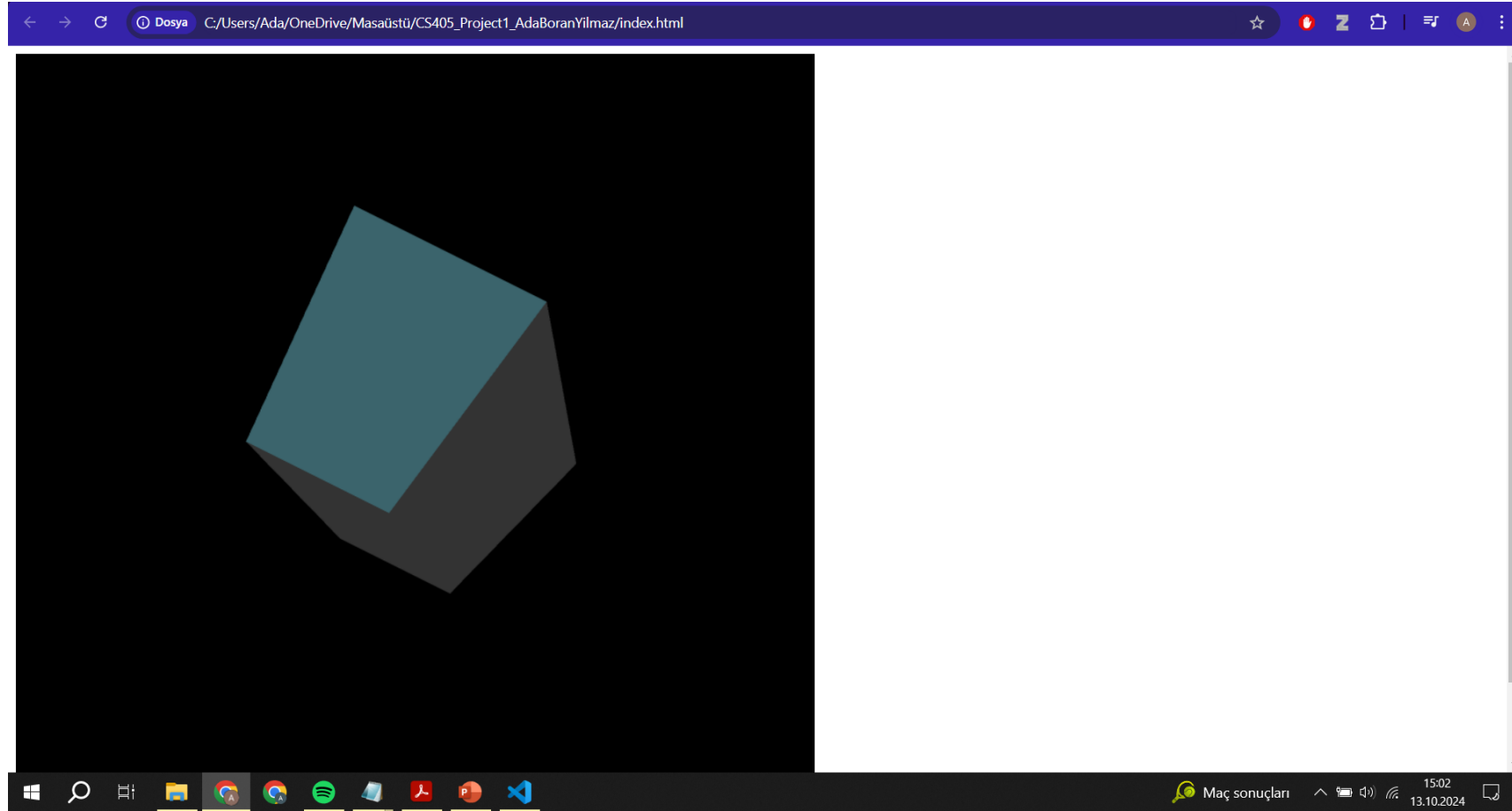# CS405 Project 1

Ada Boran Yılmaz
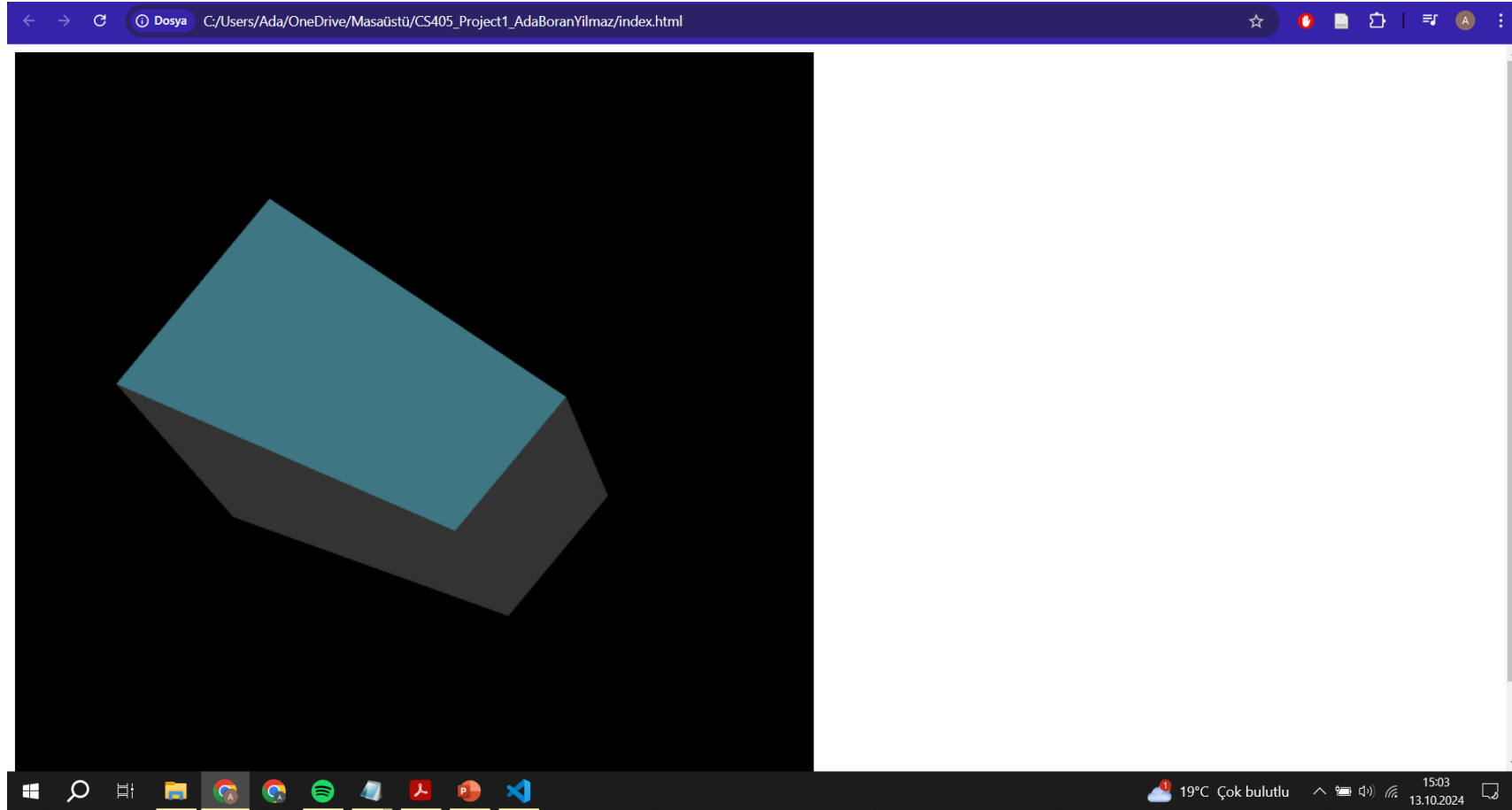
Task 1

Task 1

- This task was done by ChatGPT.
- Created the translation matrix (0.3 units in x, -0.25 units in y).
- Created the scaling matrix (scaling by 0.5 along x and y).
- Created the rotation matrices for 30 degrees on the x-axis, 45 degrees on the y-axis, and 60 degrees on the z-axis.
- Combined the matrices (scaling -> rotations (Z, Y, X) -> translation) to get the final transformation matrix.

- https://chatgpt.com/share/670bb753-5508-800f-aa4f-95805d947924

Task 2

Task 2

- The main difference between Task 1 and Task 2 likely stems from the matrix multiplication order or rotation order in Task 1, causing the transformations to be applied in an incorrect sequence.

- Used createScaleMatrix to generate the scaling matrix.

- Used createRotationMatrix_X, createRotationMatrix_Y, and createRotationMatrix_Z to generate rotation matrices for the x, y, and z axes.

- Used createTranslationMatrix for the translation matrix.

- Combined the transformations (scaling -> rotations (Z, Y, X) -> translation) using the multiplyMatrices function.

Task 3

- Created the getPeriodicMovement function to calculate the transformation matrix over the 10 second period.

- Interpolated the translation, scaling, and rotation values smoothly.

- Returned the transformation matrix for each frame to animate the cube.

- https://chatgpt.com/share/670bb753-5508-800f-aa4f-95805d947924

Github Link

- https://github.com/adayilmax/CS405_Project1_AdaBoranYilmaz.git