# ASSIGNMENT 05 CONCEPTS OF OPERATING SYSTEMS

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**Ques 01 Write a shell script to display your LOGIN NAME and HOME directory.**

```
1 echo "Login Name "
2 whoami
3 echo "HOME Directory"
4 pwd
```

```
osboxes@osboxes:~/assign5$ bash q1.sh
Login Name
osboxes
HOME Directory
/home/osboxes/assign5
```

**Ques 02 Write a shell script to display menu like "1. Date, 2. Cal, 3. Ls, 4. Pwd, 5. Exit" and execute the commands depending on user choice.**

```
1  # Ques2 Assignment 5
2
3  echo -e "1). Date\n2). Cal\n3). ls\n4). Pwd\n5). Exit "
4  read choice
5
6  case $choice in
7  1)
8      echo "Date:"
9      date
10     ;;
11 2)
12     echo "Current Month Calender"
13     cal
14     ;;
15 3)
16     ls
17     ;;
18 4)
19     pwd
20     ;;
21 5)
22     echo "U r out"
23     ;;
24 esac
25
26
```

```
osboxes@osboxes:~/assign5$ bash q2.sh
1). Date
2). Cal
3). ls
4). Pwd
5). Exit
2
Current Month Calender
    October 2024
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

osboxes@osboxes:~/assign5$ bash q2.sh
1). Date
2). Cal
3). ls
4). Pwd
5). Exit
1
Date:
Fri Oct 11 11:51:43 AM EDT 2024
```

**Ques 03 Write a shell script to accept the name from the user and check whether user entered name is file or directory. If name is file display its size and if it is directory display its contents.**

```
1 # Assign 5 Ques 3
2
3 echo "Please enter a name of (file or directory)"
4 read name_fd
5
6 if [ -e "$name_fd" ];
7 then
8     if [ -f "name_fd" ]
9     then
10    echo "$name_fd is a file"
11    echo "size of the file is : $(stat -c%s "$name_fd") bytes"
12    elif [ -d "$name_fd" ]
13    then
14    echo "$name_fd is a directory"
15    echo "contents of the directory : "
16    ls "$name_fd"
17    else
18        echo "$name_fd exists but it is not a file nor a directory.."
19    fi
20 else
21    echo "$name_fd does not exists..."
22 fi
```

```
osboxes@osboxes:~/assign5$ bash q3.sh
Please enter a name of (file or directory)
1.sh
1.sh does not exists...
```

**Ques 04 Write a shell script to determine whether a given number is prime or not**

```
#Ques 4 Assign 05

echo "Enter any number : "
read num

i=2
while [ $i -lt $num ]
do
    if [ `expr $num % $i` -eq 0 ]
    then
        echo "$num is not prime"
        break
    fi
i=`expr $i + 1`
done
if [ $num -eq $i ]
then
    echo "Number is prime"
fi
```

```
osboxes@osboxes:~/assign5$ bash q4.sh
Enter any number :
4
4 is not prime
osboxes@osboxes:~/assign5$ bash q4.sh
Enter any number :
7
Number is prime
```

**Ques 05 Write a Program to find the greatest of three numbers**

```
# Ques5 Assign5

echo "Enter 3 Numbers"
read num1 num2 num3

if [ $num1 -gt $num2 ] && [ $num1 -gt $num3 ]
then
    echo "$num1 is greater than $num2 and $num3"
elif [ $num2 -gt $num1 ] && [ $num2 -gt $num3 ]
then
    echo "$num2 is greater than $num1 and $num3"
else
    echo "$num3 is greater than $num1 and $num2"
fi
```

```
osboxes@osboxes:~/assign5$ bash q5.sh
Enter 3 Numbers
23 44 11
44 is greater than 23 and 11
```

