

Advanced Computer Networks Lab Assignment

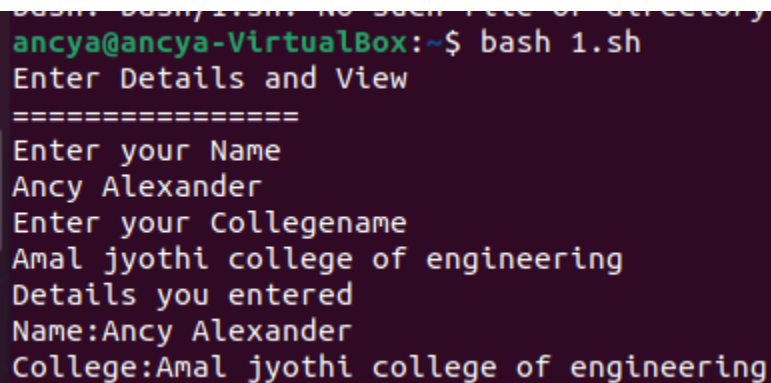
Topic: -Shell Scripting Programs

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

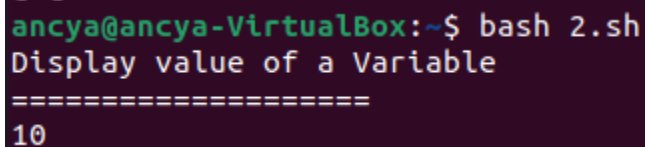
```
#!/bin/bash
echo "Enter Details and View"
echo "====="
echo Enter your Name
read name
echo Enter your College name
read college
clear
echo Details you entered
echo Name: $name
echo College: $college
```

A terminal window with a dark purple background. The prompt is 'aneya@aneya-VirtualBox:~\$'. The user enters 'bash 1.sh'. The script outputs 'Enter Details and View', followed by a separator line '====='. It then prompts 'Enter your Name', where 'Ancy Alexander' is entered. Next, it prompts 'Enter your Collegename', where 'Amal jyothi college of engineering' is entered. Finally, it displays 'Details you entered' followed by 'Name:Ancy Alexander' and 'College:Amal jyothi college of engineering' on separate lines.

```
aneya@aneya-VirtualBox:~$ bash 1.sh
Enter Details and View
=====
Enter your Name
Ancy Alexander
Enter your Collegename
Amal jyothi college of engineering
Details you entered
Name:Ancy Alexander
College:Amal jyothi 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"
```

A terminal window with a dark purple background. The prompt is 'aneya@aneya-VirtualBox:~\$'. The user enters 'bash 2.sh'. The script outputs 'Display value of a Variable', followed by a separator line '====='. It then displays the value of the variable 'a', which is '10'.

```
aneya@aneya-VirtualBox:~$ 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.

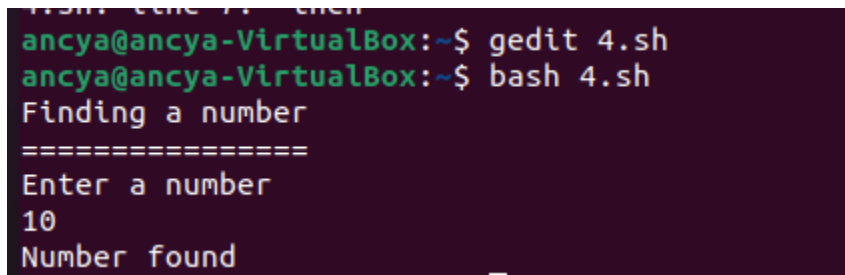
```
#!/bin/bash
echo "ARITHMETIC OPERATIONS"
echo "===== "
echo "Enter a number"
read a
echo "Enter another number"
read b
echo "Enter operation needed"
echo "\n1.Addition\n2.Subtraction\n3.Multiplication\n4.Division"
read op
case "$op" in
"1") echo "a+b=$((a+b));"
"2") echo "a-b=$((a-b));"
"3") echo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



```

else
    echo "Number NOT found !"
fi

