Networking and System Administration Lab

Lab Assignment: Shell scripting

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Roll No: 40

RMCA-B Sem-II

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

```bash
#!/bin/bash
echo "Enter the details and view"

echo "Enter your Name:"
read name
echo "Enter the name of your college"
read college
clear
echo "The entered details are:"
echo Name: $name
echo College: $college
```

```
vimalthomson@vimal-thomson:~$ vi 1.sh
vimalthomson@vimal-thomson:~$ chmod +x 1.sh
vimalthomson@vimal-thomson:~$ ./1.sh
Enter the details and view
Enter your Name:
vimal
Enter the name of your college
Amal Jyothi College of Engineering
```

```
The entered details are:
Name: vimal
College: Amal Jyothi College of Engineering
vimalthomson@vimal-thomson:~$
```

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

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

a=10
echo "$a"
```

```
vimalthomson@vimal-thomson:~$
vimalthomson@vimal-thomson:~$ vi 2.sh
vimalthomson@vimal-thomson:~$ chmod +x 2.sh
vimalthomson@vimal-thomson:~$ ./2.sh
```

```
Display value of a Variable
10
vimalthomson@vimal-thomson:~$
```

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

```bash
#!/bin/bash
echo "Arthematic Operations"
echo "Enter a number"
read a
echo "Enter another number"
read b
echo "Enter operation needed"
echo "\n1.Addition\n2.Substraction\3.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
```

```
vimalthomson@vimal-thomson:~$ vi 3.sh
vimalthomson@vimal-thomson:~$ chmod +x 3.sh
vimalthomson@vimal-thomson:~$ ./3.sh
```

```
Arthematic Operations
Enter a number
5
Enter another number
6
Enter operation needed
\n1.Addition\n2.Substraction\3.Multiplication\n4.Division
1
a+b=11
vimalthomson@vimal-thomson:~$ ./3.sh
Arthematic Operations
Enter a number
5
Enter another number
6
Enter operation needed
\n1.Addition\n2.Substraction\3.Multiplication\n4.Division
3
a*b=30
vimalthomson@vimal-thomson:~$
```

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

```bash
#!/bin/bash
echo "Finding a number"

echo "Enter a number"
read a
if [$a == 10];
then
        echo "Number found!"
else
        echo "Number not found!"
fi
```

```
vimalthomson@vimal-thomson:~$ vi 4.sh
vimalthomson@vimal-thomson:~$ chmod +x 4.sh
vimalthomson@vimal-thomson:~$ ./4.sh
Finding a number
Enter a number
5
./4.sh: line 6: [5: command not found
Number not found!
vimalthomson@vimal-thomson:~$
```

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

```bash
#!/bin/bash
echo "Time and Calender"

echo "Today is $(date)"

echo "Calender"
```

```
vimalthomson@vimal-thomson:~$ vi 5.sh
vimalthomson@vimal-thomson:~$ chmod +x 5.sh
vimalthomson@vimal-thomson:~$ ./5.sh
Time and Calender
Today is Saturday 02 October 2021 06:17:42 PM IST
Calender
vimalthomson@vimal-thomson:~$
```

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

```bash
#!/bin/bash
echo "EVEN OR ODD"

echo "Enter a number"
read n
x=$(($n%2))
if [$x-eq 0];
then
        echo "Number is even"
else
        echo "Number is odd"
fi
```

```
vimalthomson@vimal-thomson:~$ vi 6.sh
vimalthomson@vimal-thomson:~$ chmod +x 6.sh
vimalthomson@vimal-thomson:~$ ./6.sh
EVEN OR ODD
Enter a number
5
./6.sh: line 7: [1-eq: command not found
Number is odd
vimalthomson@vimal-thomson:~$
```

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

```bash
#!/bin/bash
echo "Compairing numbers"

echo "Enter first number"
read a
echo "Enter second number"
read b
if [$a -gt $b];
then
        echo "$a is greater"
elif [$b -gt $a];
        echo "$b is greater"
else
        echo "Both are Equal"
fi
```

```
vimalthomson@vimal-thomson:~$ vi 7.sh
vimalthomson@vimal-thomson:~$ ./7.sh
Compairing numbers
Enter first number
100
Enter second number
20
100 is greater
vimalthomson@vimal-thomson:~$
```

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

