Operating System

Fastrack Revision

- **Operating System:** An Operating System is a collection of programs that manages and controls the two major components of a computer system, *i.e.*, hardware and software. Computer hardware is of no use if we do not install the essential operating system software in the computer.
- **Need for an Operating System:** An Operating System (OS) is the software component of a computer system that is responsible for the management and coordination of all its activities. It shares the resources of the computer. It acts as a host for the application programs that run on the machine.
- **Functions of an Operating System:** The following are the major functions that are performed by an operating system:

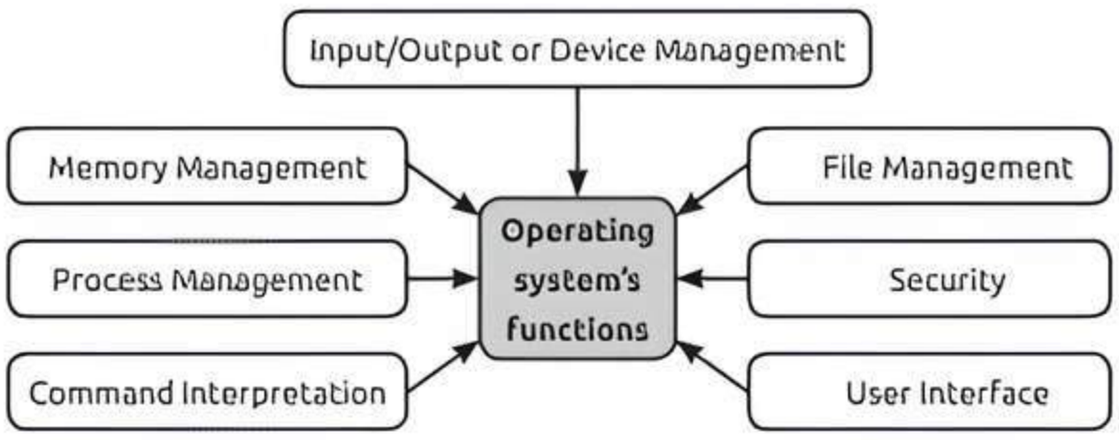

Fig. Functions of an Operating System

- **Process Management:** We can perform many tasks or open many programs at a time on a computer. This feature of multitasking/multiprogramming is managed by the operating system. The OS decides which process gets the processor, when and for how much time.
- **Memory Management:** All data and programs are saved in the computer memory. The memory management module of an operating system takes care of the allocation and reallocation of the primary memory or main memory.
- **File Management:** File management module of an operating system involves keeping track of all the different files and also maintains the integrity of data stored in the files including the file directory structure.
- **Security:** Securing our data and information from unauthorised access is one of the most important functions performed by an operating system.
- **Command Interpretation:** The Command Interpretation module of an operating system takes care of interpreting user commands and directing the system resources to handle the requests.
- **Input/Output or Device Management:** The coordination and control of various input and output devices is an important function of the operating system. The part of OS that keeps a track of all the devices is known as the I/O controller.
- **User Interface:** The OS establishes a means of communication between users and their computer systems *via* a user interface. User interface is a medium for users to communicate with the computer.

- **Internal Structure of an Operating System:** We know that operating system is the main core component of a computer system. It includes different components to perform different tasks. The following components define the basic structure of an operating system:
  - **Kernel:** The kernel works at the bottom layer of an operating system. It is the main component of an operating system as it handles all the hardware. Kernel actually performs the two major functions of device and memory management.
  - **API:** Application Programming Interface is the second layer of an operating system after the kernel. They are the routines or small program codes that are required for the communication among the software applications.
  - **File System:** This third layer of an operating system is responsible for managing all the files and folders created in a computer system. The file system component of an operating system facilitates the task of creating, storing and accessing the files in a computer.
  - **Device Drivers:** Device drivers are the software programs that handle and manage all the devices attached to a computer system. They facilitate the communication between an operating system and a device.
- **Types of Operating System:** Operating systems can be classified according to the user interface they support, according to the number of users they support and various other parameters.
- **Operating System based on User Interface:** An operating system acts as a bridge between a user and a computer hardware. It provides an interface through which user interacts with the computer system and gives instructions to it. CUI and GUI are the two types of user interfaces provided by operating systems for user interaction with a computer system.
  - **Character User Interface (CUI) based Operating Systems:** It provides a character based interface to interact with a computer. You can only type text to give commands to the computer as in MS-DOS or command prompt. There are no images or graphics on the screen and it is a primitive type of interface. Even the most modern computers have a modified version of CUI called CLI (Command Line Interface). Some examples of CUI are DOS, Unix, etc.
  - **Graphical User Interface (GUI) based Operating Systems: GUI** often pronounced as **'Gooey'** stands for **Graphical User Interface**. It is the most popular and widely used interface. This is an interface that makes use of graphics, images and icons. Windows is the most common example of GUI based operating system. Some other examples are Linux, Symbian, Mac OS, etc.
- **Operating System based on the Number of Users Supported:** On the basis of the number of users supported, an OS can be classified into two types—**Single-user** and **Multi-user operating system**.
  - **Single-user Operating System:** A single-user operating system supports only one user at a time. It provides the facilities to be used on one computer by only one user. It provides a platform for only one user and lets a single user interact with several programs at a time.
  - Some examples are MS-DOS, Windows 95, Windows NT Workstation, Windows 2000 Professional, etc.
  - **Multi-user Operating System:** A multi-user operating system has been designed for more than one user to access the computer at one time. A multi-user operating system allows many different users to take advantage of the computer's resources, simultaneously.

