**Practical No: 14**

**Aim:** Looping: Write a program to : Find factorial of a given number. Generate multiplication table up to 10 for numbers 1 to 5

**Course Outcome:** Develop/Use functions in Python programs for modular programming approach.

**Requirements: Computer, Python 3.3.34, Vs Code.**

**Theory:**

## **Python For Loops**

A for loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string).

This is less like the for keyword in other programming languages, and works more like an iterator method as found in other object-orientated programming languages.

With the for loop, we can execute a set of statements, once for each item in a list, tuple, set etc.

**Flowchart:**

**Program:**

#Aim: Looping: Write a  program to : Find factorial of  a  given number.

num = int(input("Enter a number: "))

factorial = 1

if num < 0:

   print("Factorial does not exist for negative numbers")

elif num == 0:

   print("The factorial of 0 is 1")

else:

   for i in range(1,num + 1):

       factorial = factorial\*i

   print("The factorial of",num,"is",factorial)

#Aim: Generate multiplication table up  to  10  for  numbers 1  to  5.

def table(x):

    for i in range(1,11):

        print(x,"X",i,"=",i\*x)

Num = 0

for Num in range(1, 6):

    print("Table of:",Num)

    table(Num)

**Output/Result:**

1. **Enter a number: 4**

**The factorial of 4 is 24**

**Table of: 1**

**1 X 1 = 1**

**1 X 2 = 2**

**1 X 3 = 3**

**1 X 4 = 4**

**1 X 5 = 5**

**1 X 6 = 6**

**1 X 7 = 7**

**1 X 8 = 8**

**1 X 9 = 9**

**1 X 10 = 10**

**Table of: 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**

**Table of: 3**

**3 X 1 = 3**

**3 X 2 = 6**

**3 X 3 = 9**

**3 X 4 = 12**

**3 X 5 = 15**

**3 X 6 = 18**

**3 X 7 = 21**

**3 X 8 = 24**

**3 X 9 = 27**

**3 X 10 = 30**

**Table of: 4**

**4 X 1 = 4**

**4 X 2 = 8**

**4 X 3 = 12**

**4 X 4 = 16**

**4 X 5 = 20**

**4 X 6 = 24**

**4 X 7 = 28**

**4 X 8 = 32**

**4 X 9 = 36**

**4 X 10 = 40**

**Table of: 5**

**5 X 1 = 5**

**5 X 2 = 10**

**5 X 3 = 15**

**5 X 4 = 20**

**5 X 5 = 25**

**5 X 6 = 30**

**5 X 7 = 35**

**5 X 8 = 40**

**5 X 9 = 45**

**5 X 10 = 50**

**Conclusion: hence, we have printed the table and calculated the factorial of a number using loops in python**