<Class Assignment 2>

obj Viewer & Hierarchical Modelling

Course: CSE4020 Computer Graphics (11272)

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1. Requirements & Implementations
2. Wavefront obj file viewer
3. Creating a Mesh class

* Vertex position / normal / texture cords are each stored as

3-column 2D numpy array

* Index buffer is parsed into 9-column 2D numpy array

(each row = face,3 pos | 3 tex | 3 norm indices for each face)

* n ≥ 4 sided faces are subdivided into (n-2) triangles during parsing

1. Parsing obj file into a Mesh instance

* Open file & split text into individual lines
* Get type and data from each line & process according to type

1. Drawing the mesh
2. Hierarchical model animation
3. Model hierarchy

* Three separate meshes: island, building (mill), propeller
* Model hierarchy is island > mill > propeller

1. Animation

* Island: float up and down + rotate slowly in horizontal circle
* Mill: bouncing slightly
* Propeller: spinning fast

1. Video: <https://vimeo.com/547204192>