Lab Workbook 8

Software Development HDSWD
Graphical User Interfaces
06/07/12

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There are starter files available on moodle for this lab. These files are StarterMain.java and StarterWindow.java. You may use the contents of the StarterWindow for each of the problems below. Ensure to change the class name to be the same as the file name. Call each window class for example Problem1Window and the main class Problem1Main and so on. If you want to use just one main class and create objects all the window classes in there that is ok too.

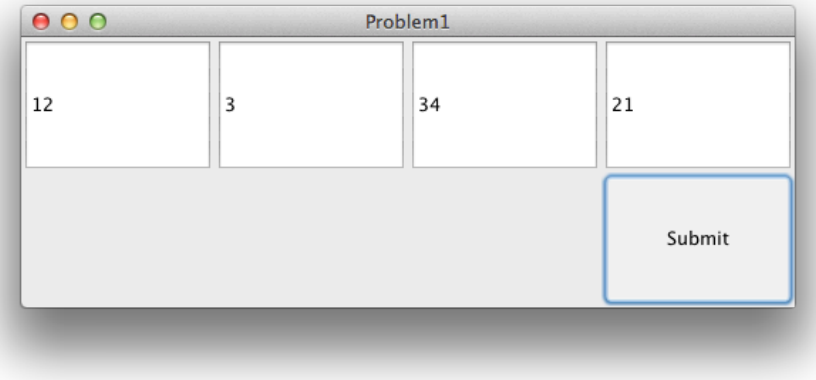
Problem 1:

Create a window that uses a grid layout with 2 rows and 4 columns. This program will take input from the user in 4 separate fields, calculate the maximum, minimum and average of the numbers then show the result to the user.

Declare and create 4 JTextField objects, one for each and input number and name them num1Field, num2Field etc. Declare and create a label called minimumLabel, this will display the minimum value. Declare and create a label called maximumLabel, this will display the maximum value. Declare and create a label called averageLabel, this will display the average of all values. Declare and create a JButton object called submitButton. Add an action listener to the button.

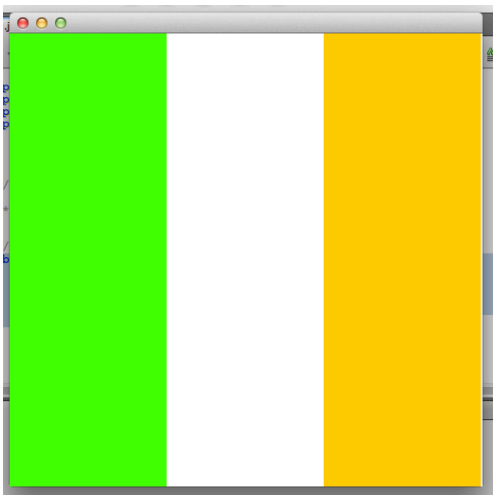
Add the 4 text fields to the content pane first, then the labels, then the button.

When the button is clicked the text from each of the text fields is parsed into integers. The max, min and average is found and then then maximumLabel, minimumLabel and averageLabel get updated with the calculations.



Problem 2:

Create a window that uses grid layout with 1 row and 3 columns. Declare and create 3 JPanels called panel1, panel2 and panel3. Each panel should be a different color, these colours are the colours of the irish flag. Use the setBackground method on each panel to change the color. Add each panel to the content pane in the correct order. The window should look like so when run.



Problem 3:

Create a window that will accept numbers from the user for red, green and blue values and show them what colour those numbers represents. Declare and create JTextFields called redField, greenfield and blueField, pass 10 into the constructor when creating them, this specifies their width. e.g.

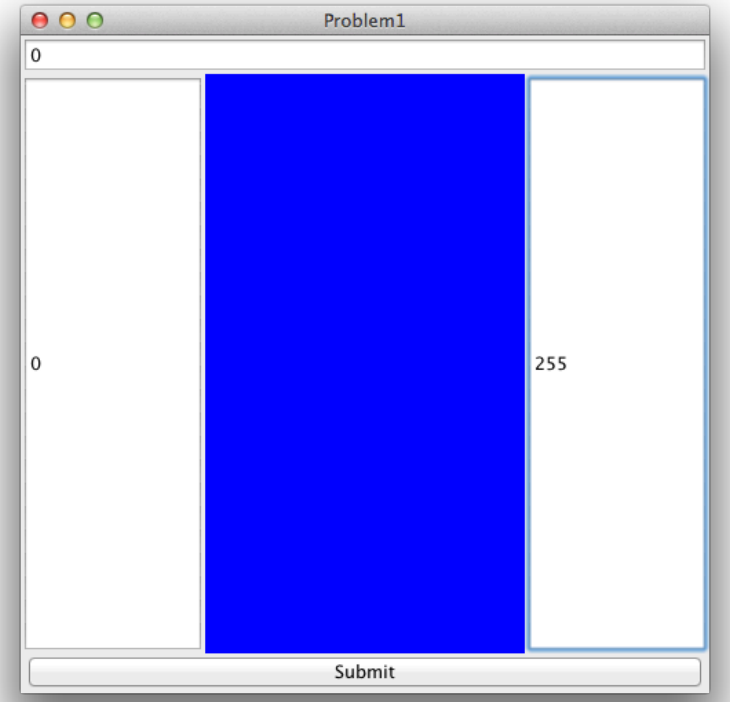
```
JTextField redField = new JTextField(10);
```

Declare and create a JPanel called colorPanel. Declare and create a button called submitButton. Add an action listener to submitButton.

Using border layout place the redField in the west of the contentPane. Place the greenField in the north of the contentPane and place the blueField in the eash of the contentPane. Place the colorPanel in the centre of the contentPane and place the submitButton in the south.

When the submit button is clicked, access each of the text fields and convert their values from strings to integers using the Integer.parseInt() method like previous examples. Use the setBackground method on the colorPanel and pass in the values from the red, green and blue fields into a new Color object like so:

```
colorPanel.setBackground(new Color(redValue,greenValue,blueValue);
```



Problem 4:

Create a window that uses flow layout. Set the size of the window to be 500 wide and 100 high. This application will let the user type in an integer number. A message dialog will appear when the click submit alerting them to whether the number is odd or even.

Declare and create a JLabel called numberLabel giving it the text "Enter an number". Declare and create a JTextField called numberField and give it a size of 20. Declare and create a JButton called submitButton and give it the text "Submit", also add an action listener to submitButton.

Add the three components to the content pane. When the use clicks the button access the numberField and convert its contents using the Integer.parseInt method. Determine if the number is off or even. Display a message dialog containing a message to the user saying if the number is odd or even. Hint:

JOptionPane.showMessageDialog(null,"Message");