

PROJECT DESCRIPTION

The application has different systems for the implementation of a TopDown2D, allowing character movement through the environment, interaction with objects, inventory management, avatar customization, and buying/selling of aesthetic elements.

Character:

The character's functionality was achieved through loosely coupled components, emphasizing system independence for ease of testing and error resolution. For example, a component was added for movement and inputs, another for equipping the character's clothing and another for interactions with objects.

Inventory:

For the inventory and shop implementation, ScriptableObject were created to store information for each in-game object. Additionally, a static class with a dictionary referencing each ScriptableObject by its ID was established. This approach eliminated the need for systems to have constant references to objects, relying only on their IDs for subsequent retrieval from the static class dictionary.

Within the inventory, the player can choose from three categories of clothing, and select unlocked items. An editor tool was created to instantiate category elements. A static class, acting as a communication channel through an Action event, notified other systems like the store or player aesthetic equipment about the selected item's ID.

Store:

The store allows selecting multiple items for purchase, with the acquired objects added to the inventory. Items can be sold through the store tab if the player does not have them equipped. Purchased and sold items notify other systems using the same communication channel in the aforementioned static class.

Interaction with world objects:

The character's interaction with world objects was implemented through an 'IInteractable' interface. When colliding with an object, the player would invoke the 'Interact' method implemented by each class of this type. Currently, there is only one type of interactable object; however, the structure is designed to easily add more without modifying the existing code—simply by incorporating new functionalities.

Task performance conclusion:

I think the test was a challenge considering the time, but I believe I managed to set up systems that meet the main goals. Given more time, I would've liked to come up with a different architecture for some systems to make them more scalable. Also, I would've loved to enhance the gameplay by adding some dangers and perks.