**Factorial**

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C#

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In mathematics, the factorial of a non-negative integer n, denoted by n!, is the product of all positive integers less than or equal to n. For example: 5! = 5 \* 4 \* 3 \* 2 \* 1 = 120. By convention the value of 0! is 1.

Write a function to calculate factorial for a given input. If input is below 0 or above 12 throw an exception of type ArgumentOutOfRangeException (C#) or IllegalArgumentException (Java) or RangeException (PHP) or throw a RangeError (JavaScript).

More details about factorial can be found here: <http://en.wikipedia.org/wiki/Factorial>

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public static int Factorial(int n)

{

if (n < 0 || n > 12)

{

throw new ArgumentOutOfRangeException();

}

int prod = 1;

for (int i = 2; i <= n; i++)

{

prod \*= i;

}

return prod;

}