

## UNIT 2

### Computer Architecture



Picture 2.1

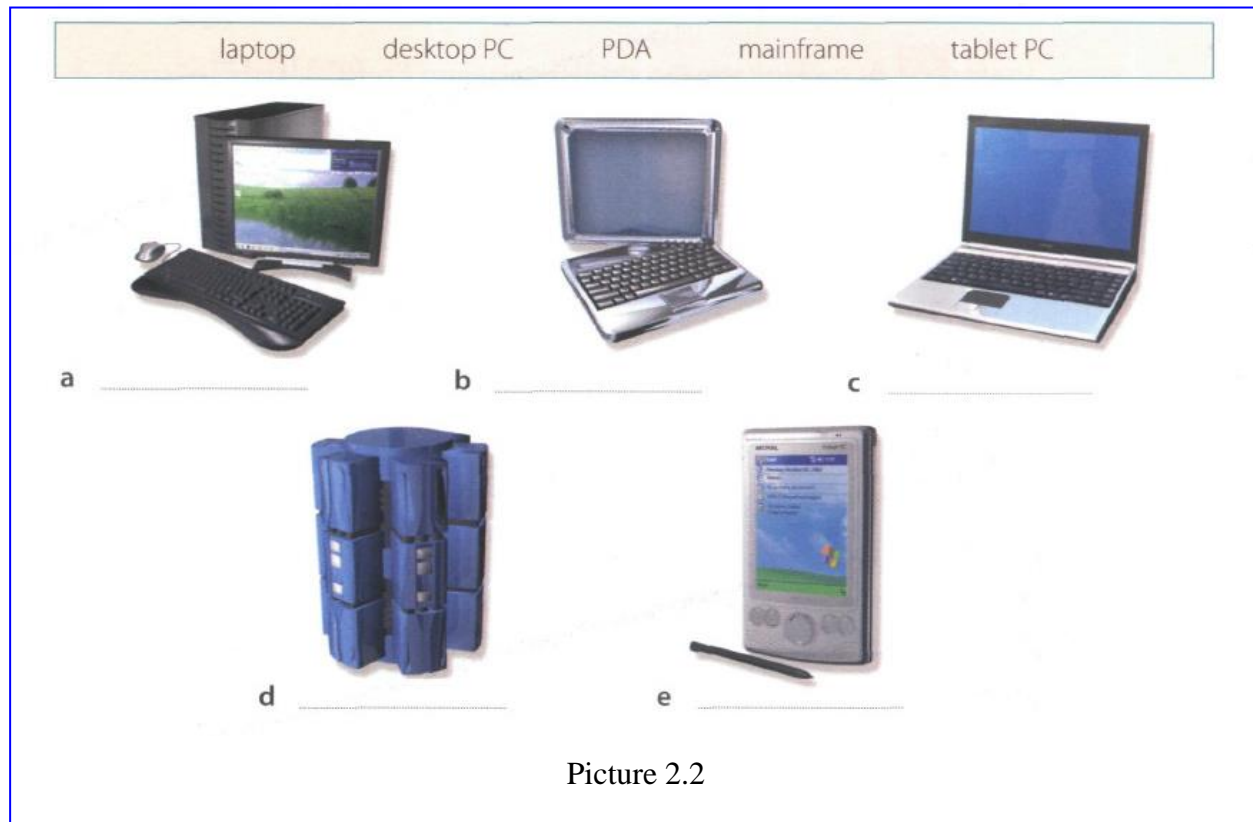
#### Learning Outcomes:

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

- read a computer advertisement
  - describe functions of computer
  - compare and contrast computers using comparative and superlatives
- .....

## 2.1. Reading a computer advertisement

**Exercise 1:** You are going to listen to an extract from an ICT class about **five** types of computer. As you listen, identify the pictures (a-e) with words from the box.



**Exercise 2:** Listen again and decide whether these sentences are true or false. Correct the false ones.

1. A mainframe computer is less powerful than a PC. (T/F)
2. A mainframe is used by large organizations that need to process enormous amounts of data. (T/F)
3. The most suitable computers for home use are desktop PC. (T/F)
4. A laptop is not portable. (T/F)
5. Laptops are not as powerful as desktop PCs. (T/F)
6. Using a stylus, you can write directly onto the screen of a tablet PC. (T/F)
7. A Personal Digital Assistant is small enough to fit into the palm of your hand. (T/F)
8. A PDA does not allow you to surf the Web. (T/F)

**Exercise 3:** Match these names to the different types of computer.



Picture 2.3

- |                 |                  |                            |
|-----------------|------------------|----------------------------|
| 1. minicomputer | 3. tablet        | 5. PC                      |
| 2. laptop       | 4. microcomputer | 6. supercomputer/mainframe |

**Exercise 4:** Listen to Part 1 of the conversation between a shop assistant and a customer. Tick the correct answers to the questions below.

