metin, ekran görüntüsü, multimedya yazılımı, grafik yazılımı içeren bir resim

Açıklama otomatik olarak oluşturuldu

In this project, I developed a game and effectively utilized Object-Oriented Programming (OOP) principles. Below, I provide a detailed explanation of the OOP concepts used in the project and how they were implemented.

1. Inheritance Inheritance allows a class to inherit the properties and methods of another class. This reduces code repetition and creates a more modular structure. In my project, I implemented this concept using a general Entity class and specific classes such as Player and Enemy that inherit from it. The Entity class defines common properties and methods, and classes like Player inherit these features and add their own specific behaviors.
2. Polymorphism Polymorphism is the ability of an object to take on different forms. In my project, objects of the Entity type are used polymorphically. For example, within the game loop, the update method is called on all Entity objects, allowing each object to perform its specific behavior. This way, the same method call produces different results for different types of Entity.
3. Encapsulation Encapsulation protects a class's data and methods by controlling external access. I implemented this principle by typically defining class properties as private and providing access through getter and setter methods. This prevents direct access to variables from outside the class and maintains data integrity.
4. Abstraction Abstraction simplifies complex systems by making them more manageable. In my project, I used abstract classes like Entity to implement the abstraction principle. This abstract class defines a general entity structure, while concrete classes (e.g., Player and Enemy) extend this abstract class and define their specific behaviors. This makes the code more understandable and manageable.
5. Composition Composition allows a class to use other classes to create more complex structures. In my project, the Game class applies the composition principle by using a list of Entity objects. The Game class manages entities such as players (Player) and enemies (Enemy) and controls the game loop. This establishes a clear relationship between the game entities and the game mechanics.

Conclusion In my project, Object-Oriented Programming (OOP) principles have been successfully applied. Concepts like inheritance, polymorphism, encapsulation, abstraction, and composition ensure that the code is more modular, reusable, and manageable. These principles have been effectively implemented in the classes and methods in the project, providing significant advantages during the game development process.

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