Hacettepe University
Computer Engineering Department
BBM 414 Computer Graphics Lab.
Experiment 3

Grup Üyeleri: Berat Eyüp YENİÇERİ(b21027587)
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Part 1

In the first part of the assignment, it is expected to run the example 6 which is an example from the book's codes. First off all, we add the shader files, library files and InibShader file to the project. To run the code, we made some changes on the code which are;

- Adding a button that rotating the cube on X rotation
- Adding a button that rotating the cube on Y rotation
- Adding a button that rotating the cube on Z rotation
- Adding a spinner that increasing or decreasing the speed of the rotation.

While we are working on part 1, we started by adding GLUI library to project. We downloaded the glui file from the internet and build it in the project. The glui 32 build file is occurred to project file and then we included it to the project. However, we could not directly add the library because the version of the library is not compatible with OpenGL. To solve this problem, we took off the control methods in the main function.

Like in the previous project, we got few error messages and we added glewExperimental = GL_TRUE; line to the code and we changed the readShaderSource method with the given code on piazza.

After we add the buttons to the project, we initialize the mouse rotation functions to these buttons. In addition, we define a spinner and add to the project to change the speed.

Because we add the buttons with glui not with glut, we changed the initializing of mouse and idle functions with glui initialization. For this operation, we used GLUI_Master.set_glutIdleFunc(idle); function.

Part 2

In the second part of the experiment, it is expected to animate the shapes with specific movements which are;

- For the circle, it is expected to move to Y direction with constant speed. To make this operation, we initialized and used a transform vector. In addition, a button should stop and start the animation.
- For the triangle, the area of the triangle should increase and decrease with the percentage of 0.5 and 1.5. To make this operation, we initialized and used a scale vector. In addition, a button should stop and start the animation.
- For the ellipse, it should turn counter clockwise. To make this operation, we initialized and used a rotation vector. In addition, a button should stop and start the animation.

While we are working on second part, we started with the addition of libraries like in the first part of the assignment. We added the buttons for animation of the shapes. Later, we defined the vectors for rotation, transformation and scaling.

As we learned in the course, these vectors are animating the issue according to origin. To avoid that, we add some codes to vertex shader. Then, on the vertex shader, we multiplied the point with the needed vector matrixes.