

**Computer Science 805**  
**Spring 2005**  
**Project 1 – Basic Ray Tracer**

**Due: Thursday, 2/10/2005**

### **Overview**

For this project, you will write a basic ray tracer. Your ray tracer need only produce a single color image consisting of scene described below. Future assignments will build upon the code you write for this project.

### **Description**

Your ray tracer should fulfill the following requirements:

- scene geometry must include at least 1 light source, 2 spheres, a checkerboard ground plane, and a sky (or background)
- lighting in the scene should include ambient, diffuse, and specular effects on object surfaces, as well as shadows
- the images should be 640x480 pixels (output in ppm format)

Your code must be well-structured and commented.

### **Submission Requirements**

You should create a webpage with the following:

- your name, date, and a title/description of this project
- the image your code produces
- any accompanying comments describing your source code
- instructions on how to compile and run your code
- any interesting problems you encountered and how you resolved them

You will be graded on the source code and the web page presenting your results. Your code must be commented and well-structured. Additional instructions for submitting your code will be given in class.

## Sample Output

Here's a sample scene:

