

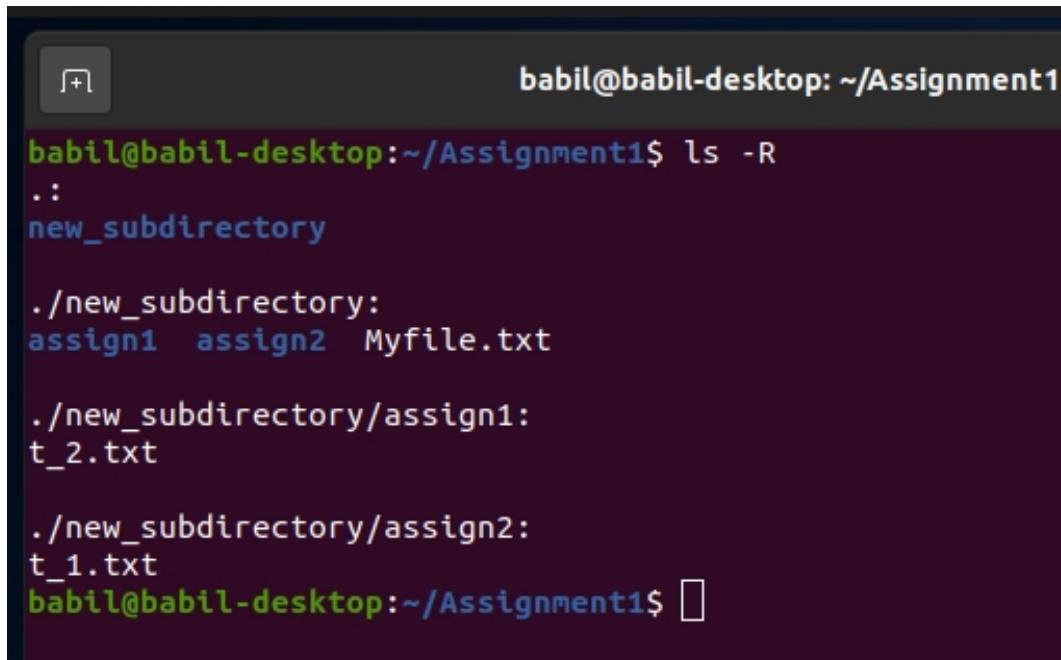
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BCA_3A_r-37

Assignment 2 on UNIX LAB

(Final assignment)

Qtn 1 :



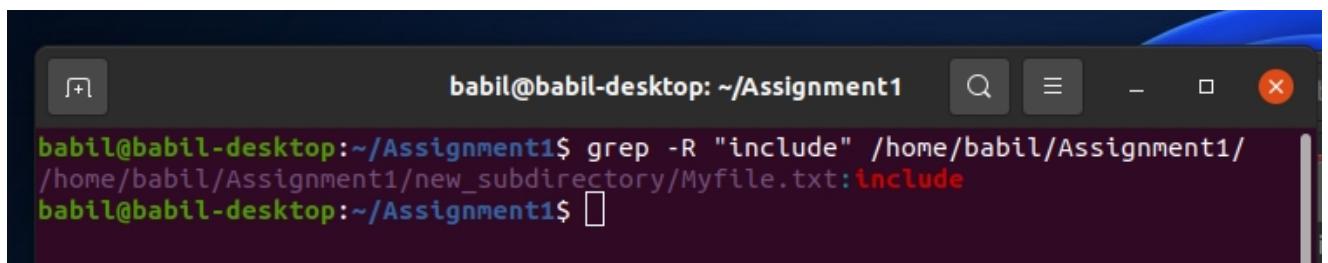
```
babil@babel-desktop: ~/Assignment1
babil@babel-desktop:~/Assignment1$ ls -R
.:
new_subdirectory

./new_subdirectory:
assign1 assign2 Myfile.txt

./new_subdirectory/assign1:
t_2.txt

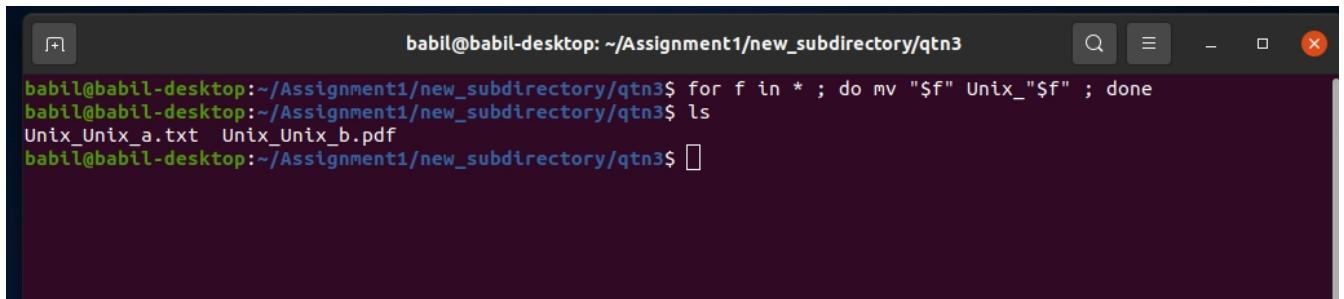
./new_subdirectory/assign2:
t_1.txt
babil@babel-desktop:~/Assignment1$
```

