PG DEPARTMENT OF COMPUTER SCIENCE

MAJLIS ARTS AND SCIENCE COLLEGE

SIXTH SEMESTER BCA/BSc COMPUTER SCIENCE

SHELL SCRIPT
LAB QUESTION AND ANSWER

1. Write a script to find area of a circle

```
echo -n "Enter the radius of a circle : "
read r
area=$(echo "scale=2;3.14 * ($r * $r)" | bc)
d=$(echo "scale=2;2 * $r"|bc)
circumference=$(echo "scale=2;3.14 * $d"| bc)
echo "Area of circle is $area"
echo "Circumference of circle is $circumference"
```

OUTPUT

```
Enter the radius of a circle : 3
Area of circle is 28.26
Circumference of circle is 18.84
```

2. Write a shell script to find given number is even or odd

```
echo "Enter a number "
read n
if [ `expr $n % 2` -eq 0 ]
then
echo "Given number $n is even"
else
echo "Given number $n is Odd"
fi
```

OUTPUT

```
Enter a number
54
Given number 54 is even
```

3. Write a shell script to make a menu driven calculator using case

```
clear
sum=0
i="y"
echo " Enter one no."
read n1
echo "Enter second no."
read n2
while [ $i = "y" ]
do
echo "1.Addition"
echo "2.Subtraction"
echo "3.Multiplication"
```

```
echo "4.Division"
echo "Enter your choice"
read ch
case $ch in
        1)sum=`expr $n1 + $n2`
        echo "Sum ="$sum;;
        2)sum=`expr $n1 - $n2`
        echo "Sub = "$sum;;
        3)sum=`expr $n1 \* $n2`
        echo "Mul = "$sum;;
        4)sum=`expr $n1 / $n2`
        echo "Div = "$sum;;
        *)echo "Invalid choice";;
esac
echo "Do u want to continue ?"
read i
if [ $i != "y" ]
then
 exit
fi
done
```

OUTPUT

```
 Enter one no.
10
Enter second no.
5
1.Addition
2.Subtraction
3.Multiplication
4.Division
Enter your choice
1
Sum =15
Do u want to continue ?
y
1.Addition
2.Subtraction
3.Multiplication
4.Division
Enter your choice
2
Sub = 5
Do u want to continue ?
y
1.Addition
2.Subtraction
```

```
3.Multiplication
4.Division
Enter your choice
3
Mul = 50
Do u want to continue ?
y
1.Addition
2.Subtraction
3.Multiplication
4.Division
Enter your choice
4
Div = 2
Do u want to continue ?
n
```

4. Write a shell script to find the greatest of three numbers

```
echo Enter First Number
read a
echo Enter Second Number
read b
echo Enter Third Number
read c
l=$a
if [ $b -gt $l ]
then
l=$b
fi
if [ $c -gt $l ]
then
l=$c
fi
echo Lagest of $a $b $c is $l
```

OUTPUT

```
Enter First Number
34
Enter Second Number
56
Enter Third Number
78
Lagest of 34 56 78 is 78
```

5. Write a shell script to compute mean and standard deviation of three numbers

```
clear
echo Enter First Number
read a
echo Enter Second Number
read b
echo Enter Third Number
read c
m=$(((($a + $b + $c) / 3))
p=`expr $a - $m`
q=`expr $b - $m`
r=`expr $c - $m`
d=$((($p * $p + $q * $q + $r * $r) / 3 ))
w=$(echo "sqrt($d)" | bc -l)
echo "Mean of $a $b $c is $m"
echo "Standard deviation is $w"
```

OUTPUT

```
Enter First Number
34
Enter Second Number
67
Enter Third Number
23
Mean of 34 67 23 is 41
Standard deviation is 18.68154169226940434847
```

6. Write a shell script to find sum of all digits from a given number

```
echo Enter a number
read n
s=0
p=$n
while [ $n -gt 0 ]
do
        r=`expr $n % 10`
        s=`expr $s + $r`
        n=`expr $n / 10`
done
echo "Sum of digit of given no $p is $s "
```

OUTPUT

```
Enter a number
5678
Sum of digit of given no 5678 is 26
```

7. Write a shell script to find reverse of a number

```
echo Enter a number
read n
s=0
p=$n
while [ $n -gt 0 ]
do
        r=$(($n % 10))
        s=$(($s * 10 + $r))
        n=$(($expr $n / 10))
done
echo "Sum of digit of given no $p is $s "
```

