--> 2) A superblock is a collection of metadata used to show the properties of file systems in some types of operating systems. The superblock is one of a handful of tools used to describe a file system along with inode, entry and file. --> 3) file command is used to determine the type of a file. .file type may be of human-readable(e.g. 'ASCII text') or MIME type(e.g. 'text/plain; charset=us-ascii'). This command tests each argument in an attempt to categorize it. --> filesystem test: This test is based on the result which returns from a stat system call. The program verifies that if the file is empty, or if it's some sort of special file. This test causes the file type to be printed. --> magic test: These tests are used to check for files with data in particular fixed formats. --> language test: This test search for particular strings which can appear anywhere in the first few blocks of a file. -->Syntax: file [option] [filename] --> 4) in Linux, a background process is nothing but process running independently of the shell. One can leave the terminal window and, but process executes in the background without any interaction from users. For example, Apache or Nginx web server always runs in the background to serve you images and dynamic content. --> 7)case $variable in pattern-1) commands;; pattern-2) commands;; pattern-3) commands;; pattern-N) commands;; *) commands;; esac. --> 6) The default editor that comes with the UNIX operating system is called vi (visual editor). Using vi editor, we can edit an existing file or create a new file from scratch. we can also use this editor to just read a text file.--> Syntax: vi filename ----> a) vi filename: Creates a new file if it already not exist, otherwise opens existing file. b) vi -R filename : Opens an existing file in read only mode. c) view filename : Opens an existing file in read only mode. --->10) Superuser accounts are highly privileged accounts primarily used for administration by specialized IT employees. These users/accounts may have virtually unlimited privileges, or ownership, over a system. Superuser account privileges may allow: * full read/write/ execute privileges * creating or installing files or software * modifying files and settings * deleting users and data
--> 9) Groups in Linux refer to the user groups. In Linux, there can be many users of a single system, (normal user can take uid from 1000 to 60000, and one root user (uid 0) and 999 system users (uid 1 to 999)). In a scenario where there are many users, there might be some privileges that some users have and some don't, and it becomes difficult to manage all the permissions at the individual user level. So using groups, we can group together a number of users, and set privileges and permissions for the entire group. groupadd command is used to create a new user group. -->Syntax:- groupadd [option] group_name ---> 13) A Linux file system is a structured collection of files on a disk drive or a partition. A partition is a segment of memory and contains some specific data. In our machine, there can be various partitions of the memory. Generally, every partition contains a file system. ---> Types of Linux File System
When we install the Linux operating system, Linux offers many file systems such as Ext, Ext2, Ext3, Ext4, JFS, ReiserFS, XFS, btrfs, and swap. -->2. JFS File System :- JFS stands for Journaled File System, and it is developed by IBM for AIX Unix. It is an alternative to the Ext file system. It can also be used in place of Ext4, where stability is needed with few resources. It is a handy file system when CPU power is limited. -->3. ReiserFS File System :-- ReiserFS is an alternative to the Ext3 file system. It has improved performance and advanced features. In the earlier time, the ReiserFS was used as the default file system in SUSE Linux, but later it has changed some policies, so SUSE returned to Ext3. This file system dynamically supports the file extension, but it has some drawbacks in performance. --> 4. XFS File System:-XFS file system was considered as high-speed JFS, which is developed for parallel I/O processing. NASA still using this file system with its high storage server (300+ Terabyte server). -->5. Btrfs File System :--Btrfs stands for the B tree file system. It is used for fault tolerance, repair system, fun administration, extensive storage configuration, and more. It is not a good suit for the production system. -->6. Swap File System :-The swap file system is used for memory paging in Linux operating system during the system hibernation. A system that never goes in hibernate state is required to have swap space equal to its RAM size ---> 18) Types of Shell Programs :--

1) Bourne Shell 2) C Shell 3) Korn Shell 4) GNU Bourne-Again Shell 5) TC Shell 6) Restricted Shell 7) A Shell 8) Z Shell --->BOURNE SHELL:-- The Bourne shell is the original UNIX shell (command execution program, often called a command interpreter) that was developed at AT&T. Named for its developer, Stephen Bourne, the Bourne shell is also known by its program name, sh. The shell prompt (character displayed to indicate readiness for input) used is the $ symbol. The Bourne shell family includes the Bourne, Korn shell, bash, and zsh shells.