Qtn 2 :



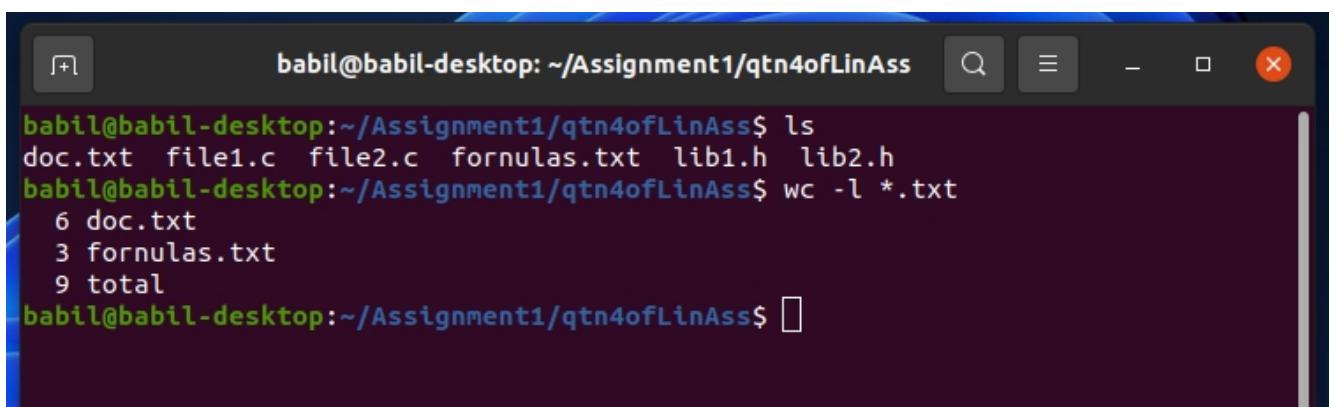
```
babil@babel-desktop: ~/Assignment1
babil@babel-desktop:~/Assignment1$ grep -R "include" /home/babil/Assignment1/
/home/babil/Assignment1/new_subdirectory/Myfile.txt:include
babil@babel-desktop:~/Assignment1$
```

Qtn 3:



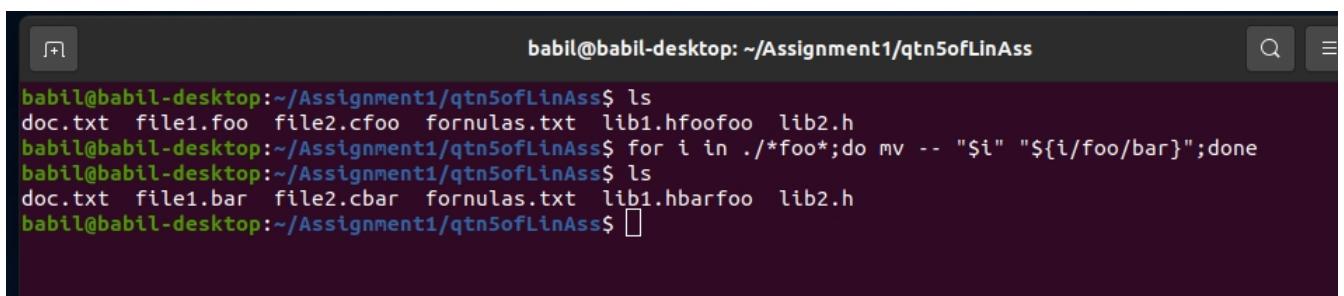
```
babil@babel-desktop:~/Assignment1/new_subdirectory/qtn3$ for f in * ; do mv "$f" Unix_"$f" ; done  
babil@babel-desktop:~/Assignment1/new_subdirectory/qtn3$ ls  
Unix_Unc_a.txt Unix_Unc_b.pdf  
babil@babel-desktop:~/Assignment1/new_subdirectory/qtn3$ 
```

