

Private Security

NVEQ Level 2 – Class X

SS204-NQ2012- Introduction to Information Technology

Student's Workbook



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Preface

The National Curriculum Framework, 2005, recommends that children's life at school must be linked to their life outside the school. This principle makes a departure from the legacy of bookish learning which continues to shape our system and causes a gap between the school, home, community and the workplace.

The student workbook on **“Introduction to Information Technology”** is a part of the qualification package developed for the implementation of National Vocational Education Qualification Framework (NVEQF), an initiative of Ministry of Human Resource Development (MHRD), Government of India to set common principles and guidelines for a nationally recognized qualification system covering Schools, Vocational Education and Training Institutions, Technical Education Institutions, Colleges and Universities. It is envisaged that the NVEQF will promote transparency of qualifications, cross-sectoral learning, student-centred learning and facilitate learner's mobility between different qualifications, thus encouraging lifelong learning.

This student workbook, which forms a part of vocational qualification package for students who have passed Class IX or equivalent examination, was created by a group of experts. The Security Knowledge and Skill Development Council (SKSDC) approved by the National Skill Development Corporation (NSDC) for the Private Security Industry developed the National Occupation Standards (NOS). The National Occupation Standards are a set of competency standards and guidelines endorsed by the representatives of Private Security Industry for recognizing and assessing skills and knowledge needed to perform effectively in the workplace.

The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), a constituent of National Council of Educational Research and Training (NCERT) in association with SKSDC has developed modular curricula and learning materials (Units) for the vocational qualification package in Private Security sector for NVEQ levels 1 to 4; level 1 is equivalent to Class IX. Based on NOS, occupation related core competencies (knowledge, skills, and abilities) were identified for development of curricula and learning modules (Units).

This student workbook attempts to discourage rote learning and to bring about necessary flexibility in offering of courses, necessary for breaking the sharp boundaries between different subject areas. The workbook attempts to enhance these endeavours by giving higher priority and space to opportunities for contemplation and wondering, discussion in small groups and activities requiring hands-on-experience. We hope these measures will

take us significantly further in the direction of a child-centred system of education outlined in the National Policy of Education (1986).

The success of this effort depends on the steps that school Principals and Teachers will take to encourage children to reflect their own learning and to pursue imaginative and on-the-job activities and questions. Participation of learners in skill development exercises and inculcation of values and creativity is possible if we involve children as participants in learning, and not as receiver of information. These aims imply considerable change in school routines and mode of functioning. Flexibility in the daily time-table would be a necessity to maintain the rigour in implementing the activities and the required number of teaching days will have to be increased for teaching and training.

About Your Workbook

This workbook is to assist you with completing the Unit of Competency **SS204-NQ2012: Introduction to Information Technology**. You should work through the workbook in the classroom, at the workplace or in your own time under the guidance and supervision of your teacher or trainer. This workbook contains sessions which will help you to acquire relevant knowledge and skills (soft and hard) on various aspects of the unit of competency. Each session is small enough to be easily tackled and digested by you before you move on to the next session. Animated pictures and photographs have been included to bring about visual appeal and to make the text lively and interactive for you. You can also try to create your own illustrations using your imagination or taking the help of your teacher. Let us now see what the sections in the sessions have for you.

Section1: Introduction

This section introduces you to the topic of the Unit. It also tells you what you will learn through the various sessions covered in the Unit.

Section 2: Relevant Knowledge

This section provides you with the relevant information on the topic (s) covered in the session. The knowledge developed through this section will enable you to perform certain activities. You should read through the information to develop an understanding on the various aspects of the topic before you complete the exercise (s).

Section 3: Exercise

Each session has exercises, which you should complete on time. You will perform the activities in the classroom, at home or at the workplace. The activities included in this section will help you to develop necessary knowledge, skills and attitude that you need for becoming competent in performing the tasks at workplace. The activities should be done under the supervision of your teacher or trainer who will guide you in completing the tasks and also provide feedback to you for improving your performance. To achieve this, prepare a timetable in consultation with your teacher or trainer and strictly adhere to the stipulated norms or standards. Do not hesitate to ask your teacher or trainer to explain anything that you do not understand.

Section 4: Assessment

The review questions included in this section will help you to check your progress. You must be able to answer all the questions before you proceed to the next session.

INTRODUCTION



Information technology (IT) is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data. Just a few years back, people used to pick up paper and pen to do all their calculations. A good knowledge of mathematics was required to solve complicated problems related to calculations and yet the process was quite time consuming. People used to fill in lot of pages in their diaries with the contact address and phone numbers of their friends, relatives and clients. A great effort used to go in searching for information from large number of pages of different books and notebooks. Big companies used to invest a lot of amount in transportation of their experts to various work locations for solving day-to-day problems. People used to communicate through traditional mails or postal mails which used to take 3 to 10 days time to reach destinations. Today, Information and Communication Technology (ICT) has tremendously influenced all aspects of our life. Almost all work places and tasks are getting automated with the help of IT tools and its applications. Information Technology is all about acquiring, processing, storing and disseminating numerical, textual, audio and video form of information with the help of electronic machine, and network applications.

Security personnel should be able to use computers for collection, processing, storage, communication, and retrieval of information. They should be able to type and process information for communication and reporting.

Through this unit, you will acquire the basic knowledge and skills for connecting the computer system with the input-output devices and basic operations related to use of operating system and software.

SESSION 1: BASICS OF INFORMATION TECHNOLOGY

RELEVANT KNOWLEDGE

“A computer system is a programmable machine designed to perform arithmetic and logical operations to produce meaningful results in a desired format”

A computer system includes software and hardware. Software is a collection of instructions and related data that tells a computer what to do and how to do. In other words, software is a conceptual entity, which contains a set of instructions (computer programs) with associated documentation related to the operations of a data processing system; whereas, computer hardware is a collection of electronic and other peripheral units, which enables software to perform desired operations. There is an important software, known as Operating system (OS) specially designed to establish the communication between various hardware devices and software loaded on a computer system.

A computer system is broadly divided into three units - **Input Unit, Central Processing Unit (CPU) and Output Unit.** Input unit helps the user to enter raw data and instructions into the computer system, the central processing unit performs the required operations as per given instructions and the output unit produces meaningful results in the desired format for the user.

Let us understand this concept with the help of an example: What information will you require to calculate the amount to be paid to shopkeeper for buying several pieces of a branded pen?

You will require its Unit Price and the Quantity procured by you. So the Unit Price and Quantity will become the raw data to be entered by you through the input unit. Now, you need to multiply both these values to know the amount to be paid to the shopkeeper. Therefore, multiplication of these two values will become the operation, which will be performed by the CPU and the amount, which is the result will be on the Output unit of a computer system.

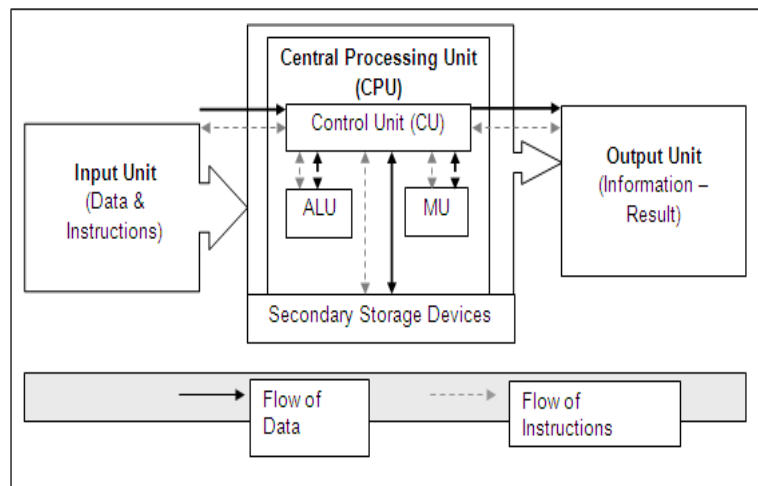


Figure 1: Block diagram of computer system

The CPU is further divided into three parts

- (i) Control unit (CU),
- (ii) Arithmetic and logic unit (ALU), and
- (iii) Memory unit (MU) inside CPU.

