

ADVANCED COMPUTER NETWORKS LAB ASSIGNMENT

Topic: - Shell Programming

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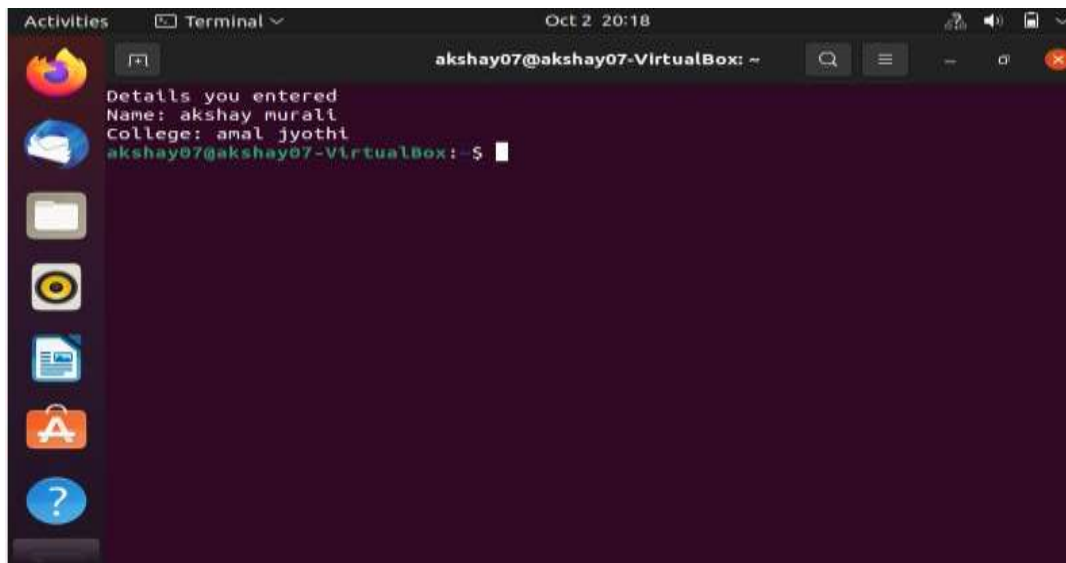
Submitted To:
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Shell Scripting Lab Assignments

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

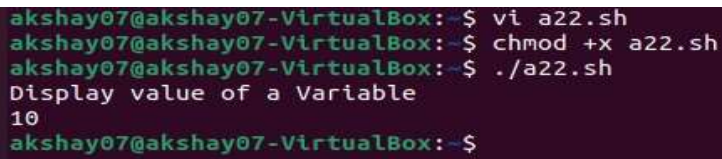
```
#!/bin/bash
echo " Enter Details and View"
echo "======"
echo Enter your Name
read name
echo Enter your College name
read college
clear
echo Details you entered
echo Name: $name
echo College: $college
```



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 'akshay07@akshay07-VirtualBox:~\$'. The user enters 'vi a22.sh', then 'chmod +x a22.sh', and finally './a22.sh'. The script output is 'Display value of a Variable' followed by '10'. The prompt returns to 'akshay07@akshay07-VirtualBox:~\$'.

```
akshay07@akshay07-VirtualBox:~$ vi a22.sh
akshay07@akshay07-VirtualBox:~$ chmod +x a22.sh
akshay07@akshay07-VirtualBox:~$ ./a22.sh
Display value of a Variable
10
akshay07@akshay07-VirtualBox:~$
```