Qtn 4:



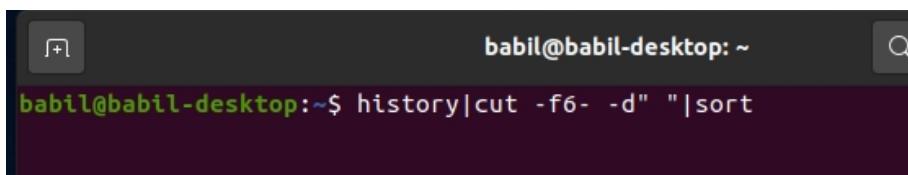
```
babil@babel-desktop:~/Assignment1/qtn4ofLinAss$ ls  
doc.txt file1.c file2.c formlas.txt lib1.h lib2.h  
babil@babel-desktop:~/Assignment1/qtn4ofLinAss$ wc -l *.txt  
6 doc.txt  
3 formlas.txt  
9 total  
babil@babel-desktop:~/Assignment1/qtn4ofLinAss$ 
```

Qtn 5:



```
babil@babel-desktop:~/Assignment1/qtn5ofLinAss$ ls  
doc.txt file1.foo file2.cfoo formlas.txt lib1.hfoofoo lib2.h  
babil@babel-desktop:~/Assignment1/qtn5ofLinAss$ for i in ./foo*;do mv -- "$i" "${i/foo/bar}";done  
babil@babel-desktop:~/Assignment1/qtn5ofLinAss$ ls  
doc.txt file1.bar file2.cbar formlas.txt lib1.hbarfoo lib2.h  
babil@babel-desktop:~/Assignment1/qtn5ofLinAss$ 
```

Qtn 6:



```
babil@babel-desktop:~$ history|cut -f6- -d" "|sort
```

results

```
babil@babil-desktop: ~
head -n file1
head -n test
head -n test.txt
--help
"/home/babil/linux_command_test/qtnswtch.sh"
"/home/babil/linux_command_test/switchtest.sh"
"/home/babil/linux_command_test/whiletest.sh"
i in ./*foo*;do mv -- "$i" "${i/foo/bar}";done
i in ./*foo*;do mv -- "$i" "${i/foo/bar}";done
i in ./*foo*;do mv -- "$i" "${i/foo/bar}";done
"include"
"include" /Assignment1
"include" /home/babil/Assignment1
jdk-8-jdk
ls
ls
ls
ls
ls -a
ls -l
ls-l
-l *.txt
```

Qtn 7 :

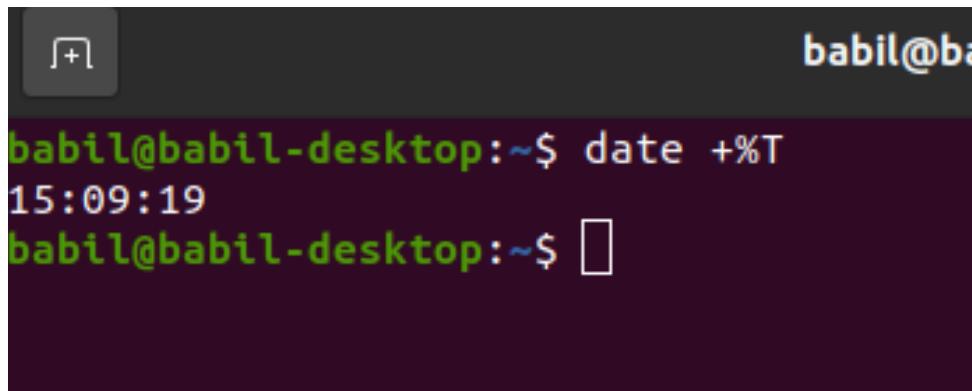
```
babil@babil-desktop: ~/Assignment1
babil@babil-desktop:~/Assignment1$ ls
copydir  new_subdirectory  sourcedir
babil@babil-desktop:~/Assignment1$ cp -R sourcedir copydir
babil@babil-desktop:~/Assignment1$ ls -R copydir
copydir:
sourcedir

copydir/sourcedir:
doc.txt  file1.bar  file2.cbar  formulas.txt  lib1.hbarfoo  lib2.h
babil@babil-desktop:~/Assignment1$
```

