Information and Communication Technology Skills

Introduction

ICT stands for Information and Communication Technology. It includes a diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information. ICT includes computers, the Internet, broadcasting technologies (radio and television) and telephony. In digital technology, translation of information is into binary format (zero or one) where each bit is a representative of two distinct amplitudes, whereas in analog technology, information is translated into electric pulses of varying amplitude. UNESCO defines informatics as the science dealing with the design, realisation, evaluation, use, and maintenance of information processing systems, including hardware, software, organisational and human aspects, and the industrial, commercial, governmental and political implications of these.

People use technology every day at home and at workplace. ICT tools enable anytime, anywhere access to information and resources. The various ICT tools that are used include computers we use at work, smartphones

Figure 3.1: ICT technology

through which we talk, Internet for getting information, communicating with others through e-mail and social networks, watching movies and TV shows, etc. For example, to find a job you may have to search the Internet for job openings, create a resume on a computer, use e-mail to send the resume, send messages through your phone to communicate appear for telephonic interview and get your offer letter through e-mail.

ICT skills help us to communicate, run our business and stay connected with our family and friends. Hence, every person needs to acquire ICT skills and build them to stay updated with the latest software and applications (apps).

Session 1: Introduction to ICT

Information can be recorded or stored in many ways. It can be hand-written on paper, typed using a typewriter or a computer and so on. When information is stored and recorded on electronic devices, it takes on a 'digital' form. ICT devices are tablet, smartphones and laptops' as shown in Figure 3.1. As a student you should be able to identify and understand the functions of

Figure 3.2: ICT Devices

the main components of a typical information and/or communication system as well as the functions

of various computer peripherals. It will help you to effectively utilise the knowledge and skills of ICT. The basic ICT skills that you need are

- knowing how to operate computers; and
- knowing how to browse the Internet for collecting, storing and disseminating information.

ICT at Workplace

ICT has become part of our workplace in all sectors of economy, right from carrying out money transactions through the online banking system to development of textbooks or research papers in educational institutions.

At workplace, we use different computer software and applications to complete tasks like making documents, calculations, tables, graphs, etc. We can also use applications to do every day work, like buying things, booking train or bus tickets, Internet banking and making online payments. Modern ICT employs a variety of media forms, which includes text, graphics, animation, audio and video, etc. It also involves creating, curating, managing images and documents; gathering and processing data and presenting them; working with audio and video tools to create media rich communications, etc. Therefore, employees are expected to possess a sound knowledge of all these to work independently on various software and computers.

ICT at Home

These days most of the people uses television for entertainment and phones for calling up other people. New devices, such as smartphones with an Internet connection are now being used to stay connected with family and friends on a regular basis through social media networks, such as Facebook, Instagram and Twitter. We use computers and mobile phones for talking to each other, sending and receiving information, watching videos and news, listening to music and playing games. You can visit the following sites and know about the ICT activities which are being carried out in various sectors.

Sector	ICT used for	Website
Agriculture	Various activities related to research, development and training in agriculture and allied fields	http://dare.nic.in/ https://bit.ly/2H3DJfU
Retail	Training programmes in the retail sector	http://rasci.in/
Beauty and Wellness	Training programmes in beauty and wellness sector	http://www.bwssc.in/
Banking and Finance	Training programmes in banking, financial services and insurance sector	http://www.bfsissc.com/
Apparel	Training programmes in Apparel sector	http://sscamh.com/indexHome.php
Logistics	Training programmes in Logistics sector	http://lsc-india.com/
Health Care	Training programmes in Health Care sector	http://www.healthcare-ssc.in

The above-mentioned sites are suggestive. You may visit various other sites related to the sectors for more information about the activities being organised in the sector and understand the benefits of ICT in searching, collecting and using information for different purposes.

Practical Exercises

These activities will be run under guidance and with feedback from vocational teacher.

Activity 1

Past, present and future use of ICT

Materials required

Diagrams or models of the basic computer components, actual samples or illustrations of peripheral devices, chart sheets sketch pens and pencils

Procedure

- Form groups of five students each
- Each group will divide the chart paper into three columns.
- Each group will choose one topic related to the past present and future use of ICT

Activity 2

Application of ICT

Materials required

Poster and newspapers cutting, pens, etc.

Procedure

- Form groups of three students
- Discuss the role and importance of ICT in personal life and in workplace.
- List at least five points in each area.
- Prepare a poster depicting five ways each in which ICT is modifying:
  (a) personal life
  (b) workplace
- Make a mention of an activity using ICT (e.g., train reservations), the technology (e.g., online ticket booking through railway website), how ICT has affected the activity (e.g., getting train tickets sitting at home) and how the activity was conducted before the technology (e.g., queuing at railway stations)
- You can use newspaper cuttings, or other material that you can get from outside.

Check Your Progress

A. State whether the following statements are True or False

1. The full form of ICT is Information Commuting Technology.
2. Live sports and news can only be shown using ICT.

B. Short answer questions

1. Give any two uses of ICT at home.
2. What are the emerging skills in ICT?
3. What are the key skills one should possess to use ICT?

What have you learnt?

After completing this session, you will be able to

- identify the importance of information and communication technology.
- list the various tools that are being used for ICT.
- demonstrate the knowledge of application of ICT in our daily life

Session 2: ICT Tools: Smartphones and Tablets — I

Smartphones and tablets are becoming more and more important as most people carry them around and

use them in daily activities like sending e-mails and messages, sharing pictures, etc. Without these, most people cannot work with others. The spreading of an idea, or of news occurring somewhere in the world is now possible through social sites on the internet. As long as one person is able to connect to the internet and express their view about a situation or simply about an idea, then the information that individual will want to share, will get out into the world. Smartphones are now being used to stay connected with social media and exchange information.

Figure 3.3: A smartphone

Smartphones

Mobile phones are ICT tools for talking to people but smartphones are more advanced. With a simple mobile phone you can only make phone calls and receive calls. With a smartphone (Figure 3.3), you can make calls and do things that you normally do using a computer, such as browsing the web, sending e-mails, making video calls, playing games, listening to music, watching movies and much more.

Smartphones are also called mobile phones as you can use them anywhere—at home, in office or on the road (Figure 3.4). They do not need a telephone line. They use wireless (mobile) networks to make calls and to connect to the Internet. Some of the popular operating systems for smartphones are Android OS, Apple iOS and Windows Mobile.

Tablets

For some activities, such as reading a book for a longtime, the screen of a mobile may be too small. For such activities, we can use a tablet (Figure 3.4). A tablet is a mini computer with input, output and processing functions that are all combined into one 'touchscreen', where you can do various tasks just by touching its screen. It is bigger than a smartphone and you can perform all the functions that one can perform on a computer or a smartphone.

Figure 3.4: A tablet

TV and Radio

TV and radio are being used as an ICT tool since a long time. Radio is used to broadcast audio while TV is used to broadcast audio-visual information to many people. Radio and TV are used for both entertainment and to learn new things. You can hear news, songs, stories, speeches, cricket commentary, etc., on radio, while TV is used for watching movies, news, weather forecast, songs, cartoons and educational lectures.

Applications or apps

How does a smartphone perform so many functions? It does so with the help of software applications (Apps). On the screen of a Smartphone or Tablet, you see a lot of small pictures (or 'icons'). If you touch these, they start programs or functions required for watching movies, playing games, using camera, etc.

Apps are software programs (a set of instructions, or a set of modules or procedures, that allow for a certain type of computer operation) that perform different functions. Some of the apps are already present on the phone or tablet. These are called "default" apps. Besides, there are hundreds of other apps that can be purchased and downloaded or downloaded free of cost from online stores. There are several online stores, including Google Play Store for Android and Apple App Store for Apple (Figure 3.5).

Figure 3.5: App. Stores

Commonly found applications

Some of the default apps installed on all smartphones/ mobiles are given in Table 3.1.

Table 3.1: Some of the default Apps installed on smartphones and simple mobile phones

	**Phone:** This app is used to make calls. It also stores the names and phone numbers of people you know.		**Camera:** Connects to the camera in the phone and takes photos and videos.
	**Calendar:** Shows a calendar and you can also enter appointments, reminders, etc.		**Mail:** An e-mail app to send and receive e-mails using your E-mail account in Gmail, Yahoo, Outlook, etc.

	Photos: This helps you store all your photos and video and arrange them into albums.		**Clock:** This shows the time and also sets alarm, timers, etc.
	Maps: This app helps you find directions to where you want to go. It uses GPS (Global Positioning System)		**Messages:** This is for sending and receiving SMS messages.
	Web Browser: This allows you to open a browser to search and visit different websites.		**Music:** This allows you to play and listen to songs and music.
Google Play	**Google Play store:** This is the Google store from where you can get apps like Facebook, WhatsApp, etc. Some apps are free while some are paid ones.		**Apple Store:** As Android smartphones have a Google Playstore, similarly, Apple devices have an Apple store where you can download and use various apps.

Difference between a smartphone and a tablet are given in Table 3.2.

Table 3.2: Smartphone vs. Tablet

	 **Smartphone**	 **Tablet**
Main usage	As a phone but with some additional features, such as camera. The majority of smartphones run on Apple iOS or Google Android but others use Windows Phone or BlackBerry OS.	As a wireless portable personal computer with a touchscreen interface which makes it more useful than the notebook computer. Some tablets use Android OS, others useApple iOS or Windows OS.
Screen size	Screen size is smaller	Has a bigger screen
Photos and videos	Watching a movie or making changes to a picture is difficult	Watching videos and making changes to a photo is better and easier due to bigger screen size
Battery life	You need to charge phones more often	Usually have a longer battery life
Storage	Comes with different storage capacities, but phones with high storage are costly	Usually have higher storage capacity, i.e., they can store more pics, videos and Apps

Practical Exercise

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Activity

Getting started with mobile devices

Materials required

Pen/pencil, notebook, smartphone, tablet

Procedure

- Form groups depending on the number of smartphones and Tablet available. For example, if you have 2 smartphones and 3 tablet, form 5 groups.
- The group studies the basic features of smartphone or a tablet. Note down the names of the Apps or icons you see in the smartphone/tablet. Compare the differences between tablet and smartphones.

