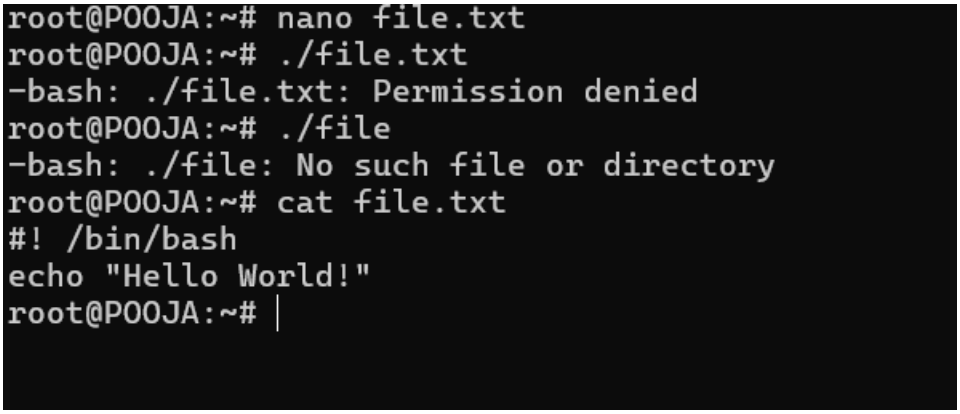
Concepts of Operating System

Part A

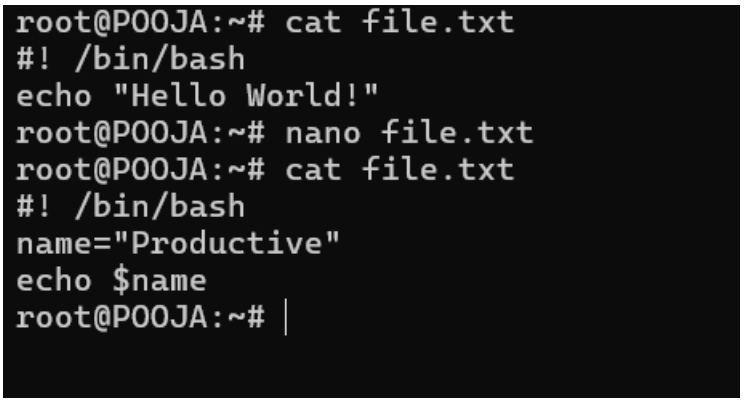
Assignment 2

What will the following commands do?

- **echo "Hello, World!"**
    - This command prints the text on the terminal. No matter whatever text it.



- **name="Productive"**
    - This command assigns the string "Productive" to the variable name.

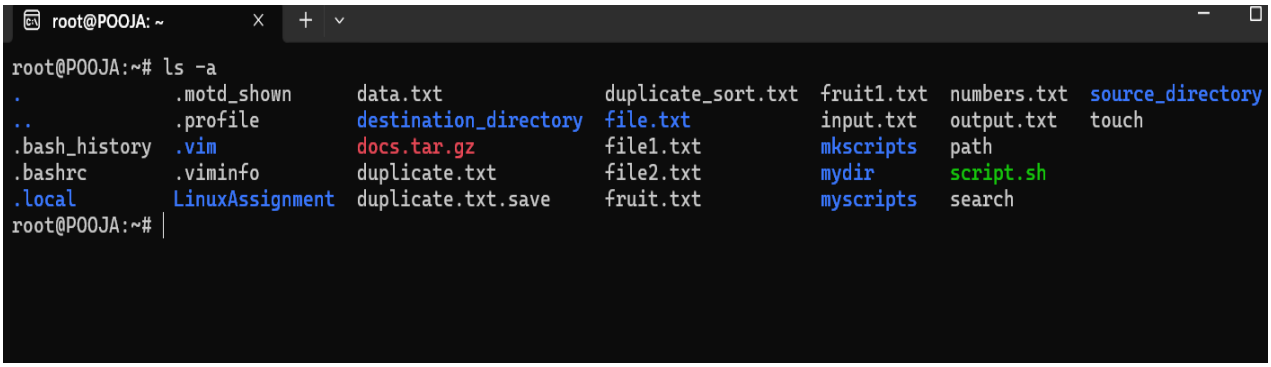


- **touch file.txt**
    - This command use for to create new file. It will create file.txt file.

```
root@POOJA:~# touch filee.txt
root@POOJA:~# cat filee.txt
root@POOJA:~# ls -l filee.txt
-rw-r--r-- 1 root root 0 Aug 30 21:17 filee.txt
root@POOJA:~#
```