- Some examples of the multi-user operating systems are Mainframe operating system, Unix, Linux, Windows Vista, etc.

- **Operating System based on the Tasks Supported at a Time:** Depending upon the number of programs that can be opened at a time, OS can be classified into two types—**Single-tasking operating system** and **Multitasking operating system**. However, there are other types of operating systems also.
  - **Single-tasking Operating System:** This operating system is designed to manage the computer so that one user can effectively do one thing at a time. Some examples are MS-DOS and Palm OS for handheld devices.
  - **Multitasking Operating System:** Multitasking refers to an operating system in which multiple processes, also called tasks, can run on a single computer, simultaneously and without interfering with each other.
  - **Batch Operating System:** Batch OS executes the number of jobs in groups called **Batches**. Each user gave his number of jobs to be executed punched on devices like punched cards and submitted it to the operator.
  - **Time Sharing Operating System:** Time sharing is a technique which enables many people, located at various terminals, to use a particular computer system, at the same time.
  - **Distributed Operating System:** Distributed OS allows multiple processors to be used by multiple programs at the same time so, that multiple real-time applications and multiple users can be served.
  - **Network Operating System:** Network OS usually works in the client and server or networked environment. It is installed on the server computer and does the task of managing data, users, groups, security and other networking applications.
  - **Real-time Operating System:** Real-time OS is defined as a data processing system in which the time interval required to process and respond to inputs, is small and it guarantees to process that input in a specified time.
  - It is further divided into two types:
    - **Hard Real-time OS:** This operating system ensures that critical tasks finish on time, for example, air traffic control, weapon systems, etc.
    - **Soft Real-time OS:** This operating system is less restrictive. In this OS, critical tasks are given priority over other tasks, for example, multimedia, virtual reality, etc.
- **Some Commonly used Operating System**
  - **Windows:** Microsoft Windows is one of the most popular operating systems. It is a commercial OS that uses Windows to execute the programs. It has a GUI interface.
  - **Linux and Unix:** Linux is an OpenSource OS, which means that its program code is freely available to the program developers. Linux has been largely influenced by the commercial Unix OS. Many different versions of Linux are available for distribution, most of which are free for the user (such as Ubuntu, Fedora and Mint).
  - **DOS:** Disk Operating System is an operating system that runs from a disk drive. It was the first operating system used with PC. It was developed by Microsoft for the firm IBM and XT type computers.
  - **Mac OS X:** Apple's Mac computers have their own operating system, OS X. The Mac version of the Microsoft Office suite cannot be installed on a Windows computer. Apple's lighter portable devices (iPads and iPhones) use a light version of the same operating system iOS.
  - **Android:** Android is an operating system designed for phones and other mobile devices. It is not available for the desktop computers, but for mobile devices, it is an extremely popular operating system.
  - **BOSS (Bharat Operating System Solutions):** It is a GNU/Linux distribution developed by C-DAC, Chennai, in order to benefit the usage of Free/Open Source software in India. BOSS GNU/Linux advanced server has unique features such as web server, proxy server, database server, mail server, network server, etc.
  - **Solaris:** Solaris OS is a free Unix-based operating system developed by Sun Microsystems. The first version of SunOS was published in 1982. With the version 4.0, the new product name Solaris was introduced for SunOS, in 1988.
  - **Symbian:** Symbian OS was the most widely-used smartphone operating system in the world till 2010, when it was overtaken by Android. Development of Symbian OS was discontinued in May 2014. It was primarily used by Nokia for its phones. It is designed for the specific requirements of 2.5G and 3G mobile phones.
  - **Windows 7:** Windows 7 is a GUI based operating system developed by **Microsoft**. It has amazing features that have made it a popular choice to be used at homes, offices, educational institutes and various other places.
- **Features of Windows 7:** Following are a few distinct features of Windows 7:
  - **User-friendly GUI Interface and Multi-tasking:** Windows 7 has a user-friendly GUI interface that allows you to work with a pointing device, like a mouse. It even allows you to open and work with more than one application program at a time.
  - **Aero Shake Feature:** Windows 7 supports Aero Shake feature that enables you to click a window pane and shake your mouse to minimise all other open windows.

