

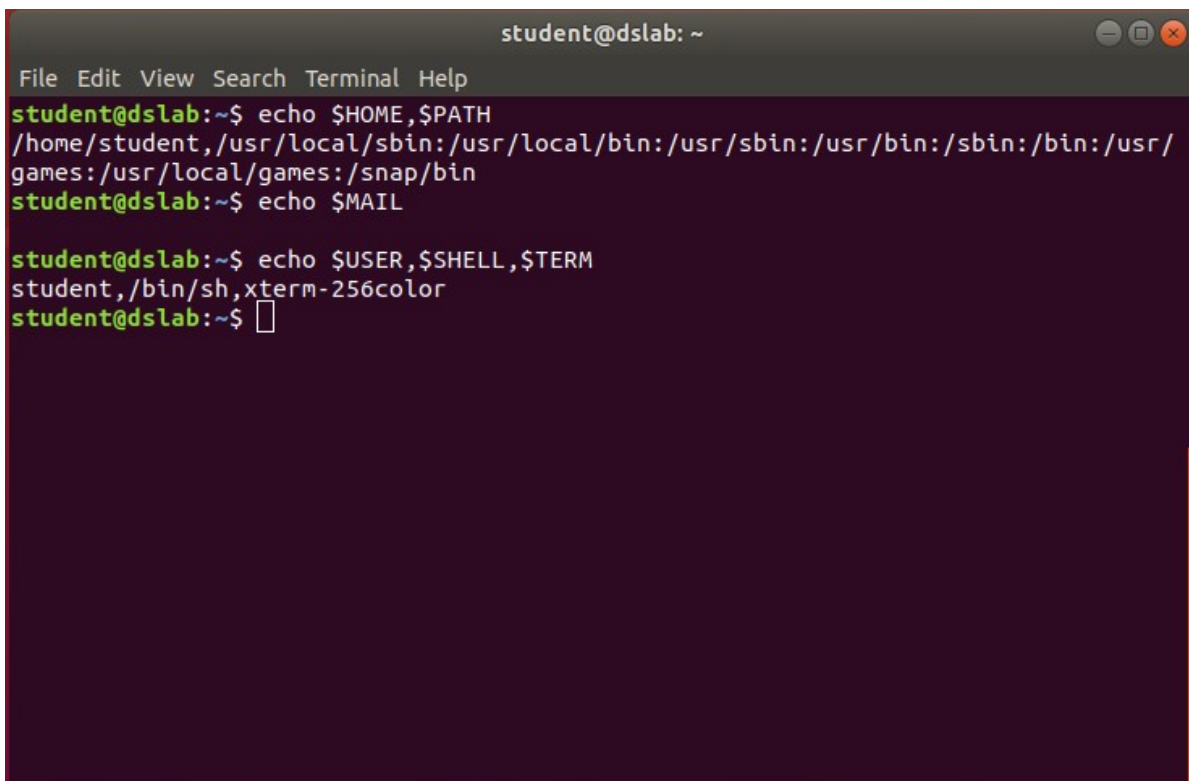
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## OST LAB: Week 2

Ex-1)

Q1)

```
echo $HOME,$PATH
echo $MAIL
echo $USER,$SHELL,$TERM
```

A screenshot of a terminal window titled 'student@dslab: ~'. The terminal has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The prompt is 'student@dslab:~\$'. The first command is 'echo \$HOME,\$PATH', which outputs '/home/student,/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin'. The second command is 'echo \$MAIL', which outputs an empty line. The third command is 'echo \$USER,\$SHELL,\$TERM', which outputs 'student,/bin/sh,xterm-256color'. The prompt returns to 'student@dslab:~\$' with a cursor.

```
student@dslab: ~
File Edit View Search Terminal Help
student@dslab:~$ echo $HOME,$PATH
/home/student,/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/
games:/usr/local/games:/snap/bin
student@dslab:~$ echo $MAIL

student@dslab:~$ echo $USER,$SHELL,$TERM
student,/bin/sh,xterm-256color
student@dslab:~$
```

Q2)

```
firstname=Ayush
lastname=Goyal
echo $firstname $lastname
export lastname
sh
$echo $firstname $lastname
^D
echo $firstname $lastname
```

```
student@dslab: ~  
File Edit View Search Terminal Help  
student@dslab:~$ firstname=Ayush  
student@dslab:~$ lastname=Goyal  
student@dslab:~$ echo $firstname $lastname  
Ayush Goyal  
student@dslab:~$ export lastname  
student@dslab:~$ sh  
$ echo $firstname $lastname  
Goyal  
$  
student@dslab:~$ echo $firstname $lastname  
Ayush Goyal  
student@dslab:~$
```

Q3)

