Fibonacci Program Class Documentation

Classes

Main.java – The main class that initiates execution. This class extends Application (a JavaFX package), and contains the methods start, main and AlgorithmDecider.

FibonacciRecursion.java – The class that contains the logic needed to run the recursive version of the Fibonacci math. This class contains the methods Recursion and fibonacciRecursion, which return a long and int respectively.

FibonacciIterative.java – The class that contains the logic needed to run the iterative version of the Fibonacci math. This class contains the method Iteration, which returns a long.

Methods

Main

The **start** method is a JavaFX method that initializes the stage for the GUI, and populates the scene with the objects needed to show a bar chart with the Fibonacci runtime data. This is where the chart's axes and data series are created, as well as where the scene and stage dimensions are set.

The **main** method is the first method to run when the program is executed. This method immediately passes control to the AlgorithmDecider method, then prints to console, and finally passes control to the start method.

The **AlgorithmDecider** method is responsible for prompting the user for input, processing that input, and then determining which of the two Fibonacci methods to execute. This method uses a switch statement to process the user input, then instantiate either a Recursion object or a Iterative object based off of that input.

FibonacciRecursion

The **Recursion** method inside FIbonacciRecurison.java contains the process that calls math method required to print out the Fibonacci values. This method calculates and prints out the runtime in nanoseconds. This method will call fibonacciRecursion the number of times equal to the user-specified Fibonacci length value. This method returns a long value, which is the runtime in nanoseconds.

The **fibonacciRecursion** method is responsible for performing the math that calculates the Fibonacci values. This method is recursive, in that the method's return statement calls the method. The amount of recursive calls is controlled by the parent method, Recursion. This method returns an int, which is the Fibonacci value.

FibonacciIterative

The **Iteration** method inside of FibonacciIterative.java is responsible for the iteration method for calculating Fibonacci values. This method runs a for-loop for the user-specified number of loops. This method also returns a long, representing the runtime in nanoseconds.