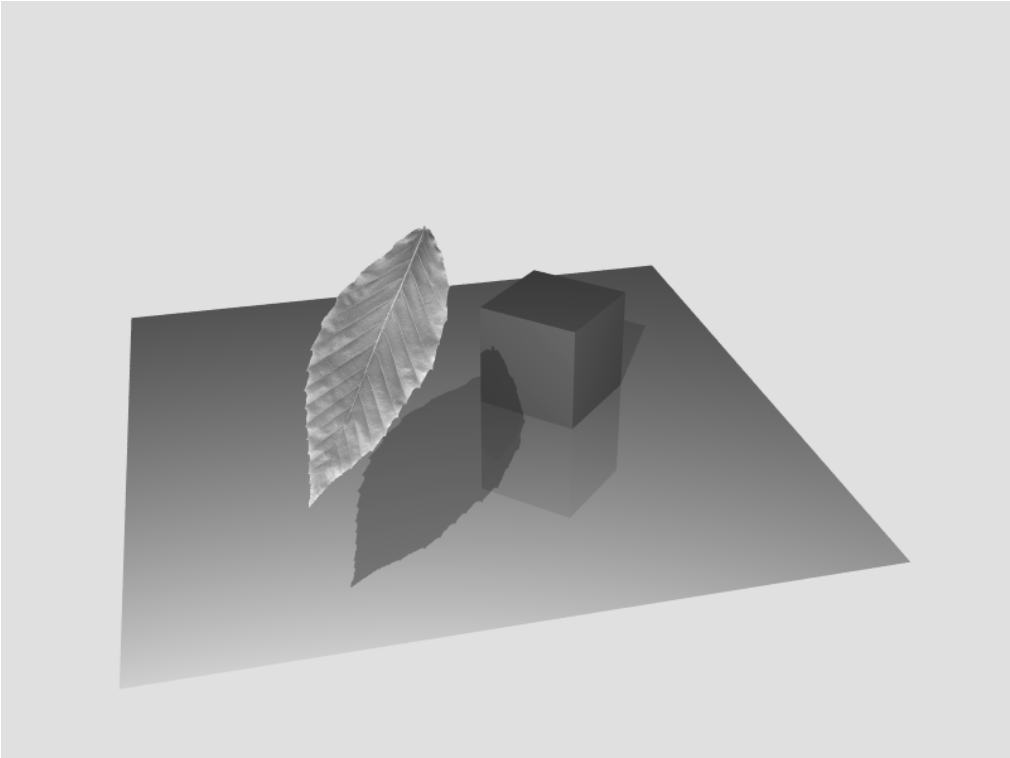
CPSC 212 Project 1: Forest RT, Phase 1



You are to write a ray tracer in C++ that is capable of creating images such as that shown above, except in color. You may modify the ray tracer that was distributed in class, or create one that is entirely your own. Constraints are numerous:

- The default scene produced by your ray tracer must include at least:
  - a plane segment, a box, and a leaf, where the leaf image is chosen from one of the alpha-extended leaf textures found on http://www.cs.clemson.edu/ geist/classdata.html.
  - box position and view direction that are not axis-aligned and different from those in the distributed ray tracer
- The code must be in C++ rather than purely in (the subset) C. In particular, no "structs" or function pointers or unions are allowed. Vector (point) operators must be overloaded, and derived classes of a generic Object class, with inheritance, must be used for the box, the leaf, and the plane.
- All objects in the scene must appear in one, singly-linked list.
- Timing: an image of size 800x600 pixels with 16 rays per pixel must be render on lab machines in less than 90 seconds.
- Space: the entire source code must be less than 1200 lines.

You may work in teams, where team size ≤ 3. Nevertheless, teams of size larger than 1 must be registered by 5pm, September 2. Register by sending team list and captain to "geist@cs.clemson.edu". Caution: any member of your team may be called forward to explain to the class how your system works. Be sure that all team members *completely* understand all components of the code.

You may not receive any help of any kind in solving this problem from anyone except your team, the lab instructors, or Robert Geist. RentACoder.com will be monitored, and you can count on an opportunity to explain your code to the class. If it cannot be adequately explained, the grade will be F.

Your code will be graded on several components:

- quality of the image
- readability of code
- speed
- space efficiency
- in-class explanation

The project is due Thursday, September 25^{th} 11:59:59 pm. Mail code and execution instructions, as a single .tar file, to geist@cs.clemson.edu. DO NOT USE THE "HAND-IN" FACILITY. DO NOT USE THE "HAND-IN" FACILITY. DO NOT USE THE "HAND-IN" FACILITY.