```



```

ancya@ancya-VirtualBox:~$ gedit 4.sh
ancya@ancya-VirtualBox:~$ bash 4.sh
Finding a number
=====
Enter a number
10
Number found

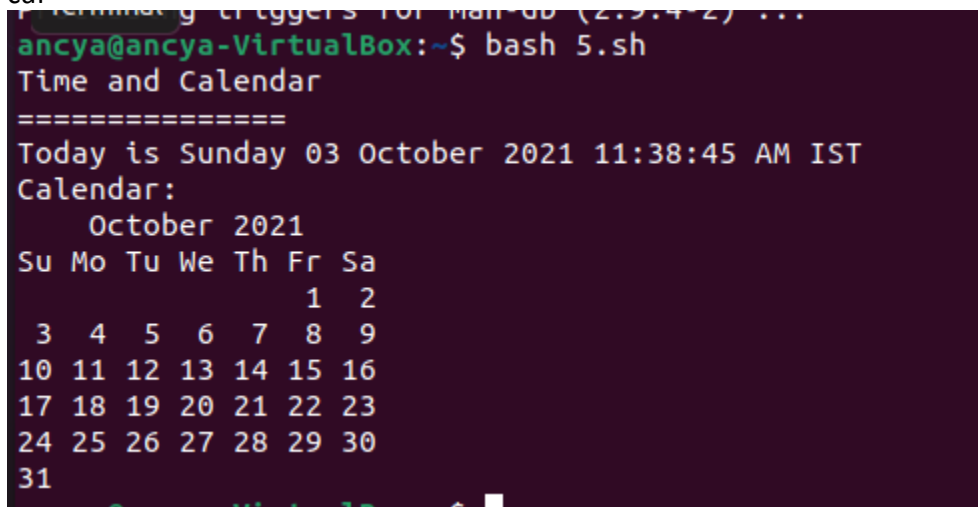
```

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

```



```

ancya@ancya-VirtualBox:~$ bash 5.sh
Time and Calendar
=====
Today is Sunday 03 October 2021 11:38:45 AM IST
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))

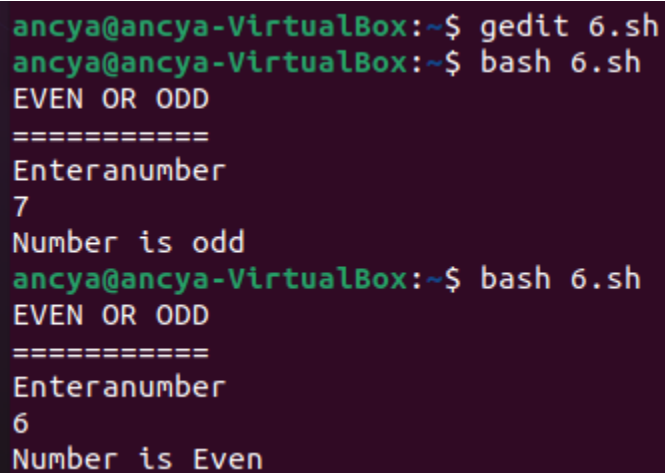
if [ $x -eq 0 ]; then

    echo "Number is Even"

else

    echo "Number is odd"

fi
```



The screenshot shows a terminal window with the following text:

```
ancya@ancya-VirtualBox:~$ gedit 6.sh
ancya@ancya-VirtualBox:~$ bash 6.sh
EVEN OR ODD
=====
Enter a number
7
Number is odd
ancya@ancya-VirtualBox:~$ bash 6.sh
EVEN OR ODD
=====
Enter a number
6
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"

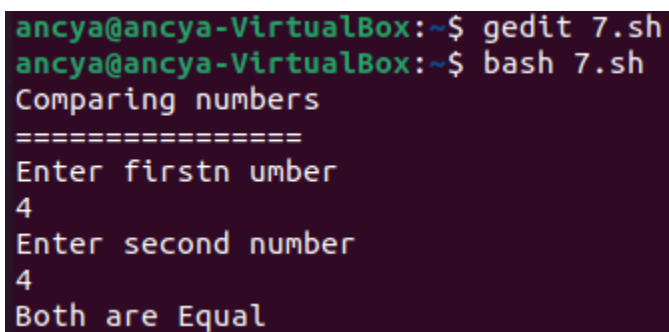
read b

if [ $a -gt $b ]; then
```

```

    echo "$a is greater"
elif [ $b -gt $a ];then
    echo "$b is greater"
else
    echo "Both are Equal"
fi

```



