

CS 251  
Fall 2007  
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Assignment 1

**Due Friday August 31<sup>st</sup>, 11:59PM**

## **A simple C++ application: 2D graphics**

1. Take the simple 2D graphics application developed in class and get it to work in your favorite C++ environment
  - a. Use 08.24 code archive on our website
  - b. Keep the image resolution at 120x90 or less
2. Implement a constructor for the Segment class that reads the parameters from a text scene description file (see Circle class for guidance)
3. Implement an axis aligned rectangle class (see Circle class for guidance)
  - a. Constructors (including reading parameters from file)
  - b. Rasterization method
4. Make and render a scene that has at least
  - a. 3 segments,
  - b. 3 axis aligned rectangles,
  - c. and 3 circles
5. **Extra-credit:** a general rectangle class (1%)
  - a. The input should be the top left point, the width, the height, and the direction of one of the sides
6. **Extra-credit:** a triangle class (2%)
7. **Extra-credit:** a camera class (3%)
  - a. The view is modeled with a general rectangle, and with a resolution
  - b. The camera should allow projecting points
  - c. Illustrate the camera by rendering the scene from a general view
8. **Extra-credit:** make the program display in a graphics window (3%)
9. Turn in instructions:
  - a. Assignment specific
    - i. Turn in your scene file
    - ii. When the program starts it should render your scene
  - b. General: see website