Programming Assignment V

Introduction:
In this assignment, you will upgrade your program with lights.

General description:
Your program should give the possibility to the user to turn on lights with ambient, diffuse, or specular in all combinations. This should be available from the menu. Add a menu item on the menu bar, and various menu items with checkmarks to select the lights, like we have for effects. For the lighting to work right, you need to compute the normals to each surface.

The program should also have a menu item that toggles between two modes. In the first mode, when the arrow keys are used, the light remains stable. In the second mode, the lights should move with the objects, simulating a moving viewer. This can be done in two ways: change the viewing parameters (the projection matrix), or reinitialize the light positions. Both ways are acceptable. If you want to implement a better user interface, you don’t have to do it from the menu. This project is more open ended than the previous one. You can add ways for the user to control more parameters with the lights, like the intensity or color.

Due Date: Friday, April 29, 2005, 11pm.

Hand in: Send your program and input file as attachments to our TA (yalbayyar@utep.edu) and to me (longpre@cs.utep.edu). Please delete the Debug folder before sending the folder as attachment. This folder can be regenerated and it clogs our e-mail boxes.

Grading:
These grading guidelines will be used for all programming assignments. Your project will be graded primarily on correctness (70%). The rest of your grade will be determined by the style, ease of use, and interface of your program and quality of input file (if required) (30%).
The penalty for a late homework is \( n^2 \% \) for \( n \) days late up to one week late, counting weekend days as well. Homework will not be accepted after one week late, unless special arrangements have been made with the professor \textit{before} the one week is over.