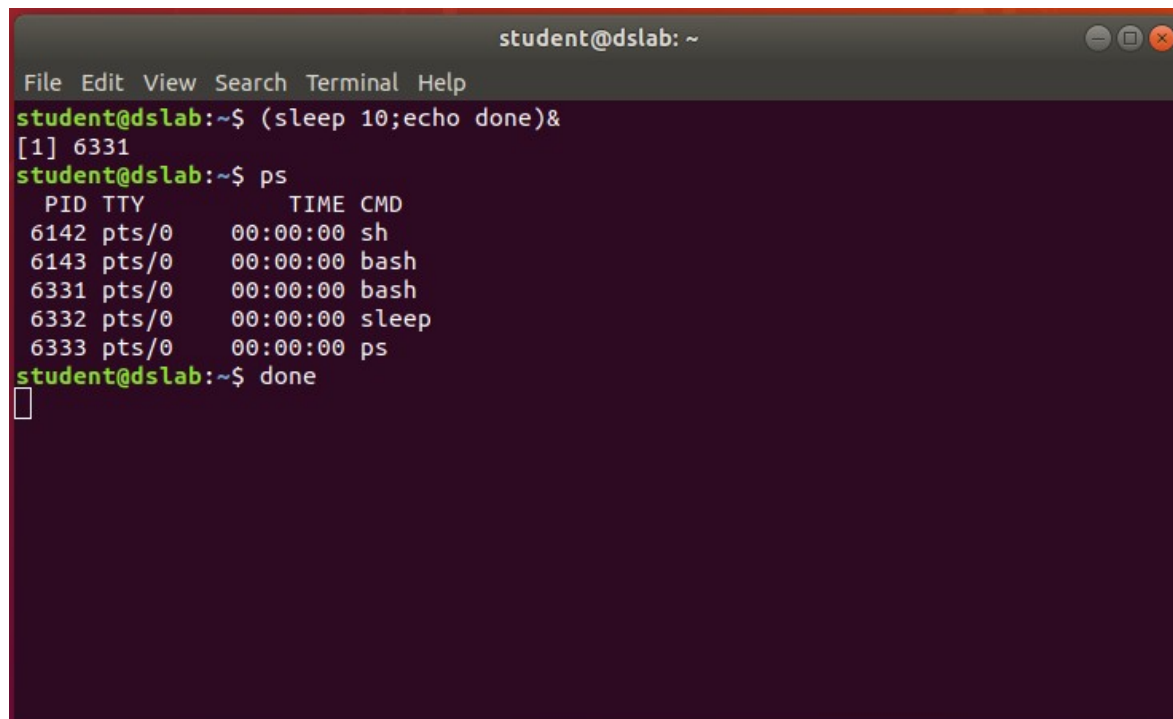
```
cat>script.sh  
echo the name of this script is $0  
echo the first argument is $1  
echo a list of all the arguments is $*  
echo this script places the date into a temporary file  
echo called $1.$$  
date>$1.$$  
rm $1.$$
```

```
student@dslab: ~  
File Edit View Search Terminal Help  
student@dslab:~$ cat>script.sh  
echo the name of this script is $0  
echo the first argument is $1  
echo a list of all the arguments is $*  
echo this script places the date into a temporary file  
echo called $1.$$  
date>$1.$$  
rm $1.$$  
student@dslab:~$ chmod +x script.sh  
student@dslab:~$ ./script.sh Rahul Sachin Kumble  
the name of this script is ./script.sh  
the first argument is Rahul  
a list of all the arguments is Rahul Sachin Kumble  
this script places the date into a temporary file  
called Rahul.6294  
student@dslab:~$
```

Ex 2)

Q1)

