

Experiment 6

6.1.2 Factorial of a number

ALGORITHM

Step 1: Start the program.

Step 2: Input integer n.

Step 3: Check if $n < 0$.

If yes, print "Factorial not defined" and go to Step 9.

Step 4: Initialize factorial = 1.

Step 5: Initialize loop counter i = 1.

Step 6: Repeat while $i \leq n$:

factorial = factorial \times i

i = i + 1

Step 7: Print the value of factorial.

Step 8: Go to Step 9.

Step 9: End the program.

PYTHON CODE

```
n = int(input())
```

```
fact = 1
```

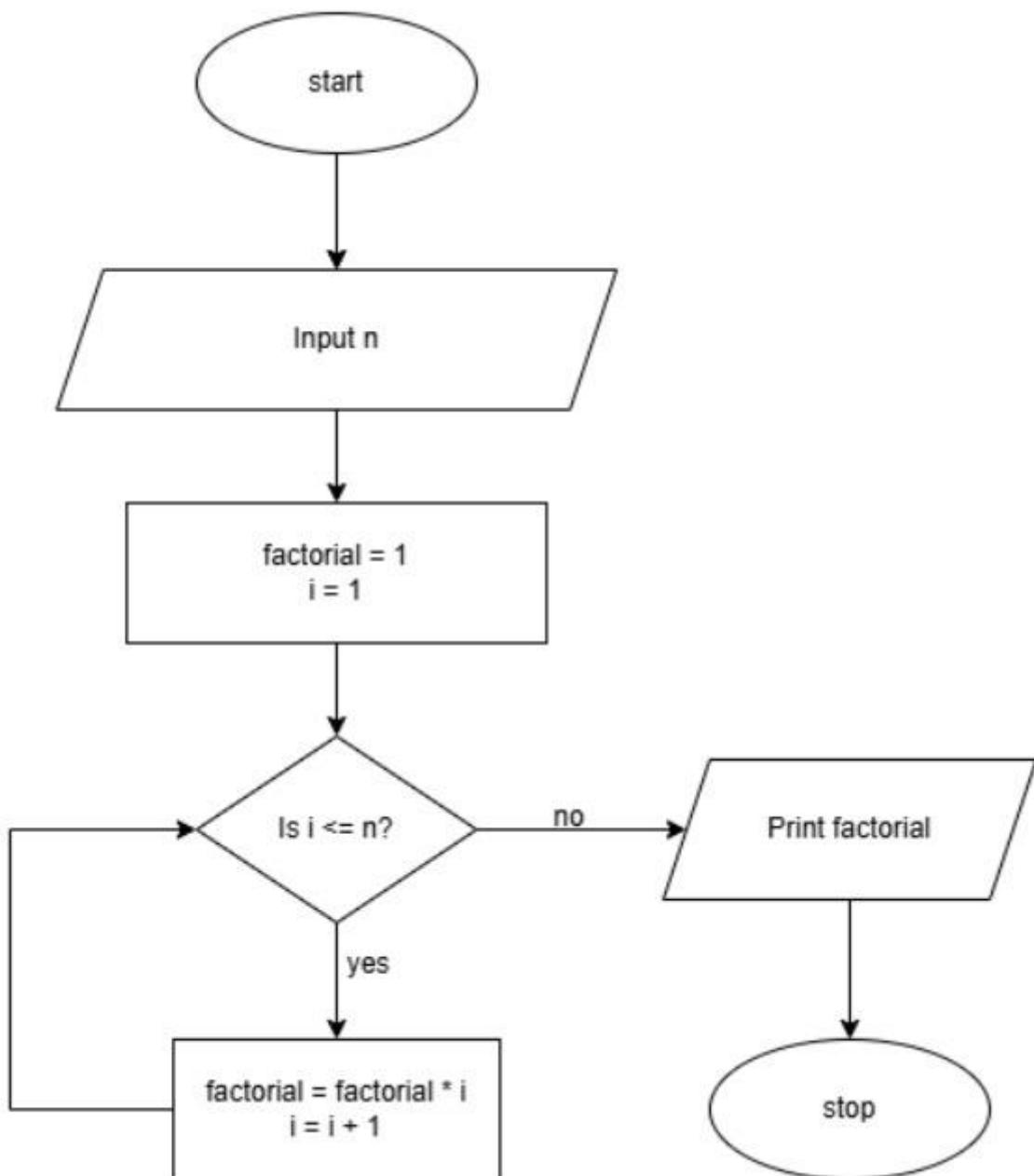
```
for i in range(1, n + 1):
```

```
fact = fact * i
```

```
print(fact)
```

FLOWCHART

Experiment 6



Experiment 6

EXCECUTION

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6.1.2. Factorial of a Number

Write a Python program to calculate the factorial of a number n using loops.

Input Format:

- A single line containing an integer n .

Output Format:

- Print the factorial of the given integer n .

factorialN...

```
1 n = int(input())
2
3 fact = 1
4
5 v for i in range(1, n + 1):
6     fact = fact * i
7
8 print(fact)
```

Average time: 0.007 s Maximum time: 0.015 s
6.75 ms 15.00 ms 2 out of 2 shown test case(s) passed
2 out of 2 hidden test case(s) passed

Test case 1 15 ms
Expected output: 18
Actual output: 18
3628800

Test case 2 6 ms

Terminal Test cases

< Prev Reset Submit Next >

The screenshot shows a Python code editor with a factorial function implementation. The code uses a for loop to calculate the factorial of an input integer. Below the code, performance metrics are displayed: average time 0.007 s, maximum time 0.015 s, and specific times of 6.75 ms and 15.00 ms. It also shows that 2 out of 2 shown test cases and 2 out of 2 hidden test cases passed. Two test cases are detailed: one for input 18, where both expected and actual outputs are 18, and another for input 10, where both are 3628800. Navigation buttons at the bottom include '< Prev', 'Reset', 'Submit' (highlighted in green), and 'Next >'.