GUI Programming 2019-2020 – Year 2

Labwork 8 – Frames, Choosers, Mouse:

(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 – Simple Single Internal Frame (10 points)

Create a class called **Lab7Part1**. Create a JFrame that contains a JInternalFrame. The internal frame should contain a JPanel. The panel should contain a JButton with the String set to "Button in Internal Frame" and a JLabel set to "Label in Internal Frame".

- Create and set the JDesktopPane and add frame to desktop   (2 points)
- Create the internal frame and make visible within the frame   (2 points)
- Add the panel to the internal frame   (2 points)
- Add button to internal frame panel   (2 points)
- Add label to internal frame panel   (2 points)

Part 2 – JColorChooser (10 points)

Create a Java program called **Lab8Part2**. Create a JFrame that contains a label called *colourFontLabel* and set the text to "Colour chosen will appear here". Use a large font in the label (e.g. minimum 15 and set to bold). Include a button with the text set to "Change colour of the text". Implement listeners so that when the button is pushed a **JColorChooser** is launched. Set the text in the label to the colour that is chosen by the user using the **JColorChooser**.

- Create the label and add to JFrame   (1 point)
- Create the button and add the listeners   (2 points)
- Set the font of the label   (1 point)
- Launch the JColorChooser   (to select colour)   (2 points)
- Retrieve the colour information from the JColorChooser   (2 points)
- Update the label to change the colour of the text shown in label   (2 points)

Part 3 – MouseInputListener (10 points)

Create a JFrame class called **Lab8Part3**. Create a JFrame that contains one label in a panel to output mouse event data. Implement the **MouseInputListener** at the class level. Add the **MouseInputListener** to the panel and use the label to output the name of **ALL** mouse events detected (seven event handlers), e.g., "Mouse Clicked Event Detected" etc.

- Implement the MouseInputListener at the class level   (1 point)
- Add the mouse listeners to the panel   (2 points)
- Implement **ALL** handler methods so they display info in label   (7 points)

Part 4 – An application using mouse events and choosers (20 points)

Create a class called **Lab8Part4**. Create a JFrame that contains four evenly split panels with a light black border (see examples or Oracle website for setting borders). Add a JLabel called *imageLabel* to the first panel. When the first panel is clicked by the mouse make a **JFileChooser** appear. Allow the user to pick an image to display in the label of the first panel and display the chosen image in the panel (the image should fit in the panel area, i.e., not too big!). In the second panel when the mouse enters the panel launch a **JColorChooser**, the user must choose a colour and the background of that panel should change colour. Add a label called *locationLabel* to the third panel. In the third panel listen for mouse **drag** events. When a mouse drag event is detected print the x and y co-ordinates of the event to the label called *locationLabel*. Finally, add a label to the fourth panel called *infoLabel*. When the mouse **exits** the fourth label the label must display the text "Luch beannacht!!!" ("Goodbye mouse" in Irish).

- First panel to change image in panel using JFileChooser   (5 points)
- Second panel to change colour with JColorChooser   (5 points)
- Third label to display x and y location of drag events   (5 points)
- Fourth label to display goodbye mouse message on mouse exit   (5 points)