LINUX ASSIGNMENT -5

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1. **What is a shell in linux OS? How many categories of shell is currently exists in linux? Why bash shell is very popular in linux distribution ?**
    Ans:
    Shell in linux is a command line interface thats a connects user and operating system kernel it also allows user to enter command which shell interprets and executes to perform tasks for example file management and process control
    Categories of shell in linux :
    1. Bourne shell
    2. C shell
    3. Korn shell
    4. Bourne again shell
    5. Zshell
    6. Fish shell
        Bash is popular because it has feature like command history ,tab completion and scripting capabilities it is also user friendly easy to learn and document.bash is highly customizable and open source which makes it easy for people to port their work

2. **What does the z-command display ?**
    Ans :
    ls -z command is used to display the security context of each file that system has,it shows details like user , role type level
    Output might look like
    -rw-r--r--root system _u:object _r: etc_t:s0   config.txt

3. **Write a command to list all hidden files in the current directory**
    Ans:
    To list all hidden files in directory we can use ls -a command which displays all the hidden files the 'a' stands for all . in linux hidden files are those which start with a dot operator

4. **Explain the difference between hard links and soft links in linux**

    Ans:
    Hard links
    Its the direct reference to same data on disk as original files
    In hard link both original file and hard link share the same inode number
    If original file is deleted then data exits as long as the one hard link remains

Command : in original.txt hardlink.txt

Soft links
Soft link is like a shortcut to another file
It has different inode number than original file but does point to the original files path
If the original files is deleted then the soft link becomes broken
Command : in -s original.txt.softlink.txt

5. A file has permission -rwxr-x- -x. Explain who can read,write,and execute it
Ans:
The rwx part in the command lets the owner or user to read write and execute the file
and r-x part lets a group read and execute only the - -x part lets other execute only

6. Write the command to change the group ownership of a file data.txt to group staff
Ans: command to use : chgrp staff data.txt

7. Why is it dangerous to give 777 permissions to a file ?
   Explain with an example
   Ans:
   777 permissions means that everyone has read write and execute access to
   its is dangerous because it can be a security risk as anyone can modify
   delete or execute the file
   Datas can be lost as a user can easily get access and accidentally or
   intentionally delete or overwrite the file
   If the file is an executable or script ,other could insert harmful code and run
   hence it is dangerous to give a file 777 permission

8. What is the difference between apropos (i.e., man -k) and what is (i.e, man -f)
   Ans:
   Approps
   This command searches the main page database for keyword in command
   description
   This command is used when user don't know the exact command name but
   know what they are looking for

   What is :
   This command displays a small summary or one line details about the specific
   command
   This command is used when you already know the command name

9. Write a command to redirect the error output of a command to a file named error.log
   Command :
   Command 2> error.log
   2>->redirects standard error (stderr)

error.log - the file where the error messages will be saved
Command - any linux command you run

10. How can you use the tee command to append output to a file instead of overwriting it ?
Ans:
To append the output we can use the command :
Command | tee -a filename
Here:
'|' sends the output of command to another command 'tee' writes the output both to file terminal and to a file '-a' appends the output