OPERATING SYSTEMS: GRAPHICAL USER INTERFACES

*The operating system (OS)* is the most important program that runs on a computer. Every general-purpose computer must have an operating system to run other programs and applications. An OS has three main function: (1) manage the computer’s resources, such as the central processing unit, memory, disk drivers, and printer, (2) establish a user interface, and (3) execute and provide services for applications software.

*The three most popular types of operating systems* for personal and business computing include *Linux, Windows and Mac.*

* *Microsoft Windows* is a family of operating systems for personal and business computers. Windows dominates the personal computer world, offering a graphical user interface, virtual memory management, multitasking, and support for many peripheral devices.
* *Mac OS* is the official name of the Apple Macintosh operating system. Mac OS features a graphical user interface that utilizes windows, icons and all applications that run on a Macintosh computer have a similar user interface.
* *Linux* is a freely distributed open source operating system that runs on a number of hardware platforms. The Linux kernel was developed mainly by Linus Torvalds and it is based on Unix.

*Classification of OS:*

* *Multi-user*: allows two or more users to run programs at the same time (Linux, Unix, Windows 2000)
* *Multiprocessing:* supports running a program on more than one CPU (Linux, Unix, Windows XP)
* *Multitasking:* allows more than one program to run concurrently (Linux, Unix, Windows 8)
* *Multithreading:* allows different parts of a single program to run concurrently (Linux, Unix, Windows XP)
* *Real time*: responds to input instantly (QNX, RtOS). General-purpose OS, such as DOS and UNIX are not real-time.

As computers have progressed and developed, so have the operating systems. One of the types is GUI – short for *GRAPHICAL USER INTERFACE.* This interface makes use of visible elements to make the process of completing actions and navigating around a device much simpler and more intuitive. For example, all major operating systems such as Windows, Mac and others all have a graphic interface. You simply click on or tap the icon to complete an action, whether that’s opening the application, viewing the menu or completing any other process.

A GUI combines graphics, icons and other elements, plus, in many cases, a simple drag and drop UI to help less advanced users do what they need to do. *What are the benefits of a graphical user interface?* The major benefit is that systems using one are accessible to people of all levels of knowledge, from an absolute beginner to an advanced developer. They make it simple for anyone to open menus, move files, launch programs or search the internet without having to tell the computer via the command line to carry out a function. GUIs also provide instant feedback. Clicking an icon will open it up, for example and this can be seen in real-time. *What are the disadvantages of using a graphical user interface?* Because the elements are graphics rather than text, GUIs can use a lot more processing power compared to a standard text-based UI. Additionally, advanced users can find GUIs frustrating, because often a chain of actions will have to happen before the process is complete.

GUIs are used for the majority of computer operating systems, mobile operating systems and software in existence. Although some operating systems, such as Linux, still use command-line interfaces, this makes them less mainstream because they are only suitable for those who have an in-depth knowledge of commands.

In the conclusion we can say that the ideal OS is one that we never have to think about, takes care of all the petty details, never demands anything of us. In recent years, we’ve made great progress toward that goal. Wizards, platform-independent file handling, network access, intelligent agents, and multimedia capabilities will bring the OS of the future closer to that ideal.