

GUI Programming 2019-2020 – Year 2

Labwork 4 – Building Basic GUI Frames:

(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 – Building a basic window (JFrame) (10 points)

Create a Java program called **Lab4Part1**. Make the program a JFrame that does all of the following:

- Create the frame by extending the JFrame class (2 points)
- Set the title of the JFrame to “YourName”, e.g., “JoeBloggs” (2 points)
- Set the size of the JFrame to 450 x 350 (2 points)
- Set the visibility of the JFrame to true (2 points)
- Run and test the JFrame (it should pop up on the screen) (2 points)

Part 2 – Building a basic window with labels (10 points)

Create a class called **Lab4Part2**. Create a JFrame with labels as follows:

- Create the frame and set the title to “My Label Frame” (2 points)
- Create a JLabel called myNameLabel and fill with text (your name) (2 points)
- Create a second JLabel called myAgeLabel and fill with text (2 points)
- Create a JPanel call labelPanel and add BOTH labels to it (2 points)
- Add the panel to content pane of Frame and test (see both labels?) (2 points)

Note: Just for a learning exercise you could try this exercise again without the JPanel and see what changes when you add the labels one after the other to the content pane of the frame without the panel!

Part 3 – Adding buttons to the Frame (10 points)

Create a JFrame class called **Lab4Part3**. Create the JFrame as follows:

- Create a Label called submitLabel with the text “Push the button: ” (2 points)
- Create a JButton call submitButton with text “Push me!” (2 points)
- Create a JPanel called submitPanel and add the label & button to it (3 points)
- Add the submitPanel to the content pane of the frame (2 points)
- Run and test (you should see the label then button) (1 point)

Note: You can change the size of the JFrame so that the GUI looks right, i.e., everything lines up. Pushing the button has no effect yet!!!...but you will notice it depresses (appears to move up and down) when clicked.

Part 4 – Adding multiple components to a JFrame (20 points)

Create a class called **Lab4Part4**. Create a JFrame that displays **THREE** pictures in a JFrame (make the images small so that the frame will fit into the screen with all three images visible...and the images must be of something individually related to you like family, friends, pets, car etc.). Each image should be labeled with a name and a text area describing the image, e.g., Fido <Image Here> Description: This is a picture of my dog Fido taken at Portrane beach.

Required activities and marking guideline:

- Create the JFrame, set appropriate size and set title to “Pictures” (2 points)
- Create EACH of the three labels and position on GUI (3 x 2 points) (6 points)
- Create EACH of the three text areas and position on GUI (3 x 2 pts.) (6 points)
- Create a panel and add all components in the correct order (4 points)
- Run and test the frame so that the GUI displays correctly (2 points)

Note: You may have to keep changing the size of the frame until the images, labels and text areas line up correctly. It is very likely you will NEED at least one panel for this (you might need more than one).