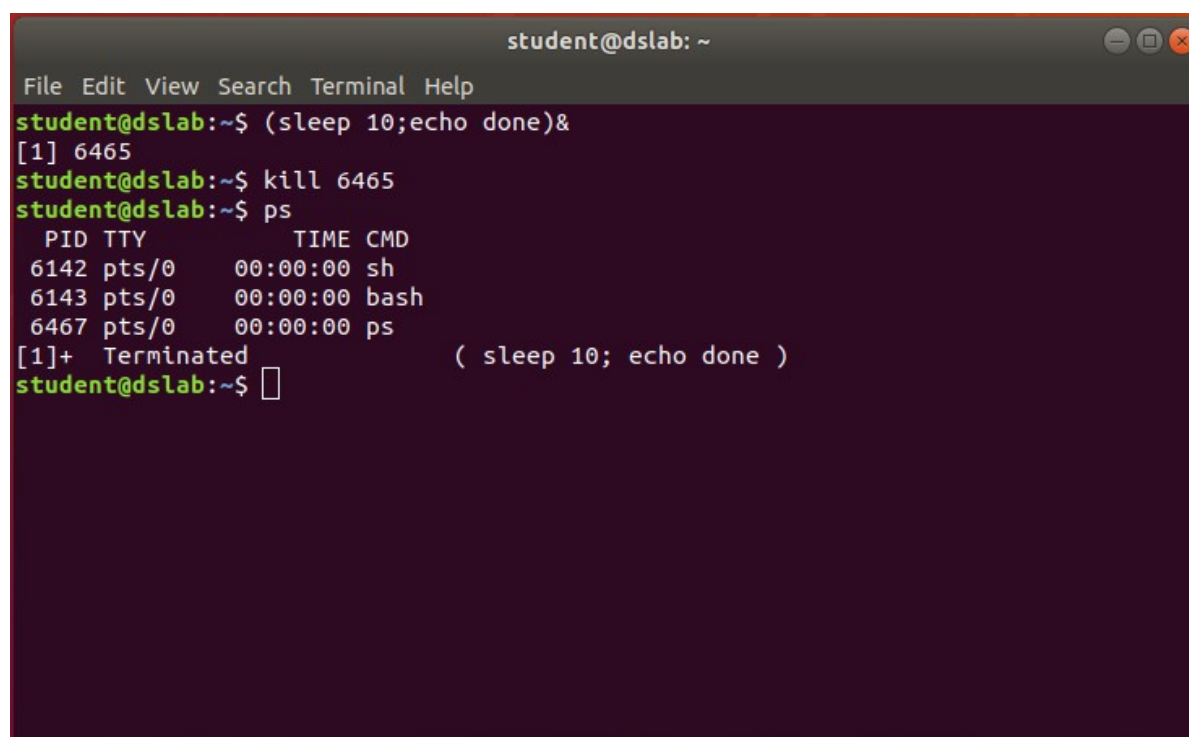
```
(sleep 10;echo done)&  
ps
```

A terminal window titled 'student@dslab: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The user enters '(sleep 10;echo done)&' and the prompt returns '[1] 6331'. Then the user enters 'ps' and a table of processes is displayed. The table has columns: PID, TTY, TIME, and CMD. The processes listed are: PID 6142 (pts/0, 00:00:00, sh), PID 6143 (pts/0, 00:00:00, bash), PID 6331 (pts/0, 00:00:00, bash), PID 6332 (pts/0, 00:00:00, sleep), and PID 6333 (pts/0, 00:00:00, ps). Finally, the user enters 'done' and the prompt returns 'done' followed by a cursor.

```
student@dslab: ~  
File Edit View Search Terminal Help  
student@dslab:~$ (sleep 10;echo done)&  
[1] 6331  
student@dslab:~$ ps  
  PID TTY          TIME CMD  
 6142 pts/0        00:00:00 sh  
 6143 pts/0        00:00:00 bash  
 6331 pts/0        00:00:00 bash  
 6332 pts/0        00:00:00 sleep  
 6333 pts/0        00:00:00 ps  
student@dslab:~$ done  
█
```

Q2)

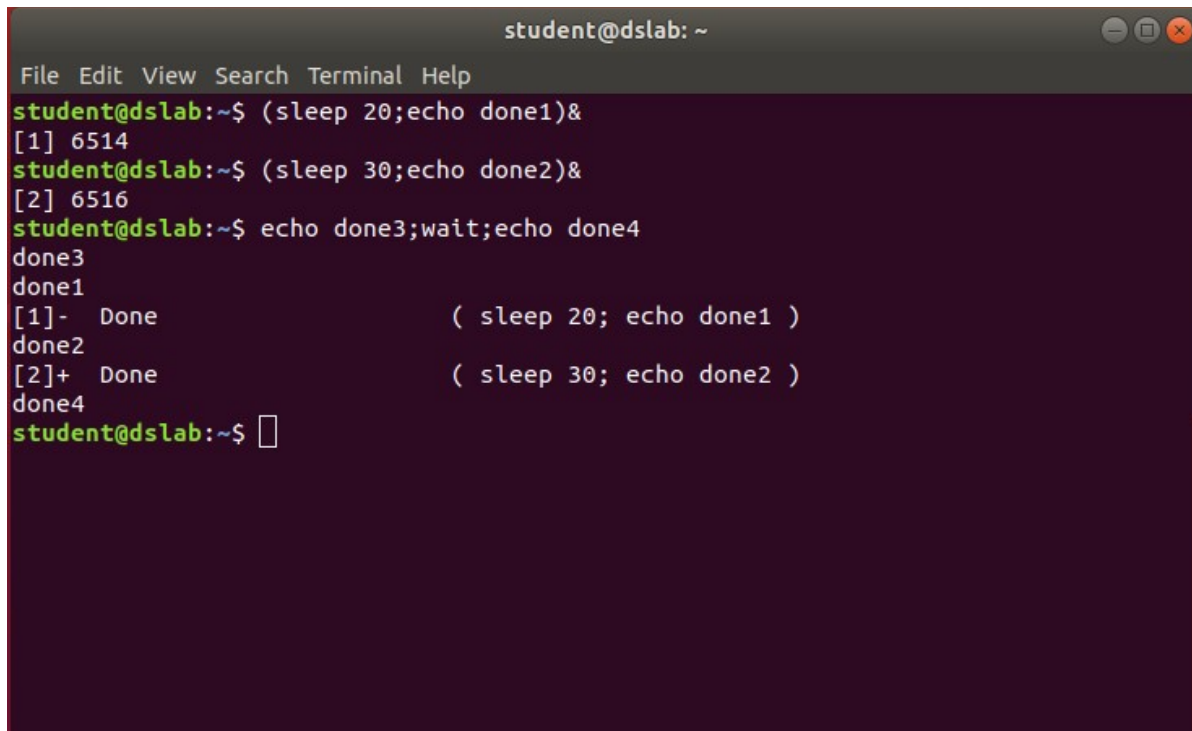
```
(sleep 10;echo done)&  
kill 6465
```