- **Aero Themes and Aero Background:** Windows 7 allows you to use new themes or choose a slideshow of your favourite photographs to make your PC reflect your personal taste.
- **Homegroup:** The Homegroup is a feature in Windows 7 that enables you to easily connect to two or more PCs running on Windows 7, on your home network, for the purpose of sharing.
- **Aero Snap:** This feature enables you to resize and expand Windows more quickly. It also allows to compare the contents of two different windows.

▸ **Basic Components of a GUI Window:** There are some basic components that are part of each GUI enabled operating system. Let us learn about them:

- **Desktop:** When you turn on your computer system, the first screen that you see on your computer screen, after logging is completed, is known as the **Desktop**.
- **Icons:** Icons are small graphical images on the desktop that represent various application programs, files and folders.
- **Folders:** Folders are the places where you can store files, icons, directories, programs, data or other folders (subfolders). Subfolders are also called Subdirectories.
- **Taskbar:** Taskbar is the long horizontal bar that is usually located at the bottom of the desktop screen. It can be moved with the Start button on the left and the clock on the right.
- **Start Button:** The Windows Start button is found at the bottom left part of the taskbar. The **Start menu** gives access to all the programs installed on the computer and also to other Windows features.
- **Quick Launch Icons:** The Quick launch icons let you quickly launch any of the programs that are on the taskbar. When you hover your mouse over one of the icons, you will see a small pop-up rectangle that shows you a preview of that opened window.
- **Notification Area:** The notification area is the area of the taskbar where you can view programs and tasks that are running in the background, as well as view important messages about updating your computer. It is also called the **System tray**.
- **Clock:** The default clock shows the date and time.
- **Gadgets:** Windows 7 offers small application programs called **Gadgets** to facilitate your routine-based tasks. Different types of gadgets such as Calendar, Clock, CPU meter, Currency, Feed Headlines, Windows, Media Center, Weather, Picture Puzzle and Slide Show are there that can be placed on the desktop.
- **Sticky Notes:** Sticky notes is another useful feature of Windows 7 and it can be placed on the desktop. These are used for writing reminders or for making a **To Do List**.
- **Show Desktop Button:** The show desktop button is located on the right end of the taskbar. Clicking this button minimises all the opened program windows and reveals the full desktop.

▸ **Components of Window Screen:** When you open an application or a folder, it is always opened within a rectangular frame structure known as window. There are basically two types of windows:

- **Application Program Window:** It opens up when you open an application.
- **Explore Window:** It opens up when you double-click on a folder to view its contents.

