Aim: Write the program for the following: (by using control statements and control structure)

(F). Write a recursive function to print the factorial for a given number.

Theory: -

Practical Implementation:-

```python
# python program to find the factorial of a number using recursion


def recur_factorial (n):
    """function to return the factorial of a number using recursion"""
    if n == 1:
        return n
    else:
        return n*recur_factorial(n-1)


# take input from the user
num = int(input("enter a number: "))


# check is the number is negative
if num < 0:
    print("sorry,factorial does not exist for negative number")
elif num == 0:
    print("the factorial of 0 is 1")
else:
    print("the factorial of",num,"is",recur_factorial(num))
```

output:-

```
Python 3.4.3 Shell                                                      —    □

File  Edit  Shell  Debug  Options  Window  Help
Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:44:40) [MSC v.1600 64 bit (AMD64)] on wi
32
Type "copyright", "credits" or "license()" for more information.
>>> ================================ RESTART ================================
>>>
enter a number: 5
the factorial of 5 is 120
>>>
>>> ================================ RESTART ================================
>>>
enter a number: -5
sorry,factorial does not exist for negative number
>>> ================================ RESTART ================================
>>>
enter a number: 0
the factorial of 0 is 1
>>> |
```

Conclusion: