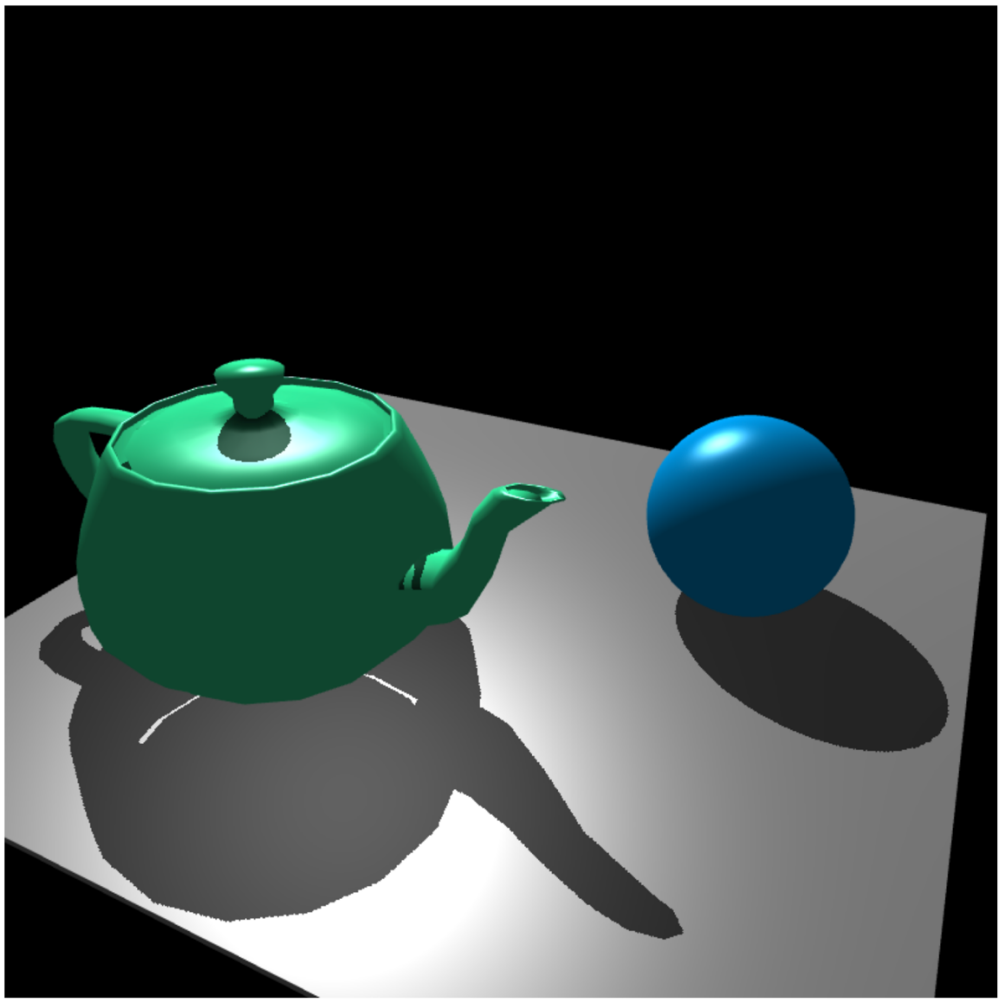
Assignment 4 – CS360
Shadow Mapping with Rasterization

Due date: October 27, 2025, 11:59pm

Grade: 100 points (10% of the course grade)

In this assignment, you will implement shadow map algorithm using two pass rendering that we have discussed in class in detail. This will use rasterization technique and NOT ray tracing. You will use the glMatrix-0.9.5.min.js JavaScript matrix-vector manipulation library to perform transformations using the APIs provided by it. Example usage of this library is discussed in class, and sample codes are provided as references. Other than the glMatrix-0.9.5.min.js library, no other additional library is allowed to be used for your assignment.

Here is the scene that you will create (Also see attached video):



Pointers for your assignment:

1. Reuse teapot.json file from previous assignment.
2. Construct the scene as shown.
3. You will add a slider that allows changing the light's location in x direction.
4. You will add a checkbox that allows to stop or animate the scene. During animation box checked, you rotate the camera around the scene as shown in the video.
5. When light position changed with the slider, the shadow should change correctly.

How to submit?

The **HelloIITK** portal will be set up for submission. There will be a time limit set. Please start early and finish it by the deadline. Your submission should ideally contain three files, one main JavaScript, one HTML file, and the glMatrix.js file. Zip everything into a single compressed file and upload it. Your code should run out-of-the-box on TA's computer without needing to do any modification. You can test it in both Chrome and Firefox before submitting it. Name your compressed submission file as "**Last-name_roll-number_Assignment4.zip**", and replace last-name, roll-number with your last name and roll number.

Grading:

We will grade your submitted version only. So DO NOT MISS THE DEADLINE, else you may get 0.