Andrew Dunn

Alec Jackson

CSCI 480

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**Milestone 2 Report**

**1.)** We have selected mesh decimation as our method of Level of Detail winnowing, and a basic implementation has been achieved. We have collected several high-polygon `.obj` files for use in demonstrating the effectiveness of our acceleration techniques.

The BVH functionality is considerably closer to a correct implementation; much of this week was spent rewriting the functional aspects out of `Bound.jl` and into `Scenes.jl` to avoid problems in compiling. The previous design was not hierarchichal in module design, which caused compilation failure, but this version compiles and runs. There are still problems in correctly returning "hits" for objects that have been stored in `BoundVol` data structures, but debugging should progress quickly on that front.

**2.)** As before, `WWURay.main(10, 4, 1000, 1000, "results/trial.png", true)` in the Julia REPL will attempt to use the BVH implementation, however the resultant image is still just background color as there are issues with continuing to ray trace once a bounding volume is hit.

For mesh decimation, calling `decimateMesh("bunny", 4)` will enact 4 iterations of the mesh decimation algorithm on "bunny.obj" (the first arg should be the filepath from within `/data` without the `.obj` extension).

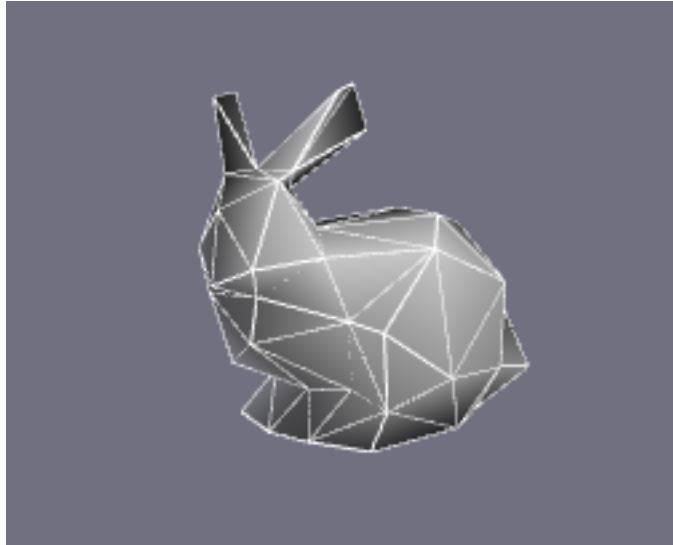**3.)** We do not feel as though the scope of our project needs to be adjusted in any way.

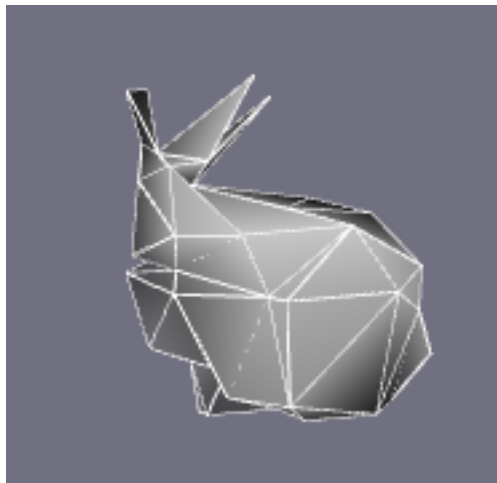**Mesh Decimation Example:**

Figure 1: Original Mesh



Figure 2: Decimated Mesh