

Computer Science 215
Fall 2003
Project 4 (Option 1) – Advanced Ray Tracer

Due: Friday, 12/5/2003 midnight

Overview

For this project, you will continue with the ray tracer from Project 3. The main feature you will add is linked lists in your code to store objects and lights read in from the file.

Description

Your ray tracer should use dynamic memory allocation to create nodes for objects and lights as you read them in from the scene file. Accordingly, you should declare two pointer variables: head of list for objects, and head of list of lights. (If you created a `SCENE_T` in the previous project, these two pointers should be included as fields in that structure.) Keep in mind that you must also change all loops that iterate through the array of objects or lights to traverse the objects or lights list.

Additionally, though you may never call it, you must include a delete function that takes `void* head` and `void* node` parameters and removes `node` from the list beginning at `head`.

Finally, you may implement any of the following enhancements for extra credit (at my discretion): refraction, red/blue stereo images, "magic eye" renders, texture mapping, bump mapping, etc.

Your code must be modular and use functions, structures, typedefs, and arrays. Please provide a correct makefile with your submission, as well as a `README.txt` file describing the option you chose and any special features of your program.

Image Output

As part of this assignment, you must also produce an interesting image of your own design that shows off the features of your ray tracer. Be creative!