

Raytracer Report – George Church gc14768

Antialiasing

I implemented antialiasing by shooting 9 rays for each pixel and then averaging the colour that each of them received. This was relatively easy to implement and makes the boundaries between objects look smoother

Bounding boxes

I created an Object class that holds all of the triangles associated with an object. The bounding box of the object is then calculated. When casting rays, I would first check if the ray intersects bounding box of an object, and if so I would then check if it intersects with the triangles within the object. This optimisation considerably speeds up the program.

Soft shadows

Instead of using one point light source I now use 6 arranged in a diamond shape. When calculating the colour of a pixel, I take into account the illumination received from each of these point light sources and then sum them up to get the final colour. This produces a soft shadow effect when a pixel is near the boundary of a shadow of an object.