Write a recursive function that returns $n!!$.

Recall that $n!! = n \times (n-2) \times (n-4) \times \ldots$. For instance, $9!! = 9 \times 7 \times 5 \times 3 \times 1 = 945$ and $8!! = 8 \times 6 \times 4 \times 2 = 384$. By definition, $0!! = 1!! = 1$.

**Interface**

<table>
<thead>
<tr>
<th>Language</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++</td>
<td><code>int double_factorial (int n);</code></td>
</tr>
<tr>
<td>C</td>
<td><code>int double_factorial (int n);</code></td>
</tr>
<tr>
<td>Java</td>
<td><code>public static int doubleFactorial (int n);</code></td>
</tr>
</tbody>
</table>
| Python   | `double_factorial (n)  # returns int
double_factorial (n: int) -> int` |

**Precondition**

Assume $0 \leq n \leq 19$.

**Observation**

You only need to submit the required procedure; your main program will be ignored.

**Problem information**

Author: Salvador Roura
Translator: Salvador Roura
Generation: 2023-07-14 18:09:33

https://jutge.org