```
#!/bin/bash
echo "Sum of Numbers"

a=0
for (( i=1;i<=10;i++ ))
do
        a=`expr $a + $i`
done
echo "Sum of 1 numbers=$a"
```

```
vimalthomson@vimal-thomson:~$ vi 8.sh
vimalthomson@vimal-thomson:~$ chmod +x 8.sh
vimalthomson@vimal-thomson:~$ ./8.sh
Sum of Numbers
Sum of first 10 numbers=55
vimalthomson@vimal-thomson:~$
```

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 numbers"

echo "enter first number"
read a
echo "enter second number"
read b
echo "enter third number"
read c
echo "enter forth number"
read d

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

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

```
vimalthomson@vimal-thomson:~$ vi 9.sh
vimalthomson@vimal-thomson:~$ chmod +x 9.sh
vimalthomson@vimal-thomson:~$ ./9.sh
avg, sum & product of 4 numbers
enter first number
1
enter second number
2
enter third number
3
enter forth number
4
./9.sh: line 14: bc-l: command not found
the sum of the numbers is: 10
the average of the numbers is:
the product of the numbers is: 24
vimalthomson@vimal-thomson:~$ 
```

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

```
#!/bin/bash
echo "Largest of Three"

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 greater"
        else
                echo "$c is greater"
        fi
elif [$b -gt $c];
then
        echo "$b is greater"
else
        echo "$c is greater"
fi
```

```
vimalthomson@vimal-thomson:~$ vi 10.sh
vimalthomson@vimal-thomson:~$ chmod +x 10.sh
vimalthomson@vimal-thomson:~$ .10.sh
.10.sh: command not found
vimalthomson@vimal-thomson:~$ ./10.sh
Largest of Three
enter first number
5
enter second number
6
enter third number
4
./10.sh: line 11: [5: command not found
./10.sh: line 19: [6: command not found
4 is greater
vimalthomson@vimal-thomson:~$
```

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

```
#!/bin/bash
echo "Factorial"

echo "enter a number"
read num
fact=1
for((i=2;i<=num;i++))
        {
                fact=$((fact*i))
        }
echo "factorial is $fact
"
```

```
vimalthomson@vimal-thomson:~$ vi 11.sh
vimalthomson@vimal-thomson:~$ chmod +x 11.sh
vimalthomson@vimal-thomson:~$ ./11.sh
Factorial
enter a number
5
factorial is 120
```

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

```bash
#!/bin/bash
echo "Palindrome or NOT"

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
```

```
vimalthomson@vimal-thomson:~$ vi 12.sh
vimalthomson@vimal-thomson:~$ chmod +x 12.sh
vimalthomson@vimal-thomson:~$ ./12.sh
Palindrome or NOT
Enter number to check
565
Number is Palindrome
vimalthomson@vimal-thomson:~$
```

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

```bash
#!/bin/bash
echo "Avg of n numbers"

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
```

```
vimalthomson@vimal-thomson:~$ vi 13.sh
vimalthomson@vimal-thomson:~$ chmod +x 13.sh
vimalthomson@vimal-thomson:~$ ./13.sh
Avg of n numbers
enter size
5
Enter numbers
2
2
2
2
2
./13.sh: line 16: avg+2.00000000000000000000: command not found
```

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

```bash
#!/bin/bash
echo "Sum of all digits"

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"
```

```
vimalthomson@vimal-thomson:~$ vi 14.sh
vimalthomson@vimal-thomson:~$ chmod +x 14.sh
vimalthomson@vimal-thomson:~$ ./14.sh
Sum of all digits
Enter a number
1221
Sum of digits is 6
vimalthomson@vimal-thomson:~$
```

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

```bash
#!/bin/bash
echo "Leap year or Not"

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
```

```
vimalthomson@vimal-thomson:~$ vi 15.sh
vimalthomson@vimal-thomson:~$ chmod +x 15.sh
vimalthomson@vimal-thomson:~$ ./15.sh
Leap year or Not
Enter the year
1998
./15.sh: line 9: [: missing `]'
1998 is not leap year
vimalthomson@vimal-thomson:~$
```