3D Gameplay Programming Repeat Project: 3D Maze Explorer Game with VBO, Shaders and Texturing

zoefountain/3d_game_scene_zoe_fountain (github.com)

Commit #1: added the starter kit to a GitHub repository. The starter kit has minor changes; the player cube now uses the npc WASD keys to move left, right, up, and down. The npc cube is now stationary and does not move.

Commit #2: added Maze.h and Maze.cpp to try and add 3d maze walls. Modified Game.h and Game.cpp, however my attempt was unsuccessful. Commit was pushed up with 2 errors,3 notes and 2 warnings in msysy terminal.

Commit #3: worked on fixing errors from last commit, implemented drawCube() to draw cube manually and made necessary changes to game.cpp. Corrected constructor declaration errors. Removed duplicate run() function in game.h. declared and initialized 'game_objects' and implemented 'game_objects' instances in game.cpp. Commit pushed up with 2 warnings, 6 notes and 10 errors in msysy terminal.

Commit #4: fixed error in Game::Initialize, updated the constructor accordingly, and the render and update methods in Game.cpp. Commit pushed up with 2 warnings, 9 errors and 4 notes.

Commit #5: fixing errors in gameObject.h, gameObject.cpp and Game.cpp. Made changes so the functions in headers match those in cpp source files. Code pushed up with 2 warnings, 1 error, 1 note in msysy terminal

Commit #6: fixed final error, added '-lglu32' to makefile. Walls and cube draw but there is an issue with the 3d factor, game is more 2d than 3d, cube has no dimension as shaders have not been implemented.

Commit #7: fixed the issue with 3d walls, fix was drawing all sides of the 3d cube I was only drawing 1 face of each wall cube. Working on free moving camera, commit pushed up with 3 errors, 1 warning and 24 notes.

Commit#8: fixed errors from previous commit. The camera implementation does not currently work, the mouse gets stuck in the center of the window and the camera does not move. 3 warnings for unused variables will be used later.

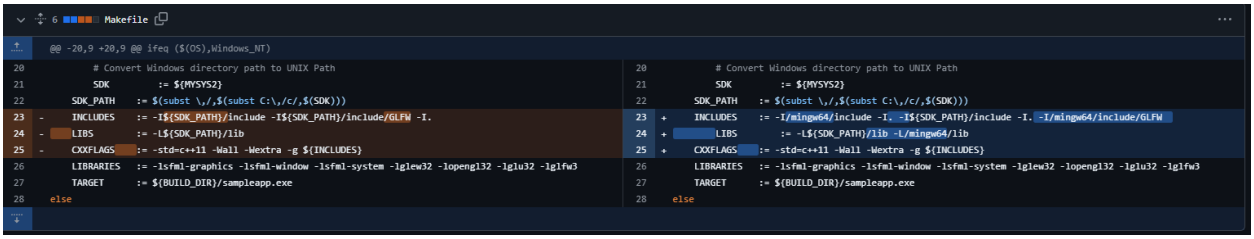
Commit #9: issue with camera possibly lies in the mouse offset, yet to figure out where the root of the problem lies, however. Commit pushed up with no msysy errors, just game bugs.

Commit #10: still working on camera movement, I believe the issue is the camera target, I believe the way I have coded the camera, makes it so the camera is always locked onto the player and does not allow it to rotate with the player as a target, as the camera always jumps back to the player position.

Commit #11: continued to try and fix camera issue but decided to move onto VBO, pushed up with 1 error. Vbo not yet functional.

Commit #12: working on vbo but having issues with glfw library.

Commit #13: managed to correctly link the glfw library. Changes made to makefile.



Commit #14: fixed errors but unsure if vbo is working or not.

Commit #15: attempting to add point cubes, originally used glut methods but glut library is not located, I will consider redoing and switching to a method that does not rely on glut.

Commit #16: reworked the method so instead of using glut methods, the point cubes use OpenGL methods and draw manually, expect the point cubes are currently not being drawn.

Commit #17: continued to try and fix point cubes but the code would run but not draw the cubes, despite checking to make sure they were being rendered. I am unsure what my problem is. Added the pdf for the commit breakdown (this doc) to the GitHub repo. The end game consists of a maze of walls with a player cube that is controlled by WASD keys, the mouse can be locked using the 'L' key.

Notes: I had hoped to have point cubes that the player could 'pick up' to gain a score, but my point cubes were not rendering. I also did not have time to go back to the VBO as I was having issues with it previously and was unable to get it working, nor did I have time to add shaders or texturing. I had attempted to have a free moving camera that circled the player using the mouse direction, however it was unsuccessful.

I also have some unused variables from attempting to add the camera and VBO, they are unused and cause no errors.

Resources:

OpenGL Course - Create 3D and 2D Graphics with C++ - https://youtu.be/45MIykWJ-C4?si=3owTOG0U0esQspsH

C++ OpenGL 3D Game Tutorial 7: Rendering 3D Cube -
https://youtu.be/DkyOI59Ij2c?si=MN-Vai3GHMY1LQjo

C++ OpenGL 3D Game Tutorial 8: Entity System - https://youtu.be/tQ-f4dkACjs?si=7XNJCJb4A-AbUbj6

Making a Game with C++ and OpenGL -
https://youtu.be/GcNOlhGGhRI?si=nuenj6DFgKKN1cfY

c++ - What is Glew, Glut and glfw3? Which ones are deprecated in Opengl 3/4 - Stack Overflow