

Programming Assignment #2

Assigned: 24.04.2017 Due: 07.05.2017

1. Objective

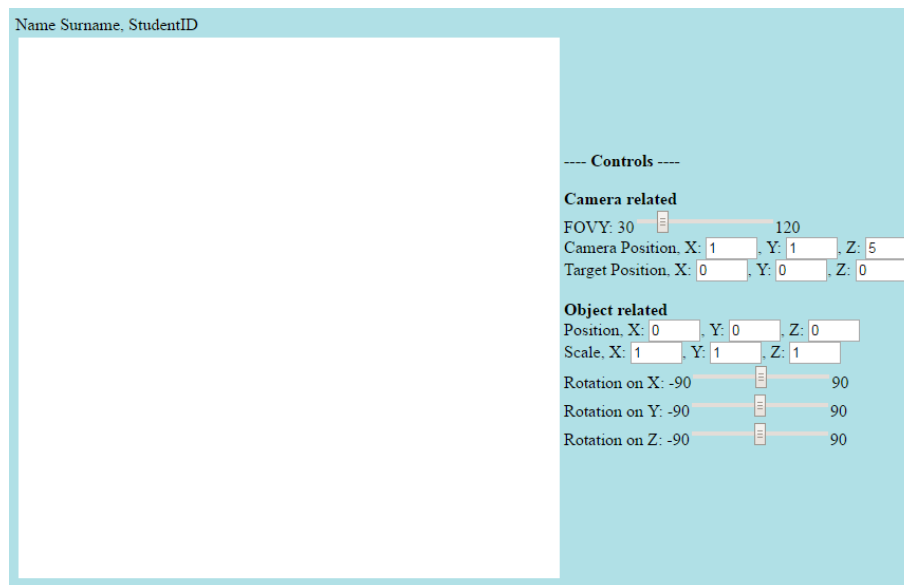
In this WebGL programming homework, you will learn how to apply modelview and projection transformations.

2. Specification

Download the files [here](#). When you unzip the file you will see "Common" and "assignment2" directories. Don't modify the "Common" directory; it includes the utility codes that you need. You will modify two files in the "assignment2" directory:

- tetrahedron.html: write your names and id's
- tetrahedron.js: everything else will be here

When you open tetrahedron.html with a browser, you need to see a page as follows:



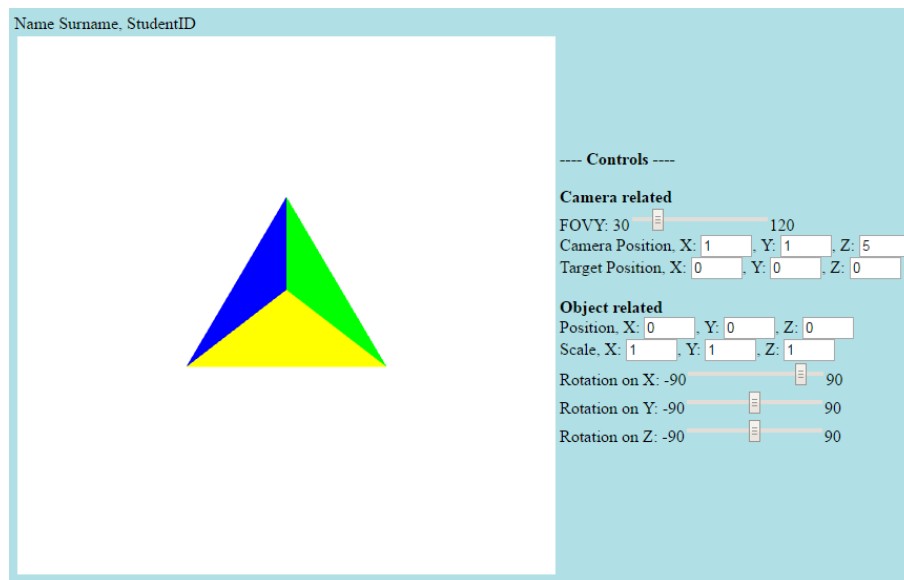
As you see, you have all UI elements (sliders, textboxes) for controls. You also have empty handler functions in the tetrahedron.js file.

What you need to do is to add necessary codes in **tetrahedron.js** file. The lines where you should add new code are labelled with **"TODO:"** comments in the .js file. These modifications include the following:

- Draw a tetrahedron having a **different color at each side**.
- All controls must be functional.
 - **FOVY**: Sets the field of view. Fill the related handler function in tetrahedron.js file.

- **Camera Position** and **Target Position** are used to change the "eye" and "at" parameters of the *lookAt()* function.
- **Position**: defines the position of the object. When you change the value, the object needs to be translated to the given position.
- **Scale**: scale of the object. Scale should be **relative to the object** (resizing shouldn't change the position of the object).
- **Rotate**: rotate the object around the given axes (X, Y, and Z). Again, the object should rotate around itself, **not around the origin**.
- Don't forget putting your names on top of the html.
- The codes should be readable (neat and tidy).
- You will need the following functions defined in MV.js file: *lookAt()*, *perspective()*, *translate()*, *rotate()*, *scalem()*.

At the end, it should look like the following image, with all required functionality.



3. Submission

- This homework can be done individually or in pairs.
- Place all your source files in a zip archive with name **PA2_Surname_Name.zip** and submit through the Moodle submission module.
- If you have further questions, you can send me an e-mail or come to my office.

4. Late Submission Policy

Deadline for homework submissions is **23:59 pm** at the specified date. For each additional day, **25% cut-off** will be applied.

Assist. Prof. Dr.
Zeynep ÇİPİLOĞLU YILDIZ