# Unit 1: System software

### Operating system

An operating system is software that manages a computer system.

The operating system is loaded by the bootstrap loader. One of its primary functions is to manage resources.

# Managing resources

The operating system manages:

- Peripherals input and output devices
- Security
- Printing using spooling
- Backing storage
- Random Access Memory (RAM)
- Processes

# Managing peripherals

The operating system:

- Communicates with and sends data output to a printer/monitor/other valid output device.
- Communicates with and receives data input to a keyboard/mouse/other valid input device.

## Managing security

The operating system:

- Allows creation and deletion of user accounts.
- Allows users to logon and change passwords.

# Managing printing using spooling

The operating system:

- Data is stored on a hard disk/in memory/stored in a queue.
- Document is printed when printer is free/in correct order.
- Benefit of spooling user can carry on working/ log off when waiting for job to print.

# Managing backing storage

The operating system:

- Ensures data is stored and can be retrieved correctly from any disk drive.
- Creates and maintains filing system such as file allocation table (FAT) or new technology file systems (NTFS).
- Organises files in a hierarchical directory structure.

Managing RAM

## The operating system:

- Ensures that programs/data do not corrupt each other.
- Ensures that all programs and data, including itself, are stored in correct memory locations.

The operating system:

- crash.

# User interface

system:

- Allows copying, deleting, moving, sorting and searching of file or folders
- Allows access to system settings such as hardware • Provides a command line interface
- Allows users to have more than one window open
- Provides a graphical user interface (Windows, Icons, Menus, Pointers)
- Allows customisation of interface, e.g. change desktop background/layout
- windows).



#### Managing processes

• Ensures that different processes can utilise the CPU and do not interfere with each other or

On a multi-tasking O/S, ensures that all tasks appear to run simultaneously.

The operating system also provides a user interface. The user interfaces provided by the operating

- Provides user with error/help messages
- Allows user to switch between tasks (programs/