

ADVANCED COMPUTER NETWORKS LAB ASSIGNMENT

TOPIC: - Shell Programming

Submitted By:

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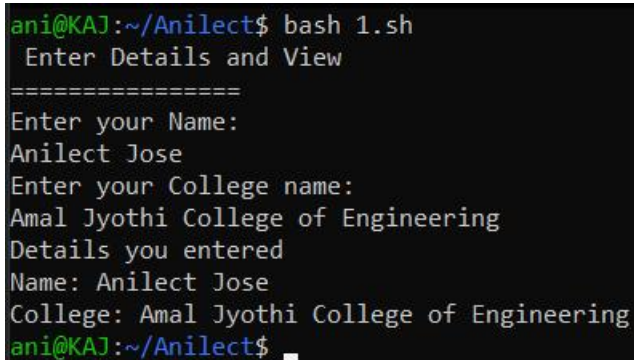
Submitted on:

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Shell Scripting Lab Assignments

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

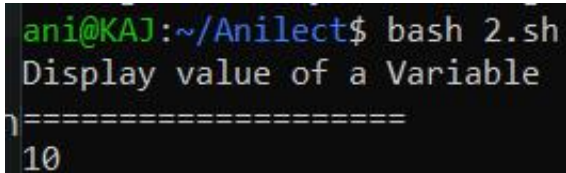
```
#!/bin/bash
echo " Enter Details and View"
echo "======"
echo Enter your Name
read name
echo Enter your College name
read college
clear
echo Details you entered
echo Name: $name
echo College: $college
```



```
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, subtraction, 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
```

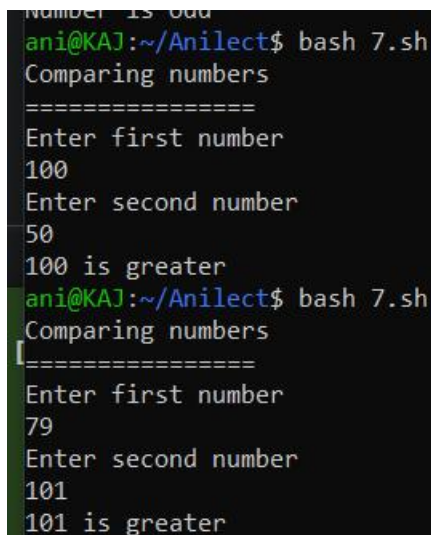
7. Write a shell script to check a number is greater than, less than or equal to another number.

```
#!/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

```



```

Number is odd
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

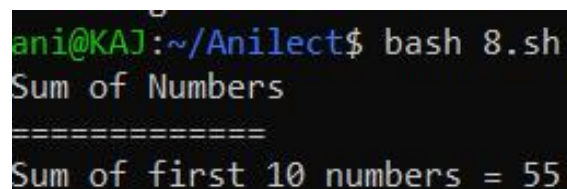
```

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

```

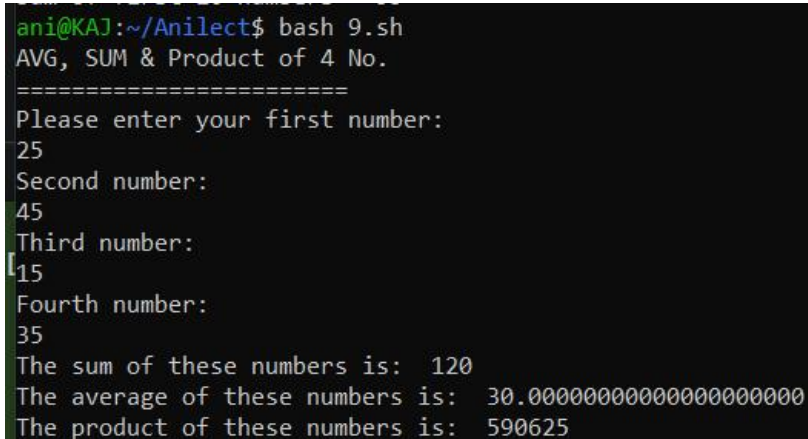
```

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: 30.000000000000000000000000000000
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"

```

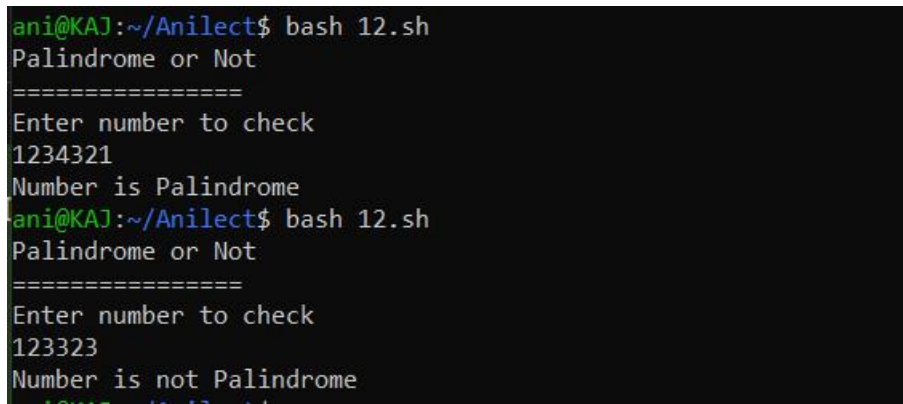
```

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 25.000000000000000000000000

```

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

```

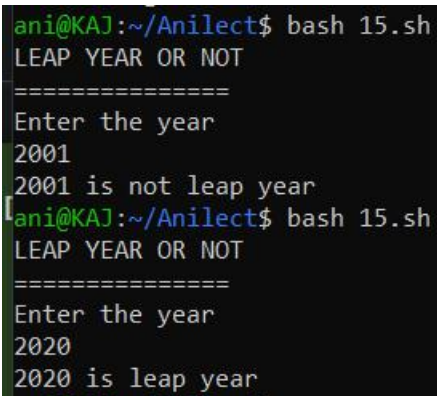
15. Write a shell Script to check whether given year is leap year or not.

```

#!/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
```



```
ani@KAJ:~/Anilect$ bash 15.sh  
LEAP YEAR OR NOT  
=====  
Enter the year  
2001  
2001 is not leap year  
ani@KAJ:~/Anilect$ bash 15.sh  
LEAP YEAR OR NOT  
=====  
Enter the year  
2020  
2020 is leap year
```

The screenshot shows a terminal window where a script named 15.sh is being executed. The prompt is ani@KAJ:~/Anilect\$. The script first prints "LEAP YEAR OR NOT" followed by a separator line of equals signs. It then prompts "Enter the year". In the first run, the user enters 2001, and the script outputs "2001 is not leap year". In the second run, the user enters 2020, and the script outputs "2020 is leap year".