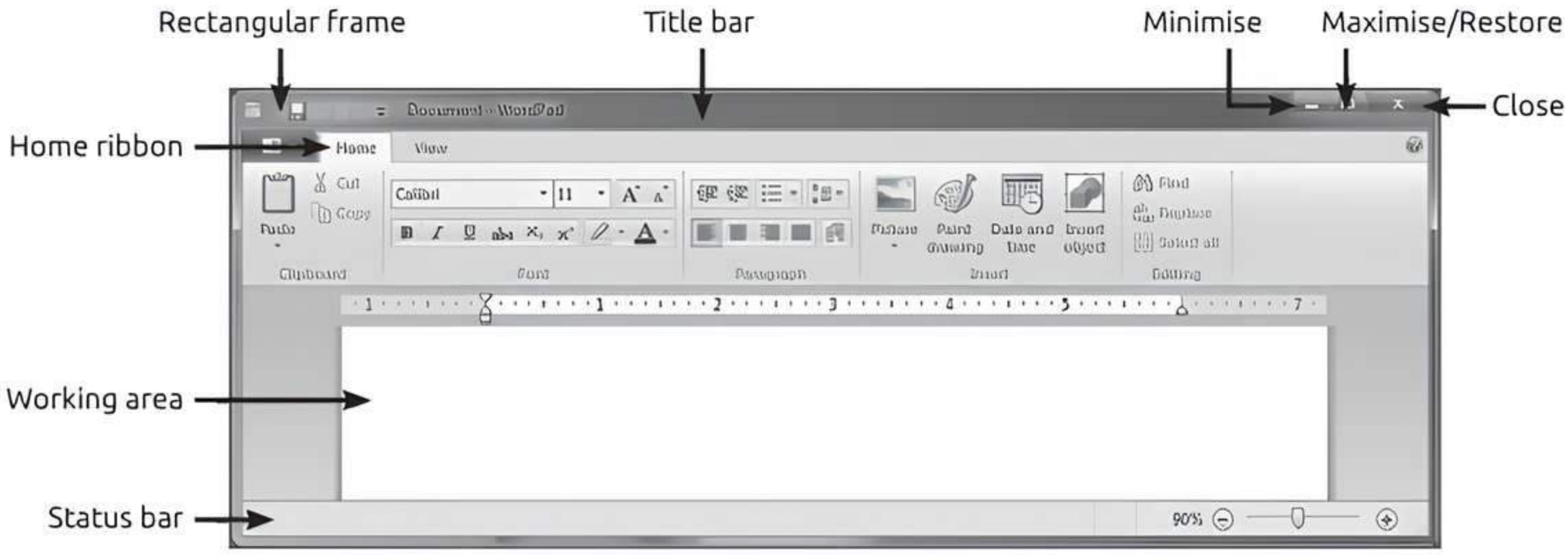

Fig. An Application Program Window (WordPad)