```

ancya@ancya-VirtualBox:~$ gedit 7.sh
ancya@ancya-VirtualBox:~$ bash 7.sh
Comparing numbers
=====
Enter firstn umber
4
Enter second number
4
Both are Equal

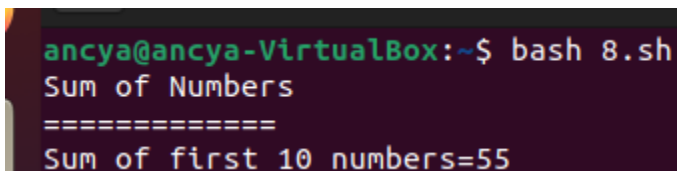
```

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"

```



```

ancya@ancya-VirtualBox:~$ bash 8.sh
Sum of Numbers
=====
Sum of first 10 numbers=55

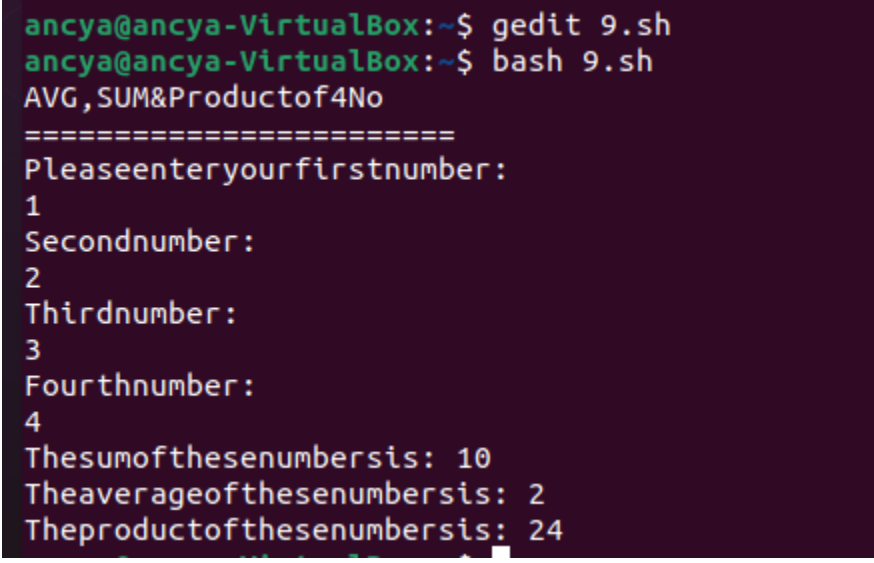
```

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
```



```

ancya@ancya-VirtualBox:~$ gedit 9.sh
ancya@ancya-VirtualBox:~$ bash 9.sh
AVG,SUM&Productof4No
=====
Pleaseenteryourfirstnumber:
1
Secondnumber:
2
Thirddnumber:
3
Fourthnumber:
4
Thesumofthesenumbersis: 10
Theaverageofthesenumbersis: 2
Theproductofthesenumbersis: 24

```

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

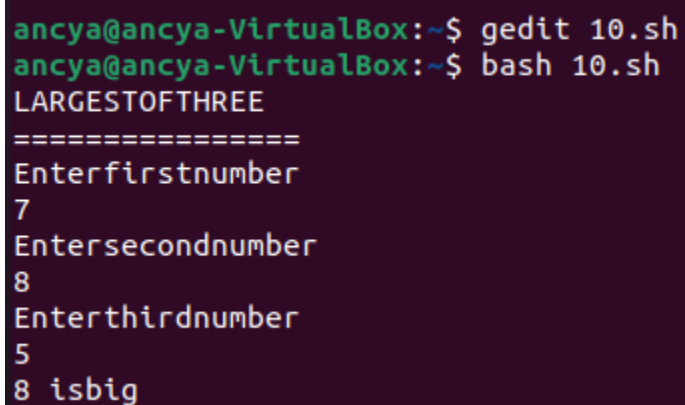
```
#!/bin/bash