Qtn8:

```
babil@babil-desktop: /home
babil@babil-desktop:~$ cd /home
babil@babil-desktop:/home$ du -s -b
290779848655 .
babil@babil-desktop:/home$
```

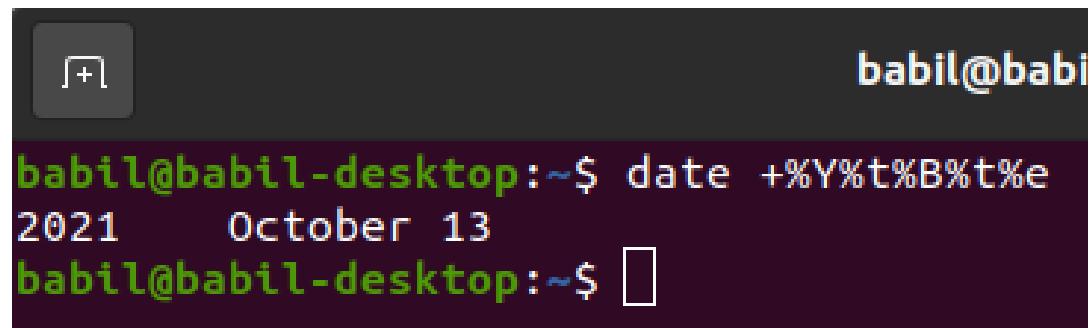
Qtn9:



A screenshot of a terminal window. The title bar says "babil@bab". The command "date +%T" was run, followed by its output "15:09:19". A red rectangular selection highlights the entire command and its output.

```
babil@babil-desktop:~$ date +%T
15:09:19
```

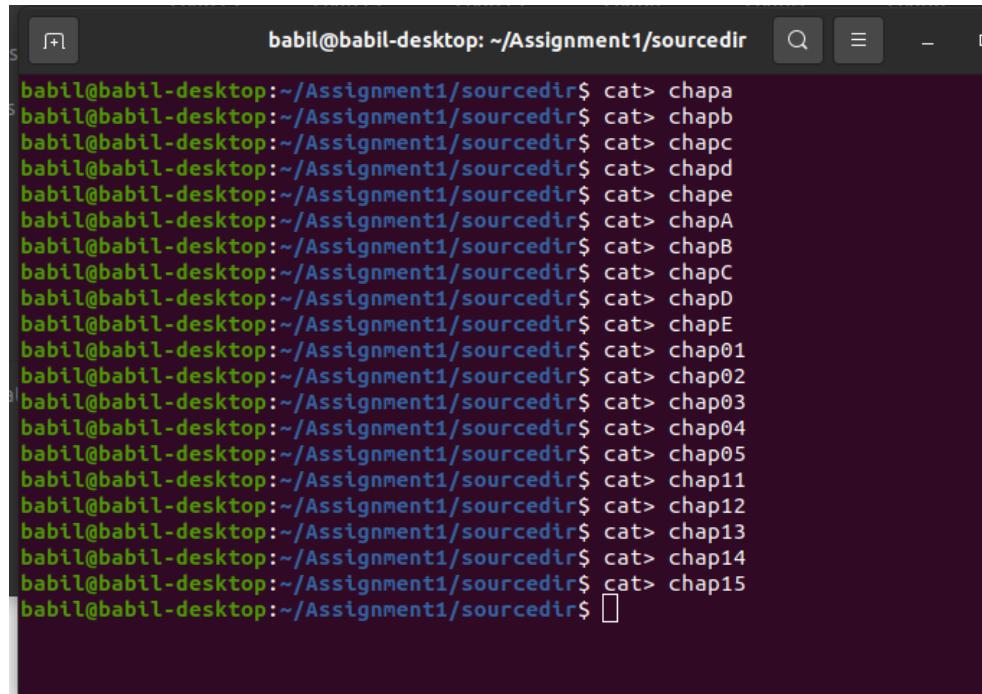
Qtn10:



A screenshot of a terminal window. The title bar says "babil@bab". The command "date +%Y%t%B%t%e" was run, followed by its output "2021 October 13". A red rectangular selection highlights the entire command and its output.

```
babil@babil-desktop:~$ date +%Y%t%B%t%e
2021 October 13
```

Qtn11:



A screenshot of a terminal window. The title bar says "babil@babil-desktop: ~/Assignment1/sourcedir". The command "cat> chap" was run 15 times, each time creating a new file named "chap" followed by a number from 1 to 15. A red rectangular selection highlights the entire command and its output.

```
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chapb
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chapc
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chapd
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chape
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chapA
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chapB
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chapC
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chapD
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chapE
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap01
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap02
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap03
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap04
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap05
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap11
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap12
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap13
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap14
babil@babil-desktop:~/Assignment1/sourcedir$ cat> chap15
babil@babil-desktop:~/Assignment1/sourcedir$ 
```

Qtn 12 :

```
babil@babel-desktop:~/Assignment1/sourcedir$ find . -name "*[a-z]"  
./chape  
./chapa  
./chapd  
./chapb  
./chapc  
babil@babel-desktop:~/Assignment1/sourcedir$ 
```

Qtn 13 :

```
babil@babel-desktop:~/Assignment1/sourcedir$ find . -name "*[A-Z]"  
./chapD  
./chapE  
./chapB  
./chapC  
./chapA  
babil@babel-desktop:~/Assignment1/sourcedir$ 
```

Qtn 14 :

```
babil@babel-desktop:~/Assignment1/sourcedir$ find . -name "*0*"  
./chap05  
./chap04  
./chap02  
./chap03  
./chap01  
babil@babel-desktop:~/Assignment1/sourcedir$ 
```

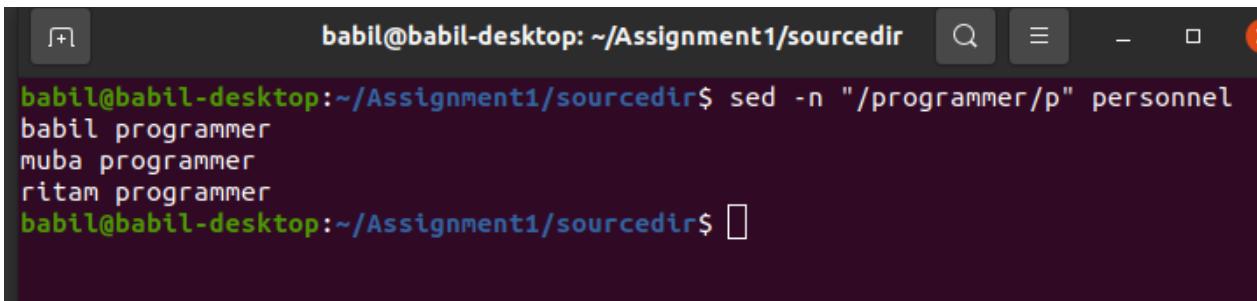
Qtn 15 :

```
babil@babel-desktop:~/Assignment1/sourcedir$ find . -name "*[b-d-z]"  
./chape  
./chapd  
./chapb  
babil@babel-desktop:~/Assignment1/sourcedir$ 
```

Qtn 16 :

```
babil@babil-desktop:~/Assignment1/sourcedir$ cat> personnel
babil programmer
muba programmer
ritam programmer
aniket analyst
riya analyst
subham consultant
babil@babil-desktop:~/Assignment1/sourcedir$ grep -c programmer personnel
3
babil@babil-desktop:~/Assignment1/sourcedir$ 
```

