

Project 2: Incremental Instant Radiosity

Implementation

Name _____

SID _____

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Basic requirement (40% , Everything must be done for get credits)

- Parse in the scene, material, light and other information _____
- Fast local rendering with OpenGL _____
- Shoot out light rays from light sources to generate VPLs _____
- Visualize these VPLs with OpenGL _____
- Generate and visualize a shadow map for each VPL _____
- Rendering the scene by rasterizing all scene triangles by shading with all VPLs with their shadow map _____
- Implement Screen-Space Ambient Occlusion (SSAO) with GPU _____

Advance requirement (170%)

- Dynamics updating the characteristics of VPLs with incremental instant Radiosity (20%)
 - Remove invalid VPLs _____
 - Adjust valid VPLs _____
 - Add new VPLs _____
- Acceleration with KD-tree or BVH (10%) _____
- Using other types of light sources (point light, goniophotometric diagram light ...) (10%) _____
- Implement arbitrary bounces (20%) _____
- Adding reflection, refraction, and caustics effects (20%) _____
- Advance algorithm such as light cut, light splatting, ... (50%) _____
- Rendering with line drawing using silhouettes and suggestive contours (5%)

- Implement GPU-based suggestive contours (15%) _____
- Implement Ambient Occlusion Volumes (30%) _____
- Suggestive contour extension
 - Pen and Ink Shading (10%) _____
 - Varied Line Thickness (10%) _____
 - Varied Color (10%) _____

■ Chinese ink painting (10%) _____