- **ls -a**

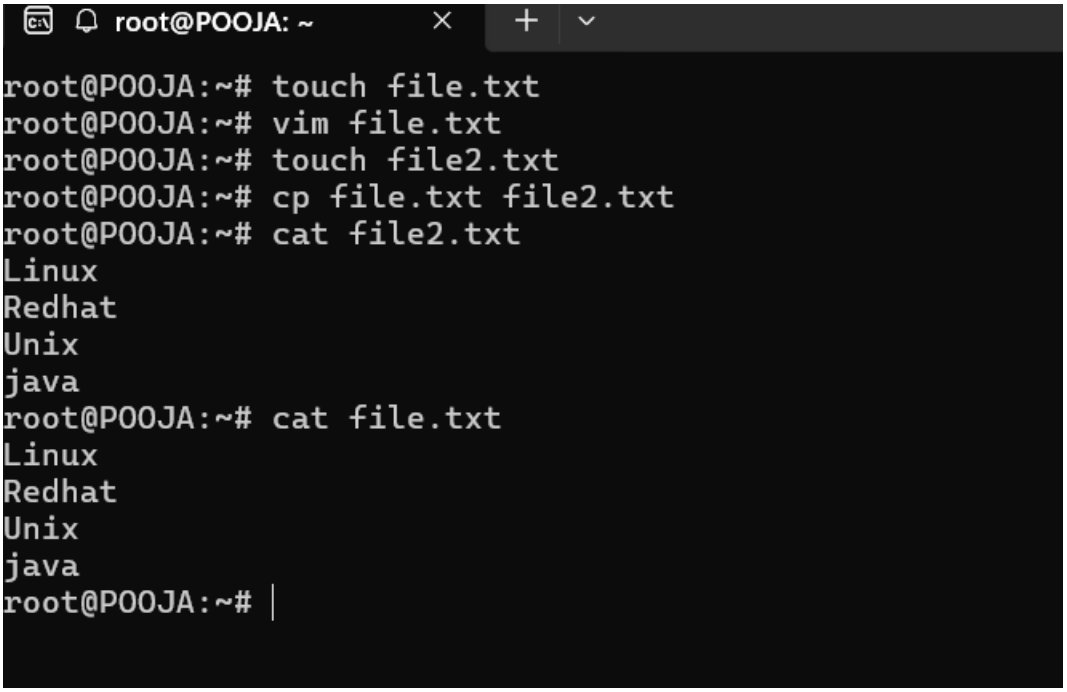
  It will list all directories, files and all hidden file.



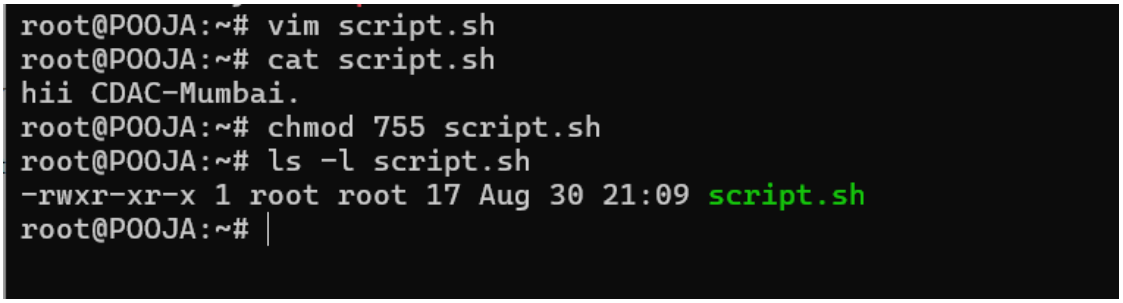
- **rm file.txt**
  - This command use for to delete file.

```
root@POOJA:~# ls -l file.txt
total 0
root@POOJA:~# rm file.txt
rm: cannot remove 'file.txt': Is a directory
root@POOJA:~# rm filee.txt
root@POOJA:~# ls -l filee.txt
ls: cannot access 'filee.txt': No such file or directory
root@POOJA:~#
```

