UNIT 1: INFORMATION AND TECHNOLOGY

Objectives:

- Understand basic concepts about Information and Technology
- Know the responsibilities of some common IT jobs

1.1. BASIC CONCEPTS ABOUT INFORMATION AND TECHNOLOGY

a. Definition of Information and Technology

Information and Technology (IT) is the study or use of electronic equipment, especially computers for the purposes of storing, accessing, analyzing and sending information. It is considered science and activity of using computers and software to store and send information.

Information Technology is a business sector that deals with computing, including hardware, software, telecommunications and generally anything involved in the transmittal of information or the systems that facilitate communication.

b. Common IT professional jobs

IT professionals are people who have responsibility to maintain hardware and software, troubleshoot technical issues as well as process electronic data. Some popular jobs in the area can be listed as: computer programming, network administration, computer engineering, web development, technical support.

Computer programming is a set of instructions to facilitate specific actions. Computer programmers write and test code that create instructions for applications and software programs to execute successfully.

Network administration refers to a wide range of operational tasks that help a network to run smoothly and efficiently. Specifically, network administration includes the management and maintenance of switches, routers, firewalls to make a network operate without any problems. A network administrator is responsible for keeping an organization’s computer network updated and operating as intended.

Computer engineering is the process of integration of computer science with electronic engineering. Computer engineers design and develop many of the software programs and technological devices that we use every day at work, school, and in our personal lives. The goal of computer engineering is to expand the capability and applicability of computers.

Web development refers to the process of develop and maintain a website. Web developers are people whose job is to build and create functions within a website. They also maintain websites so that these can work as intended.

Technical support is a repair and advice service providing to companies and customers in many areas of information technology including computer software, hardware, telecommunication. IT professionals working in this field usually provide help to customers and firms via telephone or face-to-face meetings to solve computer related problems.

1.2. EXECISES FOR FURTHER UNDERSTANTING

1.2.1. Read and choose the best answer to each statement

	HISTORY OF INFORMATION AND TECHNOLOGY The first "computers" were humans. Then machines were created to perform computational tasks. These devices have now given place to a new generation of information technology. Information is now available from any location. The gathering, processing, storing, and transmission of audible, visual, textual, and numerical information via a mix of computers and telecommunications is the focus of information technology. Because of ongoing computer progress, the early computing systems evolved into minicomputers, and eventually personal computers gained the lead. Nowadays, mobile phones are dethroning the personal computer, and computing is advancing quicker to become more disembodied, more like a cloud, and more instantly available whenever required. In this way, information technology has revolutionized individuals and businesses, allowing digital technology to affect both society and the economy.

1. The development of information technology is mainly because of
   A. the changing needs
   B. new technological advances
   C. human body development
   D. new location of information
2. According to the reading, first computers are
   A. calculators
   B. telecommunications
   C. information
   D. humans
3. During the development of information and technology, computers become
   A. bigger
   B. smaller
   C. slower
   D. larger
4. Nowadays, information can be accessed
   A. whenever needed
   B. among individuals
   C. only via minicomputers
   D. by early computing systems

1.2.2. Match the words with the definitions.

1. **code**
2. **hardware**
3. **software**
4. **data processing**
5. **information security**
6. **online**

7. decoding **9. data**

8. quality assurance **10. technical support**

A. program language

B. the physical parts of a computer

C. programs installed in a computer

D. the act of using information

E. the act of protecting information

F. connected to the internet

G. the act of discovering information in a secret way

H. preventing mistakes and defects in manufactured products

I. information, especially facts or numbers

J. giving advice to help people overcome computer problems

1.2.3. Read and choose the best answer for each question.

The capacity of small computing units to control complicated activities has changed numerous jobs, from scientific study to the production of consumer goods. Tiny 'computers on a chip' are found in medical devices, home appliances, automobiles, and toys. Handheld computer devices are used by workers to collect data at a client location, produce forms, handle inventories, and function as desktop organizers.

Computing technology is not only becoming smaller, but also more complex. Computers are now integrated into a wide range of machinery and gadgets that traditionally required constant human monitoring and control. Computers in security systems create safer surroundings, computers in automobiles enhance energy economy, and computers in phones give functions like call forwarding, call monitoring, and call answering.

These smart machines are designed to do some of the simple tasks that people used to do. By doing so, they make life a little easier and a little more pleasant. A smart card can hold important information, like your health records, driver's license, bank account, and so on. Smart phones, cars, and other things that have built-in computers can be programmed to better meet the needs of each person. In a smart house, there is a built-in system that can turn lights on or off, open and close windows, run the oven, and more.

When people have small computers that can do smart things like cook dinner, set up a DVD recorder, and control the flow of information in an organization, they can spend more time being creative. Computers can help people be more creative when they're at work.

