SEMESTER – V  
OPERATING SYSTEMS

Practical Assignment 1 – Shell Scripts

short line

# 1.1 Display the following pattern

#!/bin/bash

for i in $(seq 1 5)

do

str=""

for j in $(seq 1 $i)

do

str="$str$i "

done

echo "$str"

done

# 1.2 Display the following pattern.

#!/bin/bash

star="\*"

for i in $(seq 1 5)

do

str=""

for j in $(seq 1 $i)

do

str="$str$star "

done

echo "$str"

Done

# 1.3 Display the following pattern.

#!/bin/bash

for j in $(seq 1 5)

do

echo ""

for i in $(seq 1 $((5-j)))

do echo -n " "

done

for n in $(seq 1 $j)

do

echo -n "$j "

done

done

echo ""

# 1.4 Display the following pattern.

#!/bin/bash

for j in $(seq 1 5)

do

echo ""

for i in $(seq 1 $((5-j)))

do echo -n " "

done

for n in $(seq 1 $j)

do

echo -n "$j "

done

done

for j in $(seq 4 -1 1)

do

echo ""

for i in $(seq 1 $((5-j)))

do echo -n " "

done

for n in $(seq 1 $j)

do

echo -n "$j "

done

done

echo ""

# 1.5 Display the following pattern.

#! /bin/bash

for((i=1;i<=5;i++))

do

for((j=1;j<=5-i;j++))

do

echo -n bash' '

done

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

do

echo -n '\*'

echo -n ' '

done

echo

done

for((i=5-1;i>=1;i--))

do

for((j=1;j<=5-i;j++))

do

echo -n ' '

done

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

do

echo -n '\*'

echo -n ' '

done

echo

done

# 1.6 Display the following pattern.

#! /bin/bash

for((i=1;i<=5;i++))

do

for((j=1;j<=5-i;j++))

do

echo -n ' '

done

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

do

echo -n $i

echo -n ' '

done

echo

done

# 2. Write a shell script to find the factorial of a given no.

#! /bin/bash

echo -n "Enter Number : "

read N

for((i=N-1;i>=1;i--))

do

((N=N\*i))

done

echo -n "Ans : "

echo $N

# 3. Write a shell script to find the largest of three numbers and also find the total and average.

#! /bin/bash

echo enter three number

read a

read b

read c

if [ $a -gt $b ]

then

if [ $a -gt $c ]

then

echo Max is $a

else

echo Max is $c

fi

else

if [ $b -gt $c ]

then

echo Max is $b

else

echo Max is $c

fi

fi

# 

# 5. Write a shell script to find whether a given year (4 digits) is leap year or not.

#!/bin/bash

echo -n "Enter year : "

read year

if [ $((year%4)) -eq 0 ]

then

if [ $((year%100)) -eq 0 ]

then

if [ $((year%400)) -eq 0 ]

then echo "Leap Year"

else echo "Not a Leap Year"

fi

else echo "Leap Year"

fi

else echo "Not a Leap Year"

fi

# Output :

# (base) [vatsal@localhost OS LAB]$ sh leapyear.sh

# Enter year : 1700

# Not a Leap Year

# (base) [vatsal@localhost OS LAB]$ sh leapyear.sh

# Enter year : 2020

# Leap Year

# 6. Write a shell script to find the sum of first n numbers.

#!/bin/bash

echo -n "Enter value of n : "

read n

ans=$(((n\*(n+1))/2))

echo $ans

# 7. Write a shell script to check whether a given no. is prime or not.

#!/bin/bash

echo "Enter a number : "

read a

b=$((a-1))

flag=1

for i in $(seq 2 "$b")

do

#echo "$((a%i))"

if [ $((a%i)) -eq 0 ]

then flag=$((flag-1));break

fi

done

#echo "$flag"

if [ "$flag" -eq 1 ]

then echo "Number is prime"

else echo "Number is not prime"

fi

# 8. Write a shell script to generate a multiplication table.

#! /bin/bash

echo -n "Enter Number : "

read N

for((i=1;i<=10;i++))

do

echo $N '\*' $i '=' $((N\*1))

done

# 9. Write a command file that displays the following:

# a) Calendar of the current month and year.

# b) Current date in dd/mm/yy and time.

# c) Display “Good Morning / Good Afternoon / Good Evening” according to the current login time.

# d) User name, user’s home directory.

# e) Terminal name, terminal type.

# f) Machine name.

# g) No. of user currently logged in.

#!/bin/bash

echo "Calender : ";cal

echo "Date : ";date +"%d/%m/%y";echo ""

echo "Time : ";date +"%T";echo ""

check=`date +%H`

if [ $check -gt 6 -a $check -lt 12 ]

then echo "Good Morning"

elif [ $check -ge 12 -a $check -lt 18 ]

then echo "Good Afternoon"

else echo "Good Evening"

fi

echo ""

echo "User name : ";whoami;echo ""

echo "Home directory : ";echo $HOME;echo ""

echo "Terminal name : ";tty;echo ""

echo "Terminal Type : ";echo $TERM;echo ""

echo "Machine name : ";uname -a;echo ""

echo "Number of users currently logged in : ";users | wc -w

# Output :

Calender :

