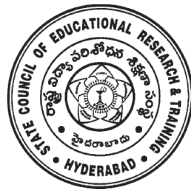


ICT TEACHER HANDBOOK

(Computer Education)

Class - IX



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



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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 a 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 use them in 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 this ICT handbook. We also acknowledge the C-DAC, Hyderabad for sharing their content related to software security in the preparation of this handbook.

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

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Class - IX

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Instructions to Teachers

The main purpose of introducing ICT in school syllabus is to help the children 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 to relevant material and consult the experts in case of any doubts.
- Before going to practice, 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 (Computer Education) 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's 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 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 a few of them in their learning.
- C2** Students are able to use 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, each 25 marks are to be allotted to Work Education and Computer Education.

Information and Communication Technology (ICT)

Introduction

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 amongst 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 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 that is needed for success in the global workplace.

Information and Communication Technology (ICT) has dominated 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 an 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 Power Point 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 have 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 schools to make teaching-learning process 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 finally able to integrate with their subjects.

Academic Standards and Assessment

Academic Standards

- The students are shall operate and use the ICT tools;
- Students are shall 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.

Learning Objectives

In this chapter you will be able to understand ;

- About ICT Sector.
- Benefits and Limitations of ICT.

About the ICT Sector Unit

Information and communication technologies (ICT) are no longer a luxury for developing countries and they are already creating new ways of communicating, doing business, and delivering services. Through extending access and use of ICTs, the World Bank aims to stimulate sustainable economic growth, improve service delivery, and promote good governance and social accountability.

Context

Technological progress is a considerable driving force behind economic growth. ICT infrastructure in particular has attracted much investment, and generated significant fiscal revenues and employment opportunities in developing countries. The number of mobile phone subscriptions in developing countries has increased from 200 million in 2000 to 3.7 billion in 2010, and the number of Internet users has grown more than tenfold.

With Internet penetration at a turning point including in the least connected region, Africa, and with 70 percent of the population in developing countries having access to fixed or mobile telephone services, ICT networks now constitute a far-reaching service delivery and citizen participation platform. ICTs can be used as a vehicle to increase accountability, and can transform and extend the reach of service delivery to the underserved in an innovative, fast, and cost-efficient manner.

Key challenges and opportunities for developing countries include:

- improving affordability in order to reach the one-third of the population of the poorest countries who currently live beyond the ICT networks;
- widening access to more advanced ICT services such as broadband for high-speed internet;

- leveraging the new ICT infrastructure to improve the delivery of services and to build on it as a source of economic growth; and
- developing and aligning people skills relevant to the Information Technology-enabled Services (ITeS) industries and knowledge economy.

World Bank Role

Since its inception, the World Bank has supported more than 100 developing countries with investments and technical assistance in ICT. Since 2003, it has committed over US\$1.3 billion for investment in standalone ICT projects, including US\$776 million from the International Development Association. The Bank's investments have helped to attract over US\$30 billion in private sector investments in ICT in low-income countries from 1997-2007.

In addition, the World Bank supports IT components in lending projects across other sectors, such as education, health, and public sector management. In a 2006 study, this figure was estimated to be US\$7.3 billion in some 1,700 active projects under preparation or implementation.

The World Bank has disbursed US\$45 million on analytical work and technical assistance in the ICT sector since 2000.

Strategy

World Bank support is evolving to reflect the new challenges and opportunities of the sector. The Bank Group's new ICT Sector Strategy will focus on three pillars:

CONNECT: Information and communication infrastructure focusing on broadband development

INNOVATE: Information Technology (IT)-enabled industry and ICT skills development

TRANSFORM: Use of ICT applications in specific sectors and contexts (e.g. agriculture, education, health, good governance, and social accountability)

Technical assistance and investment operations are increasingly focusing on :

- **CONNECT:** Financing broadband infrastructure: The World Bank recently stepped up its financing of innovative public-private partnerships (PPPs) as catalytic vehicles to attract additional private sector investment in broadband infrastructure. This includes

regional communications infrastructure programs to accelerate the rollout of terrestrial backbone networks and submarine cable systems in Africa, Pacific Islands and the Caribbean.

- **INNOVATE:** Supporting the growth of the ITeS industry: Such support helps develop and align people skills relevant to the ITeS industries and knowledge economy. It includes a small but growing portfolio of IT industry development projects in Armenia, Bhutan, Ghana, Kenya, Mexico, and Nigeria.
- **TRANSFORM:** Using ICT to improve the delivery of public services: The World Bank is supporting US\$7.3 billion of ICT components in projects across other sectors, such as education, health and public sector management, as determined by a study in 2006. Components include integrated financial management information systems, computers in schools and universities, digitization of high court proceedings, and electronic land titling. This assessment covered 1,700 projects under implementation or preparation across the Bank portfolio and through stand alone projects such as the eGhana (US\$84.7 million), eRwanda (US\$10 million), and eBenin (US\$15 million) projects.

Results

Afghanistan : Increasing Access and Affordability through Telecommunications Sector Reform

In Afghanistan, a US\$22 million International Development Association (IDA) credit supported sector reform that made the telecommunications market more competitive. It has attracted over US\$1.2 billion in private investments, improving access to ICT services and reducing prices. This helped increase the number of telephone subscribers from 57,000 to 13.4 million between 2002 and 2010, and reduce costs from US\$2 a minute to 10 US cents a minute. The Afghan telecommunications sector now contributes an estimated US\$75 million in taxes annually. (Project details).

East Africa : IDA and IFC Support to Communications Infrastructure in East Africa

The IDA-supported Regional Communications Infrastructure Program (FY07-FY13) and IFC co-financed Eastern Africa Submarine Cable System (EASSy) illustrate a joint World Bank Group approach to regional infrastructure development.

The first is a US\$424 million program that supports the development of telecommunications terrestrial networks through financing of public-private partnerships and broadband capacity purchases.

The second is a US\$240 million submarine cable connecting the east coast of Africa (from South Africa to Sudan) to Asia and Europe. These projects have contributed to a 90 percent reduction in wholesale capacity prices in East Africa, with retail prices already starting to drop by about one-third in Kenya and Rwanda. In Kenya, this has helped in increasing the number of internet users to 8 million in 2010 from 2 million in 2007. (Project details)

Ghana : Innovative Project Design through e-Government PPPs in e-Ghana

The e-Ghana Project (FY07-FY12, IDA) has an innovative design featuring a public-private partnership (PPP) to transform revenue collection, using a joint venture between Government revenue agencies and a private sector partner. The project has helped the Government attract US\$40 million in private sector investment for developing and deploying an electronic tax application to automate revenue agencies and the Registrar General's Department. Upon completion, this application is expected to help the Government increase compliance and transparency, and broaden the tax base, while reducing the incidence of fraud, upgrading Government employee skills, and developing a template for upgrading other agencies.

The eGhana project is providing support to the local IT-enabled services (ITeS) industry including support to develop a Business Process Outsourcing Facility. Over 1,000 jobs have been created in the industry during the last two years. The eGhana Project is also providing financial assistance to support a partnership between the public and private sector to train some 50 training institutions and 6,000 business process outsourcing agents. This is expected to further strengthen Ghana's position as one of the most attractive locations for ITeS business in Africa. (Project details).

Mexico : Skills Development for Improved Employability in the ITeS Industry

Through the Mexico IT Industry Development Project (FY09-FY13, US\$80 million, IBRD), the World Bank has assisted the Government of Mexico in the creation of MexicoFIRST, an institution aimed at closing the gap between demand and supply of skilled workers in the ever-changing IT industry. Through partnerships with global companies and strong links to local IT clusters, academia, and industry associations, MexicoFIRST provides certification programs that increase the quality of the Mexican labor pool. Students pay between 10 and 40 percent of the certification prices, making it more affordable.

As of 2010, more than 6,000 people have been trained and certified in skills that will qualify them for employment with higher salaries. It is expected that more than 30,000 people will be certified by the end of the project. (Project details)

Nicaragua : Extending Telecommunications Service to Unserved Rural Areas

In Nicaragua, a US\$16 million project supported the strengthening of the regulator, privatization of the incumbent telephone operator in 2001, and introduction of competition in the sector in 2005. It helped to bring about a ten-fold increase in mobile subscriptions by 2010. Total telephone penetration (fixed plus mobile) increased from 6 percent in 2001 to 25 percent in 2005, and to over 60 percent in 2008.

Thanks to a US\$10 million follow-up project, to which IDA contributed US\$7 million, more than 350,000 people in 350 communities in rural Nicaragua received access to telephone services and more than 860,000 people in 104 rural municipal towns received Internet connection for the first time. One hundred public Internet access centers were installed by the project for the benefit of those who could not afford to have direct access in their homes. They pay a modest hourly fee for using Internet access and receive free training for using the service, as well as for basic computer tasks. (Project details)

Rwanda : Bringing Public Services to the Fingertips of Citizens

In Rwanda, the eRwanda project (US\$10 million IDA grant) supports the government's efforts to use ICT for improving service delivery. The project has funded networks in government ministries and district offices around the country, and the development of a government portal linking government information and websites. The project also financed 18 telecenters for rural populations and equipped 12 district offices with computers and office software, allowing the local government offices to be connected to Kigali's central government. Additionally, four ICT buses funded by the project have been roaming among Rwanda's district offices, teaching ICT skills to youths, civil servants, farmers, politicians and private sector entrepreneurs.

Throughout the project, 2,822 citizens were trained on ICT subjects, helping them gain skills that will serve them throughout their lifetimes as employees, entrepreneurs, and local leaders, including 760 district office staff. eRwanda also had a strong gender focus and among the trainees were 685 council women in rural areas.

Learning Objectives

In this chapter you will be able to understand about ;

- Learn about the Tablet PC.

A tablet computer, or simply tablet, is a one-piece mobile computer. Devices typically offer a touchscreen, with finger (or stylus) gestures acting as the primary means of control, though often supplemented by the use of one or more physical context sensitive buttons or the input from one or more accelerometers; an on-screen, hideable virtual keyboard is generally



offered as the principal means of data input. Available in a variety of sizes, tablets customarily offer a screen diagonal greater than 7 inches (18 cm), differentiating themselves through size from functionally similar smart phones or personal digital assistants.

Though generally self-contained, a tablet computer may be connected to a physical



keyboard (or other input device), and a number of Hybrids that offer a detachable keyboard have been marketed since the mid-1990s, as have a number of convertible touch screen notebook computers that offer an integrated keyboard that can be hidden by a swivel joint or slide joint, exposing only the screen for touch operation. Tablets have also appeared in a foldable Booklet format that offer the user dual-touch screens, and can be used as a notebook by displaying a virtual keyboard on one of the displays.

Touch user interface

A key and common component among tablet computers is touch input. This allows the user to navigate easily and intuitively and type with a virtual keyboard on the screen. The

first tablet to do this was the Grid Pad by GRiD Systems Corporation; the tablet featured both a stylus, a pen-like tool to aid with precision in a touch screen device as well as an on-screen keyboard.[35]

The event processing of the operating system must respond to touches rather than clicks of a keyboard or mouse, which allows integrated hand-eye operation, a natural part of the somatosensory system. Although the device implementation differs from more traditional PCs or laptops, tablets are disrupting the current vendor sales by weakening traditional laptop PC sales in favor of the current tablet computers

Handwriting recognition[edit]

Chinese characters like this one meaning “person” can be written by handwriting recognition (人, Mandarin: rén, Korean: in, Japanese: jin, nin; hito, Cantonese: jan4). The character has two strokes, the first shown here in dark, and the second in red. The black area represents the starting position of the writing instrument.

Some tablet personal computers such as the Galaxy Note 10 utilise a stylus. These tablets often implement handwriting recognition. Tablet computers with finger driven screens usually do not. Finger driven screens are potentially better suited for inputting “variable-width stroke-based” characters, like Chinese/Japanese/Korean writing, due to their built in capability of “pressure sensing”. However at the moment not much of this potential is already used, except in digital art applications like Autodesk Sketchbook for the iPad, and as a result even on tablet computers Chinese users often use a (virtual) keyboard for input.

Touch screen hardware

Touch screens are usually one of two forms;

- **Resistive touch screens** are passive and can respond to any kind of pressure on the screen. They allow a high level of precision, useful in emulating a pointer as is common in tablet computers) but may require calibration to be accurate. Because of the high resolution of detection, a stylus or fingernail is often used for resistive screens. Limited possibilities exist for implementing multi-touch on a resistive touch-screen. As modern tablet computers tend to make heavy use of multi-touch, this technology has faded out on high-end devices where it has been replaced by capacitive touchscreens.
- **Capacitive touchscreens** tend to be less accurate, but more responsive than resistive screens. Because they require a conductive material, such as a finger tip, for input,

they are not common among (stylus using) Tablet PCs but are more prominent on the smaller scale “tablet computer” devices for ease of use, which generally do not use a stylus, and need multi-touch capabilities.

- **Palm recognition**, It prevents inadvertent palms or other contacts from disrupting the pen’s input.
- **Multi-touch capabilities**, which can recognize multiple simultaneous finger touches, allowing for enhanced manipulation of on-screen objects.

Some professional-grade Tablet PCs use pressure sensitive films that additionally allow pressure sensitivity such as those on graphic tablets.

Concurrently capacitive touch-screens, which use finger tip detection can often detect the size of the touched area, and can make some conclusions to the pressure force used, for a similar result.

Learning Objectives

In this chapter you will be able to understand about ;

- Artificial Intelligence – AI.

As a part of IPO cycle the AI (Artificial Intelligence) let us understand about the AI in this chapter.

Artificial Intelligence

Artificial intelligence (AI) is the science of making machines do things that would require intelligence if done by humans.

For example, make a machine play chess or find a patient's illness or teach geography. Artificial intelligence programs are often involved with processes such as:

- Remembering and accessing relevant knowledge.
- Revising and extending their knowledge.
- Searching in a more systematic way for a solution to a problem. Recognising similarities between things.
- And trying to understand some aspect of their surroundings, for example, something communicated to them in English.

