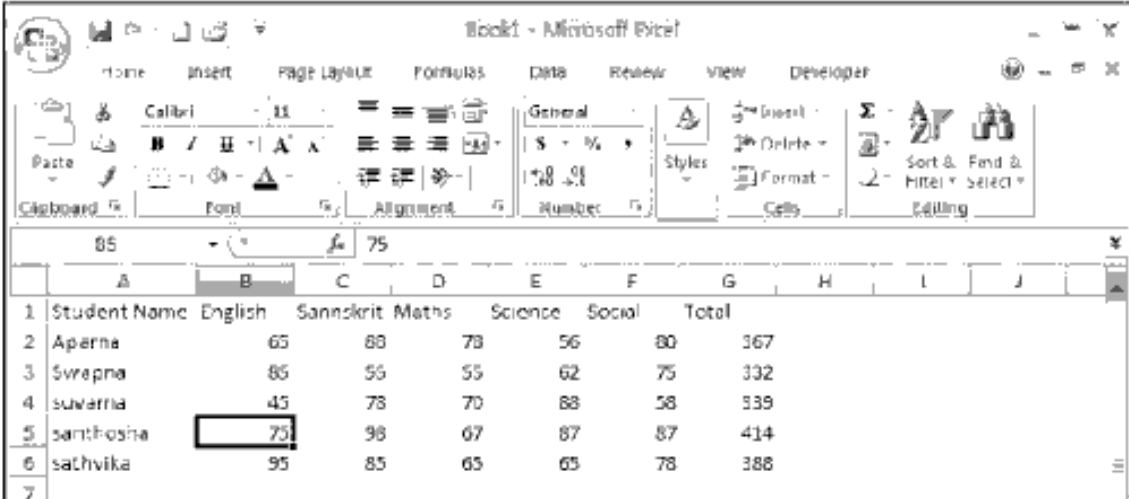To enter the first label "Student Name":

1. Click the cell A1 where you want to enter the data.

The cell now becomes the active cell.

2. Type the word "Student Name".

3. Press the *Enter* key.

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In the same way, enter the other labels. Now, proceed to type the student names in the cells below the label "Student Name". Type the marks of each student under the respective subjects. Enter the names and marks of at least 10 students.

The worksheet appears as shown

Table 2

Editing Labels and Values

If you enter a wrong value or want to make any change to the entry already made, Excel allows you to make the corrections.

To make corrections:

1. Double-click the cell.

2. Use the *Backspace* key or the *Delete* key to make corrections.

3. Press the *Enter* key.

Alternatively,

1. Click the cell.

2. Click the *Formula* bar.

3. Use the *Backspace* key or the *Delete* key to make corrections.

4. Press the *Enter* key.

Selecting a Range

For copying or moving a range of cells, you first need to select the range of cells.

To select a range of cells

1. Place the cell pointer at the position from where the selection has to start.

2. Hold the *Shift* key down and press the *Right arrow* key if you want to select the cells to the right or press the *Down arrow* key if you want to select the cells below the starting cell.

3. Press the arrow key as many times as the number of cells to be selected. Stop when you reach the last cell in the range.

Alternatively,

1. Click the cell from where the selection has to start.

2. Then hold the *Shift* key down and click the last cell till which you want to select.
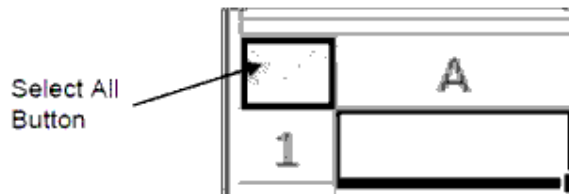
<div align="center">Or</div>

Click and drag the mouse till the entire range of cells has been selected. To select an entire column, click the column heading.

To select an entire row, click the row heading.

To select the entire worksheet:

1.   Click Select All button

Saving Workbooks

You can save your workbook so that it can be used later.

