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CS 330: Computer Graphics and Visualization  
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**How do I approach designing software?** When designing software, I start by understanding the end goal, breaking it into manageable parts, and mapping how the components will interact. I prioritize modularity and clarity from the beginning to make development and troubleshooting smoother.

**What new design skills has your work on the project helped you to craft?** This project helped me strengthen my ability to create hierarchical scene structures and manage parent-child relationships between objects, making transformations more efficient and organized.

**What design process did you follow for your project work?** I followed a block-out-first approach: I began by sketching and positioning basic shapes, then layered in textures, lighting, and refinements step-by-step. I used iteration after each layer to adjust and improve the final scene.

**How could tactics from your design approach be applied in future work?** The idea of starting simple and refining through stages can be applied to any complex project, helping to avoid being overwhelmed and keeping the work flexible for future changes.

**How do I approach developing programs?** I approach development by writing small, testable pieces first, making sure each one works correctly before integrating it into the larger program. I also use helper functions to avoid redundant code and make updates easier.

**What new development strategies did you use while working on your 3D scene?** I implemented a relative transformation helper for grouped objects, which allowed me to treat complex models like the lamp as a single unit during movement or rotation. I also practiced balancing performance and quality when choosing texture resolutions and lighting models.

**How did iteration factor into your development?** Iteration was key—I often made a rough version first, then circled back to refine texture scaling, lighting placement, and material properties after seeing how they looked in the full scene.

**How has your approach to developing code evolved throughout the milestones, which led you to the project’s completion?** Initially, I focused on just getting functionality to work. Over time, I learned to think more about efficiency, modularity, and making my code easier to extend, which helped polish the final product.

**How can computer science help me in reaching my goals?** Computer science gives me the technical skills to create new tools, solve problems efficiently, and contribute to industries that rely heavily on software development and technology.

**How do computational graphics and visualizations give you new knowledge and skills that can be applied in your future educational pathway?** Understanding graphics has taught me how real-time systems manage data and rendering, which will help me in future courses that involve game development, simulations, or interactive applications.

**How do computational graphics and visualizations give you new knowledge and skills that can be applied in your future professional pathway?** Learning computational graphics builds a foundation for careers in software engineering, UI/UX design, simulation development, and fields like virtual or augmented reality. It has also helped me become more comfortable managing complex systems with multiple moving parts.

https://github.com/jmikha5194/cs330-final.git