UNIT 4
Networking

Picture 4.1

Learning Outcomes:

By the end of the lesson, the students are expected to be able to use appropriate English to:

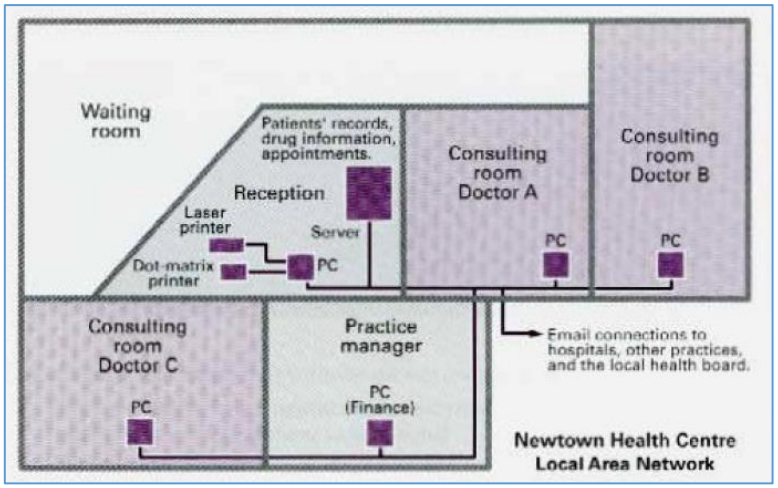
- identify and explain kinds of network hardware and its function
- explain the definition of network and its hardware components
- explain kinds of network topography
- identify and make sentences using if-clause type 1

1.1 Explaining a network and network hardware

Exercise 1: Below are hardware components used in creating a network. Match the words 1-8 to the descriptions a-g.

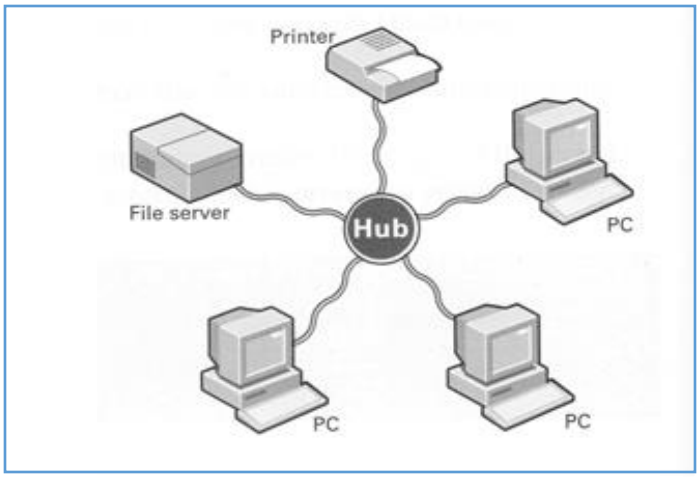
1. A modem	a. is an entrance to another network
2. A repeater	b. channels incoming data but maintains the bandwidth speed.
3. A bridge	c. allows wireless devices to connect to the network
4. A router	d. modulates and demodulates the data into a digital or an analog signal
5. A gateway	
6. A switch	e. channels incoming data but shares the bandwidth among the devices present on a network
7. A hub	f. sends the digital signal further on in the network
8. A wireless access point	g. connects networks and sends packages of data between them
	h. connects networks that use the same protocol

Exercise 2: Look at the sample of a Local Area Network (LAN). Then, answer the following questions.



1. Who are the users?
2. What kind of hardware is used?
3. What do the doctors use it for?
4. What do the receptionists use it for?
5. What does the practice manager use it for?

Exercise 3: With the help of this diagram, answer the following questions.



Picture 4.3

1. What is a *network*?
2. What are its hardware components?
3. What is the difference between a *local area network* and *wide area network*?
4. What advantages do you think networks have?

Exercise 4: Read the following text to check your answer.

What is a network?

A network is simply two or more computer linked together. It allows users to share not only data files and software applications, but also hardware like printers and other computer resources such as fax.

Most networks link computers within a limited area – within a department, an office, or a building. These are called Local Area Networks, or LANs. But networks can link computers across the world, so you can share information with someone on the other side of the world as easily as sharing with a person at the next desk. When networks are linked together in this way, they are called Wide Area Networks, or WANs.

Networks increase productivity by allowing workers to share information easily without printing, copying, telephoning, or posting. They also save money by sharing peripherals such as printers.

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Exercise 5: With the help of the diagram on exercise 3 above, identify these hardware components of the network.

1. _____ Most networks have at least one central computer which all desktop computers connect to. This is the most important computer on your network. It stores the data files and application software program that the users need to access or share with others.
2. _____ This is the desktop computer or notebook computer on your desk. It is linked to the server, and can access files and applications on it.
3. _____ Each computer on the network has a device called a network interface card which connects to the computer to the network. Many computers come with these cards fitted as standard.
4. _____ Once you have a network you can share any number of these, including printers, scanners, CD-ROM drives, and back-up devices.
5. _____ Desktops typically connect via telephone-type cabling to this intermediary service, which enables communication between server and desktops.

