

Fibonacci

Background

The Fibonacci number series is defined as follows:

Position	0	1	2	3	4	5	6	7	8	etc.
Fibonacci number	0	1	1	2	3	5	8	13	21	etc.

Positions 0 & 1 are definition values. For positions greater than 1, the corresponding Fibonacci value of position $N = \text{Fibonacci}(N-1) + \text{Fibonacci}(N-2)$.

Assignment

Write the `Fibonacci` class with a static and recursive `getNumber` method that takes in a single positive integer and returns the appropriate number of the Fibonacci series.

Driver

```
/**
 * Dominguez
 */
public class FibonacciDriver
{
    public static void main( String args[] )
    {
        System.out.println("Hello. This program finds any number in " +
            "the Fibonacci sequence." + "\n" +
            "The user (i.e. you) enters the position of the " +
            "desired Fibonacci number." + "\n" +
            "For example, if you want to know the seventh " +
            "Fibonacci number you type in 7." + "\n" +
            "The program then displays: " + "\n\t\t\t" +
            "Fibonacci(7) = 13");

        int position;
        char repeat = 'y';
        do
        {
            System.out.print("\n" + "Enter position...");
            position = SavitchIn.readLineInt();
            System.out.println("\t\t\t" + "Fibonacci(" + position + ") = " +
                Fibonacci.getNumber(position));
            System.out.print("\n" + "Another number? y/n...");
            repeat = SavitchIn.readLineNonwhiteChar();
        }while( repeat == 'y' || repeat == 'Y' );
    }
}
```

SAMPLE OUTPUT:

**Hello. This program finds any number in the Fibonacci sequence.
The user (i.e. you) enters the position of the desired Fibonacci number.
For example, if you want to know the seventh Fibonacci number you type in 7.
The program then displays:**

Fibonacci(7) = 13

Enter position...8

Fibonacci(8) = 21

Another number? y/n...y

Enter position...20

Fibonacci(20) = 6765

Another number? y/n...n