**GUI Programming 2015 – Year 2**

**Labwork 7: (5% - or 50 points out of 500 points for labwork this semester)**

**NOTE: ALL LABS TO BE COMPLETED USING TEXTPAD. NO COPYING PERMITTED AND ZERO MARKS WILL APPLY TO COPIED WORK.**

**ALL WORK SUBMITTED TO MOODLE BY DATE SPECIFIED (2 LABS SUBMISSIONS OF FIVE LABS THROUGHOUT THE SEMESTER)**

**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 “Internal Frame Button” and a JLabel set to “Internal Frame Label”.

* 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 – Multiple Internal Frames (10 points)**

Create a Java program called **Lab7Part2**. Create a JFrame that launches ten internal frames (**JInternalFrame**). Set the location of each subsequent frame so that it is 20 greater in the x-direction and 20 extra in the y-direction. Marks will be awarded for using a **loop** AND a **method** to achieve the creation of the internal frames.

* Create and set the JDesktopPane and add frames to desktop (2 points)
* Create the ten frames with different locations (cascade-like) (4 points)
* Use a loop to create the ten frames (2 points)
* Use a method to generate the frames (2 points)

**Part 3 – Launching Internal frames from menus\buttons (10 points)**

Create a JFrame class called **Lab7Part3**. Create a JFrame application that includes a **JMenu** called “Apps”. Add two **JMenuItem** objects to the “Apps” menu called “Font App” and “Image App”. Implement listeners and handler methods so that when the “Font App” is selected a **JInternalFrame** is launched to display to different types of font inside a label (choose whatever font you wish, at least two fonts must be shown). Secondly implement listeners and handler methods so that when “Image App” is selected an internal frame is launched to display an image with a label (choose any image to display, within reason!).

* Create the JDesktopPane (1 point)
* Create JMenu and JMenuItems (2 points)
* Add listeners to the menu items (2 points)
* Launch “Font App” and “Image App” (1 point)
* Build “Font App” (2 points)
* Build “Image App” (2 points)

**Part 4 – A suite of game applications using internal frames (20 points)**

Create a class called **Lab7Part4**. Create a **JFrame** that acts like a gaming application to supply two games “X’s and O’s” and “Sudoku” (note the games do not need to work fully but the interface should attempt to look like the game in each case). Create a **JMenu** called “Select” and add two **JMenuItem**’s called “Sudoku” and “X’s and O’s”. Each menu item must launch a separate **JInternalFrame** for each game. Marks will be awarded for use of methods to modularize the code.

* Create JDesktopPane (1 point)
* Create JMenu and JMenuItems (2 points)
* Add listeners to the menu items (2 points)
* Build the “Sudoku” frame and launch (Should look convincing) (6 points)
* Build “X’s and O’s” frame and launch (Should look convincing) (6 points)
* Use of methods to modularize code (3 points)