

Upon reviewing the test specifications, I identified the main development areas, listed as:

- 1) Item system;
- 2) Player movement;
- 3) Interaction with the Shopkeeper;
- 4) Ability to buy/sell items.

Following this initial analysis, I also explored additional optional resources, including research on platforms such as Itch.io and Unity Asset Store. After spending some time on this research, I decided to primarily focus on assets from the Mighty Heroes (Rogue) 2D Fantasy Characters Pack.

With the selection of the main asset pack, I developed a system to facilitate asset swapping on the character, allowing its use on other characters (NPCs) as well. To achieve this, I examined the character's construction structure, its Transforms, and GameObjects, aiming for an architecture that would best suit the requirements. As a result, I created the BodyPartController class, which manages the functioning of these assets, allowing modifications through an external script or the script itself.

Regarding the item system, I used ScriptableObject to store relevant information such as title, icons, and price. After resolving the item swapping system, I quickly implemented a movement and animation control system for the player, considering the game direction as top-down 2D. I then focused on implementing an inventory system to store acquired items, utilizing the item system visually.

With the inventory completed, it was time to implement the functionality of buying/selling items. To do this, I created the Shopkeeper and added basic player interaction to open a sales interface. I chose to reuse the same interface for both functions, adapting some details and ensuring functionality with both keyboard/joystick and mouse.

In the item selling process, I established some rules, such as blocking the sale of equipped items and ensuring the player does not possess other items of the same category as the equipped item. If the character has other items of the same category, the system sells the item and automatically equips a random item from that category.

In my opinion, I was able to achieve solid work in terms of project structure, considering the time constraints. I chose to devote less attention to the artistic aspect of the environment to focus more on architecture, organization, and project optimization.