CSC D18 – Computer Graphics

Assignment 3 feature Checklist

For each crunchy feature, please indicate if it's fully or partially working, or not implemented place a checkmark in the corresponding column). If fully or partially working, indicate the test image name for the image that shows this feature being used in a rendered scene.

Feature	***Working***	***Part-working***	***Not implemented***	***Test Image Name***
Multi-threading (no test image needed!)			✓	
CSG or Hierarchical objects			✓	
Normal mapping			✓	
Other (specify) mapping		✓		
Depth of Field			✓	
Photon Mapping		✓		
Dispersion			✓	
RT Acceleration			✓	
Meshes			✓	
Ray Marching			✓	
Diffuse Reflection			✓	
Animation			✓	

Notes: (please add here anything else we should look at when evaluating your work for A3!)

Alpha Mapping: There was an attempt to implement alphamapping using a pgm file. However, due to issues reducing opacity overall, the maps failed to have an effect.

Photon Mapping: Photon mapping was implemented, however, it failed to record photon colours on the black screen and would always return a black photon map. Although all steps of the pseudo code were attempted and adjusted for our situation, there wasn't much feedback from the produced files. Therefore, we were unable to successfully debug our code to get a working photon map record.

Refraction for objects within objects: A stack element was added to the rays to try to account for light travelling through different materials. This stack would be passed on between rays to keep track of the previous refraction indexes. These are popped if we are exiting items, and pushed if we are entering. Failed to work completely and would crash but there was an effort made to make this better.

If wanting to test the stack there is a block of code in the "refraction" function from line 213-232 that MUST be uncommented. In addition, the code from line 234-250 MUST be commented. Then the testing for refraction with multiple objects can be done.