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
```



```
ancya@ancya-VirtualBox:~$ gedit 10.sh
ancya@ancya-VirtualBox:~$ bash 10.sh
LARGESTOFTHREE
=====
Enterfirstnumber
7
Entersecondnumber
8
Enterthirdnumber
5
8 isbig
```

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

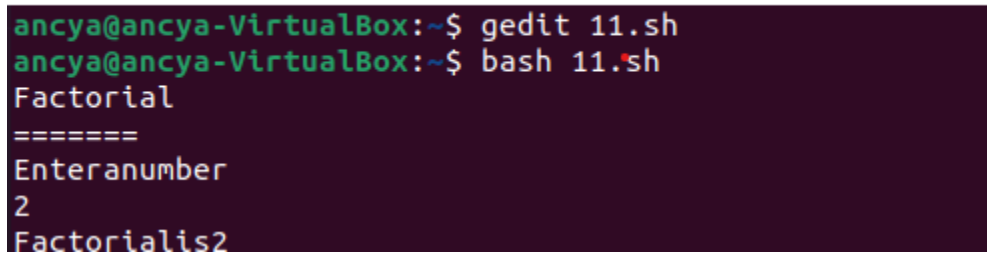
```
#!/bin/bash
```

```

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"

```



```

ancya@ancya-VirtualBox:~$ gedit 11.sh
ancya@ancya-VirtualBox:~$ bash 11.sh
Factorial
======"
Enter a number
2
Factorial is 2

```

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

```

```

ancya@ancya-VirtualBox:~$ gedit 12.sh
ancya@ancya-VirtualBox:~$ bash 12.sh
Palindrome or Not
=====
Enter number to check
56
NumberisnotPalindrome
ancya@ancya-VirtualBox:~$ bash 12.sh
Palindrome or Not
=====
Enter number to check
12321
NumberisPalindrome
ancya@ancya-VirtualBox:~$

```

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

```

```

ancya@ancya-VirtualBox:~$ gedit 13.sh
ancya@ancya-VirtualBox:~$ bash 13.sh
AverageofNnumbers
=====
EnterSize
3
EnterNumbers
1
6
9
5.33333333333333333333
ancya@ancya-VirtualBox:~$ █

```

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"

```

```

ancya@ancya-VirtualBox:~$ bash 14.sh
Sum of all digits
=====
Enter a number:
698
Sum of digits is 23

```

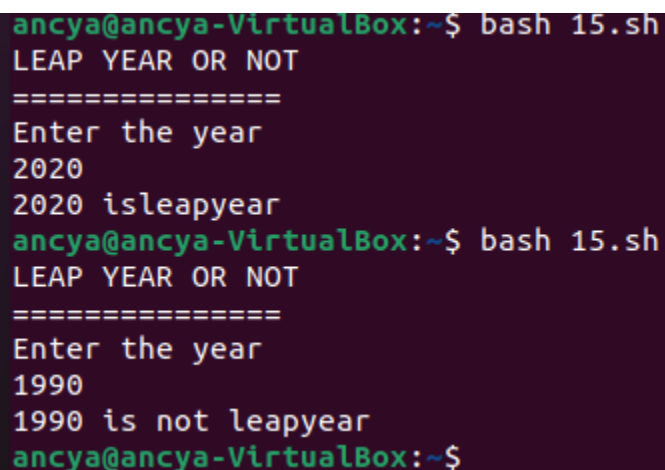
15. Write a shell Script to check whether given year is leap year or not.

```

#!/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
```



```
ancya@ancya-VirtualBox:~$ bash 15.sh
LEAP YEAR OR NOT
=====
Enter the year
2020
2020 isleapyear
ancya@ancya-VirtualBox:~$ bash 15.sh
LEAP YEAR OR NOT
=====
Enter the year
1990
1990 is not leapyear
ancya@ancya-VirtualBox:~$
```

The screenshot shows a terminal window with a dark background. It displays the output of the script for two different years. For 2020, it correctly identifies it as a leap year. For 1990, it correctly identifies it as not a leap year. The prompt 'ancya@ancya-VirtualBox:~\$' is visible at the start of each command line.