Check Your Progress

A. Short answer questions

1. Identify the following symbols and write the name in the blank space.

a.		
b.		
c.		
d.		
e.		
f.		

2. Write any two differences between a smartphone and a tablet.

What have you learnt?

After completing this session, you will be able to

- demonstrate the knowledge of the uses of ICT tools, such as smartphones and tablet.
- differentiate between smartphones and tablets.

Session 3: ICT Tools: Smartphones and Tablets — II

To operate your smartphone, you need to know about basic controls and functions and their uses.

Mobile Device Layout

Some of the basic controls you see on mobile device are as follows: (Figure 3.6):

Figure 3.6: Basic Controls of a Mobile

- **Power button:** This is used to start and shut down a mobile device.
- **Screen:** A screen on which we perform functions by touching with our fingers.
- **Back button:** You use the Back Button to go back to the previous screen in an application.
- **Microphone:** This is present at the bottom of the mobile and we speak into the microphone when we talk to someone.
- **Menu button:** This is used to show the options available in a particular app. This may not be present in all mobile devices.
- **Home button:** This brings you back to the Home Screen from wherever you are in your mobile, whether you are on another page or using an App.
- **Earpiece:** This helps you to listen to voice calls.
- **Volume button:** This helps you to increase or reduce the sound of your mobile.

Basic features of a mobile device

Some of the basic features present in all mobile devices are as given in Table 3.3.

Table 3.3: Basic Features of a Mobile Device

	Bluetooth: This is a short-range wireless technology which helps you connect with other devices that are within 30 feet of where you are. Once connected, you can send messages and songs.
	Chargeable Battery: This is a portable power pack which can be recharged. It allows you to use the device anywhere.
	Wi-Fi: This is a wireless network technology that helps you connect to the local area network. This is used to connect to the Internet and work with e-mails, social media and anything to do which requires internet.
	Touch Screen: The output display of a mobile device is a touch screen. This helps you to run apps and type anything into the mobile by simply touching different areas of the screen with your finger.
	Camera: Smartphones and Tablet have a front and back camera to capture pictures and videos.
	Clock: Every mobile device has a clock which can be set according to the time in your country.
	Cellular network connectivity: This provides the network through which you can make calls.
	Global Positioning System: It is a navigation (direction finding) system that helps you to navigate, find direction and maps to specific locations.

Home screen of a mobile device

The home screen is the first (start) screen of a mobile device (Figure 3.7). There are three main parts of the home screen.

Basic gestures used

Gestures are used to interact with the touchscreen of your mobile device. For example, instead of clicking a mouse to open an App, you tap on the touchscreen. Some of these gestures' as shown in Figure 3.8 are as follows:

- **Tap:** Touch the screen with your finger, once, to click.

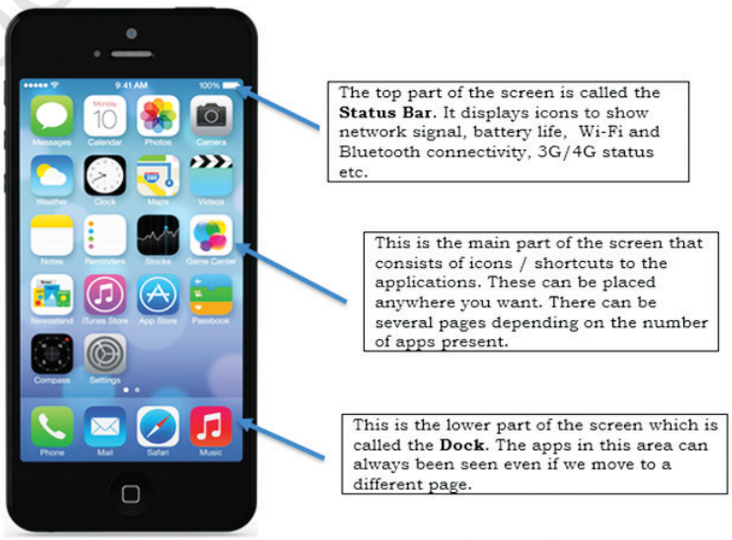


Figure 3.7: Home Screen of a Mobile

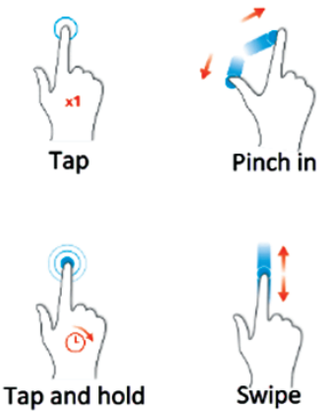


Figure 3.8: Basic gestures

- **Tap and hold:** This is similar to right-clicking your mouse.
- **Drag:** To tap, hold and move your finger across the screen.
- **Swipe:** To slide finger to the right, left, up or down of the screen like turning a page.
- **Double tap:** To tap twice quickly—this is to zoom out (increase the size of) of something. For example, to make a word appear bigger.
- **Pinch:** To bring thumb and finger together on the screen—to zoom in (reduce the size). For example, to make a picture appear smaller.

Practical Exercise

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Activity

Getting familiar with a mobile device

Materials required

Pen, notebook, smartphone, tablet

Procedure

- Form groups' depending on the number of mobile devices available. For example, if you have 3 smartphones and 2 Tablet, form 5 groups.
- Each member starts the device and notes down the names of icons in the status bar and the dock. One group of volunteers shall come in front of the class and read aloud what they have noted.
- The class then discusses the various features of the icons.

Check Your Progress

A. Multiple choice questions

1. What is a short-range wireless communication technology called?
   (a) Wi-Fi
   (b) Internet
   (c) Bluetooth
   (d) PS

2. Which part of the home screen is visible on all pages?
   (a) Status bar
   (b) Main icon area
   (c) Dock
   (d) Clock
3. What does GPS stand for?
   (a) Global Positioning System
   (b) Global Payment System
   (c) Global Program System
   (d) Global Pointing System

What have you learnt?

After completing this session, you will be able to

- identify various parts of a mobile device and list their functions.
- list the important features of a mobile device.

Session 4: Parts of a Computer and Peripherals

Parts of a computer

A computer system is a programmable machine designed to store and retrieve information and perform arithmetic and logical operations to produce meaningful results in desired format. It consists of three main units: Input Unit, Central Processing Unit (CPU) and Output Unit. Different computers have different ways in which the input, processing and output units are connected. In desktop computers, as shown in Figure 3.9, all three units are separate devices. It has: (i) a keyboard, which is the input unit, (ii) a box with the Central Processing Unit, which is the processing unit and (iii) a monitor, which is the output unit. Input unit helps the user to enter raw data and instructions into the computer system, central processing unit performs the required operations

Figure 3.9: Desktop Computer

as per given instructions and the output unit produces meaningful results in the desired format for the user. The CPU is further divided into three parts: (i) control unit (CU), (ii) arithmetic and logic unit (ALU), and (iii) memory unit (MU). 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 the memory unit acts as a temporary store of a company, where small amount of data is stored while other operations are being performed.

In a laptop, all three units, input, processing and output are combined into one device. Input and output devices are also called 'peripherals'. These are plugged into the computer using connection ports.

Figure 3.10: Keyboard

Input devices

An input device is used to enter information into the computer. A keyboard, as shown in Figure 3.10, is an input device used to enter letters, numbers and control functions. Microphone is an input device that is connected to the computer to record sound. A web camera is a device used to record videos. Many computers come with built-in microphones and webcams. Another input device is a scanner that copies physical documents and stores them in a computer in digital (computer-readable) format. For example, if you fill an admission form for a college, you can scan it and then e-mail it to the college instead of sending the actual form by post.

Figure 3.11: Monitor

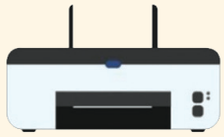
Output devices

Output devices bring information from the computer to the user. If you want to calculate the percentage marks, you input all your marks using a keyboard, the computer calculates using the formula and you see the results on a monitor screen. This monitor, as shown in Figure 3.11, is the output device on which the computer displays the output information. In the same way, a

printer is an output device which gives us the hard copy of the information processed by the computer. If you want to hear the song you have recorded, you can use speakers to play them. Just like input devices, output devices can also be either separate or built-into the computer.

The commonly used peripheral devices are given in Table 3.4.

Table 3.4: Common Peripheral Devices

			
Keyboard: It is used to provide input to the computer on what to do, which could be in the form of typed letters, numbers, and symbols.	**Mouse**: We use it to go to different parts of the screen on the monitor.	**Microphone**: It is used to record voice on the computer, and communicate.	**Projector**: It is used to project images or video from computer on a screen.
			
Monitor: It displays all the visual output that CPU produces after processing the input.	**Speakers**: It plays back all the sound-based output.	**Scanner**: It is a device that scans/ captures a paper image, document and converts it to digital file on computer.	**Printer**: It helps to print out the visual output on the paper, as displayed on the monitor.

Other peripheral devices and their functions

In large retail stores, a peripheral device commonly found is the barcode reader or barcode scanner. It is used for recording the items purchased in order to create the receipt/bill. In offices and homes, we use a peripheral device known as scanner, and it is used to convert the information on a paper document into a digital information document.

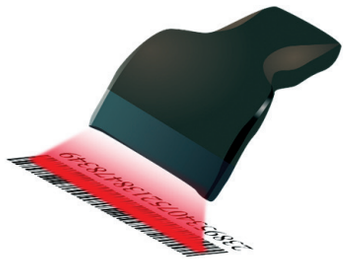


Figure 3.12: Barcode scanning

Figure 3.13: Central Processing Unit

Central Processing Unit

The Central Processing Unit (CPU) of the computer as shown in Figure 3.13, is like our brain. How does our brain work? Our eyes see (input) a mathematical problem and sends the details to the brain. The brain thinks (processes) and gets the result while the hand writes it on paper (output). In a similar way, the CPU also processes information received from the keyboard and gives the output to the monitor or the printer. Just as our brain can understand arithmetic and logical information, the CPU can also solve mathematical and logical problems.

