# Advanced Computer Networks
# Lab Assignment

**TOPIC: -** Shell Programming

**Submitted By:**
Anilect Jose
Roll no: 17
S2 RMCA A

**Submitted To:**
Rini Kurian

**Submitted on:**
02-10-2021

# Shell Scripting Lab Assignments

## *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
```

```
ani@KAJ:~/Anilect$ bash 1.sh
 Enter Details and View
================
Enter your Name:
Anilect Jose
Enter your College name:
Amal Jyothi College of Engineering
Details you entered
Name: Anilect Jose
College: Amal Jyothi College of Engineering
ani@KAJ:~/Anilect$
```

## *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"
```

```
ani@KAJ:~/Anilect$ bash 2.sh
Display value of a Variable
====================
10
```

***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
```

```
ARITHMETIC OPERATIONS
=====================
Enter a number
20
Enter another number
10
Enter operation needed

 1.Addition
 2.Substraction
 3.Multiplication
 4.Division1
a+b=30
ani@KAJ:~/Anilect$ vi 3.sh
ani@KAJ:~/Anilect$ bash 3.sh
ARITHMETIC OPERATIONS
=====================
Enter a number
20
Enter another number
10
Enter operation needed
1.Addition
2.Substraction
3.Multiplication
4.Division
1
a+b=30
ani@KAJ:~/Anilect$ bash 3.sh
ARITHMETIC OPERATIONS
=====================
Enter a number
20
Enter another number
10
Enter operation needed
1.Addition
2.Substraction
3.Multiplication
4.Division
2
a-b=10
```

```
ARITHMETIC OPERATIONS
=====================
Enter a number
20
Enter another number
10
Enter operation needed
1.Addition
2.Substraction
3.Multiplication
4.Division
4
a/b=2
```

## *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
```

```
ani@KAJ:~/Anilect$ bash 4.sh
Finding a number
================
Enter a number
10
Number found ;)
ani@KAJ:~/Anilect$ bash 4.sh
Finding a number
================
Enter a number
30
Number NOT found !
```

## *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

```
ani@KAJ:~/Anilect$ bash 5.sh
Time and Calendar
==========
Today is Sat Oct  2 15:29:52 IST 2021

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
```

```
ani@KAJ:~/Anilect$ bash 6.sh
EVEN OR ODD
===========
Enter a number
100
Number is Even
ani@KAJ:~/Anilect$ bash 6.sh
EVEN OR ODD
===========
Enter a number
51
Number is odd
```

## *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
```

```
ani@KAJ:~/Anilect$ bash 7.sh
Comparing numbers
================
Enter first number
100
Enter second number
50
100 is greater
ani@KAJ:~/Anilect$ bash 7.sh
Comparing numbers
================
Enter first number
79
Enter second number
101
101 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”
```

```
ani@KAJ:~/Anilect$ bash 8.sh
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
```

```
ani@KAJ:~/Anilect$ bash 9.sh
AVG, SUM & Product of 4 No.
========================
Please enter your first number:
25
Second number:
45
Third number:
15
Fourth number:
35
The sum of these numbers is:  120
The average of these numbers is:  30.00000000000000000000
The product of these numbers is:  590625
```

## *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
```

```
ani@KAJ:~/Anilect$ bash 10.sh
LARGEST OF THREE
================
Enter first number
20
Enter second number
78
Enter third number
60
78 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"
```

```
ani@KAJ:~/Anilect$ bash 11.sh
Factorial
========
Enter a number
3
Factorial is 6
ani@KAJ:~/Anilect$ bash 11.sh
Factorial
========
Enter a number
6
Factorial is 720
```

## *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
```

```
ani@KAJ:~/Anilect$ bash 12.sh
Palindrome or Not
================
Enter number to check
1234321
Number is Palindrome
ani@KAJ:~/Anilect$ bash 12.sh
Palindrome or Not
================
Enter number to check
123323
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
```

```
ani@KAJ:~/Anilect$ bash 13.sh
Average of N numbers
==================
Enter Size
5
Enter Numbers
10
15
14
50
36
Average is 25.0000000000000000000
```

## *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"
```

```
ani@KAJ:~/Anilect$ bash 14.sh
Sum of all digits
=================
Enter a number:
457734
Sum of digits is 30
```

## *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
```