Role of the OS

The **operating system** is a collection of software designed to act as an interface between the user and the computer and manages the overall operation of the computer.

Computers can run multiple programs simultaneously, as the OS can allocate memory and processing time to each program.

# Resource Management

* The OS organises the order in which the processer assigns time to each process
* This uses the Process Scheduler unit of the OS
* Priority levels are given to processes (can be manually adjusted)
* Interrupts are used when a device needs urgent attention from the processor
* Only one process can be executed by a single processor core at a time

**Device Drivers** are interfaces that allow the OS to use generic commands to control various types of hardware.

The OS manages main memory, keeping track of where data and instructions are stored. **Virtual memory** is a technique where part of the secondary storage is used to store data that is not currently needed my main memory, and then transferred back when required.

As a security feature, each process *cannot* access memory that belongs to another process.

The OS can provide **APIs (application program interfaces)** that allow application programs to access functions of the OS without the need for any complex knowledge of the OS itself.