Exercise 6: Read Katharina's email to Agatha. Complete this email with the words in the box.

equipment	internet	LAN	recommend
remote	should	VPN	WAN

Dear Agatha
Following our meeting last week, please find my recommendations for your business, I think you (1)_____ set up a LAN, or Local Area Network, and a WAN, or Wide Area Network, for your needs. A (2)_____ connects devices over a small area, for example your apartment and the shop. In addition, you should connect office (3)_____ , such as the printer, scanner and fax machine, to your LAN because you can then share these devices between users:
I'd recommend that we connect the LAN to a (4)_____ so you can link to the Internet and sell your products. In addition, I'd (5)_____ we set up a Virtual Private Network so that you can have a (6)_____ access to your company's LAN when you travel.
(7)_____ is a private network that uses a public network, usually the (8)_____, to connect remote sites or users together.
Lets meet on Friday to discuss these recommendations.
Best Regards

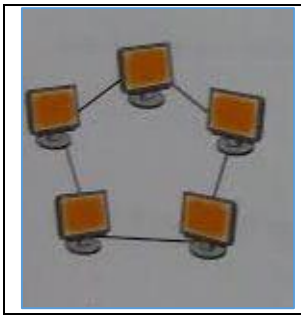
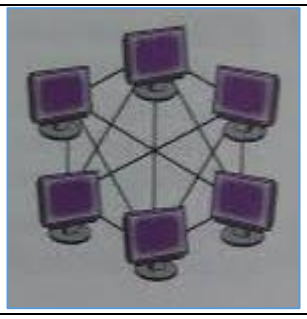
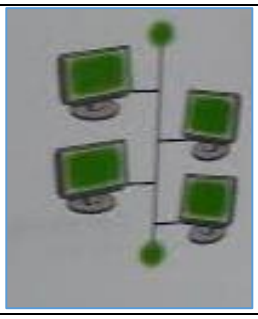
Katharina

Sans Serif | Send | Saved

1.2 Identifying Network Topologies

Exercise 7: This following diagrams show four network topologies. Match each with the correct name.

ring	bus	star	mesh

			
1.	2.	3.	4.

Picture 4.3

Exercise 8: Read this following text to check your answer for exercise 7.

NETWORK TOPOLOGY

Topology refers to the shape of a network. There are three basic physical topologies. One is a **star** system. In this topology, there is a central device to which all the computers/workstations are directly connected. This central position can be occupied by a server, or a hub, a connection point of the elements of a network that redistributes the data. Another type is a **ring** system. This is a network that has each workstation linked to two others. In a **bus** system there is a central or main cable which is called a bus, and each workstation is linked to it. There are also mixed topologies, like the **tree**, a group of stars connected to a central bus. Some large networks use a **mesh**. In this topology, each workstation is linked to several others. This has one big advantage: if one connection breaks, the data can use other connections. Therefore, it is difficult to break a mesh network.

Exercise 9: Refering to exercise 7 and 8 above. Identify which topologies these statements refer to.

1. If one of the computer fails, the whole network will be affected.
2. If we remove a computer from the network, it won't affect the other computers.
3. If the main cable fails, the whole network will fail.
4. If the central server fails, the whole network will fail.
5. If a cable breaks, the whole network will be affected.
6. If a computer fails, it won't affect the other computers.

Exercise 10: Refering to exercise 9. You see that If-Clause Type 1 are used the the sentences above. Here are more explanation on the If-Clause Type 1.

Note	Description	Examples
Formula	If + simple present, simple future **If clause (condition), Main clause (result)** **Meaning:** If this thing happens, that thing will happen.	▪ If the main cable fails, the whole network will fail. ▪ The whole network will fail if the main cable fails. ▪ If a cable breaks, the whole network will be affected. ▪ The whole network will be affected if a cable breaks.
The Order	The order of the clauses is not fixed. When you change the order of the clauses, you need to pay attention to the punctuation and pronoun, but the meaning is identical.	
Function	These sentences are based on facts, and they are used to make statements about the real world, and about particular situations. In type 1 conditional sentences, the time is the **present** or **future** and the situation is **real**.	
If-Clause Type 1 with Modals	In type 1 conditional sentences, you can also use modals in the main clause instead of the future tense to express the degree of certainty, permission, or a recommendation about the outcome.	▪ If a computer fails, it won't affect the other computers. ▪ It won't affect the other computers if a computer fails.

Exercise 11: Refering to the If-Clause Type 1 that you learned, complete the following sentences.

1. If she (need) _____ a computer, her brother (give) _____ her his computer.
2. If she (read/not) _____ the Computer Networking module and her notes, she (pass/not) _____ the test.
3. If they (invite/not) _____ me to the computer workshop, I (go/not) _____.
4. The administration staff (accept) _____ his thesis draft if Rama (turn in) _____ his thesis draft on time.
5. If you (want) _____ a remote access to your company's LAN, you (set up) _____ a Virtual Private Network.
6. If Anugrah (need) _____ to connect devices over a small area, he (need) _____ to set up a LAN.

Exercise 12: Link each action (1-10) with a suitable consequence (a-j). Then, combine them using if-clause.

Example: ***If*** *you place a floppy disk near magnet, you will destroy the data*.

1. You place a floppy disk near a magnet	a. The cursor moves to the left
2. You press print screen	b. The computer hangs
3. You input the correct password	c. It is not lost when you switch off
4. You add memory to a computer	d. You damage the drive
5. You move the mouse to the left	e. You copy the screen
6. You store data in RAM	f. You have access to the network
7. You use a faster modem	g. You destroy the data
8. There is a memory fault	h. It runs faster
9. You press the arrow key	i. Your phone bills are lower
10. You move a CD-ROM drive with the disk in place	**j.** The cursor moves accross the screen

Exercise 13: Now make a short dialog that uses the If-Clause Type 1 that you learned. Perform the dialog in front of the class.