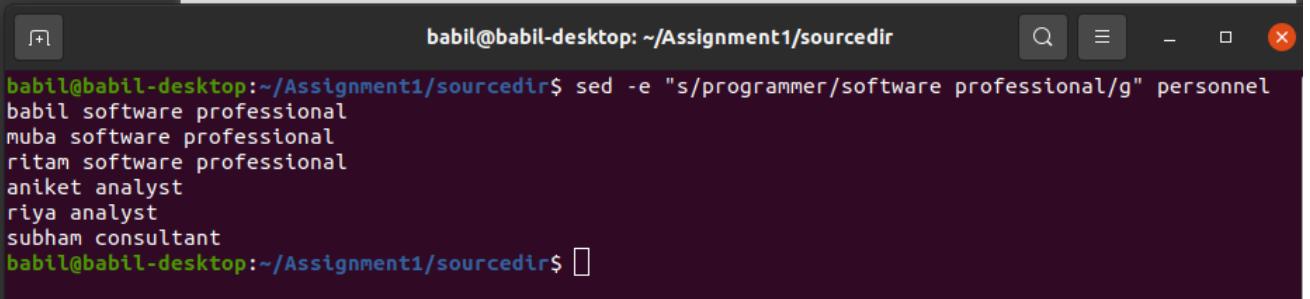
Qtn 17 :



A terminal window titled "babil@babil-desktop: ~/Assignment1/sourcedir". The command "sed -n "/programmer/p" personnel" is run, displaying the lines "babil programmer", "muba programmer", and "ritam programmer".

```
babil@babil-desktop:~/Assignment1/sourcedir$ sed -n "/programmer/p" personnel
babil programmer
muba programmer
ritam programmer
babil@babil-desktop:~/Assignment1/sourcedir$ 
```

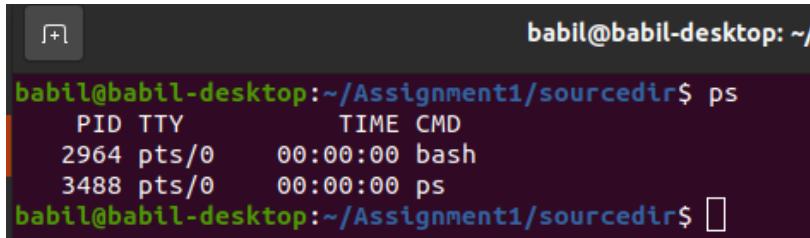
Qtn 18 :



A terminal window titled "babil@babil-desktop: ~/Assignment1/sourcedir". The command "sed -e "s/programmer/software professional/g" personnel" is run, changing all occurrences of "programmer" to "software professional".

```
babil@babil-desktop:~/Assignment1/sourcedir$ sed -e "s/programmer/software professional/g" personnel
babil software professional
muba software professional
ritam software professional
aniket analyst
riya analyst
subham consultant
babil@babil-desktop:~/Assignment1/sourcedir$ 
```

Qtn 19 :



A terminal window titled "babil@babil-desktop: ~/". The command "ps" is run, displaying two processes: "bash" and "ps".

```
babil@babil-desktop:~/Assignment1/sourcedir$ ps
 PID TTY          TIME CMD
 2964 pts/0    00:00:00 bash
 3488 pts/0    00:00:00 ps
babil@babil-desktop:~/Assignment1/sourcedir$ 
```

Qtn 20 :

```
$ qtn20Sum3.sh x
$ qtn20Sum3.sh
 1 echo "enter first number:"
 2 read a
 3 echo "enter second number:"
 4 read b
 5 echo "enter third number:"
 6 read c
 7 sum=$((a + $b + $c))
 8 echo "Sum = $sum"

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/shell_programs/qtn20Sum3.sh"
enter first number:
10
enter second number:
20
enter third number:
30
Sum = 60
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 21 :

```
$ qtn21sum2w3.sh x
$ qtn21sum2w3.sh
 1 echo "enter first number:"
 2 read a
 3 echo "enter second number:"
 4 read b
 5 a=$((a + $b))#without third variable
 6 echo "Sum = $a"

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/shell_programs/qtn21sum2w3.sh"
enter first number:
10
enter second number:
20
Sum = 30
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 22 :

```
$ qtn22diff2.sh
 1 # WASP to calculate the difference of two numbers (using third var)
 2 echo "enter first number:"
 3 read a
 4 echo "enter second number:"
 5 read b
 6 diff=$((a - $b))
 7 echo "diff = $diff"

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/shell_programs/qtn22diff2.sh"
enter first number:
40
enter second number:
20
diff = 20
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 23 :

