This assignment 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 should consist of a drawing space along with the ability to select basic modes as follows:

* A mode to draw sketches with 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 use 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
* A live demonstration showing the functionality (and overviewing the prev 3 artefacts)