1. The customer wants a computer for.....
 

<input type="checkbox"/> writing	<input type="checkbox"/> internet	<input type="checkbox"/> games
<input type="checkbox"/> graphics	<input type="checkbox"/> video	
  
2. A multimedia computer provides.....
 

<input type="checkbox"/> sound	<input type="checkbox"/> telephone
<input type="checkbox"/> graphics	<input type="checkbox"/> video
<input type="checkbox"/> games	

**Exercise 5:** Listen to Part 2 of the conversation. In column A, tick hardware items named. In column B, tick the items the assistant recommends.

A	B	Device	A	B	Device
<input type="checkbox"/>	<input type="checkbox"/>	multimedia computer	<input type="checkbox"/>	<input type="checkbox"/>	handheld
<input type="checkbox"/>	<input type="checkbox"/>	multimedia notebook	<input type="checkbox"/>	<input type="checkbox"/>	printer
<input type="checkbox"/>	<input type="checkbox"/>	subnotebook	<input type="checkbox"/>	<input type="checkbox"/>	monitor
<input type="checkbox"/>	<input type="checkbox"/>	laptop	<input type="checkbox"/>	<input type="checkbox"/>	Modem

**Exercise 6:** Study the text entitled "How to Read a Computer Ad" and then answer the following questions.

1. What is the memory size of PC?
2. What storage devices are supplied?
3. What size is the display screen?
4. How fast is the processor?
5. What is the capacity of the hard drive?
6. Which operating system does it use?
7. What multimedia features does the computer have?

## HOW TO READ A COMPUTER AD.

- 1 Intel Core i7-9700K 9th Generation (Coffee lake). Base Clock: 3.6 GHz, Bus Speed: 800 MHz
- 2 Mini-tower chassis
- 3 16 GB dual channel DDR4 SDRAM
- 4 512 SSD & 2 TB Serial ATA hard drive (7200 r.p.m)
- 5 8 GB GDDR6 NVIDIA PCI-Express video graphic card
- 6 Integrated Dolby Atmos Stereo audio
- 7 Corsair K95 RGB Platinum Keyboard
- 8 42" TFT flat panel 4K (3840 x 2160) monitor
- 9 Microsoft Windows 10 Professional



Picture 2.4

- |  |  |  |
|--|--|--|
| <ol style="list-style-type: none"> <li>1 The main processing chip called a 'core i7' that was designed and manufactured by the intel Corporation. It operates at a clock speed of three point six gigahertz and has a front-side bus that operates at a speed of eight hundred megahertz.</li> <li>2 A small, tall and narrow style of case containing the computer system.</li> <li>3 Synchronous dynamic random access memory with a capacity of sixteen gigabyte. It is a high bandwidth, double data rate memory.</li> </ol> | <ol style="list-style-type: none"> <li>4 A Solid state drive with a 512 gigabytes storage and a hard drive with a capacity of two terabytes that uses a type of connection interface known as Serial ATA. It has a serial data connection rather than the original parallel connection. It rotates at a speed of seven thousand, two hundred revolutions per minute.</li> <li>5 Electronics for driving the graphics output that has a memory capacity of eight gigabytes and uses a type of connection interface known as PCI-Express.</li> </ol> | <ol style="list-style-type: none"> <li>6 Electronics for controlling the sound output that is built into the main electronics of the computer.</li> <li>7 The K95 Platinum is a big keyboard. Dedicated media controls and a USB pass-through, a metal volume wheel, RGB lighting. It even comes with an extra set of textured keycaps for the WASD keys.</li> <li>8 A forty two inch, flat display screen made from thin film transistors with a resolution of 3840 by 2160.</li> <li>9 The operating system that is used to control the system.</li> </ol> |
|--|--|--|

*Oxford English for Information Technology (2011: 11)*

## 2.2. Describing functions of computer

<p><b>We can describe the function of an item in a number of ways. Study these examples.</b></p> <p><b>Using the present simple</b></p> <p>1. ROM <u>holds</u> instruction which are needed to start up the computer.</p> <p><b>Used to-infinitive, Used for + -ing form</b></p> <p>2. ROM is <u>used to hold</u> instructions which are needed to start up the computer.</p>	<p>3. ROM <u>is used for holding</u> instructions which are needed to start up the computer.</p> <p><b>Emphasizing the function</b></p> <p>4. <i>The function of ROM is</i> to hold instruction which are needed to start up the computer.</p>
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**Exercise 7:** Match each item with its functions. Then describe the functions in three ways as the examples on the table above.

