Worksheet 2 – Introduction to JavaFX

The objectives of this worksheet are to:

1. Make sure that you can create and execute simple JavaFX applications (e.g. Hello World) using your chosen IDE (IntelliJ or Eclipse) on your machine.
2. To give you some initial experience of creating very simple event-driven GUI applications in JavaFX. You can do this:
   - Manually by creating JavaFX GUI objects yourself in the Java code to create a Scene.
   - Or by using SceneBuilder to create an FXML document that describes a JavaFX GUI.

Steps to follow:

1. To begin with, make sure that your IDE (IntelliJ or Eclipse) is set up for developing JavaFX applications. Go to "New…" and see if it offers an option to create a JavaFX Project. If not, you will have to configure and/or add a plugin to your IDE to support it.
   - The e(fx)clipse plugin for Eclipse, for example.
2. Depending on what JDK you are running, you may need to download and use a JavaFX SDK (as JavaFX is only bundled in JDK 8 to 10, and has been decoupled since JDK 11).
   - A version of the JavaFX SDK is provided on Moodle for you to download and use (you can check for/use a newer version if you like)
   - If you need to use the SDK then you will have to include it in the project settings (or global environment).
     - Add it as a library, basically.
     - If added/included correctly then the JavaFX class names, packages, etc. will be recognised and not report as errors. The JavaFX project should also compile/build without error.
   - You might also have to provide VM options in the run configuration so that the compiled application can actually run:
     - --module-path %PATH_TO_FX% --add-modules javafx.controls,javafx.fxml
     - Note that %PATH_TO_FX% simply describes the location/path of the JavaFX SDK (so the VM knows where it is!), and you could alternatively just include the path to it instead of using such an environmental variable.
3. Download the SceneBuilder application (Gluon) and make sure it works/runs for you.
   - Experiment with it. Easy to use and intuitive.
4. Once you have this working, here are some exercises for you to work through:
   - Create a "Hello World" application in JavaFX. Use CSS to style the "Hello World" caption to get it nice, funky and interactive (e.g. a metallic look that glows or burns when the mouse moves over it). Your previous experience with CSS can be used here.
     - Create this in Java only by manually coding it. Do not use SceneBuilder (yet).
   - Create a simple event-driven application in JavaFX that consists of a textbox, button, and label. When you type "something" into the textbox and click the button you are

told how many vowels and consonants are in the text (e.g. "something" would report "3 vowels and 6 consonants"). Ensure the layout and styling of the GUI is nice and polished.

- Firstly, create this in Java only by manually coding it.
- Secondly, create this by developing the GUI using SceneBuilder instead.

Note that some tutorial slides/notes on JavaFX have been provided on Moodle for you to refer to and use.

Note:

The objective of this worksheet is to ensure that you are familiar with creating basic graphical user interfaces in JavaFX. The CA in this module will require you to use JavaFX for your GUIs, so make sure that you are sufficiently familiar with it to this end. This worksheet does not have to be submitted, and it does not count towards your final mark. It should ideally be completed in the Week 2 lab sessions.