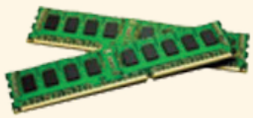
There are 3 main parts of the CPU.

- **Control unit:** It acts like a receiver and a manager of a company. It receives inputs from user and controls different parts to do the operations required.
- **Processing unit:** It acts as an accountant of a company and performs all the mathematical and logical calculations.
- **Memory unit:** It acts as the storage room of a company, where data is stored temporarily (RAM) as well as for a long time (ROM).

Understanding RAM and ROM

Let us take the example of a kitchen to understand the meaning of RAM and ROM. If you are a cook, what would you keep on the kitchen counter? And what would you store away in the kitchen shelves? Well, all the things you need immediately and regularly will be on the counter. And things that you do not access often will be in the shelves. Random Access Memory (RAM) is like the kitchen counter to a computer that is switched on, and Read Only Memory (ROM) is like the storage shelf. Flash memory is usually an external device which is a mix of both RAM and ROM. Some key differences between various storage devices are given in Table 3.5.

Table 3.5: Types of Memory Storage Devices

RAM	ROM	Flash Memory
		
• When you are doing tasks on your computer, you use RAM	• Permanently stores information	• Can permanently store information
• Temporarily stores information • Information is lost when computer is switched off • Information can be changed easily.	• Information is stored when computer is off • Information cannot be changed easily • It is mainly used when starting the computer.	• Information is not lost when computer is switched off • Information can be changed on easily. It is mainly used in removable storage devices (like USB), and its usage is based on user's needs.

Motherboard

Motherboard, also referred to as a system board, is the main circuit board inside a computer. It connects input, processing and output devices.

Some other important parts of a computer system are storage devices, ports and connections.

Storage devices

In order to transfer files from one computer to another one, you need smaller storage devices which you can carry easily from one place to another. These storage devices are used to store digital information. The commonly used storage devices are USB flash drive, hard disk, CD, DVD, etc., as shown in Figure 3.14. They

Compact Disc | USB Flash Drive | DVD | External Hard Disk

Figure 3.14: Storage Devices

mainly differ in their storage capacity (how much data they can store).

You may have heard of a computer with data storage capacity of 500 MB or 2GB. What does that mean? Data is stored in the form of bits and bytes. Bit (Binary Digit, represented by 0 or 1) is the smallest storage unit. Eight bits combined together form a byte, which in turn represents a character (numerals/letters/symbols).

- 8 bits make a byte and 1024 bytes make a kilobyte (KB).
- 1024 KB make 1 megabyte (MB)
- 1024 megabyte make 1 gigabyte (GB)
- 1024 gigabyte make 1 terabyte (TB)

Very simply, more the number of bytes, larger and more number of files can be stored.

Ports and connections

How do you think we connect our keyboard or mouse to the CPU? We do it with the help of wires. Where do you think the wires go in the CPU? The slots or channels into which we connect the mouse/keyboard/external hard disk wires are called ports. Thus, ports help us connect input, output and storage devices in a computer system.

There are several types of ports that you can use to connect a computer to an external devices and networks. These are:

Figure 3.15: USB Port

Figure 3.16: RGB Display port (Left) and HDMI port (Right)

Figure 3.17: Audio Ports

- Universal serial bus or the USB port (as shown in Figure 3.15) which connects peripheral devices, such as a mouse or a keyboard or a printer to a computer using the cable.
- Display port (as shown in Figure 3.16) which connects the monitor, or any display unit, to the computer using the cable. These can be of different types, like Video Graphics Array (VGA) and High Definition Multimedia Interface (HDMI), depending on the requirement.
- Audio ports (as shown in Figure 3.17) help to connect microphone, speakers, and headphones to a computer system. Often, the speaker and

headphone port is called the line out port, i.e., it is meant for sound output.

- Ethernet port (as shown in Figure 3.18) is used for connecting the system to high speed Internet cable.
- Power port (as shown in Figure 3.19) is used for connecting the computer system to the power supply.

Figure 3.18: Ethernet Port

Figure 3.19: Power Port

Practical Exercises

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Initial thinking activity

After watching the initial video write why do you think it is important to know the different parts of a computer?

Activity 1

Knowing your computer

Materials required

Pen/pencil, notebook

Procedure

- Form groups of 5 students each group.
- List the basic input output devices you need in a computer.
- Draw a diagram of a computer system showing all the devices connected to it. Label the diagram and mention the uses of the various devices.
- One volunteer from the group presents the illustration to the class and explains it to the students.

Activity 2

Connecting devices to a computer

Materials required

Pen/pencil, notebook, computer

Procedure

- Form groups of 5 students in each group.
- Each member of the group connects one of the parts of the computer, such as printer, monitor, keyboard, mouse and the speakers to the central processing unit.
- Fit the cables into the correct ports as explained and check if each device is working properly.

Check Your Progress

A. Multiple choice questions

1. Which of the following units make up the CPU? Choose and tick all the correct options.
   (a) Processing Unit
   (b) Input Unit
   (c) Memory Unit
   (d) Control Unit
   (e) Output Unit
2. Which of the following are names of ports in a computer? Choose and tick all the correct options.
   (a) HDMI
   (b) Input
   (c) VGA
   (d) USB
   (e) Ethernet
3. There is a talent contest in your town. For participating in the audition, you have to send a recording of a song. What would you connect to your computer to record your song?
   (a) Keyboard
   (b) Microphone
   (c) Scanner
   (d) Mouse

B. Short answer questions

Write the purpose of the I/O devices

Input/Output device	Purpose
Mic/microphone	
Scanner	
Camera	
Barcode Reader	
Printer	
Speaker	

What have you learnt?

After completing this session, you will be able to

- identify the basic parts of a computer.
- list the use of input and output devices.
- list the functions of the CPU.
- differentiate between RAM and ROM.
- identify the different ports and connections on a computer.

Session 5: Basic Computer Operations

Computer hardware and software

Figure 3.20: Hardware and Software

A computer system consists of two main parts—the hardware and the software. The physical parts that we can see and touch are called the hardware. It is the machinery of a computer. These are the keyboard, monitor, CPU, etc. The software that we cannot see makes the hardware work the way we want. For example, as shown in Figure 3.20, the monitor is a physical device or the hardware. When we start a program, it is displayed on the monitor. This is done by the software which displays things on monitor. Hardware would not be of any use without the software.

The most important software in any computer is the Operating System (OS). This is the software that starts

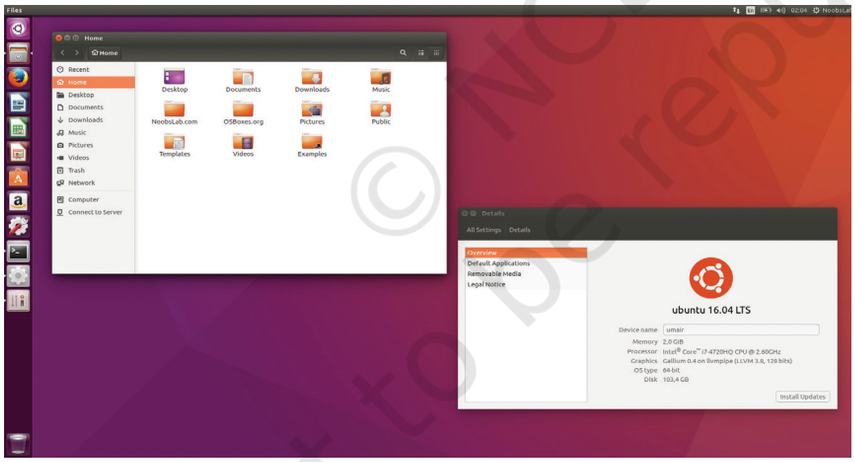


Figure 3.21: Ubuntu Desktop

working as soon as we switch on a computer. It displays the desktop on the monitor. Some of the most commonly used operating systems for laptops and desktop are Ubuntu (as shown in Figure 3.21), Microsoft Windows and Mac OS.

Mobile devices also have operating system that helps them perform their functions. Some of the mobile

Figure 3.22: Mobile Android OS

operating systems are Apple iOS and Google Android (as shown in Figure 3.22).

All the computer applications, such as browsers, games, Office tools, etc., are also software programs that perform a particular function.

Starting a computer

What is the first thing you do after you wake up in the morning? What if your father tells you to do your homework immediately? Can you do it? Maybe, but normally you would do some daily activities and get ready before you start working? Similarly when a computer is switched on, it performs some basic processes/ functions, before it is ready to take instructions from the user.

Figure 3.23: Starting a Computer

To start a computer, press the Power button on the CPU. This will start the Windows operating system and display the Windows desktop on the monitor.

Basic functions performed when a computer starts

Just as we go about with our morning routine, without anyone telling us what to do, a computer automatically runs a basic program called BIOS (Basic Input/Output System) as soon as it is switched on or the power button is pushed on.

The BIOS first does a self-test. If the self-test shows that the system is fine, the BIOS will load the Operating System. This means that the computer's operating system, for example Ubuntu, is now ready to take inputs from the user.

Figure 3.24: Sign-in in Windows

Login and logout

When multiple people use the same computer, each person has his/her own files and applications. To make sure nobody else sees your work, you have login-IDs and passwords. A login and password is like a key to the lock which allows you to use the computer.

When you login to the computer with your login-ID and password (as shown in Figures 3.24 and 3.25), the computer knows that you are an authorised person and allows you to work on the applications in the computer. Once you finish working, you must log out or **sign out** so that no one else can see your work.

