**PRACTICAL NO- 7 Shell Scripting – II**

**1] Write a shell script to print n natural numbers using while loop.**

**Code:** vi 22

echo "Enter a number :"

read n

i=1

echo "The first $n natural numbers :"

while [ $i -le $n ]

do

echo $i

i=$[ $i + 1 ]

done

**Output:**

[tybscit@localhost Desktop]$ sh 22

Enter a number :

5

The first 5 natural numbers :

1

2

3

4

5

**2] Write a shell script to read sum of first n natural numbers using 'until' loop**

**Code:** vi 23

echo "Enter a number :"

read n

i=1

sum=0

until [ $i -gt $n ]

do

sum=$[ $sum+$i]

i=$[ $i+1 ]

done

echo "The sum of $n natural numbers : $sum"

**Output:**

[tybscit@localhost Desktop]$ sh 23

Enter a number :

5

The sum of 5 natural numbers : 15

**3] Write a shell script to print the sum of first n natural numbers using c type for loop.**

**Code:** vi 24

echo "Enter a number :"

read n

i=1

sumsq=0

for ((i=1;i<=n;i++))

do

sumsq=$[ $sumsq + $i \* $i ]

done

echo "The sum of square $n natural numbers : $sumsq"

**Output:**

[tybscit@localhost Desktop]$ sh 24

Enter a number :

5

The sum of square 5 natural numbers : 55

**4] Write a shell script to read positive number from the user and print multiplication of that number.**

**Code:** vi 25

while [ true ]

do

echo "Enter a number :"

read num

if [ $num -le 0 ]

then

echo "Please enter positive number :"

else

i=1

while [ $i -le 10 ]

do

mul=$[ $i \* $num ]

echo "$num \* $i=$mul"

i=$[ $i +1 ]

done

break

fi

done

**Output:**

[tybscit@localhost Desktop]$ sh 25

Enter a number :

5

5 \* 1=5

5 \* 2=10

5 \* 3=15

5 \* 4=20

5 \* 5=25

5 \* 6=30

5 \* 7=35

5 \* 8=40

5 \* 9=45

5 \* 10=50

**5] Write a shell script to print even or odd series up to n using while loop.**

**Code:** vi 26

echo "Enter a number"

read n

x=1

echo "The even numbers upto $n are : "

while [ $x -le $n ]

do

if(( $x%2==0 ))

then

echo $x

fi

x=$[$x+1]

done

x=1

echo "The odd numbers upto $n are : "

while [ $x -le $n ]

do

if(( $x%2!=0 ))

then

echo $x

fi

x=$[$x+1]

**Output:**

[tybscit@localhost Desktop]$ sh 26

Enter a number

8

The even numbers upto 8 are :

2

4

6

8

**6] Write a shell script to generate Fibonacci series upto n.**

**Code:** vi 27

echo "Enter any value :"

read n

i=1

f1=0

f2=1

echo "$f1"

echo "$f2"

while [ $i -le $n ]

do

f3=`expr $f1 + $f2`

echo "$f3"

i=$[ $i + 1 ]

f1=$f2

f2=$f3

done

**Output:**

[tybscit@localhost Desktop]$ sh 27

Enter any value :

10

0

1

1

2

3

5

8

13

21

34

55

**7] Write a shell script to generate following series using while loop, series is 1, 3 ,2, 4, 3......100**

**Code:** vi 28

i=1

j=3

while [ $j -le 100 ]

do

echo $i

echo $j

i=$[ $i + 1 ]

j=$[ $j + 1 ]

done

**Output:**

[tybscit@localhost Desktop]$ sh 28

1

2

3

4

3

.

.

100

**8] Write a shell script to read positive number from the command line argument and find its factorial.**

**Code:** vi 29

echo "Enter a number :"

read num

if [ $num -lt 0 ]

then

echo "Please enter positive number."

else

fact=1

for ((i=1;i<=num;i++))

do

fact=$[ $fact \* $i ]

done

echo "Factorial of $num is : $fact"

fi

**Output:**

[tybscit@localhost Desktop]$ sh 29

Enter a number :

5

Factorial of 5 is : 120

**9] Write a shell script that asks the user to input the number and display the table of factorial from 1 to n.**

**Code:** vi 30

echo "Enter any number :"

read num

fact=1

if [ $num -lt 0 ]

then

echo "Please enter positive number."

else

for(( i=1;i<=num;i++ ))

do

for(( j=1;j<=$i;j++ ))

do

fact=$[ $fact \* $j ]

done

echo "$i!= $fact"

fact=1

done

fi

**Output:**

[tybscit@localhost Desktop]$ sh 30

Enter any number :