- **cp file1.txt file2.txt**
  - This command use for copy the data of one file to another file.



- **mv file.txt /path/to/directory/**
    - This command use to move data from one file to another but after moving data it will remove from original file. It can also be used to rename a file.
- **chmod 755 script.sh**



    - This command use to give the permission to group , others, and owner.
    - This is numeric method to change permission .
    - Read=4
    - Write = 2
    - Execute=1
    - None=0
- **grep "pattern" file.txt**
    - **It use for search word from file.**

```
root@POOJA:~# touch file1.txt
root@POOJA:~# vim file1.txt
root@POOJA:~# cat file1.txt
Hii
pooja here.
4+4+4 is very best pattern for cdac.
root@POOJA:~# grep "pattern" file1.txt
4+4+4 is very best pattern for cdac.
root@POOJA:~#
```

- **kill PID**
    - This command use to terminate the process with the specific ID.
- **mkdir mydir && cd mydir && touch file.txt && echo "Hello, World!" > file.txt && cat file.txt**

  In this sequence first created the mydir directory the crected file.txt. then there is hello world ! msg in fille directory and it will print msg using cat command.

```
root@POOJA:~# mkdir mydir && cd mydir && touch file.txt && echo "Hello, World!" > file.txt && cat file.txt
Hello, World!
root@POOJA:~/mydir#
```

- **ls -l | grep ".txt"**

This command use to list all files with .txt extension.

```
root@POOJA:~# ls -l | grep ".txt"
-rw-r--r-- 1 root root  119 Aug 29 16:52 data.txt
-rw-r--r-- 1 root root    0 Aug 29 19:32 duplicate.txt
-rw------- 1 root root   71 Aug 29 17:39 duplicate.txt.save
-rw-r--r-- 1 root root    0 Aug 29 19:31 duplicate_sort.txt
drwxr-sr-x 2 root root 4096 Aug 30 20:12 file.txt
-rw-r--r-- 1 root root   50 Aug 30 20:54 file1.txt
-rw-r--r-- 1 root root    0 Aug 30 20:55 file2.txt
-rw-r--r-- 1 root root   44 Aug 29 19:27 fruit.txt
-rw-r--r-- 1 root root   67 Aug 29 19:27 fruit1.txt
-rw-r--r-- 1 root root   44 Aug 29 17:29 input.txt
-rw-r--r-- 1 root root  224 Aug 29 17:06 numbers.txt
-rw-r--r-- 1 root root   44 Aug 29 17:29 output.txt
root@POOJA:~#
```

cat file1.txt file2.txt | sort | uniq

- This command use to concatenate the data of from fil1 to file2. Then it will sort and It wiil show the uniq data from file1.

```
drwxr-sr-x 2 root root 4096 Aug 30 20:32 source_directory
root@POOJA:~# touch file1.txt
root@POOJA:~# vim file1.txt
root@POOJA:~# touch file2.txt
root@POOJA:~# cat file1.txt
appple
orange
kiwi
mango
kiwi
apple
grapes
orange
root@POOJA:~# cat file1.txt file2.txt | sort | uniq
apple
appple
grapes
kiwi
mango
orange
root@POOJA:~#
```

