

## **Software Engineering for Human-Computer Interface Design**

### ***Simple SketchPad Drawing Lab/Assignment***

The following itemized requirements are an informal representation of a set of assignments that comprises the design of a simple sketch drawing program (along with an implementation that can be targeted to any platform of the students' choice). The program layout should consist mainly of a 2D drawing space along with the ability to select basic modes as follows:

- A mode to draw sketches using scribbled freehand lines
- A mode to draw straight lines
- A mode to draw rectangles
- A mode to draw ellipses
- A mode to draw special cases of these (squares and circles)
- A mode to draw polygons (open and closed polygons)

In addition, the user should be able to select a colour for any of the graphical objects that are about to be drawn. Furthermore, the user should have a selection method so that they can identify an object that has already been drawn and perform the following operations:

- Move the selected object to a new location
- Cut the object from the drawing (delete a graphical object)
- Paste the selected object (copy and paste) to a new location

Advanced versions of the program may also have the following functionality:

- Group the object with another object (possibly creating groups of arbitrary objects)
- Ungroup a set of objects that have been grouped

Very advanced versions of the program could contain the following additional functions:

- Undo (and Redo)
- Save (and Load) a partially completed drawing

The report for this assignment should include the following design artefacts:

- Statecharts for the designed interactive functions
- Object diagram representing the Software Architecture and any Design Patterns
- The source code and deployment specific files
- Be prepared to demo; showing the functionality (and overviewing the prev 3 artefacts)