

Team Number: 12

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Project Name: Tanks

Project Synopsis

Top-down shooter where a player controls a tank and plays against another tank. Different maps and enemy tanks with unique abilities and shots add level variety. The player completes as many levels as possible before being defeated by the enemy tanks.

Architecture

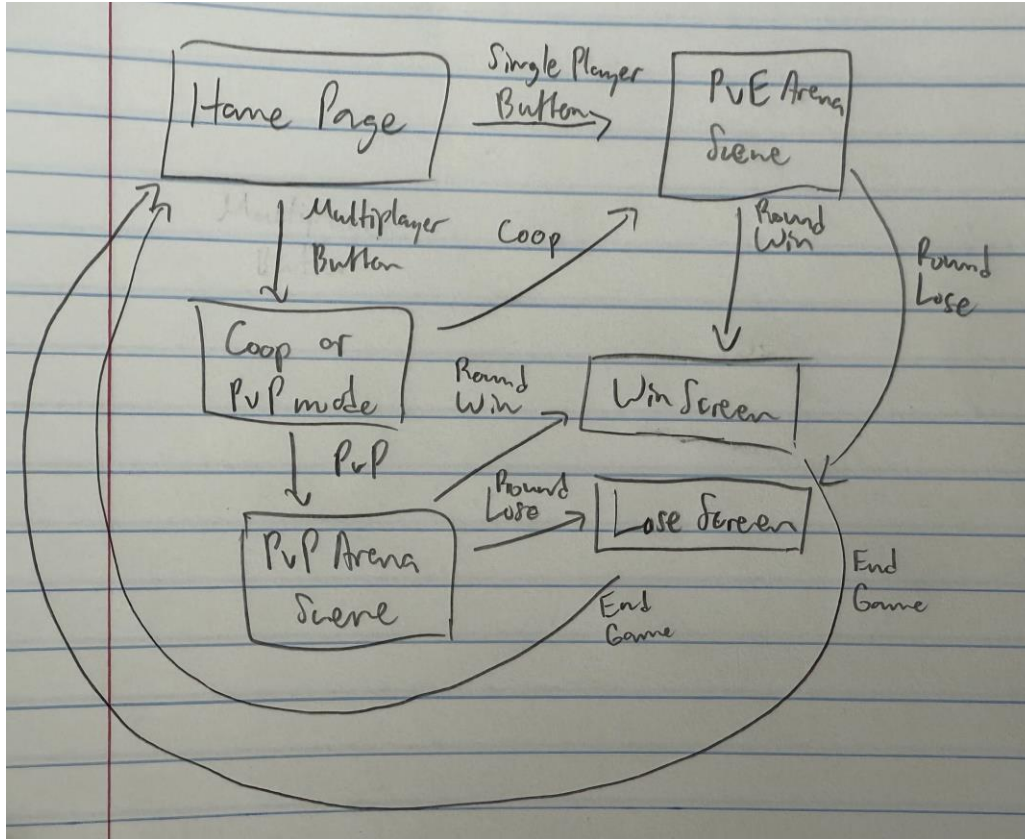
The game is built in the Godot game engine using C# and GDScript as programming languages. The structure of the game is built on nodes in a tree structure. Each scene is constructed using a combination of nodes. Each node is constructed using a combination of scripts and objects. Objects give properties to nodes, and scripts allow for the nodes to move, change, and interact with other nodes in the scene. Scripts are written in either C# or GDScript.

The game starts in the main menu where the player will choose single player or multiplayer cooperative. The game will then show a screen with instructions on what the controls of the game are, then will send the player to the first level. Within each level there will be an arena composed of walls seen from a top-down view. There will also be placed the player(s) tank(s) and enemy tanks.

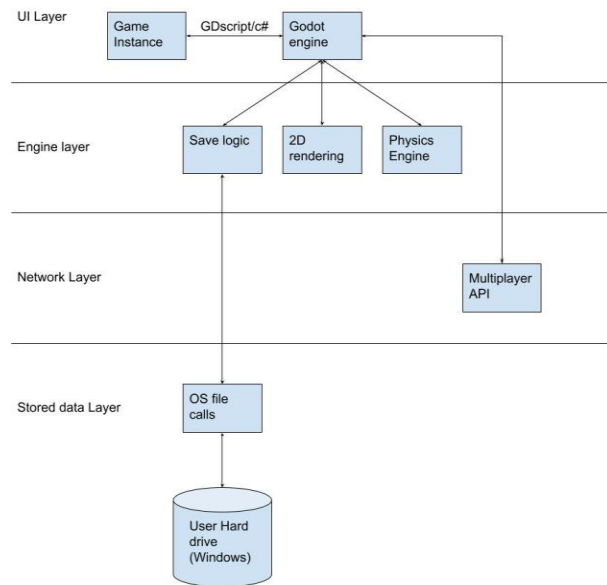
Each enemy tank will have a different algorithm that makes the tank drive and fire depending on the color of the tank. Tanks will be able to shoot bullets. If a bullet connects with an enemy tank, the tank will be destroyed. If a bullet connects with a wall, it will reflect off the wall. The angle of reflection will be based off the angle of incidence in the same way that a billiard ball would bounce off the wall of a billiards table. Some tanks will also be able to place mines. Mines will explode at the end of a timer, upon colliding with a tank, or upon colliding with a bullet.

If all player tanks are destroyed, the players will see a defeat screen and be given the option of retrying the level or returning to the main menu. If all enemy tanks are destroyed, the players will see a victory screen and be given the option of continuing to the next level or returning to the main menu. If the players complete the final level, then they will see a final victory screen with a special prize and be given the option to return to the main menu.

UI Flow:



Technology Stack:



Change Case:

Change case (technology change): Massively multiplayer online version of the game.
Likelihood: Medium likelihood for the third or fourth sprint.
Impact: Medium impact. The structure of NPC opponents would have to change to be online players instead of AI bots. The system would need full support for some sort of online capability as well as matchmaking systems to combine players into different lobbies together in order for them to play. Potentially change the way different abilities are gained in the game so that it's more satisfying to users, since they would no longer have the different types of NPCs that will exist in the base game.