# Intro

* Links
* GDD

# Imported Assets and Libraries

There are some things I didn’t make in this game and some things I made before starting this project. There is of course Unity which I didn’t make, but I also didn’t code some of the packages I used for this game. These packages are:

* Cinemachine, for better cameras and transitions
* TextMeshPro, for better text display
* LeanTween, for UI animation

Cinemachine and TextMeshPro are official Unity packages while LeanTween is third-party.

I also imported assets which I frequently use for all my games such as Audio and UI, but these are made by me.

The first commits on the GitHub repository were all imported from the aforementioned sources.

# The barebones prototype

I have a lot of ideas (some of which won’t make it before the end of the assignment, or won’t make it into the game at all), but first I need to build the crude version of the game to see if there is potential for fun. However, the concept of a top shooter is decades old so the prototype will need to be a bit richer than normal.

With that in mind, I made a GDD (Game Design Document) and wrote some ideas, I set up a Trello board and made a list of what I should do first before any play testing is done. First the player movement, which was something I already had done dozens of time so it went pretty easy. I used a physics-based movement with Unity’s Rigidbody to allow for smooth controls as well as potential use of physics later (such as wind). The next thing was shooting, this is also relatively easy, just a little bit more verbose for the input since I have to detect when the player presses and releases the button for firing.

The firing was working just fine, but then I set up the main menu (which took 5 minutes since I already made a template) and it was not working anymore. The player was moving according to the input, but it was not shooting. Although I don’t know why it is like this, the likely culprit is the PlayerInput component I have on my Canvas (which was necessary for my menu) which meant I had two PlayerInput components in my scene at once which broke something (the Input System package is still relatively new so it’s still a bit funky to use at times). The movement input was using messages and worked fine, while the shooting was using with C# events and didn’t work. I couldn’t use messages for the shooting since I need to detect whether the input was pressed or released so I switched the PlayerInput to use C# events and made sure to change the movement input accordingly. After that, the shooting and movement were both working fine, at the expense of concise code since it probably tripled the amount of line needed for this.

Next, I made a simple seeking enemy, added a health bar and created a spawner for the enemies, it gets a random index from the list and instantiates the corresponding enemy, then it waits a cooldown specified by the enemy spawned (stronger enemies have higher spawn cooldowns). It’s not ideal, but it gets the job done for the prototype. I’ll also create a faster enemy to add a little bit of variety. With that done, it’s difficult to tell when your bullet hit an enemy since it doesn’t disappear immediately (each bullet can hit multiple enemies), so we’ll need to add some feedback. I also fixed a bug where the bullets were hitting the same enemy twice. Finally, I made a dashing ability to make the game a little bit more interesting. This is supposed to be a top shooter but also a bullet hell game, so I’ll need to add a shooting enemy before finishing the prototype.

# Filling up the game

The prototype seems promising (lining up your shots so that each bullet hits multiple enemies is quite fun), so I can start filling up the game and make an MVP (Minimum Viable Product). I’ll add as many things as I can to make the game more interesting as well as playtest a little bit to get a little bit of feedback before releasing the alpha version.

I want to add another weapon, but for that I need to implement selecting the weapons, took a bit of setup, but in about 30 min it was finished. I added a weapon that fires faster but can hit less enemies, but it’s just for testing purposes and both weapons are likely to change later on.