Items	Functions
<ol style="list-style-type: none"> <li>1. RAM</li> <li>2. processor</li> <li>3. mouse</li> <li>4. clock</li> <li>5. flash memory key</li> <li>6. monitor</li> <li>7. keyboard</li> <li>8. cache</li> <li>9. DVD-ROM drive</li> <li>10. ROM</li> </ol>	<ol style="list-style-type: none"> <li>A. controls the cursor</li> <li>B. inputs data through keys like a typewriter</li> <li>C. displays the output from a computer on a screen</li> <li>D. reads DVD-ROMs</li> <li>E. reads and writes to electronic chips on a card</li> <li>F. holds instructions which are needed to start up the computer</li> <li>G. holds data read or written to it by the processor</li> <li>H. provides extremely fast access for sections of a program and its data</li> <li>I. controls the timing of signals in the computer</li> <li>J. controls all the operations in a computer</li> </ol>

**Exercise 8:** With your partner, describe the functions of these items using the forms you have learned before.

- |                     |                       |
|---------------------|-----------------------|
| 1. Scanner          | 6. ports              |
| 2. printer          | 7. mainframe computer |
| 3. CPU              | 8. barcodes           |
| 4. SSD              | 9. swipe cards        |
| 5. hard disk driver | 10. main memory       |

### 2.3. Comparing and contrasting computer

**Exercise 9:** Study these details of different types of computer. Find answers to the questions.

Which computer is?

1. The most common?
2. Small enough for a pocket?
3. The most common portable?
4. Used by many people at the same time?
5. Used like mainframes?
6. Also called a handheld computer?
7. The most powerful?
8. Not suitable for a lot typing?

Types of Computer	Notes
<b>Mainframes</b>	Large, powerful, expensive. Multi-user systems – used by many people at the same time. Used for processing very large amounts of data. The most powerful mainframes are called <i>supercomputers</i> .
<b>Minicomputers</b>	Used like mainframes. Not as big, powerful, or expensive as mainframes. Less common now because microcomputers have improved.
<b>Microcomputers or Personal computers (PCs)</b>	The most common type of computer. Smaller, cheaper, and less powerful than mainframes and minicomputers.

Types of Portable	Notes
<b>Laptop</b>	About the size of small typewriter. Less common now because smaller and lighter portables are available.
<b>Notebook</b>	About the size of a piece of writing paper. The most common type of portable.
<b>Subnotebook</b>	Not quite as big as notebooks. Can fit into a jacket pocket.
<b>Handheld or Palmtop</b>	Small enough to fit into the palm of one hand. Not easy to type with because of their size. Specialized handheld computer known as PDAs are used as personal organizers.

**Exercise 10:** Study this comparison of three types of computer.

	Mainframes	Minicomputers	Microcomputers
<b>Size</b>	+++	++	+
<b>Power</b>	+++	++	+
<b>Cost</b>	+++	++	+

We compare things using adjectives in two ways.

1. We can compare one type of computer with another.

*Minicomputers are **bigger than** microcomputers.*

*Mainframes are **more expensive than** microcomputers.*

For negative comparisons, we can say:

*Microcomputers are **not as big as** minicomputers.*

*Microcomputers are **not as powerful as** mainframes.*

2. We can compare mainframes to all other types of computer.

*Mainframes are **the biggest** computers.*

*Mainframes are **the most powerful** computers.*

*Mainframes are **the most expensive** computers.*

With short adjectives (*big, small, fast*), we add *-er* and *-est* (*faster, fastest*).

With longer adjectives (*powerful, expensive*), we use *more/less* and the *most/the least* before the adjectives (*more powerful, the most powerful*).

Remember some exceptions:



*good – better – the best**bad – worse – the worst*

**Exercise 11:** Choose the correct adjectives. Then fill in the gaps with the correct form of the adjectives.

***light/heavy***

Laptops are <sup>1</sup>\_\_\_\_\_ than desktop computers, but  
<sup>2</sup>\_\_\_\_\_ than notebooks.