OUTPUT

```
Enter a number
654
Sum of digit of given no 654 is 456
```

8. Write a shell script to find prime numbers upto a given number

```
echo Enter a limit
read limit
n=2
while [ $n -le $limit ]
        do
        i=2
        f=0
         while [ $i -lt $n ]
                do
                if [ `expr $n % $i` -eq 0 ]
                then
                        f=1
                        break;
                fi
                i=`expr $i + 1`
        done
        if [ $f -eq 0 ]
        then
        echo $n
        fi
        n=`expr $n + 1`
done
```

OUTPUT

```
Enter a limit
10
2
3
5
7
```

9. Write a shell script to find n fibonacci numbers

```
echo Enter a Limit
read num
a=1
b=0
c=0
n=1
while [ $n -le $num ]
do
        echo $c
        c=$(($a + $b))
        a=$b
        b=$c
        n=$(($n + 1))
done
```

OUTPUT

```
Enter a Limit
10
0
1
1
2
3
5
8
13
21
34
```

10. Write a shell script to check whether a given number is Amstrong or not

```
echo Enter a Number
read n
s=0
p=$n
while [ $n -gt 0 ]
```

```
do
r=$(($n % 10))
s=$(($s + $r * $r * $r))
n=$(($n / 10))
done
if [ $p -eq $s ]
then
echo Given number is Amstrong
else
echo Given number is Not Amstrong
fi
```

OUTPUT

```
Enter a Number
153
Given number is Amstrong
```

11. Write a shell script to reverse a string and check whether a given string is palindrome or not

```
echo "Enter a string "
read s
t=`echo $s|wc -c`
t=`expr $t - 1`
while [ $t -ne 0 ]
do
temp=`echo $s|cut -c $t`
tem1=`echo $tem1$temp`
t=`expr $t - 1`
done
echo "Reverse of the string is $tem1"
if [ "$s" == "$tem1" ]
then
echo Given String $s is Palindrom
else
echo Given String $s is Not Palindrom
fi
```

OUTPUT

```
Enter a string
computer
Reverse of the string is retupmoc
Given String computer is Not Palindrom
```

12. Write a shell script to count no of line, words and characters of a input file

```
echo Enter the filename
read file
w=`cat $file | wc -w`
c=`cat $file | wc -c`
l=`grep -c "." $file`
echo Number of characters in $file is $c
echo Number of words in $file is $w
echo Number of lines in $file is $l
```

OUTPUT

```
Enter the filename
test
Number of characters in test is 220
Number of words in test is 45
Number of lines in test is 9
```

13. Write a shell script find the factorial of a given number

```
echo "Enter a Number"
read n

fact=1
while [ $n -gt 0 ]
do
      fact=`expr $fact \* $n`
         n=`expr $n - 1`
done
echo "Factorial is  $fact"
```

OUTPUT

```
Enter a Number  5
Factorial  is 120
```

14. An employee Basic salary is input through keyboard where da is 40% of basic salary and hra is 20% of basic salary. Write a program to calculate gross salary

```
echo  "Enter Your basic salary "
read sal

      da=`expr $sal \* 40 / 100`
      ha=`expr $sal  \* 20  / 100`
      Nsal=`expr $sal + $da + $ha`
```

```
echo "ur Basic Salary       $sal "
echo "ur Dearness Allowance    $da "
echo "Ur House rent           $ha "
echo "                   ------------"
echo "Ur Net Salary is   Rs. $Nsal "
```

OUTPUT

```
Enter Your basic salary
5000
Your Basic Salary         5000
Your Dearness Allowance    2000
Your House rent           1000
                  ------------
Your Net Salary is     Rs. 8000
```

15. Code for Shell script which whenever gets executed displays the message "Good Morning/Good afternoon /Good Evening "depending on the time it get executed"

```
clear
  hours=`date|cut -c12-13`
  if [ $hours -le 12 ]
  then
      echo "Good Morning"
  else
      if [ $hours -le 16 ]
      then
          echo "Good Afternoon"
      elif [ $hours -le 20 ]
      then
          echo "Good Evening"
      else
          echo "Good Night"
      fi
   fi
```

OUTPUT

Good Morning