5

1!= 1

2!= 2

3!= 6

4!= 24

5!= 120

**10] Write a shell script to read a number from the user and check whether it is prime number or not.**

**Code:** vi 31

i=2

flag=0

while [ $i -lt $1 ]

do

if [ `expr $1 % $i` -eq 0 ]

then

flag=1

fi

i=$[ $i + 1 ]

done

if [ $flag -eq 0 ]

then

echo "$1 is a prime number."

else

echo "$1 is not a prime number."

fi

**Output:**

[tybscit@localhost Desktop]$ sh 31 5

5 is a prime number.

**11] Write a shell script to read a number from the user and print prime number series up to that number.**

**Code:** vi 32

flag=0

echo "Enter number: "

read no

echo "Series of prime numbers upto $no: "

for((i=2;i<=no;i++))

do

for((j=2;j<i;j++))

do

if [ `expr $i % $j ` -eq 0 ]

then

flag=1

fi

done

if [ $flag -eq 0 ]

then

echo $i

fi

flag=0

done

**Output:**

[tybscit@localhost Desktop]$ sh 32

Enter number:

20

Series of prime numbers upto 20:

2

3

5

7

11

13

17

19

**12] Write a shell script to find power of n^y where n and y should be taken from command line.**

**Code:** vi 33

pow=1

echo "Enter number(m): "

read m

echo "Enter power(n): "

read n

for((i=1;i<=n;i++))

do

pow=`expr $pow \\* $m `

done

echo "$m^$n = $pow"

**Output:** [tybscit@localhost Desktop]$ sh 33

Enter number(m):

3

Enter power(n):

2

3^2 = 9

**13] Write a shell script to find G.C.D. and L.C.M. of 2 positive numbers.**

**Code:** vi 34

echo "Enter first number :"

read n

echo "Enter second number :"

read m

for (( i=1;i<=n;i++ ))

do

if [ `expr $n % $i` -eq 0 ]

then

if [ `expr $m % $i` -eq 0 ]

then

gcd=$i

fi

fi

done

echo "G.C.D. :$gcd"

lcm=`expr $n \\* $m`

lcm1=`expr $lcm / $gcd`

echo "L.C.M. is $lcm1"

**Output:**

[tybscit@localhost Desktop]$ sh 34

Enter first number :

4

Enter second number :

20

G.C.D. :4

L.C.M. is 20

**14] Write a shell script to display list of all files and directories in current working directory separately.**

**Code:** vi 41

f=0

s=0

d=0

for i in \*

do

if [-f $i]

then

f=$[$f+1]

elif [-d $i]

then

d=$[$d+1]

else

s=$[$s+1]

fi

done

echo "The number of directory $d"

echo "The number of files :$f"

echo "The number of special files :$s"

**Output:**

[tybscit@localhost Desktop]$ sh 41

The number of directory 0

The number of files :0

The number of special files :9

**15] Write a shell script which checks every minute how many users currently logged in.**

**Code:** vi 42

while [ true ]

do

x=`who|wc -l`

echo "Number of users currently logged in :$x"

sleep 60

done

**Output:**

[tybscit@localhost Desktop]$ sh 42

Number of users currently logged in :2

Number of users currently logged in :2

**16] Write a shell script to create a file which stores name of file. Against each name put morning, evening or afternoon depending upon time at which file is created.**

**Code:** vi 44

for i in \*

do

if [ -f $i ]

then

x=`ls -l $i | cut -c 45-47`

echo "$x"

if [ $x -ge 6 -a $x -lt 12 ]

then

echo "$i: morning" >>b1

elif [ $x -ge 12 -a $x -lt 16 ]

then

echo "$i: afternoon" >>b1

elif [ $x -ge 16 -a $x -lt 20 ]

then

echo "$i: evening" >>b1

else

echo "$i: goodnight" >>b1

fi

cat b1

else

echo "File does not exist"

fi

done

**Output:**

[tybscit@localhost Desktop]$ sh 44

a1: goodnight

a2: goodnight

a3: goodnight

list: goodnight

prog36: goodnight

prog36~: goodnight

prog37: goodnight

prog37~: goodnight

prog38: goodnight

prog38~: goodnight

prog39: goodnight

prog39~: goodnight

prog40: goodnight

prog40~: goodnight

prog41: goodnight

prog41~: goodnight

prog42: goodnight

prog42~: goodnight

prog43: goodnight

prog43~: goodnight

prog44: goodnight

prog44~: goodnight

prog45: goodnight

prog45~: goodnight

prog46: goodnight

prog46~: goodnight

**17] Write a shell script to accept a username. If user is not present then appropriate**

**message should be displayed otherwise tell the user to logout, wait for 5 seconds and kill his job.**

**Code:** vi 45

echo "Enter username:"

read u

x=`who|grep -c "$u"`

if [ $x -eq 0 ]

then

echo "$u user not present."