***large/small***

The mainframes is the <sup>3</sup>\_\_\_\_\_ type of  
 computer. A minicomputer is <sup>4</sup>\_\_\_\_\_ than a  
 microcomputer.

***common/good***

Personal computer are <sup>5</sup>\_\_\_\_\_ than mainframes  
 but mainframes are <sup>6</sup>\_\_\_\_\_ than personal  
 computers at processing very large amounts of data.

***powerful/expensive***

Minicomputers are <sup>7</sup>\_\_\_\_\_ than mainframes  
 but they are also <sup>8</sup>\_\_\_\_\_

***fast/cheap***

New computers are <sup>9</sup>\_\_\_\_\_ and sometimes  
<sup>10</sup>\_\_\_\_\_ than older machines.

***powerful/expensive***

Laptops are often <sup>11</sup>\_\_\_\_\_ than PCs but they are  
 not as <sup>12</sup>\_\_\_\_\_

**Exercise 12:** Put the words in brackets into the correct form.

There are different types of computer. The (*large*) <sup>1</sup>\_\_\_\_\_ and (*powerful*)  
<sup>2</sup>\_\_\_\_\_ are mainframe computers. Minicomputers are (*small*) <sup>3</sup>\_\_\_\_\_  
 than mainframes but are still very powerful. Microcomputers are small enough to sit on a desk.  
 They are the (*common*) <sup>4</sup>\_\_\_\_\_ type of computer. They are usually (*powerful*)  
<sup>5</sup>\_\_\_\_\_ than microcomputers.

Portable computers are (*small*) <sup>6</sup>\_\_\_\_\_ than desktops. The (*large*)  
<sup>7</sup>\_\_\_\_\_ portable is a laptop. (*Small*) <sup>8</sup>\_\_\_\_\_ portables, about the size of  
 a piece of writing paper, are called notebook computers. Subnotebooks are (*small*)  
<sup>9</sup>\_\_\_\_\_ than notebooks. You can hold the (*small*) <sup>10</sup>\_\_\_\_\_  
 computers in one hand. They are called handheld computers or palmtop computers.

**Exercise 13:** In pairs, decide what type of computer is best from each of these users.

1. Wyatt is a salesperson and he spends a lot of time visiting customers. He wants a computer to carry with him so he can access data about his customers and record his sales.
2. Juliet is a personnel officer. She needs a computer to keep staff records and to keep a diary of appointments. She also needs a computer for writing letters.
3. The University of Blue Sky needs a computer to look after its accounts, its network, the records of all the students and staff, and to help scientific research.
4. The Johnson family want a computer for entertainment, writing letters, the internet, and for calculating tax.

**Exercise 14:** In pairs, discuss who or what you think is:

1. The most difficult game you've ever played.
2. The most exciting film you've ever seen.
3. The funniest program on TV.
4. The most dangerous computer virus.
5. The best blogger or webmaster on the web.
6. The most popular web browser.

**Exercise 15:** Preparation is essential for an effective presentation. Here are some phrases that can help you delivering a better presentation.

### Useful Phrases for Presentation

When giving a presentation, certain keywords are used to signpost the different stages. It's a good idea to memorize them and practice them so that they come to your mind easily during a presentation.

Useful Phrases for Presentation	
Starting the presentation	Explaining the purpose
<ul style="list-style-type: none"> <li>● Good morning/good afternoon ladies and gentlemen.</li> <li>● The subject of my presentation today is ...</li> <li>● What I'm going to talk about today is ...</li> </ul>	<ul style="list-style-type: none"> <li>● The purpose of this presentation is ...</li> <li>● My objective is to ...</li> <li>● My main aim today is to ...</li> </ul>
Stating the main points	Introducing the first point
<ul style="list-style-type: none"> <li>● The main points I will be talking about today are firstly ..., secondly ....., next ....., finally, we're going to look at...</li> </ul>	<ul style="list-style-type: none"> <li>● Let's start/begin with ...</li> <li>● I'd like to start by ....</li> </ul>
Showing visuals	Moving on to the next point
<ul style="list-style-type: none"> <li>● I'd like to illustrate this by showing you ...</li> </ul>	<ul style="list-style-type: none"> <li>● Now let's move on to ...</li> </ul>
Referring to an earlier point	Summarizing
<ul style="list-style-type: none"> <li>● Let me go back to what I said earlier about ...</li> </ul>	<ul style="list-style-type: none"> <li>● I'd like to recap the main points of my presentation. First I covered ..., then we talked about ... and finally we looked at ...</li> <li>● I'd now like to sum up the main points, which were ...</li> </ul>
Conclusion Inviting	Questions
<ul style="list-style-type: none"> <li>● I'm going to conclude by ... saying that / inviting you to / quoting ...</li> <li>● In conclusion, let me leave you with this thought / invite you to ...</li> </ul>	<ul style="list-style-type: none"> <li>● Finally, I'll be happy to answer your questions.</li> <li>● Now I'd like to invite any questions you might have.</li> <li>● Do you have any questions?</li> </ul>