Control unit acts as a receptionist and a manager of a company. It receives each and every instruction from user and coordinates between different parts to perform various operations. Arithmetic and logic unit

acts as an accountant of a company, which performs all the mathematical and logical calculations. And memory unit acts as a temporary store of a company, where small amount of data is stored while other operations are being performed. In addition to these units, a computer system also has secondary storage device to hold or store large amount of data for later use by various applications running on it. Figure 1 illustrates the interconnection of these units and secondary storage device.

Now, you must be wondering how you can recognize these units in the form of real devices in a personal computer system. You might have seen a device having several buttons (known as keys) with alphabets and numbers. This device is known as keyboard, which acts as an input device of the computer system. You might have also seen another oval shaped device with two/three buttons in front. This device is known as mouse, which is also an input device. Further, you can see a vertically standing/horizontally places box/case with an on/off/reset button - this cabinet/case is known as CPU cabinet, which contains secondary storage devices such as hard disk, to hold large amount of data and instructions, and Compact Disc (CD)/Digital Versatile Disc (DVD)/Blue Ray drive to keep data on portable discs. One of the most common output devices is LCD/LED/Monitor, which is used as output unit to display the results. The computer system may also have some more additional input and output devices connected with it. The common IO devices are given in Table 1.

Table 1: Input / Output Devices

Input/ Output device	Purpose	Examples of use
Mic/mike	Used to take the audio input	To record nursery rhymes songs in the system
Scanner	Used to accept digital input from a paper picture/image/ document.	To scan a picture that is to be included in an assignment.
Camera	Used to accept image/video inputs	To take pictures of students for identity cards.
Barcode Reader	Used to read barcode	To read Barcodes present on books being issued/ returned in the School library or to scan the barcode on grocery items.
Printer	Used to print output on paper	To print an assignment on paper
Speaker	Used for audio output	To listen to presentations and talks

The memory unit of CPU is further divided into two components: (i) **Random Access Memory (RAM)** which takes care of intermediate storage of data while working on a computer system; and

(ii) Read Only Memory (ROM) which stores the essential instructions, the operating system and perform basic input/output operations. It is also referred to as BIOS i.e. Basic Input-Output System.

In the computer, the data is stored in the form of Bits and Bytes. **Bit** (Binary Digit represented by 0 or 1) is the smallest storage unit, 8 Bits combined together form a single byte, which in turn represent a single character. If the name “RAVI” is required to be stored in computer, it will need 4 bytes in the computer’s memory. Table 2 shows the conversion of memory units.

Table 2: Conversion of Memory Units

Memory unit	Relationship with memory unit	In equivalent Bytes
Kilo Byte (KB)	1 Kilo Byte = 1024 Bytes(or 2^{10} Bytes)	1024
Mega Byte (MB)	1 Mega Byte = 1024 Kilo Byte(or 2^{10} KB)	1024x1024
Giga Byte (GB)	1 Giga Byte = 1024 Mega Byte(or 2^{10} MB)	1024x1024x1024
Tera Byte (TB)	1 Tera Byte = 1024 Giga Byte(or 2^{10} GB)	1024x1024x1024x1024

RAM and ROM discussed in the above paragraph constitute **Primary Memory**. Now, let us discuss in detail about the various **Secondary Storage Devices**. The secondary storage devices are basically used to store large amount of data (with capacity in the range of 20 GB to 2 TB) permanently on computer, i.e. the data is retained even when the system is switched off. **Hard Disc** is one of the most important secondary storage devices, which is used to hold (store) operating system, office applications, utility software and the user’s data, etc. It is usually fitted in the cabinet of CPU, so that it cannot be easily removed from the computer system. Apart from hard disk, one can always

use additional (portable) secondary storage devices such as Compact Disk (CD with a storage capacity of 750 MB), Digital Versatile Disk (DVD with a capacity of around 4.5 GB), Blue-ray Disk (with a storage capacity of around 25 GB/50GB), Pen Drives (with a storage capacity of 512 MB to 32 GB), Memory Stick (with a storage capacity of 512 MB to 32 GB).

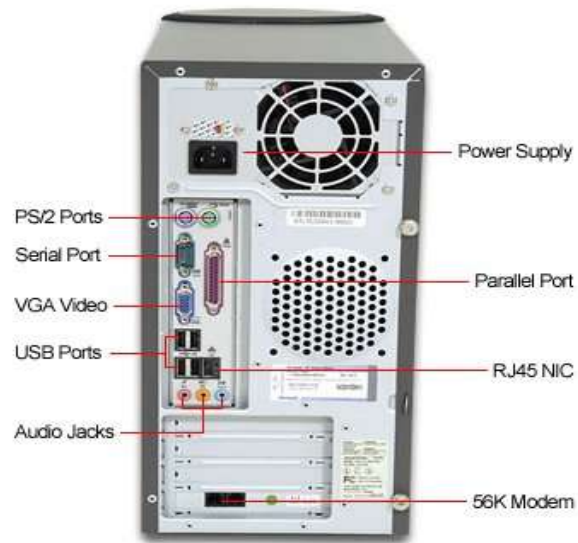


Figure 2: CPU Cabinet Back Panel

Now, let us connect the various parts of a personal computer. Try to locate all the sockets or ports, which are present behind the CPU Cabinet as shown in Figure 2. Some of the common sockets/ports are power socket for connecting power cable, PS2 ports for connecting Mouse and Keyboard, USB Port for connecting USB devices such as mouse, keyboard, printer, pen drive, etc., VGA port for connecting Monitor/Screen.

Connect Monitor with VGA cable, mouse and keyboard with PS2/USB cable and push the power on button on the CPU after connecting power cable. Your computer should display some message from the manufacturer and then it should start the Operating System (boot

up with the operating system). Once some icons, which allow you to choose and start the the booting process is over, see the application of your choice. Some of the common ports desktop - the first screen you see in and cables along with their pictures are described in the beginning. This desktop display table 2.

USB Port & Cables	Firewire Port & Cables	Ethernet (RJ45) Port & Cables
		
		
<p>A USB (Universal Serial Bus) port is a standard cable connection interface available on personal computers and some other electronic devices for data communication. USB ports allow stand-alone electronic devices to be connected with the help of cables to a computer (or to each other). USB ports can also supply electric power across the cable to devices.</p> <p>Pins: 4 Standard: Industry Standard in 1990</p>	<p>FireWire® ports are forms of a serial port that make use of FireWire® technology to transfer data rapidly from one electronic device to another. The FireWire® port has the ability to interact with a number of different devices. A FireWire® port can provide an ideal way to connect a scanner and digital camera to a computer system as the data transfer is relatively faster than on USB and also results in excellent quality.</p> <p>Pins: 4,6,9 Standard: IEEE 1394</p>	<p>Ethernet Port is used to connect computers and other devices to form a computer network. It uses Ethernet cables to establish efficient and effective communication between computers and other peripheral devices such as modem, router, multimedia projector etc.</p> <p>Pins: 8 Pins Standard: IEEE Std 802.1 to 802.10</p>

Table 2: Common Ports and Cables

Software

Software is a set of instructions (also known as program) and data that tells a computer what to do and how to do. In other words, software is a conceptual entity, which contains a set of instructions with associated documentation related to the operations of a data processing system. Software can be divided into three major classes: (i) System Software, (ii) Programming Software, and (iii) Application Software.

