

## **EECS1720**

### **Worksheet 5 – Java AWT/Swing GUI's**

- 1) Explain how a basic JavaAWT/Swing application is constructed (what are its main components)?
- 2) What is a JFrame?
- 3) Outline 2 different approaches to creating an application that employs JFrame(s). Are there any advantages to using one approach versus the other? Explain.
- 4) What is a JPanel?
- 5) What is a UI Control?
- 6) In the context of Swing, How do you create a
  - i. CheckBox
  - ii. Radio Button Group
  - iii. Image Icon
  - iv. Image
  - v. Scrollable Panel including several other components
  - vi. Application with a Split Area (i.e. two areas left/right or top/bottom)

- 7) In the context of Swing, how do you create:
- i. An object that is used as a “spacer” – used to fill an empty space of a given size and position
  - ii. An application with all GUI controls laid out horizontally?
  - iii. An application with all GUI controls on a regular grid?
  - iv. A popup dialog window (message only)?
  - v. A popup dialog window (that accepts text input)?
  - vi. A Shape (any type of geometry from java.awt.geom)?
- 8) What is the purpose of a Layout Manager in Swing?
- 9) Explain how one would achieve absolute positioning of GUI components in Swing?
- 10) Outline how you would make a TextArea scrollable in Swing?
- 11) Outline how you would make a set of GUI controls all work within a common, scrollable area within part of a JFrame?

12) How do we configure a JFrame to respond to:

- i. Window resizing?
- ii. Window minimizing?
- iii. Exiting on clicking the 'x' button in the top of the JFrame?

13) How do you modify the state of the following UI Controls in Swing?

- i. A TextField object ?
- ii. A TextArea object?
- iii. A JLabel object?
- iv. An Icon within a JButton object?

14) Explain how one would access a JPanel object to draw graphics and geometries directly inside it?

15) What are the benefits to extending a JComponent object (any component) versus just instantiating one and using it as a field or instance variable.