Advanced Computer Networks Lab Assignment

Topic: -Shell Programming

Submitted By,

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S2RMCA Batch A

Roll No:29

1. Write a shell script to ask your name, and college name and print it on the screen.

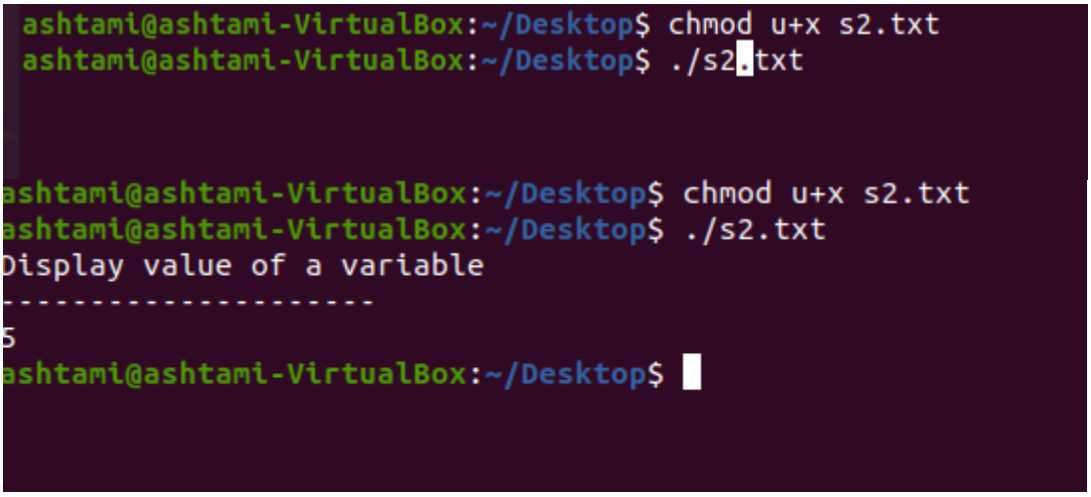
```
#!/bin/bash
echo " Enter Details and View”
echo "================"
echo Enter your Name
read name
echo Enter your College name
read college
clear
echo Details you entered
echo Name: $name
echo College: $college
```

```
ashtami@ashtami-VirtualBox:~/Desktop$ chmod u+x s1.txt
ashtami@ashtami-VirtualBox:~/Desktop$ ./s1.txt
Enter details and view
----------------------
enter your name
Ashtami Prasad
enter your college name
Amaljyothi College of Engineering
```

```
details you entered
name:Ashtami Prasad
college:Amaljyothi College of Engineering
```

2. Write a shell script to set a value for a variable and display it on command line interface.

```
#!/bin/bash
echo "Display value of a Variable "
echo  "===================="
a=10
echo "$a"
```



3. Write a shell script to perform addition, substation, multiplication, division with two numbers that is accepted from user.

```
#!/bin/bash
echo "ARITHMETIC OPERATIONS"
echo "====================="
echo "Enter a number"
read a
echo "Enter another number"
read b
echo "Enter operation needed"
echo "\n1.Addition\n2.Substraction\n3.Multiplication\n4.Division"
read op
case "$op" in
"1") echo "a+b="$(($a+$b));;
"2") echo "a-b="$(($a-$b));;
"3") echo "a*b="$(($a*$b));;
"4") echo "a/b="$(($a/$b));;
esac
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s3.txt
ashtami@ashtami-VirtualBox:~$ ./s3.txt
ARITHMETIC OPERATIONS
=====================
Enter a number
5
Enter another number
6
Enter operation needed
\n1.Addition\n2.Substraction\n3.Multiplication\n4.Division
1
a+b=11
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s3.txt
ashtami@ashtami-VirtualBox:~$ ./s3.txt
ARITHMETIC OPERATIONS
=====================
Enter a number
6
Enter another number
5
Enter operation needed
\n1.Addition\n2.Substraction\n3.Multiplication\n4.Division
2
a-b=1
ashtami@ashtami-VirtualBox:~$ ./s3.txt
ARITHMETIC OPERATIONS
=====================
Enter a number
6
Enter another number
5
Enter operation needed
\n1.Addition\n2.Substraction\n3.Multiplication\n4.Division
3
a*b=30
```

```
ashtami@ashtami-VirtualBox:~$ ./s3.txt
ARITHMETIC OPERATIONS
=====================
Enter a number
6
Enter another number
5
Enter operation needed
\n1.Addition\n2.Substraction\n3.Multiplication\n4.Division
4
a/b=1
```

4. Write a shell script to check the value of a given number and display whether the number is found or not.

```
#!/bin/bash
echo "Finding a number"
echo "================"
echo "Enter a number"
read a
if [ $a == 10 ]; then
      echo "Number found ;)"
else
      echo "Number NOT found !"
fi
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s4.txt
ashtami@ashtami-VirtualBox:~$ ./s4.txt
```

```
ashtami@ashtami-VirtualBox:~$ ./s4.txt
Finding a number
================
Enter a number
5
Number NOT found !
ashtami@ashtami-VirtualBox:~$
```

5. Write a shell script to display current date, calendar.

```
#!/bin/bash
echo "Time and Calendar"
echo "================"
echo "Today is $(date)"
echo ""
echo "Calendar :"
cal
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s5.txt
ashtami@ashtami-VirtualBox:~$ ./s5.txt
Time and Calendar
===============
Today is Sat 02 Oct 2021 01:02:06 PM EDT

Calendar :
    October 2021
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
```

