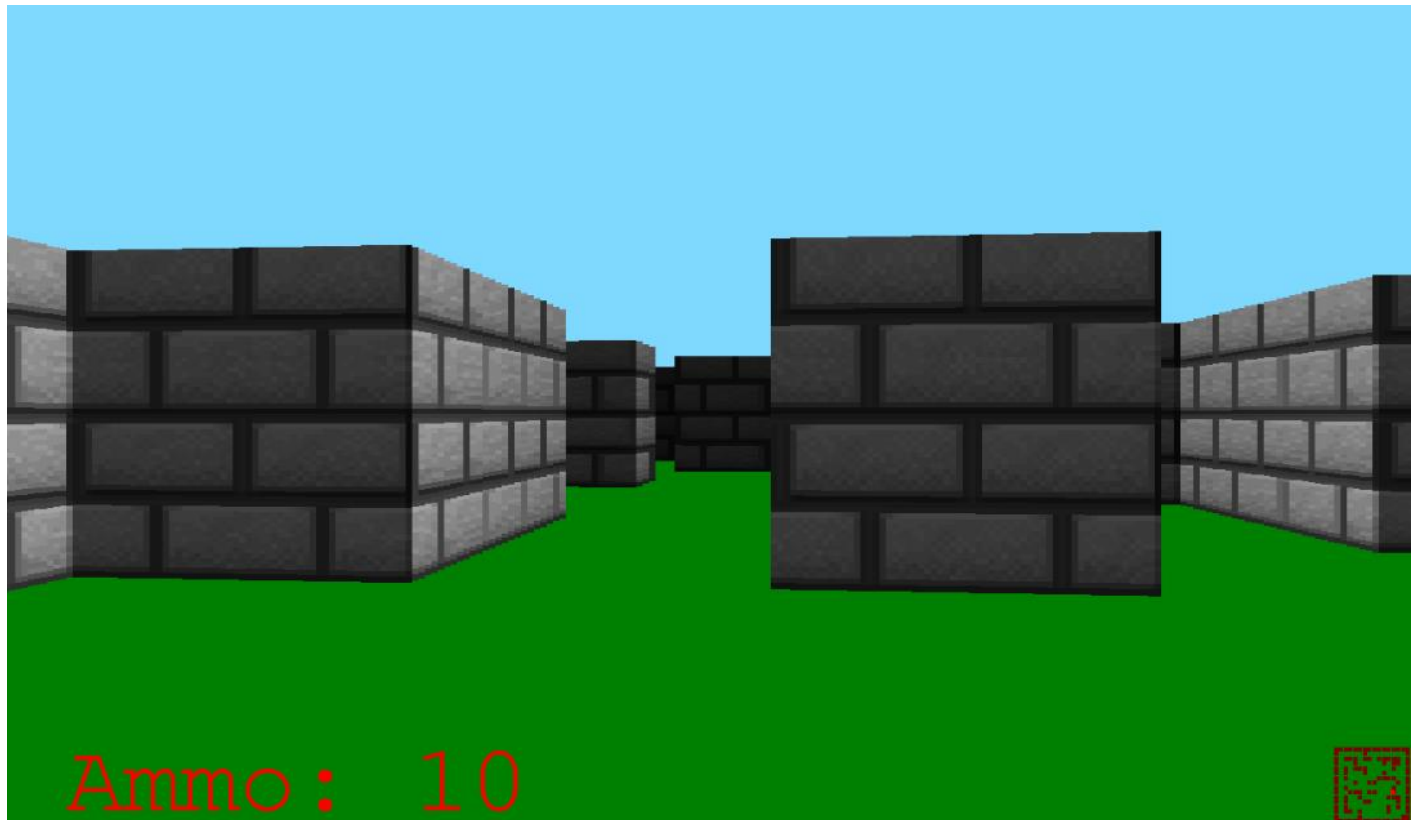


CS 175 Final Project Writeup



What I did

- For my final project, I attempted to create a similar game setting as the original Wolfenstein using the same raycasting method in Python and Pygame
- Although there is no game functionality other than an ammo counter that you can reduce by left-clicking, you can walk around in the self-created maze.

How to Run

- This program requires that you have Python 3 installed, as well as the appropriate version of Pygame for Python 3.
- Within the directory containing main.py, just run
 - `python main.py`
- In the game, you can press the wasd keys to move around, and move the mouse to turn left or right only.
- You can also left click to cause the ammo counter to go down, as well as click on 'r' to reload the weapon.

Resources I Used

- Aside from the documentation for Python and Pygame, conceptually, I used this website in order to understand how raycasting worked and how to understand it from a programming perspective
 - <https://lodev.org/cgtutor/raycasting.html>
- I also used stackoverflow to help with mouse movement

What I Tried/Problems

- My original project was attempting to create a ragdoll simulation (also in Python), but I encountered a problem where for some reason Python was unable to detect the dll for PyODE despite having it installed
 - This was likely due to some sort of problem with the package as it was very old, and I had to use Python 2.5 or 2.6 to even get it to install
- Because I could not figure that out, I switched to the current project, which is why I have the basic walking around the map implemented but not much additional game functionality.
- One problem I had was the ammo counter going down when mouse click is pressed is interrupted when any new input is introduced
 - For example, if clicking mouse button, then pressing 'w' will interrupt ammo countdown
 - The same will occur if moving the mouse while clicking mouse button
 - I rectified this by moving the click detection into the event loop at the top of main, rather than having it outside

What I learned

- Although I have used Pygame before, because Pygame is meant to be a 2D game library, I did not realize something like creating a “3D” game was possible.
 - I have played the original Wolfenstein, which I must admit, I did not know was not actually in 3D.
- I learned how to use some math to fake a 3D experience, making it easier to implement such a game.