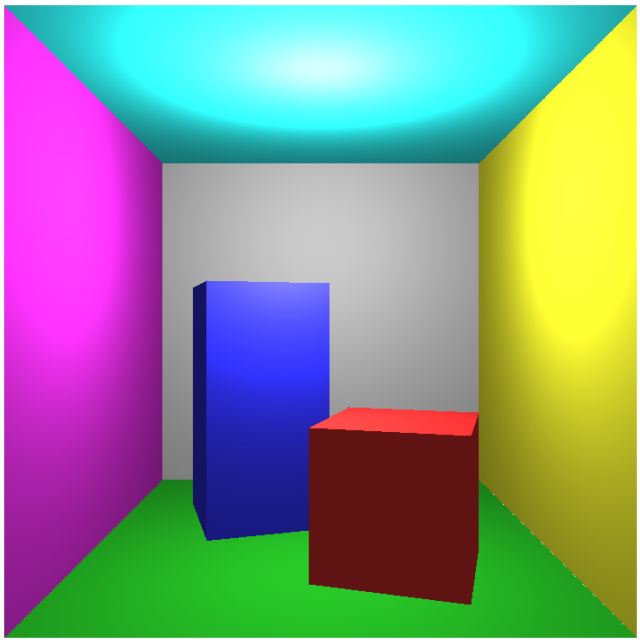
Tristan Saunders - ts16802 | Sunny Miglani - sm15504

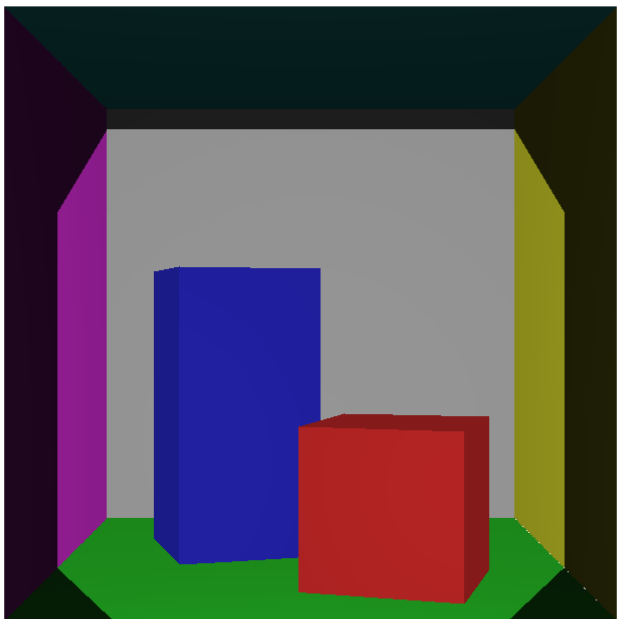
Rasterizer:

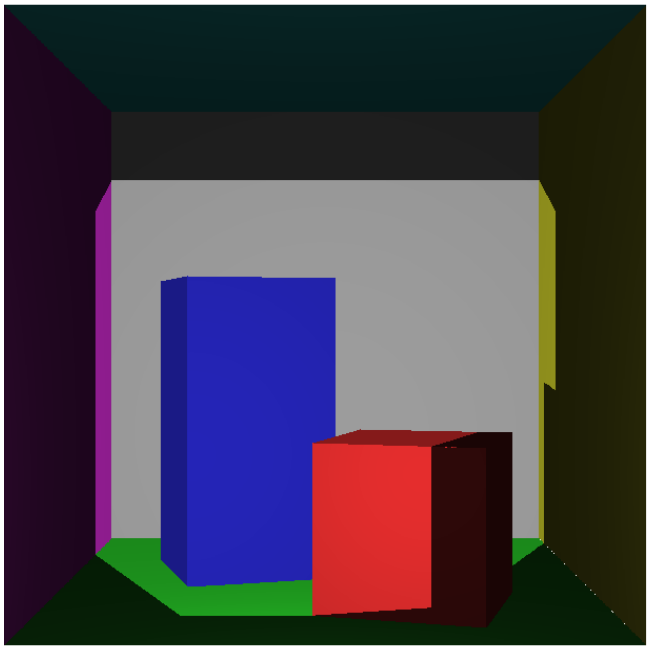
Features:

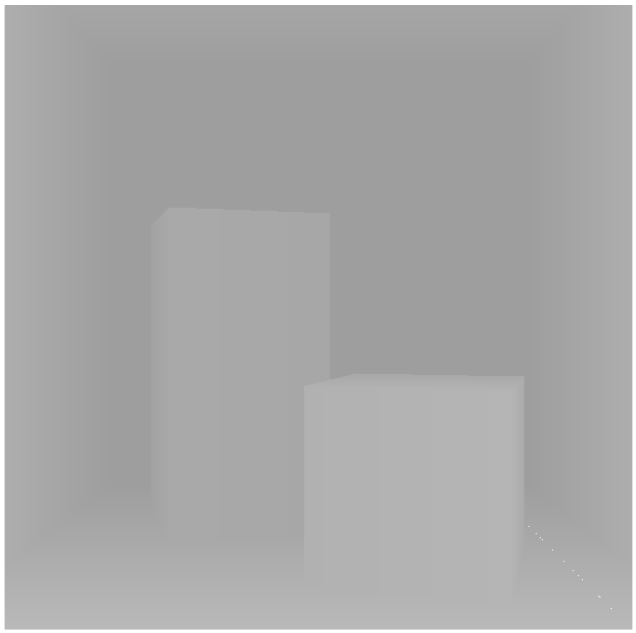
1. Barycentric Coordinates
2. A version of shadow mapping that allows for creation of a “torch” with directional light
   This system uses the light as a camera, and produces a shadow map (depth buffer) that allows for lighting only parts of the scene.
3. Attempt at Anti Aliasing, doesn't work due to some faults in logic.

Below are some sample images:







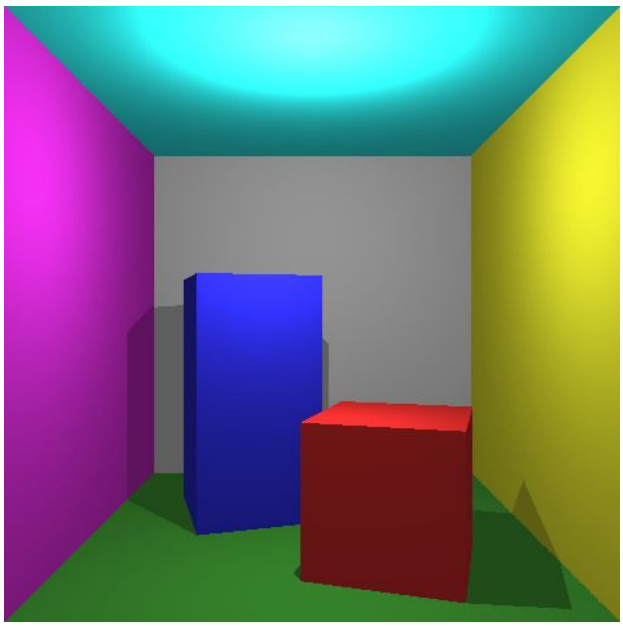


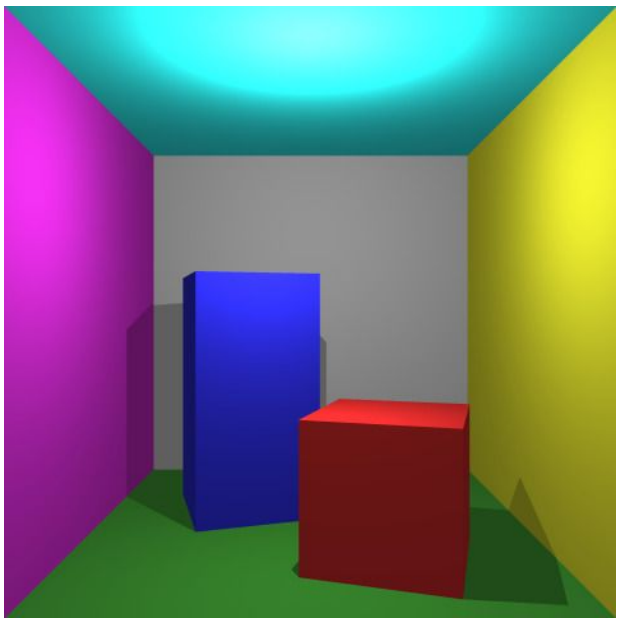
Raytracer:

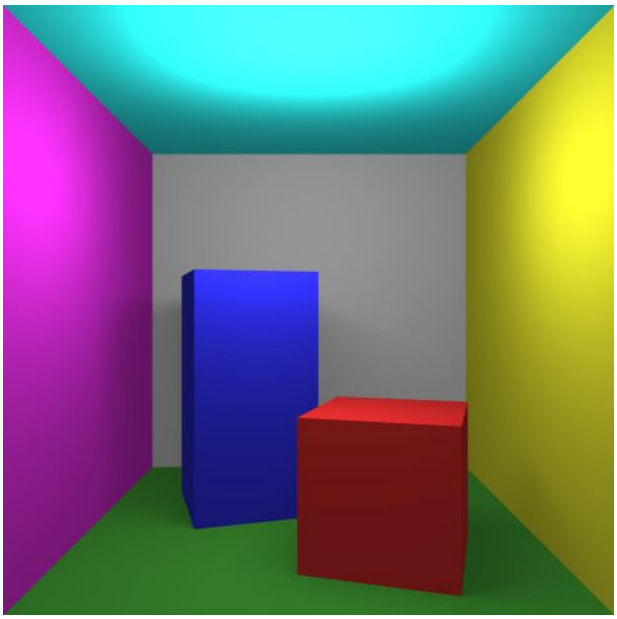
Features:

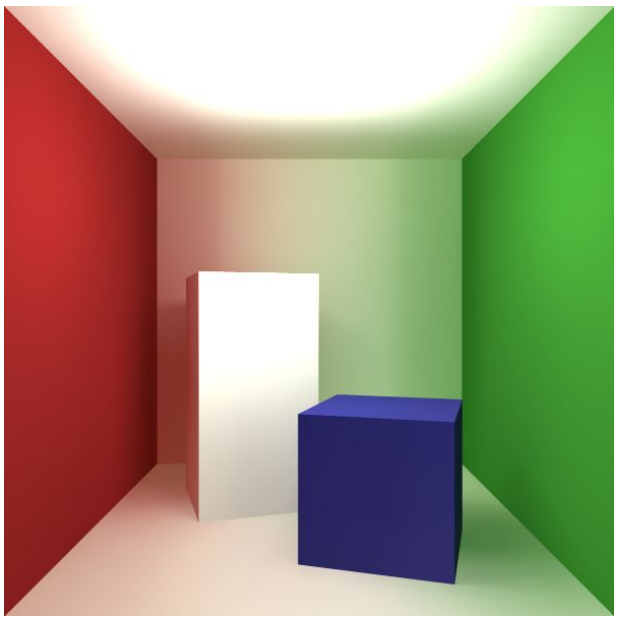
1. Antialiasing using SSAA
2. Soft shadows by creating multiple light sources (64 in example shown)
3. Global Illumination using Photon Mapping
4. OpenMP parallelization

Below are some sample images (First image is the image achieved by completing the instructions PDF:









We’ve added the full resolution image of the Raytracer below as well:
Resolution: 600x600
Antialiasing: 5x5 SSAA (25 rays per pixel)
Shadows: 128 light positions/ light rays
Photons: 500,000 with 5 bounces
OpenMP: 4 threads
Render time: 6 hours