Table of Contents

Selected Problem Set 10

1. What is the difference between an extent and a projective extent?

2. Why is projective extent optimization superior to the simple extent method? Use *number of intersections to compute* as your central argument.

3. What type of data structure would one use to implement projective extents such that for every pixel we exactly know with which object to compute an intersection?

4. Devise an algorithm to project the 8 corners of a generic cube transformed with the the matrix of the object it encloses back onto the near plane in pixel coordinates.

5. What is an octree? Give an example that relates to ray-tracing optimization.