

The main objective of this requirement 3 is to add the new feature of allowing the player to listen to the Blacksmith's monologue.

To do this, we decided to introduce a new interface called 'Monologist' which is implemented by classes that can monologue, in this case the Blacksmith. This interface has a method called 'generateMonologue()', which returns a string which represents the monologue. This adheres to the Interface Segregation Principle (ISP) since we do not force entities that cannot monologue to implement this method.

The 'MonologueAction' takes in a 'Monologist' as an argument in its constructor. We will call the 'getMonologue' method inside the execute of 'MonologueAction'. This adheres to the Dependency Inversion Principle (DIP), as we rely on the abstraction of the 'Monologist' rather than its specific implementation.

Blacksmith and IsolatedTraveller can be used interchangeably in contexts where an 'Monologist' is expected, like when passing the argument through the 'MonologueAction' constructor, this demonstrates adherence to the Liskov Substitution Principle (LSP).

Possible Alternative Solution

A possible alternative to this would be to have a manager class, that would manage all the monologists and their corresponding monologues. However, this would be way more complicated than the current implementation as we would need to have static methods to register and remove monologue options.

Advantages

Future Extensibility

This implementation adheres to the Open/Closed Principle (OCP), as we can easily add more entities that can monologue, without modification to the existing code. All we have to do is have it implement the 'Monologist' interface.

Straightforward

The alternative of using a manager class for managing Monologists and monologues would be way more complicated and time consuming to implement. It might even be over-engineering, for our needs.

Disadvantages

Tight Coupling

Our implementation introduces a level of coupling between the 'Monologist' interface and the 'MonologueAction'. Since 'MonologueAction' requires a 'Monologist' in its constructor, it is tightly coupled to the specific monologist classes. This can make it harder to use MonologueAction with other entities that don't implement the Monologist interface.

Lack of Centralized Control

Our current implementation doesn't provide a centralized way to manage and coordinate monologues across different entities. This might become an issue if we need to synchronize or manage monologues in complex game scenarios down the line.