The concepts from disciplines such as psychology, linguistics and computer science are used by researches to prepare programs or create systems to do tasks automatically.

Computers were programmed years ago to play checkers against human opponents. In one case the program improved the game to the point where it easily defeated its author or the builder. Thus the machine learned what not to do by trial and error. Hundreds of chess playing programs have also been written that can run on machines ranging from micros to supercomputers. The possible number of moves in a chess program is so large that all could not be stored or analysed by any computer.

Researchers then started building neural-network computers, which are machines with circuits patterned after the complex interconnections existing among the neurons, or nerve cells. Neural network computers now have processing elements, or simulated neurons, that number in hundreds or thousands, and there are thousands or millions of interconnections between these elements. In contrast, humans have about 10 billion neurons in the thinking part of their brains, and there are at least 100 trillion interconnections between nerve cells.

Expert Systems

An example of AI is the use of expert systems. An expert system is a software package that attempts to encode the knowledge and decision rules of human specialists. A complete expert system package includes two components:

- Knowledge base
- Expert System Shell

Knowledge base - there is a stored knowledge base that may be filled with “if-then” facts (such as if the sun shines over the sea then the water will evaporate), and general rules (such as: if the student walks 20 minutes late to the class then punish him).

Expert system shell - there is an expert system shell of linguistic and reasoning mechanism. This can probe the knowledge base to reach conclusions and recommend solutions to specific problems.

The need of an expert system in an organisation

- To preserve knowledge that might be lost if a company expert retires, resigns, or dies.
- To clone specialist expertise so that beginners at different locations can be trained to perform as the expert does.
- To develop the knowledge-base component for an expert system.

Researchers and knowledge engineers of artificial intelligence spend more time in knowing the brain of specialists. The aim was to extract and structure the knowledge that is the basis for the specialists’ expertise. When the user supplies the data, the expert system should respond like an intelligent assistant by suggesting possible decisions.

Uses of the Expert systems

A geology package

An expert system called prospector asks the user about an area's geological formations and then gives advice on the possible location of mineral deposits. Prospector has predicted accurately the location of a multimillion-dollar molybdenum deposit under mount Tolman in East Washington.

Medical diagnostic package

Expert programs have been developed to diagnose diseases and advise treatments. One such system called HELP, is used to diagnose the problems of patients with heart disease. HELP collects patient data from health care professionals, and suggests probable diagnosis and treatments.

Another diagnostic expert systems called Puff, is used to measure lung functions. Caduceus, a more generalised package is programmed to evaluate over 4,000 symptoms and other data in order to recognise over 600 diseases. Caduceus accepts the initial input data about a patient from the doctor. The program provides the diagnosis for the doctor in a few minutes.

AI and the Future

The Japanese expect to achieve leadership in AI technology with a supercomputer capable of storing a knowledge base of up to 20,000 rules and 100 million data items. The U.S government's Defence Advanced Research Projects Agency (DARPA) is also spending hundreds of millions of dollars on a Strategic Computing Initiative (SCI) program to achieve dramatic advances in microelectronics, computer architecture, and AI. The achievements of the combination of the superiority of the human brain and the speed and accuracy of the computer will be limitless. The alliance between human and computer can produce a synergistic effect. The word synergy refers to the ability of the two entities to achieve together what each is incapable of achieving alone.

Learning objectives

In this chapter you will be able to understand about ;

- Input devices: Scanner.

Scanner

Scanners are one of the more prevalent computer peripherals. They are used to scan printed documents, such as old photographs, pages from books and magazines, and hand-drawn artwork. Flatbed scanners are the most common type, and there are many features offered by different models of flatbed scanners

What is a Flatbed Scanner?

A scanner is a device that creates a digital representation of a tangible object. A flatbed scanner is named for its platen (or glass plate) that literally creates a “flat bed” on which the object being scanned rests. Its counterpart is the drum scanner, which, as its name implies, uses a drum for scanning. One of the benefits of the flatbed scanner is that scanned objects remain stationary, so it’s suitable for delicate originals or even 3-D objects.

Important Components

The most important component of the flatbed scanner is the charge coupled device (CCD). Scanners work by shining light on the object and using mirrors to reflect it to a photosensitive device. Flatbed scanners use CCDs for that process, and the CCD collects the reflected light and converts it to a series of electronic signals. The CCD is a “coupled” device as it uses two types of arrays: one to image the scanned object and the other to store it as pixels.

Sizes

- Flatbed scanners are available in a range of sizes. Most scanners designed for household and small office use can scan a maximum size of 8.5 by 11 inches (or standard letter or A4 size originals). Larger scanners accommodate tabloid-size sheets and can scan sizes 11 by 17 inches to 12 by 18 inches. Those are typically found in graphic art studios and pre-press departments.

Resolutions

- Resolution determines the quality of the digital image. It refers to how many dots make up the image and is expressed as dpi (dots per inch) or ppi (pixels per inch). The numbers that express resolution are given to indicate the dot count along both the X and Y coordinates. For example, a scanner that provides 4800 dots per horizontal inch (the X coordinate) and 9600 dots per vertical inch (the Y coordinate) is said to have a 4800 by 9600 resolution. Many manufacturers abbreviate that specification and only refer to the X coordinate for resolution.

How Much Resolution is Enough?

- When it comes to resolution, more is not always better. Flatbed scanners with high resolution capabilities are more expensive, so it's important to determine how much resolution you require. The highest quality scans will yield the highest quality printed output, especially in large formats, and they will also create very large files. Resolutions at 4800 are required for high quality output, but the printer or press that is to be used to reproduce the image is also a determining factor in the final quality. Not all output devices can print high resolutions, so high resolution scanning might be wasted. If you use your scanner primarily to scan images for on-screen viewing, you also do not need a high-end scanner.
- Resolutions at 2400 are good all-purpose devices and suffice for home computing needs. Flatbed scanners for documents only (text without graphics or images) have a 600 dpi resolution, which is adequate for that type of scanning.

Bit-Depth Color

- Another defining specification for flatbed scanners is the color bit depth. Broader color rendering and representation can be gained with higher bit depths. The most basic scanners have a 24-bit color depth, while higher-end models provide 48-bit color. Using a 24-bit color scanner will be fine for scanning colored charts and graphs. If you will be scanning a lot of photographs, it's best to use a 48-bit color device, as it will be able to capture the tonal shades associated with photos. Scanners with 96-bit color can discern the widest array of colors and are used by professionals for scanning paintings and other original artwork.

Summary

- In this chapter we have learnt about the Flatbed Scanners.



Teacher Activity

- Demonstrates the functioning of Scanner.



Student Activity

- Scan a text book picture in various resolutions and compare.



Key Words

- Resolution
- Flatbed
- CCD - Charge Coupled device
- PPI - Pixels Per inch
- DPI - Dots per Inch

Learning Objectives

In this chapter you will be able to understand about ;

- Memory and storage
- Memory – RAM and ROM
- Storage Capacity
- Computer Storage

Refers to the data stored in an electromagnetic form to be used by the processor

Storage Capacity

Storage capacity is the number of characters that can be stored on a computer.

You can measure the amount of data stored on a computer just as you can measure the amount of water in a container, although measurement units are different.

- Computer stores a variety of data and information in its memory
- Stores numbers (0-9), letters (A-Z) and symbols and other characters (#, {}, ', ~, ^)
- Uses the binary system to represent these characters
- The 0s and 1s in the binary system are known as bits (**binary digits**)
- A bit is the smallest unit of measurement of storage capacity
- A set of eight bits is called a byte
- Kilobytes, megabytes, gigabytes and terabytes are higher units for measuring the storage capacity of a computer

Explain this table of measurements

8 bits	= 1 byte
1024 bytes	= 1 kilobyte (KB)
1024 KB	= 1 megabyte (MB)
1024 MB	= 1 gigabyte (GB)
1024 GB	= 1 terabyte (TB)

Computers use two types of storage:

1. Internal storage
2. External storage

Internal Storage :

- It is one of the main components of the system unit
- Also known as the main memory
- Stores data and instructions on the computer
- Stores the output data temporarily before it is sent to the output device
- It is volatile and its capacity is also limited;
- This means that the contents in the memory will be lost when the computer is turned off
- The act of retrieving existing data from memory is called reading
- The process of storing data in memory is called writing

There are two types of internal storage:

Random Access Memory (RAM)

Read Only Memory (ROM)

The storage capacity of RAM will vary from one computer to another. The capacity of RAM ranges from 4 MB to 8 GB or more.

Differences between RAM and ROM

Random Access Memory (RAM)	Read Only Memory (ROM)
Temporary storage area for holding programs and data	Permanent storage area for holding instructions to start a computer
Data is lost as soon as power is switched off	Instructions are not lost as soon as power is switched off

External Storage

- It is a permanent storage area
- Stores data and programs that are not needed immediately by the computer
- Also known as secondary storage
- Data stored in this medium is permanent
- It is inexpensive and has a large storage capacity

You need a storage device called a drive to write to and read from a storage medium

A computer's internal storage or main memory is *volatile*. This means that the contents in the memory will be lost when the computer is turned off. The storage capacity of the primary memory is also limited.

Some of the commonly used external storage devices are:

- Hard disk drives
- Floppy disk drives
- Compact Disk – Read Only Memory (CD-ROM) drives
- Digital Video Disk (DVD) drives
- CD and DVD writers

Hard Disk Drive

- Is an external storage device used to store large quantities of data?
- Is attached to the system unit from within?
- Is packaged along with the hard disk ?
- Is used to read data from and write data to the hard disk?
- Has a storage capacity varying from 40 GB to 500 GB to a few terabytes?



Floppy Disk Drive

- Is an external storage device used to read from and write to a floppy disk.
- Floppy Disk:
- Is also called a floppy or diskette.

- Is a portable storage medium that can store a small amount of data.
- Has a storage capacity of 1.44 MB.
- Is prone to damage by heat and dust.

Compact Disk -Read Only Memory (CD-ROM) Drive

- Is used to read from a CD-ROM.
- Is a storage medium.
- Has a large storage capacity of 650 MB or 700 MB.
- Is less prone to damage.
- Is nowadays available as rewritable CD.
- Handle CDs carefully. If the CD is scratched, you may not be able to read the CD contents.
- Floppy drives and hard drives can perform both read and write operations. Hence, they can be called input/output devices. A CD-ROM drive can only read from a CD-ROM and not write onto it. Hence, it is only an input device.



Rewritable CDs and CD Writers



- Are storage devices that can write data to a CD.
- Store a large amount of data on a CD, with a minimum range starting at 650 MB.
- Can read CD-ROMs.

Digital Video Disk (DVD) Drive

- Is an external storage device.
- Used to read from a DVD-ROM.

DVD-ROM :

- Is similar to a CD-ROM.
- Can store a minimum of 4.7 GB and maximum up to 17 GB.
- Used to store multimedia objects that combine high quality sound and graphics.
- A DVD drive is capable of reading from CD-ROMs.



Comparison between Floppy Disks, Hard Disks, CD-Roms and DVDS

Floppy disk	Hard disk	CD-ROM	DVD
Also referred to as diskettes or floppies	Also referred to as the fixed disk	Also referred to as compact disc	Also referred to as digital video disc
Is removable	Non-removable	Is removable.	Is removable.
Less resistant to damage as made of vinyl material	Less prone to damage as it is inside the system unit	Is more reliable than a floppy disc	Is more reliable than a floppy disc
Can store 1.44MB of data	Can store 40 GB of data or more	Can store 650 MB or 700 MB of data	Can store a minimum of 4.7 GB of data
Can be used to read and write data	Can be used to read and write data	Is read-only	Is read-only



Teacher Activity

- Collect and show the various types of storage media.



Student Activity

- Differentiate between CD & DVD.
- Differentiate between Hard disk & Floppy disk.
- Differentiate between movable & stable storage media.
- Differentiate between storage, capacities of floppy, CD & DVD, select and storage media depending on data size.
- Differentiate between read, write storage media.



Key Words

- Hard Disk
- DVD
- Read only memory
- Storage capacity
- Secondary storage

Learning Objectives

In this chapter you will be able to ;

- State the need for networks
- Define a network
- List the different types of networks
- List the various components of a network
- Define basic terms related to networks
- List the types of LAN
- Define workgroup and domain

Networking**What is a network?**

A network refers to an arrangement of things. For instance, you may have come across the sentence, ‘The state has a very good network of roads’. This signifies that there is a good system of roads that reaches out to every corner of the state. In other words, the cities, towns and villages of the state are well connected through the wide network of roads. It also signifies that these cities, towns and villages are dependent on the interconnectivity that this network of road provides.

We can extend this analogy to computers, too. When we say that a group of computers is ‘networked’, it implies that these computers are linked by means of a communication system. Technically speaking, the term ‘*computer network*’ refers not just to the computers but includes the software that helps them communicate and the transmission methods used in such communication. Therefore, it includes the whole range of hardware and software components that make a computer network operate.

Thus, networking is the process of linking several computers together in order to enable them to communicate with each other. The interconnection of the hardware and software components of a group of computers is known as a *Network*.

Advantages of Networking

- Networking allows sharing of files and documents among various systems in the network.
- Networking allows sharing of hardware and software resources among various systems.
- It also provides an improved communication link between users in a network.

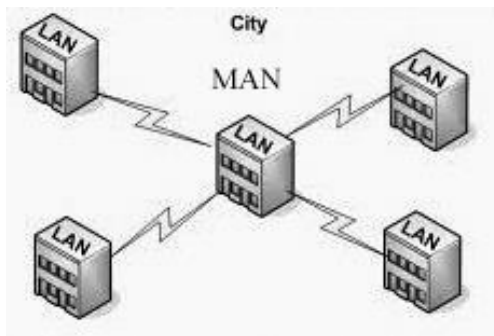
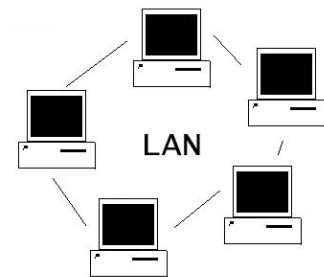
Types of Network :

Networks vary widely in their size, complexity and geographical spread. One way of classifying networks is based on their geographical spread. On this basis, networks can be classified into

- Local Area Network (LAN)
- Metropolitan Area Network (MAN)
- Wide Area Network (WAN)

Local Area Network :

A *LAN* is a group of computers and other devices distributed over a limited area and connected by cables. Example: Computers in a school.

