CMPE 460 Project 1.

Due: Feb 27, 2018
Submission thru Moodle page

Write a simple ray tracer that renders a scene using ambient illumination (meaning, constant colors for objects), checking only for shadow and multiplying colors by 0.1 if the intersection point is in shadow (please also check for self shadowing). Assume the eye point is at the origin (0,0,0); and the center of the screen is at (0,0,100).The screen extends from (-50,-50,100) to (50,50,100) and the resolution is to be 1000x1000 pixels. Assume there is only one light source and it is at (500,500,500).

Inputs to the program are:
number of spheres N
color of sphere i, i=1,..,N
Position (x,y,z) of sphere i, i=1,..,N
Radius of sphere i, i=1,..,N
(Note that nearest object should have z>200 and far objects should have z<1000. Choose x & y so that spheres are visible (x,y<z/2))

Output: 1000x1000 color image file representing screen.

Test your program with the following parameters, and with similar parameters of your choice:

number of spheres 2
color of sphere 1: (R,G,B)=(255,0,0);
color of sphere 2=(0,255,0);
Position (x,y,z) of sphere 1: (50,50,300)
Radius of sphere 1 = 20
Position (x,y,z) of sphere 2: (100,100,600)
Radius of sphere 2 = 60

Report: Your report should explain the method used, and display outputs with several parameter settings.

What to submit: You should submit your source code; and exe together with your report.