```
$ qtn23sum3w4.sh ×
$ qtn23sum3w4.sh
1 # WASP to calculate the sum of 3 numbers (without using 4rth var)
2 echo "enter first number:"
3 read a
4 echo "enter second number:"
5 read b
6 echo "enter third number:"
7 read c
8 c=$((a + $b + $c)) #without using 4rth var
9 echo "Sum = $c"

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/shell_programs/qtn23sum3w4.sh"
enter first number:
5
enter second number:
6
enter third number:
7
Sum = 18
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 24 :

```
$ qtn24pro3.sh ×
$ qtn24pro3.sh
1 # WASP to calculate the product of 3 numbers
2 echo "enter first number:"
3 read a
4 echo "enter second number:"
5 read b
6 echo "enter third number:"
7 read c
8 pro=$((a * $b * $c))
9 echo "Product = $pro"

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/shell_programs/qtn24pro3.sh"
enter first number:
5
enter second number:
2
enter third number:
2
Product = 20
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 25 :

```
$ qtn25avg3.sh ×
$ qtn25avg3.sh
1 # WASP to calculate the average of 3 numbers
2 echo "enter first number:"
3 read a
4 echo "enter second number:"
5 read b
6 echo "enter third number:"
7 read c
8 avg=$((($a + $b + $c)/3))
9 echo "Average = $avg"

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/shell_programs/qtn25avg3.sh"
enter first number:
10
enter second number:
15
enter third number:
20
Average = 15
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 26 :

```
$ qtn26arperiofrect.sh x
$ qtn26arperiofrect.sh
1 # WASP to calculate the area and perimeter
2 # of a rectangle
3 echo "enter length of the rectangle:"
4 read a
5 echo "enter breadth of the rectangle:"
6 read b
7 area=$((a * b))
8 peri=$((2*(a + b)))
9 echo "area = $area and perimeter = $peri"

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/
enter length of the rectangle:
10
enter breadth of the rectangle:
5
area = 50 and perimeter = 30
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 27 :

```
$ qtn27sqrt.sh x
$ qtn27sqrt.sh
1 # WASP to calculate the sqroot
2 # of a number
3 echo "enter a number:"
4 read a
5 sqrot=`echo "scale=4; sqrt($a)" | bc`
6 echo "square root = $sqrot"

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/
enter a number:
169
square root = 13.0000
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 28 :

```
$ qtn28posneg.sh x
$ qtn28posneg.sh
1 # WASP to check if the number is
2 # negative or positive
3 echo "enter a number"
4 read n
5 if [ $n -lt 0 ]
6 then
7 echo "negative"
8 elif [ $n -gt 0 ]
9 then
10 echo "Positive"
11 else
12 echo "the number is null or 0"
13 fi

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/
enter a number
2
Positive
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/
enter a number
-3
negative
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/
enter a number
0
the number is null or 0
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 29 :

```
$ qtn29lrgamg3.sh ×  
$ qtn29lrgamg3.sh  
1 # WASP to check the largest number  
2 # amoung 3 number  
3 echo "enter first number:"  
4 read a  
5 echo "enter second number:"  
6 read b  
7 echo "enter third number:"  
8 read c  
9 if [ $b -gt $a ] && [ $b -gt $c ]  
10 then  
11     echo "Second number $b is largest"  
12 elif [ $a -gt $b ] && [ $a -gt $c ]  
13 then  
14     echo "First number $a is largest"  
15 else  
16     echo "Third number $c is largest"  
17 fi  
  
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE  
  
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/shell_programs/qtn29lrgamg3.sh"  
enter first number:  
20  
enter second number:  
2  
enter third number:  
3  
First number 20 is largest  
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 30 :

```
$ qtn29lrgamg3.sh × $ qtn30fact.sh ×  
$ qtn30fact.sh  
1 # WASP to find factorial of a number  
2 echo "enter a Number"  
3 read num  
4 fact=1  
5 while [ $num -gt 1 ]  
6 do  
7     fact=$((fact * num))  
8     num=$((num - 1))  
9 done  
10 echo "factorial : $fact"  
  
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE  
  
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/shell_programs/qtn30fact.sh"  
enter a Number  
5  
factorial : 120  
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 31 :