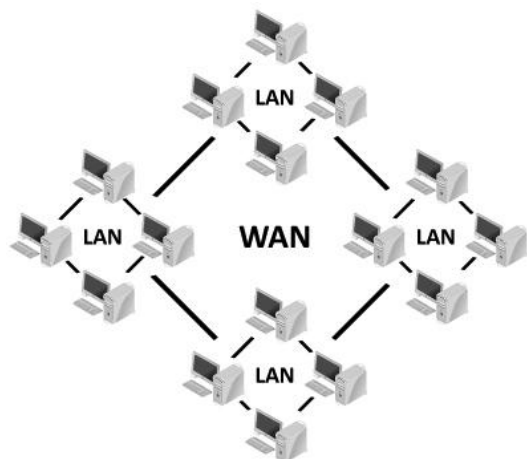


Metropolitan Area Network :

A *MAN* is a communication network that connects computers and other devices that are distributed within the geographical boundaries of a city or town. Example: The railway reservation system in a city.

Wide Area Network :

A *WAN* is a communication network that connects geographically separated areas such as countries or even continents. Majority of the WANs use satellites as their primary medium of transmission. Example: The Internet



Components of a Network

- Components of a network can be classified into two headings namely *logical components* and *physical components*.
- The Logical components of a network consist of the *Network Operating System (NOS)* and the associated *protocols*.
- The Physical components of a network comprise network adapter cards, cabling systems that connect the computers, telecommunication lines, satellites and hubs.

Network Operating System

The operating system that enables a computer to participate in a network is known as the Network Operating System.

Some of the popular network operating systems are listed below.

- Variants of UNIX like IRIX, Linux, HP-UNIX and Solaris
- Novell NetWare from Novell
- Windows NT from Microsoft

Network Protocols

A protocol is a set of rules and conventions to be followed for sending and receiving information over the network. The set of rules governs the following:

- the content of the information
- the format in which the information will be sent
- the timing and the sequence in which the information will be sent
- the error control messages that are sent

In a network, these rules are implemented through a set of software. Some commonly used software for implementing these rules and conventions are listed below.

- Ethernet Protocol
- Transmission Control Protocol/Internet Protocol (TCP/IP)

Terms Related to Networks

Node

A *node* is a device that is directly attached to the network. Generally, the term is used in the context of computers attached to a network. However, there are other devices such as network printers that can be attached directly to a network. If these devices are attached to a network, they are also referred to as nodes.

Workstation

Workstations refer to the computers that are attached to a LAN and are seeking to share the resources of the network. A workstation is also known as client. LAN connects all the individual workstations together and each workstation has access to resources available through the network. A workstation that is part of a LAN can still be used independently.

Server

A *server* is a computer that shares its resources with the other workstations in a network. Servers are of two types: *dedicated server* and *non-dedicated server*.

Dedicated Server

A *dedicated server* is one that can work only as a server and cannot double up as a workstation. This type of server is used in very large networks. Here the only job of the server is to help workstations access data, software and hardware resources.

Non-dedicated Server

A *non-dedicated server* is simply another workstation. The computer acts as a server by providing resources to the workstation on the network and also doubles up as a workstation. This type of server is suitable for smaller networks, which have fewer workstations.

Types of LAN :

LAN can be classified into two types: *peer-to-peer network* and *client/server network*.

Peer-to-peer network :

A *Peer-to-peer network* is a network in which every node can act as both a client and a server. Each node can share its resources with other nodes on the network. Every computer on this network takes an equal part in the networking process and is ideally suited for smaller networks.

Consider a peer-to-peer network of four computers. Assume that 'node2' on the network needs to access a PowerPoint presentation from 'node3'. When 'node2' is accessing the presentation from 'node3', 'node3' becomes the server and 'node2' becomes the client. Now assume that 'node1' needs to access a file from 'node2'. Here, 'node2' is the server and 'node1' becomes the client. Therefore, any system in a peer-to-peer network can act both as a client and a server.

Client/Server Network :

A *client/server network* involves using a powerful computer, which runs a network operating system and acts as the server in the network. This network operating system manages the communication link between the server and the client. In this type of network setup, the administration of security and user account information is centralised. These networks are easier to administer and control, especially in a large network setup.

Consider a client/server network of 20 computers. In this setup 'node1' is designated as the server and it is the only system that can provide network services to the clients. The remaining 19 nodes are designated as clients. In this setup, clients can never act as servers.

Workgroup

A *workgroup* is a logical grouping of computers on a network. Each workgroup on a network is identified by a unique name. In this network setup, resources are shared among the nodes and security information is distributed to each node that acts as a server. Peer-to-peer network setup is otherwise called a workgroup.

In a workgroup, the maintenance of security becomes cumbersome as the network grows. This is because there is no centralised administration of security information and resources.

Domain

A logical grouping of computers and users that share a common security database is known as a *domain*. This grouping of computers and users is done mainly to implement security for users and resources. A client/server network setup is otherwise called a domain.

Summary

- The interconnection of the hardware and software components of a group of computers is known as a *Network*.
- The three types of networks are LAN, MAN and WAN.
- Components of a network include:
- Logical Components – consist of the Network Operation System (NOS) and the associated protocols.
- Physical Components – comprise the network adapter card, network cables, telecommunication lines, satellites and hubs.
- The Network Operating System allows a computer to participate in a network.
- A protocol is a set of rules and conventions to be followed for sending and receiving information over the network.
- A node is a device that is directly attached to a network.
- Workstations refer to computers that are attached to a LAN and are seeking to share the resources of the network.
- A server is a computer that shares its resources with the other workstations on a network. Servers are of two types: dedicated server and non-dedicated server.
- Peer-to-peer network is a network in which every node can act as both a client and a server.
- A client/server network involves using a powerful computer, which runs a network operating system and acts as the server in the network.
- A workgroup is a logical grouping of computers, which enables users to browse the network.

- A logical group of users and computers implemented for security purposes is known as a domain.



Teacher Activity

- Shows the computer lab network.
- Demonstrates its functioning.
- Explains its components.



Student Activity

- Identify the components of lab network.
- Observe and record various networkers used in the open market.



Test Your Knowledge

Fill in the blanks

1. The interconnection of the _____ and _____ components of a group of computers is known as a network.
2. WANs use _____ as their primary medium of transmission.
3. The operating system that enables a machine to participate in the network is known as the _____ operating system.
4. A _____ is a computer that shares its resources with the other workstations on a network.
5. Peer-to-peer network is a network in which every node can act as a _____ and a



Key Words

- LAN
- MAN
- WAN
- NOS
- Server
- Node
- Work Station
- Protocol

Windows – Organizing Data: Running an application**Learning Objectives**

In this chapter you will be able to understand about ;

- Open Windows Explorer
- View files and folders by using Windows Explorer
- Create folders
- Create files

Windows Explorer

Windows Explorer is a tool that is used to browse through the entire system, including the network drives (refer Figure 1)

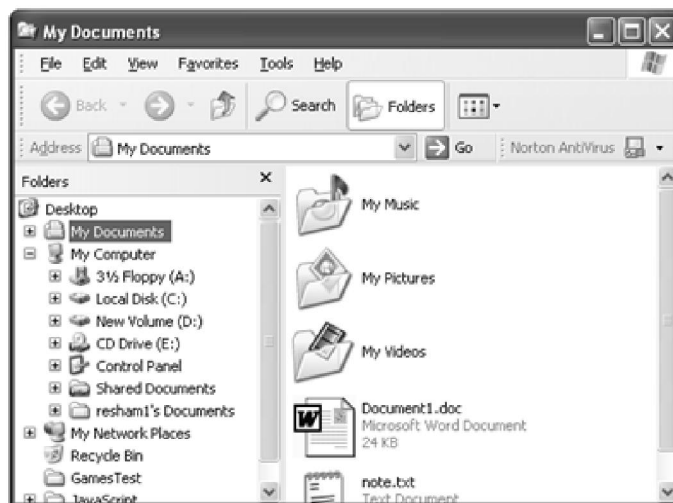


Figure 1: Windows Explorer window

To open the Explorer,

1. Click the *Start* menu.
2. Choose the *All Programs* option.
3. Choose the *Accessories* option.
4. Click the *Windows Explorer* option (refer Figure 2).

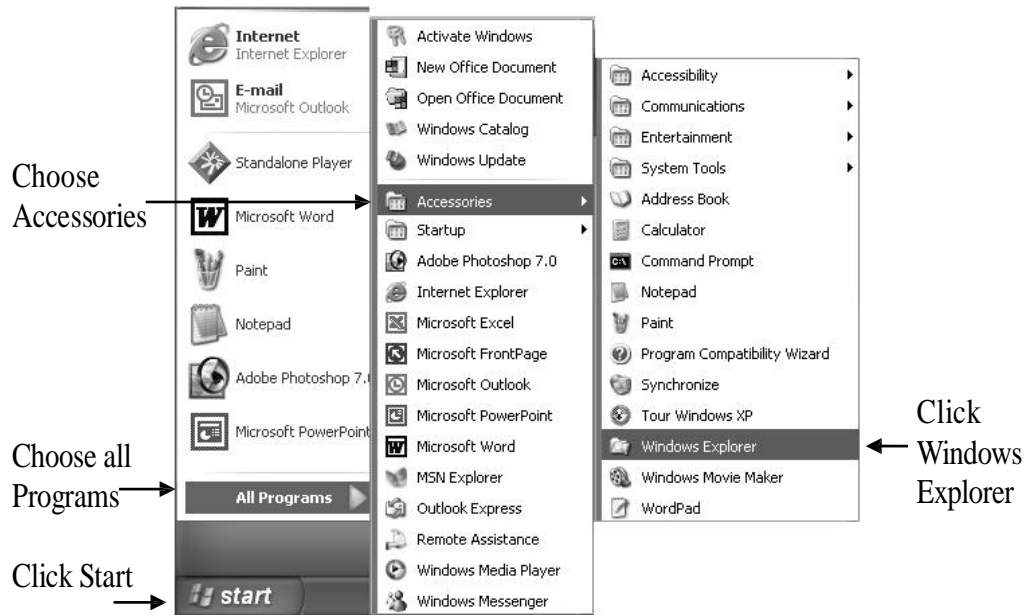



Figure 2: Opening Windows Explorer

Tip : You can also use the Windows +  key combination to view the Windows Explorer window.

With the help of Explorer, you can view the contents of the computer and the hierarchy of the folder structure.

The Windows Explorer window has a menu bar, toolbar, address bar and two panes. The left pane is called the *Folders pane*. The right pane is called *work area*.

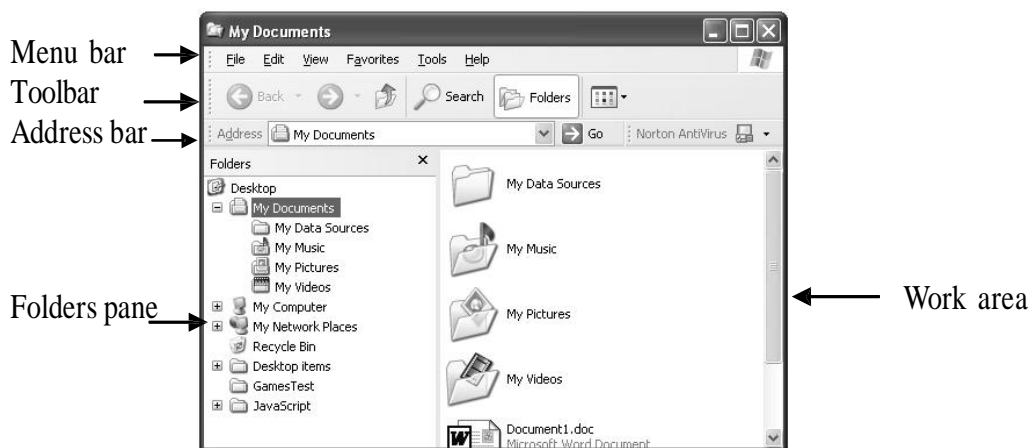


Figure 3: Parts of the Windows Explorer window

The Folders pane

The Folders pane displays the hierarchy of folders.

(refer Figure 4)

To view the Folders pane,

1. Click the *Folders* button  *Folders* in the toolbar.

Alternatively,

1. Click the *View* menu.
2. Choose the *Explorer Bar* option.
3. Click the *Folders* option (refer Figure 5).



Figure 4: The Folders pane

Creating a Folder in the C Drive Using Windows Explorer

The steps for creating a folder in Windows Explorer are the same as that of the My Computer.

To create a folder in the C drive using the Windows Explorer,

1. Select the C drive in the Folders pane.
2. Right-click the right pane.
3. Choose the *New* option on the shortcut menu.
4. Click the *Folder* option.

Alternatively,

1. Click the *File* menu.
2. Choose the *New* option.
3. Click the *Folder* option.



Figure 5: The Folders option on the View menu

Creating a File in the C Drive Using Windows Explorer

You can now create files within your folder. Suppose you want to create a text document to store your friends' phone numbers.

To create a file within a folder:

1. Double-click the folder you just created.

When you double-click a folder, its contents are displayed. Since the folder you created is empty, nothing will be shown.

2. Click the *File* menu.
3. Choose the *New* option.



A submenu appears.

Figure 6: Newly created document

4. Click the *Text Document* option.

A text file is created in your new folder as shown in the Figure 6.

Note : Text file is a simple file in which you can type text. The extension of a text file is .txt, where txt denotes a text file.

Alternatively, to create a file:

1. Right-click anywhere on the blank area in the right pane of the Windows Explorer.
2. A pop-up menu appears.
3. Choose the *New* option.
4. Click the *Text Document* option.

