









Leaderboard









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# Day 9: Recursion **■**

Problem



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# Objective

Today, we're learning and practicing an algorithmic concept called *Recursion*. Check out the Tutorial tab for learning materials and an instructional videol

## **Recursive Method for Calculating Factorial**

$$factorial(N) = egin{cases} 1 & N \leq 1 \\ N imes factorial(N-1) & otherwise \end{cases}$$

#### **Task**

Write a factorial function that takes a positive integer, N as a parameter and prints the result of N! (N factorial).

**Note:** If you fail to use recursion or fail to name your recursive function factorial or Factorial, you will get a score of 0.

#### **Input Format**

A single integer, N (the argument to pass to factorial).

# Constraints

- $2 \le N \le 12$
- Your submission must contain a recursive function named factorial.

## **Output Format**

Print a single integer denoting N!.

# Sample Input

3

## **Sample Output**

6

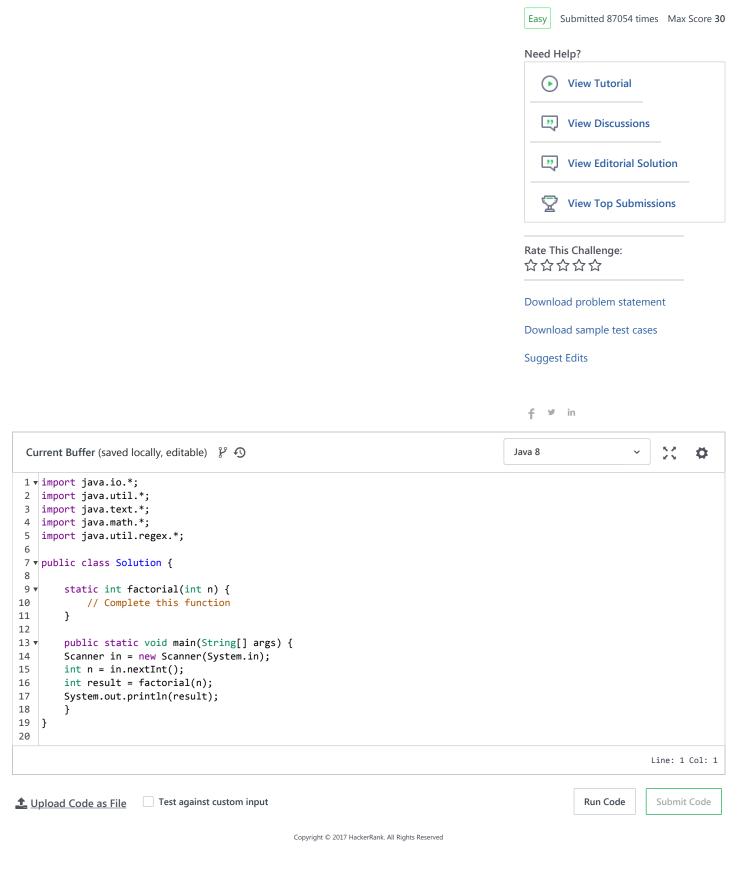
# Explanation

Consider the following steps:

- 1.  $factorial(3) = 3 \times factorial(2)$
- 2.  $factorial(2) = 2 \times factorial(1)$
- 3. factorial(1) = 1

From steps 2 and 3, we can say  $factorial(2) = 2 \times 1 = 2$ ; then when we apply the value from factorial(2) to step 1, we get  $factorial(3) = 3 \times 2 \times 1 = 6$ . Thus, we print 6 as our answer.

Solved score: 15.00pts



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