Advanced Computer Networks Lab Assignment

Shell Programming

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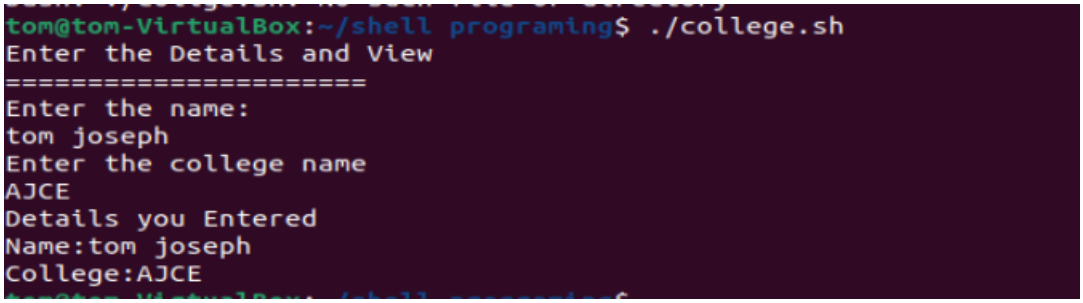
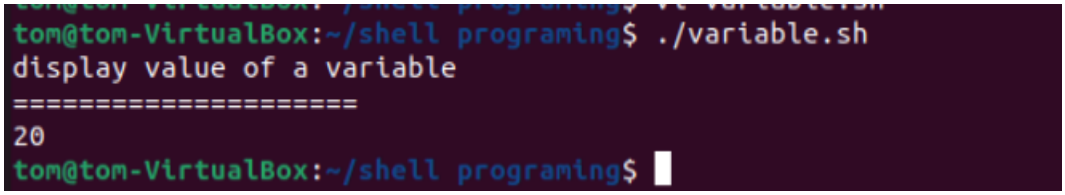
1. Write a shell script to ask your name, and college name and print it on the screen.

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



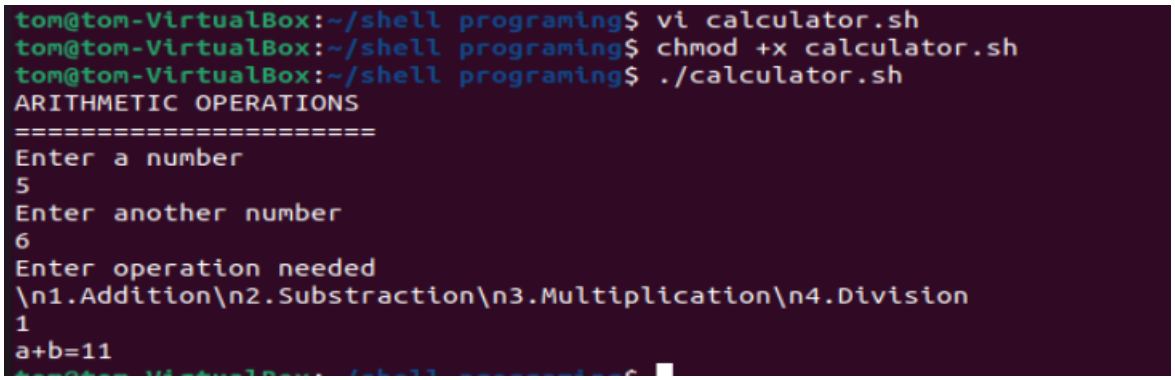
2. Write a shell script to set a value for a variable and display it on command line interface.

```
#!/bin/bash
echo "Display value Variable”
echo"================="
a=10
echo "$a"
```



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 anothernumber"
 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
```



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
```

```
tom@tom-VirtualBox:~/shell programing$ vi date.sh
tom@tom-VirtualBox:~/shell programing$ chmod +x date.sh
tom@tom-VirtualBox:~/shell programing$ ./date.sh
Time and Calendar
===============
Today is Saturday 02 October 2021 06:16:00 PM IST

Calendar :
```

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

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

```
tom@tom-VirtualBox:~/shell programing$ vi date.sh
tom@tom-VirtualBox:~/shell programing$ chmod +x date.sh
tom@tom-VirtualBox:~/shell programing$ ./date.sh
Time and Calendar
===============
Today is Saturday 02 October 2021 06:16:00 PM IST

Calendar :
```

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

```
#!/bin/bash
echo "EVEN OR ODD"
echo"==========="
echo"Enternumbe"
read n x=$(($n%2))
if [ $x -eq 0 ]; then
echo "Number is Even"
```

```
else
echo "Number is odd"
fi
```

```
tom@tom-VirtualBox:~/shell programing$ vi oddoreven.sh
tom@tom-VirtualBox:~/shell programing$ chmod +x oddoreven.sh
tom@tom-VirtualBox:~/shell programing$ ./oddoreven.sh
EVEN OR ODD
==========
Enter a number
5
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
```

```
tom@tom-VirtualBox:~/shell programing$ vi greater.sh
tom@tom-VirtualBox:~/shell programing$ ./greater.sh
Comparing numbers
================
Enter first number
10
Enter second number
5
10 is greater
```