A new text document gets created.

Viewing Folders Using the Windows Explorer

To view the folders using the Windows Explorer,

- Double-click the folder.

Alternatively,

1. Right-click the folder.
2. Click the *Open* option on the shortcut menu.

Tip : You can also select the folder and click File ? Open to open a folder.

A + sign before a folder means that the folder has subfolders under it. Clicking the + sign will display the subfolders and the sign will change to -. Clicking the - sign will display only the parent folder and the - sign will change to +.

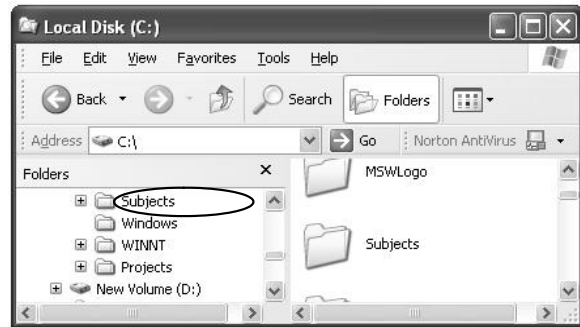


Figure 7: Viewing folders

For example, in Figure 7 the folder Subjects has + sign before it. This denotes that it has subfolders. When the + sign is clicked, the subfolders English, Maths and Science are displayed and the sign changes to - When the + sign before the folder English is clicked, subfolders Essay, Grammar and Short Stories are displayed. Notice that there is no sign before the folders Essay, Grammar and Short Stories. This indicates that they do not contain any subfolders (refer Figure 8).



Figure 8: Displaying the folder hierarchy in Folders pane

In this folder structure, folders Essay, Grammar and Short Stories are the subfolders of the folder English. English is also a subfolder of the folder Subjects, which is a parent folder.

Now You Know

- *Windows Explorer* is a program that enables you to view the contents of the entire system.
- You can view the contents of the computer, and the hierarchy of the folder structure using Windows Explorer.

Teacher Activity

- Demonstrate organising files or folders.

Student Activity

- I Hands on practice for organising files & folders.

II Do the following

1. Create a shortcut for Microsoft PowerPoint on the desktop.
2. Open Windows Explorer.
3. Create a folder “Student” in the desktop.
4. Create a folder under C:.
5. Create a text file under the New Folder.
6. Select the C: icon.
7. View the list of folders and files in the right pane. Check if the files and the folders you created are shown.
8. Select the *Desktop* icon. List the icons shown in the right pane.



Test Your Knowledge

I True or False

1. You cannot create your own folders.
2. Text document is a program that enables you to view the contents of the entire system.
3. Folders cannot contain folders within them.
4. A folder is automatically named as “Folder” when it is created.



Key Words

- Windows Explorer
- Work Area
- Left or Right Pane
- .txt
- + sign
- - sign

Learning Objectives

In this chapter you will be able to understand about ;

View presentations in different modes like

- Normal view
- Slide sorter view
- Notes Page view
- Slide show view

Change the background of slides

Apply design templates Change the slide layout Change the colour scheme - Add slide transitions

Views in PowerPoint

While creating a presentation, sometimes it is helpful to see the entire content to reorganize it and to see what the audience will see during the presentation.

PowerPoint has several ways of viewing your slides while creating it.

To change the view:

1. Click the *View tab*.
2. Click the required view (refer Figure 1).

Normal View

Normal view is the main editing view, which you use to write and design your presentation. The screen is split into three sections. On the left, there are tabs that alternate between an outline view of your slide text (*Outline* tab) and your slides displayed as thumbnails (*Slides* tab). On the right, there is the slide pane, which displays a large view of the current slide. At the bottom, there is a pane to enter notes (Refer Figure 2).

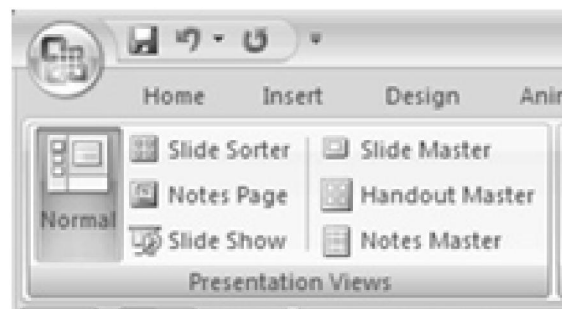


Figure 1: Changing the View

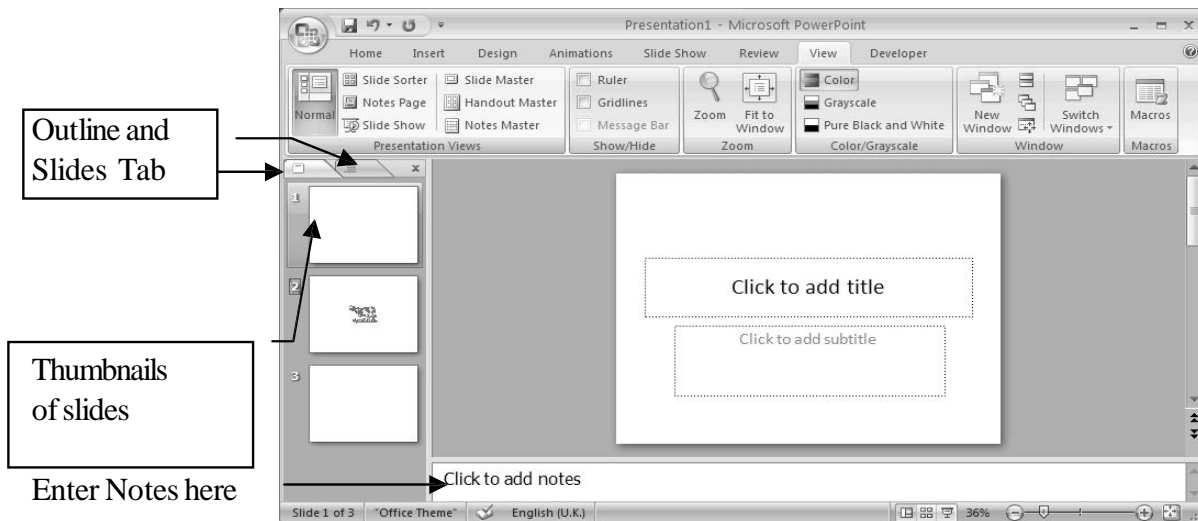


Figure 2: The Normal View

Slide Sorter View

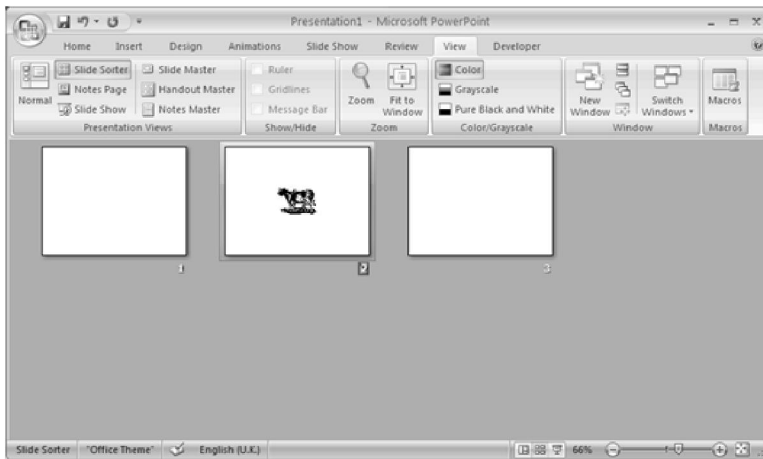


Figure 3: The Slide Sorter View

A small image of each slide is displayed in the *Slide Sorter* view. Slides can easily be ordered and sorted from this screen (Refer Figure 3).

You can use the icons on the *Slide Sorter* toolbar to set timings for a slide show and to apply animations and transitions. You can also easily

move and copy slides in this view.

Notes Page View

The *Notes Page* view is used to enter notes for slides within a presentation. Each notes page includes an image of the associated slide, below which there is an area where you can enter text. Notes pages act as a script for the presentation. It can hold as much text as it can fit on one page (Refer Figure 4).

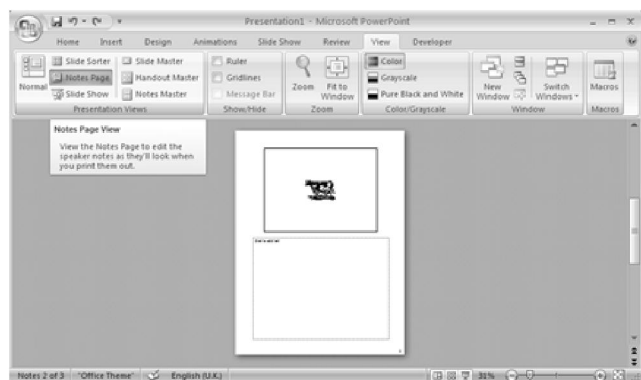


Figure 4: The Notes Page View

Slide Show View

The *Slide Show* view displays slides in full screen mode. When you use this view, the PowerPoint window is not visible and each slide occupies the complete screen area. This view helps you see how the slide will actually look like when the presentation is made.

Changing the Background of the Slides

You want to change the background of the slides to yellow. You can change the appearance of your slide background by changing its colour, shade, pattern or texture. You can also use a picture as a slide background, but you cannot use more than one picture.

To change the colour or the effect of the existing slide background:

1. Select the slide for which you want to apply a colour.
2. Right click the slide.
3. Select the Format Background option.
4. A Format Background dialog box is displayed.
5. Select the colour by clicking the Color list box. (Refer Figure 5)



Figure 5: The Notes Page View

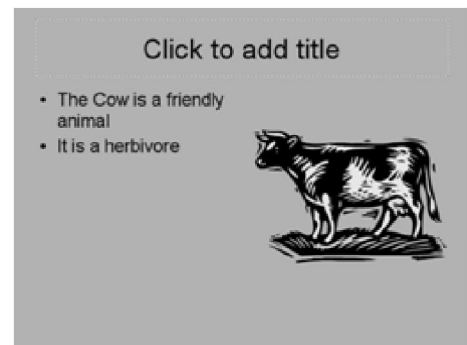


Figure 6: Slide after changing the background

6. If the colour is not available in the colour scheme, click the More Colors option and select the color you want.
7. To apply the change to the current slide, click the Close button. To apply the change to all the slides, click the *Apply to All* button.

The background of your slides has changed (Refer Figure 6).

Applying Design Templates

A design template is a slide that has a pre-defined background design, background colour, font style and font colour. This can be applied to the slides in your presentation. A variety of design templates are available. You have to choose a template that will best suit

your presentation. The design templates can be applied in the beginning, when you create a new presentation. You can also change the design of your slides at any point of time.

To change the design template:

1. Click on the Design tab. Various design templates will be displayed in the Themes group. (Refer Figure: 7)
2. Move the mouse on each template to see the preview.



Figure 7: Design templates



Figure 8: Applying a design template

3. Select the design template by clicking it.
4. The design template will be applied to all the slides.

If you want the design template to be applied to one or more selected slides, then click the *Apply to Selected Slides* option. If you have not selected any slide, it will apply the layout to all the slides.

5. Right-click on the Design Slide. From the pop up box displayed select the required option. (Refer Figure 8)

Changing the Slide Layout

Suppose you want to make the slide containing the list of domestic animals into a clipart and text slide. To do this, you need not insert a new slide with the preferred layout and type the whole text again. Instead, you can change the layout of the existing slide.

To change the slide layout:

1. Select the slide to which you want layout to be changed.
2. Click the *Home tab*.
3. Click the Layout option from the Slides group.

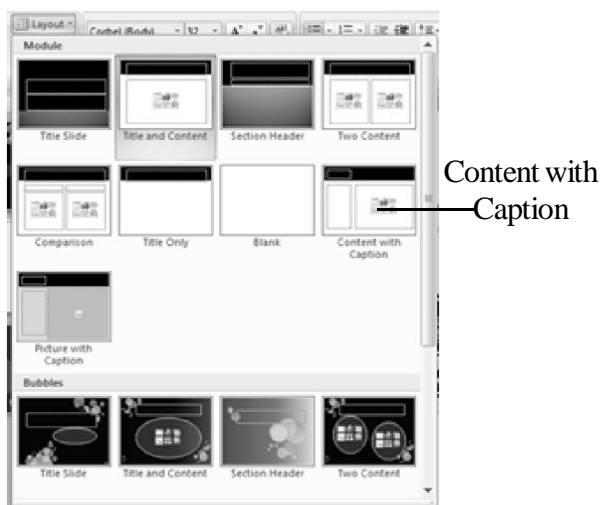


Figure 9: Changing the slide layout

The Module task pane appears (Refer Figure 8).

4. Use the scroll bar to view all layouts. Select the required layout, in this case, the Content with Caption layout.

The selected layout is applied to the slide.

Now, you can add the clipart of your choice to this slide.

Adding Slide Transitions

Transitions control how slides will switch from one to the next during a slide show. Transitions provide different effects for advancing to the next slide.

To add transition effects to your slides:

1. Select the slide to which you want to apply transition.
2. Click the *Animation* tab.
3. From the Transition to This Slide group, select the type of transition that you want to apply. (Refer Figure 10)
4. Transition effect is applied to the slide. To apply the transition effect to all the slides,
5. Click Apply To All button from Transition to This Slide group. (Refer Figure 10) Your presentation is now ready to be displayed before the class.

Figure 10: Applying a Slide Transition

Note : Select the *On mouse click* check box to advance the slides only when you click the mouse or press the required key on the keyboard.



Select the *Automatically after* check box for the slides to advance automatically. You can specify a time in the spinner box below.

Now You Know

PowerPoint has different types of views that help you in constructing your presentation. Some of them are:

- *Normal* view – The screen is split into three sections showing the presentation outline on the left, the slide in the main window, and notes at the bottom.
- *Slide Sorter* view – A small image of each slide is displayed in *Slide Sorter* view. Slides can easily be ordered and sorted from this screen.
- *Slide Show* view – This view is used to see the full-screen slide show.
- *Notes Page* view – The *Notes Page* view is used to enter notes for slides within a presentation.

