

NYU School of Continuing and Professional Studies

Course Title: Object Oriented Analysis and Design

Fall 2011

Homework #3:

A software company has contracted you to build an interactive drawing application for their younger clientele. The details of the application are as follows:

1. The application will contain a toolbox and a workspace
2. The toolbox will contain many different elements (shapes and line) initially:
 - a. Circle
 - b. Square
 - c. Triangle
 - d. Rectangle
 - e. Hexagon
 - f. Heptagon
 - g. Octagon
 - h. Decagon
3. The company expects the number of shapes to increase in subsequent releases.
4. All shapes will contain the necessary fields to allow users to obtain the following:
 - a. Area of the shape
 - b. Perimeter of the shape

Users will drag shapes from the toolbox and place them on the workspace. Once placed on the workspace, users must be able to interact with shapes as follows:

1. Change the color of a shape
2. Get the position of a shape: Each shape must “know” its position, tracked by the XY-coordinate of the upper-left point of its bounding rectangle. The workspace’s upper left corner is the origin, i.e. point (0,0).

Users must also be able to do the following:

1. Print the workspace and any shapes
2. Export the workspace to JPEG

Homework Submission Requirements

- Please submit a class diagram for this assignment – as usual, this is not an implementation exercise. You should assume the application has a “typical” GUI interface and interaction between user and workspace/shape will be via mouse/keyboard. These elements do not need to be reflected in your OO design.
- For each class, please list all fields and methods that the class must have in order to satisfy the requirements. This may be included in the diagram or may be separate.