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Module: Concepts of OS

ASSIGNMENT 2 – PART C

- **Q1. Write a shell script that prints "Hello, World!" to the terminal.**

```
cdac@SHRIRAM:~$ cd feb25
cdac@SHRIRAM:~/feb25$ nano hello.sh
cdac@SHRIRAM:~/feb25$ cat hello.sh
echo "Hello, World!"
cdac@SHRIRAM:~/feb25$ bash hello.sh
Hello, World!
cdac@SHRIRAM:~/feb25$
```

- **Q2. Declare a variable named "name" and assign the value "CDAC Mumbai" to it. Print the value of the variable.**

```
cdac@SHRIRAM:~/feb25$ nano name.sh
cdac@SHRIRAM:~/feb25$ cat name.sh
name="CDAC Mumbai"
echo $name
cdac@SHRIRAM:~/feb25$ bash name.sh
CDAC Mumbai
```

- **Q3. Write a shell script that takes a number as input from the user and prints it.**

```
cdac@SHRIRAM:~/feb25$ nano Q3.sh
cdac@SHRIRAM:~/feb25$ cat Q3.sh
echo "Enter a number"
read a
echo Your number is $a
cdac@SHRIRAM:~/feb25$ bash Q3.sh
Enter a number
659
Your number is 659
```

- **Q4. Write a shell script that performs addition of two numbers (e.g., 5 and 3) and prints the result.**

```
cdac@SHRIRAM:~/feb25$ nano Q4.sh
cdac@SHRIRAM:~/feb25$ cat Q4.sh
echo "Enter a number"
read a
echo "Enter a number"
read b
sum=`expr $a + $b`
echo sum of $a and $b is $sum
cdac@SHRIRAM:~/feb25$ bash Q4.sh
Enter a number
5
Enter a number
3
sum of 5 and 3 is 8
```

- **Q5. Write a shell script that takes a number as input and prints "Even" if it is even, otherwise prints "Odd".**

```
cdac@SHRIRAM:~/feb25$ nano Q5.sh
cdac@SHRIRAM:~/feb25$ cat Q5.sh
echo "Enter a number"
read a
if [ `expr $a % 2` -eq 0 ]
then
        echo "$a is an even number"
else
        echo "$a is an odd number"
fi

cdac@SHRIRAM:~/feb25$ bash Q5.sh
Enter a number
5
5 is an odd number
cdac@SHRIRAM:~/feb25$ bash Q5.sh
Enter a number
6
6 is an even number
```

- **Q6. Write a shell script that uses a for loop to print numbers from 1 to 5.**

```
cdac@SHRIRAM:~/feb25$ nano Q6.sh
cdac@SHRIRAM:~/feb25$ cat Q6.sh
for i in 1 2 3 4 5
do
        echo $i
done
cdac@SHRIRAM:~/feb25$ bash Q6.sh
1
2
3
4
5
```

- **Q7. Write a shell script that uses a while loop to print numbers from 1 to 5.**

```
cdac@SHRIRAM:~/feb25$ nano Q7.sh
cdac@SHRIRAM:~/feb25$ cat Q7.sh
a=1
while [ $a -lt 6 ]
do
        echo $a
a=`expr $a + 1`
done
cdac@SHRIRAM:~/feb25$ bash Q7.sh
1
2
3
4
5
```

- **Q8. Write a shell script that checks if a file named "file.txt" exists in the current directory. If it does, print "File exists", otherwise, print "File does not exist".**

```
cdac@SHRIRAM:~/feb25$ nano Q8.sh
cdac@SHRIRAM:~/feb25$ cat Q8.sh
if [ -e file.txt ]
then
        echo "File exists"
else
        echo "File doesn't exist"
fi

cdac@SHRIRAM:~/feb25$ bash Q8.sh
File doesn't exist
cdac@SHRIRAM:~/feb25$ touch file.txt
cdac@SHRIRAM:~/feb25$ bash Q8.sh
File exists
```

- **Q9. Write a shell script that uses the if statement to check if a number is greater than 10 and prints a message accordingly.**

```
cdac@SHRIRAM:~/feb25$ nano Q9.sh
cdac@SHRIRAM:~/feb25$ cat Q9.sh
echo "Enter a number" ; read a
if [ $a -gt 10 ]
then
        echo "$a is greater than 10"
else
        if [ $a -eq 10 ]
        then
                echo "$a is equal to 10"
        else
                echo "$a is smaller than 10"
        fi
fi
cdac@SHRIRAM:~/feb25$ bash Q9.sh
Enter a number
56
56 is greater than 10
cdac@SHRIRAM:~/feb25$ bash Q9.sh
Enter a number
10
10 is equal to 10
cdac@SHRIRAM:~/feb25$ bash Q9.sh
Enter a number
5
5 is smaller than 10
```

- **Q10. Write a shell script that uses nested for loops to print a multiplication table for numbers from 1 to 5. The output should be formatted nicely, with each row representing a number and each column representing the multiplication result for that number.**

```
cdac@SHRIRAM:~/feb25$ nano Q10.sh
cdac@SHRIRAM:~/feb25$ cat Q10.sh
for i in  {1..5}
do
        for j in {1..5}
        do
                result=`expr $i \* $j`
                echo -n "$result          "
        done
        echo
done
cdac@SHRIRAM:~/feb25$ bash Q10.sh
1       2       3       4       5
2       4       6       8       10
3       6       9       12      15
4       8       12      16      20
5       10      15      20      25
```

- **Q11. Write a shell script that uses a while loop to read numbers from the user until the user enters a negative number. For each positive number entered, print its square. Use the break statement to exit the loop when a negative number is entered.**

```
cdac@SHRIRAM:~/feb25$ nano Q11.sh
cdac@SHRIRAM:~/feb25$ cat Q11.sh
while [ true ]
do
        echo "Enter a number" ; read a
        if [ $a -lt 0 ]
        then
                break
        fi
done
echo "Program Terminated"
cdac@SHRIRAM:~/feb25$ bash Q11.sh
Enter a number
5
Enter a number
4
Enter a number
3
Enter a number
0
Enter a number
-1
Program Terminated
```