### 1.3 Operating systems

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<table>
<thead>
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<tbody>
<tr>
<td></td>
<td>Define and describe operating systems which contain a Command Line Interface (CLI)</td>
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<tr>
<td></td>
<td>Define and describe operating systems which contain a Graphical User Interface (GUI)</td>
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<tr>
<td></td>
<td>Describe the differences, including the benefits and drawbacks, between operating systems which contain a CLI and those which contain a GUI</td>
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Role of an Operating System

An operating system is a system **software** that **manages** the general operation of a computer system:

- Helps the user interact with the computer through a **user interface**.
- Provides **security** and prevents unauthorised access to a system.
- Allows users to load, run and store **applications**. Also resolve errors occurring applications.
- Decided what should be loaded and deleted from memory.
- Helping save, organise, find and delete **files**.
- Manages **input**, output and backing devices.
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Example GUI Operating Systems

- Windows
- Mac OS
- Linux
- Android
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Graphical User Interface (GUI)

**GUI (Graphical User Interface)** is an user interface built around graphics.

- **Windows** – areas for displaying information
- **Menus** - lists of options or applications users can select from
- **Icons** - small images used to represent files/folders or applications
- **Pointers** – Mouse pointer can be used to select and open files/applications

- **GUIs** are quite easy to use due to the visual nature of the interface
- The user has lots of visual clues as to what things do.
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Graphical User Interface (GUI) Examples

- https://mrlawsonsclassroom.weebly.com/
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Command Line Interface (CLI)

- **CLI** requires the user to **enter command prompts** to interact with the computer.
- **CLI** are normally used by **expert users** as it allows them to be more complicated to use.
- **CLI** and is not restricted to a number of predetermined options.

**Example Command Prompts**

- **ATTRIB**: Displays or changes file attributes.
- **CD**: Displays the name of current directory
- **CHKDSK**: Checks a disk and displays a status report
- **Copy**: Copies one or more files to another location
- **DIR**: Displays a list of files and sub directories
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Main Differences between CLI and GUI

<table>
<thead>
<tr>
<th>Graphical User Interface (GUI)</th>
<th>Command Line Interface (CLI)</th>
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<tbody>
<tr>
<td><strong>Advantages:</strong></td>
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<td>• The user does not need to learn any commands.</td>
<td>• The user has more freedom to use specific command in interacting with the computer.</td>
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<td>• The interface is easier to use.</td>
<td>• It is possible to alter computer settings.</td>
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<td>• Can use a pointing device to clicks and select icons or menu options.</td>
<td><strong>Disadvantages:</strong></td>
</tr>
<tr>
<td><strong>Disadvantages:</strong></td>
<td>• User needs to learn commands</td>
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<tr>
<td>• Takes up more memory than a CLI interface.</td>
<td>• Commands must be typed in without errors.</td>
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<tr>
<td>• Requires an operating system to operate.</td>
<td>• No visual aids.</td>
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