

I learned the importance of being able to rely on group members for help during a group assignment in which I had to create a simplified version of CPU-based rasterization. Regrettably, none of my group members were accessible to assist one another in this assignment. Because of the lack of participation, I was unable to properly comprehend the content and complete the work on time.

I had to create a transformation matrix and a view/projection matrix, as well as transform three 3D points to the camera/view/monitor coordinates system. I also had to create a model, view, and projection transformation matrix based on these locations to display the lined triangle on the screen. While I was given a skeleton program to work with, I still had to modify several functions in the main.cpp file, including `get_model_matrix(float rotation_angle)`, `get_projection_matrix(float eye_fov, float aspect_ratio, float zNear, float zFar)`, and `main()`.

In brief, this assignment focuses on understanding and modifying the files `rasterizer.hpp` and `main.cpp` to generate rasterization and complete rendering without using triangle files. The file `rasterizer.hpp` contains variables such as transformation matrices and a frame buffer to store color data. It also has functions to set the model, view, and projection matrices, and to set the pixel color and write it to the frame buffer.

In `main.cpp`, I simulated the graphic pipeline by defining the rasterization example, setting the variables, and passing the transformation matrices to the rasterization function. After the model, view, and projection transformations, I have the points in canonical space coordinate. Finally, I compiled using CMake and the required libraries Eigen and OpenCV.

I struggled to fully understand the concepts and how to implement them appropriately without the help of my group members. I found myself wasting a lot of time on trial and error and internet resource seeking. This lack of communication also made troubleshooting any issues that developed during the project challenging. Furthermore, without the support of my classmates, I found it difficult to keep motivated and engaged.

Ultimately, this project taught me the value of working together with others and relying on group members for help. It also taught me the value of clear communication and establishing expectations for collaborative work. Moving forward, I will try to maintain open lines of communication with my group members and to ensure that everyone is accessible to assist one another when necessary.