For the Bourne Shell the: • Command full-path name is : /bin/sh • Non-root user default prompt is : $ • Root user default prompt is : # --->C SHELL :-- C shell is the UNIX shell (command execution program, often called a command interpreter) created by Bill Joy at the University of California at Berkeley as an alternative to UNIX's original shell, the Bourne shell. These two UNIX shells, along with the Korn shell , are the three most commonly used shells. The C shell program name is csh , and the shell prompt (the character displayed to indicate readiness for user input) is the % symbol. The C shell was invented for programmers who prefer a syntax similar to that of the C programming language. --->KORN SHELL :--It was developed by David Korn at AT&T Bell Labs. The Korn Shell combines the features of both the Bourne and C Shell. Its executable file name is 'ksh'. The Korn shell's command editors interface enables the quick, effortless correction of typing error, plus easy recall and reuse of command history. It include convenient programming features like built-in arithmetic and C-like arrays, functions, and string manipulation facilities and is faster than the C shell. For the Korn shell the:- • Command full-path name is: /bin/ksh • Non-root user default prompt is: $ • Root user default prompt is: # ----> BOURNE AGAIN SHELL (bash) :--- This is a public domain shell written by the Free Software Foundation under their GNU project. Bash provides all the interactive features of the C chell (esh) and the Korn shell (ksh). Its programming language is compatible with the Bourne shell (sh). It is an enhancement of Bourne shell. Bash is an acronym for Bourne Again Shell.
Bash shell is a default shell for most Linux systems. It is stored in the /bin directory. It stores the commands that we store in a session. It also stores the commands that we used in the previous session. The executable file name is 'bash'. In Red Hat Linux, the sh command is a symbolic link to bash. For the GNU Bourne-Again shell the: • Command full-path name is :/bin/bash • Default prompt for a non-root user is: bash-x.xx$. (Where x.xx indicates the shell version number. For example, bash-3.50$) • Root user default prompt is: bash-x.xx#. (Where x.xx indicates the shell version number. For example, bash-3.50$#) ----> TC SHELL OR TCSH SHELL :-- Tcsh stands for Tom's C shell and is an enhancement of the C shell. It is also known as the TC shell. In Linux the csh command is a symbolic link to the Tcsh shell. We can execute the Tcsh shell by typing either csh or tcsh at the command prompt. This shell is available in the public domajn provides all the features of the C shell together with emacs style editing of the command line. (emacs is a text editor which offers longer list of commands).
---> RESTRICTED SHELL :--- Restricted shell is used to provide limited access on the operating system by the user. The restricted shell is typically used for guest users who only need limited
rights and permissions. ---->A SHELL :-- A shell was developed by Kenneth Almquist. It emulates Bourne shell. A shell is suitable for the computers having limited memory. The executable file name for the A shell is 'ash'. --->Z SHELL :-- Z shell offers the features of Tesh and Korn shell. It provides a large number of utilities and extensive documentation. The executable file name for the Z shell is 'zsh'. It sports a number of useful features, including spelling correction, theming, nameable directory shortcuts, sharing your command history across multiple
terminals etc. ---> 25) APACHE :--- Apache is free and open-source software of web server that is used by approx 40% of websites all over the world. Apache HTTP Server is its official name. It is developed and maintained by the Apache Software Foundation. Apache permits the owners of the websites for serving content over the web. It is the reason why it is known as a "web server." One of the most reliable and old versions of the Apache web server was

published in 1995. If someone wishes to visit any website, they fill-out the name of the domain in their browser address bar. The web server will bring the requested files by performing as the virtual delivery person. ---> WORKING :-- Apache is not any physical server; it is software that executes on the server. However, we define it as a web server. Its objective is to build a connection among the website visitor browsers (Safari, Google Chrome, Firefox, etc.) and the server. Apache can be defined as cross-platform software, so it can work on Windows servers and UNIX. When any visitor wishes for loading a page on our website, the homepage, for instance, or our "About Us" page, the visitor's browser will send a request on our server. Apache will return a response along with each requested file (images, files, etc.). The client and server communicate by HTTP protocol, and Apache is liable for secure and smooth communication among t both the machines. Apache is software that is highly customizable. It contains the module-based structure. Various modules permit server administrators for turning additional functionality off and on. Apache includes modules for caching, security, password authentication, URL rewriting, and other purposes. Also, we can set up our own configuration of the server with the help of a file known as .htaccess. It is a supported configuration file of Apache. ----> Pros:--- * Stable and reliable software. * Free and open-source, even for economic use. * Regular security patches, frequently updated. * Beginner-friendly, easy to configure.
*** Flexible because of the module-based structure. * Works out of a box with the WordPress sites. * Cross-platform (implements on Windows servers and Unix). * Easily available support and huge community in the case of any issue. ---->Cons: * Various performance issues on extremely heavy-traffic websites. * Several options of configuration can cause security susceptibility.**