```
$ qtn31armstrng.sh ×  
$ qtn31armstrng.sh  
1 # WASP to check if the number is  
2 # armstrong or not  
3 echo "enter a number:"  
4 read num  
5 arm=$num  
6 sum=0  
7 r=0  
8 dig=0  
9 while [ $arm -gt 0 ]  
10 do  
11     r=$((arm % 10))  
12     dig=$((r * r * r))  
13     sum=$((sum + dig))  
14     arm=$((arm / 10))  
15     done  
16 if [ $sum -eq $num ]  
17 then  
18     echo "It is an armstrong number"  
19 else  
20     echo "It is not an armstrong number"  
21 fi  
22  
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE  
babil@babil-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Desktop/qtn31armstrng.sh"  
enter a number:  
153  
It is an armstrong number  
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 32 :

```
$ qtn32fibona.sh ×  
$ qtn32fibona.sh  
1 # WASP to print fibonacci series upto n  
2 echo "enter the range"  
3 read num  
4 n1=0  
5 n2=1  
6 n3=0  
7 echo "$n1"  
8 echo "$n2"  
9 while [ $num -gt 2 ]  
10 do  
11     n3=$((n1 + n2))  
12     echo "$n3"  
13     n1=$n2  
14     n2=$n3  
15     num=$((num - 1))  
16 done  
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE  
enter the range  
15  
0  
1  
1  
2  
3  
5  
8  
13  
21  
34  
55  
89  
144  
233  
377  
babil@babil-desktop:~/Assignment1/shell_programs$
```

Qtn 33 :

```
$ qtn33vowlornot.sh x
$ qtn33vowlornot.sh
1 # WASP to check vowel or not
2 echo "enter a alphabet"
3 read c
4 case $c in
5     "a") echo "it is a vowel.";;
6     "e") echo "it is a vowel.";;
7     "i") echo "it is a vowel.";;
8     "o") echo "it is a vowel.";;
9     "u") echo "it is a vowel.";;
10    "A") echo "it is a vowel.";;
11    "E") echo "it is a vowel.";;
12    "I") echo "it is a vowel.";;
13    "O") echo "it is a vowel.";;
14    "U") echo "it is a vowel.";;
15 esac
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
babil@babel-desktop:~/Assignment1/shell_programs$ bash
enter a alphabet
a
it is a vowel.
babil@babel-desktop:~/Assignment1/shell_programs$
```

Qtn 34 :

```
$ qtn33vowlornot.sh      $ qtn34prmornt.sh x
$ qtn34prmornt.sh
1 # WASP to check a number is
2 # prime or not
3 echo "enter the number"
4 read num
5 i=2
6 flag=0
7 while [ $i -le $($num / 2) ]
8 do
9     if [ $($num % $i) -eq 0 ]
10    then
11        flag=1
12    fi
13    i=$($i + 1)
14 done
15 if [ $num -eq 1 ]
16 then
17     echo "the number $num is neither prime nor composite"
18 elif [ $flag -eq 0 ]
19 then
20     echo "The number $num is prime"
21 else
22     echo "The number $num is not prime"
23 fi
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
babil@babel-desktop:~/Assignment1/shell_programs$ bash "/home/babil/Assignment1/shell_p
enter the number
13
The number 13 is prime
babil@babel-desktop:~/Assignment1/shell_programs$
```

Qtn 35 :

```
$ qtn35pttrn.sh x
$ qtn35pttrn.sh
1  # WASP to print the pattern  $
2  #
3  #
4  #
5 echo "enter the number of rows"
6 read rows
7 j=0
8 for ((i=1; i<=rows; i++))
9 do
10    for ((j=1 ; j<=rows - i ;j++))
11    do
12      echo -n " "
13    done
14    for ((j=0; j<=i - 1 ; j++))
15    do
16      echo -n "$ "
17    done
18 echo
19 done
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

babil@babil-desktop:~/Assignment1/shell_programs\$ bash
enter the number of rows

4

```
$
$ $
$ $ $
$ $ $ $
```

babil@babil-desktop:~/Assignment1/shell_programs\$