

DTL Assignment 7 : Bash Scripting

1. Making new file and entering text into it
2. Making the file executable
3. Listing all the files in directory
4. Executing the file

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo echo Hello World! > hello_world.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 hello_world.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls
hello_world.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ bash hello_world.sh
Hello World!
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

1. Adding multiple lines to a file
2. Changing permission of the file created
3. Listing all the files in the directory
4. Executing the file

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ cat << ALLDONE >> multiline.sh
> echo Shrikant Hamand
> echo 112103048
> echo DTL Assignment 7
> ALLDONE
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 multiline.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls
hello_world.sh  multiline.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ bash multiline.sh
Shrikant Hamand
112103048
DTL Assignment 7
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

1. Opening Downloads directory
2. Creating a new file with current timestamp
3. Opening the file
4. Changing permissions
5. Listing the files in the directory
6. Executing the file

```
GNU nano 6.2                                     hello-world.sh
# !/bin/bash -xv
# Bash Scripting
echo "Hello World!! I'm Shrikant."
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ touch hello-world.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano hello-world.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod +x hello-world.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ./hello-world.sh
Hello World!! I'm Shrikant.
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

Special Parameters:

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano file1.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 file1.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls
file1.sh  hello-world.sh  hello_world.sh  multiline.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ bash file1.sh {A..Z}
S H R I
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

```
hariom@hariom-Lenovo-V14-IIL: ~/Desktop/112103048/Assignment 7
GNU nano 6.2                                     file1.sh *
# !/bin/bash -xv
echo ${19} ${8} ${18} ${9}
```

Exploring all special parameters:

```
GNU nano 6.2                                file2.sh *
#!/bin/bash

echo
echo $* Represents all arguments as single string
echo
echo $@ Represents all arguments as an Array rather than a string
echo
echo $# Total number of positional arguments
echo
echo $- Current flag position
echo
echo $$ PID of the shell
echo
echo $! PID of the last executed background command
echo
echo $0 Name of the shell or shell script
echo
echo $_ Final argument of the last executed foreground command
echo
echo $? Represents exit status of the last executed foreground command
echo
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano file2.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 file2.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ bash file2.sh {A..Z}

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

26

hB

18805

file2.sh

echo

0

hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

Bracket Expansion:

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo a{b,d,c}e
abe ade ace
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo {A..Z}
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ mkdir z{1..10}
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls
file1.sh file2.sh hello-world.sh hello_world.sh multiline.sh z1 z10 z2 z3 z4 z5 z6 z7 z8 z9
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $BASH
/usr/bin/bash
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

Using variables:

```
GNU nano 6.2 variable.sh
#!/bin/bash

name=" Shrikant Hamand "
echo My name is ${name}.
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano variable.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 variable.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ./variable.sh
My name is Shrikant Hamand .
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

```
GNU nano 6.2 friends.sh *
#!/bin/bash

friend1=Hariom
friend2=Ishwar
friend3=Aditya

echo ${friend1}, ${friend2} and ${friend3} my buddies.
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano variable.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano friends.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 friends.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ./friends.sh
Hariom, Ishwar and Aditya my buddies.
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

Arithmetic Expansion:

```
hariom@hariom-Lenovo-V14-IIL: ~/Desktop/112103048/Assignment 7
GNU nano 6.2 arithmetic.sh *
#!/bin/bash

a=20
b=35

echo a=${a} and b=${b}
echo a+b = $((a+b))
echo ${a}
((a++))
echo
echo ${a}
echo
unset b
((b--))
echo ${b}
echo
a=1
let a++
echo ${a}
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano arithmetic.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 arithmetic.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ./arithmetic.sh
a=20 and b=35
a+b = 55
20

21

-1

2
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

Command Substitution:

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ file arithmetic.sh
arithmetic.sh: Bourne-Again shell script, ASCII text executable
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