A terminal window titled 'student@dslab: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The user enters '(sleep 10;echo done)&' and the prompt returns '[1] 6465'. Then the user enters 'kill 6465'. Next, the user enters 'ps' and a table of processes is displayed. The table has columns: PID, TTY, TIME, and CMD. The processes listed are: PID 6142 (pts/0, 00:00:00, sh), PID 6143 (pts/0, 00:00:00, bash), and PID 6467 (pts/0, 00:00:00, ps). Finally, the user enters 'done' and the prompt returns '[1]+ Terminated ( sleep 10; echo done )' followed by a cursor.

```
student@dslab: ~  
File Edit View Search Terminal Help  
student@dslab:~$ (sleep 10;echo done)&  
[1] 6465  
student@dslab:~$ kill 6465  
student@dslab:~$ ps  
  PID TTY          TIME CMD  
 6142 pts/0        00:00:00 sh  
 6143 pts/0        00:00:00 bash  
 6467 pts/0        00:00:00 ps  
[1]+  Terminated          ( sleep 10; echo done )  
student@dslab:~$ █
```

Q3)

```
(sleep 20;echo done1)&  
(sleep 30;echo done2)&  
echo done2;wait;echo done4
```



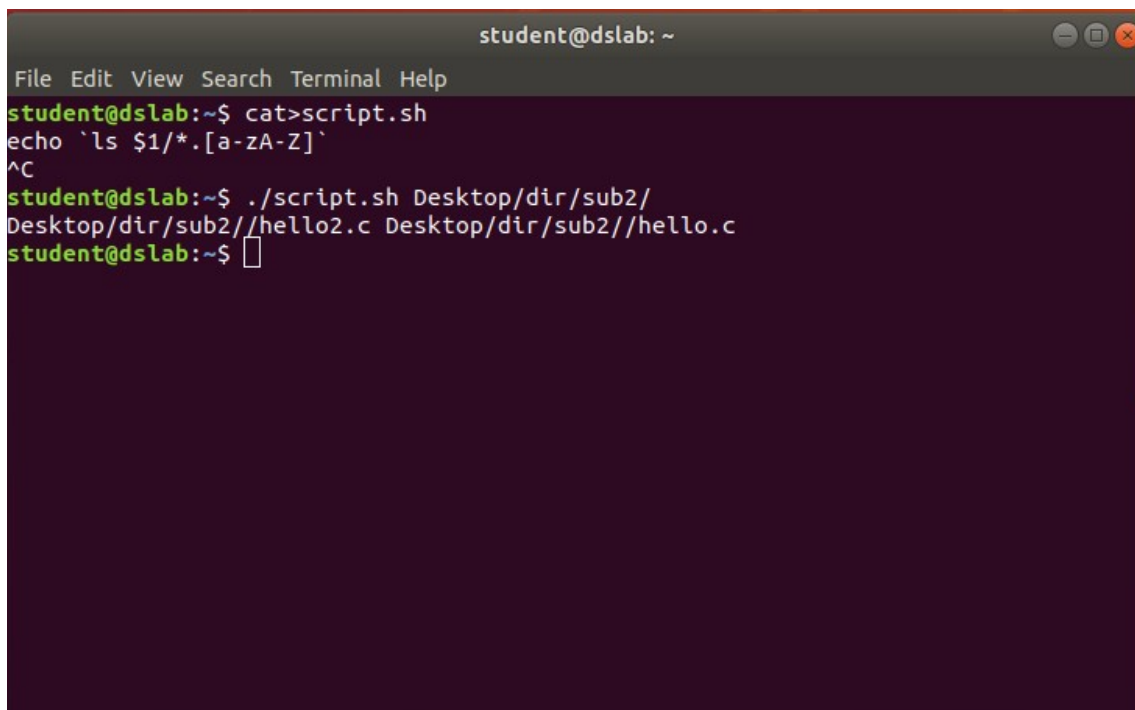
A terminal window titled 'student@dslab: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
student@dslab:~$ (sleep 20;echo done1)&  
[1] 6514  
student@dslab:~$ (sleep 30;echo done2)&  
[2] 6516  
student@dslab:~$ echo done3;wait;echo done4  
done3  
done1  
[1]-  Done                ( sleep 20; echo done1 )  
done2  
[2]+  Done                ( sleep 30; echo done2 )  
done4  
student@dslab:~$
```

Ex 3)

Q1)

