GUI Programming 2020 – Year 2
Labwork 3: (6% - or 60 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. A COMPLETED SELF-ASSESSMENT SHEET WILL BE USED TO GUIDE THE ASSESSMENT. 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 (SUBMISSION DEADLINES WILL BE POSTED ON MOODLE).**

- **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.**

- **YOU CAN USE A SIMPLE JAVA ENABLED TEXT EDITOR IF YOU WISH, e.g., TEXTPAD or NOTEPAD. HOWEVER, I SUPPORT THE MOVING ON TO A MORE ADVANCED IDE AT THIS POINT ALSO (e.g., Eclipse or IntelliJ or NetBeans).**

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

Create a Java program called **Lab3Part1**. Make the program a JFrame of a mock login system with a textfield and password field. The fields should be laid out well in the center of the screen with labels (e.g., enter Username: and enter Password:).

- 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)
- Set layout (or use existing one properly) (2 points)
- Use a panel to organize components (1 point)

Part 2 – Using fields, labels (10 points)

Create a Java program called **Lab3Part2**. Make the program a JFrame of a mock address entering form. Include labels and input fields for Street, City, County and Country. The fields should be well laid out with the labels beside them.

- Create the frame by extending the JFrame class (1 point)
- Create and add the labels (4 points)
- Create and add the fields (set reasonable sizes) (4 points)
- Set layout (or use existing one properly) (1 point)

Part 3 – JList (10 points)

Create a class called **Lab3Part3**. Create a JFrame that holds a **JList** that allows the user to select from a list of at least seven different snacks (e.g. Twix, Bounty, Mars etc.). Place the list on the bottom of the frame.

- Create the frame (1 point)
- Create the Strings to add to the JList (list of 7) (3 points)
- Create the JList object and add the seven Strings (e.g. use array) (3 points)
- Add the JList to the bottom section of the JFrame (3 points)

Part 4 – JComboBox (10 points)

Create a JFrame class called **Lab3Part4**. 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 sportswear, e.g., Umbro, Nike etc. The second JComboBox must allow the user to select from six different countries they'd like to visit (in normal times). 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 (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 5 – More Advanced Layout (20 points)

Create a class called **Lab3Part5**. 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 objective this week is to try to make the GUI look good but will not actually do anything yet (no balance returned 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)