What is a computer?

A computer is any device take takes an input, processes it and then outputs infor-

Input Devices

An input device is a piece of hardware that can be used to enter data into a computer

Output Devices

An output device is a piece of hardware that can be used to represent information in a variety of ways

Fetch, Decode, Execute

The main function of the CPU is to run an endless fetch-execute cycle.

The speed of the FDE cycle is measured in cycles per second (hertz). This is known as the clock speed.

Processors are usually measured in gigahertz (GHz)

1GHz = 1 billion instructions processed.

Components

Computer components are all the different internal parts of a computer system that help it to operate. Each component has its own purpose and functions.

Central Processing Unit

The CPU is the brain of the computer. It does all the processing and calculating for the computer.

Heat sink

A heat sink is used to draw heat away from important components such as the CPU that can get quite hot. If a component gets too hot then it won't be able to perform its job as well.

Motherboard

The motherboard is what connects all the other components. It helps keep them secure and allows the components to communicate.

Power Supply

A power supply helps to convert electricity to a suitable voltage to power the computer safely.

Hard Drive

A Hard Drive is where all the computers long term data is stored i.e. data you want to keep for in the future, such as your own documents, music, films and games.

Random Access Memory

RAM is where temporary data is stored while the computer is currently being used. Once a computer is switched off this data is lost
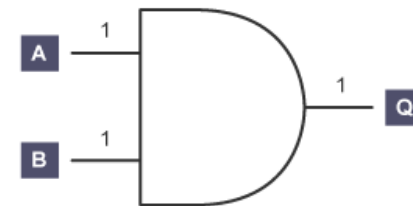
Network Interface Card

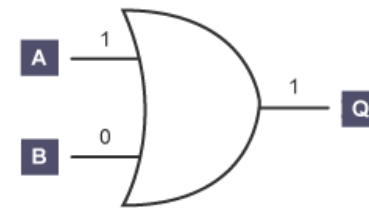A network interface card (NIC) enables a computer system to connect to a network. Some allow access wirelessly.
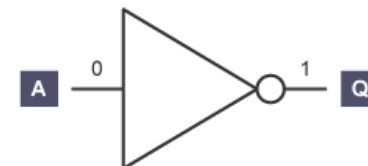
Logic Gates

AND gate

An **AND** gate usually has two inputs. **AND tells us that both Input A AND Input B have to be 1 (or ON) in order for the output to be 1. Otherwise the output is 0.**

OR gate

An **OR** gate has two inputs. **OR tells us that EITHER Input A OR Input B has to be 1 (or ON) in order for the output to be 1. Otherwise the output is 0**.

NOT gate

A NOT gate has just one input. NOT tells us that Input A has to be 0 (or OFF) in order for the output to be 1. Otherwise the output is 0. A NOT gate is sometimes called an inverter.

Logic gates can be combined to form complex logic circuits.