To save a workbook:

1. Select the O*ffice button*.

2. Click the *Save* option.

The *Save As* dialog box appears as shown

3. Type the name *Marks* in the *File name* box.

4. Click the *Save* button.

Your file has now been saved with the name "Marks.xlsx". All Excel files are saved with the extension .xlsx

Closing Workbooks

Once you finish working on the workbook, you can close it.

To close a workbook

1. Click the *Office Button*.

2. Click the *Close* option.

The workbook is closed.

Exiting Excel

To exit Excel

1. Click the *Office Button*.

2. Choose the *Exit Excel* option.

The Excel window is closed.

Summary

Excel is a software package, which can be used to store, organise, calculate and analyse data.

✧ A worksheet is a combination of rows and columns.

✧ The intersection of a row and column is called a **cell**.

✧ A cell address is formed with the column letter and the row number.

✧ The active cell is the cell you are currently working with.

✧ You can enter data in the active cell only.

✧ You can select a range of cells to work on them as a whole.

✧ To save a workbook, click the *Save* option on the *Office Button*.

✧ To close a workbook, click the *Close* option on the *Office Button*.

✧ To exit Excel, click the *Exit Excel* option on the *Office Button*.

Teacher Activity

Demonstration of Excel worksheet.

Student Activity

Hands on practice - making a work sheet for demo.

Test Your Knowledge

Fill in the blanks

1. An Excel file is called a _____.

2. An Excel worksheet has _____ and _____.

3. A new Excel workbook has _____ sheets by default.

4. The cell that has a highlighted rectangular box positioned on it is called the _____.

5. To save a workbook, click the _____ option on the _____ Button.

Key Words

✧ Cell   ✧ Active Cell   ✧ Row   ✧ Column

✧ Range   ✧ Formula Bar   ✧ Linking

✶✶✶✶✶

Chapter - 10   Internet

Learning Objectives

In this chapter you will be able to understand about ;

- ✧ Know what is WWW?

- ✧ Explain the advantages of using WWW

- ✧ Define URL

- ✧ Define the term Web browser

- ✧ Use the Internet Explorer to browse

- ✧ Recall the terms used in Internet

World Wide Web

WWW stands for the *World Wide Web*. It is a series of interconnected servers that contains information in form of text, pictures, sounds and animation. You would have seen a library. It consists of millions and millions of books with pages of text, pictures, sounds and animation. WWW is very similar to a library. Just like a library, WWW has information on different topics. These information pages are stored on different computers that are connected to the Internet and have links between them. When you click on a certain word, which is a link in the page, it will take you to another page. Such texts, which act as a link between Web pages, are called *hypertext*. These links are called *hyperlinks* and the pages are known as *Web pages*. A collection of related Web pages is known as a *Web site,* which is similar to a book containing related information. The first Web page that gets displayed when the user opens any Web site is called the *Home page*.

Advantages of Using WWW

The advantages of WWW are:

- ✧ A user can click any hyperlink present on the Web page and jump to a related Web page on the same or a different Web site.

- ✧ A Web page can contain text, pictures, audio, and video clips which makes it interesting to the user.

✧ A user can interact with a Web page by filling a form, by running a program or select options from a Web page.

URL

You know that each house has an address. The address has a door number, street name, city name and pin code. The address is used to locate a house easily. Similarly each web site has an address. This address is called the *URL (Uniform Resource Locator)* to a Web site.

Examples for Web site address are:

✧ www.yahoo.com ✧ www.hotmail.com ✧ www.google.com

Web Browsers

We are already aware of the process of connecting to the Internet. But, more than connecting to the Internet, you should be able to use the services provided by the Internet. For example, you may use WordPad to type a letter and Paint to draw a picture. Likewise, *Web Browser* is a software program using which you can open any Web site to browse and avail the services offered by the Web site. Web browsers are capable of displaying Web pages containing text, pictures, sound and video files.

The commonly used Web browsers are:

✧ Internet Explorer ✧ Netscape Navigator

✧ Hot Java ✧ Opera

Using the Internet Explorer

The Microsoft Internet Explorer is a Web browser developed by Microsoft. The Internet Explorer comes free when you buy Windows 98 or Windows 2000 or Windows XP operating system.