August 2019

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

Date :

17/08/19

Time :

21:54:38

Good Evening

User name :

vatsal

Home directory :

/home/vatsal

Terminal name :

/dev/pts/0

Terminal Type :

xterm-256color

Machine name :

Linux mr5-VirtualBox 4.15.0-46-generic #49-Ubuntu SMP Wed Feb 6 09:33:07 UTC 2019 x86\_64 x86\_64 x86\_64 GNU/Linux

Number of users currently logged in :

1

# 10. Write a shell script to find the sum of n numbers which are passed by command line argument.

#!/bin/bash

ans=0

for i in $@

do

ans=$((ans+i))

done

echo $ans

# Output

:~/Desktop/Operating System$ sh sumofnCommandline.sh 2 3 4

9

:~/Desktop/Operating System$ sh sumofnCommandline.sh 2 3 4 7 10

26

# 11. Write a shell script to find the sum of digits of a number entered through command line argument and find whether sum is even or not.

# #!/bin/bash

n=$1

ans=0

while [ $n -ne 0 ]

do

r=$((n%10))

ans=$((ans+r))

n=$((n/10))

done

if [ $((ans%2)) -eq 0 ]; then

echo "Even"

else echo "Odd"

Fi

~/Desktop/Operating System$ sh sumofdigitsCommandline.sh 111

Odd

~/Desktop/Operating System$ sh sumofdigitsCommandline.sh 1111

Even

:~/Desktop/Operating System$ sh sumofdigitsCommandline.sh 1221

Even

~/Desktop/Operating System$ sh sumofdigitsCommandline.sh 12211

Odd

~/Desktop/Operating System$ sh sumofdigitsCommandline.sh 122111

Even

'

# 12. Write a shell script to print all the values which are passed by command line argument in reverse way. If total values entered through command line argument are more than 5 print “Invalid number of arguments”.

#!/bin/bash

if [ $# -gt 5 ];then

echo "invalid number of Arguments"

else

n=$#

args="$@"

echo $args

for i in $(seq $((n-1)) -1 0)

do

echo $i

#echo -n "${args[$i]}"

done

fi

echo ""

# 13. Write a shell script to check whether a given user is currently logged in or not.

#!/bin/bash

echo -n "Enter name of the user : "

read name

Logged=`users`

for user in $Logged

do

if [ $user = $name ];then

echo "User is Logged in currently"

exit

fi

done

echo "User not logged in currently"

#Output :

(base) [vatsal@localhost OS LAB]$ sh userLoggedin.sh

Enter name of the user : vatsal

User is Logged in currently

(base) [vatsal@localhost OS LAB]$ sh userLoggedin.sh

Enter name of the user : ttt

User not logged in currently

'

# 16. Write a shell script to remove all the zero sized files from the current directory.

#!/bin/bash

echo -n "Enter name of the directory :"

read dire

if [ ! -d "$dire" ]

then

echo "Directory does not exist"

else

for i in `find $directory -type f -size 0`

do

rm -i $i

done

Fi

# 17. Combine Emp1 and Emp2 in file Emp3 horizontally and vertically.

#!/bin/bash

IFS=

echo "File one : "

echo `cat $1`

echo "File two : "

echo `cat $2`

`paste $1 $2 > Horizontal`

echo "Horizontal : "

echo `cat Horizontal`

echo "Vertical : "

`cat $1 $2 > Vertical`

echo `cat Vertical`

: '

cp25@cp25-OptiPlex-3050:~/Desktop/17BIT028$ sh 17.sh one two

File one :

a

a

a

a

File two :

b

b

b

b

Horizontal :

a b

a b

a b

a b

Vertical :

a

a

a

a

b

b

b

b

'

# 22. Write a shell script to change the suffix of all your \*.txt files to .dat.

#!/bin/bash

for file in \*.txt

do

mv -- "$file" "${file%.txt}.text"

done

## **palindrome number**

#! /bin/bash

echo -n "Enter Number : "

read N

num=$N

c=''

while [ $N -ne 0 ]

do

ll=$((N%10))

c=$c$ll

N=$((N/10))

done

if [ $c -eq $num ]

then

echo "yes"

else

echo "No"

fi