

Software

1) Types of Software

Distinguish between operating systems software and applications software. Understand the reasons for software versions.

Software is divided into two broad categories: **systems software** and **application software**.

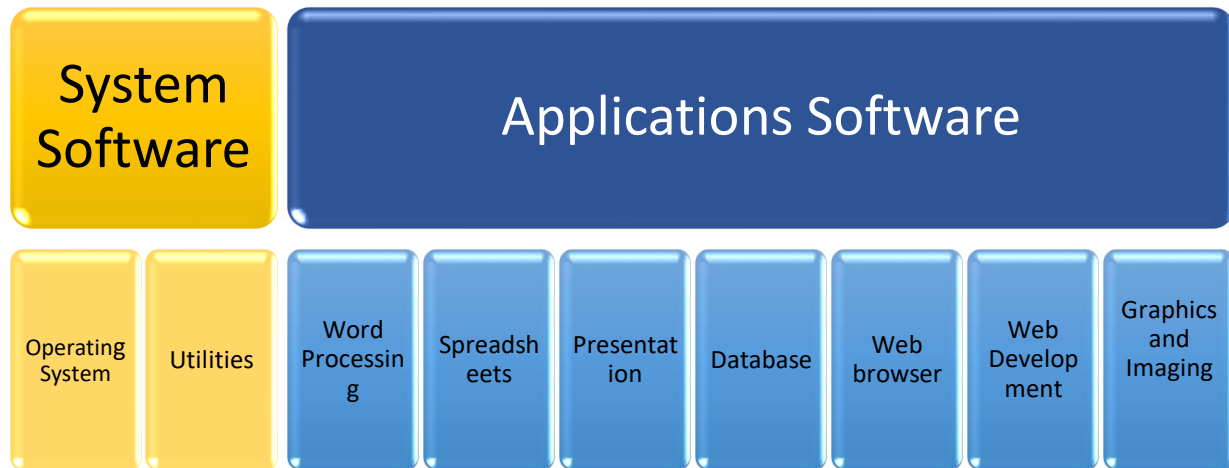
Systems software is the term used to describe programs that enable the computer to function, improve its performance and access the functionality of the hardware. Systems software's sole function is the control of the operation of the computer. You can think of systems software as providing the foundation for applications software.

Systems software is further subdivided into **operating systems** and **utilities**. The operating system is the program that actually makes the computer operate. Utilities are programs which either improve the functioning of the operating system or supply missing or additional functionality.

Applications software is the term used for programs that enable the user to achieve specific objectives such as create a document, use a database, produce a spreadsheet or design a building.

Versions: Software developers continually strive to improve the performance of their products and add new features. Especially in a world of competing products, each developer needs to make their product perform better, have fewer problems and have more features. The new releases of software products are called versions. The versions use a numbering system such as Mandrake Linux 9.2 or OpenOffice.org 4.1. A change in the first number represents a major new version while a change in the second number represents a less significant change.

Software



2) Operating System Software

Describe the main functions of an operating system and name some common operating systems.

As mentioned above, it is the operating system that actually makes the computer function. The following is a list of some of the functions of the operating system:

- Boot-up the computer.
- Control the hard drives: This includes such features as formatting and defragmenting disks as well as saving files to and retrieving files from disk.
- Control input devices such as keyboards, mice and scanners.
- Control output devices such as the video display and printer.
- Control the external ports: Ports are the external connections that enable peripheral devices to be connected to a computer. Common types of ports are serial, parallel, usb and firewire. Of these the USB ports are the most important.
- Provide the functionality for computers to be linked in a network.
- Provide the foundation for application software to be launched.
- Enable application software to access and use the hardware.

The following list names some operating systems. They are grouped according to similarity.

- Unix; Linux; Free BSD
- Windows 95; Windows 98; Windows Me; Windows XP;
- Windows NT4 Workstation; Windows 2000 Workstation; Windows 7; Windows 8; Windows 8.1; Windows 10
- Windows NT4 Server; Windows 2000 Server; Windows 2003 Server; Windows 2019 Server

3) Applications Software

List some common software applications such as: word processing, spreadsheet, database, Web browsing, desktop publishing, accounting, together with their uses.

The following table lists some types of application software, brand names and function.

Application	Brand names	Function
Word processor	OpenOffice.org Writer StarWriter, KWord Microsoft Word Lotus Ami Pro Corel WordPerfect	Create, store, format and edit documents, letters and articles. Word processors are used where the emphasis is on manipulation of text.
Spreadsheet	OpenOffice.org Calc StarCalc, KSpread Microsoft Excel Quattro Pro Lotus 123	Create financial statements, balance sheets, perform statistical and numerical analysis of data, make forecasts based on numeric data. Spreadsheets are used where the emphasis is on arithmetic.
Presentation	OpenOffice.org Impress StarImpress KPresenter Microsoft PowerPoint	Create slide shows, lectures, seminars and other types of presentation.
Database	Sybase, MySQL Microsoft Access	Store and convert data into information. Databases are particularly useful in working with large quantities of data.
Email client	Evolution, KMail Microsoft Outlook	Send, receive, store and organise electronic mail.
Web browser	Mozilla, Netscape	Surf the Internet and view web sites.

