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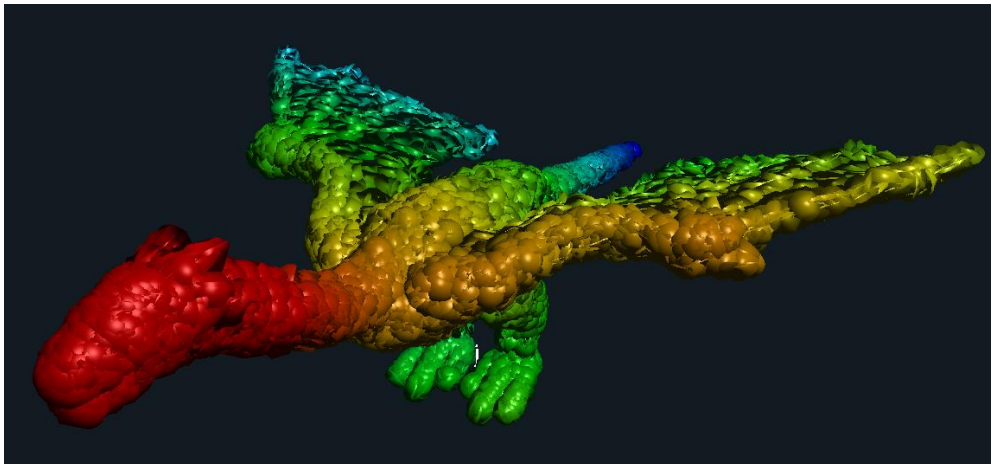
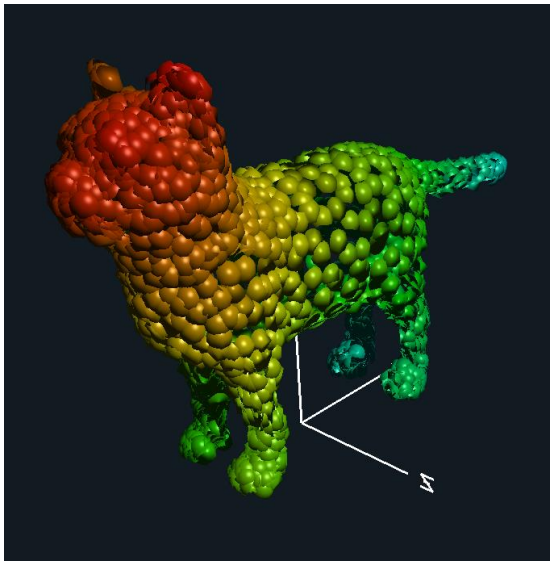
Project 7A: Turning a Polygonal Model into a Collection of Spheres
Video Link

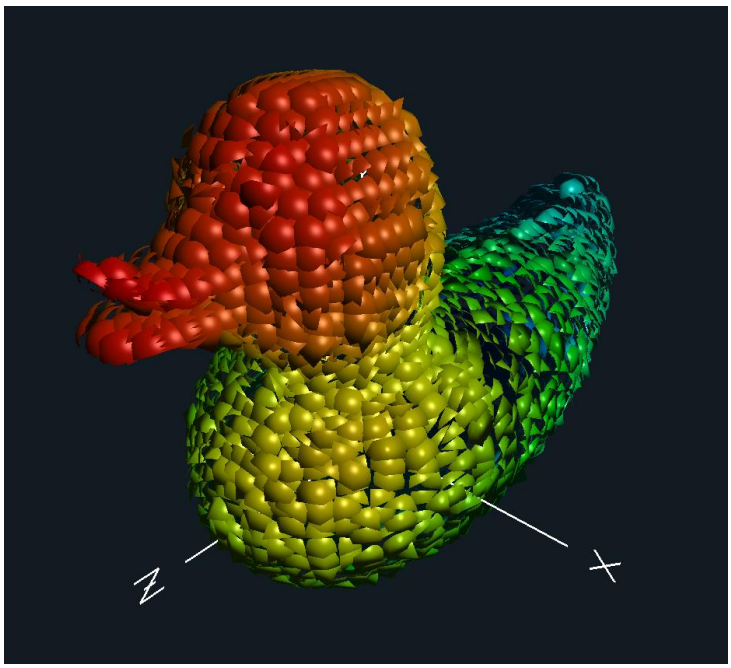
Description:

- **Vertex Shader**
  - The vertices are sent to the geometry shader unmodified. No model, view, or projection matrix is applied.
- **Geometry Shader**
  - The geometry shader intakes triangles and output triangle strips.
  - The triangle centroid is calculated, which is then quantized based on the uQuantize value.
  - A subdivided triangle is generated with triangle strips. The number of subdivisions is set by uLevel.
  - Each vertex of the subdivided triangle is repositioned to be on the surface of a sphere whose diameter is set by the uDiam value, and whose center is at the calculated centroid.
  - The normal is easily calculated using the vector from centroid to the new vertex.
  - All the typical lighting vectors are sent to the frag shader for per-fragment lighting. In addition, the z coordinate of the vertex in eye-space is sent to the fragment shader for the extra credit ChromaDepth feature.
- **Fragment Shader**
  - Per-fragment lighting is done as is typical.
  - The colors are set using the z coordinate of the view-space vertex and the rainbow function shown in the project spec. This causes the colors to fade across the rainbow as the vertex moves from front to back of the eye-space.

Screen Shots:






Z
X


Y
X