

Part IV: Static Graphical User Interface

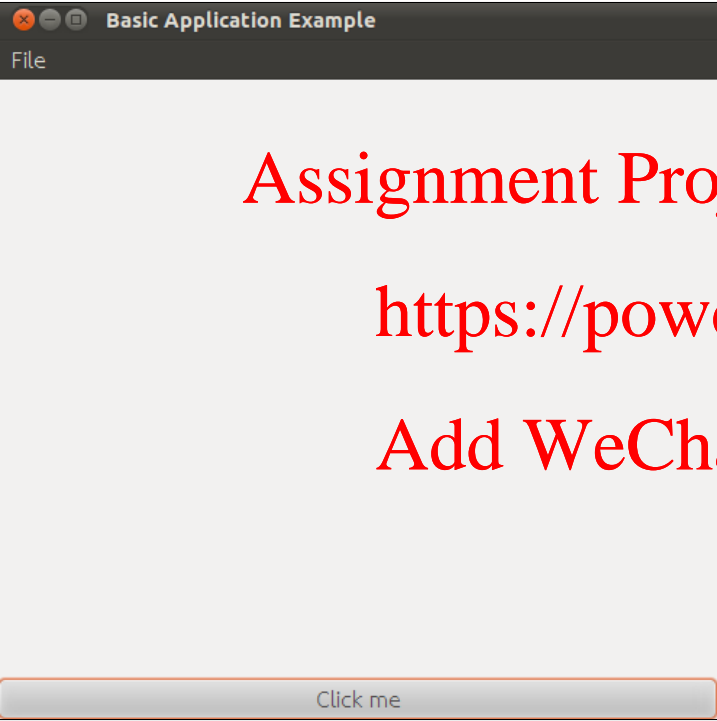
Useful Link: [Model-View-Controller \(MVC\) Explained Through Ordering Drinks At The Bar](#)

Your task for this part is to implement a **STATIC** GUI. By static, we mean that your GUI should have **ZERO USER INTERACTION**. The only thing required for this week is to display the initial configuration of a chess board. **Do not waste your time implementing chess moves, you may even lose points if you do.** The point of this restriction is to give you a clearer understanding of the MVC architecture, by strictly separating the Model, View, and Control components. You implemented the chess model last week, this week's focus is the view. Simply display a chess board with the normal set of chess pieces in their initial positions. Keep in mind, however, this does not mean you can simply display a static image in your JFrame.

GUI Builder Warning!

If you decide to use the UI builder in Netbeans or IntelliJ for this assignment, be very careful.
Although the UI builder quickly generates Java GUIs, it produces very ugly code that will not meet the requirements for this assignment without modification. Most noticeably, it tightly couples the view with the controller, so significant refactoring of the autogenerated code will be required. In the staff's opinion, it is *more work* to generate a UI automatically and refactor it properly than to build one from scratch.

Hand written code



```
import java.awt.BorderLayout;
import java.awt.Dimension;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JMenu;
import javax.swing.JMenuBar;
import javax.swing.JMenuItem;
import javax.swing.JOptionPane;
import javax.swing.JPanel;
import javax.swing.UIManager;

public class GUIExample implements ActionListener{

    public GUIExample() {
```

Requirement - Custom Chess Piec
Requirement - Static Use Interface
Requirement - Doxygen Generation

Category

Requirement
- Refactorin

Testing

Testing (Sc

Total

```

    try {
        UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());
    } catch (Exception e) {
        //silently ignore
    }

    JFrame window = new JFrame("Basic Application Example");
    window.setSize(500, 500);
    JPanel myPanel = initializePanel();
    initializeButton(myPanel);
    setUpMenu(window);
    window.setContentPane(myPanel);
    window.setVisible(true);
    window.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
}

private void initializeButton(JPanel myPanel) {
    JButton button = new JButton("Click me");
    button.addActionListener(this);
    myPanel.add(button, BorderLayout.SOUTH);
}

private JPanel initializePanel() {
    JPanel myPanel = new JPanel();
    myPanel.setPreferredSize(new Dimension(500,500));
    myPanel.setLayout(new BorderLayout());
    return myPanel;
}

private void setUpMenu(JFrame window) {
    JMenuBar menubar = new JMenuBar();
    JMenu file = new JMenu("File");
    JMenuItem open = new JMenuItem("Open");
    open.addActionListener(this);
    file.add(open);
    menubar.add(file);
    window.setJMenuBar(menubar);
}

@Override
public void actionPerformed(ActionEvent e) {
    JOptionPane.showMessageDialog(null,
        "I was clicked by "+e.getActionCommand(),
        "Title here", JOptionPane.INFORMATION_MESSAGE);
}

public static void main(String[] args) {
    new GUIExample();
}
}