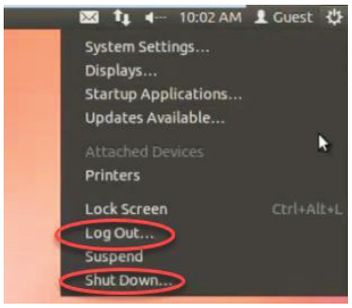


Figure 3.25: Sign-in in Ubuntu

Shutting down a computer

You can shut down the computer in Ubuntu by clicking "Systems" at the top right and then click on Shut Down as shown in Figure 3.25. When you click Shut down, the Operating System will close all the applications and turn off the computer.

Using the keyboard

A keyboard is an input device used to type text, numbers and commands into the computer, as shown in Figure 3.26.

Figure 3.26: Parts of a Keyboard

Function keys

Keys labelled from F1 to F12 are function keys. You use them to perform specific functions. Their functions differ from program to program. The function of the F1 key in most programs is to get help on that program. Some keyboards may have fewer function keys.

Control keys

Keys, such as Control (CTRL), SHIFT, SPACEBAR, ALT, CAPS LOCK, and TAB, are special control keys that perform special functions depending on when and where they are used.

Enter key

The label on this key can be either ENTER or RETURN, depending on the brand of computer that you are using. You use the ENTER or the RETURN key to move the

cursor to the beginning of a new line. In some programs, it is used to send commands and to confirm a task on a computer.

Punctuation keys

It includes keys for punctuation marks, such as colon (:), semicolon (;), question mark (?), single quotation marks (‘ ’), and double quotation marks (“ ”).

Navigation keys

Keys, such as the arrow keys, HOME, END, PAGE UP, and PAGE DOWN are navigation keys. These are used to move up and down, right and left in a document. The HOME and END keys move the cursor to the left/right end of a line of text, respectively. The PAGE UP and PAGE DOWN keys are used to move one page up and one page down, respectively.

Command keys

Keys, such as INSERT (INS), DELETE (DEL), and BACKSPACE are command keys. When the INSERT key is turned ON, it helps you overwrite characters to the right of the cursor. The DELETE key and the BACKSPACE key are used to remove typed text, characters, and other objects on the right and left side of the cursor, respectively.

Windows key

Pressing this key opens the **Start** menu.

Using a mouse

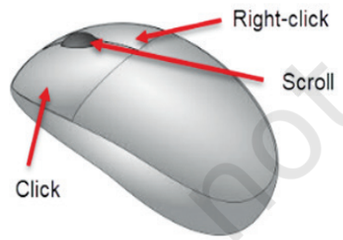


Figure 3.27: Mouse

A mouse, as shown in Figure 3.27 is a small device that you can use to move, select, and open items on your computer screen. Let us see some of the functions that can be performed using a mouse. Different application will behave differently to the mouse actions. Here we use the File Explorer to see the effect of the mouse action.

Roll over/hover

Some actions can be done by simply rolling over or hovering over an item. When you bring the mouse

over a file in File Explorer, it will show the details of that file as shown in Figure 3.28.

Point and click

As you move the mouse on your desk, a pointer moves correspondingly on your screen. The mouse allows you to select an item on the screen. When you click a particular file, it gets selected as shown in Figure 3.29.

Drag and drop

To move an item, you need to click it, and then holding the mouse button down, move the item to a new location. After you move the item to the new location, you release the mouse button. This is called drag and drop. When you drag a file in File Explorer, you can pick it up from the present location and drop it in a new location where you release the mouse as shown in Figure 3.30.

Double-click

It means to quickly click the left mouse button twice. When we double-click the file icon, it will open the file.

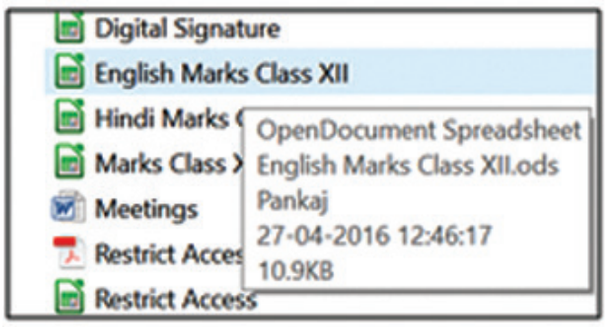


Figure 3.28: Roll Over

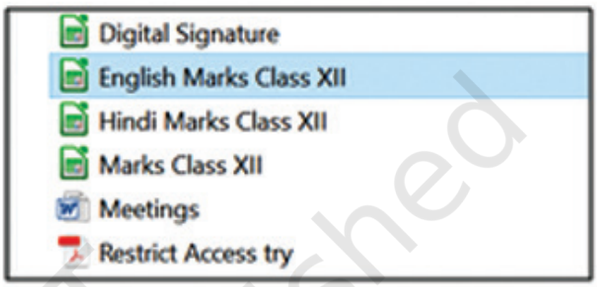


Figure 3.29: Point and Click

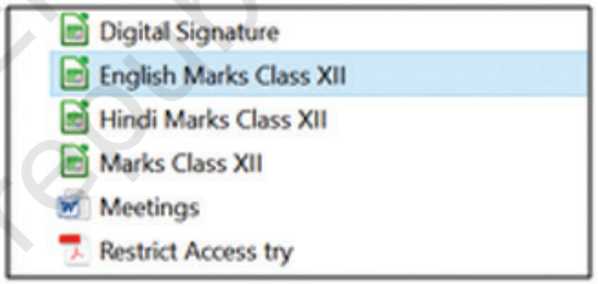


Figure 3.30: Drag and Drop

Practical Exercises

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Initial thinking activity

After watching the initial video write what do you think happens when you start a computer and how do you enter data using a keyboard and mouse?

Activity 1

Use of computer

Materials required

Pen/pencil, notebook, computer

Procedure

1. Form groups depending on the number of computers available.
2. One student starts the computer and logs in. Another student identifies the keys on the keyboard. Another student then performs all the functions of the mouse, such as hover, click, double-click, etc.
3. After the students have performed all the activities, they will shut down the computer. Other students watch and give feedback on what was done right and which tasks can be improved.

Activity 2

Using the keyboard

Material required

Computer

Procedure

- Form groups depending on the number of computers available.
- Open a text editor in Ubuntu by typing 'editor' in the search bar and then selecting the Text Editor. You can also open Notepad in Windows by typing Notepad on the Windows Search bar and then selecting Notepad from the search result.

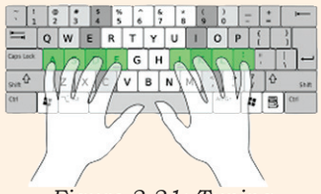


Figure 3.31: Typing

- Each student types the following letters on the text editor. Position your hands on the keyboard, as given in the Figure 3.31 and type the given letters and words. After one student is done, the next student practices the same until. All student should get a chance.

Letters in the home: rowasdf; lkjhj; asdfgf; lkjhj;
Letters in the top row: qwerty poiuy trewq yuiop
Letters in the bottom: rowzxcvb nm,./bvcxz.,mn

- Now, each student types five words using the keyboard. For example, add, all, ask, sad, gas, dad, lad, had, hall, fall, row, tow, top, out, pot, rot, wire, tire, type, write, cab, nab, man, can, van, ban. All students in the group should get a chance to practice.

Check Your Progress

A. Multiple choice questions

1. Which of the following functions are performed using a mouse. Choose and tick all the correct options.
   (a) Turn on computer
   (b) Typing
   (c) Right click
   (d) Drag and Drop an Icon
2. What is the term used when you press and hold the left mouse key and move the mouse around?
   (a) Highlighting
   (b) Dragging
   (c) Selecting
   (d) Moving
3. Rearrange the steps for starting a computer in the correct sequence.
   (a) Desktop appears after login ( )
   (b) Login screen appears ( )
   (c) Power on Self-Test (POST) starts ( )
   (d) Operating system starts ( )
   (e) Welcome screen appears ( )

B. Short answer questions

1. Describe the functions of at least 5 types of keys.
2. Describe the functions of a mouse.

What Have You Learnt?

After completing this session, you will be able to

- start and shut down a computer.
- identify the various keys on a keyboard and their associated functions.
- use a mouse.
- type simple words.

Session 6: Performing Basic File Operations

Need to perform basic file operations

In any school (or office), each teacher has a separate cabinet, as shown in Figure 3.32 where they keep the files of different students/classes on separate shelves. Similarly, information on a computer is stored in

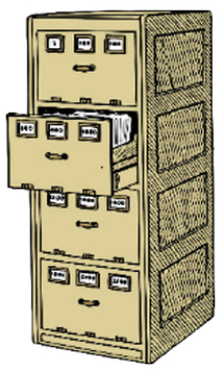


Figure 3.32: File Cabinet

electronic files, which can be put into separate folders. It is easier to manage the electronic files as they can be simply copied, moved, renamed or even deleted.

Files and folders

All information stored in a computer is kept in **files**. Different types of files store different types of information. Each file is given a **file name** and has a **file name extension** that identifies the file type. (The file name and file name extension are separated by a period or a 'dot'.) For example, a document (e.g., with the name Neha) created using **Notepad** (a type of computer application to create simple text files) will have the extension **.txt**. There are other types like .doc, .xls, etc. An image file usually has an extension **.jpg,** while a sound file usually has **.mp3**. A **folder** is a location where a group of files can be stored.

Creating a file (using a text editor in Ubuntu)

When a student, Neha, joins a class, the teacher creates a file on the computer to store Neha's information, such as name, address, phone number, etc. Let us create a new file using a text editor in Ubuntu.

- To open a text editor, type 'editor' in the search dialog box. Then double-click the text editor option as shown in Figure 3.33 and 3.34. This will open a blank document. In Windows, you can open Notepad and type in the text.