```
GNU nano 6.2 greetings.sh *
#!/bin/bash

greeting="Hi"
user=$(whoami)
date=$(date +%F)

echo "$greeting $user! Today is $date"
echo "Your bash shell version is : $BASH_VERSION!"
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ file arithmetic.sh
arithmetic.sh: Bourne-Again shell script, ASCII text executable
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano greetings.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 greetings.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ./greetings.sh
Hi hariom! Today is 2023-02-05
Your bash shell version is : 5.1.16(1)-release.
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ a=25
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ b=12
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $a
25
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $b
12
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $[a + b]
37
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

Creating Backup:

```
GNU nano 6.2 file3.sh *
#!/bin/bash

user=$(whoami)
input=/home/${user}
output=/tmp/${user}_home_$(date +%Y-%m-%d_%H%M%S).tar.gz

tar -cvf $output $input

echo "$input backup is complete! Details are:"
ls -l $output
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano greetings.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano file3.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 file3.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ./file3.sh
tar: Removing leading `/' from member names
/home/hariom/
/home/hariom/a-add.o
/home/hariom/.sudo_as_admin_successful
/home/hariom/add.c
/home/hariom/dtl/
/home/hariom/dtl/xp.sh.save
/home/hariom/dtl/xpp.sh.save
/home/hariom/dtl/xp.sh
/home/hariom/dtl/xpp.sh
/home/hariom/dtl/hello-world.sh
/home/hariom/.ssh/
/home/hariom/Public/
/home/hariom/hari/
/home/hariom/hari/hello.c
/home/hariom/hari/a.out
/home/hariom/Desktop/
/home/hariom/Desktop/112103048/
/home/hariom/Desktop/112103048/file1.txt
/home/hariom/Desktop/112103048/mergedFile.txt
/home/hariom/Desktop/112103048/linux.txt
/home/hariom/Desktop/112103048/Assignment 7/
/home/hariom/Desktop/112103048/Assignment 7/z9/
/home/hariom/Desktop/112103048/Assignment 7/file1.sh
/home/hariom/Desktop/112103048/Assignment 7/z7/
/home/hariom/Desktop/112103048/Assignment 7/arithmetic.sh
/home/hariom/Desktop/112103048/Assignment 7/multiline.sh
/home/hariom/Desktop/112103048/Assignment 7/friends.sh
/home/hariom/Desktop/112103048/Assignment 7/z2/
/home/hariom/Desktop/112103048/Assignment 7/hello_world.sh
/home/hariom/Desktop/112103048/Assignment 7/z8/
/home/hariom/Desktop/112103048/Assignment 7/z6/
/home/hariom/Desktop/112103048/Assignment 7/z1/
/home/hariom/Desktop/112103048/Assignment 7/variable.sh
```

Environment:

```

hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ env
SHELL=/bin/bash
SESSION_MANAGER=local/hariom-Lenovo-V14-IIL:@/tmp/.ICE-unix/1472,unix/hariom-Lenovo-V14-IIL:/tmp/.ICE-unix/1472
QT_ACCESSIBILITY=1
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/etc/xdg
SSH_AGENT_LAUNCHER=gnome-keyring
XDG_MENU_PREFIX=gnome-
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
LANGUAGE=en_IN:en
GNOME_SHELL_SESSION_MODE=ubuntu
SSH_AUTH_SOCK=/run/user/1000/keyring/ssh
XMODIFIERS=@im=ibus
DESKTOP_SESSION=ubuntu
GTK_MODULES=gail:atk-bridge
DBUS_STARTER_BUS_TYPE=session
PWD=/home/hariom/Desktop/112103048/Assignment 7
LOGNAME=hariom
XDG_SESSION_DESKTOP=ubuntu
XDG_SESSION_TYPE=wayland
SYSTEMD_EXEC_PID=1472
XAUTHORITY=/run/user/1000/.mutter-Xwaylandauth.4XUHZ1
HOME=/home/hariom
USERNAME=hariom
IM_CONFIG_PHASE=1
LANG=en_IN
LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;4
2:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tl
z=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.zst=01
;31:*.tztst=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=
01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.wim=01;31:*.swm=01;31:*.dwm=01;31:*.esd
=01;31:*.jpg=01;35:*.jpeg=01;35:*.mjpg=01;35:*.mjpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35
:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=
01;35:*.mkv=01;35:*.webm=01;35:*.webp=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.
asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.
cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36
:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:
XDG_CURRENT_DESKTOP=ubuntu:GNOME