```

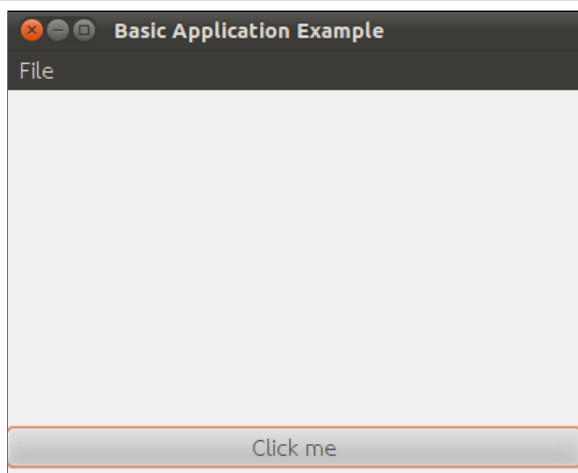
Netbeans autogenerated code

Assignment Project Exam Help

<https://powcoder.com>

Add WeChat powcoder

Hand written code



```

/*
 * GUIExampleView.java
 */

package guiexample;

import org.jdesktop.application.SingleFrameApplication;
import org.jdesktop.application.FrameView;
import javax.swing.JDesktopPane;

/**
 * The application's main frame.
 */
public class GUIExampleView extends FrameView {

    public GUIExampleView(SingleFrameApplication app) {
        super(app);

        initComponents();
    }

    /** This method is called from within the constructor to
     * initialize the form.
     * WARNING: Do NOT modify this code. The content of this method is
     * always regenerated by the Form Editor.
     */
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        mainPanel = new javax.swing.JPanel();
        menuBar = new javax.swing.JMenuBar();
        javax.swing.JMenu fileMenu = new javax.swing.JMenu();
        javax.swing.JMenuItem exitMenuItem = new javax.swing.JMenuItem();
        statusPanel = new javax.swing.JPanel();
        javax.swing.JSeparator statusPanelSeparator = new javax.swing.JSeparator();
        statusMessageLabel = new javax.swing.JLabel();
        statusAnimationLabel = new javax.swing.JLabel();
        jButton1 = new javax.swing.JButton();

        mainPanel.setName("mainPanel"); // NOI18N

        javax.swing.GroupLayout mainPanelLayout = new javax.swing.GroupLayout(mainPanel);
        mainPanel.setLayout(mainPanelLayout);
        mainPanelLayout.setHorizontalGroup(

```

Assignment Project Exam Help

<https://powcoder.com>

Add WeChat powcoder


```

        .addComponent(statusPanelSeparator, javax.swing.GroupLayout.PREFERRED_SIZE,
                        2, javax.swing.GroupLayout.PREFERRED_SIZE)
        .addComponent(jButton1))
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
                        javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addGroup(statusPanelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
        .addComponent(statusMessageLabel)
        .addComponent(statusAnimationLabel))
        .addGap(3, 3, 3)
    );

    setComponent(mainPanel);
    setMenuBar(menuBar);
    setStatusBar(statusPanel);
} // </editor-fold>

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    JOptionPane.showMessageDialog(null, "I was clicked by "+evt.getActionCommand(),
                                "Title", JOptionPane.INFORMATION_MESSAGE);
}

private void exitMenuItemActionPerformed(java.awt.event.ActionEvent evt) {
    jButton1ActionPerformed(evt);
}

// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JPanel mainPanel;
private javax.swing.JMenuBar menuBar;
private javax.swing.JLabel statusAnimationLabel;
private javax.swing.JLabel statusMessageLabel;
private javax.swing.JPanel statusPanel;
// End of variables declaration

}

```

Assignment Project Exam Help

<https://powcoder.com>

Add WeChat powcoder

Getting Started

GUI programming can be a potentially daunting experience. Below are some external resources to help get you going. Please start early and come to office hours or ask questions on Piazza if you are confused. These resources cover more than what you need for implementing a static GUI, but keep in mind **NO USER INTERACTION** this week.

- [MVC Wikipedia Article](#) - The Wikipedia article on Model-view-controller architecture.
- [Sun JAVA GUI Tutorial](#) - Sun's tutorial on Java GUI programming. This is a great resource since it is straight from the source.
- [Model/View/Controller GUI](#) - An introduction to the model view controller design scheme. Includes a Java GUI example. Especially relevant is section 3.1.2.0.1 Warning.
- [Crash Course in Java GUI](#) - An introduction to Java GUI programming. The links on this site are actually powerpoint presentations.
- [Java GUI Examples](#) - A number of examples using JFrame and JButton.

Part V: Manual Test Plan

GUI testing is difficult, especially just with unit tests. This week, in order to test your GUI, write a test plan including screenshots and specific steps for a human tester to follow - what a tester should do and what he/she should observe. Since your GUI this week is static, the test script should be very simple. You will be building on this test plan in the coming weeks.

Need help?

First, ask questions on Piazza. If you have a question, there is a pretty good chance someone else has the same question and an even better chance that someone else in the class or one of the TAs will be able to answer it for you. If you are still having a problem, email your moderator or one of the TAs to get advice. Remember, it's best to ask questions early on so they have time to be answered. Don't wait until the last second to get started then realize that you are confused. In general, we are flexible with interpretations of the assignment, **as long as it does not trivialize any component of the assignment**.

无标签