

CMPE 360

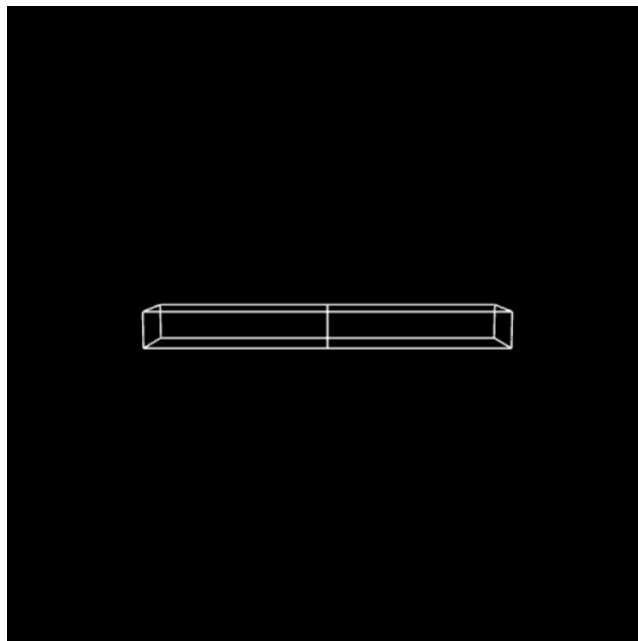
Fall 2023

Project 8

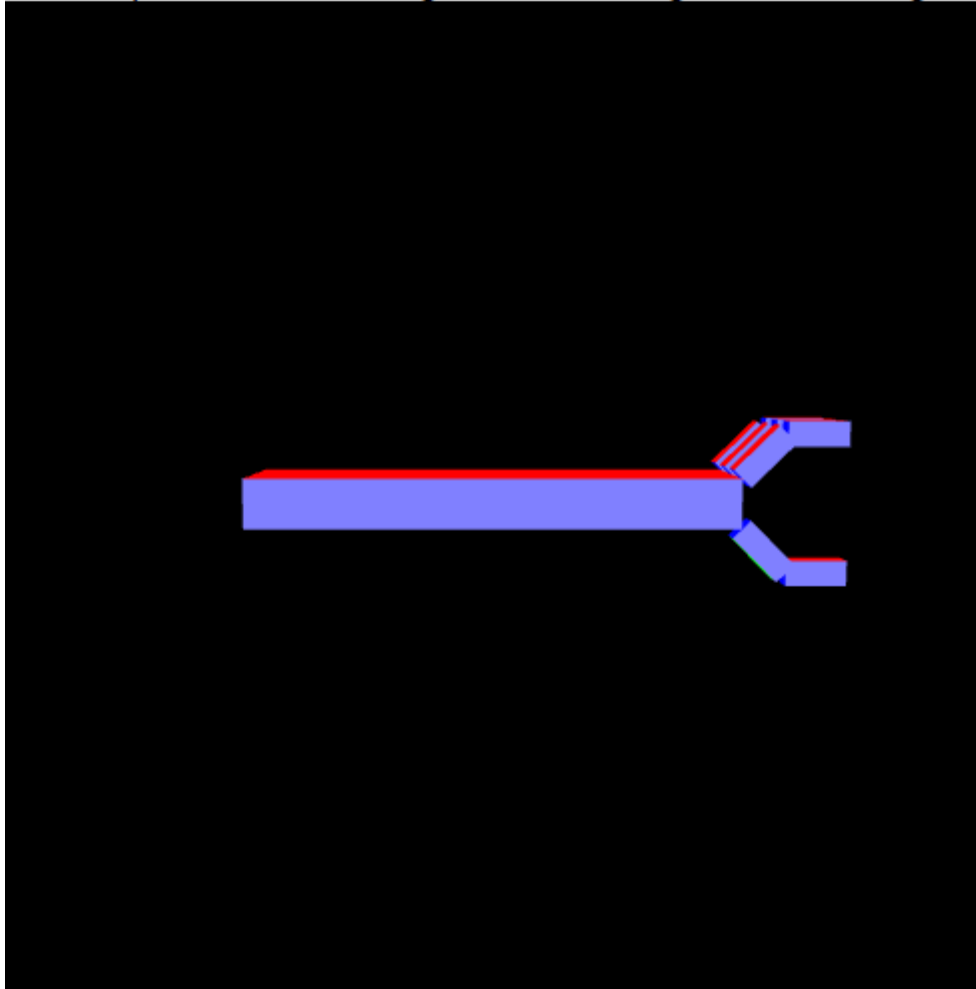
WebGL

This assignment is due by 23:59 on Sunday, 17 December 2023

Start with robot_arm.html and robot_arm.js from **Project08.zip**. When you run robot_arm.html you should see like below default robot arm.



- First load the application and see how it works. Try pressing lower and uppercase 'e' to move the elbow. Try pressing lower and uppercase 's' to move the shoulder
- Now, add three fingers and a thumb to the robot. Use `matStack.push()` and `matStack.pop()` to separate the transformations for each digit. Do not attempt to "untransform" with an inverse rotate, translate or scale.
- Finally, add some code that will make the finger and thumb move apart when 'f' is pressed and together when 'F' is pressed. The center of rotation should be at the wrist.



You can interact with this sample solution to see how your arm might work. Click on it and use the keys described above. I have also added some additional controls:

- x/X: to rotate the arm on the X axis so you can see it from different angles
- y/Y: to rotate the arm on the Y axis so you can see it from different angles
- a/A: to rotate the fingers on the x-axis with positive direction
- b/B: to rotate the fingers on the x-axis with negative direction
- m/M: to rotate the fingers on the y-axis with positive direction
- n/N: to rotate the fingers on the y-axis with negative direction
- t/T: toggle between solid and wire cubes
- p/P: toggle between perspective and ortho projections



Submission

IMPORTANT: You can do this project in groups of 2 people. Project8 will be the continuation of Project7, so you should work with the same group of friends in Project7 and Project8.

Project 8

- A working version of the robot arm program with opening and closing claw and at least three and one thumb. Please upload your files as a zip file (Project8 Files Submission).
- On your report pdf file, explain your process in **detailed** for all options. Please upload your report file on LMS (Project8 Report Submission).
- **Please record a video the all options and copy the drive link to your report.**
- **Write in the html file which features you showed in which order in the video you recorded and make the order visible on the screen.**

Grading Rubric

Project8	
Source files	10
Explain your process	35
Drive link(For options of the working version)	20
Quiz	35