CS405 Project 1: 3D Animations using ChatGPT

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Github Repository: https://github.com/CZunal/CS405_Project1
ChatGPT Link: https://chatgpt.com/share/6708e8b2-03c0-8002-a1c5-874d96634745

Project Description

Added function implementations for the 3 tasks that apply a transformation and animates a cube. First task is about asking ChatGPT to do the following transformations translation, scaling and rotation, which results in a float 32 array. Second task is doing the transformations in task one by using the provided functions in correct order and values. Third task is about animating the transformation calculated in task 2. In the first 5 seconds of the animation the cube transforms from its initial position to the target position, in the next 5 seconds it returns to its original position. This cycle continues indefinitely. Used a function that interpolates between two matrices based on an interpolation factor between 0 and 1 to create this effect . Used LERP (linear interpolation) for smooth transitions. When the interpolation factor is 0 it is in the initial position and when the factor is 1 it is in the target position. We can calculate the current time by using the startTime and Date library.

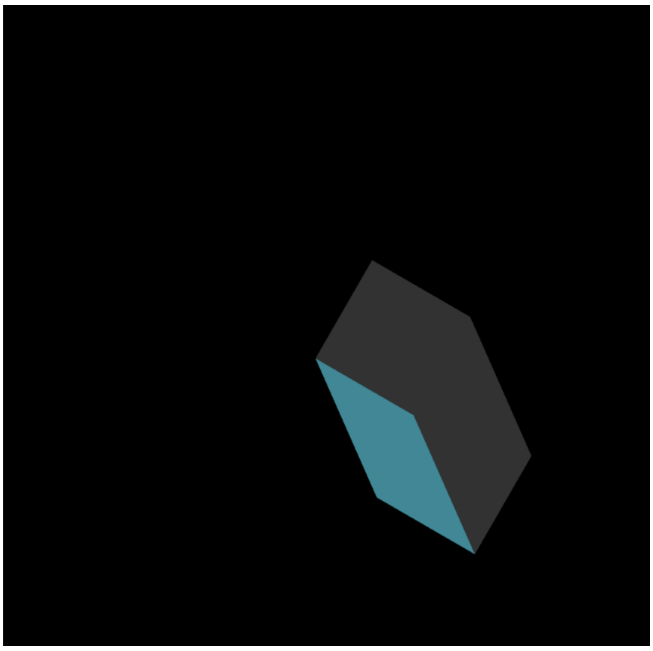
Methodology

Used ChatGPT for the tasks. Tried to keep the prompts as short as possible. If the ChatGPT output didn't reflect on what is wanted, regenerated the question, or made clarifications. For the second part I first did the task first by myself then used ChatGPT to compare so that I can be sure of the correctness of the code. Committed all tasks separately after completion for ease of grading.

The Reason Behind The Difference Between Task 1 Output and Task 2 Output

As you can see below, there seems to be a difference between the outputs of task 1 and task 2. This is because the first task that wanted the ChatGPT to calculate the transformations by itself. As ChatGPT is a language model and doesn't do the computing by itself it is very bad at doing floating point additions, multiplications and such. Task 2 answer must be the correct one.

Task 1 Output:



Task 2 Output