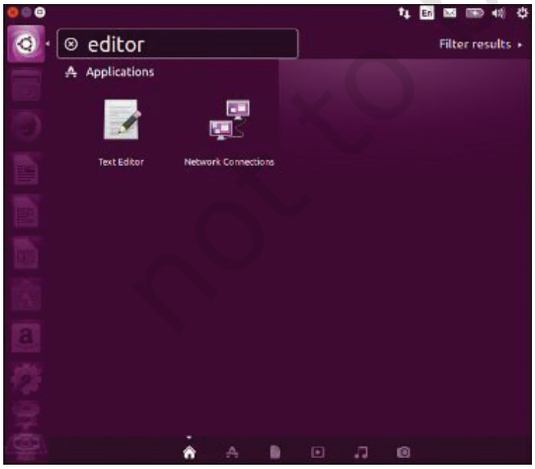


Figure 3.33: Opening Text Editor

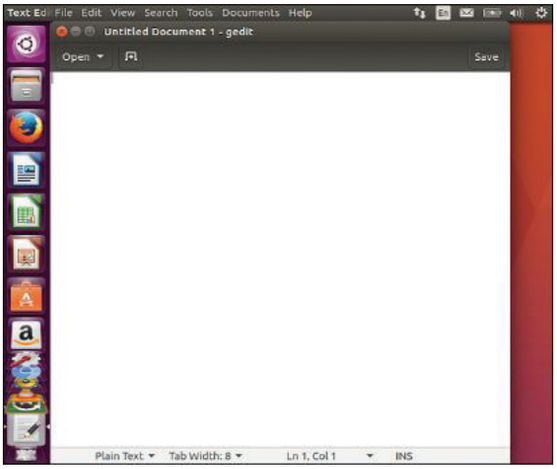


Figure 3.34: Text Editor

- Here you can add text, such as 'Neha Tiwari, Shakti Nagar, New Delhi. M: 7856453451'
- To save the file click Save. In the Save As dialog box, browse to the Desktop folder, type the name as 'Neha' and click Save as shown in Figure 3.35.

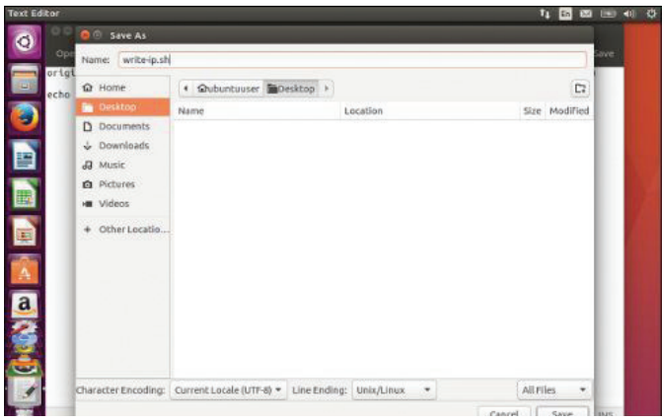


Figure 3.35: Saving a File

Practical Exercise

The teacher will facilitate these activities by showing you the e-learning module for this lesson viahttp://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Initial thinking activity

After watching the initial video in the e-learning lesson for this topic why do you think it's important to know how files are stored in a computer?

Activity 1

Create a file

Materials required

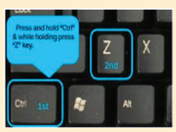
Pen/pencil, notebook, computer

Procedure

- Form groups, depending on the number of computers available. Each member of the group creates a file. Others can watch and give feedback on what was done correctly and what can be improved.
- Open a text editor in Ubuntu or Notepad in Windows.
- Type details, such as name, class, address, parent's name, etc., for a student
- Save the file on the desktop.

Each student studies the shortcut given below:

CTRL+z undo	CTRL+c copy
CTRL+y redo	CTRL+v paste
CTRL+a select all	CTRL+p print
CTRL+x cut	CTRL+s save



The first group asks the other groups a questions (e.g., what does CRTL+Z do? or what is the shortcut for Copy).

Check Your Progress

A. Multiple choice questions

1. Which one of the following shortcut key is used to paste a file? Tick mark the correct answer.
   (a) Ctrl + C
   (b) Ctrl + P
   (c) Ctrl + V
   (d) Ctrl + X
2. Which of the following is a valid file extension for Notepad file? Tick mark the correct answer.
   (a) .jpg
   (b) .doc
   (c) .text
   (d) .txt
3. Which key do you use to copy something? Tick mark the correct answer.
   (a) Ctrl+X
   (b) Ctrl+C
   (c) Ctrl+Z
   (d) Ctrl+T

What Have You Learnt?

After completing this session, you will be able to

- demonstrate the knowledge of the computer files and folders.
- open a new file in a text editor, type in the details and save the file.

Session 7: Communication and Networking — Basics of Internet

Figure 3.36: the Internet

The Internet is a huge network of computers around the world. Using the Internet you can get any information that is stored in a web page on the World Wide Web. You can do all this by connecting your computer to the Internet.

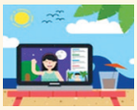
If your computer is connected to the Internet, you say that your computer is online. With the help of the Internet, you can gather a lot of knowledge which is available on it. The knowledge is stored in a big library/ storehouse, called the World Wide Web (WWW) or the Web. It is a collection of different websites that you can view if you are connected to the Internet. You can also

use these websites to buy something, watch movies, read books, learn new skills, educate yourself, find the best colleges to study further, etc.

Uses of the Internet

There is no limit to what you can do online, but some of the most common uses are given in Table 3.6.

Table 3.6: Common uses of Internet

	**Search information:** You can get the latest information about anything that is uploaded on the web, whether it is result, news about an earthquake, a cricket match or the election details.		**Shopping:** You can buy and sell products, such as books and electronic goods over the Internet. You can also pay for these products via digital modes of payments, such as wallets, plastic cardsor through e-banking.
	**Entertainment:** You can listen to music, play games, watch movies or share pictures.		**Online booking:** You can book movie tickets, hotels, bus/train/ plane tickets, etc., online.
	**E-mail and chatting:** You can talk or send messages to people all around the world quickly and easily. The messages you send over the Internet can reach any part of world in just a few seconds. For example, Gmail and Outlook.		**Online learning:** There are a number of courses available online—some are free while others are not. You can do a course on a topic you like or want to know more about.
	**Social networking:** You can share your interests, knowledge and stories with your family and friends around the world. For example, Facebook and Twitter.		**Online banking:** You can do banking operations, like checking details of your bank account or transferring money from one account to another through mobile banking/NEFT/RTGS.

Connecting to the Internet

As shown in Figure 3.37, to connect to the Internet, you need:

(a) A device, such as a computer, laptop or mobile.

(b) A connection device, i.e., a modem.

An Internet Service Provider (ISP)—i.e., the telephone company which provides the Internet connectivity using the phone lines or a wireless network.

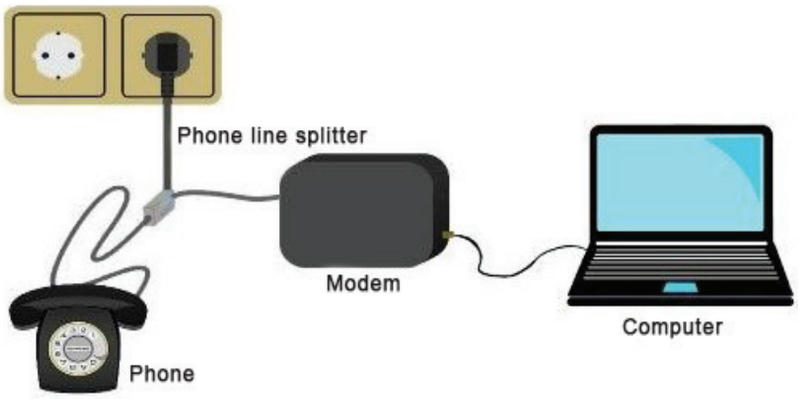


Figure 3.37: Connecting to the Internet

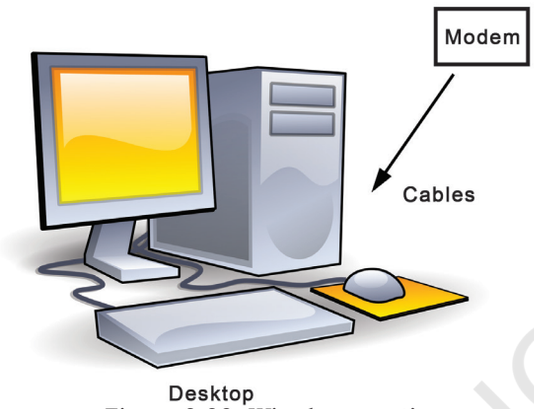


Figure 3.38: Wired connection

Figure 3.38A: Wireless connection

Types of connections

(a) Wired connections: When our computer is connected to the Internet using a wire, it is called a wired connection (as shown in Figure 3.38). We use Ethernet cables (cables used for connecting to the Internet) to connect to the modem which connects to the ISP using a phone line.

(b) Wireless connection: You can also connect your computer to the Internet using wireless technology as shown in Figure 3.38A. Laptops need a wireless Internet card to connect to a modem with using any cables.

Bandwidth

Bandwidth is the amount of data that can be transmitted over a network in a certain amount of time. To understand bandwidth, Let us take the example of a pipe, the amount of water flowing through a pipe depends on its thickness. Similarly, the amount of data that your network can receive or send depends on its bandwidth. In case of digital devices, the bandwidth is usually expressed in bits per second (bps) or bytes per second and in case

of analog devices, the bandwidth is expressed in cycles per second, or Hertz (Hz).

Data transfer speed over the networks (including the internet) is calculated in terms of bits per second.

1 Kbps (kilo bits per second) = 1000 bits per second
1 Mbps (mega bits per second) = 1000 kilo bits per second
1 Gbps (giga bits per second) = 1,000 mega bits per second

Internet browser

To see the information on the various websites, you need an Internet Browser. An Internet Browser is an application or a software program on your computer or laptop which helps you visit the various websites. Some examples of browsers are Google Chrome, Mozilla Firefox and Internet Explorer.

Figure 3.39: Some Internet Browsers

(a) Searching for information: Do the steps below to search for information on the Internet.

Open an Internet browser, as shown in Figure 3.40.

- Type the topic, on which you want information, in the **search box** and hit the Enter key.

