# Function to calculate factorial of a number using Recursion

## Problem Statement:

Write a recursive function `fact(n)` that returns the factorial of a number `n`.

## Example:

**Input:** 5

**Process:** (5 * 4 * 3 * 2 * 1)

**Output:** 120

## Concepts:

**Recursion:** Repeatedly multiply `n` with **fact (n-1)**.

**Base Case:** `fact(1) = 1`.

**Recursive Case:** `n * fact(n - 1)`

## Approach:

If `n == 1`, `return 1` (base case).

Else, return `n * fact(n - 1)`.

## Time & Space Complexity:

**Time Complexity: O(n)**

**Space Complexity: O(n)** `recursive call stack`

JavaScript | Python | Java | C++ | C | C#

```
using System;

class Program {
    static int Fact(int n) {
        if (n == 1) return 1;
        return n * Fact(n - 1);
    }

    static void Main() {
        Console.WriteLine(Fact(5)); // Output: 120
    }
}
```



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