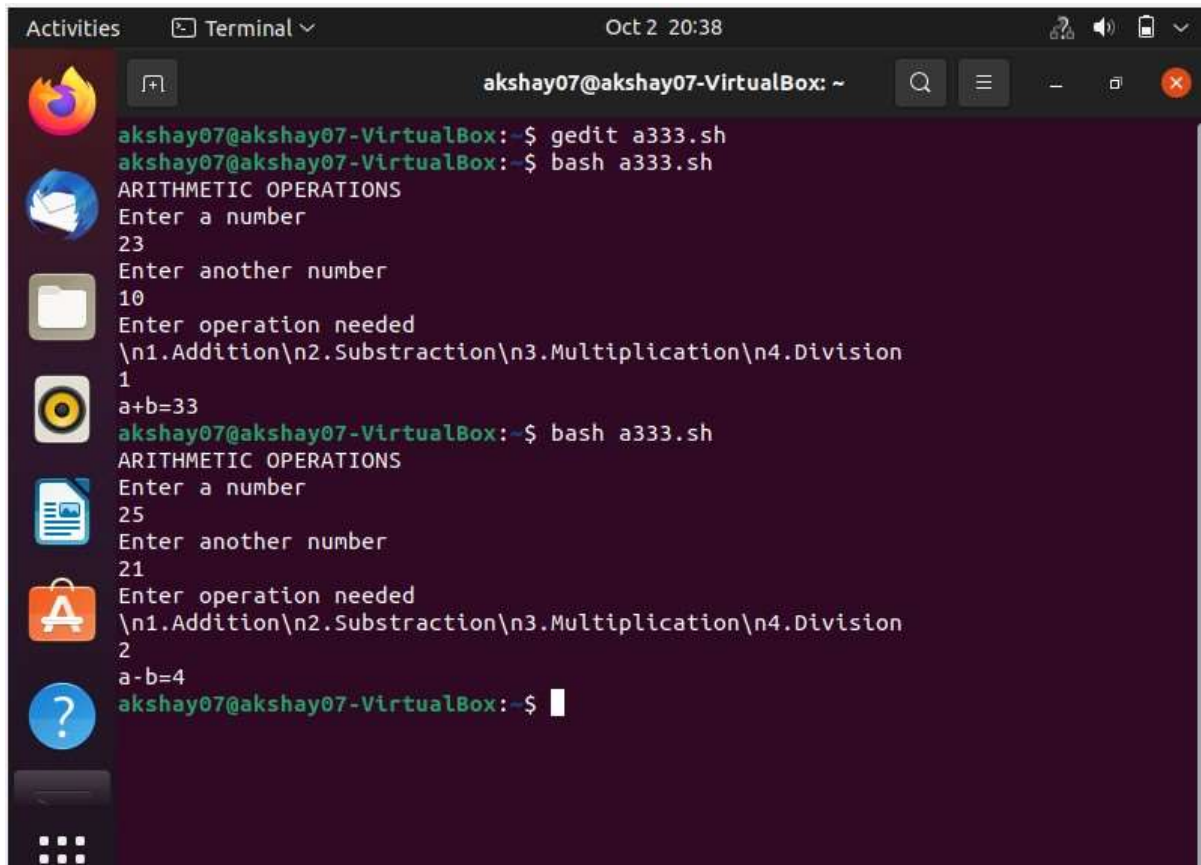
3. Write a shell script to perform addition, subtraction, multiplication, division with two numbers that is accepted from user.

```
#!/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
```



```
akshay07@akshay07-VirtualBox: ~$ gedit a333.sh
akshay07@akshay07-VirtualBox:~$ bash a333.sh
ARITHMETIC OPERATIONS
Enter a number
23
Enter another number
10
Enter operation needed
\n1.Addition\n2.Substraction\n3.Multiplication\n4.Division
1
a+b=33
akshay07@akshay07-VirtualBox:~$ bash a333.sh
ARITHMETIC OPERATIONS
Enter a number
25
Enter another number
21
Enter operation needed
\n1.Addition\n2.Substraction\n3.Multiplication\n4.Division
2
a-b=4
akshay07@akshay07-VirtualBox:~$
```

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

```
Number NOT found !
akshay07@akshay07-VirtualBox: ~$ bash a444.sh
Finding a number
Enter a number
5
a444.sh: line 5: [5: command not found
Number NOT found !
akshay07@akshay07-VirtualBox: ~$
```

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

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

```
cal
akshay07@akshay07-VirtualBox: ~$ bash a5555.sh
Time and Calender
Today is Saturday 02 October 2021 08:51:12 PM IST

Calendar :
akshay07@akshay07-VirtualBox: ~$
```

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
```



```
akshay07@akshay07-VirtualBox:~$ bash a6666.sh  
EVEN OR ODD  
Enter a number  
77  
Number is odd  
akshay07@akshay07-VirtualBox:~$ bash a6666.sh  
EVEN OR ODD  
Enter a number  
2  
Number is Even  
akshay07@akshay07-VirtualBox:~$
```

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
```

```
akshay07@akshay07-VirtualBox:~$ bash a7777.sh
Comparing numbers
Enter first number
66
Enter second number
77
a7777.sh: line 7: [: missing `]'
77 is greater
akshay07@akshay07-VirtualBox:~$
```

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"
```

```
akshay07@akshay07-VirtualBox:~$ gedit a88888.sh
^C
akshay07@akshay07-VirtualBox:~$ bash a88888.sh
Sum of Numbers
Sum of first 10 numbers = 55
akshay07@akshay07-VirtualBox:~$
```

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
```