- (i) **System software** provides the basic functions for computer usage and helps run the computer hardware system. It includes a combination of Operating System (OS), device drivers, servers, utilities and window system. The OS establishes the communication between various hardware devices and software loaded on a computer system. It is responsible for managing a variety of independent hardware components, so that they can work together. The most popular OS available for computers today are Microsoft Windows, Mac OS X and Linux.
- (ii) **Programming software** usually provides tools to assist a programmer in writing programs or software using different programming languages. The tools include compilers, debuggers, interpreters, linkers and text editors.
- (iii) **Application software** serves as a tool for performing specific tasks. For example, if you want to do word processing, you can use application software, such as MS Word or Corel Draw.

Now let us review what we have learnt about the various computer devices. The table given below contains the description of the various parts of a computer:

Part	Description
Input devices	<p>Input devices are used to provide information to a computer, such as typing a letter or giving instructions to a computer. Some examples of input devices are as follows:</p> <ul style="list-style-type: none">• Mouse: A standard mouse has a left and a right button. You use the left button to select items and provide instructions by clicking an active area on the screen. You use the right button to display commonly used menu items on the screen.• Keyboard: A set of keys that resembles a keyboard on a typewriter. You use the keyboard to type text such as letters or numbers into the computer.• Microphone: A device that you can use to talk to people in different parts of the world. You can record sound into a computer by using a microphone. You can also record your speech and let the computer convert it into text.• Scanner: A device that is similar to a photocopy machine. You can use this device to transfer an exact copy of a photograph or document into a computer. A scanner reads a page and translates it into a digital format that a computer can read. For example, you can scan photographs of your family using a scanner.• Webcam: A device that is similar to a video camera. It allows you to capture and send live pictures to other users. For example, a webcam allows your friends and family to see you when you are communicating with them.• Stylus: A pointing device, similar to a pen, used to make selections and enter information by tapping on a touch sensitive surface. For example, to enter information on a personal digital assistant (PDA), you use a stylus. A PDA is a lightweight, palmtop computer.• Trackball: A pointing device that is an alternative to a mouse. A trackball consists of a ball that is rotated to move the pointer on a computer screen. You can use a trackball when you have limited desk space.
Output devices	<p>You use output devices to get feedback from a computer after it performs a task. Some examples of output devices are as follows:</p>

	<ul style="list-style-type: none"> • Monitor: A device that is similar to a television. It is used to display information in visual form, using text and graphics. • Printer: A device that you use to transfer text and images from a computer to a paper or to another medium, such as a transparency film. You can use a printer to create a paper copy of whatever you see on your monitor. • Speaker/Headphone: A device that allows you to hear sounds. Speakers may either be external or built into the computer.
Central Processing Unit (CPU) and Memory	<p>The Central Processing Unit (CPU) is a device that interprets and runs the commands that you give to a computer. It is the control unit of a computer. The CPU is also referred to as the processor.</p> <p>Memory is where information is stored and retrieved by the CPU. There are three main types of memory.</p> <ul style="list-style-type: none"> • Random access memory (RAM): It is the main memory and allows you to temporarily store commands and data. The CPU reads data and commands from RAM to perform specific tasks. RAM is volatile, which means it is available only while the computer is turned on. The contents of RAM must be copied to a storage device if you want to save the data in the RAM. • Read only memory (ROM): It is the memory that retains its contents even after the computer is turned off. ROM is nonvolatile, or permanent, memory that is commonly used to store commands, such as the commands that check whether everything is working properly. • Flash memory: It is a nonvolatile memory that retains data even after a computer is turned off. Unlike in ROM, you can erase or modify stored information.
Motherboard	<p>The motherboard is the main circuit board inside a computer. It has tiny electronic circuits and other components on it. The motherboard connects input, output, and processing devices together and tells the CPU how to run. Other components on the motherboard are the video card, the sound card, and the circuits that allow a computer to communicate with devices like a printer. The motherboard is sometimes called a system board.</p>
Expansion Cards	<p>An expansion card is a circuit board that can be attached to a motherboard to add features such as video display and audio</p>

	<p>capability to your computer. An expansion card improves the performance of your computer and enhances its features. Expansion cards are also called expansion boards. Some types of expansion cards are described in the following list.</p> <ul style="list-style-type: none"> • Video card: It is connected to a computer monitor and is used to display information on the monitor. • Network interface card (NIC): It allows a computer to be connected to other computers so that information can be exchanged between them. • Sound card: It converts audio signals from a microphone, audio tape, or some other source to digital signals, which can be stored as a computer audio file. Sound cards also convert computer audio files to electrical signals, which you can play through a speaker or a headphone. You connect microphone and speakers to a sound card.
Storage Devices	<p>You use storage devices to store computer information. Storage devices come in many forms. Some examples are hard drive or disk, CD-ROM, floppy disk, and DVD-ROM. Storage devices can be divided into two types, internal storage devices and external storage devices. Some common storage devices are as follows:</p> <ul style="list-style-type: none"> • Hard disk: A magnetic disk that is usually the main storage device on most computers. It can be an external or an internal device. • Floppy disk: A portable storage device that allows you to store a small amount of data. A disadvantage of this disk is that it can be easily damaged by heat, dust, or magnetic fields. • CD-ROM: A portable storage medium that allows you to store 400 times more data than on a floppy disk. It is less prone to damage than a floppy disk. • DVD-ROM: A portable storage medium that is similar to a CD-ROM; however, it can store larger amounts of data than a floppy disk or a CD-ROM.
Ports and Connections	<p>A port is a channel through which data is transferred between input/output devices and the processor. There are several types of ports that you can use to connect a computer to external devices and networks. Some types of ports are described in the following list.</p> <ul style="list-style-type: none"> • Universal serial bus (USB) port: You use this to connect peripheral devices such as a mouse, a modem, a keyboard, or a printer to a

	<p>computer.</p> <ul style="list-style-type: none"> • FireWire: You use this to connect devices such as a digital camera. It is faster than a USB. • Network port: You use this to connect a computer to other computers to exchange information between the computers. • Parallel port and serial port: You use these ports to connect printers and other devices to a personal computer. However, the USB port is now preferred to connect peripheral devices because it is faster and easier to use. • Display adapter: You connect a monitor to a display adapter on your computer. The display adapter generates the video signal received from a computer, and sends it to a monitor through a cable. The display adapter may be on the motherboard, or on an expansion card. • Power: A motherboard and other components inside a computer use direct current (DC). A power supply takes alternating current (AC) from a wall outlet and converts it into DC power
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Creating a picture using Paint tool

Open Paint tool by

Clicking **Start->Programs->Accessories->Paint**

OR

Click **Start -> Run** and type in **MSPAINT** and click on **open**

Paint tool is the most basic software to draw pictures with the help of various tools such as Pencil Tool, Brush Tool, Air Brush Tool, Text Tool, Line tool, Curve Tool, Rectangle Tool, Polygon Tool, Ellipse Tool and Rounded Rectangle tool (as shown in Figure 3).


<i>Tool Description</i>	Tools	<i>Tool Description</i>
Free Form Select helps in Selection of any shape		Select tools helps in rectangular selection
Eraser tool erases a portion of picture		Fill Color tool fills color in the closed boundary
Pick color picks color from one place and fill in the other place		Magnifier tool magnifies the picture
Pencil tool to draw continuous thin free hand line		Brush tool for drawing thick free hand line
Air brush tool is for spreading colors		Text tool is for writing text in the picture
Line tool to draw straight line		Curve tool to draw symmetrical curves
Ractangle tool to draw rectangular shape		Polygon tool to draw a figure with multiple corners
Ellipse tool to draw circles and ellipse		Rounded Rectangle tool to draw a figure with multiple corners

Figure 3: Paint Tool Bar

At the time of using any of these tools, you can select the colors of your choice to be used in the drawing (picture) from Basic Colors usually found at the bottom of the drawing area (as shown in Figure 4) or can use customized colors clicking **Color -> EditColors** and creating a color of choice from the color palette (as shown in Figure 5).



