

Software

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The Role of the Operating System

Operating systems are examples of system software. The operating system is the most important program on any computer because it is responsible for controlling all the hardware and software activities in your computer system. Operating systems can be open source (available free of charge) or non-open source (available at a cost). Your choice of operating system will depend on your needs.

Lesson Outcomes

- By the end of the lesson, you should be able to:
- Explain the role of different types of operating systems;
 - List some examples of operating systems;
 - Compare the differences between open source and non-open source software.

Curriculum Links

- This task supports the assessment of:
- LO 1: Hardware and System Software**
- Identify the functions of various types of operating system.

Lesson Notes

Operating systems are system software programs. Every computer must have an operating system to function properly. It is responsible for controlling all the software and hardware activities on a computer. If there is no operating system then none of the other programs loaded on the computer will work. For example, when you are working with Microsoft Excel and want to save your work, you click on “Save” in the File menu and it is the operating system that determines where and how to save your work to the hard drive. When you want to print your work, the printer driver communicates with the operating system to give details of how the printer functions and your work can then be printed according to these instructions.

One of the first things your computer does when you switch it on, is to make sure that there is an operating system installed. Your computer does this check via the basic input/output system (BIOS) program which is stored on the ROM (read-only memory) chip. If an operating system is found, it is loaded into RAM (random access memory), it takes control of the computer, and you can continue with your work.

Microsoft’s first operating system was called MS DOS (Microsoft disk operating system), was very basic and had no graphic capabilities. One of the more recent operating systems from Microsoft is Windows XP (the XP stands for experience) and uses a graphical user interface (GUI) which accepts commands and instructions from the user via a mouse. Icons, or graphic images, are a major feature of GUIs.

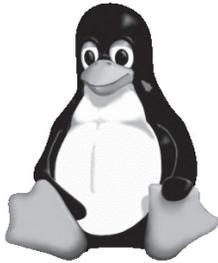


Linux is another popular operating system. Linux was originally developed by Linus Torvalds – it was a scaled down version of the complex UNIX operating system. There are many versions of Linux available today. One of the most used versions is called Red Hat Linux and it also uses a GUI interface.

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Lesson Notes continued...



The most important difference between Windows and Linux is that Windows is a non-open source operating system and Linux is open source. Open source software is made available to anyone who wants to use it free of charge. The source code is made available and can therefore be modified. The one condition is that these modifications and improvements to the source code must then be made available, free of charge to anyone else who wants to use them. A General Public License accompanies some open source software and it gives details of how the software and its source code can be freely copied, distributed and modified. By contrast, the source code of non-open source software is not made available and so changes cannot be made to the program by the general public.

Task

1. A friend, who has limited funds, has asked your opinion on whether to use an open source or a non-open source operating system. With the knowledge you gained from this lesson, write a short paragraph on which operating system you would recommend, and why.