GUI Programming 2019-2020 – Year 2

Labwork 5 – Building Basic GUI Frames with Layout Managers:

(Worth 5% - or 50 points out of 500 points for labwork this semester)

IMPORTANT NOTES:

- **NO COPYING PERMITTED AND ZERO MARKS WILL APPLY TO COPIED WORK. FURTHER ACTION MAY BE TAKEN AGAINST STUDENTS THAT HAVE BEEN FOUND TO COPY WORK.**

- **ASSESSMENT WILL INVOLVE ONE-TO-ONE QUESTIONS ABOUT YOUR SUBMITTED WORK. USE COMMENTS IN YOUR CODE TO ENSURE YOU DON'T FORGET WHY YOU WROTE CODE YOU MAY LATER BE ASKED ABOUT.**

- **ALL WORK MUST BE SUBMITTED TO MOODLE BY DATES SPECIFIED (2 LABS SUBMISSIONS OF FIVE LABS THROUGHOUT THE SEMESTER).**

- **MANY OF THE TASKS ASSIGNED BELOW CAN BE COMPLEX AND\OR THE DESCRIPTIONS MAY REQUIRE FURTHER CLARIFICATIONS. PLEASE USE THE AVAILABLE LAB TIMES TO ASK FOR CLARIFICATIONS AND ADVICE\HINTS ON THE TASKS BELOW.**

Part 1 – Using panels, labels, buttons and fields (10 points)

Create a Java program called **Lab5Part1**. Make the program a JFrame that allows you to join a club using three labels, three fields and one "Join" button. The fields should ask the user to enter their name, password and e-mail address. The join button will simply show a "Join" option to be selected when all of the data is entered in the fields. You should also use at least one panel in this simple GUI.

- Create the frame by extending the JFrame class (1 point)
- Create and add the labels (3 points)
- Create and add the fields (set a reasonable size) (3 points)
- Create and add the button (2 points)
- Use a panel to organize components (1 point)

Part 2 – JList (10 points)

Create a class called **Lab5Part2**. Create a JFrame that holds a **JList** that allows the user to select from a list of at least 8 different shops (e.g. Tesco, ALDI…).

- Create the frame (1 point)
- Create the Strings to add to the JList (the list of 8 shop names) (3 points)
- Create the JList object and add the 8 Strings (e.g. using an array) (3 points)
- Add the JList to the top section of the JFrame (Layout north) (3 points)

Part 3 – JComboBox (10 points)

Create a JFrame class called **Lab5Part3**. Create a JFrame that holds two **JComboBox** objects, one at the top of the frame and one at the bottom of the frame (north and south). The first JComboBox must allow the user to select from a list of at least 4 different types of car make, e.g., Opel, Ford etc. The second JComboBox must allow the user to select from a list of favourite music artists\groups (e.g. Taylor Swift, Eminem, Slipknot etc.). Set the second JComboBox so that it is editable (can be added to).

- Create the frame (1 point)
- Create the Strings for the JComboBox's (2 x car and artists) (4 points)
- Create the JComboBox objects and add to frame (top and bottom) (4 points)
- Set the second JComboBox to be editable (test by typing in value) (1 point)

Part 4 – Layouts (20 points)

Create a class called **Lab5Part4**. Create a JFrame that models the ATM machine menu options using buttons (JButton) and labels (JLabel) only (panel(s) will be needed also). The GUI should contain all of the usual menu options you see at your ATM (minimum 6 menu options with a button to click; you should use labels to help the user use the system properly, e.g., "Please select option" etc.). In this lab section use a **Layout manager** to achieve the layout of the GUI. Use images and change background colours in the GUI buttons\frame to the GUI to make it look interesting\appealing (use the Oracle website to find out options for changes in colour to panel backgrounds). Note: The GUI will just look good this week but will not actually do anything (no balance etc.)!!!

- Create the JFrame, set appropriate size and set title (2 points)
- Create the buttons for the menu options (6 minimum) (6 points)
- Use well positioned labels to instruct\helps the user (titles etc.) (3 points)
- Use panel(s) to group components in layout (2 points)
- Make GUI look unique (use your imagination. e.g., colour\images) (4 points)
- Use a well selected Layout manager(s) (Border/Flow/Grid) (3 points)