- **ls -l | grep "^d"**
    - This command lists all files and directories in long format and filters the output to show only directories (lines that start with "d").

```
/path/to/search/file1.txt:pattern is use in the  structure.
root@POOJA:/path/to/search# cd
root@POOJA:~# ls -l | grep "^d"
drwxr-xr-x 4 root root 4096 Aug 29 16:40 LinuxAssignment
drwxr-sr-x 3 root root 4096 Aug 30 20:34 destination_directory
drwxr-sr-x 2 root root 4096 Aug 30 20:12 file.txt
drwxr-sr-x 2 root root 4096 Aug 30 12:42 mkscripts
drwxr-sr-x 3 root root 4096 Aug 30 12:58 myscripts
drwxr-sr-x 2 root root 4096 Aug 30 20:32 source_directory
root@POOJA:~#
```

- **grep -r "pattern" /path/to/directory/**
    - **This command is use to search string from directory or file.**

```
root@POOJA:~# cd /path/to/search
root@POOJA:/path/to/search# touch pattern.txt
root@POOJA:/path/to/search# touch file1.txt
root@POOJA:/path/to/search# vim file1.txt
root@POOJA:/path/to/search# vim file1.txt
root@POOJA:/path/to/search# grep -r "pattern" /path/to/directory/
grep: /path/to/directory/: No such file or directory
root@POOJA:/path/to/search# grep -r "pattern" /path/to/search
root@POOJA:/path/to/search# cd
root@POOJA:~# grep -r "pattern" /path/to/search/
root@POOJA:~# cd /path/to/search
root@POOJA:/path/to/search# grep -r "pattern" /path/to/search/
root@POOJA:/path/to/search# touch file1.txt
root@POOJA:/path/to/search# cat file1.txt
Hey CDAC-Mumbai.
Pattern is use in the  structure.
root@POOJA:/path/to/search# vim file1.txt
root@POOJA:/path/to/search# grep -r "pattern" /path/to/search/
/path/to/search/file1.txt:pattern is use in the  structure.
root@POOJA:/path/to/search#
```

- **cat file1.txt file2.txt | sort | uniq -d**
    - This command concatenates the contents of file1.txt and file2.txt, sorts the lines, and then displays only the duplicate lines.
- **chmod 644 file.txt**
    - **This command change permission of file it gives write and read permission to owner and read permission to group and other.**
    - Read=4
    - Write = 2
    - Execute=1
    - None=0

- **cp -r source_directory destination_directory**
    - This command copies the entire source_directory (including its contents) to destination_directory.

```
root@POOJA: ~
root@POOJA:~# mkdir source_directory
root@POOJA:~# mkdir destination_directory
root@POOJA:~# cd source_directory
root@POOJA:~/source_directory# touch pooja.txt
root@POOJA:~/source_directory# touch MIT.txt
root@POOJA:~/source_directory# touch Linux.txt
root@POOJA:~/source_directory# cd source_directory
-bash: cd: source_directory: No such file or directory
root@POOJA:~/source_directory# cd
root@POOJA:~# cd destination_directory
root@POOJA:~/destination_directory# touch CDAC.txt
root@POOJA:~/destination_directory# touch CCEE.txt
root@POOJA:~/destination_directory# cd
root@POOJA:~# cp -r source_directory destination_directory
root@POOJA:~# ls -ld destination_directory
drwxr-sr-x 3 root root 4096 Aug 30 20:34 destination_directory
root@POOJA:~# ls -l destination_directory
total 4
-rw-r--r-- 1 root root    0 Aug 30 20:33 CCEE.txt
-rw-r--r-- 1 root root    0 Aug 30 20:33 CDAC.txt
drwxr-sr-x 2 root root 4096 Aug 30 20:34 source_directory
root@POOJA:~#
```

- **find /path/to/search -name "*.txt"**
    - **This command is use to search all .txt file from the path.**

```
root@POOJA:~# mkdir -p /path/to/search
root@POOJA:~# cd /path/to/search
root@POOJA:/path/to/search# touch f1.txt
root@POOJA:/path/to/search# touch f111.txt
root@POOJA:/path/to/search# touch file99.txgt
root@POOJA:/path/to/search# touch file99.txt
root@POOJA:/path/to/search# cd
root@POOJA:~# find /path/to/search -name "*.txt"
/path/to/search/f111.txt
/path/to/search/f1.txt
/path/to/search/file99.txt
root@POOJA:~#
```