Figure 4: Basic Color Palette



Figure 5: Edit Color Palette

Saving the File

After drawing picture, you can save the file permanently in hard disk or any other storages device in various file formats such as BMP (Bit Map File - this is a large picture file format, can also be used to be inserted in a document), JPG (here JPG is the short form of Joint Picture Expert Group - this small/large picture file format is most common picture file format, also used on the website or can be inserted in the documents) and GIF (Graphic Image File - this small/large picture file format is also a common picture file format, can be used on the website or can be inserted in the documents). A sample screen shot is shown in the Figure 6 to save the file in the desired format.

To do this, you need to follow the instructions given below:

[1] Click File -> **[2]** Click Save -> **[3]** Chose the correct location -> **[4]** Select the required picture file format **[5]** Type in the name of the file -> **[6]** Click Save button.

Let us see the use of different tools, to decide which tool to be opted for a particular shape or design. You will use the pencil tool to freely draw any shape using requiring a thin tip. The Figure 7 -9 illustrates some of the drawing made with the help of pencil tool. Before drawing any shape or design, you can choose the color of pencil accordingly.

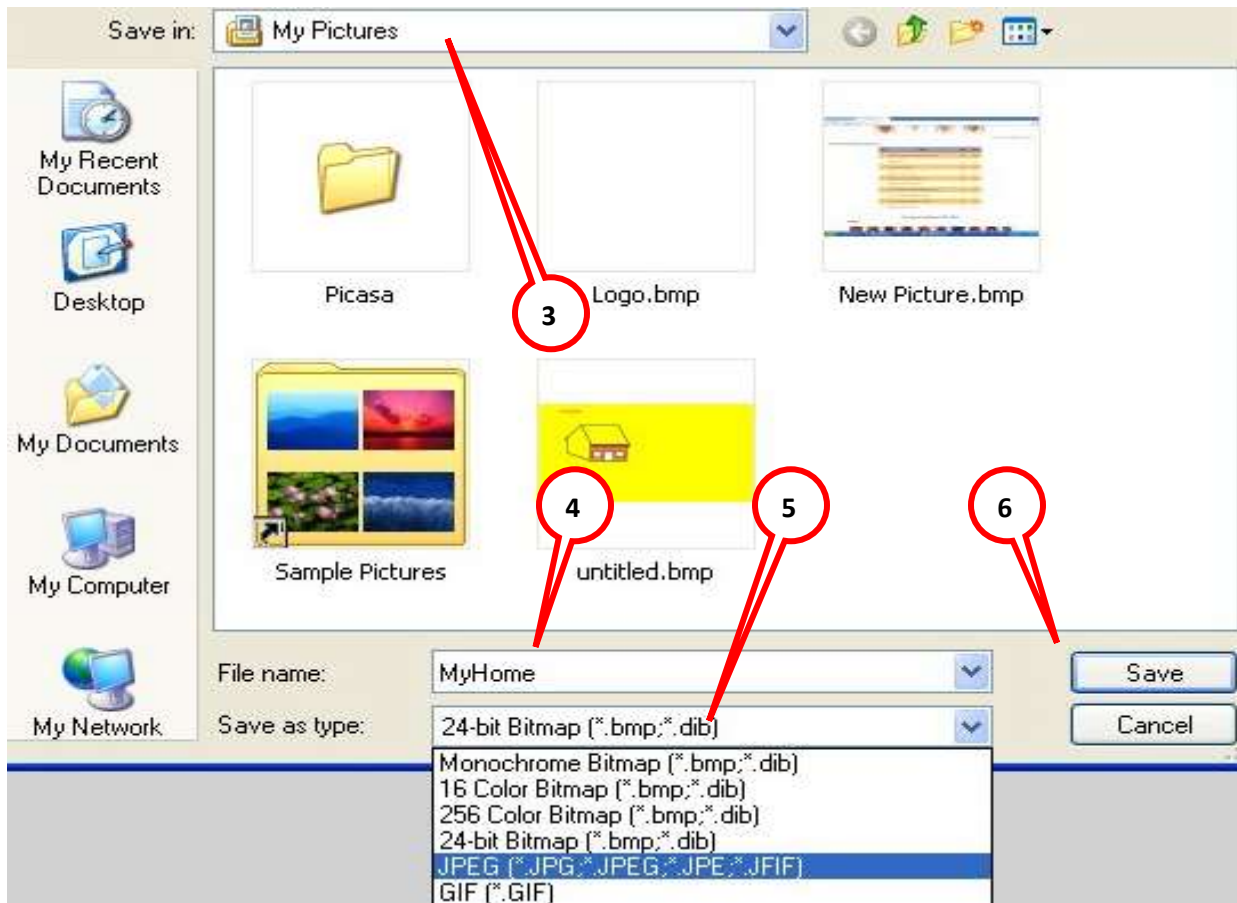


Figure 6: Saving file

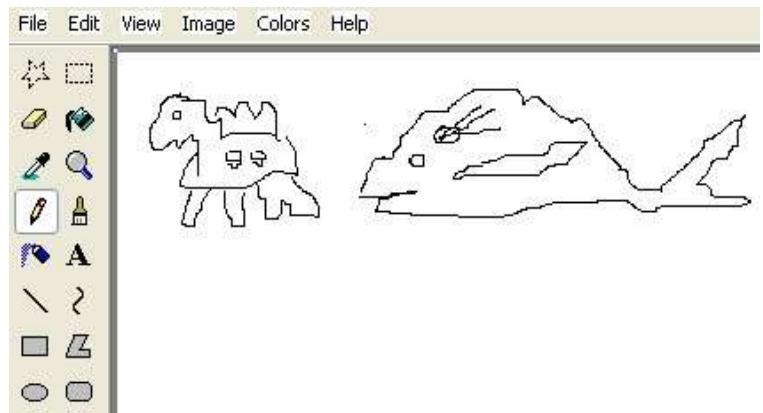
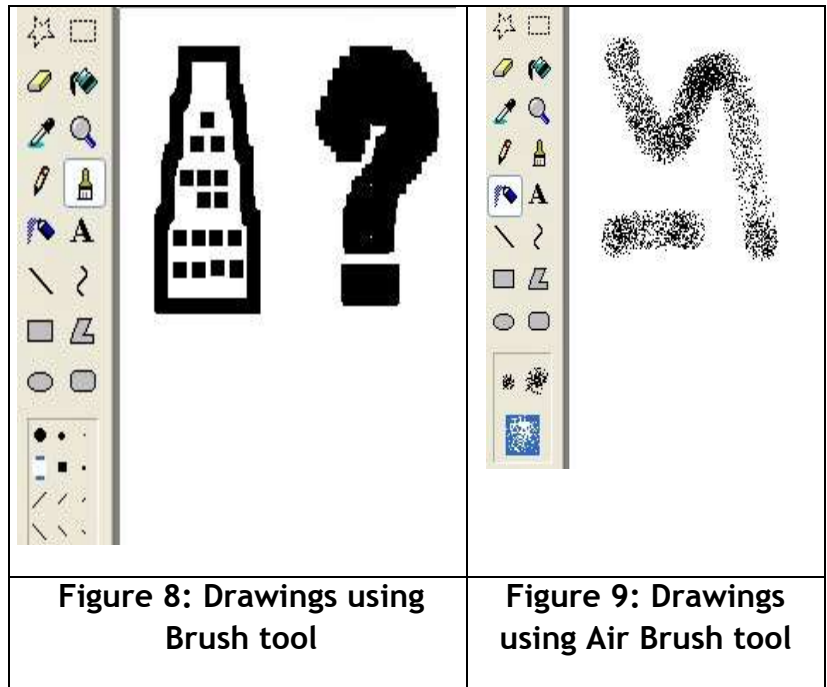


Figure 7: Drawings using Pencil tool

You will use the Brush or Air Brush tool to freely draw any shape using requiring a thick tip. The brush tool will have the solid color tip, where as the Air Brush will have dotted tip for drawing. The Figure 8 and Figure 9 illustrate the drawings made with the help of

Brush and Air Brush tools respectively. Here also, you can choose the color for your Brushes accordingly.



