A Plague of Rabbits

> This is a **warmup** exercise. It is **not compulsory**, and may be completed **individually or with your lab partner**.

I have a terrible rabbit problem.

I used to have a pair of baby rabbits; they were extremely cute and fluffy, so of course I got them. But the shopkeeper I get them from – a guy named Leonardo, of Pisa Pets – didn't tell me they would mature very fast, and breed even faster.

After a month, I had a mature pair of rabbits... and, of course, they bred. Damn.

So, a month later, I had a pair of adults and a pair of baby rabbits.

And a month later, I had two pairs of adults, and another pair of baby rabbits,

And a month later, I had three pairs of adults, and two pairs of baby rabbits.

And a month later, I had five pairs of adults, and three pairs of baby rabbits.

HELP! I HAVE SO MANY RABBITS, I'M GOING HOPPING MAD!

I know that the number of rabbits I have each month will be the number of rabbits I had in the previous month, plus the number of rabbits I had in the month before.

Given I started with, well, no rabbits, and I got one pair of baby rabbits, write a function that tells me how many rabbits I'll have after n months. Give it this prototype:

```
long long rabbits (long long month);
```

(Hint: $\mathbf{Rabbits}_n = \mathbf{Rabbits}_{n-1} + \mathbf{Rabbits}_{n-2}$.)

To run some simple automated tests:

```
$ 1511 autotest rabbits
```

To run Styl-o-matic:

```
$ 1511 stylomatic rabbits.c
Looks good!
```

You'll get advice if you need to make changes to your code.

Submit your work with the *give* command, like so:

```
$ give cs1511 wk12_rabbits
```

Or, if you are working from home, upload the relevant file(s) to the `wk12_rabbits` activity on Give Online.