You can change the appearance of your slide background by changing its colour, shade, pattern or texture using the *Background* option on the *Format* menu.

Pictures can also be used in the background.

To change a slide layout, click the *Layout* option on the *Home* tab.

The transition style determines how one slide is removed from the screen and the new one is displayed during the slide show.

Teacher Activity

- Demonstrate the enhancement in slide presentation.

Student Activity

1. Start PowerPoint.
2. Create a presentation titled “Uses of Computers”. It must have at least five slides.
 - a) Change the background to blue.
 - b) Insert some pictures on computers.
 - c) Add notes to each slide using the *Notes Page View*.
 - d) Apply a design template.
 - e) Add different slide transitions to each slide.
3. Save the presentation as “computers.ppt”. Use the *Slide Show* view to run the presentation.



Test Your Knowledge

Fill in the blanks

1. The _____ view shows small images of each slide where slides can be ordered and sorted easily.
2. The _____ view is used to enter notes for slides within a presentation.
3. The _____ controls how slides will switch from one to the next during a slide show.
4. The design templates are available in the _____
5. _____ control how slides will switch from one to the next during a slide show.



Key Words

- Normal View
- Note Page View
- Design Template
- Layout
- Slide Sorter View
- Slie Show View
- Animation

Learning Objectives

In this chapter you will be able to ;

Change the font type, size, colour and style using the formatting toolbar

- Use the Font dialog box
- Change the case of text
- Change the line spacing

Formatting Text

Word allows you to change the appearance of text so that it looks better. This can be done by changing the font used in the Word document.

Font refers to the manner or style in which text is displayed in your document. You can change the font type, font size, font colour and font style. This change in the style or appearance of text is called formatting. For this, you need to use the formatting toolbar.

Changing the Font Type

The text is currently in the font Times New Roman. You want to change it to Comic Sans MS.

To change the font:

1. Select the text.
2. Select a font from the *Font* drop-down list on the Font group from the Home tab. (refer Figure 1).

The font of your text will change as shown below.

The Solar System is like a family made of objects in the sky. The sun forms the center of the solar system. It is surrounded by the other family members namely planets, moons, asteroids and comets.

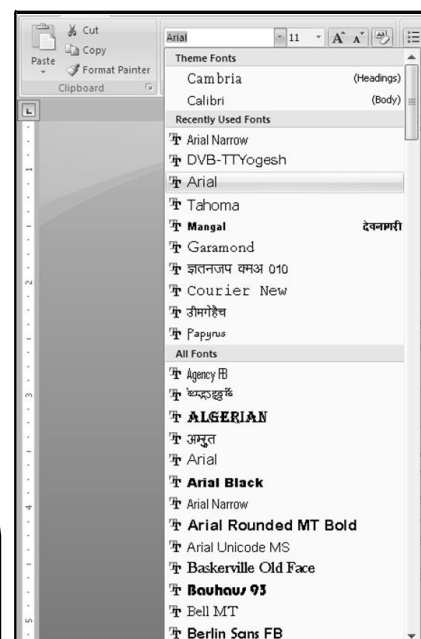


Figure 1: Changing the font type using the formatting toolbar

The Solar System is like a family made of objects in the sky. The sun forms the center of the solar system. It is surrounded by the other family members namely planets, moons, asteroids and comets.

Text after changing the font to Comic Sans MS

Changing the Font Size

To change the font size of the heading to 20:

1. Select the heading.
2. Select 20 in the from the *Font Size* drop-down list on the Font group from the Home tab. (refer Figure 2).

The font size of the heading has changed as shown below.

The Solar System

The Solar System is like a family made of objects in the sky.



Figure 2: Changing the Font size

To format text using the Font dialog box:

1. Select the text to be formatted.
2. Click the *Home* tab.
3. Click the *Font dialog box launcher* in the *Font* group. (An arrow next to the Font group)

The *Font* dialog box appears as shown in Figure 4.

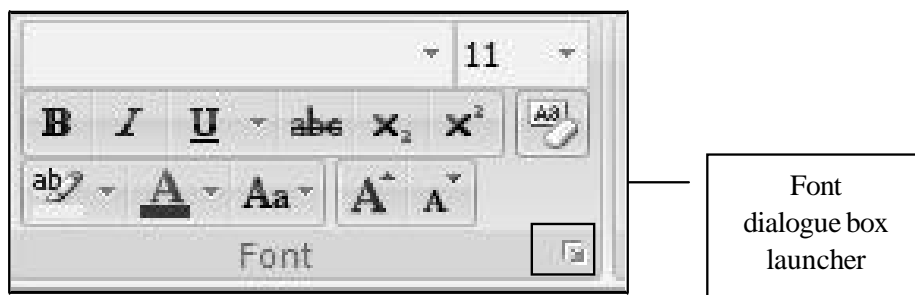


Figure 3 : Font dialogue box launcher

4. Select the required options for font type, font size, font colour and font style.
5. Click the *OK* button.

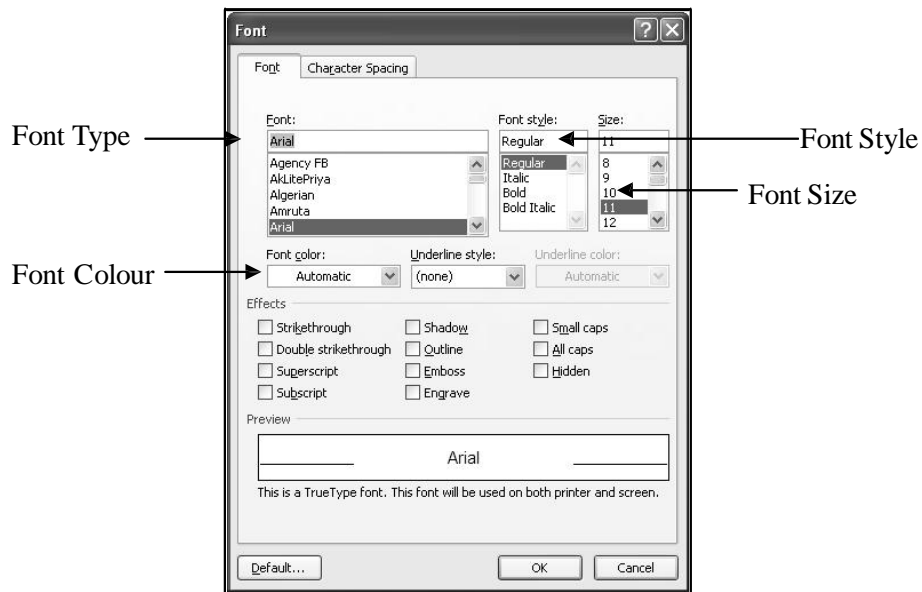


Figure 4 : The Font dialog box

Changing the Font Style

You want to underline the main heading. You also decide to make the sub-headings a bit thicker than the rest of the text and slant them. Word provides you with many styles like Bold, Italics and Underline.

The **Bold** option makes your text thicker.

The *Italics* option makes your text slant to the right side.

The Underline option puts a line below your text.

1. Select the heading and press the **U** button on the font group from the Home tab, to underline the main heading.
2. Select each sub-heading and press the **B** button on the font group from the Home tab, to make them thicker.
3. Use the **I** button on the font group from the Home tab, to italicise the sub-headings.

Note that the font styles of the text have changed (refer Figure 5).

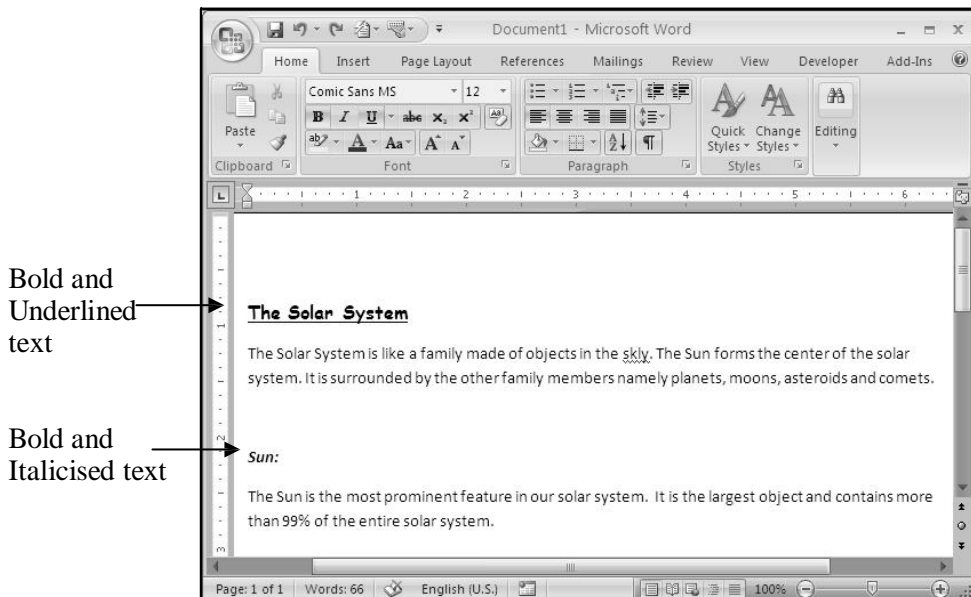


Figure 5 : Text after applying changes to the font

Changing the Case of Text

If you want to change a sentence from lower case to upper case, you need not type the whole sentence once again. You can use the *Change Case* option of Word.

For example, you want to change the sub-headings in your text to upper case. All you need to do is:

1. Select the heading.
2. Click the Home Tab.
3. Click the arrow next to the *Change Case*

(Change Case list) from the Font group.

(Refer Figure 6)

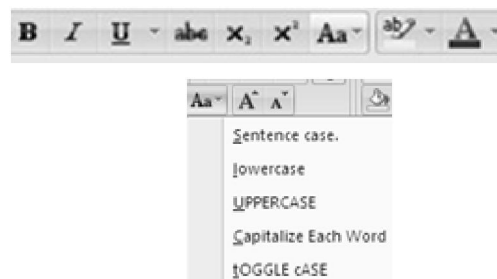


Figure 6 :

The Change Case dialog box

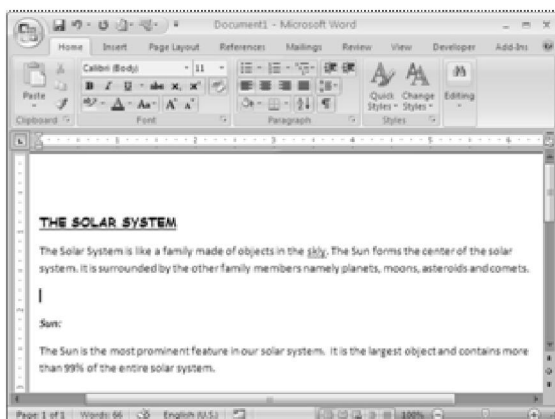


Figure 7 : Text with Upper Case

The *Change Case* dialog box is displayed as shown in Figure 6.

4. Select the *UPPER CASE* option.
5. Click the *OK* button.

The selected text has now changed to upper case (refer Figure 7).

The various options in the *Change Case* dialog box are:

Sentence case – Capitalizes the first letter of the selected sentence

Lowercase – Changes the selected text to lowercase

Uppercase – Changes the selected text to uppercase

Title case – Changes the first letter of every word in the selected sentence to uppercase

Toggle case – Changes all uppercase letters in the selected sentence to lowercase, and all lowercase letters to uppercase

Changing the Line Spacing

Line spacing refers to the amount of space from the bottom of one line of text to the bottom of the next line. Word bases the line spacing on the font size of the text. The line spacing you select will affect all lines of text in the selected paragraph.

Word uses single line spacing by default. You want to change it to a line spacing of 1.5 lines. To change spacing between lines:

1. Click the *Home Tab*.
2. Click the *Paragraph dialog box launcher*. (Refer Figure 8) The *Paragraph dialog box* appears as shown in Figure 9.

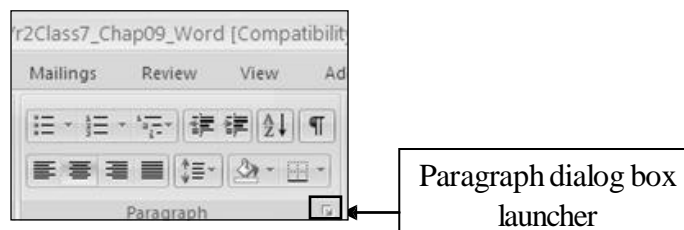


Figure 8 : Paragraph dialog box launcher

3. Select the *Indents and Spacing* tab.



Figure 9 : The Paragraph dialog box

4. In the *Spacing* section, change the value in the *Line Spacing* drop-down list to 1.5 lines.

5. Click the *OK* button.

The line spacing between the lines in your document has changed (refer Figure 10).

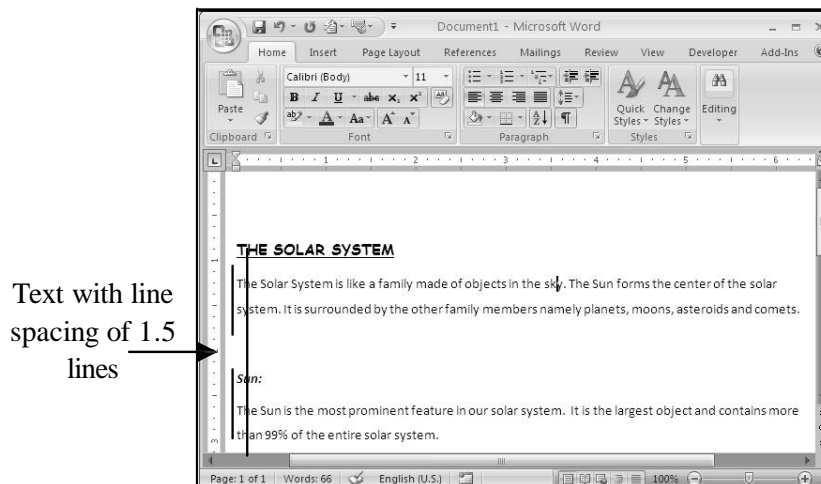


Figure 10 : Changed line spacing in the document

Summary

- Changing the appearance of text is called formatting.
- You can change the font type, its size, style and colour using the formatting toolbar.
- The *Font* dialog box can also be used to change the font properties.
- The *Change Case* option helps in changing the case from one to another.
- The *Paragraph* option on the *Home Tab* is used to maintain uniform spacing between lines of text.
- Word 2007 offers several new features that make it easier to work with documents.