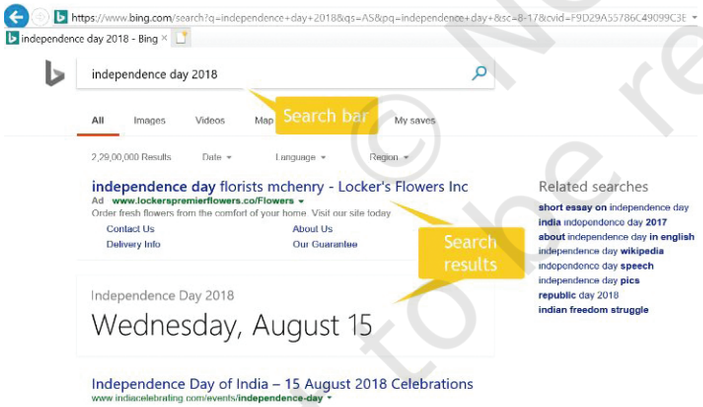


Figure 3.40: Internet Explorer

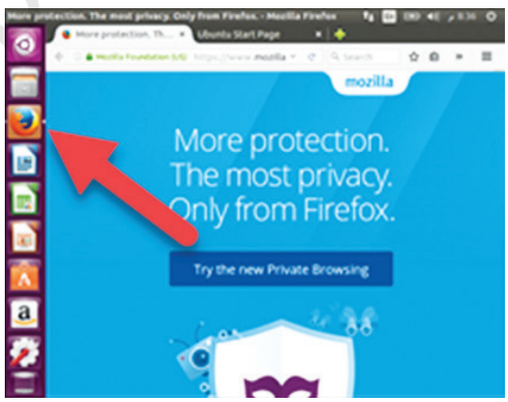


Figure 3.41: Firefox in Ubuntu

- The **search results** having the required information will be displayed.
- In Ubuntu, click Firefox icon as shown in Figure 3.41 to open Firefox Mozilla browser and search for information.

Practical Exercise

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Initial thinking activity

After watching the initial video in the e-learning lesson for this topic, write down why do you think the first person did not have enough information about available jobs.

Activity 1

Uses of the Internet

Materials required

Pen/pencil, notebook

Procedure

- Form groups depending on the number of computers available.
- Discuss the various uses of the Internet. Every member gives one use and what he/she would do using an Internet connection. Rest of the group should give feedback on whether it is correct and not. One group volunteers and presents to class. Students give feedback.

Check Your Progress

A. Multiple choice questions

1. To connect to the Internet, the computer has to be connected to the _____.
   (a) Internet Society
   (b) Internet Architecture
   (c) Internet Service Provider
   (d) Large Area Network

2. What is the Internet?

   (a) Phone connections
   (b) Collection of computer networks
   (c) Network of computers in an office
   (d) None of the above

B. Short answer question

1. Write a short note on the uses of internet.

What have you learnt?

After completing this session, you will be able to

- search information on the Internet.
- identify the various uses of Internet.

Session 8: Communication and Networking—Internet Browsing

World Wide Web

The World Wide Web (WWW) or simply the Web is a huge collection of information as shown symbolically in Figure 3.42. It is a vast network of linked hypertext files, stored on computers throughout the world, that can provide a computer user with information on a huge variety of subjects. Thus, it serves as a platform through which users can use or share information.

Figure 3.42: Symbolic Representation of World Wide Web (WWW)

It is made up of

- A web page
- A web browser
- A system to transfer information between the web browser and the web pages

Web page

A web page is a document present on a computer that is connected to the Internet. There are hundreds of web pages. Each web page has a unique address/location like the address of a house. We can use the address to see a particular web page. For example, the address of NCERT is *http://ncert.nic.in* as shown in Figure 3.43. To view a web page you need a web browser on your computer.

Figure 3.43: Web Address

Web browser

A web browser (commonly referred to as a browser) is a software application for using and sharing information on the World Wide Web.

Mozilla Firefox	Google Chrome	Internet Explorer	Apple Safari	Opera
				

Figure 3.44: Web browsers

Figure 3.45: Web browser

The most popular web browsers that are used today are shown in Figure 3.44.

If you want to see a web page that gives information on plants, you type that address in the web browser in the address bar as shown in Figure 3.45. Then the web page on plants will be displayed in the browser.

(a) Hyperlinks: Very often, there are hyperlinks (highlighted and underlined words) present on web pages. If you click a hyperlink, it will take you to another part on the same page or to a different page.

Figure 3.46: Parts of a Browser

(b) Important parts of a web browser (as shown in Figure 3.46):

(i) *Address bar (Alt+d)*: You can type the address/URL of a web page in this box and press Enter. The browser will display the page linked to that URL.

(ii) *Tabbed browsing (Ctrl+T):* Tabbed browsing allows a user to view multiple pages in the same window. So if you want to compare two types of plants, for example, trees and shrubs, you can open the two in two different tabs.

(iii) *Back and forward buttons (Alt+Left or right arrow keys):* These buttons allow you to go back to the last page viewed, or go forward to the next page viewed. For example, in the previous example, if you click 'Back' arrow on the 'Flowers' page it will take you back to the 'Table of Content'.

(iv) *Refresh button (F5):* Sometimes, you do not see the complete page correctly. You can reload the page by clicking the Refresh button.

(v) *Steps to browse a web page:* Open a web browser, such as Internet Explorer or Google Chrome. To search for information, follow the given steps:

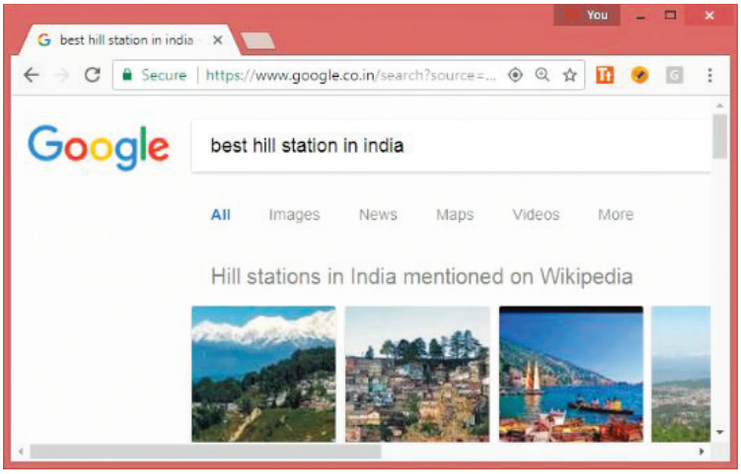


Figure 3.47: Searching for Information

- Type http://google.co.in in the address bar
- Type 'best hill station in India' in the Google search bar
- Press **Enter**
- Scroll the screen and click on the link for the page you want to see.

Practical Exercise

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Initial thinking activity

After watching the initial video in the e-learning lesson for this topic, write why do you think the second person told her friend that she neither needs books or someone else to get information about anything?

Activity

Web browsing

Materials required

Pen/pencil, notebook, computer with an Internet connection

Procedure

1. Form groups depending on the number of computers available.
2. One member does the steps while the other watches and give feedback on what was done correctly and what can be improved.

Do the following

- You are planning to go to your relative's place who lives in another city.
- Use Internet (IRCTC, etc.) find out which trains are going there, their timings and ticket fare.
- Find out about two cities you want to visit and places you can visit in these cities.
- Use Internet (IRCTC) to find out which trains connect these two cities, their timings and ticket fare.

Check Your Progress

A. Multiple choice questions

1. What do I need to get information from the World Wide Web?
   (a) Computer
   (b) Browser
   (c) Internet Connection
   (d) All of the above
2. Which of the following is a web browser?
   (a) Internet
   (b) Chrome
   (c) Windows
   (d) None of the above

B. Short answer questions

1. List the steps to search for information using a web browser.

What Have You Learnt?

After completing this session, you will be able to

- use a web browser to search for information on the Internet.

Session 9: Communication and Networking — Introduction to e-Mail

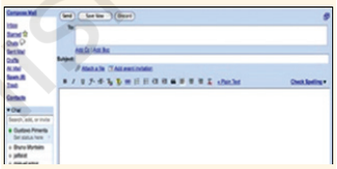
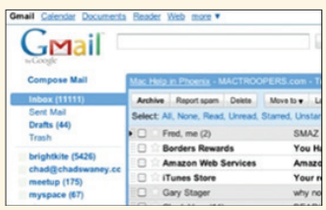
Electronic mail or e-mail is a quick way of sending messages to people using the Internet. Electronic mail is a message sent over the Internet from one person to another. It consists of lines of text and images.The invention of e-mail has influenced our lives and they have become a popular means of communication.

How does the e-mail work?

Files containing videos, documents, spreadsheets, etc., can be sent along with the e-mail as attachments. E-mail is fast and easy to use and it can be sent to multiple people at the same time.

Let us compare the way a postal mail and an e-mail is sent as shown in Table 3.7.

Table 3.7: Comparing Postal mail vs. e-mail

		Postal Mail	e-mail
Address	Postal mail address is a street, city, etc., of a geographical location while an e-mail address is a digital location on a mail computer where you can send or receive an electronic message.	To, Mr. Ashok Rastogi 3 Bapu Nagar, Rana Pratap Bagh, New Delhi -110004 From: Gopi Kishan, Mumbai	ashokrastogi@gmail.com
Written on	Postal mail is written with paper and pen. An e-mail is written on a computer or mobile device.		
Sent via	Postal mail is sent by bus, air, train while an e-mail travels in a digital format over an Internet connection.		
Received in	Postal mail is brought by the postman and dropped into the letterbox outside our house. E-mail comes into the Inbox of the receiver's e-mail account.		

E-mail ID or Address

The general format of an e-mail address is local_part@domain. An example of an e-mail address is ashokrastogi_1@gmail.com.

- An e-mail address is made up of two parts separated by the @ symbol. The part before the @

symbol is created by the user and is usually the name of the person, for example, *ashokrastogi_1*. This is different for every user. One might need to add numbers or any other prefix or suffix in case someone else has already taken that mail address before him. One person can only have a specific e-mail address.

