LINUX FILES

1. Metadata: Data that defines other data, such as file name, file size, permissions, etc.
2. Touch:
   * Purpose: Create an empty file or update the timestamp of an existing file.
   * Access Time (atime),Modification Time (mtime) and Change Time (ctime)
   * Syntax: touch file.txt
3. Setfacl:
   * Purpose: Set file access control lists (ACLs), allowing you to define permissions beyond the traditional owner, group, and others.
   * Syntax: setfacl [options] file
4. Getfacl:
   * Purpose: Display file access control lists (ACLs) for a specified file.
   * Syntax: getfacl [file]
5. Chattr:
   * Purpose: Change file attributes to make a file immutable (cannot be modified, deleted, or renamed).
   * Syntax: sudo chattr +i [filename]
6. Lsattr :
   * Purpose: Display file attributes, including whether a file is immutable or not.
   * Syntax: lsattr [filename]

Q1. What is ACL?

Ans.

* ACL stands for Access Control List.
* It is a set of permissions attached to a file or directory that specifies which users or system processes are granted access rights and what actions they can perform on the file or directory.
* ACLs provide a more granular level of control over file permissions compared to traditional Unix permissions, allowing administrators to define permissions for specific users and groups beyond the owner, group, and others.

Q2. What is file globbing?

Ans.

* File globbing, also known as wildcard expansion, is a feature provided by the shell (such as Bash) that allows you to specify a pattern to match filenames or paths.
* Wildcard characters such as '*', '?', and '[]' are used to represent groups of filenames that match the specified pattern.*
* File globbing is commonly used in commands like **ls**, **cp**, **mv**, and **rm** to perform operations on multiple files matching a specific pattern.

Q3. What is brace expansion?

Ans.

Brace expansion is a powerful feature in file globbing that allows you to generate a list of strings by specifying a pattern inside curly braces. Here's an example of how brace expansion works:

touch {apple,banana,orange}\_{red,green,yellow}.txt

Q4. What are character classes?

Ans.

Character classes in regular expressions (regex) or globbing provide a way to match certain types or classes of characters. Let's break down the character classes you mentioned:

* [:digit:]: Matches any digit (0-9).
* [:upper:]: Matches any uppercase letter.
* [:lower:]: Matches any lowercase letter.
* [:alpha:]: Matches any alphabetical character (uppercase or lowercase).
* [:alnum:]: Matches any alphanumeric character (letter or digit).
* [:space:]: Matches any whitespace character (space, tab, newline).
* [:graph:]: Matches any printable character except space.
* [:print:]: Matches any printable character, including space.
* [:punct:]: Matches any punctuation character.
* [:cntrl:]: Matches any control character.
* [:xdigit:]: Matches any hexadecimal digit (0-9, A-F, a-f).

A white background with black text

Description automatically generated\*\* The **-v** or **--verbose** option in command-line utilities, including the **mv** command, is used to enable verbose or detailed output. When you use this option, the command provides additional information about the operations it performs.