```
cat>script.sh  
echo `ls $1/*.[a-zA-Z]`  
./script.sh Desktop/dir/sub2/
```

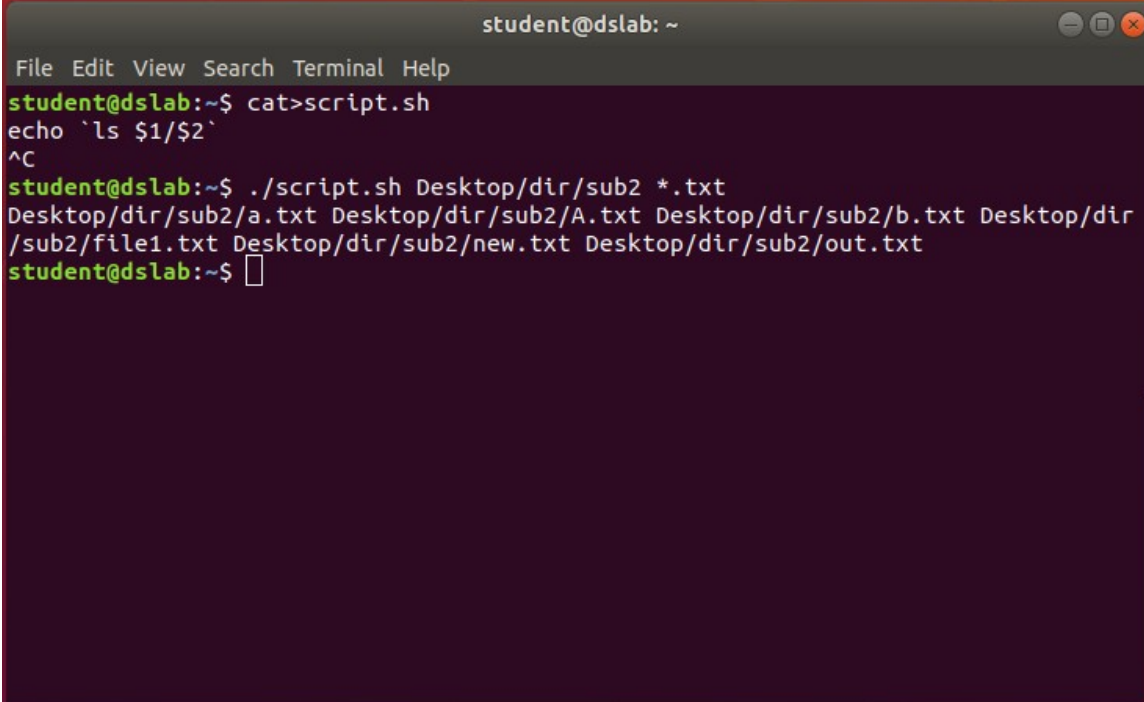


A terminal window titled 'student@dslab: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
student@dslab:~$ cat>script.sh  
echo `ls $1/*.[a-zA-Z]`  
^C  
student@dslab:~$ ./script.sh Desktop/dir/sub2/  
Desktop/dir/sub2//hello2.c Desktop/dir/sub2//hello.c  
student@dslab:~$
```

Q2)

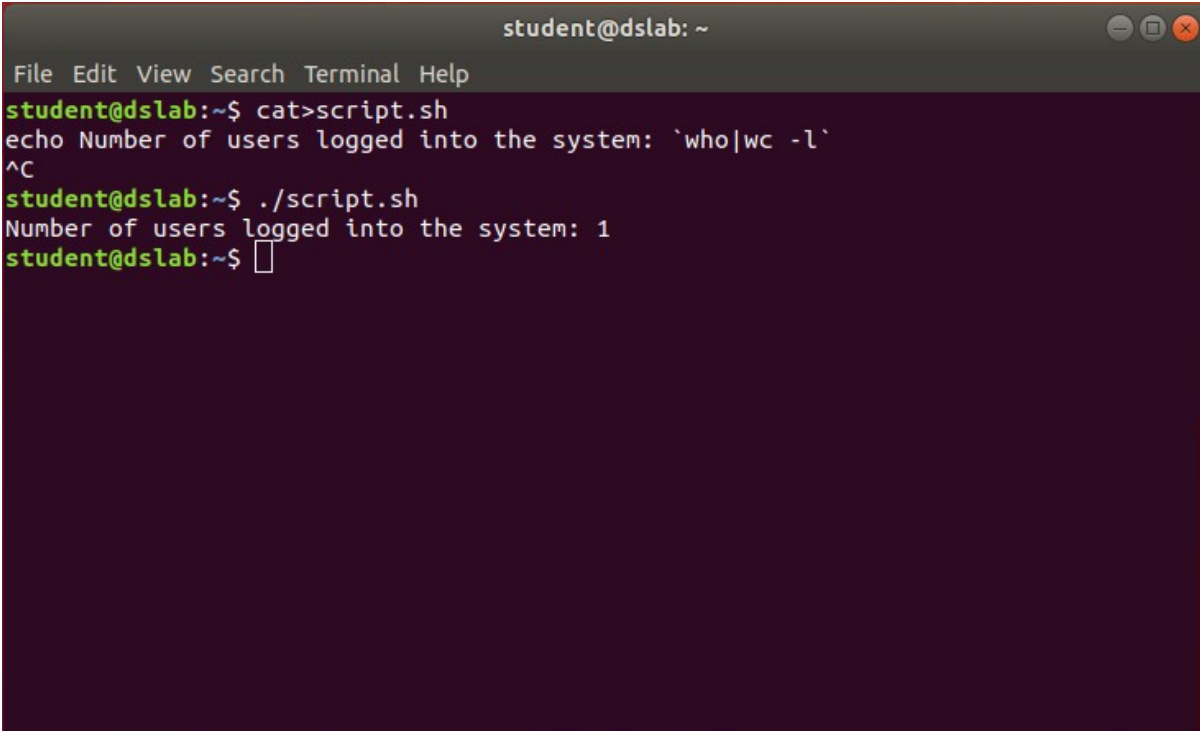
```
cat>script.sh
echo `ls $1/$2`
./script.sh Desktop/dir/sub2 *.txt
```

