

## **GUI Programming 2021 – Year 2**

**Labwork 9: (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. 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 – Message Dialog (10 points)

Create a class called **Lab9Part1**. Create a JFrame that contains a JButton with the String set as “Show Message Dialog”. Set the title of the Dialog to YOUR NAME. Launch the message dialog and show the message “This is “ + yourName + “ and this is my first message dialog” [Replace the yourName with YOUR NAME]. Set the message type as INFORMATION\_MESSAGE (showing the default icon).

- Create the button and add the listeners (2 points)
- Launch the message dialog (2 points)
- Set the message within the dialog (with your name) (2 points)
- Set the title of the JFrame to the dialog input (2 points)
- Set the default icon using INFORMATION\_MESSAGE (2 points)

### Part 2 – Input dialog with dropdown choice and message dialog (10 points)

Create a JFrame class called **Lab9Part2**. Create a JFrame that has a JButton to launch a JDialog with an in-built drop-down menu (an **Input Dialog**). The five options in the dropdown menu should have any five recreational activities of your choice (pick your own). For each of the activities chosen in the dialog show make a **message** dialog pop-up with a picture representing the activity (e.g. if the user selects ‘Hiking’ show a message dialog and override the default icon in the message dialog to show some mountains).

- Create the button and add the listeners (1 point)
- Launch the input dialog (with dropdown menu) (3 points)
- Retrieve the choice selected in the dialog (3 points)
- Launch the message dialog for each and show image (3 points)

### Part 3 – Option Dialog (10 points)

Create a Java program called **Lab9Part3**. Create a JFrame that contains a JMenu called “Choices”, add a JMenuItem to the menu called “Subject Choice”. Add listeners to the menu item so that when “Subject Choices” is selected it launches an **Option Dialog** with three options (three subjects you have covered in your studies so far...your choice!!!). Once the user selects one of the three options launch a second **Message Dialog** to confirm their choice, e.g., “You have selected Programming as your favourite subject”. Launch a message dialog for EACH of the three possible choices. N.B.: THIS DIALOG IS DIFFERENT TO PART 2 AS THE OPTIONS ARE PRESENTED AS CUSTOMIZED BUTTON MESSAGES AS PART OF THE OPTION DIALOG (i.e. **showOptionDialog** and pass array of options to **show**)

- Create the menu and menu item and add the listeners (2 points)
- Launch the option dialog (with the customized choices) (3 points)
- Retrieve subject selected using JOptionPane final static variable (2 points)
- Launch a message dialog to conform EACH option selected (3 points)

### Part 4 – Draw a seasonal character on a JFrame (20 points)

Create a Java program called **Lab9Part4**. Create a JFrame that will be used to draw 2D graphics (i.e. implement the paint method with the ‘Graphics g’ parameter). Draw a seasonal drawing of a character for this time of year (e.g. Snowman, Reindeer, Elf, Santa, Mrs. Claus...you choose). I accept the drawing may be a little “rough” but try and put some shapes together that at least resemble the seasonal character you have chosen! Try to split up the drawing using methods, e.g., drawHead(Graphics g), drawLegs(Graphics g) – you will need to pass the graphics context when drawing with methods.

- Create the JFrame with the paint method (1 point)
- Include Graphics g parameter and call to super.paint(g) (1 point)
- Draw hat\antlers\hair (4 points)
- Draw head (or top section) (4 points)
- Draw face (4 points)
- Draw body (4 points)
- Use colour to make it look better (1 point)
- Overall look and design (1 point)