

LAB - 5 Assignment

1. Write a shell program to calculate the factorial of a number.

```
--(sukhendu@BeastKing)-[~/day5]
$ cat factorial.sh
echo "Enter a number"
read num

fact=1

while [ $num -gt 1 ]
do
    fact=$((fact * num))    #fact = fact * num
    num=$((num - 1))       #num = num - 1
done

echo $fact

--(sukhendu@BeastKing)-[~/day5]
$ bash factorial.sh
Enter a number
3
6
```

2. Write a shell menu driven program to do the following:

- Display the current working directory.
- Check whether an input number is even or odd.
- Display the number of counts of all the files in the directory.
- Print the long listing of all the files.

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```
--(sukhendu☹BeastKing)-[~/day5]
$ cat prog.sh
echo "---- CURRENT WORKING DIR ----"
pwd

echo "---- EVEN OR ODD IN SHELL SCRIPT ----"
echo -n "Enter a number:"
read n
echo -n "RESULT: "
if [ `expr $n % 2` = 0 ]
then
    echo "$n is even"
else
    echo "$n is Odd"
fi

echo "---- NO OF FILES IN THE DIR ----"
echo "No. of files is $(find "$@" -type f | wc -l)"
echo "No. of directories is $(find "$@" -type d | wc -l)"
echo "---- LONG LISTING FILES ----"
ls -l

--(sukhendu☹BeastKing)-[~/day5]
$ bash prog.sh
---- CURRENT WORKING DIR ----
/home/sukhendu/day5
---- EVEN OR ODD IN SHELL SCRIPT ----
Enter a number:3
RESULT: 3 is Odd
---- NO OF FILES IN THE DIR ----
No. of files is 2
No. of directories is 1
---- LONG LISTING FILES ----
total 8
-rw-r--r-- 1 sukhendu sukhendu 163 Apr 12 16:52 factorial.sh
-rw-r--r-- 1 sukhendu sukhendu 413 Apr 12 17:04 prog.sh
```

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3. Write a shell program to display all the prime numbers between 1 to 100 using while loop.

```
--(sukhendu@BeastKing)-[~/day5]
$ cat prime.sh
#!/bin/bash
echo "Enter a limit"
read limit
echo "prime numbers upto $limit are :"
echo "1"
i=2
while [ $i -le $limit ]
do
    flag=1
    j=2
    while [ $j -lt $i ]
    do
        rem=$(( $i % $j ))
        if [ $rem -eq 0 ]
        then
            flag=0
            break
        fi
        j=$(( $j+1 ))
    done
    if [ $flag -eq 1 ]
    then
        echo "$i"
    fi
    i=$(( $i+1 ))
done
```

```
--(sukhendu@BeastKing)-[~/day5]
$ bash prime.sh
Enter a limit
100
prime numbers upto 100 are :
1
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97
```

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4. Write a menu program to find out whether a given letter is vowel or not.

```

[---(sukhendu@BeastKing)-[~/day5]
[---$ cat vowel.sh
# Shell Program to Find whether the Character is Vowel or Not
echo "Enter any character: "
read ch
case $ch in
"a") echo "It is a vowel.";;
"e") echo "It is a vowel.";;
"i") echo "It is a vowel.";;
"o") echo "It is a vowel.";;
"u") echo "It is a vowel.";;
*) echo "It is not a vowel."
esac

[---(sukhendu@BeastKing)-[~/day5]
[---$ bash vowel.sh
Enter any character:
c
It is not a vowel.

[---(sukhendu@BeastKing)-[~/day5]
[---$ bash vowel.sh
Enter any character:
a
It is a vowel.

```

5. Write a shell script which will generate the output as follows:

```

*
* *
* * *
* * * *

```

```

[---(sukhendu@BeastKing)-[~/day5]
[---$ cat patt.sh
rows=4
for((i=1; i<=rows; i++))
do
    for((j=1; j<=i; j++))
    do
        echo -n "*"
    done
    echo
done

[---(sukhendu@BeastKing)-[~/day5]
[---$ bash patt.sh
*
* *
* * *
* * * *

```

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6. Write a shell script that computes the gross salary of a employee according to the following rules:

i) If basic salary is < 1500 then HRA =10% of the basic and DA =90% of the basic.

ii) If basic salary is >=1500 then HRA =Rs500 and DA=98% of the basic.

The basic salary is entered interactively through the key board.

```
--(sukhendu@BeastKing)-[~/day5]
-$ nvim sal.sh

--(sukhendu@BeastKing)-[~/day5]
-$ cat sal.sh
echo "enter the basic salary:"
read bsal
if [ $bsal -lt 1500 ]
then
gsal=$((bsal+((bsal/100)*10)+(bsal/100)*90))
echo "The gross salary : $gsal"
fi
if [ $bsal -ge 1500 ]
then
gsal=$((bsal+500)+(bsal/100)*98))
echo "the gross salary : $gsal"
fi

--(sukhendu@BeastKing)-[~/day5]
-$ bash sal.sh
enter the basic salary:
1200
The gross salary : 2400

--(sukhendu@BeastKing)-[~/day5]
-$ █
```

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