Laboratory Assignment 2

On

Design Principles of Operating System (CSE 3249)

Submitted by

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Assignment 2: Familiarization with basic Commands in Unix Operating System and Shell Programming

Objective of this Assignment:
- To learn basic concepts of shell programming
- To lean concept of command line argument in shell script.

Observation:

1:

```
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ cat > a.txt
1
2
^C
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ cat > b.txt
1
3
4
^C
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ cat > c.txt
5
6
^C
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ gedit prog.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ bash prog.sh
1
1
2
3
4
5
6
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$
```

prog.sh
~/DOS_2241016309/DOSAss2

```
1 #!/bin/bash
2 sort a.txt b.txt c.txt > result.txt
3 cat result.txt
```

sh ∨   Tab Width: 4 ∨   Ln 2, Col 36   INS

2:

```
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ gedit systeminfo.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ chmod u+x systeminfo
chmod: cannot access 'systeminfo': No such file or directory
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ chmod u+x systeminfo.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ systeminfo.sh
systeminfo.sh: command not found
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ alias systeminfo='/home/ejdotp/DOS_2241016
309/DOSAss2/systeminfo.sh'
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ systeminfo
Login Name: ejdotp
UNIX System Name: Linux
SHELL Name: /bin/bash
PATH: /home/ejdotp/DOS_2241016309/DOSAss2
Total Files: a.txt
b.txt
c.txt
prog.sh
result.txt
systeminfo.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$
```

```sh
1 echo "Login Name: $LOGNAME"
2 echo "UNIX System Name: `uname`"
3 echo "SHELL Name: $SHELL"
4 echo "PATH: $PWD"
5 echo "Total Files: `ls`"
```

3:

```
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ gedit dtcal.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ chmod u+x dtcal.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ ./dtcal.sh
Date: Sat Oct 26 12:23:27 PM IST 2024
Calender:
     March 2022
Su Mo Tu We Th Fr Sa
       1  2  3  4  5
 6  7  8  9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$
```

*dtcal.sh

```sh
1 #!/bin/bash
2 echo "Date: `date`"
3 echo -e "Calender: \n`cal march 2022`"
```

4:

```
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ gedit nvwc.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ chmod u+x nvwc.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ ./nvwc.sh
Filename: dtcal.sh
Line count: 3
Word count: 10
Char count: 71
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$
```

nvwc.sh

```sh
1 #!/bin/bash
2 echo "Filename: dtcal.sh"
3 echo "Line count: `wc -l < dtcal.sh`"
4 echo "Word count: `wc -w < dtcal.sh`"
5 echo "Char count: `wc -c < dtcal.sh`"
```

Saving file "~/DOS_2241016309/DOSAss2/nvwc.sh"...

5:

```
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ gedit nvwc2.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ chmod u+x nvwc2.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ ./nvwc2.sh dtcal.sh
Filename          linecount          wordcount          charcount
dtcal.sh              3                  10                 71
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$
```

nvwc2.sh
~/DOS_2241016309/DOSAss2

```bash
#!/bin/bash
echo -e "Filename\tlinecount\t wordcount\tcharcount"
echo -e "$1\t\t`wc -l < $1`\t\t`wc -w < $1`\t\t`wc -c < $1`"
```

sh ∨   Tab Width: 4 ∨   Ln 3, Col 57   INS

6:

```
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ gedit darg.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ bash darg.sh 10 20 30
1st argument: 10
2nd argument: 20
all arguments: 10 20 30
Total arguments: 3
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$
```

darg.sh
~/DOS_2241016309/DOSAss2

```bash
#!/bin/nash
echo "1st argument: $1"
echo "2nd argument: $2"
echo "all arguments: $@"
echo "Total arguments: $#"

```

Saving file "~/DOS_2241016309/DOSAss2/darg.sh"...   sh ∨   Tab Width: 4 ∨   Ln 6, Col 1   INS

7:

```
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ gedit ndisp.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ chmod u+x ndisp.sh
ejdotp@Belzeebub:~/DOS_2241016309/DOSAss2$ ./ndisp.sh 2 3 darg.sh
Filename: darg.sh

First 2 lines:
#!/bin/nash
echo "1st argument: $1"

Last 3 lines:
echo "all arguments: $@"
echo "Total arguments: $#"

Total no. of lines: 6
```

ndisp.sh
~/DOS_2241016309/DOSAss2

```bash
#!/bin/bash
echo "Filename: $3"
echo -e "\nFirst $1 lines:"
echo "`head -$1 $3`"
echo -e "\nLast $2 lines:"
echo "`tail -$2 $3`"
echo -e "\nTotal no. of lines: `wc -l < $3`"
```

sh ∨   Tab Width: 4 ∨   Ln 7, Col 45   INS