SHELL SCRIPTING

What is Shell Scripting

A shell script is a list of commands in a computer program that is run by the Unix shell which is a command line interpreter. A shell script usually has comments that describe the steps. The different operations performed by shell scripts are program execution, file manipulation, and text printing. A wrapper is also a kind of shell script that creates the program environment, runs the program, etc.

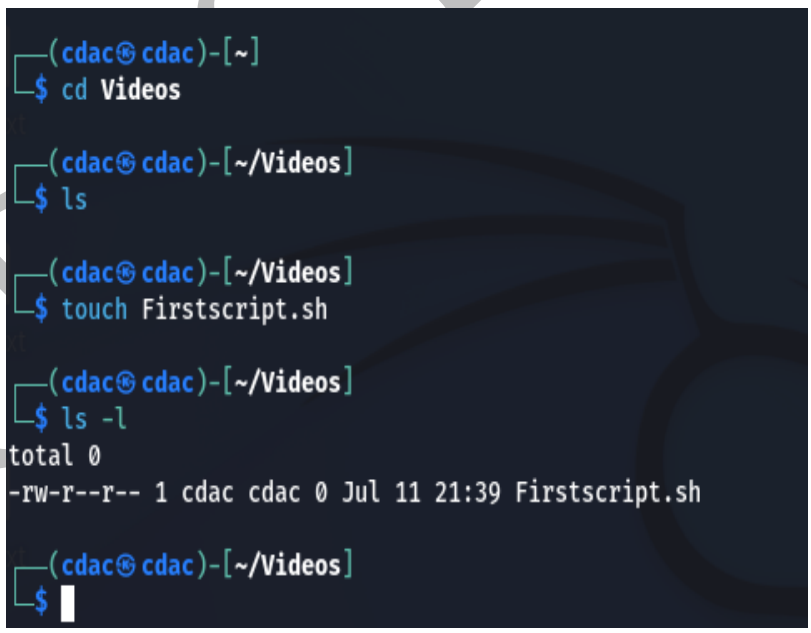
Steps for Writing and Executing Shell Scripting

- Open the terminal in Linux OS.
- Go to the directory where you want to create your script
- Create a file with a .sh extension
- Make the script executable with the command chmod +x <filename>
- Write the script in the file using an editor
- Run the script using. /<filename>.

Now let's execute the above steps.

1. **Open Terminal in Kali Linux Virtual machine, as done in other lab manuals and Create file with .sh format**

   Touch "FileName.sh"



2. **Make File Executable**

   chmod "FileName.sh"

```
┌──(cdac㉿cdac)-[~/Videos]
└─$ ls -l
total 0
-rw-r--r-- 1 cdac cdac 0 Jul 11 21:39 Firstscript.sh

┌──(cdac㉿cdac)-[~/Videos]
└─$ chmod +x Firstscript.sh

┌──(cdac㉿cdac)-[~/Videos]
└─$ ls -l
total 0
-rwxr-xr-x 1 cdac cdac 0 Jul 11 21:39 Firstscript.sh

┌──(cdac㉿cdac)-[~/Videos]
└─$
```

3. Write the Script Using Text Editors

```
┌──(cdac㉿cdac)-[~/Videos]
└─$ nano Firstscript.sh
```

```
  GNU nano 6.2                                          Firstscript.sh *
#!/usr/bin/env bash
# read-menu: a menu driven system information program
clear
cat << EOF
Please Select:
    1. Display System Information
    2. Display Disk Space
    3. Display Home Space Utilization
    0. Quit
EOF
echo -n 'Enter selection [0-3]: '
read -r sel
case $sel in
        0) echo "Program terminated.";;
        1) echo "Hostname: $HOSTNAME"; uptime;;
        2) df -h;;
        3)
                if [ "$UID" = 0 ]; then
                        echo "Home Space Utilization (All Users)"
                        du -sh /home/*
                else
                        echo "Home Space Utilization ($USER)"
                        du -sh "$HOME"
                fi
        ;;
        *)
                echo "Invalid entry." >&2
                exit 1
esac
```

****This is the Script executed in the above screenshot****

Script

```
#!/usr/bin/env bash
# read-menu: a menu-driven system information program
clear
cat << EOF
Please Select:
   1. Display System Information
```

```
   2. Display Disk Space
   3. Display Home Space Utilization
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EOF
echo -n 'Enter selection [0-3]: '
read -r sel
case $sel in
        0) echo "Program terminated.";;
        1) echo "Hostname: $HOSTNAME"; uptime;;
        2) df -h;;
        3)
                if [ "$UID" = 0 ]; then
                        echo "Home Space Utilization (All Users)"
                        du -sh /home/*
                else
                        echo "Home Space Utilization ($USER)"
                        du -sh "$HOME"
                fi
        ;;
        *)
                echo "Invalid entry." >&2
                exit 1
esac
```
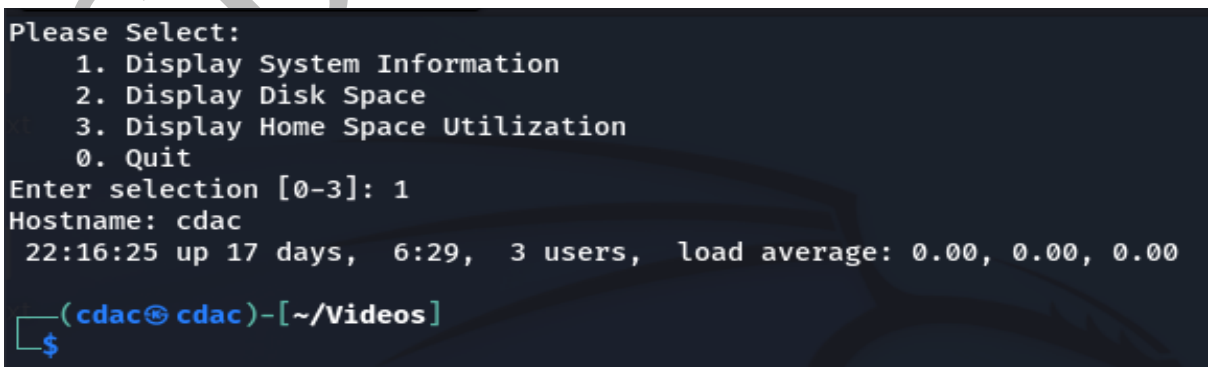

Running the above Script

Execute by **./filename.sh (Write this Command in the terminal)**

Script Output for Option 1 (If you Choose Option 1)



Script Output for Option 2 (If you Choose Option 2)

```
Please Select:
    1. Display System Information
    2. Display Disk Space
    3. Display Home Space Utilization
    0. Quit
Enter selection [0-3]: 2
df: /run/user/1000/doc: Operation not permitted
Filesystem      Size  Used Avail Use% Mounted on
udev            1.9G     0  1.9G   0% /dev
tmpfs           387M  1.1M  386M   1% /run
/dev/sda1        78G   12G   62G  16% /
tmpfs           1.9G     0  1.9G   0% /dev/shm
tmpfs           5.0M     0  5.0M   0% /run/lock
tmpfs           387M  100K  387M   1% /run/user/1000

┌──(cdac㉿cdac)-[~/Videos]
└─$
```

Script Output for Option 3 (If you Choose Option 3)

```
Please Select:
    1. Display System Information
    2. Display Disk Space
    3. Display Home Space Utilization
    0. Quit
Enter selection [0-3]: 3
Home Space Utilization (cdac)
117M    /home/cdac

┌──(cdac㉿cdac)-[~/Videos]
└─$
```