# CS405 PROJECT 1 REPORT

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## Task 1

I gave the prompt to ChatGPT directly, then got its response and pasted it back into the “getChatGPTModelViewMatrix” function in “utils.js” file.

Here is the image of the render it generates:

ekran görüntüsü, metin, multimedya yazılımı, yazılım içeren bir resim

Açıklama otomatik olarak oluşturuldu

This was not what I imagined based on the prompt. Link:

<https://chat.openai.com/share/41b7f0cc-6847-43ae-82c4-721eea01a2ed>

## Task 2

For this task, I used the functions provided by the file to generate scale, translation, and rotation matrices. To find a rotation matrix, I first converted degrees to radian via dividing “Math.PI” by them and then, used each of the x, y, z rotation matrix generator functions. Later I combined them by multiplying in Z -> Y -> X order, thus generating a rotation matrix. Finally, I multiplied each transformation matrix into a single affine transformation matrix in the order of T \* R \* S.

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The matrices generated by this function and the ChatGPT function are quite different. The reason for that may be because as a token-based language model, GPT does not have the capability to perform mathematical calculations, even though it seems to have a simple reasoning and knows the formulas.

# Task 3

In this part, GPT generated an answer, but it was not correct at all. So, I only took its code as initial advice, and went from there on. For example, it did not animate scaling at all. I used progress percentage it calculated to find the current scaling by subtracting 0.5\*progress from 1 for the first 5 seconds.

In here, what we did was first calculating the elapsed time, then doing another calculation to find our progress in the periodic movement. Then, for each matrix key, we take their product with the progress value. Then we generate the matrices like we did in the Task 2. Thus, we can generate the animation we need.

<https://chat.openai.com/share/911f09f4-7d17-4d98-b000-37b1fd53a1a4>