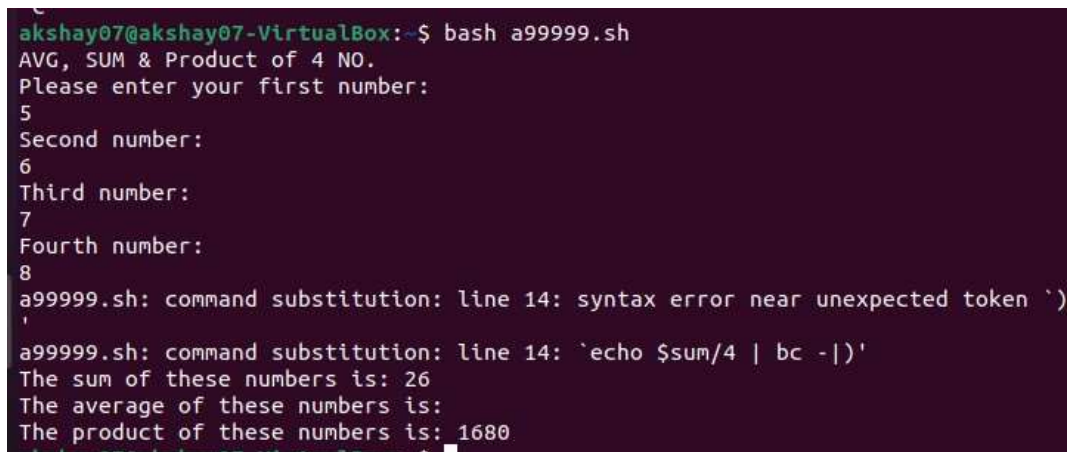
```

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

```



```

akshay07@akshay07-VirtualBox:~$ bash a99999.sh
AVG, SUM & Product of 4 NO.
Please enter your first number:
5
Second number:
6
Third number:
7
Fourth number:
8
a99999.sh: command substitution: line 14: syntax error near unexpected token `)'
'
a99999.sh: command substitution: line 14: `echo $sum/4 | bc -|)'
The sum of these numbers is: 26
The average of these numbers is:
The product of these numbers is: 1680

```

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"

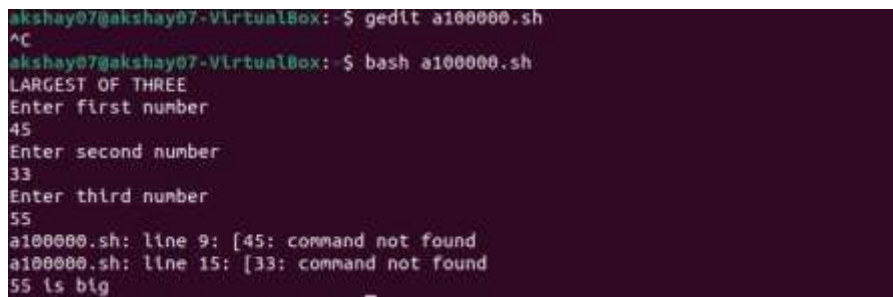
```



```

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

```



```

akshay07@akshay07-VirtualBox: ~$ gedit a100000.sh
^C
akshay07@akshay07-VirtualBox: ~$ bash a100000.sh
LARGEST OF THREE
Enter first number
45
Enter second number
33
Enter third number
55
a100000.sh: line 9: [45: command not found
a100000.sh: line 15: [33: command not found
55 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"

```

```

akshay07@akshay07-VirtualBox:~$ gedit a110000.sh
^C
akshay07@akshay07-VirtualBox:~$ bash a110000.sh
Factorial
Enter a number
8
Factorial is 40320
akshay07@akshay07-VirtualBox:~$

```

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

```

```


akshay07@akshay07-VirtualBox:~$ gedit a120000.sh
^C
akshay07@akshay07-VirtualBox:~$ bash a120000.sh
Palindrome or Not
Enter number to check
56
Number is not Palindrome
akshay07@akshay07-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
```



```
akshay07@akshay07-VirtualBox:~$ gedit a130000.sh
^C
akshay07@akshay07-VirtualBox:~$ bash a130000.sh
Average of N numbers
Enter Size
3
Enter Numbers
23
44
55
```

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"
```

```
akshay07@akshay07-VirtualBox:~$ gedit a140000.sh
^C
akshay07@akshay07-VirtualBox:~$ bash a140000.sh
Sum of aa digits
Enter a number:
56777
Sum of digits is 32
akshay07@akshay07-VirtualBox:~$
```

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
```

```
akshay07@akshay07-VirtualBox: ~$ gedit a150000.sh
^C
akshay07@akshay07-VirtualBox: ~$ bash a150000.sh
LEAP YEAR OR NOT
Enter the year
2009
2009 is not leap year
akshay07@akshay07-VirtualBox: ~$
```