

Let's begin from the beginning. After reading the requirements of the task, I felt challenged, whereas I've never done a 2D top-down game before. However, I was really confident on making an item/shop system, since I've done it several times. So I started working on the weak spots, and searched the internet for how I could code the movement and how to set the scenario.

Afterwards, I started thinking what game I should do. For me, one of the most important things to have in mind while you are designing a game is this simple question: "What feeling I want my player to feel while playing my game? One of the feelings that crossed my mind was "progression". I liked it and immediately merged this concept with the Item/Shop system. I knew that I could develop a system that could be flexible and turn things easy to create new Items with some variety. I added to the game the fact that I wanted to do a shooter that I saw tutorials on YouTube. This way I decided to make a game that you are rewarded by shooting enemies in some kind of arenas, that gets harder and harder. In order to pass all arenas, you should buy new and better equipment, that would make you stronger.

With that said, I will explain the systems. First of all, the player. It was built with the component pattern to separate the logic module of it. Therefore, there is a script that handles movement, another one to handle shooting and a central one as a Controller with singleton pattern – there is even a Scriptable Object just to hold the player stats – all of them independent from each other. The enemies were made following the exactly same logic, just without a SO for stats.

Now it's the item / shop system time. In this one, I made a base Scriptable Object called Item. Then I separated it in two kinds: Armor and Weapon, because I wanted to change different values on player when I equip them. The other scripts would inherit this two, with unlimited possibilities. In this game case, each item type (Head, Left Arm, Right Arm, Torso and Weapon) are a class that is empty. This is kind of weird, but I leave it that way so in future, if I would like to extend the code for each type has a different behaviour, I could easily make it by overriding methods. After that, I defined another two SO to hold and handle a List of Items, one for the Store and the other for Inventory. Next, I needed controllers for each of it: for inventory I made a static class, since I only would have a single inventory with constant access; for Store I made a Salesman, once I would like to have many sellers. Finally, I just had to create the scripts that would handle UI and keep it updated using the Observer pattern.

In the arena system I made the ArenaSettings ScriptableObject that would have a list of Challenges, which in turn it is another SO (Yes, I like Scriptable Objects) that keeps information about how many enemies will have on the level, the time range that they spawn and the reward for completing it. Next step was adding an Interactor that would open the UI to select the challenges. And guess it? I would need a script to control this UI again. Finally, I did a controller to instantiate enemies on the scene based on active challenge and keep track of their death in order to reward player on completion.

As far as my opinion on Alien Arena is concerned, I think I did pretty well for a four-day game. The game is fun, it passes a good feeling of progression, and works pretty fine (there are just some few bugs, witch surprised me). Although, I wish I had polished it more. The game is definitely in need of animations for the player, also sprites for seller, arena interactor and for the recharges. I would love to add some NavMesh Agent on enemies; they would be a lot smarter and challenging. Lastly, I would balance better the game for sure.

In short, it was a fine experience making this Project. I learned lot of things, especially in 2D game development. I was very happy with some results of my code, but sad that I couldn't polish the game in time. The next steps on this is polishing, creating a Editor script for help editing, creating and visualizing items, inventories, stores and challenges, and add more enemies with more complex and smaterst behaviours.