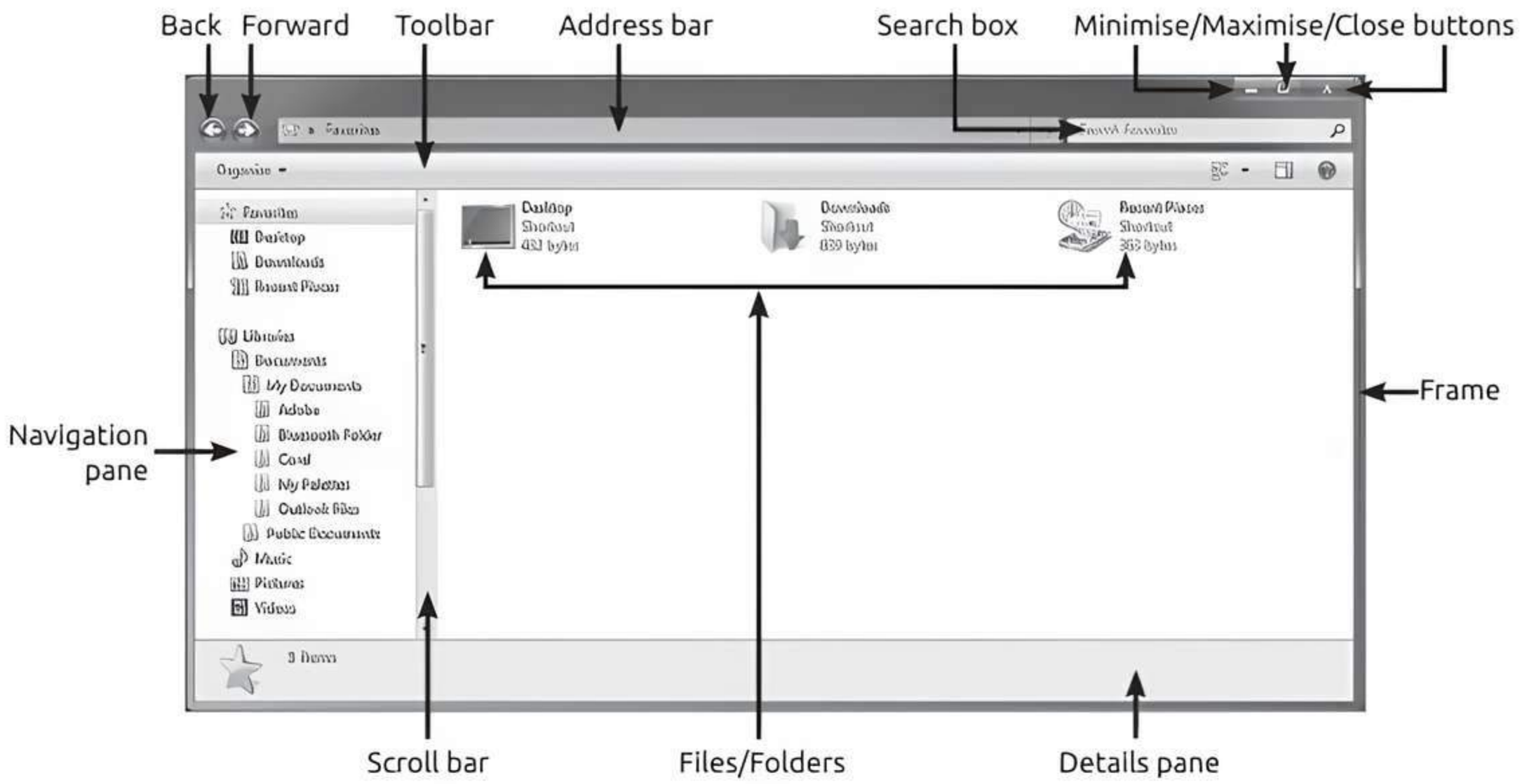

Fig. Windows Explorer Window (showing a folder and its contents)

- **Elements of Windows:** Various elements of windows are as follows:
  - **Title Bar:** The Title bar appears at the top of the program window. This bar displays the name of the opened application program, folder and also contains the Minimise, Maximise/Restore and Close buttons.
  - **Scroll Bar:** The Scroll bar appears when there is more matter on the window screen to display.
  - **Address Bar:** The Address bar allows you to navigate up and down on a series of windows by double-clicking on a folder.
  - **Navigation Pane:** The Navigation pane provides quick links to various folders and locations on the computer.
  - **Tool Bar:** The Tool bar contains the tools for performing various tasks/functions.
  - **Details Pane:** The Details pane gives the details about the application or file/folder which is opened.
  - **Menu Bar:** The Menu bar has various menus such as File, Edit, Home, etc. Menus have a group of commands that are used in an application program to perform some basic functions of Windows 7.
  - **Status Bar:** The Status bar appears at the bottom of the window and displays the status of an application such as edit, ready, etc.
  - **Rectangular Frame:** The Rectangular frame is the boundary of the window pane.
- **File:** Collection of interrelated information or data is known as file.
- **Folder or Directory:** Collection of interrelated files is known as folder or directory. It is like a container that can hold all the files, or a storage drawer in which you can put your books, toys, etc.

Practice Exercise

Multiple Choice Questions

Q 1. How many types of user interfaces are there?

a. Three b. One
c. Two d. Four

Q 2. Which type of user interface does not require a mouse?

a. CUI b. GUI
c. Both a. and b. d. None of these

Q 3. Which type of user interface requires a mouse?

a. CUI b. GUI
c. Both a. and b. d. None of these

Q 4. What is the other name of CUI?

a. CLI b. GUI c. WIPM d. WIMP

Q 5. Which of the following is an example of CUI based OS?

a. Windows 7 b. Windows XP
c. MS-DOS d. Linux

Q 6. Which of the following is an example of GUI based OS?

a. Windows 7 b. MS Word
c. MS-DOS d. Unix

Q 7. Which of the following is an example of an operating system?

a. Linux b. Paint
c. MS PowerPoint d. Java

Q 8. Which of the following is not an example of operating system?

a. Linux b. Windows
c. Unix d. Java

Q 9. Which OS is freely available?

a. Linux b. BOSS
c. Windows 7 d. Android

Q 10. Which OS is popularly used for smartphones and tablets?

a. Unix b. Linux
c. Windows 7 d. Android

Q 11. Which of the following operating systems is not used for smartphones and tablets?

a. Unix b. Symbian
c. IOS d. Android

Q 12. Which of the following operating systems is developed by the Indian government?

a. Unix b. BOSS
c. Windows 7 d. Android

Q 13. In how many types is the real-time operating system further divided?

a. Three b. One
c. Two d. Four

Q 14. Which of the following operating systems ensures that critical tasks are completed on time?

a. Batch operating system
b. Distributed operating system
c. Hard Real-time operating system
d. Multitasking operating system

Q 15. ..... is a horizontal bar present at bottom of the Windows 7 desktop. *[CBSE 2023]*

a. Status bar b. Menu bar
c. Task bar d. Recycle bin

Q 16. Which of the following buttons on a window allows you to close it?

a. Start b. Minimize
c. Close d. Show desktop

Q 17. Which of the following is a collection of files?

a. Folder b. Document
c. Holder d. None of these

Q 18. Which Windows folder stores the deleted files?

a. Recycle bin b. System tools
c. Accessories d. None of these

Q 19. Which of the following is the shortcut key combination to cut a file?

a. Ctrl + C b. Ctrl + V
c. Ctrl + K d. Ctrl + X

Q 20. Which of the following shortcut key combinations allows you to delete a file permanently?

a. Shift + DEL b. CTRL + DEL
c. Ctrl + X d. Ctrl + K

Q 21. Which of the following operating systems is available in the mobile devices?

