

Tutorial 6 – GUI Programming (1)

In this tutorial, you will learn to apply the GUI programming concepts and basic techniques. Create a package `tutes.gui1` for the exercises below. The classes mentioned in the exercises below are provided in the file `tut06_starter.zip` which can be downloaded from the course website.

Exercise 1

Change the `FirstWindow` class (used in the lecture) so that the event handling methods of both the window's closing and the button's mouse-click event share the same code.

Exercise 2

In the current `FirstWindow` class, two different listener objects are needed to handle the window closing and button click events. How do you change this class so that only one listener object is used to handle both events? Experiment with creating this object using the two methods mentioned in the lecture (using a normal and an anonymous class).

Exercise 3

Change the `ColoredWindow` class so that it does not set the colour of the window at creation time (i.e. the window uses the default background colour). Instead, the window will contain a button and a label. When a user clicks on the button the application picks a random colour from the list of pre-defined colours of the `Color` class for the background of the label. This event will also cause the foreground colour of the label and the background colour of the window to be changed appropriately. That is, if the label's background is black then the window's background and the label's foreground must be set to a colour other than black. A suggestion is to determine a roughly opposite colour to the label's background (e.g. `WHITE` for `BLACK`) and use this for the window's background and the label's foreground.

Finally, change the `DemoColoredWindow` class so that it creates just one `ColoredWindow` object.

Note: To add two display components to a window, invoke the `add` method of the window object with two different component index values. Below are the index values defined in the `BorderLayout` class that you can use:

NORTH CENTER WEST SOUTH EAST

Don't worry about what these mean for now. Just experiment with them in the code to see the effects.