- The part after the '@' symbol is the domain name of e-mail service provider, i.e., the company that provides the e-mail service. Here *gmail.com* is the domain name of Google. For example, Gmail by Google, Outlook.com by Microsoft and yahoo.co.in by Yahoo!

Advantages of e-mail

E-mails can be sent to multiple users along with the attachments. They are fast as they reach anyone around the world immediately, free as most services do not charge money and it is environment friendly, as no paper is used.

Practical Exercise

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Initial thinking activity

After watching the initial video in the e-learning lesson for this topic where the boy he is going to send a post card, what suggestion did his friend give?

Activity 1

Advantages of using e-mail

Materials required

Pen/pencil, notebook

Procedure

- Form groups of 5 students each.
- Discuss how writing e-mail is better than sending a letter through postal mail. Every student says whether he/she prefers to send an e-mail or post a letter and why.

Check Your Progress

A. State whether the following statements are True or False

1. Email cannot be sent to more than one person at a time.
2. Email is an electronic message sent over the Internet or a computer network.
3. Pictures, videos, audio files, and spreadsheet files cannot be attached with an e-mail.

What have you learnt?

After completing this session, you will be able to

- differentiate between postal mail and electronic mail.
- write an e-mail message.
- list the benefits of an e-mail account.

SESSION 10: COMMUNICATION AND NETWORKING — CREATING AN E-MAIL ACCOUNT

Creating an e-mail account

To set up an e-mail account, there are a number of popular providers to consider

(a) Gmail (run by Google)

(b) Outlook mail (run by Microsoft)

(c) Yahoo mail (run by Yahoo)

Figure 3.48: Email service providers

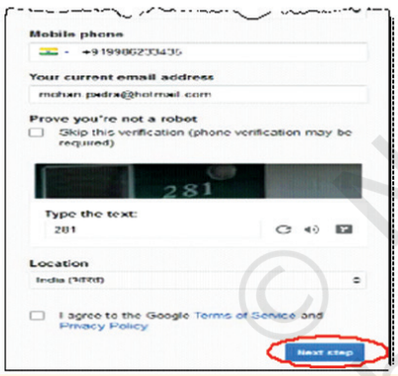
Here we will learn how to create an e-mail account using Gmail. All e-mail hosting sites will have similar procedures.

Steps to open an e-mail account on Gmail

1. Go to www.gmail.com and click "Create an account".

2. The sign up form will appear. You will need to fill your name, username, password and other details in a sign-up form. A password should be at least 8 characters long and contain letters, numbers and special characters (e.g., $%#). This will make it more secure.

3. Fill in other details as your phone number, country, etc. Review the Terms of Service and Privacy Policy, click the check box, and then click **Next step**.



4. Google welcome page will appear. Click on the '**Continue to Gmail'**. This will display your Gmail account page.

Practical Exercise

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Initial thinking activity

After watching the initial video in the e-learning lesson for this topic why, do you think the person could not send an e-mail?

Activity

Creating an e-mail account

Materials required

Pen/pencil, notebook, computer with Internet connection

Procedure

- Form groups, depending on the number of computers available.
- Each student takes turns to:
  (a) create an e-mail account using gmail.com (or any other free service). NOTE: make careful note of your e-mail address and password.
  (b) sign out and sign in the e-mail account. Do not share password with others.

Check Your Progress

1. Multiple choice questions

1. Here are the steps to sign in to your Gmail account.

   (i) Type username (ii) Go to www.gmail.com
   (iii) Click Sign in (iv) Type password

   Choose the option with the correct order.

   (a) i > ii > iv > iii
   (b) ii > i > iii > iv
   (c) ii> i > iv > iii
   (d) ii > iii > i > iv

2. Which one of the following statements is false?

   (a) You need to create an account before you can send an e-mail.
   (b) You should sign out of your account when you are not using the computer.
   (c) You do not need an Internet connection to use your Gmail account.
   (d) You must not share your password with others.

3. Which of the following is an e-mail service?

   (a) WhatsApp
   (b) WeChat
   (c) Gmail
   (d) Facebook

Short answer questions

1. What characters should the password have in e-mail address, to make it more secure?

What have you learnt?

After completing this session, you will be able to

- create an e-mail account.
- sign in and sign out an e-mail account.

Session 11: Communication and Networking—Writing an e-Mail

Gmail is a free e-mail application. Let us learn how to use it.

1. To write a new e-mail, connect to the Internet and open Gmail.
2. Type 'gmail.com' in the address bar of Internet Explorer.
3. To start using Gmail, you need to sign in. Type your e-mail ID and password in the given areas and click on the **Sign in** button as shown in Figure 3.49
4. Click on the **COMPOSE** button on the Gmail home page.

Figure 3.49: Sign in page

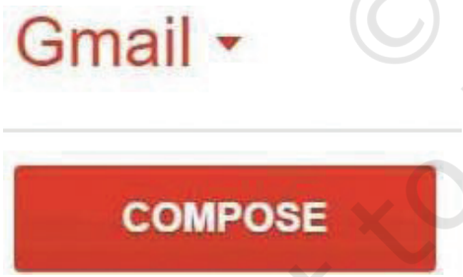


Figure 3.50: Compose email

This will open a **New Message** window. Let us understand this with an example. Mohan Padra wants to send Diwali greetings to his sister, his wife and daughter. He wants do this by writing an e-mail using the Gmail account he just created.

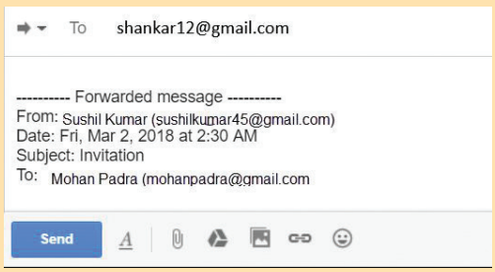
In the **To**: section he types the e-mail ID of his sister, i.e., mohini@gmail.com

- In the **Cc**: section he types the e-mail IDs of his wife, sagasika@gmail.com and her daughter shalloo@gmail.com. In this way he is able to send the same message to all three at once instead of writing it three times.
- In the **Subject**: section, he writes 'Happy Diwali' which is the main topic of the e-mail message.
- He starts the **main body** of the message with a greeting "Hello everyone". This can change depending on whom you are writing the mail to. Then he writes the complete message. He ends

the e-mail message with “best wishes” and his name (Mohan).

- When he click the **Send** button, the e-mail will reach the recipients.

Follow the given steps to write an e-mail



1. In the **To** section, write the e-mail-id of the person you are sending the mail to.
2. In the **Cc** section, write the e-mail-ids of all the people to whom you want to send copies of the message.
3. In the **Subject**, write the topic of the mail. For example, Happy Diwali.
4. In the **main body**, type the message you want to send. This will include the salutation in the beginning, main message in the middle and signature at the end.
5. After you type the message, click **Send**.

The mail will be sent to all the people whose e-mail addresses you have given in the **To** and **Cc** sections.

Figure 3.51: Attach a file

Attaching a file to an e-mail

An attachment is a type of file such as a photo or document that you can send along with your e-mail. To add an attachment you need to click on the Attach button.

- The Attach button often has a paperclip as its symbol
- When you click on the Attach button it opens up a new window

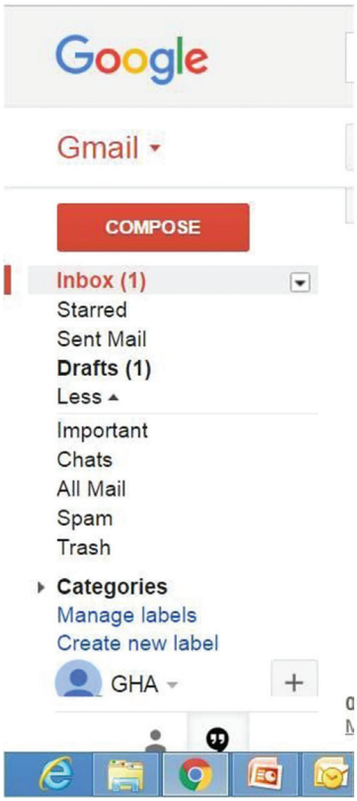


Figure 3.52: Folders

- The window shows you files and folders on your computer
- Find and then click on the file you want to attach and press OK
- The file will now show as an attachment in your e-mail
- The name of the file will be shown next to a paper clip symbol

Managing Folders

There are different folders that could help you manage and organise your e-mails.

- The **Inbox** holds e-mails that people have sent to you
- The **Sent** folder holds e-mails that you have sent to people
- The **Drafts** folder holds all the e-mail you have started writing, but not yet sent
- The **Junk/Spam** folder holds e-mails that may not be useful
- The **Trash** can or folder holds e-mails that you no longer need and have deleted. To delete an e-mail, you select an e-mail and then click on the Delete button for it to be moved from inbox to trash folder (see Figure 3.52).

Practical Exercise

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Initial thinking activity

After watching the initial video in the e-learning lesson for this topic what do you think is the first thing you will do after creating your e-mail account.

Activity 1

Writing an e-mail

Materials required

Pen/pencil, notebook, computer with an Internet connection

Procedure

- Form groups, depending on the number of computers available.
- Each student writes an e-mail to two of the other group members using their newly created e-mail address wishing them for a future festival. Other members watch and guide the student.

Check Your Progress

A. Multiple choice questions

1. What do you type in the "To" field?
   (a) The topic of the e-mail
   (b) The main message of the e-mail
   (c) Email address of the person to whom you want to send a copy of the e-mail
   (d) Email address of the person you are sending the mail to
2. You want to send an e-mail message to your friend Sushil. In which order will you perform the given steps to write and send an e-mail to him?
   (i) Type Sushil's e-mail address, subject and message
   (ii) Click on the Compose button (iii) Click Send (iv) Open your e-mail account.
   (a) (iv)>(ii)>(i)>(iii)
   (b) (iv)>(i)>(ii)>(iii)
   (c) (iv)>(i)>(iii)>(ii)
   (d) (iii)>(i)>(ii)>(iv)

B. Fill in the blanks

1. In "**To**:" section _____ is typed for sending a message through e-mail.
2. The Attach button in e-mail often has a _____ as its symbol.
3. In the _____ section of the e-mail, the topic of the mail is written.
4. After typing the message in the main body of the e-mail, you need to click on _____ button to send the e-mail.