a. MAC OS X b. Windows XP
c. Android d. Linux

Q 22. Which type of operating system will allow a number of users to use the same computer at the same time?

a. Multitasking b. Multi-user
c. Multi-processing d. None of these

Q 23. A.....operating system is a computing environment that reacts to input within a specific period of time. *[CBSE SQP 2021, Term-1]*

a. Single-user b. Real time
c. Multi-user d. Distribute

Q 24. Which of the following bars allows you to navigate up and down a series of windows by double-clicking on a folder?

a. Status bar b. Title bar
c. Scroll bar d. Address bar

Q 25. Which of the following buttons minimises all the running program windows and reveals the desktop?

a. Start b. Minimise
c. Close d. Show desktop

Q 26. If there are multiple recycle bin for a hard disk:

a. you can set different size for each recycle bin
b. you can choose which recycle bin to use to store your deleted files
c. you can make any one of them default recycle bin
d. None of the above

Q 27. Identify false statement.

a. You can find deleted files in recycle bin
b. You can restore any files in recycle bin if you ever need
c. You can increase free space of disk by sending files in recycle bin
d. You can right click and choose Empty Recycle Bin to clean it at once

Q 28. If the displayed system time and date is wrong, you can reset it using:

a. write b. calendar
c. write file d. control panel

Q 29. You should save your computer from:

a. Viruses b. Time bombs
c. Worms d. All of these

Q 30. Which of the following is not essential to shut down your computer?

a. Save all opened files
b. Close all running applications
c. Switch off monitor
d. Cut off the power supply

Q 31. Windows displays various options to shut down. Which is suitable at the end of day?

a. Shut down b. Restart
c. Sleep d. Hibernate

Q 32. A computer automatically runs a basic program called .....as soon as it is switched on or the power. *[CBSE SQP 2021, Term-1]*

a. BIOS (Basic Input/Output System)
b. IOS (Input/Output System)
c. BOSS (Basic on System Startup)
d. PoS (Power on System)

Fill in the Blanks Type Questions

Q 33. A computer system is made up of two main components ..... and .....

Q 34. The ..... is the collection of programs that manages the whole computer system.

Q 35. Operating system takes care of the ..... and ..... of processes.

Q 36. We can open many ..... at a time on a computer.

Q 37. ..... is directly accessed by the CPU to speed up the processing.

Q 38. The ..... works at the bottom layer of an operating system.

Q 39. ..... interface makes the use of graphics, images and icons.

Q 40. The ..... feature makes all your open windows transparent.

Assertion & Reason Type Questions

Directions (Q. Nos. 41-51): *In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option.*

a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Q 41. **Assertion (A): An operating system is a collection of programs that manages and controls the two major components of a computer system, *i.e.*, hardware and software.**
Reason (R): Computer hardware is of no use if we do not install the essential operating system software in the computer.

Q 42. **Assertion (A): An operating system (OS) is the hardware component of a computer system that is responsible for the management and coordination of all its activities. It shares the resources of the computer.**
Reason (R): The OS decides which process gets the processor, when and for how much time.

Q 43. **Assertion (A): The OS allocates the processor (CPU) to a process and deallocates processor when a process is no longer required.**
Reason (R): The main purposes of an OS is to handle the details of the operations of the software.

Q 44. **Assertion (A): The process management module of an OS takes care of the creation and deletion of the processes and scheduling of various system resources to the different processes requesting them. This function is known as Memory management.**
Reason (R): The memory management module of an operating system takes care of the allocation and reallocation of the primary memory or main memory.

Q 45. **Assertion (A): File management module of an operating system involves keeping track of all the different files and also maintains the integrity of data stored in the files including the file directory structure.**
Reason (R): Securing our data and information from unauthorised access is one of the most important functions performed by an operating system.

Q 46. **Assertion (A): The Command Interpretation module of an operating system takes care of interpreting user commands and directing the system resources to handle the requests.**
Reason (R): The coordination and control of various input and output devices is an important function of the operating system.

Q 47. **Assertion (A): The API works at the bottom layer of an operating system. It is the main component of an operating system as it handles all the hardware.**
Reason (R): The kernel is the first component to be loaded in the memory when an operating system is loaded into the memory and it remains in the memory till the time a computer is shut down.

Q 48. **Assertion (A): The file system is set-up at the time of installing an operating system. There are different types of file system that can be set-up in a computer such as FAT, NTFS, GFS and HFS.**
Reason (R): This first layer of an operating system is responsible for managing all the files and folders created in a computer system.