**Ques 06 Write a Program to find whether a given year is a leap year or not**

```
# Assign 5 Ques 6

echo "Enter any year.."
read year

if (( year % 400 == 0 ));
then
    echo "$year is a leap year.."
elif (( year % 100 == 0 ));
then
    echo "$year is not a leap year.."
elif (( year % 4 == 0 ))
then
    echo "$year is a leap year.."
else
    echo "$year is not a leap year.."
fi
```

```
osboxes@osboxes:~/assign5$ bash q6.sh
Enter any year..
2000
2000 is a leap year..
osboxes@osboxes:~/assign5$ bash q6.sh
Enter any year..
2001
2001 is not a leap year..
```

**Ques 07 Write a Program to find whether a given number is positive or negative**

```
# Ques 7 Assign 05

echo "Enter any number : "
read num

if [ $num -lt 0 ]
then
    echo "$num is negative..."
elif [ $num -eq 0 ]
then
    echo "You entered zero..."
else
    echo "$num is positive..."
fi

```

```
osboxes@osboxes:~/assign5$ bash q7.sh
Enter any number :
-11
-11 is negative...
osboxes@osboxes:~/assign5$ bash q7.sh
Enter any number :
0
You entered zero...
osboxes@osboxes:~/assign5$ bash q7.sh
Enter any number :
222
222 is positive...
```

**Ques 08 Write a program to print the table of a given number.**

```
# Assign 05 Ques 08

echo "Enter the no of which you want print table : "
read num

i=1
for (( i=1; i <= 10; i++ ))
do
    res=`expr $num \* $i`
    echo "$num x $i = $res"
done
```

```
osboxes@osboxes:~/assign5$ bash q8.sh
Enter the no of which you want print table :
2
2 x 1 = 2
2 x 2 = 4
2 x 3 = 6
2 x 4 = 8
2 x 5 = 10
2 x 6 = 12
2 x 7 = 14
2 x 8 = 16
2 x 9 = 18
2 x 10 = 20
```

**Ques 09 Write a program to find the factorial of given number.**

```
# Ques 09 Assign 05

echo "Enter the no of u want factorial : "
read num
fact=1
i=1
while [ $i -le $num ]
do
    if [ $num -eq  0 ] || [ $num -eq 1 ]
    then
        echo "Factorial is 1"
    elif [ $num -lt 0 ]
    then
        echo "$num is negative"
    else
    fact=`expr $fact \* $i`
    fi
i=`expr $i + 1`
done
echo "Factorial of $num is : $fact"
```

```
osboxes@osboxes:~/assign5$ bash q9.sh
Enter the no of u want factorial :
4
Factorial of 4 is : 24
osboxes@osboxes:~/assign5$ bash q9.sh
Enter the no of u want factorial :
5
Factorial of 5 is : 120
osboxes@osboxes:~/assign5$ bash q9.sh
Enter the no of u want factorial :
6
Factorial of 6 is : 720
```

**Ques 10 Write a program to find given number of terms in the Fibonacci series.**

```
# Assign 5 Ques 10

echo -n "Enter the number of terms in the Fibonacci series: "
read n
i=0

firstterm=0
secondterm=1

echo "Fibonacci series upto $n terms: "

while [ $i -lt $n ]
do
    echo -n "$firstterm "
    thirdterm=$((firstterm + secondterm))
    firstterm=$secondterm
    secondterm=$thirdterm
    i=$((i + 1))
done

echo
```

```
osboxes@osboxes:~/assign5$ bash q10.sh
Enter the number of terms in the Fibonacci series: 6
Fibonacci series upto 6 terms:
0 1 1 2 3 5
```

**Ques 11 Write a program to calculate gross salary if the DA is 40%, HRA is 20% of basic salary. Accept basic salary form user and display gross salary (Result can be floating point value).**

```
# Assign 5 Ques 11

echo "Enter your basic salary:"
read bsal

da=`expr $bsal \* 40 / 100`
hra=`expr $bsal \* 20 / 100`

echo "Your Basic Salary is Rs $bsal"
echo "Your DA is Rs $da"
echo "Your HRA is Rs $hra"

Gsal=`expr $bsal + $da + $hra`
echo "Total Gross Salary is $Gsal"
```

```
osboxes@osboxes:~/assign5$ bash 11.sh
Enter your basic salary:
3000
Your Basic Salary is Rs 3000
Your DA is Rs 1200
Your HRA is Rs 600
Total Gross Salary is 4800
```

