Assignment 2—Hello (3D) World

Due: Thursday September 21 at 23:59

1. Add to your planar pinhole camera class the following functionality:
   1. Change of focal length
   2. Interpolation between two given cameras
   3. Save / load from text file
2. Implement a triangle mesh class that stores shared vertices and triangle connectivity data and that has the following functionality:
   1. Load from bin file
   2. Computation of 3-D axis aligned bounding box (AABB)
   3. Translation of vertices
   4. Scaling of vertices
   5. Placing the centroid at given position and scaling to given AABB size
   6. Rendering in wireframe mode
   7. Rendering in filled mode with z-buffering and screen space interpolation of vertex colors
3. Demonstrate your code.
   1. Create a scene with at least 5 objects.
   2. Each object should rotate about an arbitrary axis.
   3. At least one object should be spinning, i.e. rotating about an axis passing through its centroid.
   4. Render a 10s 30Hz 720p video sequence illustrating your scene. For the first 5 seconds the camera should be fixed. For the next 5s the camera should move progressively from the initial view to a second view. The video file should be in a popular format. Use the video making software of your choice.
4. Turn in via blackboard one zip archive that contains
   1. Source code
   2. Executable
   3. Video file

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