

## Lab 2.3.7 Do it yourself: Fibonacci sequence

### Objectives

Familiarize the student with:

- classic iterative algorithms;
- and improve the student's skills in using loops.

### Scenario

We're almost sure that you've heard of the Fibonacci sequence. It's a series of natural numbers built up by a simple formula:

- the first Fibonacci number is equal to 1;
- the second Fibonacci number is equal to 1 too;
- the third, fourth and every subsequent Fibonacci number is equal to the sum of the previous two numbers.

This means that the first five Fibonacci numbers look as follows:

1, 1, 2, 3, 5

Is that clear? Of course it is! Now it's your turn – write a code asking the user for a number (let's name it  $n$ ) and then print an  $n$ -th Fibonacci number.

But beware! These numbers grow very fast – use proper data types to avoid premature overflows!

Test your code using the data we've provided.

#### Example input

8

#### Example output

21

#### Example input

20

#### Example output

6765

#### Example input

55

#### Example output

139583862445