What have you learnt?

After completing this session, you will be able to

- identify the various elements of the e-mail message.
- compose and send an e-mail message.
- attach files in an e-mail.

Session 12: Communication and Networking — Receiving and Replying to e-mails

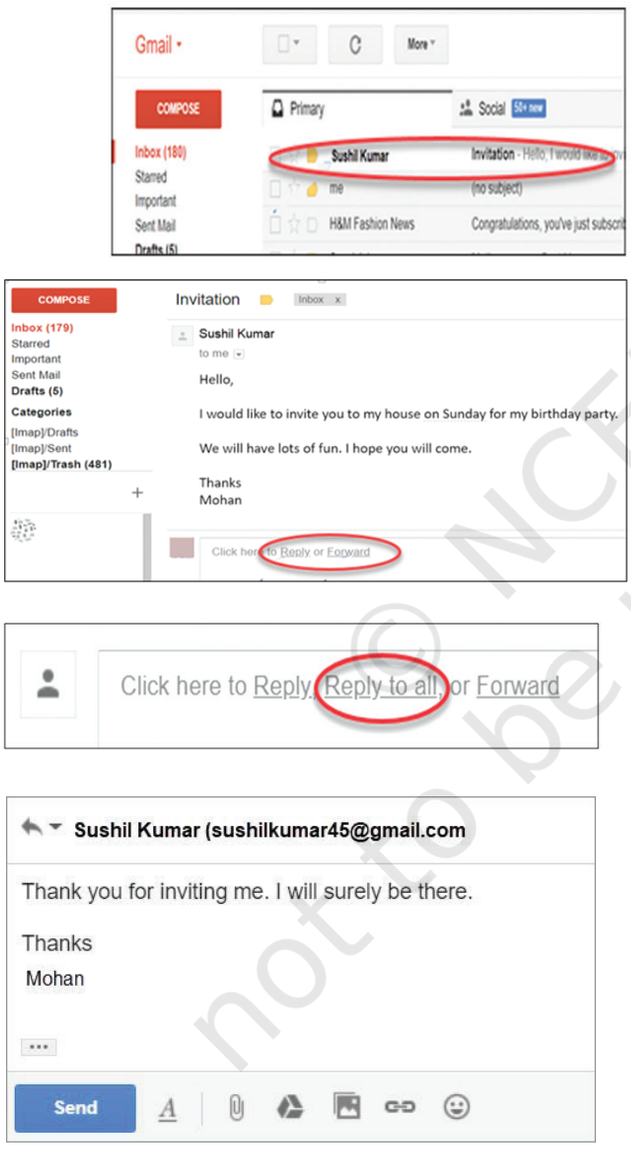


Figure 3.53: Reply to an email

Receiving an e-mail

Imagine your friend sends you an e-mail. The e-mail will appear in your **Inbox**. It shows the name of the sender, subject and a title of the main message. It will remain **bold** till you open it.

1. Click on the mail to open it.
2. Once you have read the e-mail, you can **reply**, **forward** or **delete** the mail.
3. If the invitation was sent to many people, you get another option, i.e., **Reply to All**. When you click this, the reply will be sent to all the people who received a copy of this mail.

Replying to an e-mail

To reply to this e-mail:

1. Click on the **Reply** option at the bottom. This will open a space where you can write your reply. The e-mail address of the person to whom this e-mail will be sent is already present at the top.
2. Type your reply and click **Send**.

Forwarding an e-mail

You can also forward this e-mail to your parents to inform them about the invitation.

1. When you click on "**Forward**", a space is displayed with the old message copied to it.
2. You can give the e-mail address of the person(s) you want to forward to and write anything extra you want to add.
3. Then click on the "**Send**" button.

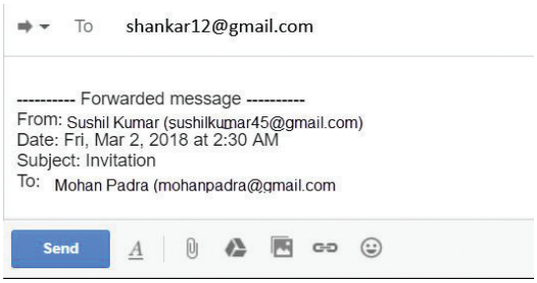


Figure 3.54: Forward an email

Deleting an e-mail

You can delete the mail by clicking on the delete icon. This will remove the e-mail from your inbox and move it to the "Trash" folder. It will remain there for a few days before it is removed from the system.

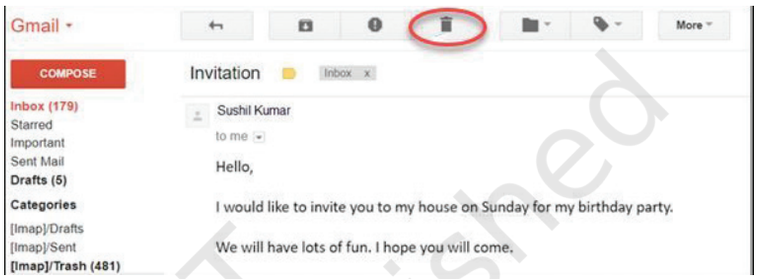


Figure 3.55: Delete an email

Practical Exercise

The teacher will facilitate these activities by showing you the e-learning module for this lesson via http://www.psscive.ac.in/Employability_Skills.html. The module will include videos and e-content for the above topics as well as detailed instructions for some activities below.

Activity 1

Receiving and replying to an e-mail

Materials required

Pen/pencil, notebook, computer with an Internet connection

Procedure

- Form groups depending on the number of computers available.
- The teacher sends an e-mail to a student in each group informing them about a group dance competition.

All details about the date, time, venue, etc., is described in the mail.

- The leader reads the e-mail and then forwards it to all his group members to inform them about the details of the dance competition. The leader discusses with the group whether they want to take part or not and then sends a reply to the teacher.

Check Your Progress

A. State whether the following statements are True or False.

1. By choosing the "Reply" option, the e-mail address of the sender of the original message will appear in the "To" field.
2. Email is an electronic message transmitted over the Internet or computer network from one user to another.
3. You can forward the e-mail by clicking on the delete icon.

What have you learnt?

After completing this session, you will be able to

- identify a new mail in your inbox.
- reply or forward an e-mail.
- delete an e-mail.

GLOSSARY

Applications/Apps: *software programs on a mobile device which perform specific tasks*

Attachment: *adding a file to an e-mail*

Barcode: *a machine-readable code in the form of numbers and a pattern of parallel lines of varying widths, printed on a commodity and used especially for stock control*

Bytes: *a group of binary digits or bits (usually eight) operated on as a unit, a byte is considered as a unit of memory size*

Digital: *the information that is stored on a computer is said to be in a digital form*

Drag: *pull an icon or something on the screen with a mouse*

E-Commerce: *it is a process of buying and selling goods online*

Email: *a way of sending messages over the Internet*

Ethernet: *a system for connecting a number of computer systems to form a local area network*

File: *a document on a computer. There are different types of files*

Folder: *a location on the computer. It may contain many files or sub-folders*

Gestures: *the actions you do with your fingers to interact with a touch screen*

ICT: *it is an abbreviation of Information and Communication Technology*

Internet Browser: *it is a software which helps you search for information online*

Internet: *a number of computers connected together to provide information*

Junk: *the location for storing unwanted e-mail as determined by a spam filter*

Messaging: *sending text, audio and video messages over an Internet connection*

Motherboard: *a printed circuit board containing the principal components of a computer or other device, with connectors for other boards to be slotted into*

Navigation: *the action of moving around a website, the Internet, etc.*

Operating/operate: *control the functioning of (a machine, process, or system)*

Peripheral: *a device that you are able to attach to and use with a computer, though it does not form an integral part of it*

Port: *a socket in a computer network into which a device can be plugged*

Privacy: *the state of being free from public attention*

Reply to all: *an option present when we want to reply to all the recepients, if we choose Reply to all, the reply will be sent to all the people the mail was sent to or received from*

Scanner: *a device that scans documents and converts them into digital data*

Smartphone: *a mobile device that is used to make calls, connect to the Internet and run applications that do a variety of functions*

Tablet: *a mobile device like a smartphone but with a bigger size*

Web Browser: *a software used to browse information on WWW using Internet*

Web Page: *it displays information in the form of text, graphics, audio or video*

Wi-Fi: *a wireless connection to the Internet*

World Wide Web (WWW): *it is a collection of information located on computers around the world*

Further Readings

Session 1: Introduction to ICT
- https://bit.ly/2pYKPKF

Session 2: ICT Tools – Smartphones and Tables – 1
- https://bit.ly/2zolM6d

Session 3: ICT Tools – Smartphones and Tables – 2
- https://bit.ly/2vvtqdN

Session 4: Parts of a computer and peripherals
- https://bit.ly/2w3GL0J

Session 5: Basic Computer Operations
- https://bit.ly/2EbIl0o

Session 6: Performing basic file operations
- https://bit.ly/2oPHluK

Session 7: Communications and Networking – Basics of Internet
- https://bit.ly/2vkoUS4

Session 8: Communications and Networking – Internet Browsing
- https://bit.ly/2vikTix

Session 9: Communications and Networking – Introduction to Email
- https://bit.ly/2GpsNfm
- https://bit.ly/1C4PJDi

Session 10: Communications and Networking – Creating an Email Account
- https://bit.ly/2GpsNfm
- https://bit.ly/2vwslCD
- https://bit.ly/1C4PJDi

Session 11: Communications and Networking – Writing an Email
- https://bit.ly/2xGttUQ

Session 12: Communications and Networking–Receiving and Replying to Email
- https://bit.ly/2wWjrln