Student Activity

1. Create a new Word document and type the following text.

The Air around us

The atmosphere is a mixture of many gases. The constituents of air are nitrogen, oxygen, carbon-di-oxide, argon and others.

Nitrogen

Nitrogen forms the major constituent of air with 78% by volume. It is not a reactive gas under normal conditions. Nitrogen compounds are essential for plant growth. Plants make proteins from nitrates. Proteins are the building materials of all living things.

Oxygen

Oxygen is the next largest constituent of air with 21% by volume. Oxygen helps combustion. Burning of candle, kerosene, petrol, etc are examples of combustion. Respiration and rusting are also examples of combustion.

Carbon-di-oxide

The amount of carbon-di-oxide is very little (about 0.03%). But this amount increases due to pollution. Carbon-di-oxide is used in fire extinguisher and aerated drinks. Dry ice is used for cooling ice cream, packing fish and to deep-freeze some foods.

2. Make the following changes to your document.

- a) Change the font type of the entire text to Courier New.
- b) Change the font size of the main heading to 18 points and underline it
- c) Change the font size of the sub-headings to 14 points.
- d) Change the font colour to blue.
- e) *Italicise* all sub-headings.
- f) Change all the headings to **bold**.
- g) Change the line spacing of the entire text to 1.5 lines.
- h) Change the case of the sub-headings to title case.
- i) Change the main heading to upper case.

3. Save the document.



Test Your Knowledge

Fill in the blanks

1. The _____ group helps you to change font style and font size.
2. You can use the _____ option on the Font group to change the character case. font style makes your text look bolder.
3. The _____ option is used to give multiple line spacing.
4. The _____ option changes the selected text to lowercase.

Learning objectives

In this chapter you will be able to ;

- Find and replace text
- Check your document for spelling and grammatical mistakes

Find and Replace

The Find and Replace option is very useful in searching for specific text in your Word document. It also helps you to replace the searched text with some other text. Using this feature, you can either replace all or only few occurrences of a particular text. Such an option is very useful when you are working with large documents where you can avoid scrolling through the entire document to locate or replace the text you want.

To find and replace text:

1. Click the Home Tab.
2. Click the Replace button from the Editing group(refer Figure 1).



Figure 1: The Replace button from the Editing group

The Find and Replace dialog box with the Replace page appears as shown in Figure 2.

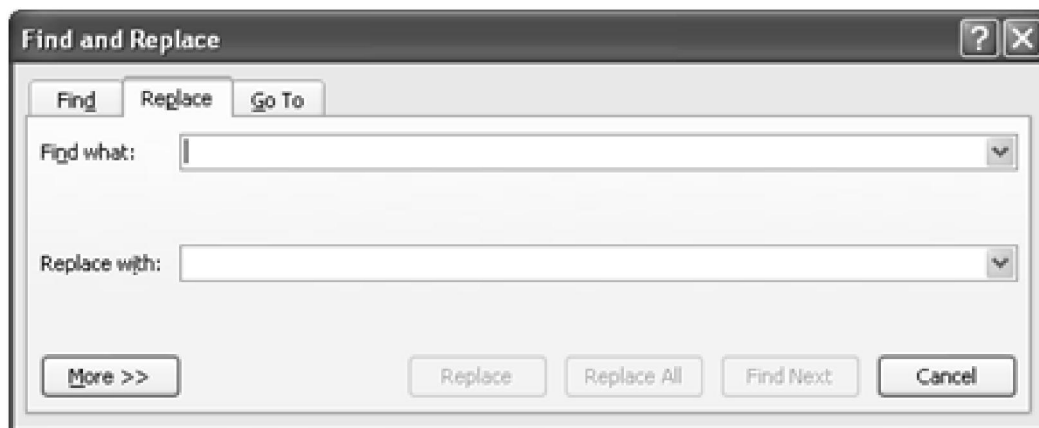


Figure 2: The Find and Replace dialog box

3. Enter the text you want to search in the Find What box.
4. Type the text with which you want to replace the search text in the Replace with box.
5. Click the Find Next button.

Word highlights the first occurrence of the search text.

6. Click the Replace button to replace it. The next occurrence of the word is highlighted.
7. Repeat step 6 till you get a message box informing you that there is no more search text available in the document.

Tip : If you do not want to change a particular occurrence of the word, click the Find Next button.

If you want to replace the text wherever it appears in the same document all at one once, click the Replace All button.

Spelling and Grammar

As you read earlier, Word can identify spelling and grammatical errors in your document. It also provides suggestions to correct them. Word has a dictionary of words. If the word you type is not present in the dictionary, it is underlined with a red wavy line. If Word finds a sentence with a grammatical problem, it is underlined with a green wavy line (reffe Figure 3).

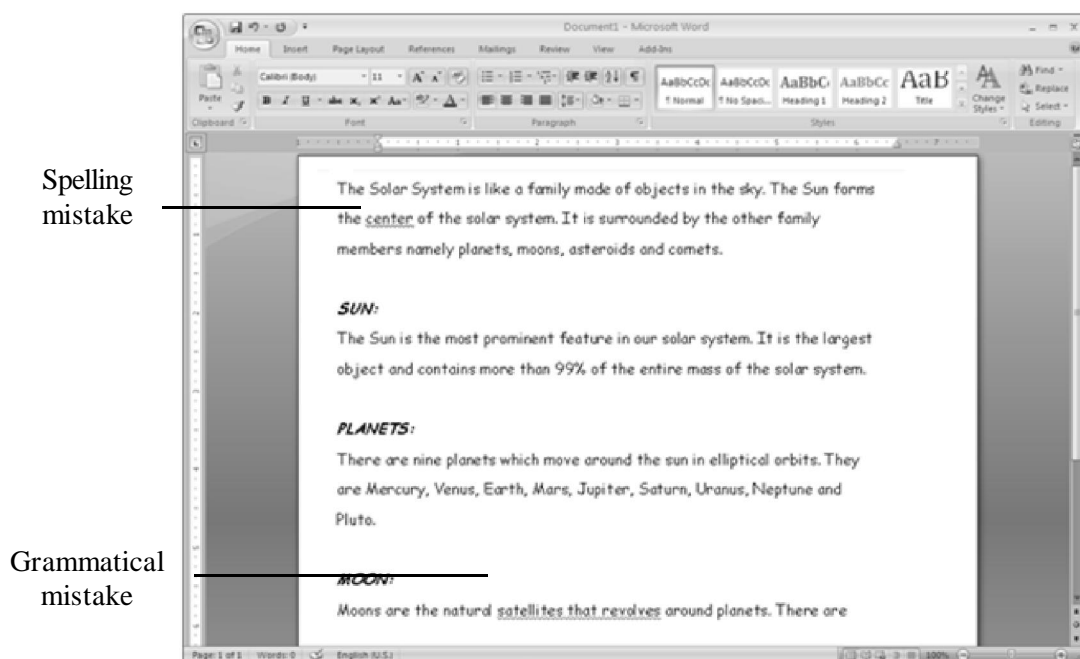


Figure 3: Document to be spell checked

To check for mistakes in spelling or grammar:

1. Click the Review Tab.
2. Click the Spelling and Grammar option.

The Spelling and Grammar dialog box appears (refer Figure 4). Word underlines the word “centre” in red. This is a spelling mistake. Word also suggests some words which it feels are correct.

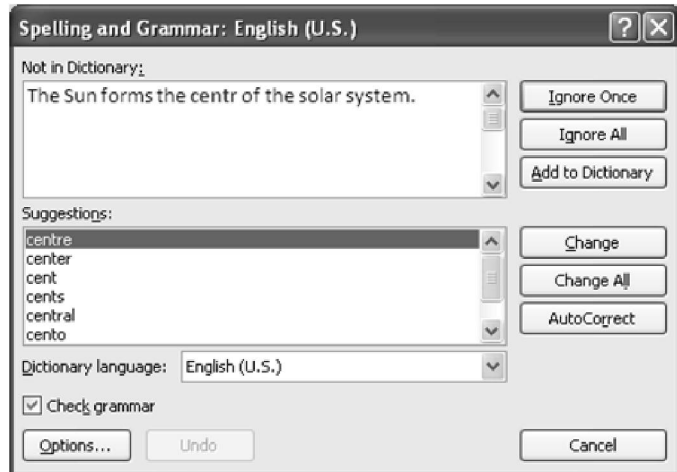


Figure 4: The Spelling and Grammar dialog box showing a spelling mistake

3. The correct spelling for it is “centre”. Select it from the Suggestions list box as shown in Figure 4.
4. Click the Change button.

Tip : To change all occurrences of a word to the suggestion, click the Change All button.

5. Word then underlines the words “satellites that revolves” in green. This is a grammatical mistake. The correct words for it are “satellites that revolve”. Select it from the Suggestions list box.
6. Click the Change button.

Word then continues with the spelling and grammar check for the rest of the document. Accept the changes suggested by Word if you feel they are correct. Sometimes, you may feel that a spelling or grammatical mistake pointed out by Word is not a valid one. In such a case you can ignore the error by clicking the Ignore Once button.

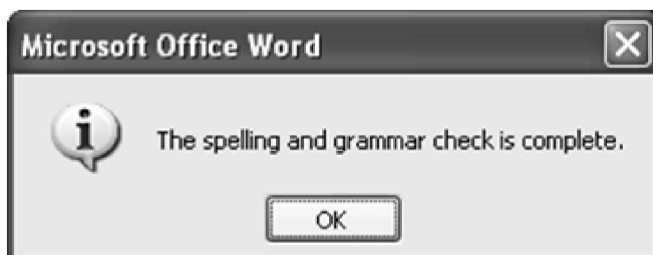


Figure 5: The Microsoft Word message box

To prevent Word from pointing the same word another time as a spelling mistake, click the Ignore All button.

To prevent Word from pointing the same text another time as a grammatical mistake, click the Ignore Rule button.

When the check is complete, Word displays a message box as shown in Figure 5

7. Click the OK button.

Your document is now error-free.

Summary

You can use the *Find and Replace* option to search for any text and replace it with some other text.

You can check your document for spelling and grammatical errors using the *Spelling and Grammar* option on the Review tab.

Student Activity

1. Create a new document and type the following text.

Food Production in Plants

All living organisms perform the basic functions of growth and reproduction. Food is the fuel that gives energy to the living organisms. Where does this food come from?

Man gets his food from animals and plants. The animals get their food from plants. Plants make their own food.

Plants have green leaves, which contain chlorophyll. This chlorophyll helps the plants make its food. The process by which plants make their food is called photosynthesis.

In photosynthesis, carbon-di-oxide and water react to produce carbohydrates and oxygen. The oxygen is released into the atmosphere, which we breathe.

The chlorophyll present in the leaves traps the light energy from the sun and converts it into chemical energy to produce carbohydrates. This is later converted into starch and stored in the plants. This food produced by plants forms the food for the other organisms like animals and man.

2. Find the text “make” and replace it with “prepare”.
3. Save the document as “The Food We Eat”.
4. Create a new document and type the following: Acid Rain

Acid rain is a common term for pollution caused when sulfur and nitrogen-di-oxide combine with moisture in the air to produce a rain of sulfuric and nitricacids. Such pollution

may also be suspended in a fog or the pollutants may be deposited in dry form. High levels of acid rain have also been detected in many areas around the world. Acid rain can cause severe environmental damage. It has destroyed plant and animal life in lakes, damaged forests and crops, endangered life in coastal waters, eroded structures and contaminated drinking water.

5. Perform the Spelling and Grammar check on your document.

Accept the changes suggested by Word if you feel they are correct. Otherwise ignore them.



Test Your Knowledge

Fill in the blanks

1. You can use the _____ with some other text.
2. The Replace option is found on the _____ feature to search for a text and replace it tab.
3. The text to be searched for must be entered in the _____ text box.
4. To accept the suggestion given by Word in the Spelling and Grammar dialog box, click the _____ button.
5. To ignore the suggestion given by Word in the Spelling and Grammar dialog box, click the _____ button.

Formatting Worksheets

Learning Objectives

In this chapter you will be able to understand about ;

- Format text and numbers
- Perform Auto Formatting and Conditional Formatting

Formatting Text


Your teacher wants you to improve the appearance of the marks statement file. You can do this by using the various formatting features available in Excel. Formatting determines how the information looks on the screen and how it appears when printed.

Formatting improves the appearance of the worksheet. You can format the data to highlight important facts and make the worksheet easier to read.

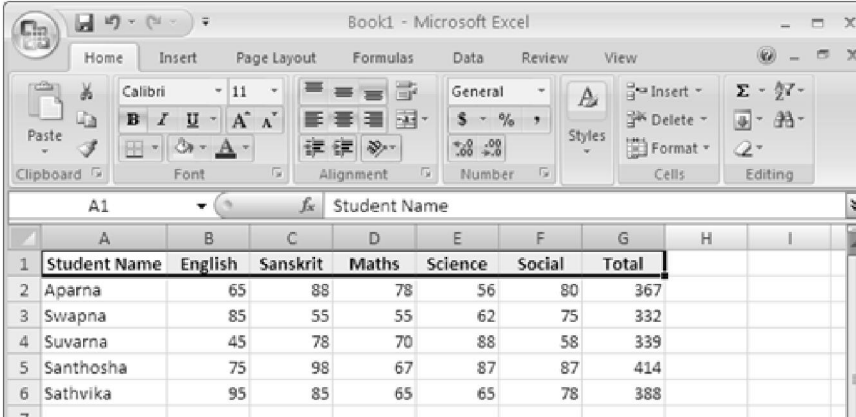
Changing Alignment

As you know, label entries are left aligned by default, that is, they appear on the left side of the cell. However, you can right-align or centre the label entries, if you want to.