EXERCISE

Practice Sessions

1.Connecting parts of a Computer System

Let us connect the various parts of a personal computer and start the system

Procedure:

Step 1: Locate all the sockets or ports, which are present behind the CPU Cabinet, as shown in Figure (PS2 ports for connecting Mouse and Keyboard, USB Port for connecting USB devices such as mouse, keyboard, printer, pen drive etc., VGA port for connecting Monitor/Screen).

Step 2: Connect Monitor with VGA cable, mouse and keyboard with PS2/USB cable and power on the CPU after connecting power cable.



Step 3: Connect power cable at the power supply point and put on the switch and press the start button of the CPU cabinet.

Step 4: Check for the display of some message from the manufacturer on the screen. Once the booting process is over, you will see the desktop. Desktop is the first screen that you see in the beginning.

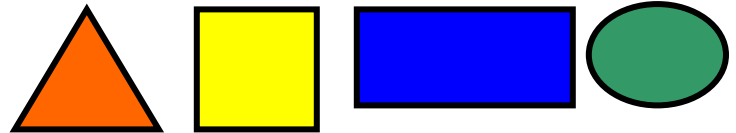
Step 5: Double click on the icon with the help of left side of the mouse to start the application of your choice.

2. Write the types of each device in the column given:

S.No.	Device	Type of Device: (Input, Output or Storage)
1	Mouse	
2	Microphone	
3	Keyboard	
4	CD-ROM	
5	Printer	
6	Stylus	
7	Floppy Disk	
8	Headphone	
9	Scanner	
10	Hard Disk	
11	Speaker	
12	Monitor	
13	DVD-ROM	

3. Draw the following shapes in Paint Tool and save the pictures as JPG files in a folder with your name.

Triangle, Square, Rectangle and Circle, color them with different colors and label them accordingly. Save the file as “SHAPES.JPG”



Triangle

Square

Rectangle

Circle

ASSESSMENT

A. Multiple Choice Questions

1. The unit of a computer system, which **displays** the results is known as
 - (a) Central Processing Unit
 - (b) Memory Unit
 - (c) Input Unit
 - (d) Output unit
2. A computer system can accept **textual input** with the help of
 - (a) Mouse
 - (b) Video Camera
 - (c) Keyboard
 - (d) Barcode Reader
3. We can enter the **audio form of data** into a computer system with the help of
 - (a) Mike
 - (b) Scanner
 - (c) Keyboard
 - (d) Barcode Reader

4. A device, which is used for **voice output** in a computer system is known as
- (a) LCD
 - (b) Printer
 - (c) Speaker
 - (d) Plotter
5. A **kilobyte** is equivalent to.
- (a) 1 Byte
 - (b) 1000 Bytes
 - (c) 1024 Bytes
 - (d) 1 Megabyte
6. **Bit** stands for
- (a) Binary Digit
 - (b) Binary Decimal
 - (c) Binary Digital
 - (d) Binary Information Technology
7. **CD-ROM** stands for
- (a) Compactable Read Only Memory
 - (b) Compact Data Read Only Memory
 - (c) Compactable Disc Read Only Memory
 - (d) Compact Disc Read Only Memory
8. **Central Processing Unit (CPU)** is a combination of
- (a) Control and storage
 - (b) Arithmetic & logic and input unit
 - (c) Arithmetic & logic and control unit
 - (d) Control and output unit
9. **Group of instructions** that directs a computer is called
- (a) Memory
 - (b) Storage
 - (c) Program
 - (d) Logic

10. The **software**, which enables a computer to communicate with various hardware devices and software applications is
- (a) Operating System
 - (b) Office Tools
 - (c) Browser
 - (d) None of the above

CHECKLIST FOR ASSESSMENT ACTIVITY

Use the following checklist to see if you have met all the requirements for assessment activity.

Part A

- (a) Differentiated between primary memory and secondary storage device.
- (b) Differentiated between Bit and Byte.
- (c) Differentiated between input/output devices
- (d) Differentiated between system and application software.

Part B

Discussed in class the following:

- (a) What are the latest configurations of the hardware components available in the market?
- (b) What are the latest versions of software available in the market?

Part C

Performance standards

The performance standards may include, but not limited to:

Performance standards	Yes	No
Identify Monitor Screen, CPU Cabinet, Keyboard, Mouse and Printer.		
Classify input and output devices.		
Distinguish between common i/o ports and connectors.		
Start and shut down a computer system		

SESSION 2: WORKING ON COMPUTER SYSTEM

RELEVANT KNOWLEDGE

As you are now familiar with the basics of a computer system, you must be curious to work on the system. Look at the screen and you will find some pictures and text present on the various parts of the screen. A sample view of the desktop and its various components is given in Figure 10.

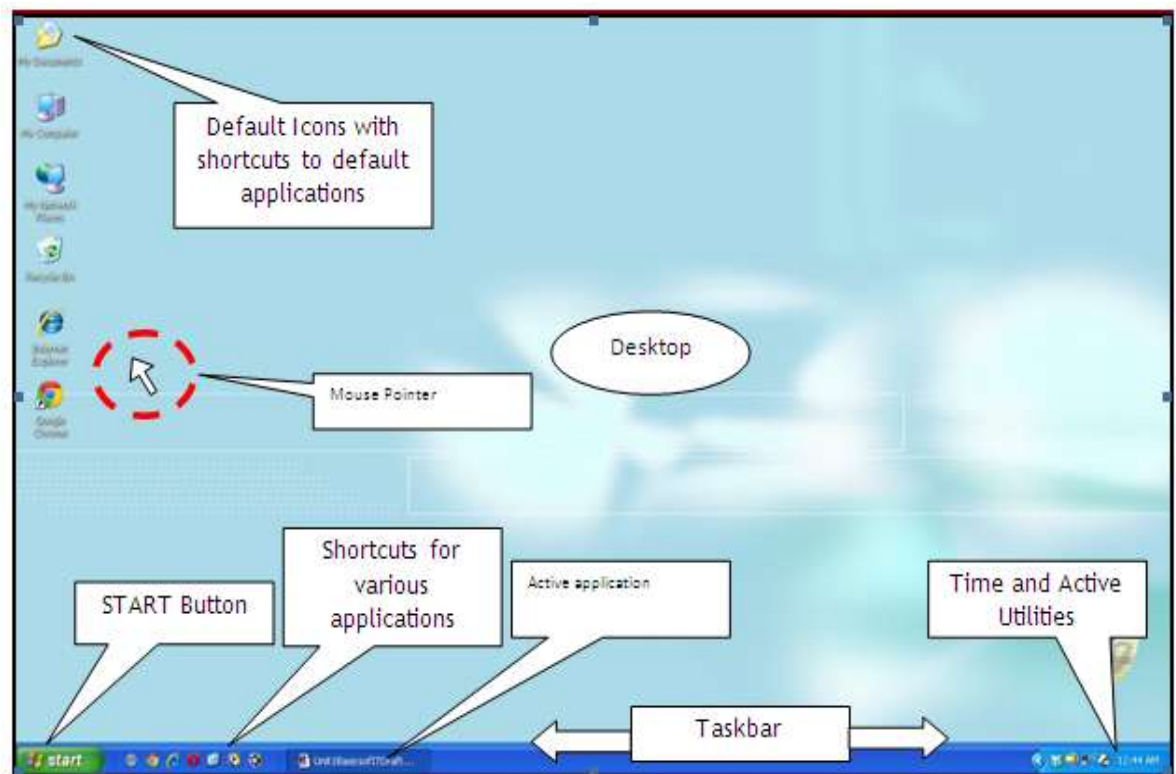


Figure 10: Desktop

Desktop: A desktop is a computer display area of windows that contains various objects that one might find on the computer. On the desktop of your computer, you may find pictures with the following labels:

- (i) **My Computer** or **Computer:** it contain all the storage areas of your computer (Hard Disk, Floppy Disk, CD/DVD)

- (ii) **Recycle Bin** - it contains all the deleted content of your computer,
- (iii) **My Network Places** or **Network** - it contains the information of interconnected computers (if any),
- (iv) **My Documents** or **Documents** - it contains a common area to store various types of files on the computer. You may find some more pictures on the desktop with self-explanatory labels. All these pictures, which you see on screen, are known as “icons”. At the bottom of desktop, you can see a bar (known as **Taskbar**), left side of which may contain a Start button, right side may contain date, time and active device or utility information and the center of the taskbar may have some shortcuts and active applications. Shortcuts are the direct links to help the user to start the application, which may be stored anywhere on the computer. It is also important for you to know, which area of desktop will perform an operation on left click of a mouse button. You can click on any shortcut or buttons to start an application or to perform the desired task. Now, just look at Figure 11 to view a sample menu and sub-menu display, which you will see after clicking the Start Menu. Here, you will see various options you can choose from. The common ones are:
 - (i) **Help and Support** to provide documented form of basic help information to work on the computer.
 - (ii) **Search** to help you search for an application or a file.
 - (iii) **Settings** to customize various settings (Display, Hardware, Software, etc.) of the computer.

(iv) **Documents** to provide you quick links to all recent documents, which were opened or modified recently on the computer.

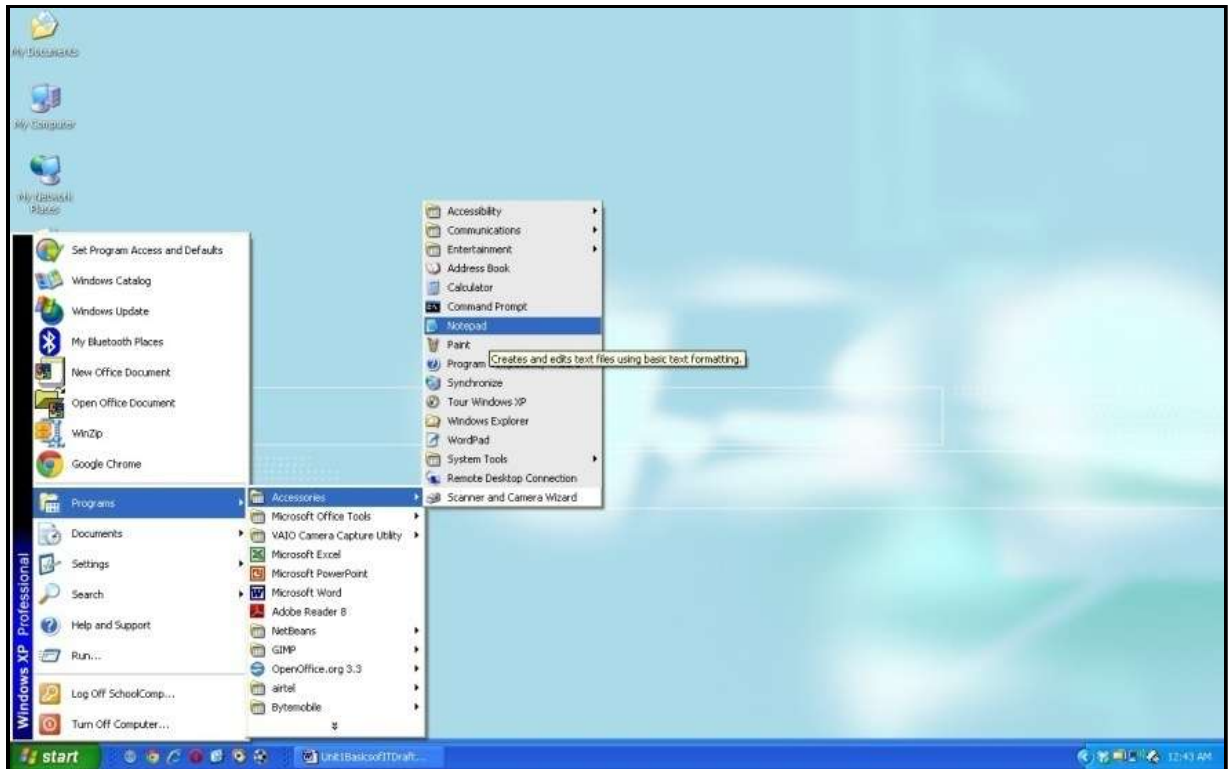


Figure 11: Start Menu and Program Menu

(v) **Programs** to display a submenu with list of various applications available on the computer to work on.

The Start menu also gives you an option to Log Off/Shut Down/Turn Off the computer. These options may vary from version to version and OS to OS.

Every file has an associated format that defines the way data is stored in the file. The file format is identified by a period (also called a dot) appended to a file name, followed by three or four letters. The following are some of the more common file formats:

- Word documents (.doc/.docx)
- Images (.gif and .jpg)
- Executable programs (.exe)
- Multimedia files (.wma and others)

Let us now discuss about some common applications, which come along with the operating system. **Notepad** is one such application, which allows you to type in the content in a text file, save it on the hard disk and print the same, if required.

In **My Computer** or **Computer**, you will find a list of all the Secondary Storage device(s) available on your computer (Figure 12). These drives are represented in the form of alphabets (from **A:** to **Z:**). For example **C:** Drive normally represents the first hard disk present in your system, **D:** Drive may represent the second hard disk or CD/DVD Drive. **A:** and **B:** Drives normally represent Floppy Drives, last alphabets are normally used to represent Network Drives (i.e., the hard disk or DVD drive of another computer).

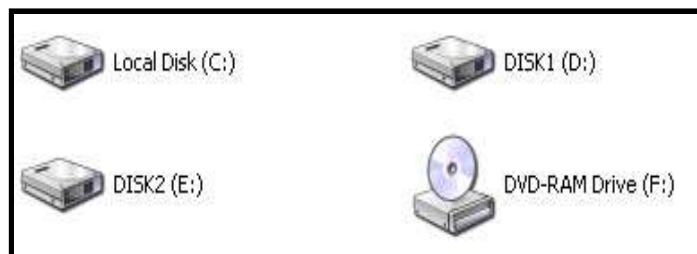


Figure 12: Drives

The data on computer can be organized in files and folders. Files are the immediate container of the content created by you using a particular tool/application. For example, using the Notepad, you can create a Text file “REPORT.TXT” containing report of a particular program organized in your school, you might create another text file “LESSON1.TXT” containing a list of assignments to be given in a class

and using paint tool, you might create a file “MYCREATION.BMP”. All these are known as “files”. When you have many files loaded or stored on the computer, you would like them to be organized in separate groups so that you can manage the files easily. You can create Folders on computer to represent these groups, where each folder can hold any number of file(s) or sub-folder(s). For example, you can create a folder as **Movies** with sub-folders as Hindi and English to contain Hindi Movie Files and English Movies Files, respectively. You may create a Folder with name **Academics** with sub-folders as School Work, Homework, etc.

Creating a Text file using Notepad

Open Notepad by

Clicking **Start -> Programs -> Accessories -> Notepad**

OR

Click **Start -> Run** and type in **NOTEPAD** and click on **open**

Once the notepad is loaded, type the content required by you in the text file.

Type your name and address and save the file.