**Exercise 16:** Now put the following phrases in the correct groups. Add some more phrases that you know.

- In conclusion, let me leave you with this thought / invite you to ...
- Good morning/good afternoon ladies and gentlemen.
- The main points I will be talking about today are firstly ..., secondly ....., next ....., finally, we're going to look at...
- I'm going to conclude by ... saying that / inviting you to / quoting ...
- Now let's move on to ...
- My objective is to ...
- Finally, I'll be happy to answer your questions.
- Now I'd like to invite any questions you might have.
- What I'm going to talk about today is ...
- The subject of my presentation today is ...
- I'd like to illustrate this by showing you ...
- I'd like to recap the main points of my presentation. First I covered ..., then we talked about ... and finally we looked at ...

Useful Phrases for Presentation	
Starting the presentation	Explaining the purpose
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
Stating the main points	Introducing the first point
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
Showing visuals	Moving on to the next point

<hr/> <hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/> <hr/>
<b>Referring to an earlier point</b>	<b>Summarizing</b>
<hr/> <hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/> <hr/>
<b>Conclusion</b>	<b>Inviting Questions</b>
<hr/> <hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/> <hr/>

Apple iPhone XS Max		Samsung Galaxy Note10+	
			
REVIEW		REVIEW	
SPECIFICATIONS		SPECIFICATIONS	
READ OPINIONS		READ OPINIONS	
PICTURES		PICTURES	
360° VIEW		360° VIEW	

Display	6.5" (16.51 cm) 1242 x 2688 pixels	6.8" (17.27 cm) 1080 x 2280 pixels
Storage	256 GB	256 GB
Camera	12 MP + 12 MP	12MP + 12MP + 16MP
Battery	3174 mAh	3500 mAh
Ram	4 GB	12 GB
Operating System	iOS v12.0	Android v9.0 (Pie)
Sim Slots	Dual SIM, GSM+GSM	Dual SIM, GSM+GSM, Dual VoLTE
Model	iPhone XS Max	Galaxy Note 10+
Launch Date	September 28, 2018 (Official)	August 23, 2019 (Expected)
Brand	Apple	Samsung
Sim Size	SIM1: Nano SIM2: eSIM	SIM1: Nano SIM2: Nano
Chipset	Apple A12 Bionic	Samsung Exynos 9 Octa 9825
Graphics	Apple GPU (four-core graphics)	Mali-G76 MP12
Processor	Hexa Core (2.49 GHz, Dual core, Vortex + 1.52 GHz, Quad core, Tempest)	Octa core (2.73 GHz, Dual core, M4 Mongoose + 2.4 GHz, Dual core, Cortex A75 + 1.9 GHz, Quad core, Cortex A55)
Ram	4 GB	8 GB
Flash	✓ Retina Flash	✓ LED Flash

Video Recording	1920x1080 @ 30 fps	3840x2160 @ 60 fps, 1920x1080 @ 240 fps, 1280x720 @ 960 f
Bezelless Display	✓ with notch	✓ with punch-hole display
Pixel Density	456 ppi	400 ppi
Screen Protection	✓	Corning Gorilla Glass v6
Price	IDR 17.000.000	IDR 18.900.000

Picture 2.5

**Exercise 17:** In pairs, find two different advertisements of PCs/laptops/any gadgets and write some comparisons (at least 10 sentences) based on their specifications and present it in the class. Use the phrases that you have learned today.

Look at the example below.

### Example of Writing a Comparison between Two Things

1. Samsung Galaxy Note 10+'s size is bigger than iPhone XS Max's.
2. The storage of Samsung Galaxy Note 10+ and iPhone XS Max has the same capacity.
3. The price of Samsung Galaxy Note 10+ is more expensive than iPhone XS Max.
4. ....
5. ....