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// CalcController.java - Controller
//   Handles user interaction with listeners.
//   Calls View and Model as needed.
// Fred Swartz -- December 2004
// Paolo Bucci -- November 2009 (modified)

import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

public class CalcController {

    // ... The Controller needs to interact with both the Model and View.
    private CalcModel m_model;
    private CalcView m_view;

    // ===== constructor
    /** Constructor */
    public CalcController(CalcModel model, CalcView view) {
        this.m_model = model;
        this.m_view = view;

        // ... Initialize view
        this.m_view.setTotal(this.m_model.getValue());

        // ... Add listeners to the view.
        view.addMultiplyListener(new MultiplyListener());
        view.addClearListener(new ClearListener());
    }

    // //////////////////////////////////////// inner class MultiplyListener
    /**
     * When a multiplication is requested. 1. Get the user input number from the
     * View. 2. Call the model to multiply by this number. 3. Get the result
     * from the Model. 4. Tell the View to display the result. If there was an
     * error, tell the View to display it.
     */
    private class MultiplyListener implements ActionListener {
        @Override
        public void actionPerformed(ActionEvent e) {
            String userInput = "";
            try {
                userInput = CalcController.this.m_view.getUserInput();
                CalcController.this.m_model.multiplyBy(userInput);
                CalcController.this.m_view.setTotal(CalcController.this.m_model
                    .getValue());
            } catch (NumberFormatException nfex) {
                CalcController.this.m_view.showError("Bad input: '" + userInput
                    + "'");
            }
        }
    } // end inner class MultiplyListener

    // //////////////////////////////////////// inner class ClearListener
    /**
     * 1. Reset model. 2. Reset view.
     */
    private class ClearListener implements ActionListener {
        @Override
        public void actionPerformed(ActionEvent e) {
            CalcController.this.m_model.reset();
            CalcController.this.m_view.setTotal(CalcController.this.m_model
                .getValue());
        }
    }
}
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    } // end inner class ClearListener  
}
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