Saving the File: After typing in the desired content, you may like to save the content permanently on the hard disk of the computer or any other secondary storage device (Figure 13). To do this, you need to follow the instructions given below:

1. Click File ->
2. Click Save ->
3. Choose the location ->
4. Type in the name of the file ->
5. Click Save button

Printing File: Follow the following steps to print the content of the text file

1. Click File ->
2. Click Print ->
3. Select Printer ->

4. Click Print Button

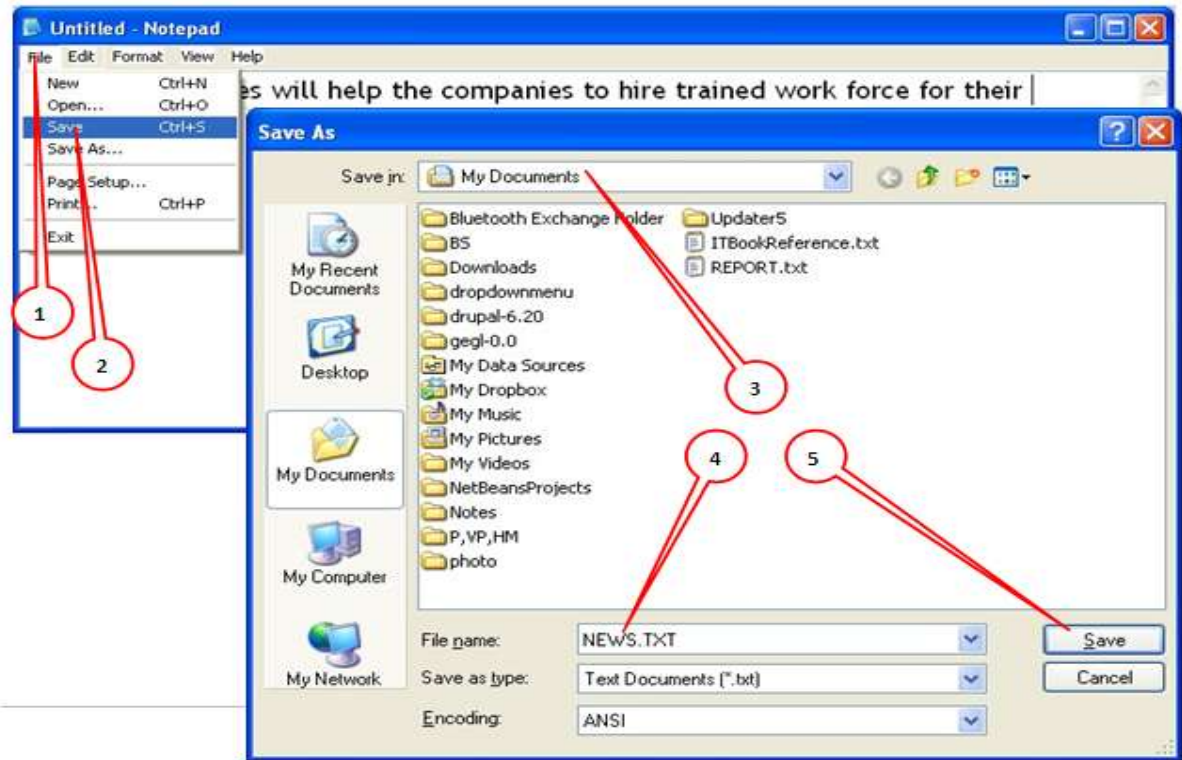


Figure 13: Saving a TEXT file in Notepad

Quitting Notepad

To quit select the close button (X) on the upper right corner of the Window

OR

Click on the File Menu and Select 'Close' option to quit the Notepad.

Folders and Subfolders

When you have many files stored on a computer, you would like them to be organized in a separate folder so that you can manage them easily. This can be done by creating folder(s) on your computer, where you can place related files. Each folder can hold several files or sub-folders.

Creating and Renaming Folder

To create a new folder, right click the mouse to open a menu on your desktop. Take the pointer or cursor to the 'New' and then to the 'Folder' on the right (Figure 14). Left click your mouse on the Folder. You will see a folder on the desktop with a default name 'New Folder'. Left click your mouse on the new folder and name it as you want and then press enter. You can also rename the folder by right clicking and then clicking on 'rename'. Once you have renamed your folder, click Enter on the keyboard.

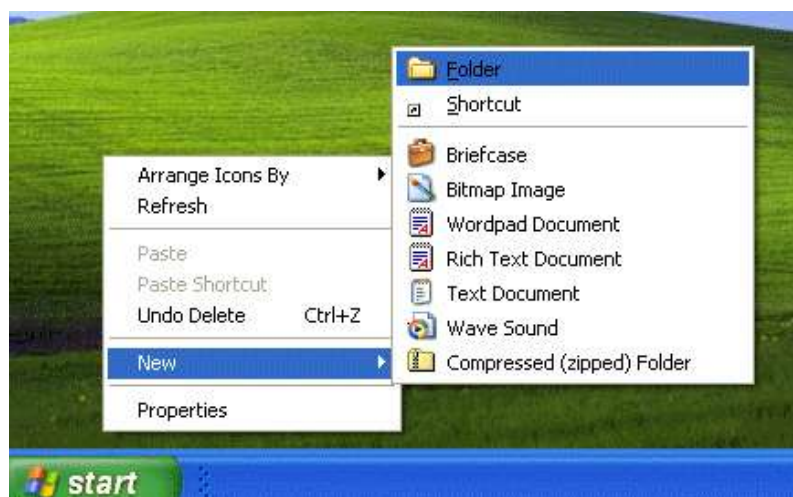
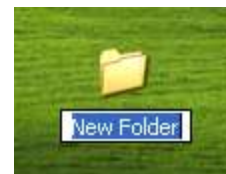


Figure 14: Creating a Folder

You can create a folder on any drive. For example if you wish to create a folder labeled as 'Letters' with sub-folders labeled as 'Hindi' and 'English' to contain Hindi Letter Files and English Letter Files, respectively.

To create a folder, you will have to right click the 'start' button on the task bar and go to the 'Explore' by left click of the mouse. Click on the drive (e.g., C or D) where you wish to create a folder. Now right click the mouse button, go to 'New' and then to 'Folder'. A folder with a default name 'New Folder' will be created. You can rename the folder.

Restoring files from Recycle Bin

Suppose you have deleted some files or folders by mistake and you wish to restore the files/ folders to the same place from where they were deleted, then you need to go to the recycle bin on your desktop, and then right click to restore the file. Restoring an item in the Recycle Bin returns that item to its original location. So look for your restored file from where you deleted it. The following files are not stored in the Recycle Bin and therefore cannot be restored:

- Files deleted from network location.
- Files deleted from removable media such as pen drive.
- Files those are larger than the storage capacity of the recycle bin.

Shutting Down Your Computer

When you have finished using your computer, it is important to shut it down properly. Windows will close any open applications, save settings, and remove temporary files that have been stored. When you have saved your file, take the following steps to shut down your computer.

Step 1: Click the Start button.

Step 2: Click the arrow next to the Lock button.

Step 3: Click the Shut Down option to turn off the computer.

The **Sleep** feature can be used to conserve energy. It will power down the hard drive and monitor and retain information in memory. If there is a power failure, information in memory will be lost, so it is wise to save your documents before you use the Sleep feature.

EXERCISE

Practice Session

1. Open a file in the Notepad program and type your day's activities and save the file in a folder.
2. Open a new Notepad file and type the following:
 - (a) **Name (in upper case letters):**
 - (b) (Note: To type an uppercase letter, hold the Shift key down while you type the letter or Press the Caps Lock key). Turn off the caps lock feature if you wish to type in small case. If you have typed an incorrect letter, press the **Backspace key** to delete it. Press the Enter key to move the flashing insertion point down one line).
 - (c) **Father's name (in uppercase letters):**
 - (d) **Mother's name(in uppercase letters):**
 - (e) **Residential address:**
 - (f) **Telephone no.:**
 - (g) **E-mail address:**

ASSESSMENT

A. Multiple Choice Questions

1. The **file extension** not related to storage of images on a computer is
 - (a) Txt
 - (b) Jpg
 - (c) Gif
 - (d) Bmp

2. A **small picture** that represents a folder or an application program is known as
 - (a) Desktop
 - (b) Icon
 - (c) Graphic
 - (d) Text
3. The **software**, which helps in editing of a basic text file is
 - (a) Adobe Reader
 - (b) Notepad
 - (c) MSPaint
 - (d) None of the above

B. Fill in the Blanks

1. A shortcut to default application on a desktop is known as _____.
2. The deleted files can be found in the _____ bin.
3. To go to the log off option you need to first go to the _____ menu.
4. A list of all secondary storage devices can be found at _____ computer.
5. Files can be organized in a _____.
6. A file with an extension .txt is a _____ file.
7. A file with a .jpg is an _____ file.