```

```

hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ cat /etc/environment
PATH="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin"
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$

```

```

hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ cat /etc/profile
# /etc/profile: system-wide .profile file for the Bourne shell (sh(1))
# and Bourne compatible shells (bash(1), ksh(1), ash(1), ...).

if [ "${PS1-}" ]; then
  if [ "${BASH-}" ] && [ "$BASH" != "/bin/sh" ]; then
    # The file bash.bashrc already sets the default PS1.
    # PS1='\h:\w\$ '
    if [ -f /etc/bash.bashrc ]; then
      . /etc/bash.bashrc
    fi
  else
    if [ "$(id -u)" -eq 0 ]; then
      PS1='# '
    else
      PS1='$ '
    fi
  fi
fi

if [ -d /etc/profile.d ]; then
  for i in /etc/profile.d/*.sh; do
    if [ -r $i ]; then
      . $i
    fi
  done
unset i
fi
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$

```

Input and Output Redirection:


```
hariom@hariom-Lenovo-V14-IIL: ~/Desktop/112103048/Assignment 7
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ~/.bashrc
bash: /home/hariom/.bashrc: Permission denied
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ cmd < x.in
bash: x.in: No such file or directory
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ touch foobar
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls -l foobar
-rw-rw-r-- 1 hariom hariom 0 Feb  5 23:03 foobar
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls foobar barfoo
ls: cannot access 'barfoo': No such file or directory
foobar
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls foobar barfoo > stdout.txt
ls: cannot access 'barfoo': No such file or directory
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls foobar barfoo 2> stdout.txt
foobar
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls foobar barfoo &> stdout.txt
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ cat stdout.txt
ls: cannot access 'barfoo': No such file or directory
foobar
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 stdout.txt
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ cat stdout.txt
ls: cannot access 'barfoo': No such file or directory
foobar
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ cat stderr.txt
cat: stderr.txt: No such file or directory
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ls foobar barfoo 2> stderr.txt
foobar
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ cat stderr.txt
ls: cannot access 'barfoo': No such file or directory
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ cat stdoutandstderr.txt
cat: stdoutandstderr.txt: No such file or directory
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ █
```

Functions:

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ function status {date; uptime; who | grep $USER; }
bash: syntax error near unexpected token `{date'
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ function status { date; uptime; who | grep $USER; }
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ status
Sunday 05 February 2023 11:10:26 PM IST
23:10:26 up 8:37, 1 user, load average: 0.19, 0.15, 0.11
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ my_function() { echo "Hello I'm a function"; echo "Bye!"; }
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ my_function
Hello I'm a function
Bye!
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ bash -- debugger
bash: debugger: No such file or directory
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ bash --debugger
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ declare -F my_function
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ declare -f my_function
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ unset my_function
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ my_function
my_function: command not found
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ █
```

Conditional statements:

```
hariom@hariom-Lenovo-V14-IIL: ~/Desktop/112103048/Assignment 7
GNU nano 6.2 file4.sh *
#!/bin/bash

a=19
if ((a==30))
then echo YES;
else
echo NO;
fi
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ nano file4.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ chmod 755 file4.sh
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ ./file4.sh
NO
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```

Arithmetic Expression:

```
hariom@hariom-Lenovo-V14-IIL: ~/Desktop/112103048/Assignment 7
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $((25+5))
30
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $((48-40))
8
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $((4*8))
32
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $((30/4))
7
```

```
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ a=30; b=5
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $(( $a * $b ))
150
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ expr 238 + 3
241
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ expr 238 - 3
235
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ expr 238 / 3
79
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ let x=38+5
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$ echo $x
43
hariom@hariom-Lenovo-V14-IIL:~/Desktop/112103048/Assignment 7$
```