

Day 9: Recursion 3

5 more challenges to get your next star!

Points: 10/15

30

Days of Code

ProblemSubmissionsLeaderboardDiscussionsEditorialTutorial

Objective

Today, we're learning and practicing an algorithmic concept called Recursion. Check out the [Tutorial](#) tab for learning materials and an instructional video!

Recursive Method for Calculating Factorial

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

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

$2 \leq N \leq 12$

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.

Author	AvmnuSng
Difficulty	Easy
Cutoff Score	15.00
Max Score	30
Submitted By	278537

NEED HELP?

View tutorial

View discussions

View editorial

View top submissions

RATE THIS CHALLENGE

☆

☆

☆

☆

☆

MORE DETAILS

Download problem statement

Download sample test cases

Suggest Edits

f

🐦

in

Change ThemePython 3

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

#!/bin/python3

import math

import os

import random

import re

import sys

Complete the factorial function below.

def factorial(n):

if __name__ == '__main__':

fptr = open(os.environ['OUTPUT_PATH'], 'w')

n = int(input())

result = factorial(n)

fptr.write(str(result) + '\n')

fptr.close()

Line: 22 Col: 1

Upload Code as File

Test against custom input

Run Code

Submit Code

Contest Calendar | Blog | Scoring | Environment | FAQ | About Us | Support | Careers | Terms Of Service | Privacy Policy | Request a Feature