CHECKLIST FOR ASSESSMENT ACTIVITY

Use the following checklist to see if you have met all the requirements for assessment activity.

Part A

(a) Differentiated between different desktop icons.

Part B

Discussed in class the following:

(a) Why do we need to create folders and sub-folders?

(b) How files can be restored?

Part C

Performance standards

The performance standards may include, but not limited to:

Performance standards	Yes	No
Identify common desktop icons		
Identify files with different types of extension		
Perform different tasks using a mouse		
Demonstrate the use of icons to open and close files, and use of program menu		
Create a text file in Notepad and save it in desired location.		
Create and rename folders		
Locate stored files and folders		
Restore files from the recycle bin		
Draw a picture in paint and save the file		

SESSION 3: MANAGING FILES AND FOLDERS

RELEVANT KNOWLEDGE

A file in computer terminology can be considered as the modern counterpart of paper documents which traditionally were kept in offices and libraries. The term file is used in computers for a block of arbitrary information, or resource for storing information.

Here are some of the ways to rename, delete, copy, cut and paste files.

To rename a particular file: Close the file to be renamed, if opened. Locate and Select the file:

1. Click the right button of mouse.
2. Select Rename.
3. The filename will become editable - type the new name and press **ENTER** Key on the keyboard.

OR

Locate and Select the file:

1. Click F2 button of key board.
2. The filename will become editable - type the new name and press **ENTER** Key on the keyboard.

To delete a particular file:

Close the file to be deleted, if opened. Locate and Select the file:

1. Click the right button of mouse.
2. Select Delete.
3. Pop up will ask to confirm File Delete - Click on YES

OR.

Locate and Select the file:

1. Press Delete key on keyboard.
2. Pop up will ask to confirm File Delete - Click on YES.

To COPY-PASTE a particular file:

In Copy-Paste, the file will remain there in the original location and a copy of the same will be saved on the new location.

Locate and Select the file:

1. Click the right button of mouse.
2. Select Copy.
3. Change the Drive and Folder to target location.
4. Click the right button.
5. Select Paste.

OR

Locate and Select the file:

1. Press **CTR** and **C** Keys together.
2. Change the Drive and Folder to target location.
3. Press **CTR** & **V** Keys together.

To CUT-PASTE a particular file:

Close the file to be moved, if opened. Locate and select the file.

1. Click the right button of mouse.
2. Select Cut.
3. Change the Drive and Folder to target location.
4. Click the right button.
5. Select Paste.

OR

Locate and Select the file:

1. Press **CTR** & **X** keys together.
2. Change the Drive and Folder to target location.
3. Press **CTR** & **V** keys together.

In Cut-Paste, the file will be removed from the original location and it will be copied in the new location.

Folder

A folder is basically a container, in which the files can be organized in the computer's storage devices. We create folders to keep different kind of information separately for later use.

To rename a particular folder

Close all the applications, which are using the folder to be renamed.

Locate and Select the folder:

1. Click the right button of mouse.
2. Select Rename.
3. The folder name will become editable
4. Type the new name and press **ENTER** Key on the keyboard.

OR

Locate and Select the folder:

1. Click F2 button of key board.
2. The folder name will become editable
3. Type the new name and press **ENTER** Key on the keyboard.

To delete a particular folder:

Close all the applications, which are using the folder to be deleted.

Locate and Select the folder:

1. Click the right button of mouse.
2. Select Delete.
3. Pop up will ask to confirm Folder delete - Click on YES.

OR

Locate and Select the folder:

1. Press Delete key on keyboard.
2. Pop up will ask to confirm File Delete - Click on YES.

To COPY-PASTE a particular folder:

In Copy-Paste, the folder will remain there in the original location and a copy of the same will be saved on the new location.

Locate and Select the folder:

1. Click the right button of mouse.
2. Select Copy.
3. Change the Drive and Folder to target location.
4. Click the right button.
5. Select Paste.

OR

Locate and Select the folder.

1. Press **CTR & C** Keys together.
2. Change the Drive and Folder to target location.
3. Press **CTR & V** Keys together.

To CUT-PASTE a particular folder:

In Cut-Paste, the folder will be removed from the original location and will be copied in the new location.

Close all the applications, which are using the folder to be deleted.

Locate and Select the folder

1. Click the right button of mouse.
2. Select Cut.
3. Change the Drive and Folder to target location.
4. Click the right button.
5. Select Paste.

OR

Locate and Select the folder:

1. Press **CTR & X** Keys together.
2. Change the Drive and Folder to target location.
3. Press **CTR & V** Keys together.

If we wish to select all the files within a folder in one go, we can simply go in that folder and select them by pressing **CTR & A** together. All the files in the folder are selected. After selecting the files, we can Copy or Cut these files with the help of **CTR & C** or **CTR & X** respectively.

We can select some of the files, which are next to each other in a particular folder with the help of **Shift** and direction keys (Left, Right, Up and Down Keys) as shown in the following picture; the first four files in a sequence are selected. We can also select some of the files, one by one, by holding **CTR** key and using Left button of the mouse.

EXERCISE

Practice Session

You will now create and save a file, browse the file, delete the file, and restore the file. Follow the steps given in the table below:

1.	To view a program that is installed on a computer, click the Start button, and then click All Programs .
2.	To open WordPad, click Accessories , and then click WordPad .
3.	To add text in the document, in the Document - WordPad window, for the purposes of this exercise, press SPACEBAR to have the text typed for you.
4.	To save the document, click the File menu, and then click Save As .
5.	To name the document, in the Save As dialog box, in the File name box.
6.	To close the Sample file, click the Close button.
7.	To open the Sample file, double-click Sample .
8.	To close the file, click the Close button.
9.	To delete the Sample file, ensure that the Sample file is selected, click Organize , and then click Delete .

10.	To confirm that you want to send the file to the Recycle Bin, in the Delete File message box, click Yes .
11.	To close Windows Explorer, click the Close button.
12.	To restore the Sample file to its original location, double-click Recycle Bin .
13.	In the Recycle Bin window, click Sample , and then click Restore this item .

ASSESSMENT

A. Multiple Choice Questions

- Files can be organized in a
 - Printer
 - Keyboard
 - Folder
 - Mouse
- Which of the following combination of keys are used for copying a particular file in a folder?
 - CTR+V
 - CTR+X
 - CTR+C
 - CTR+A
- Which of the following combination of keys are used for pasting a particular file in a folder?
 - CTR+V
 - CTR+X
 - CTR+C
 - CTR+A
- To rename a file, you should _____ the file before renaming it
 - Close the file
 - Move the file
 - Go to explorer
 - Open the file

CHECKLIST FOR ASSESSMENT ACTIVITY

Use the following checklist to see if you have met all the requirements for assessment activity.

Part A

(a) Differentiated between file and folder.

Part B

Discussed in class the following:

- (a) Why do we need to create folders?
- (b) How should we name files and folders?
- (c) Where do the files and folders move when we delete them?
- (d) How can we restore files and folders?

Performance standards

The performance standards may include, but not limited to:

Performance standards	Yes	No
Create, rename and delete folders and subfolders		
Copy and Paste folder		
Cut and Paste folder		
Copy, Cut and Paste folders.		