Q 49. **Assertion (A): Device drivers are the software programs that handle and manage all the devices attached to a computer system. They facilitate the communication between an operating system and a device.**
Reason (R): An operating system acts as a bridge between a user and a computer hardware. It provides an interface through which user interacts with the computer system and gives instructions to it.

Q 50. **Assertion (A): CUI stands for Character User Interface, and as the name suggests, it provides a character based interface to interact with a computer.**
Reason (R): The GUI operating system is also known as WIMP (Windows, Icons, Menus, Pointer) as the most common combination of elements using which a user interacts in a GUI environment.

Q 51. **Assertion (A): An operating system can also be classified on the basis of the number of users it supports. It can be a single user OS that will only allow one user to login, and can be a multi-user OS that will allow more than one user to login.**
Reason (R): Single-user operating system supports only one user at a time. It provides the facilities to be used on one computer by only one user. It provides a platform for only one user and lets a single user interact with several programs at a time.

Answers

1. (c)	2. (a)	3. (b)	4. (a)	5. (c)
6. (a)	7. (a)	8. (d)	9. (a)	10. (d)
11. (a)	12. (b)	13. (c)	14. (c)	15. (c)
16. (c)	17. (a)	18. (a)	19. (d)	20. (a)
21. (c)	22. (b)	23. (b)	24. (d)	25. (b)

26. (a) 27. (c) 28. (d) 29. (d) 30. (c)
31. (a) 32. (a)
33. hardware, software 34. operating system
35. creation, deletion 36. programs
37. Main memory 38. kernel
39. GUI 40. Aero peek
41. (b) 42. (d) 43. (c) 44. (d) 45. (b)
46. (b) 47. (d) 48. (c) 49. (b) 50. (b)
51. (b)

Very Short Answer Type Questions

Q 1. Define an Operating System.

Ans. An Operating System is the collection of programs that manages and controls the two major components of a computer system, *i.e.*, hardware and software. Computer hardware is of no use if we do not install the essential operating system software in the computer.

Q 2. Name any four major functions that are performed by an operating system.

Ans. The four major functions that are performed by an operating system are:

(i) Memory management
(ii) File management
(iii) Input/Output or Device management
(iv) Process management

Q 3. Define Bootstrap Loader.

Ans. Bootstrap Loader is a program that is stored on the ROM. It loads the OS into the RAM, when we start a computer. This process is known as Booting.

Q 4. Define the term kernel.

Ans. The kernel works at the bottom layer of an operating system. It is the main component of an operating system as it handles all the hardware. Kernel actually performs the two major functions of device and memory management.

Q 5. Explain Device Drivers.

Ans. Device drivers are the software programs that handle and manage all the devices attached to a computer system. They facilitate the communication between an operating system and a device.

Q 6. Give some examples of multitasking OS.

Ans. Some examples of multitasking OS are Linux, Mac OS and Android.

Q 7. Differentiate between Single-user operating system and Multi-user operating system.

Ans.

S. No.	Basis of Difference	Single-user OS	Multi-user OS
(i)	Nature	A single-user operating system supports only one user at a time.	A multi-user operating system has been designed for more than one user to access the computer at one-time.
(ii)	Example	Example: MS-DOS, Windows 95	Example: Unix, Linux

Q 8. Differentiate between single-tasking and multitasking operating system.

Ans. Single-tasking Operating System: This operating system is designed to manage the computer so that one user can effectively do one thing at a time. Some examples are MS-DOS and Palm OS for handheld devices.

Multitasking Operating System: Multitasking refers to an operating system in which multiple processes, also called tasks, can run on a single computer, simultaneously and without interfering with each other. For example: Linux, Mac OS, Android.

COMMON ERROR

Students do not give examples of operating systems but only definition.

Q 9. Explain the types of Real-time operating system.

Ans. Real-time operating system is divided into two types:

(i) **Hard Real-time OS:** This operating system ensures that critical tasks finish on time, for example, air traffic control, weapon systems, etc.
(ii) **Soft Real-time OS:** This operating system is less restrictive. In this OS, critical tasks are given priority over other tasks, for example, multimedia, virtual reality, etc.

Q 10. For which devices is the Android mainly designed?

Ans. Android is mainly designed for touchscreen mobile devices such as smartphones and tablets.

Q 11. Which OS is developed by the Indian Government?

Ans. BOSS (Bharat Operating System Solutions) is developed by Indian Government.

Q 12. What do you mean by Solaris?

Ans. Solaris OS is a free Unix-based operating system developed by Sun Microsystems. The first version of SunOS was published in 1982. With the version 4.0, the new product name Solaris was introduced for SunOS, in 1988.