A terminal window titled 'student@dslab: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The user enters 'cat>script.sh' and presses Enter. The prompt changes to 'student@dslab:~\$'. The user enters 'echo `ls \$1/\$2`' and presses Enter, which results in '^C'. The user then enters './script.sh Desktop/dir/sub2 \*.txt' and presses Enter. The terminal displays the output: 'Desktop/dir/sub2/a.txt Desktop/dir/sub2/A.txt Desktop/dir/sub2/b.txt Desktop/dir/sub2/file1.txt Desktop/dir/sub2/new.txt Desktop/dir/sub2/out.txt'. The prompt returns to 'student@dslab:~\$' with a cursor.

```
student@dslab: ~
File Edit View Search Terminal Help
student@dslab:~$ cat>script.sh
echo `ls $1/$2`
^C
student@dslab:~$ ./script.sh Desktop/dir/sub2 *.txt
Desktop/dir/sub2/a.txt Desktop/dir/sub2/A.txt Desktop/dir/sub2/b.txt Desktop/dir/
/sub2/file1.txt Desktop/dir/sub2/new.txt Desktop/dir/sub2/out.txt
student@dslab:~$
```

Q3)

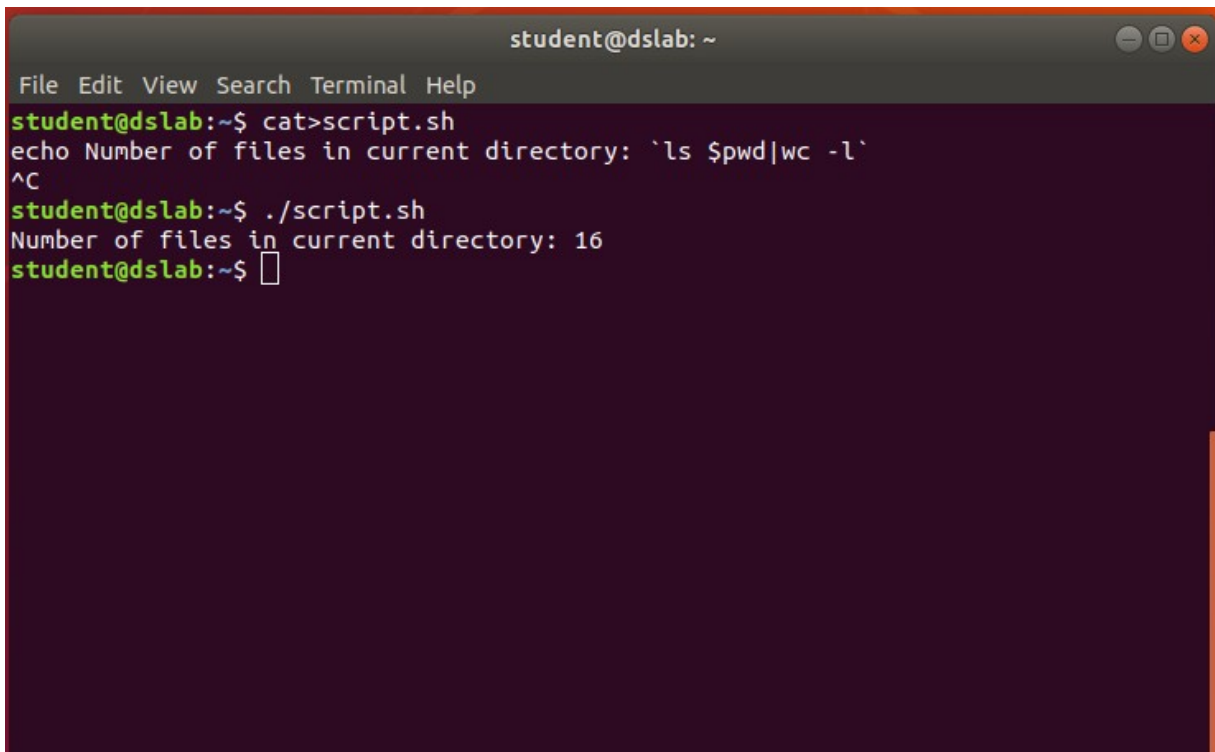
```
cat>script.sh
echo Number of users logged into the system : `who|wc -l`
./script.sh
```

