

## **Design Doc**

### **Description:**

The name of the project is "Ghost of Downtown". It's a 2D platform, stealth-action game where the player's objective is to find the best way to take down enemies in the fastest way possible. Maintaining stealth is optional, but if done successfully it awards bonus points. There would be different levels with different layouts.

### **Similar Projects:**

This project is mainly inspired by a game called "Deadbolt". I'm essentially trying to recreate the shooting, navigating, and stealth features of the game. I'll also try to have different types of enemies with different attributes and weaknesses.

### **Structural Plan:**

Player Class:

There would be a player class that would have attributes and methods for:

- getting the player's current position
- getting the player's current health
- gun ammo

Different Enemy Classes:

Depending on the level, there would be different enemy classes, and their methods would differ.

Generally, they would have attributes and methods for:

- setting a boolean value based on whether the enemy can see the player or not
- following the player based on said boolean value
- shooting the player based on said boolean value

I'd have the cursor change shape based on how far the player aims the gun. There would also be doors and perhaps vents that the player would open/unlock and enter to strategically navigate the level.

### **Algorithmic Plan:**

I think the shooting and stealth aspects of the game are going to be the hardest parts to code, besides the graphics. As stated above, I'd have different classes for the players and enemies, and between both of them, I'd have a "seen" state that would be a boolean value that changes depending on whether the enemy can see the player or not, and depending on that I'd have the enemy shoot/follow the player.

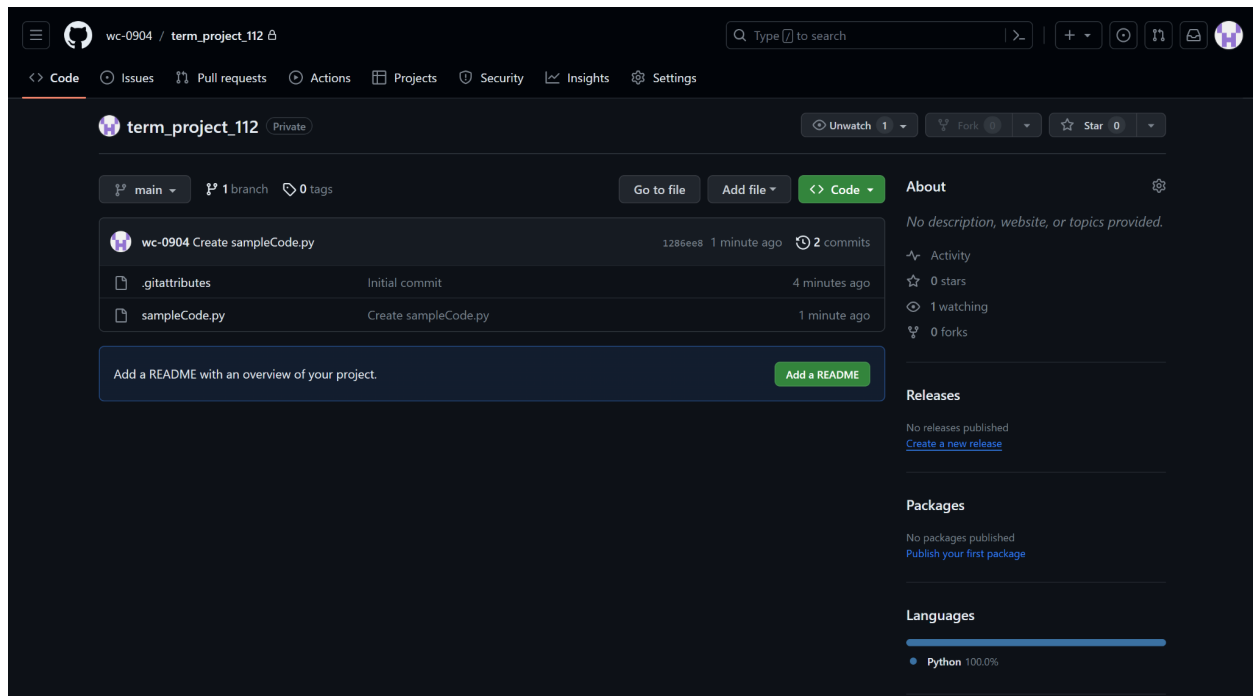
## Timeline Plan:

I'm hoping to complete the cursor code first since that shouldn't be too complicated. After that, I'll try to work on the player class and shooting aspects and get them done before TP1, and the enemy class and a base level by TP2. After that, I'd try to implement the stealth and door/vent navigation aspects by TP3.

## Version Control Plan:

I'd use GitHub to save the different code blocks for each class in a repository. I'll also make sure to update the repository with new versions every time I work on a piece of code and make progress.

## Sample Image:



## Module List:

I don't plan to use any modules or external tech.

## **TP1 Update**

### **Player Class:**

Instead of having different classes for the player and for enemies, I'll try to keep them both in one "Player" class and change their attributes accordingly.

### **Bullet Physics:**

I would try to implement bullet physics so that the bullet can bounce once off the wall if the enemy isn't hit on the first try.

I will also try to implement some amount of sidescrolling in the levels and some amount of randomization of where the enemies spawn in the level.

### **TP2 Update**

Instead of randomization of obstacles/levels/enemies, I'll instead implement 3 different bullet patterns for the enemies, all of which would hone in on the player.

Besides that, there are no other updates.

### **TP3 Update**

No major changes were made to the design docs. Only one level was made.