Q 13. What is the major advantage of BOSS?

Ans. The major advantage of BOSS is that it is available in different local languages, so more people can understand and use it easily.

Short Answer Type Questions

Q 1. Discuss Security management and File management module of an OS.

Ans. Security Management: Securing our data and information from an unauthorised access is one of the most important functions performed by an operating system. The security modules of an operating system protect the resources and information of a computer system against destruction and unauthorised access.

File Management: In addition to memory, data and programs are also stored on the secondary storage devices such as hard disk, CD, DVD, pen drive, etc. File management module of an operating system involves keeping track of all the different files and also maintaining the integrity of data stored in the files including the file directory structure.

Q 2. What is Distributed operating system?

Ans. Distributed OS is one that allows multiple processors to be used by multiple programs at the same time so that multiple real-time applications and multiple users can be served. The processors communicate with one another through various communication lines.

Q 3. Discuss MAC OS X.

Ans. Apple's Mac computers have their own operating system, OS X. The Mac version of the Microsoft Office suite cannot be installed on a Windows computer. We can install other operating systems on Mac computers, but the OS X operating system is only available for the computers made by Apple. Apple's lighter portable devices (iPads and iPhones) use a light version iOS, of the same operating system.

Q 4. What is Symbian operating system?

Ans. Symbian OS was the most widely-used smartphone operating system in the world till 2010, when it was overtaken by Android. Development of Symbian OS was discontinued in May 2014. It was primarily used by Nokia for its phones. It is designed for the specific requirements of 2.5G and 3G mobile phones.

Q 5. What does Aero Shake feature of Windows 7 enable you to do?

Ans. Windows 7 supports Aero Shake feature that enables us to click a window pane and shake our mouse to minimise all other open windows. We can shake the pane again to restore the windows to their original sizes.

Q 6. Differentiate between files and folders? *[CBSE 2023]*

Ans.

S. No.	Basis of difference	Files	Folders
1.	Definition	It is a collection of interrelated information or data.	It is a collection of interrelated files.
2.	Container	A file cannot contain other files.	A folder can contain other files/folders.
3.	Extensions	Files have extensions.	Folders does not have any extension.
4.	Supported operations	Open, save, rename, print, email and modify file content	Move, rename, delete and share.

Chapter Test

Multiple Choice Questions

Q 1. Which of the following is not an operating system?

a. DOS b. Linux
c. Windows d. Oracle

Q 2. Linux is a(n) ..... operating system.

a. opensource
b. microsoft
c. windows
d. mac

Q 3. Which operating system can you give smallest file name?

a. PS/2 b. DOS
c. Windows d. Windows NT

Q 4. Which one is not operating system?

a. P11 b. OS/2
c. Windows d. Unix

Q 5. Which of the following is not a multitasking operating system?

a. Windows b. Linux c. Win NT d. DOS

Fill in the Blank Type Questions

Q 6. The ..... feature enables you to resize and expand windows more quickly and also allows to compare the contents of two different windows.

Q 7. The ..... button is found at the bottom left part of the taskbar.

Q 8. The ..... shows the name of the application program.

Assertion and Reason Type Questions

Directions (Q. Nos. 9-11): *In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option.*

a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).

c. Assertion (A) is true, but Reason (R) is false.

d. Assertion (A) is false, but Reason (R) is true.

Q 9. **Assertion (A): A multi-processor operating system allows many different users to take advantage of the computer's resources, simultaneously. It provides regular access for a number of users by maintaining a database of known users.**

Reason (R): The multi-user operating systems are complex in comparison to the single-user operating systems. Each user is provided with a terminal and all these terminals are connected to a main computer.

Q 10. **Assertion (A): Multi user refers to an operating system in which multiple processes, also called tasks, can run on a single computer, simultaneously and without interfering with each other.**

Reason (R): The Batch operating system was primarily used when computers were just invented. Batch OS executes the number of jobs in groups called Batches.

Q 11. **Assertion (A): Time sharing is a technique which enables many people, located at various terminals, to use a particular computer system, at the same time.**

Reason (R): Networking OS is defined as a data processing system in which the time interval required to process and respond to inputs, is small and it guarantees to process that input in a specified time.

Very Short Answer Type Questions

Q 12. **Why is GUI also known as WIMP?**

Q 13. **What do you understand by the term Homegroup?**

Q 14. **What do you mean by Sticky Notes?**

Q 15. **Define address bar.**

Short Answer Type Questions

Q 16. **Discuss the term Desktop in detail.**

Q 17. **What are Gadgets?**