- **chmod u+x file.txt**

    This command will give the execute permission to user.

```
root@POOJA:~# ls
LinuxAssignment  docs.tar.gz    duplicate.txt.save  fruit.txt   input.txt  myscripts    output.txt
data.txt         duplicate.txt  duplicate_sort.txt  fruit1.txt  mkscripts  numbers.txt
root@POOJA:~# mkdir file.txt
root@POOJA:~# chmod u+x file.txt
root@POOJA:~# ls -l
total 48
drwxr-xr-x 4 root root 4096 Aug 29 16:40 LinuxAssignment
-rw-r--r-- 1 root root  119 Aug 29 16:52 data.txt
-rw-r--r-- 1 root root   45 Aug 29 16:15 docs.tar.gz
-rw-r--r-- 1 root root    0 Aug 29 19:32 duplicate.txt
-rw------- 1 root root   71 Aug 29 17:39 duplicate.txt.save
-rw-r--r-- 1 root root    0 Aug 29 19:31 duplicate_sort.txt
drwxr-sr-x 2 root root 4096 Aug 30 20:12 file.txt
-rw-r--r-- 1 root root   44 Aug 29 19:27 fruit.txt
-rw-r--r-- 1 root root   67 Aug 29 19:27 fruit1.txt
-rw-r--r-- 1 root root   44 Aug 29 17:29 input.txt
drwxr-sr-x 2 root root 4096 Aug 30 12:42 mkscripts
drwxr-sr-x 3 root root 4096 Aug 30 12:58 myscripts
-rw-r--r-- 1 root root  224 Aug 29 17:06 numbers.txt
-rw-r--r-- 1 root root   44 Aug 29 17:29 output.txt
root@POOJA:~#
```

- **echo $PATH**
    - This command displays the current value of the PATH environment variable, which lists the directories where the shell looks for executable files

```
root@POOJA:~# echo $path

root@POOJA:~# echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/usr/lib/wsl/lib:/mnt/c/Program
 Files/Python311/Scripts/:/mnt/c/Program Files/Python311/:/mnt/c/Program Files/Common Files/Oracle/Java/javapath:/mnt/c/
windows/system32:/mnt/c/windows:/mnt/c/windows/System32/Wbem:/mnt/c/windows/System32/WindowsPowerShell/v1.0/:/mnt/c/wind
ows/System32/OpenSSH/:/mnt/c/Program Files (x86)/Microsoft SQL Server/100/Tools/Binn/:/mnt/c/Program Files/Microsoft SQL
 Server/100/Tools/Binn/:/mnt/c/Program Files/Microsoft SQL Server/100/DTS/Binn/:/mnt/c/Program Files/Java/jdk-20/bin:/mn
t/c/Program Files (x86)/Microsoft SQL Server/160/Tools/Binn/:/mnt/c/Program Files/Microsoft SQL Server/160/Tools/Binn/:/
mnt/c/Program Files/Microsoft SQL Server/Client SDK/ODBC/170/Tools/Binn/:/mnt/c/Program Files/Microsoft SQL Server/160/D
TS/Binn/:/mnt/c/Program Files/Azure Data Studio/bin:/mnt/c/Program Files/Microsoft SQL Server/150/Tools/Binn/:/mnt/c/Pro
gram Files/Java/jdk-20/bin:/mnt/c/apache-tomcat-10/bin:/mnt/c/Program Files/Git/cmd:/mnt/c/OpenSSL-Win64/bin:/mnt/c/Prog
ram Files/Microsoft SQL Server/130/Tools/Binn/:/mnt/c/Program Files (x86)/Microsoft SQL Server/160/DTS/Binn/:/mnt/c/Prog
ram Files/dotnet/:/mnt/c/Users/pooja/AppData/Local/Microsoft/WindowsApps:/mnt/c/Users/pooja/AppData/Local/Programs/Micro
soft VS Code/bin:/snap/bin
root@POOJA:~#
```