CST8221 – Java Application Programming
Lab 10
Visual GUI Builders – The NetBeans GUI Builder

Objectives

Visual GUI builders are specialized tools that let you design the visual appearance of your application and then they generate much (often all) of the GUI code for you. NetBeans IDE offers such a tool for building Swing GUI applications (code name Matisse (a famous French painter)). Eclipse Java IDE offers plug-ins such as Eclipse Visual Editor and WindowBuilder. There is another tool closely associated with NetNeans for building JavaFX GUI. Its name is Scene Builder.

The Nature of Things

In order to use the visual builders you should first learn how to build a user interface manually. Once you understand the basic building blocks of a GUI application, you can use visual builders for Rapid Application Development. At this point of your learning you should have a pretty good understanding of how the Java GUI works. Which means that you a ready to try a visual GUI builder.

References

Textbook: Appendix I.
Links:
http://download.oracle.com/javase/tutorial/uiswing/learn/index.html

Task 1 – Installing NetBeans IDE

If have not already installed NetBeans IDE you have to installed before you can proceed with the lab Task 2. Go to the link below

https://netbeans.org/downloads/

and download the Java SE bundle for your platform. The bundle does not include the Java JDK. Before running the installation of NetBeans, consult with me. Do not forget to create an operating system restore point. You will need an Internet connection during the installation. Once NetBeans is installed, launch it and proceed with Task 2.

Tasks 2 _ Building a GUI with NetBeans GUI Painter

Download the document Netbeans_GUI_Tutorial.pdf (or go to the reference link). You will find a step by step tutorial demonstrating how to use the NetBeans GUI building tool. There are some small differences in some of the screens you are going to experience. The tutorial has been written for NetBeans 7.1, and you will be working with NetBeans 8.x. For example, in Step 2 instead of selecting *General* from the Categories column, select *Java*. The *Inspector* window is replaced with the *Navigator* window. To change the default names you must use *Refactor* instead *Change variable name*. When you are instructed to **double-click**, double-click very slowly.
Complete the tutorial and build the **CelsiusConverter** application. When you set the application frame title in section

Creating the CelsiusConverter GUI, Step 1: Set the Title

include your name in the title (for example, *Ranev's Celsius Converter*).
When resizing the frame you should make sure that the whole title is visible at launch time.

Also at some point you must change the default horizontal alignment of the JTextField to **right aligned**.

Except for these small changes your application must look and behave exactly as the demo provided in the tutorial

Note: The default repository for the NetBeans projects is
C:\Users\...user folder..\Documents\NetBeansProjects

Once you finish testing your new application select Run->Build Project or press F11. This action will generate an executable ***CelsiusConverterProject.jar*** file. The file is located in the ***dist*** folder of the project. Now your app is ready for distribution and demonstration.

Before the lab

Enjoy Java.

During the lab

Follow carefully the steps in the lesson.

Before leaving the lab

Demonstrate your Converter GUI application if you want to get credit for the lab work. Sign the attendance sheet.

After the lab

Remember what you have learned. You may need it later. If you finish early you can try (or at least look at) this: https://netbeans.org/kb/docs/java/quickstart-gui.html

Submission

No submission is required for this lab but if you want to earn some marks, you have to demonstrate your work by the end of your lab period in week 10 of the semester.

Marks: 2% of your maximum course mark

2% of your total course marks are allocated for this activity. In order to receive full marks your application **must** look (except for the title and the alignment) and behave exactly as the demo provided in the tutorial.

Marking Scheme

Maximum mark – 2% of the total course marks

Deduction Event	ActionPerformed (Deduction (%))
Missing or late demonstration	**100**
Missing NetBeans ***CelsiusConverterProject*** project folder and package	**100**
Application does not work properly	**up to 100**
Application does not compile and/or run	**100**
Wrong title or package (learn)	**10**
Components are not aligned properly	**20**
Missing component	**20**
Converter does not convert	**50**