Suppose you want to center align the column headings in Marks.xls file.

1. Select all the column headings, starting from “Student” to “Average”.
2. Click the *Center*  button on the Alignment Group in the Home tab.

All the headings are center-aligned as shown in Figure 1.




Student Name	English	Sanskrit	Maths	Science	Social	Total
Aparna	65	88	78	56	80	367
Swapna	85	55	55	62	75	332
Suvarna	45	78	70	88	58	339
Santhosha	75	98	67	87	87	414
Sathvika	95	85	65	65	78	388

Figure 1: Aligning column headings

Your teacher suggests that you give a main heading to the worksheet and centre the heading. So, you type the heading “Mark List” in cell A2 of the worksheet. You now have to centre the main heading. This heading has to be centred across a range of cells and not within a cell as in the earlier case.

To do this:

1. Select the cells across which you want to centre the heading, starting from the cell A2.
2. Click the *Merge and Center*  button from the Alignment group on the Home Tab.

The heading is aligned to the center of the entire marks statement (refer Figure 2).

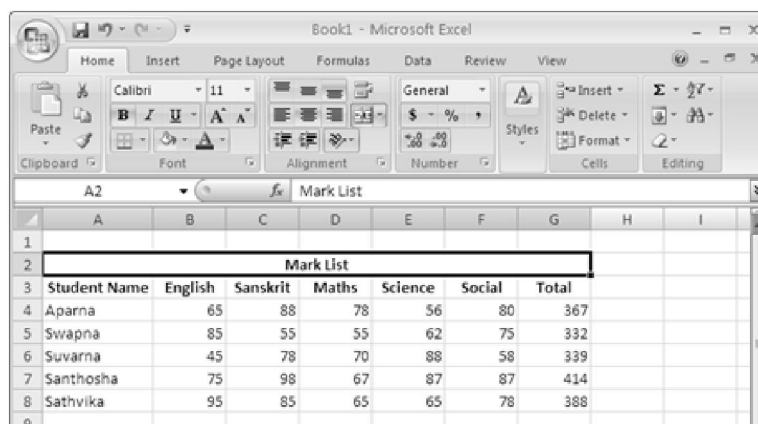


Figure 2: The Merged and Centred Text

Changing the Font Type, Size and Colour of Text

You can also change the font type, colour and size of the text in your worksheet. Suppose you want to change the font type to Comic Sans MS.

To do so:

1. Select the entire text.
2. Select Comic Sans MS in the *Font* drop-down list from the Home Tab (refer Figure 3).

The font is changed.

Suppose you want to change the font size of the heading to 14 and the font colour to brown. To change the font size and colour:

1. Select the heading.
2. Select 14 in the *Size* drop-down list from the Home Tab (refer Figure 3).
3. Select the brown colour in the *Font Color* drop-down list from the Home Tab (refer Figure 3).



Figure 3: The formatting toolbar

Your text appears as shown in Figure 4.

Mark List						
Student Name	English	Sanskrit	Maths	Science	Social	Total
Aparna	65	88	78	56	80	367
Swapna	85	55	55	62	75	332
Suvarna	45	78	70	88	58	339
Santhosha	75	98	67	87	87	414
Sathvika	95	85	65	65	78	388

Figure 4: Text after changing the font type, font size and font colour

Changing the Font Style

An ordinary looking text can be well highlighted, by making it Bold, italicised or underlined. You can make these changes by using the options available in the Font group on the Home Tab.

- The **Bold** **B** option makes the selected text thicker.
- The *Italics* **I** option makes the selected text slant to the right side.
- The Underline **U** option puts a line below the selected text.

Formatting Numbers

The appearance of numbers in the cells can be changed using a variety of options in the *Number* tab of the *Format Cells* dialog box.

Suppose you want the average marks of each student to contain two decimal places only. To change the number format:

1. Select the average marks of all the students.
2. Click the *Home* tab.
3. Click the *Number* group dialog box launcher.

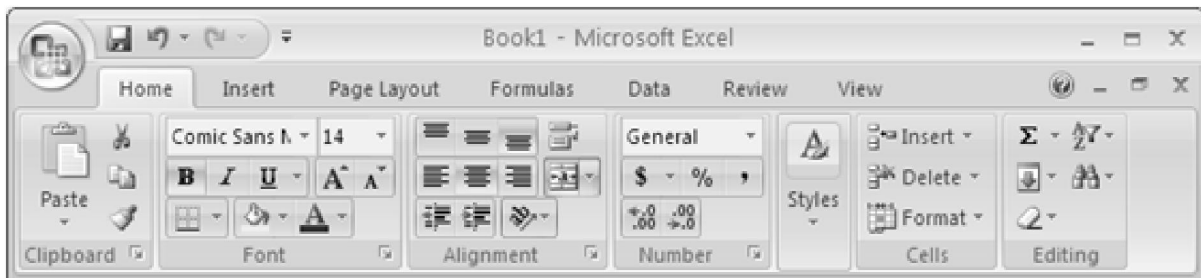


Figure 5: Number group dialog box launcher

The *Format Cells* dialog box appears. (Refer Figure 6)

4. Click the *Number* tab (refer Figure 6).
5. Select the *Number* option in the *Category* list box.

Number group dialog box launcher

6. Select 2 in the *Decimal Places* spinner box.
7. Click the *OK* button.




Figure 6: The Number page of the Format Cells dialog box

Formatting Rows and Columns

Changing Row Height and Column Width


Excel allows you to change the row height and column width in a worksheet. To resize rows:

1. Move the mouse pointer over the row border, which you want to resize.

The mouse pointer changes to a double-headed arrow .

2. Click and drag the boundary until the row height changes to the height you want. To resize columns:

1. Move the mouse pointer over the column border, which you want to resize.

The mouse pointer changes to a double-headed arrow .

2. Click and drag the boundary until the column width changes to the width you want.

Tip: If you want Excel to automatically size your rows or columns:

1. Click the *Home Tab*.
2. Click *Format* list box from the *Cells* group. A submenu appears.
3. Click the *AutoFit* option.

Adding Borders and Patterns to Cells

To put borders around the column headings:

1. Select the column headings.
2. Click the *Home Tab*.
3. Click the *Font/Number/Alignment dialog box launcher*.

A *Format Cells* dialog box is displayed.

4. Select the *Border* tab (refer Figure 7).
5. Select the border style and colour of your choice.
6. Click the *OK* button.

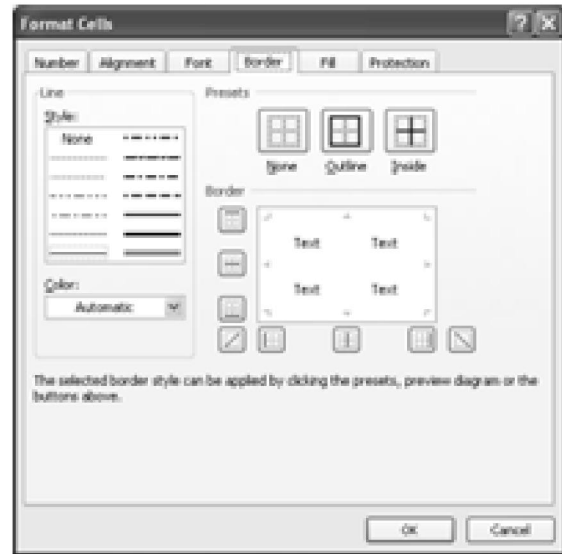
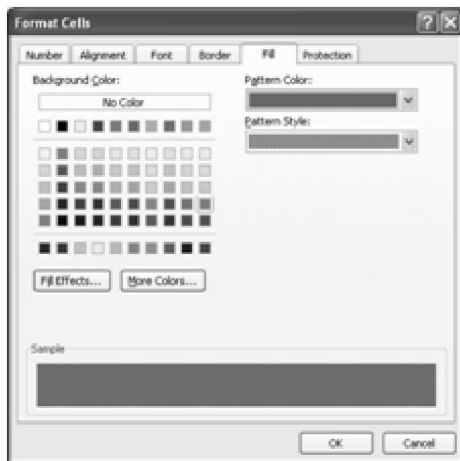


Figure 7: The Border page of the *Format Cells* dialog box

Adding Background Colour

To apply background colour to the column headings:



1. Select the column headings.
2. Click the *Home Tab*.
3. Click the *Font/Alignment/Number dialog box launcher*.

The *Format Cells* dialog box appears.

4. Select the *Fill* tab.
5. Select the colour and pattern of your choice.
6. Click the *OK* button.

The background for the columns heading

Auto Formatting

This feature enables you to format a range of cells, into a table format. You can choose from a list of standard formats.

1. Select the range of cells to be formatted as a table format.
2. Click the *Home Tab*.

3. Click the *Format as Table* option from the Styles group. (Refer Figure 9) The *AutoFormat* dialog box appears as shown in Figure 10.
4. Select the format of your choice.
5. Click the *OK* button.

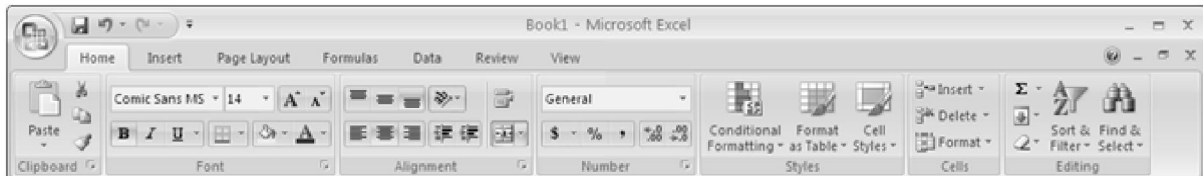


Figure 9: The Styles group

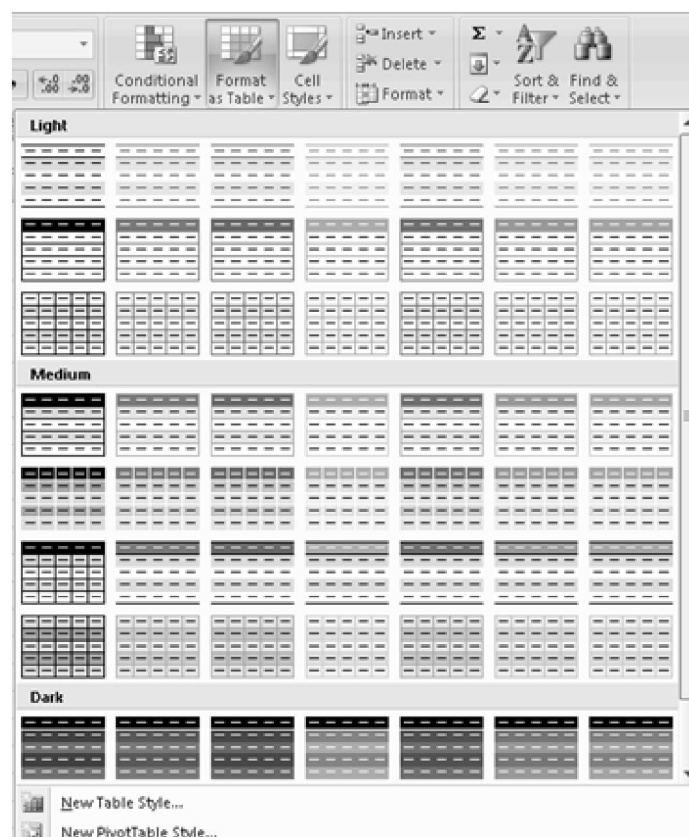


Figure 10: Format as Table dialog box

Conditional Formatting

Excel allows you to format cells based on specific conditions. However, you can give a maximum of only three conditions.

For example, in the marks statement worksheet, you can give a red colour to marks below 50, a green colour to marks between 50 and 80 and a brown colour to marks above 80.

To set the above conditions:

1. Select the range of cells.
2. Click the *Home Tab*.
3. Click the *Conditional Formatting* button from the Styles Group. (Refer Figure 12)
4. Select Highlight Cells Rules -> Greater than option.



Figure 12 : Conditional Formatting option

Greater Than dialog box appears. (Refer Figure 13)



Figure 13 : Conditional Formatting option

5. Enter the condition.
6. Select the colour with which you want to highlight the cell from the options available in the with list box.

The colour for the selected condition is applied to the cell. (Refer Figure 14)

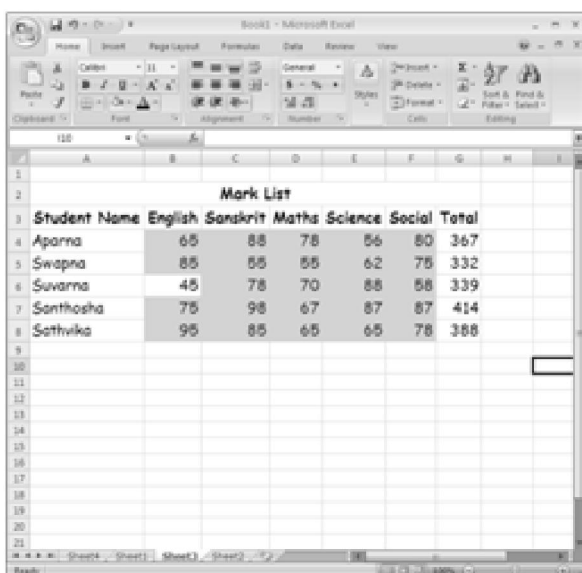


Figure 14 : Cells highlighted with colour

Summary

- Formatting a worksheet improves the appearance of the worksheet.
- The formatting features of Excel allows you to change the font, font style, font colour, font size and alignment, add borders and patterns to cells and change the way the numbers are displayed.
- You can change the column width and row height in a worksheet.
- The Format As Table button on the Styles Group enables you to format a range of cells, into a table format.
- The *Conditional Formatting* feature enables you to format cells based on certain conditions.



