Homework 10: Fibonacci number

Due Jun. 20, 2019

Instruction

Submit your answer to this question via PC^2 under your account by the posted due time. No late submissions will be accepted. Note that homework is opened-book, but no outside assistance is permitted.

Problem

The Fibonacci sequence is the series of numbers, e.g., 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, ..., where a number is found by adding up the two numbers before it.

Write a program that computes the Fibonacci numbers of a non-negative integer n, denoted by $F(n)$ as follows:

$$F(n) = \begin{cases} 0, if n = 0 \\ 1, if n = 1 \\ F(n-1) + F(n-2), if n \geq 2 \end{cases}$$

Warning: Input number could be pretty big so design a faster algorithm.

Sample input

10
20

Sample output

55
6765