Interim Report
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Summary of Proposal
My project consists of implementing a Rubik's Cube Solver for Tizen. A user would be able to enter in an initial configuration of a Rubik's Cube, and the application would then show the scrambled cube in simulation, slowly rotating the sides acting as a step by step guide for how to solve it. While initially it was not decided how the user would enter the initial configuration, it will most likely consist of the user typing six 3x3 matrices into a text box. The program would then interpret this information as the 6 sides of the Rubik's Cube.

Current Progress
Unfortunately, not much has been implemented so far. I spent the past weeks heavily researching solving algorithms for Rubik's Cubes, and last week I started writing Tizen Code. The overall design of the system is as follows:

1)Read input from user through textbox
2)Parse input and generate different textures to display on the 26 small cubes that make up one Rubik's Cube (the center cube is not visible, so we don't worry about that one). This allows us to have the proper colors on each individual small cube.
3)Using the initial configuration from part 1, using solving algorithm code to generate steps needed to solve cube.
4)Following the steps from part 3, select 9 of the small cubes at a time and rotate them to the next configuration until cube is solved.

As the primary goal of this project is to use OpenGL, I started with attempting to display more than one object at a time on the screen. This proved more challenging than I expected. I first tried using one of the Tizen Templates from the developer page, and though I had minimal success at displaying 2 objects, I feared it would be extremely time consuming to implement a lot of the functionality that was already provided to us in the Homework code we were given. Therefore, I tried modifying the template code from our homeworks to render 2 objects at a time, but I ran into some errors. After spending days trying to research this problem online, I met with the TA today for assistance. I am waiting on a reply from him that will hopefully help me understand how to render multiple objects at once.

Troubles I am Facing
Besides rendering multiple objects, I foresee difficulty in rotating my small cubes. After looking at the openGL library and the glRotate functions, I am not quite sure how I can select specific objects to rotate. The TA helped me today with this issue, and I believe I have a way to solve this problem.

I am also unsure how I am going to properly color the small cubes from the input. Instead of using a texture, there seems to be a way where I can simply specify the RGB value of each vertex of a cube using the glVertexAttribPointer function along with a vertex shader.

My last dilemma is how to read input from a user. I have not investigated this in too much detail yet, though I assume there is a lot of information online about how to read in from a textbox in Tizen.

Additional Info

I realize now I bit off more than I could chew on this project. The learning curve of Tizen is steeper than I expected and there is more coding that isn't related to OpenGL than I realized. While I am not sure if I can complete the project by the deadline, I've created a list of things I will cut to ensure I have a project I can turn in.

1) Do not implement a start button for when the solving begins. It will start after a delay from pressing enter in the input box.
2) Do not have a way to enter in a different configuration once the solver finishes. The application has to be relaunched if a new configuration is desired.
3) Remove the ability for input and have it hard coded. If another initial configuration is desired, it can be set directly in the code and recompiled for the device.