Take Infinity
Project Proposal

Title: Infinity Ray Tracer

Team Name: Take Infinity

Team Members: Anil Ramakrishna, Srikanth Madhava, Uthara Thelagar, Tanmay Patil, Himanshu Joshi

Objectives: Our goal is to build a fully functional Ray tracing graphics library with features such as implicit and explicit geometry rendering, shadows, reflection, refraction, aniti-aliasing, soft shadows etc. We also plan to create a short animation of scene using our library. We hope to understand the building blocks of the most used rendering technology, and understand why Raytracer is such a powerful tool, and also compare to what we have learnt with Scanline renderer that we learnt in class.

Approach: We plan to build a bare-bone Raytracer and iteratively add features to it. Along with the Raytracer we plan to implement a object parser on the side to be used with our Raytracer. Our reference is the graphics training website scratchapixel.com along with several online publications, in particular Siggraph papers and other links that we cite in our final report.

Task Breakdown:

Name	Tasks
Uthara	Main concept, design, implementation, skeleton tracer, shadows, shading, reflection, look development. Domain architect.
Himanshu	SW Architecture, Skeleton Tracer, Shader, Multiple Object Intersection, Github, Cross Platform Support, Documentation.
Tanmay	Explicitly Modeled Object Parser, OctTree Optimization for complex object rendering, s-t and Normal Interpolation.
Anil	Animation, Refraction, Reflection, Shadow calculation, Debugging, Code Refinement, Documentation, Report generation.
Srikanth	Texture Mapping (Explicit and Procedural), Anti-Aliasing, Website, Animation, Report generation.

Expected time of completion:

First, Second Week : Bare bone Raytracer with Shading, Software Design, Work Process Setup, Coming up with ideas to work seamlessly.
Third Week : Object Parser, Reflection
Fourth Week : Refractions and Antialiasing and bug fixes
Fifth Week : Adding Textures, Animation, Additional features
Sixth Week : Look Development and final fixes
Final Delivery: December 1st

Expected Results: We hope to have a fully functional and efficient ray tracer with cool features and optimized functionalities

Reference to our discussion on objectives and expected results

https://courses.uscden.net/d2l/le/7191/discussions/threads/1018/View