PRACTICE

A. Read the text and complete the activities.

What is inside a PC system?

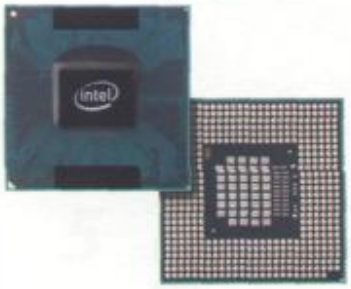
Processing

The nerve centre of a PC is the **processor**, also called the **CPU**, or **central processing unit**. This is built into a single **chip** which executes program instructions and coordinates the activities that take place within the computer system. The chip itself is a small piece of silicon with a complex electrical circuit called an **integrated circuit**.

The processor consists of three main parts:

- The **control unit** examines the instructions in the user's program, interprets each instruction and causes the circuits and the rest of the components – monitor, disk drives, etc. – to execute the functions specified.
- The **arithmetic logic unit** (**ALU**) performs mathematical calculations (+, -, etc.) and logical operations (AND, OR, NOT).
- The **registers** are high-speed units of memory used to store and control data. One of the registers (the program counter, or PC) keeps track of the next instruction to be performed in the main memory. The other (the instruction register, or IR) holds the instruction that is being executed (see Fig. 1 on page 13).

The power and performance of a computer is partly determined by the speed of its processor. A **system clock** sends out signals at fixed intervals to measure and synchronize the flow of data. **Clock speed** is measured in **gigahertz** (**GHz**). For example, a CPU running at 4GHz (four thousand million hertz, or cycles, per second) will enable your PC to handle the most demanding applications.

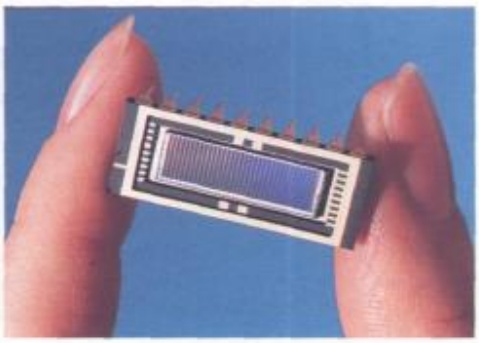


The Intel Core 2 Duo processor; other chip manufacturers are AMD and Motorola

RAM and ROM

The programs and data which pass through the processor must be loaded into the main memory in order to be processed. Therefore, when the user runs a program, the CPU looks for it on the hard disk and transfers a copy into the **RAM** chips. RAM (**random access memory**) is volatile – that is, its information is lost when the computer is turned off. However, **ROM** (**read only memory**) is non-volatile, containing instructions and routines for the basic operations of the CPU. The **BIOS** (**basic input/output system**) uses ROM to control communication with peripherals.

RAM capacity can be expanded by adding extra chips, usually contained in small circuit boards called dual in-line memory modules (**DIMMs**).



A RAM chip

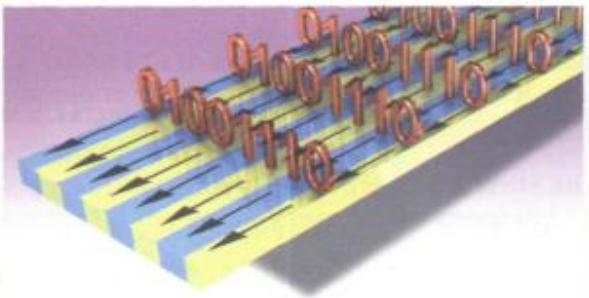
Buses and cards

The main circuit board inside your system is called the **motherboard** and contains the processor, the memory chips, expansions slots, and controllers for peripherals, connected by **buses** – electrical channels which allow devices inside the computer to communicate with each other. For example, the front side bus carries all data that passes from the CPU to other devices.

The size of a bus, called **bus width**, determines how much data can be transmitted. It can be compared to the number of lanes on a motorway – the larger the width, the more data can travel along the bus. For example, a 64-bit bus can transmit 64 bits of data.

Expansion slots allow users to install **expansion cards**, adding features like sound, memory and network capabilities.

A data bus



a) Answer the following questions.

1. What are the main parts of the CPU?

2. What does ALU stand for? What does it do?

3. What is the function of the system clock?

4. How much is one gigahertz?

5. What type of memory is temporary?

6. What type of memory is permanent and includes instructions needed by the CPU?

7. How can RAM be increased?

8. What term is used to refer to the main printed circuit board?

9. What is a *bus?*

10. What is the benefit of having expansion slots?

b) Look at these extracts from the text. What do the words in bold refer to?

1. **This** is built into a single chip. (line 2) …….

2. **……which** execute program instructions and coordinates …. (line 3) …….

3. **…. That** is being executed. (line 22) …….

4. **…** performance of a computer is partly determined by the speed of **its** processor. (line 25)

…….

5. **…** the CPU looks for **it on** the hard disk… (line 35) …….

6. … inside the computer to communicate with each other. (line 52) …….

c) Decide if the sentences are true or false, and correct the false ones to make them true.

1. The CPU directs and coordinates the activities taking place within the computer system. T / F
2. The arithmetic logic unit performs calculations on the data. T / F
3. 32-bit processors can handle more information than 64-bit processors. T / F
4. A chip is an electronic device composed of silicon elements containing a set of integrated circuits. T / F
5. RAM, ROM and secondary storage are the components of the main memory. T / F
6. Information cannot be processed by the microprocessor if it is not loaded into the main memory. T / F

7. “Permanent” storage of information is provided by RAM (random access memory). T / F

8. The speed of the microprocessor is measured in gigahertz or megahertz. One GHz is equivalent to one thousand MHz. One MHz is equivalent to one million cycles per second. T / F

B. Fill in the gaps using relative pronouns.

1. A student …….. doesn't study hard enough cannot be successful.
2. Confusing topics ……..are well-expressed can be understood.
3. The car, …… was designed by a foreign company, won the race.
4. One should quit smoking, …… is very harmful to health.
5. I spoke to the guy …….. deals with complaints.
6. I work for a company ……. designs video games.
7. She went to a school ……. they studied all subjects in English.
8. I bought a palmtop computer…….'s got a Chinese -English dictionary built in.
9. We stayed in a hotel ……every room had a broadband connection.
10. We stayed in a hotel…… had a swimming pool and a sauna.
11. The college ……. we study it´s in Italo Palanca street.
12. In the 19th century, …….. Charles Babbage invented the analytical engine, it didn´t exist computers.
13. That`s the school ……. I attended with my brother.
14. The week …….. we have final exams is very exhausting.
15. Ada Lovelace was a woman ……. made many contributions to science, technology, engineering, and mathematics.

C. Add the phrase in brackets to the sentence using a relative clause. Use 'that/which' or “who” or no pronoun. Make only one sentence.

1. She bought the computer (her brother had recommended the computer)
2. We employed the engineer (Julie recommended the engineer)
3. The wallet belongs to John (Lucy found the wallet in the garden)
4. The notes were very useful (David wrote the notes)
5. The cell phone was stolen (my father gave me the cell phone)
6. They ate the fruit (I bought the fruit)
7. His friend lives in Scotland (his friend is a web designer)
8. The pen drive is in my bag (the pen drive has important information)
9. The bag was stolen (I bought the bag yesterday)
10. He likes films (the films come from Asia)
11. The accountant was arrested (the accountant works for my father's company)
12. The mobile phone can't be fixed (the mobile phone is broken)
13. We live in a house (the house was built by my grandfather)
14. The money has been given to charity (the money was found in the street)
15. People live in Scotland. (They are called Scots)