To launch Internet Explorer

Double-click the *Internet Explorer* icon ( ) present on the desktop.

Alternatively,

1. Click the *Start* button.

2. Click the *Internet Explorer* option from the menu.

The Internet Explorer window opens up as shown

The Internet Explorer window has title bar, menu bar, toolbar, address bar and status bar. To visit a web site, you have to type the Web site address in the address bar and press the *Enter* key. The home page of the corresponding Web site will be displayed

Click the *Forward* button on the toolbar to move to the next page and the *Back* button to go to the previous Web page visited.

Terms Used in the Internet

Let us recall the Internet terms, which you have already learnt.

✧ *Web browser* is a software that allows the user to display and interact with a Web site.

✧ *Web page* is a page which may contains text, pictures, audio, and video clips.

✧ *Web site* is a collection of related Web pages.

✧ *Home page* is the first Web page displayed when the user opens any Web site.

✧ *Hypertext Transfer Protocol (HTTP)* is a protocol used on the WWW to transfer Web pages. A *protocol* is a set of rules that the computers follow to communicate with each other.

- *HTML* (Hypertext Markup language) is a language used to create Web pages.

- *Uniform Resource Locator (URL)* is a Web addressing system that is used to identify each Web site uniquely on a network.

  Example of an *URL*: http://www.aub.edu/services/faq.html

Summary

- WWW stands for the World Wide Web. It consists of millions and millions of Web pages.

- Collection of related Web pages is known as Web site that is stored on different computers that are connected to the Internet.

- Hyperlinks are used to link the related Web page.

- Web page is a page which may contains text, pictures, audio, and video clips

- Home page is the first Web page displayed when the user opens any Web site.

- A protocol is a set of rules that the computers follow to communicate with each other.

- Hypertext Transfer Protocol (HTTP) is a protocol used on the WWW to transfer Web pages.

- HTML (Hypertext Markup language) is a language used to create Web pages.

- Uniform Resource Locator (URL) is a Web addressing system that is used to identify each Web site uniquely on a network.

- *Internet Explorer* is a Web browser developed by Microsoft.

- A Web browser is a program that enables you to view the Web site available on the WWW.

- You can open the Internet Explorer using the Internet Explorer icon on the desktop.

- The Internet Explorer window has the Address bar where you type the Web site address.

Teacher Activity

Show case a browser and its use.

Student Activity

I 1. Browse any website using URL.

2. Find its URL while clicking on menu.

3. Use search option.

II Lab Work

1. Visit http:/ http://www.nineplanets.org/ to collect information about the solar system.

2. Visit http://www.nationalgeographic.com/kids/creature_feature/archive/ to view photographs of animals and collect information about them.

3. Visit http://www.petsmart.com to gather information on your favourite pet..

4. Visit http://www.mapsofindia.com/maps/andhrapradesh/andhra-pradesh-district.htm to view the map of Andhra Pradesh.

5. Visit www.indiatravelinfo.com/wildlife.htm to learn about wildlife sanctuaries in India.

6. Browse the site http://www.historyofindia.com to get information about Indian history.

7. Visit http://www.jiskha.com/social_studies/world_issues/ozone_depletion.html and learn about ozone depletion.

Test Your Knowledge

Fill in the blanks

1. _____ is software that allows the user to display and interact with a Web site.

2. _____ is a collection of related Web pages.

3. HTTP stands for _____.

4. HTML stands for _____.

5. The address of a Web site is also called _____.

6. WWW stands for _____.

7. _____ are the pages on the Internet that contain text, pictures, sounds and animation.

8. _____ is a set of rules that the computers follow to exchange information.

9. You have to type the Web site address in _____ bar.

10. The first page that appears after opening a Web site is known as _____.

Key Words

- ✧ WWW
- ✧ HTML
- ✧ HTTP
- ✧ Browser
- ✧ Home page
- ✧ Web page

✳✳✳✳✳

Projects

1. Prepare PowerPoint presentation with four slides on agriculture in our time.

2. Prepare you class time table by using Microsoft Word and Excel.

3. Prepare a flow hart of any recipe you know.