Student Activity

1. Open the file Marks.xls.
2. Change the font size of the main title Mark List to 20.
3. Merge and center the title and make it appear in **bold**.
4. Centre all the column headings and make it appear **Bold**.
5. Centre the marks and percentage columns.
6. Format the column which contains the average to 0 decimal places.
7. Apply a dark blue background to the column headings.
8. Change the font colour of the column headings to light blue.
9. Draw a border around the marks statement.
10. Save and close the file.



Key Words

True or False

1. Formatting options are present on the Home Tab.
2. Numeric data cannot be formatted.
3. To centre text across multiple cells, use the *Merge and Center button*.
4. The *AutoFit* option adjusts the width of the columns automatically.
5. The *AutoFormat* option is available on the *Insert tab*.

Learning Objectives

In this chapter you will be able to understand about ;

- Start Access
- Identify the parts of the Access window
- Create a database by using the database wizard
- Create a database by using the Blank database option
- Exit a database
- Exit Access

Starting Access

To start Access:

1. Click the *Start* button.
2. Choose the *All Programs* option. A submenu appears.
3. Click the *Microsoft Office* option.
4. Click the *Microsoft Office Access 2007* option. (Refer Figure 1)

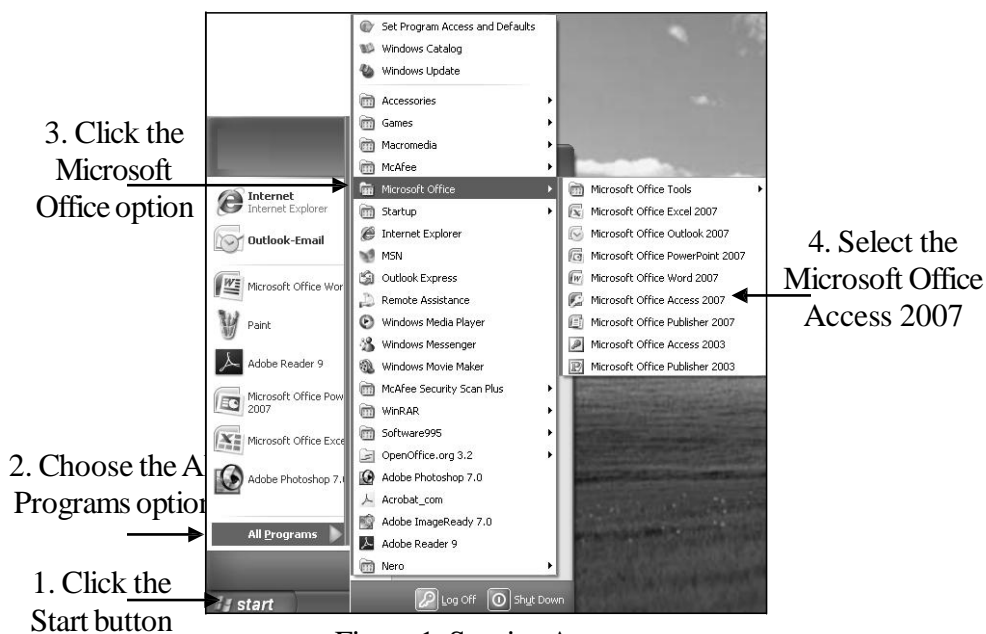


Figure 1: Starting Access

The Access window appears (refer Figure 2).



Figure 2: Access window

New Interface elements of MS Access 2007 Window

The major new interface elements in MS Office Access 2007 are:

- **Getting Started with Microsoft Office Access:** It is the page that is displayed when a user starts MS Access 2007 from the Windows Start menu or from a desktop shortcut. Microsoft Office Button: This button is located in the upper-left corner of the MS Access 2007 window.
- **Ribbon:** It is the area at the top of the program window from where a user can choose commands. It is designed for easy browsing. It consists of tabs and the controls on each tab are further organized into several groups. The Ribbon can host richer content than menus and toolbars, including buttons, galleries and dialog box content.
- **Command tab:** It is a tab that displays commands that are generally used together. It is found on the top of the ribbon.
- **Contextual command tab:** It is a command tab that appears depending on the context.
- **Gallery:** It displays a preview of a style or option that enables a user to see the results before committing to a choice.
- **Quick Access Toolbar:** It is a single standard toolbar that appears in the ribbon and offers single-click access to most needed commands, such as Save and Undo.
- **Dialog Box Launchers:** These are small icons that appear in some groups. When the Dialog Box Launcher is clicked, a related dialog box or task pane opens. This provides more options related to that group.

- **Navigation Pane:** It is the area on the left side of the window that displays your database objects. This replaces the Database window from earlier versions of Access.
- **Tabbed documents:** It displays tables, queries, forms, reports, pages and macros as tabbed documents.
- **Status bar:** It is the bar at the bottom of the program window. It displays status information and includes buttons that permit a user to alter the view.
- **Mini toolbar:** It is a toolbar-like element that transparently appears above the text that has been selected. It helps to format the text such as changing the font or using bold or italic.

Creating a Database

A database can either be created by using the *Database Wizard* option or by using the *Blank Database* option.

- **Database Wizard** – Is used to create tables, forms, queries and reports by following a series of steps provided by the wizard. The wizard provides a step-by-step process to achieve the desired result.
- **Blank Database Option** – Is used to create a blank database. All other database objects should be created manually.

Tip : Wizard is a utility that provides a guided sequence to perform complex tasks easily and quickly. Wizards ask you questions about the contents, style and format of the object that you want to create and then create the object automatically. You need to answer the questions by selecting options like Yes/No.

Creating a Database Using the Database Wizard (Templates)

Access provides a number of templates that can be used to create a database of a specific type. For example, you can create a database that contains the list of your friends and their contact information. Access also provides easy methods to create the database of your choice. Database wizard in Access provides you with a sequence of guided steps to create databases.



Figure 4: Local Template Database Wizard

To invoke the database wizard:

1. The Local *Templates* dialog box appears (refer Figure 3).
5. Select the Local Templates from the Template Categories. (Refer Figure 3)
6. Click the Contact button.
7. Enter the name of the database in the *File name* text box.



Figure 3: The Template dialog box:

In Figure 4, Contacts is the database name entered in the *File name* text box.

8. Click the *Create* button.

The Contacts table window is displayed. (Refer Figure 5) Quick

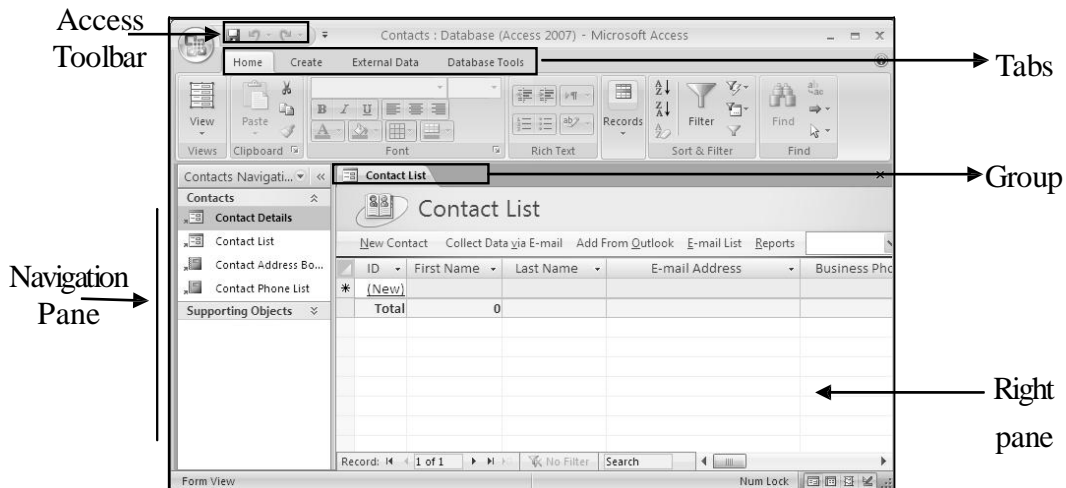


Figure 5: Student List table window

The Contacts database gets created with all the required forms and reports corresponding to the database.

Components of Database Window

The various components of the database window are:

Navigation Pane – It displays all the objects of the database. Tables, Forms, Query, Macros, Reports and Modules.

Right Pane – It outlines all the corresponding elements associated with selected database objects in the object bar.

Creating a Database by using the Blank Database Option

The Blank Database option helps you to create a blank database in which tables, queries, forms and reports can be added according to your requirement.

The database templates provide a limited number of options. If you wish to create a database for which you do not find a suitable template, you can use the Blank Database option to create a blank template. Thereafter, you can create tables and the other objects on your own.

To create a blank database:

1. On Getting Started with Microsoft Office Access page, under New Blank Database, click Blank Database.
2. In the Blank Database pane, type a file name in the File Name box.
3. Click the Browse folder icon (next to the File Name box) for a location to place the database.
4. Browse to the new location and click OK.
5. Click Create.

Access creates the database with an empty table named Table1 and opens Table1 in the Datasheet View (Refer Figure 6). The cursor is placed in the first empty cell in the Add New Field column.

Now, data can be added by typing it or by pasting it from another source.



Entering information in Datasheet view is very similar to working in Microsoft Office Excel

2007 worksheet. A new field is defined when a new column is added to the table. Access automatically sets each field's data type, based on the data that is entered.

In case no more information is to be entered in Table1, click Close. If changes are made to the table, MS Access prompts to save changes to the table. So, click Yes to save the changes, click No to reject them or click Cancel to leave the table open.

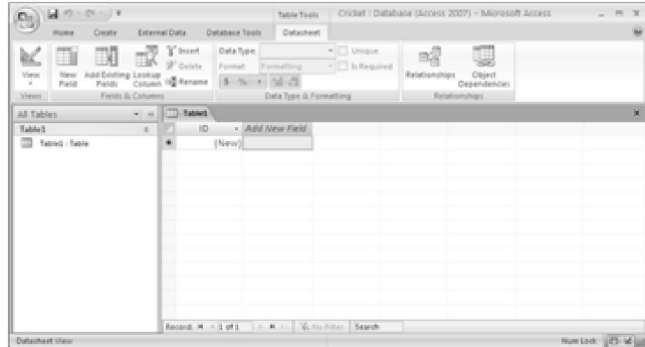


Figure 6: Datasheet view

Closing a Database

To close a database:

1. Click the Office Button.
2. Click the Close Database option. The database gets closed.

Closing Access

To exit the Access window:

1. Click the *Office Button*.
2. Click the Exit Access option. The Access window gets closed.

Summary

- To invoke Access, click the *Microsoft Access* option on the *All Programs*-> *Microsoft Office*.
- The *Blank Database* option is used to create database in which the tables, queries, forms and reports can be added according to your requirement.
- To open an existing database, click the *Open* option from the *Office Button*.
- To exit the Access, click the *Exit Access* option from the *Office Button*.



Teacher Activity

1. Demonstrate creating data base in Access.



Student Activity

1. Create a database called Friends Details by using the Blank Database option.
2. Create a Cricket database by using the Blank Database option.



Test Your Knowledge

Fill in the Blanks

1. The _____ option is used to create a database through a sequence of guided steps.
2. The _____ shows the current status of the ongoing task.
3. The *Close Database* option on the _____ button is used to close a database.
4. The _____ is used to create a step by step method to create a database.



Key Words

- Interface tab
- Navigation pane
- Database wizard

Learning Objectives

In this chapter you will be able to ;

- 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 the 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 text, 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 in Figure 1



Figure 1: Microsoft Internet Explorer Window

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 (refer Figure 2).

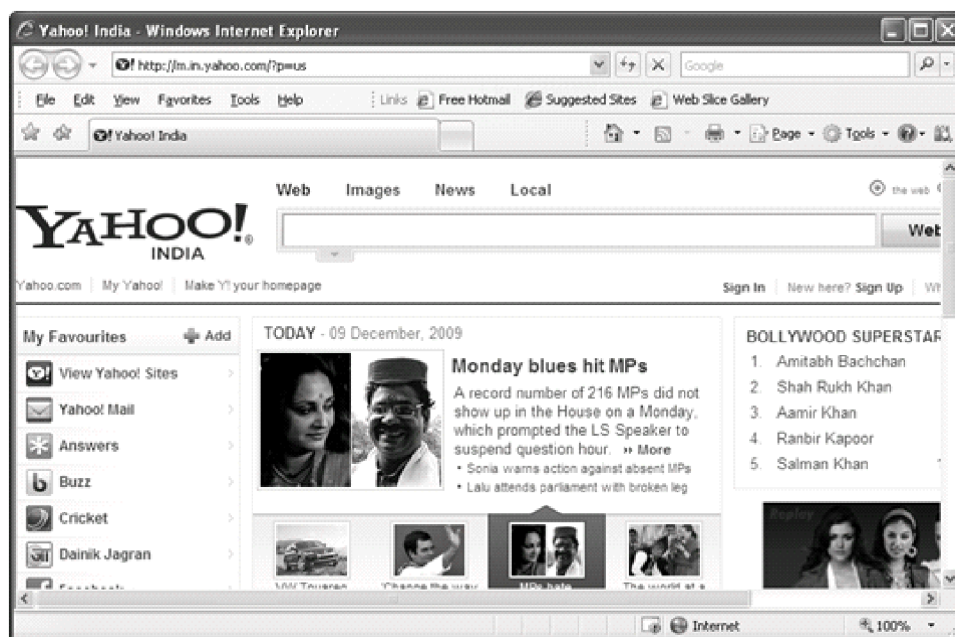


Figure 2: Yahoo Home Page

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 contain 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 contain 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

- Demonstrate creating a HML Page.



Student Activity

- I**
- Create a Web page using template.
 - Browse various websites and observe.

II Lab Work

1. Visit <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

- HTML
- Web Page
- Website

Projects

1. Collect the data of class 10 pass percentage of your school for five years and create bar chart, pie chart, column chart and space chart.