**Ques 12 Write a shell script to accept a filename as argument and displays the last modification time if the file exists and a suitable message if it doesn't exist.**

```
# assign 5 ques 12

echo -n "Enter filename"
read filename

# checking if the file exists

if [ -e "$filename" ]
then
    mod_time=$(stat -c %y "$filename")
    echo "Last modification time of '$filename':$mod_time"
else
    echo "File '$filename' does not exist."
fi
```

```
osboxes@osboxes:~/assign5$ bash q12.sh
Enter filenameq11.sh
File 'q11.sh' does not exist.
osboxes@osboxes:~/assign5$ ls
11.sh   q12.sh  q1.sh  q3.sh  q5.sh  q7.sh  q9.sh
q10.sh  q17.sh  q2.sh  q4.sh  q6.sh  q8.sh
osboxes@osboxes:~/assign5$ bash q12.sh
Enter filenameq12.sh
Last modification time of 'q12.sh':2024-10-14 11:58:40.502610146 -0400
```

**Ques 13 Write a shell script to display only hidden file of current directory.**

```
# Assign 5 Ques 13

echo "Hidden files in the current directory: "
ls -d .[^.]* 2>/dev/null
```

```
osboxes@osboxes:~/assign5$ bash q13.sh
Hidden files in the current directory:
.q6.sh.swp
```

**Ques 14 Write a shell script to display only executable files of current directory.**

```
# Assign 5 Ques 14

echo "Executable files in the current directory: "
find . -maxdepth 1 -type f -executable
```

```
osboxes@osboxes:~/assign5$ chmod +x q2.sh q5.sh
osboxes@osboxes:~/assign5$ bash q14.sh
Executable files in the current directory:
./q2.sh
./q5.sh
```

**Ques 15 Accept the two file names from user and append the contents in reverse case of first file into second file.**

```
Enter the name of the first file: q14.sh
Enter the name of the second file: q13.sh
Appended reversed case content of 'q14.sh' to 'q13.sh'.
```

```
1 # Assign 5 Ques 15
2
3 echo "Hidden files in the current directory: "
4 ls -d .[^.]* 2>/dev/null
5
6
7
8
9
10 ECHO "EXECUTABLE FILES IN THE CURRENT DIRECTORY:"
11 FIND . -MAXDEPTH 1 -TYPE F -EXECUTABLE
```

**Ques 16 Write a shell script to display welcome message to the user along with contents of his home directory. Ensure that shell script will execute automatically when user login to the shell. (Make entry of your shell script into .bashrc file into your home directory).**

```
1 # Assign 5 Ques 16
2
3 echo "Welcome, $USER!"
4 echo "Here are the contents of your home directory: "
5
6 ls ~
```

```
osboxes@osboxes:~/assign5$ bash q16.sh
Welcome, osboxes!
Here are the contents of your home directory:
assign5   dir1       file1.txt  Pictures          scripts     test.txt
d1        dir2       file2.txt  Public            select.txt  textfile.txt
data.txt  Documents  file.txt   q1.sh             snap        Videos
Desktop   Downloads  move       readonlyfile.txt  taste.txt   vim.txt
dir       ex.txt     Music      repeat.txt        Templates
```

**Ques 17 Print the following pattern.**

```
#Assign 05 Ques 17


echo  "Enter no of rows u want to see in pattern : "
read rows

for (( i=1; i<=rows; i++ ))
do
    for (( j=1;j<=i;j++ ))
    do
        echo -n "*"
    done
echo  ""
done
```

```
osboxes@osboxes:~/assign5$ bash  q17.sh
Enter no of rows u want to see in pattern :
5
*
**
***
****
*****
```

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