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package BackgroundCalculator; // Using SwingWorker

import javax.swing.*; import java.awt.*; import java.awt.event.ActionEvent; import
java.awt.event.ActionListener;

public class FibonacciNumbers extends JFrame {

    public class getFib extends SwingWorker<Long, Object> {
        final int fibNum; final JLabel result;
        public getFib (int n, JLabel r) { fibNum = n; result = r; }

        public Long doInBackground() {
            //Worker thread:
            //The doInBackground() method is called on this thread.
            //This is where all background activities should happen.

            return fib(fibNum); }

        public long fib(long n) { if (n== 0 || n== 1) return n;
            else return fib(n - 1) + fib(n- 2); }

        protected void done() {
            // Event Dispatch Thread:
            // All Swing related activities occur on this thread.
            // SwingWorker invokes the process and done() methods and notifies
            // any PropertyChangeListeners on this thread.

            try { result.setText(get() + " "); } catch (Exception ex) { } //for get()
        } }

    public FibonacciNumbers() {
        setLayout(new GridLayout(2, 2));
        JTextField numField = new JTextField();
        JButton goButton = new JButton("Go!!!");
        JLabel fibLabel = new JLabel();
        goButton.addActionListener( new ActionListener() {
            public void actionPerformed(ActionEvent event) {
                int n = Integer.parseInt(numField.getText());
                fibLabel.setText("Calculating...");
                getFib x = new getFib(n, fibLabel);
                x.execute();

                //Current thread:
                //The execute() method is called on this thread.
                //schedules SwingWorker to execute a worker thread and returns immediately
            } } );

        add(new JLabel("Get Fibonacci of:")); add(numField); add(goButton); add(
fibLabel);
        setSize(475, 400);
        setVisible(true); }

    public static void main(String[] args) {
        FibonacciNumbers application = new FibonacciNumbers();
        application.setDefaultCloseOperation(EXIT_ON_CLOSE); }
}

```