

CS2311 Practice Exercise – Array

Fibonacci numbers is a well-known number sequence named after the mathematician Leonardo Fibonacci. The number sequence, as shown below, is found to be related to the golden-ratio interestingly:

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, ...etc.

The 0th Fibonacci number is defined as **0**

The 1st Fibonacci number is defined as **1**

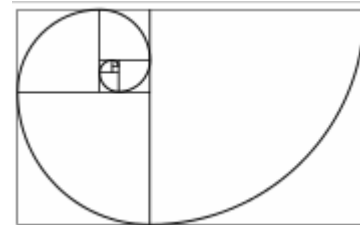
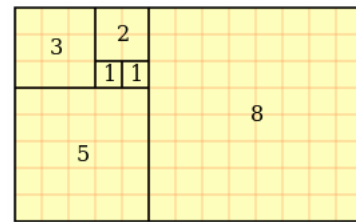
The rest of Fibonacci numbers could be calculated easily by summing up the previous two numbers. As such, the 2nd Fibonacci number equals to the 0th number (i.e. **0**) and the 1st number (i.e. **1**), therefore it is **1**. Similarly, the 3rd number equals to the sum of the 2nd number (i.e. **1**) and the 1st number (i.e. **1**), therefore it is **2**.

In this question, you will write a program to calculate the ***n*-th** Fibonacci number, where **n** is an integer specified by user ($0 \leq n \leq 50$).

Sample Input/Output

(User input is underlined, your program don't need to print it again.)

Input the value n: <u>7</u> The Fibonacci number in position 7 is 13
Input the value n: <u>8</u> The Fibonacci number in position 8 is 21
Input the value n: <u>0</u> The Fibonacci number in position 0 is 0
Input the value n: <u>51</u> Error: Index outside range!
Input the value n: <u>-1</u> Error: Index outside range!



Plot of Fabonacci numbers,
courtesy of Wikipedia