**GUI Programming 2016 – Year 2**

**Labwork 5: (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 – Build a basic menu (10 points)**

Create a class called **Lab5Part1**. Create a JFrame and add two JMenu’s to the JFrame’s menubar. Add a menu called ‘Functions’ and a menu called ‘Languages’. Add two menu items to the ‘Functions’ menu called ‘Rename’ and ‘Delete’. Add two menu items to the ‘Languages’ menu with two languages of your choosing: add a flag to represent the country for the language (e.g. Mandarin could have a small Chinese flag icon).

* Create the menubar (and set) (1 point)
* Create menus and add to menubar (2x 2 points) (4 points)
* Create menu items and add to correct menus (4x1 points) (4 points)
* Add icon to language menu items (1 point)

**Part 2 – Menu with listeners (10 points)**

Create a Java program called **Lab5Part2**. Create a JFrame that has a JMenu called ‘Fruits’. Add at least three menu items with three different fruit names of your choice. Add a label to the main frame window. Implement listeners on the menu items so that when a fruit is clicked an image of the selected fruit is shown in the label, e.g., select ‘Orange’ and a picture of an orange appears in the label.

* Create the menubar (and set) (1 point)
* Create the fruit menu (2 points)
* Create and add fruit menu items (3 points)
* Add the listeners (2 points)
* Get the images to appear correctly (test it!) (2 points)

**Part 3 – Menus with listeners and short cuts (10 points)**

Create a JFrame class called **Lab5Part3**. Create a JFrame with a JMenu called ‘News’. Add at least three menu items to the menu with the following headings ‘Sport News’, ‘Local News’, ‘Weather’. When the user clicks the corresponding menu option make a news related image appear in the GUI and also include a scrollable text area to describe the news item (e.g. Sport could show picture of the footballer Jack Grealish with an English flag and the text area describing the headline). Add a mnemonic and appropriate accelerator to each of the menu items so that the menu options can be short-cut.

* Create the menubar (and set) (1 point)
* Create and add the menu (2 points)
* Create and add menuitems (3 x 1 point) (3 points)
* Listeners for ALL menu items (shortcuts tested) (2 points)
* Short-cut working (1 point)
* Scrollable textarea (1 point)

**Part 4 – Modified ATM machine with listeners and menus (20 points)**

Create a class called **Lab5Part4**. Create a JFrame which modifies the ATM Machine created in Lab3Part4 so that at least three of the functionalities listed in the ATM work using listeners for the buttons AND include menus with shortcuts to carry out the same functions (any 3 functions can be chosen, e.g. lodge, withdraw, show balance). You will need to add some sort of output label to show the response to the button pushes and menu selections. [Note: If you didn’t get to do Lab3Part4 then you can do the whole thing from the beginning or you can focus on the menus only and receive marks for those]

* Add the button listeners (2 points)
* Menubar (and set) (1 point)
* Add the menu (2 points)
* Add display\input label(s) to input\output information (2 points)
* Add the menu items (2 points)
* Add listeners for the menu items (3 points)
* Add at least THREE accelerators to menu items (3 points)
* Add at least ONE mnemonic to menu (2 point)
* System fully working with button (1 point)
* System fully working with menus (2 points)