

```
package gui;

import javafx.stage.*;
import javafx.scene.*;
import javafx.scene.control.*;
import javafx.scene.layout.*;

public class Gui extends Stage {

    private final VBox root;

    private final HBox jackFile;
    private final Label label1;
    private final TextField textField1;
    private final Button load1;

    private final Button compileButton;

    private final HBox vmcode;
    private final Label label2;
    private final TextField textField2;
    private final Button load2;

    private final Button translateButton;

    private final HBox assembly;
    private final Label label3;
    private final TextField textField3;
    private final Button load3;

    private final Button assembleButton;

    private final HBox binary;
    private final Label label4;
    private final TextField textField4;

    private final Label errorLabel;

    public Gui() {
        super();

        root = new VBox();

        jackFile = new HBox();
        label1 = new Label("Jack File: ");
        textField1 = new TextField();
        load1 = new Button("Load");

        compileButton = new Button("Compile");
        vmcode = new HBox();
        label2 = new Label("VMCode: ");
        textField2 = new TextField();
        load2 = new Button("Load directory containing .vm files");

        translateButton = new Button("Translate");

        assembly = new HBox();
        label3 = new Label("Assembly File: ");
        textField3 = new TextField();
        load3 = new Button("Load .asm file");

        assembleButton = new Button("Assemble");
        binary = new HBox();
        label4 = new Label("Binary File: ");
        textField4 = new TextField();
    }
}
```

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        errorLabel = new Label();

        assembleGUI();

        super.setTitle("nand2tetris");
        super.setScene(new Scene(root));
        super.setWidth(530);
        super.setHeight(250);
        super.show();
    }

    private void assembleGUI() {
        root.getChildren().add(jackFile);
        jackFile.getChildren().add(label1);
        jackFile.getChildren().add(textField1);
        jackFile.getChildren().add(load1);
        root.getChildren().add(compileButton);
        root.getChildren().add(vmcode);
        vmcode.getChildren().add(label2);
        vmcode.getChildren().add(textField2);
        vmcode.getChildren().add(load2);
        root.getChildren().add(translateButton);
        root.getChildren().add(assembly);
        assembly.getChildren().add(label3);
        assembly.getChildren().add(textField3);
        assembly.getChildren().add(load3);
        root.getChildren().add(assembleButton);
        root.getChildren().add(binary);
        binary.getChildren().add(label4);
        binary.getChildren().add(textField4);
        root.getChildren().add(errorLabel);
        errorLabel.setWrapText(true);
    }

    public Button getLoad1Button() {
        return load1;
    }

    public Button getLoad2Button() {
        return load2;
    }

    public Button getLoad3Button() {
        return load3;
    }

    public TextField getTextField1() {
        return textField1;
    }

    public TextField getTextField2() {
        return textField2;
    }

    public TextField getTextField3() {
        return textField3;
    }

    public TextField getTextField4() {
        return textField4;
    }

    public Button getAssembleButton() {
        return assembleButton;
    }
}
```

```
    public Button getTranslateButton() {  
        return translateButton;  
    }  
  
    public Button getCompileButton() { return compileButton; }  
  
    public Label getErrorLabel() { return errorLabel; }  
}
```