else

echo "$u user present....please save your work....system will shut down in some

time"

sleep 5

shut down -h 0

fi

**Output:**

[tybscit@localhost Desktop]$ sh 45

Enter username:

tybscit

tybscit user present....please save your work....system will shut down in some

time

**18] Write a shell script to accept file name from user, store the names in new file if length of name is less than 10.**

**Code:** vi 46

count=1

while [ $count -le 5 ]

do

echo "Enter name $count"

read name

len=${#name}

if [ $len -lt 10 ]

then

echo "$name">>demo

fi

count=$[ $count+1 ]

done

echo "The name whose length is less than 10 are :"

cat demo

**Output:**

[tybscit@localhost Desktop]$ sh 46

Enter name 1

rampatel

Enter name 2

ram

Enter name 3

patel

Enter name 4

ichigokurosaki

Enter name 5

urahara

The name whose length is less than 10 are :

ram

patel

urahara

**19] Write a shell script to pick up a shell script file and convert first 10 lines from lower to uppercase.**

**Code:** vi 48

echo "Enter file name :"

read f

for f in \*.c

do

if [ -f$f ]

then

echo "The original content of $f file :"

cat $f

echo "The translated first 2 lines of $f file :"

head -2 $f|tr '[a-z]' '[A-Z]'

else

echo "$f is not a file"

fi

done

**Output:**

[tybscit@localhost Desktop]$ sh 48

Enter file name :

471.c

The original content of 471.c file :

echo "Enter c program file"

read f1

if [ -f$f1 ]

then

echo "$f1 exist"

echo "Compiling and executing $f1 file"

cc -o a1.out $f1

echo "The output of $f1 file is "

./a1.out

else

echo "$f1 file does not exist."

fi

The translated first 2 lines of 471.c file :

ECHO "ENTER C PROGRAM FILE"

READ F1

The original content of 47.c file :

#include<stdio.h>

main()

{

printf("Hello World !!\n");

}

The translated first 2 lines of 47.c file :

#INCLUDE<STDIO.H>

MAIN()

**20] Write a shell script to accept 5 student marks, name and roll number. Store these details in pass or fail file depending on their marks.**

**Code:** vi 49

count=1

while [ $count -lt 5 ]

do

echo "Enter roll number,name and marks $count:"

read rlno

read nm

read mks

if [ $mks -lt 35 ]

then

echo "$rlno~$nm~$mks">>fail

else

echo "$rlno~$nm~$mks">>pass

fi

count=$[ $count+1 ]

done

echo "Students who have passed:"

cat pass

echo "Students who have failed :"

cat fail;

**Output:**

[tybscit@localhost Desktop]$ sh 49

Enter roll number,name and marks 1:

1

ram

80

Enter roll number,name and marks 2:

2

aaryan

77

Enter roll number,name and marks 3:

3

dodo

90

Enter roll number,name and marks 4:

4

dumdum

30

Students who have passed:

1 77~2 33~3 99

1 ram 88~2 aaryan 80~3 dodo 70

1 ram 99~2 aaryan 66~3 dodo 89

1~ram~80

2~aaryan~77

3~dodo~90

Students who have failed :

4~dumdum~30

**21] Write a shell script to accept 2 file names from user. Translate all characters of a first file from lower to uppercase and store it in second file.**

**Code:** vi 50

echo "Enter file 1 name"

read f1

if [ -f$f1 ]

then

echo "The $f1 exists."

echo "The contents of $f1 are :"

cat $f1

while [ true ]

do

echo "Enter file 2 name"

read f2

if [ -f$f2 ]

then

echo "$f2 exist......Please enter other name"

echo "The translated content of $f1"

tr '[a-z]' '[A-Z]' <$f1 >$f2

cat $f2

break

fi

done

break

else

**Output:**

[tybscit@localhost Desktop]$ sh 50

Enter file 1 name

demo

The demo exists.

The contents of demo are :

ram

patel

urahara

Enter file 2 name

demo2

demo2 exist......Please enter other name

The translated content of demo

RAM

PATEL

URAHARA