

SANTA CLARA UNIVERSITY

Computer Engineering Department

COEN 160: Lab Assignment 4

Graphical User Interfaces

Assignment: Complete problems 1 and 2.

Objectives: To learn to create graphical user interfaces by adding components to containers and attaching listeners to the components using the Swing framework.

Notes:

- ❖ Include comments in your code so that it is easy to understand the program you have written.
- ❖ Indent your programs properly.
- ❖ Each source code file must contain a title and a description of its purpose.
- ❖ Select identifiers that are meaningful.

Details:

Problem 1: Understanding Layout Managers

Create a window and set a *JPanel* as the content pane of the window. Create four buttons and add them to this *JPanel* using the following layout managers:

- a) *FlowLayout*
- b) *BorderLayout*
- c) *GridBagLayout*
- d) *BorderLayout*

Add listeners to the buttons so that the name of the button is displayed when it is clicked.

Problem 2: Pizza ordering form

Create a pizza ordering form with the following components:

- a) A *JPanel* with a *JLabel* that contains the name of the pizza shop.
- b) A *JPanel* containing three *JRadioButtons* with the names “Small”, “Medium” and “Large”. Each *JRadioButton* is a part of a *ButtonGroup*.
- c) A *JPanel* with five *JCheckBoxes*. Each checkbox has a label that is the name of topping that can be added to the pizza, such as “olive” and “peppers”.
- d) A *JPanel* with one *JButton* with the name “Submit order”. When the

JButton is clicked, a message similar to the one below should be displayed on the console (depending on which radiobutton and checkboxes are selected):

You have ordered a small pizza with the following topping(s): olives

Note: You will need to set one panel as the top-level content pane of the window and add the other panels to it. Experiment with different types of layout managers for each *JPanel*.

Problem 3: Displaying the contents of a table on a GUI

Create a graphical user interface to represent the contents of a table. Create an instance of a class (for example, *StudentRecordTableModel*) that implements *TableModel*. This class *StudentRecordTableModel* has two fields declared as arrays containing the data and names of the columns in your table. Use a *JTable* in your GUI and populate it with the data from your table using a suitable constructor or method. Display the name of the table on the GUI.

Submission: You must submit the source code of your programs and the output when you run the program. Demonstrate that your program runs correctly to the teaching assistant.