

# 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):
```

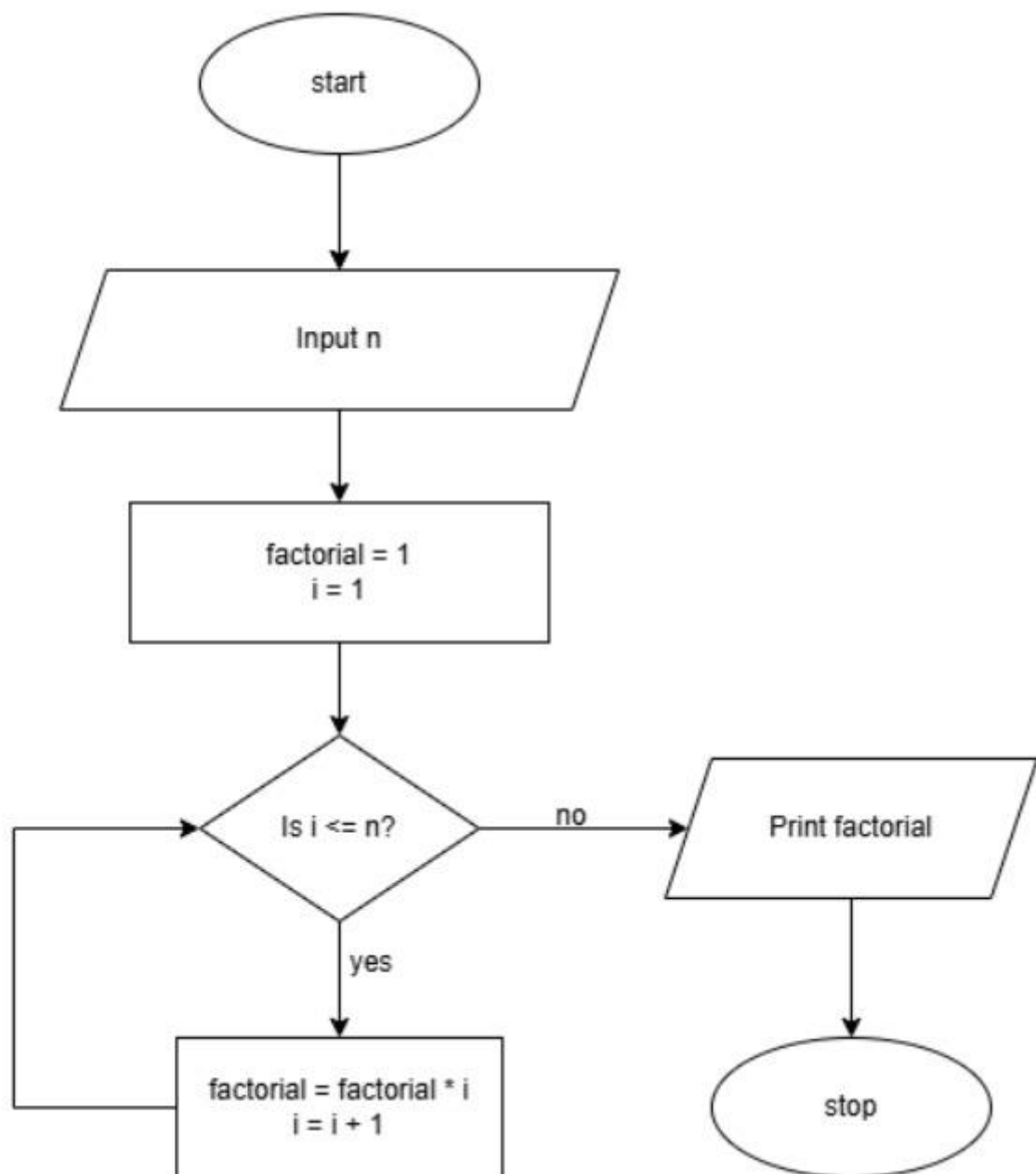
```
    fact = fact * i
```

```
print(fact)
```

### FLOWCHART

## Experiment 6

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## EXCECUTION

The screenshot displays the CDETANTRA IDE interface. The left sidebar shows the file explorer with a file named 'factorialN...'. The main editor area contains a Python program for calculating the factorial of a number  $n$  using a loop. The program is as follows:

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

The right sidebar shows the execution results. It indicates that the program passed 2 out of 2 shown test cases and 2 out of 2 hidden test cases. The execution time is 0.007 s (6.75 ms) for the average and 0.015 s (15.00 ms) for the maximum. The test cases are as follows:

Test Case	Expected output	Actual output
Test case 1	10	3628800
Test case 2	10	3628800

The bottom of the interface shows a terminal and test cases section. The terminal is currently empty. The test cases section shows the expected and actual outputs for the test cases.