A terminal window titled 'student@dslab: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The user enters 'cat>script.sh' and presses Enter. The prompt changes to 'student@dslab:~\$'. The user enters 'echo Number of users logged into the system : `who|wc -l`' and presses Enter, which results in '^C'. The user then enters './script.sh' and presses Enter. The terminal displays the output: 'Number of users logged into the system: 1'. The prompt returns to 'student@dslab:~\$' with a cursor.

```
student@dslab: ~
File Edit View Search Terminal Help
student@dslab:~$ cat>script.sh
echo Number of users logged into the system : `who|wc -l`
^C
student@dslab:~$ ./script.sh
Number of users logged into the system: 1
student@dslab:~$
```

Q4)

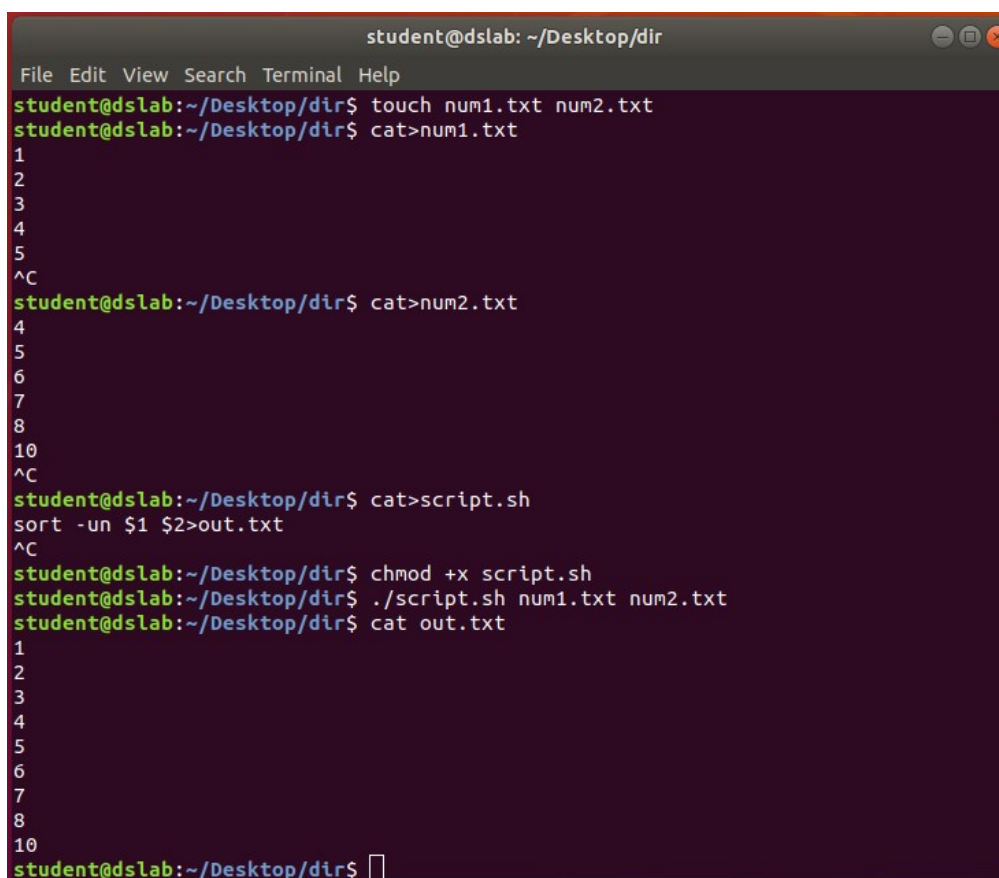
```
cat>script.sh
echo Number of files in current directory: `ls $pwd|wc -l`
^C
./script.sh
```