	Microsoft Internet Explorer	
Desktop publishing DTP	Microsoft Publisher Page Maker	DTP is similar to word processing except that there is more emphasis on page layout and the integration of diagrams.
Accounting	GnuCash Pastel Accounting	Store accounting information and produce reports, statements and invoices.
Web development	Dreamweaver Microsoft FrontPage	Create web sites that can be read by a browser.
Graphics and imaging	The GIMP Adobe Photoshop	Create and manipulate graphics images and store images in a variety of formats.

4) Graphical User Interface

Understand the term Graphical User Interface (GUI).

A **graphical user interface** or **GUI** is designed to simplify the work of the user whether they are using the operating system or an application package. The interface consists of a screen with a number of icons or menus. Functions are executed by pointing and clicking with the mouse.

Some of the **advantages** of using a GUI are:

- Less work for the user. To execute a function all you have to do is point and click on an icon instead of typing out an instruction.
- Quicker to learn.
- Easy access to the basic functionality of the operating system or application package.
- Hides the underlying complexity from the user.
- Simplifies and integrates multitasking. Multitasking refers to using several applications at the same time. Opening a new application or document involves a couple of mouse clicks. Likewise switching between tasks also involves only a couple of mouse clicks.

There are some **disadvantages** to using a GUI based operating system.

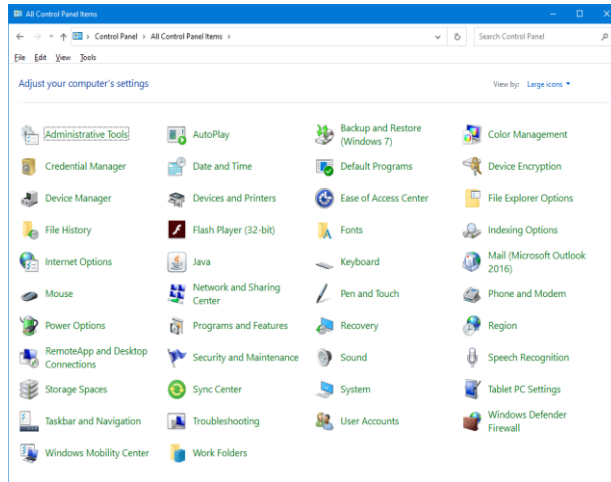
- Not all the functionality is available. The icon represents the most commonly used form of a function. A text based system gives you access to all the

options associated with a function. Power users tend to switch between the GUI and the system prompt as needed.

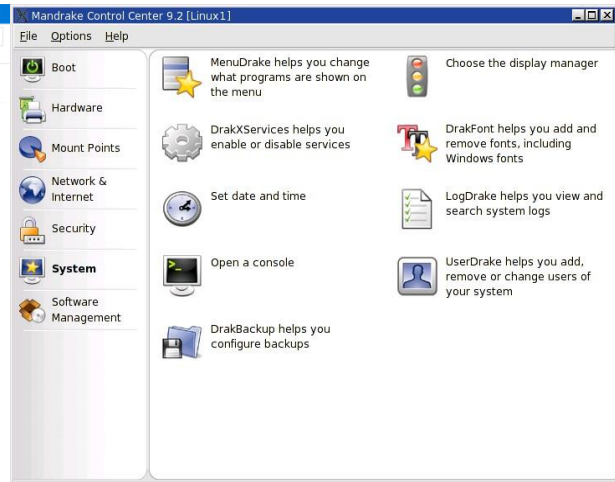
- Being graphics based, a GUI runs more slowly than a text based system. However, with the power and speed of modern computers this is not the problem it once was.

The following screens illustrate a GUI in Linux and Windows.

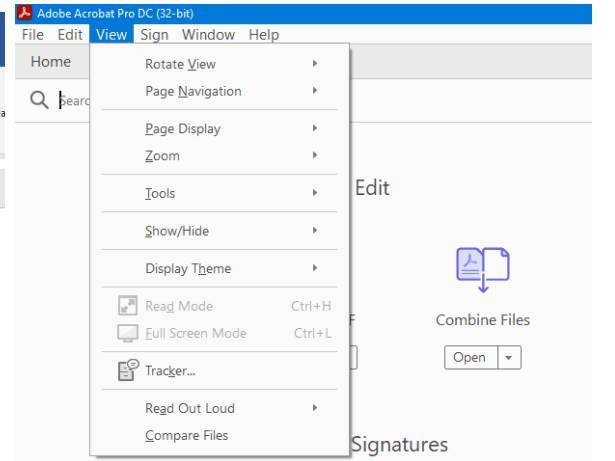
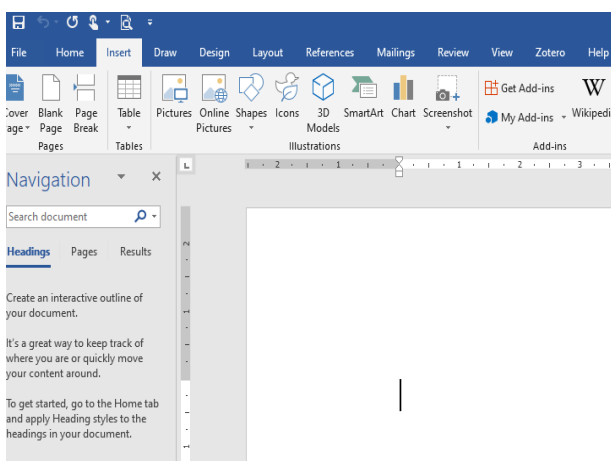
Linux:



Windows:



The following two screens illustrate the use of menus:



In each case, clicking on an icon will either execute a function or display another set of icons containing the function.