6. Write a shell script to check a number is even or odd.

```
#!/bin/bash
echo "EVEN OR ODD"
echo "==========="
echo "Enter a number"
read n
x=$(($n%2))
if [ $x -eq 0 ]; then
  echo "Number is Even"
else
  echo "Number is odd"
fi
```

```
ashtami@ashtami-VirtualBox:~$ nano
ashtami@ashtami-VirtualBox:~$ chmod u+x s6.txt
ashtami@ashtami-VirtualBox:~$ ./s6.txt
EVEN OR ODD
===========
Enter a number
10
Number is Even
```

7. Write a shell script to check a number is greater than, less than or equal to another number.

```
#!/bin/bash
echo "Comparing numbers"
echo "================"
echo "Enter first number"
read a
echo "Enter second number"
read b
if [ $a -gt $b ]; then
  echo "$a is greater"
elif [ $b -gt $a ];then
  echo "$b is greater"
else
  echo "Both are Equal"
fi
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s7.txt
ashtami@ashtami-VirtualBox:~$ ./s7.txt
Comparing numbers
================
Enter first number
100
Enter second number
50
100 is greater
```

8.Write a shell script to find the sum of first 10 numbers.

```
#!/bin/bash
```

```
echo "Sum of Numbers "
echo "============="
s=0
for (( i=1;i<=10;i++ ))
do
s=`expr $s + $i`
done
echo “Sum of first 10 numbers = $s”
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s8.txt
ashtami@ashtami-VirtualBox:~$ ./s8.txt
Sum of Numbers
=============
“Sum of first 10 numbers = 55”
```

9. Write a shell script to find the sum, the average and the product of the four integers entered.

```
#!/bin/bash
echo  "AVG, SUM & Product of 4 No."
echo  "========================"
echo "Please enter your first number: "
read a
echo "Second number: "
read b
echo "Third number: "
read c
echo "Fourth number: "
read d

sum=$(($a + $b + $c + $d))
avg=$(echo $sum / 4 | bc -l )
prod=$(($a * $b * $c * $d))

echo "The sum of these numbers is: " $sum
echo "The average of these numbers is: " $avg
echo "The product of these numbers is: " $prod
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s9.txt
ashtami@ashtami-VirtualBox:~$ ./s9.txt
AVG, SUM & Product of 4 No.
----------------------------------------
Please enter your first number:
1
Second number:
5
Third number:
9
Fourth number:
8
The sum of these numbers is:  23
The average of these numbers is:  5.75000000000000000000
The product of these numbers is:  360
```

10. Write a shell script to find the smallest of three numbers.

```
#!/bin/bash
echo "LARGEST OF THREE"
echo "================"
echo "Enter first number"
read a
echo "Enter second number"
read b
echo "Enter third number"
read c
if [$a -gt $b]; then
if [$a -gt $c]; then
echo "$a is big"
else
echo "$c is big"
fi
elif [$b -gt $c];then
```

```
echo "$b is big"

else

echo "$c is big"

fi
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s16.txt
ashtami@ashtami-VirtualBox:~$ ./s16.txt
LARGEST OF THREE
================
Enter first number
5
Enter second number
10
Enter third number
20
20 is big
```

11. Write a shell program to find factorial of given number.

```
#!/bin/bash
echo "Factorial"
echo "======="
echo "Enter a number"
read num
fact=1

for((i=2;i<=num;i++))
     {
          fact=$((fact * i))  #fact = fact * i
      }
echo "Factorial is $fact"
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s11.txt
ashtami@ashtami-VirtualBox:~$ ./s11.txt
Factorial
=======
Enter a number
4
Factorial is 24
```

12. Write a shell program to check a number is palindrome or not.

```
#!/bin/bash
echo "Palindrome or Not"
echo "================"
echo "Enter number to check"
read n
rev=$(echo $n | rev)
if [ $n -eq $rev ]; then
    echo "Number is Palindrome"
else
    echo "Number is not Palindrome"
fi
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s12.txt
ashtami@ashtami-VirtualBox:~$ ./s12.txt
Palindrome or Not
================
Enter number to check
1233
Number is not Palindrome
```

13.Write a shell script to find the average of the numbers entered in command line.

```
#!/bin/bash
echo "Average of N numbers"
echo "==================="
echo "Enter Size"
read n
i=1
sum=0

echo "Enter Numbers"
while [ $i -le $n ]
do
 read num
 sum=$((sum + num))
 i=$((i + 1))
done
avg=$(echo $sum / $n | bc -l)
echo $avg
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s13.txt
ashtami@ashtami-VirtualBox:~$ ./s13.txt
Average of N numbers
==================
Enter Size
3
Enter Numbers
7
6
11
8.00000000000000000000
```

14.Write a shell program to find the sum of all the digits in a number.

```
#!/bin/bash
echo "Sum of all digits"
echo "============="
echo "Enter a number:"
read num
sum=0

while [ $num -gt 0 ]
do
    mod=$((num % 10))
    sum=$((sum + mod))
    num=$((num / 10))
done
echo "Sum of digits is $sum"
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s14.txt
ashtami@ashtami-VirtualBox:~$ ./s14.txt
Sum of all digits
=============
Enter a number:
6
Sum of digits is 6
```

15.Write a shell Script to check whether given year is leap year or not.

```
#!/bin/bash
echo "LEAP YEAR OR NOT"
echo "==============="
echo "Enter the year"
read y
a=`expr $y % 4`
b=`expr $y % 100`
c=`expr $y % 400`
if [ $a -eq 0 -a $b -ne 0 -o $c -eq 0 ];
then
echo "$y is leap year"
else
echo "$y is not leap year"
fi
```

```
ashtami@ashtami-VirtualBox:~$ chmod u+x s15.txt
ashtami@ashtami-VirtualBox:~$ ./s15.txt
LEAP YEAR OR NOT
===============
Enter the year
2020
2020 is leap year
```