A terminal window titled 'student@dslab: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
student@dslab:~$ cat>script.sh
echo Number of files in current directory: `ls $pwd|wc -l`
^C
student@dslab:~$ ./script.sh
Number of files in current directory: 16
student@dslab:~$
```

Q5)

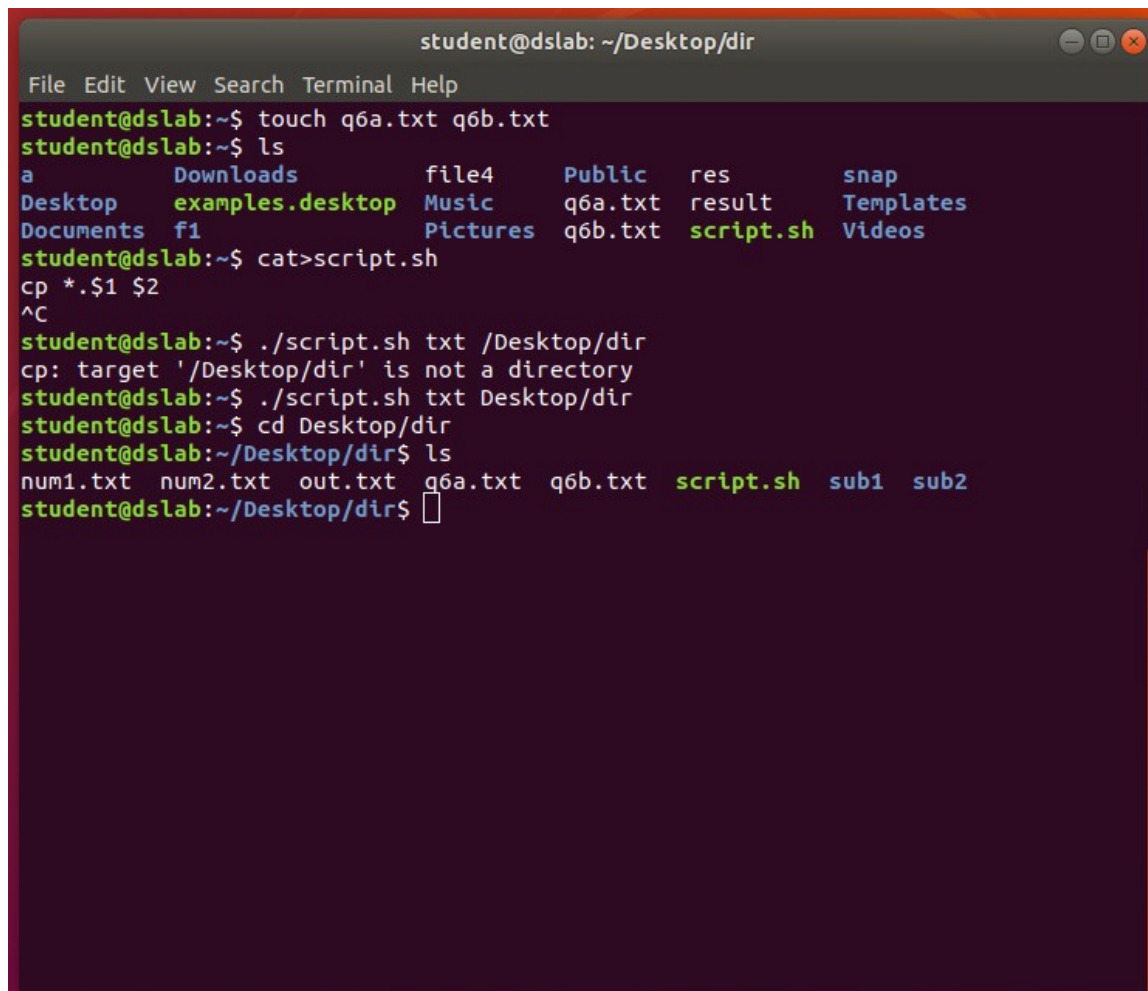
```
cat>script.sh
sort -un $1 $2>out.txt
chmod +x script.sh
./script.sh num1.txt num2.txt
```

A terminal window titled 'student@dslab: ~/Desktop/dir' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
student@dslab:~/Desktop/dir$ touch num1.txt num2.txt
student@dslab:~/Desktop/dir$ cat>num1.txt
1
2
3
4
5
^C
student@dslab:~/Desktop/dir$ cat>num2.txt
4
5
6
7
8
10
^C
student@dslab:~/Desktop/dir$ cat>script.sh
sort -un $1 $2>out.txt
^C
student@dslab:~/Desktop/dir$ chmod +x script.sh
student@dslab:~/Desktop/dir$ ./script.sh num1.txt num2.txt
student@dslab:~/Desktop/dir$ cat out.txt
1
2
3
4
5
6
7
8
10
student@dslab:~/Desktop/dir$
```

Q6)

```
cat>script.sh
cp *.$1 $2
./script.sh txt Desktop/dir
```



```
student@dslab: ~/Desktop/dir
File Edit View Search Terminal Help
student@dslab:~$ touch q6a.txt q6b.txt
student@dslab:~$ ls
a           Downloads      file4       Public     res        snap
Desktop    examples.desktop Music       q6a.txt    result     Templates
Documents  f1                Pictures    q6b.txt    script.sh  Videos
student@dslab:~$ cat>script.sh
cp *.$1 $2
^C
student@dslab:~$ ./script.sh txt /Desktop/dir
cp: target '/Desktop/dir' is not a directory
student@dslab:~$ ./script.sh txt Desktop/dir
student@dslab:~$ cd Desktop/dir
student@dslab:~/Desktop/dir$ ls
num1.txt  num2.txt  out.txt  q6a.txt  q6b.txt  script.sh  sub1  sub2
student@dslab:~/Desktop/dir$
```