

## CSE165/ENG140 Mini Project 1

Use the support code `freeglutapp.zip` uploaded to CatCourses. The support code contains a class `GlutWindow` that interfaces with the main functions of `freeglut`, a C interface for using OpenGL graphics. The support code also contains a class `AppWindow`, which is where you will implement your mini-project. `AppWindow` already comes with examples of how to read events and draw simple lines and polygons. The examples use the OpenGL API 1.1, which is very easy to use based on `glBegin()/glEnd()` calls and avoids the programming of shaders required in the current 4.x version.

The goal of your mini-project is to design and implement a simple 2D window desktop management. The functionality you will need to implement can be summarized as follows:

- a) Add a `RectStash` to manage several rectangles each representing a window with its own coordinates and color. When your program starts, it will already display several rectangles randomly placed inside your application.
- b) The order of your rectangles in your stash class will determine which rectangles are on top of each other. When you draw the rectangles in order, the first ones will appear before the last ones if there is overlap.
- c) Now each time a mouse click is detected, you check what is the first rectangle, from top to bottom, that contained the mouse event. That rectangle will be somehow visually marked as the current one selected and will be moved to become the top-most rectangle.
- d) If the mouse drags a rectangle, it will be first moved to become the top most rectangle, and then it will follow the mouse in a smooth way, without any jumps.

This basic selection and arrangement mechanism is similar to how a windows management system works, so you may try to use that as a concrete example of what to achieve. Of course you may (and should) use the classes developed in the previous exercises.