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

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

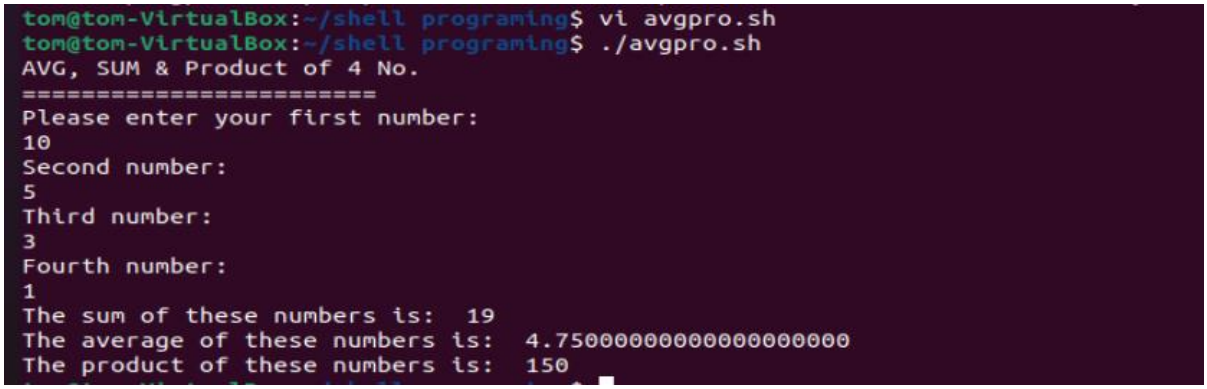
```
s=0
for (( i=1;i<=10;i++ ))
do
s=`expr $s + $i` done
echo “Sum of first 10 numbers = $s”
```

```
tom@tom-VirtualBox:~/shell programing$ vi sumof.sh
tom@tom-VirtualBox:~/shell programing$ chmod +x sumof.sh
tom@tom-VirtualBox:~/shell programing$ ./sumof.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
No."
echo"================="

echo "Please enter 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
```



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 "$c isbig"
fi
elif [$b -gt $c];then
```

```
echo "$b is big"
else
echo "$c is big"
fi
```

```
tom@tom-VirtualBox:~/shell programing$ vi smallest.sh
tom@tom-VirtualBox:~/shell programing$ ./smallest.sh
LARGEST OF THREE
================
Enter first number
45
Enter second number
56
Enter third number
22
56 is big
tom@tom-VirtualBox:~/shell programing$
```

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

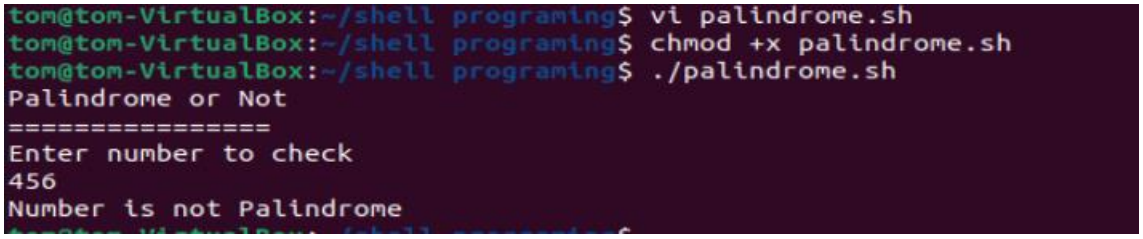
```
#!/bin/bash
echo "Factorial"
echo "======="
echo "Enter a number"
read num
fact=1
for((i=2;i<=num;i++))
{
fact=$((fact * i)) #fact = fact * i
}
echo "Factorial is $fact"
```

```
tom@tom-VirtualBox:~/shell programing$ vi smallest.sh
tom@tom-VirtualBox:~/shell programing$ vi factorial.sh
tom@tom-VirtualBox:~/shell programing$ chmod +x factorial.sh
tom@tom-VirtualBox:~/shell programing$ ./factorial.sh
Factorial
=======
Enter a number
10
Factorial is 3628800
```

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
```



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

```
#!/bin/bash
echo "Average of Nnumbers"
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
```

```
tom@tom-VirtualBox:~/shell programing$ vi average.sh
tom@tom-VirtualBox:~/shell programing$ chmod +x average.sh
tom@tom-VirtualBox:~/shell programing$ ./average.sh
Average of N numbers
====================
Enter Size
5
Enter Numbers
12
45
66
33
55
42.200000000000000000
```

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"
```

```
tom@tom-VirtualBox:~/shell programing$ vi average.sh
tom@tom-VirtualBox:~/shell programing$ vi sumofdigit.sh
tom@tom-VirtualBox:~/shell programing$ chmod +x sumofdigit.sh
tom@tom-VirtualBox:~/shell programing$ ./sumofdigit.sh
Sum of all digits
=============
Enter a number:
10
Sum of digits is 1
```

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
```