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Computer Graphics 446
Project Proposal

This application will be a visualization of a scene-graph data structure. The application will give a user the controls to a model of a robotic arm that is composed of a series of meshes in a hierarchical organization. Behind the model will be a 2D representation of a scene-graph of the model in the scene. As the user gives input and the model moves, the scene graph's nodes will light up from the top down in accordance with what is being activated.

The model of the robotic arm will have grippers as the first feature but additional features will be explored (lights, projectiles). These features will be considered to broaden the branches of the scene graph. The user will have access to control over each transformation-node in the scene-graph, such that if there is a transformation happening, the entire path from the root to that child node being affected is lit.

The camera position can be adjusted through arrow keys, model control will be accessed through keys to be determined. There will be text overlay with all controls visible. This will be written in HTML and Javascript. The scene rendering, modeling, geometry transformations will be accessed through the Javascript library Three.js.