People use the term "edutainment" to describe how multimedia systems can be both educational and fun at the same time. A lot of people like multimedia because it combines text with things like sound, video, animation, and graphics. This makes it easier for people to interact with machines and make information more interesting and appealing to them. A piece of software called expert systems lets computers "think like experts." Medical diagnosis expert systems, for example, can help doctors figure out what's wrong with a patient, suggest more tests, and prescribe the right drugs.

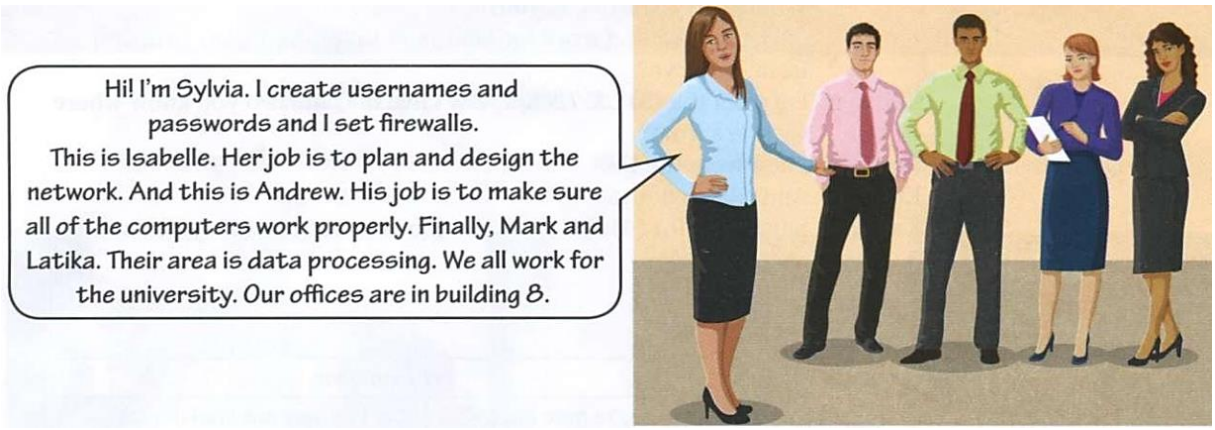
In this way, computers and software that would not normally be able to talk to each other and share resources can connect. Now that computers are common in many places and people can use networks to get data and communicate with each other, personal computers are becoming interpersonal PCs. They could make a big difference in how we interact with each other. There are a lot of people who work from home today. They use their computers to stay in touch with the office while they work at home. Staff at a hospital can get a diagnosis from a doctor who lives hundreds or thousands of miles away if they have the right tools. Computers also make it easier for the disabled to communicate with other people.

Distance learning and videoconferencing are two ideas that can be done with the help of an electronic classroom or boardroom that can be used by people in different places. Users of the Internet can now access huge databases of information, and all of them can send each other mail. People from all over the world will be able to get free access to all these resources thanks to the information superhighway.

People are very important to making sure that hardware, software, and connectivity work well together in a socially responsible way. There are people who use computers and people who work with computers. They are the ones who will make sure that hardware, software, and networks last, and how important they will be to our lives. People must use their power to make sure that computers are used not only efficiently, but also in a way that is good for society.

1. According to the first paragraph, which areas do people use computer?
2. What are the benefits of using computers in security systems, cars, phones?
3. What are the functions of smart cards?
4. What uses of computer are mentioned in the reading?
5. What are the advantages of multimedia?
6. How can technology help medical experts?
7. What types of computing systems are made available to people in remote areas using electronic classrooms or boardrooms?
8. Who takes the responsibility to ensure that hardware, software and connectivity are effectively connected in a responsible way?

1.2.4. Read the team introduction and complete the descriptions 1-4 with the IT jobs in the box



Network architect
Database analyst
IT supporter
Network administrator

1. Isabelle is a _____.
2. Andrew is an _____.
3. Sylvia is a _____.
4. Mark and Latika are _____.

1.3.5. Read the memo and finds words that match these definitions.

1. Person in charge of IT _____ .
2. Keeping something safe _____ .
3. Information such as numbers and details about people _____ .
4. A secret word that you type into a computer before you can use it _____ .
5. A group of connected computers _____ .
6. Having only letters and numbers _____ .
7. Letters, numbers, punctuation marks …. _____ .
8. People you work with _____ .

FROM: HR Department
TO: All employees
DATE: 27 July
SUBJECT: IT security

As you know, many new staff have joined us at SPC Digital recently, so now is a good time for a reminder about some of our rules. Security is important, and these rules will help us to keep our IT systems and data secure. Firstly, passwords are important for keeping the network secure. Don't use common words or numbers as passwords, such as birthdays or names of your children. Passwords must be alphanumeric and be at least eight characters long. You need to change your password every month or more frequently. Also, you should not share it with anyone, including your colleagues.