Object-Oriented Programming

Report Lab 02: Problem Modeling and Encapsulation

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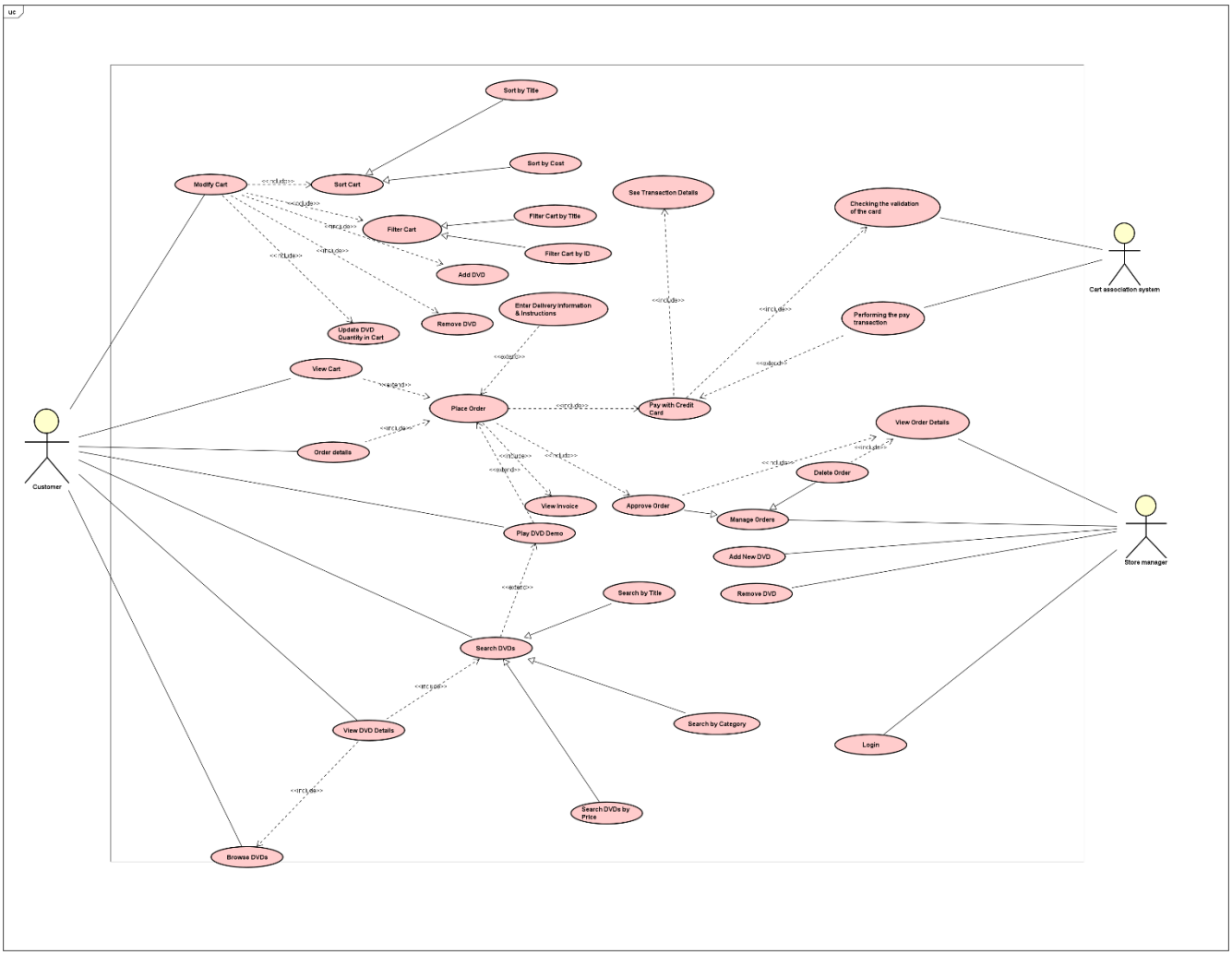
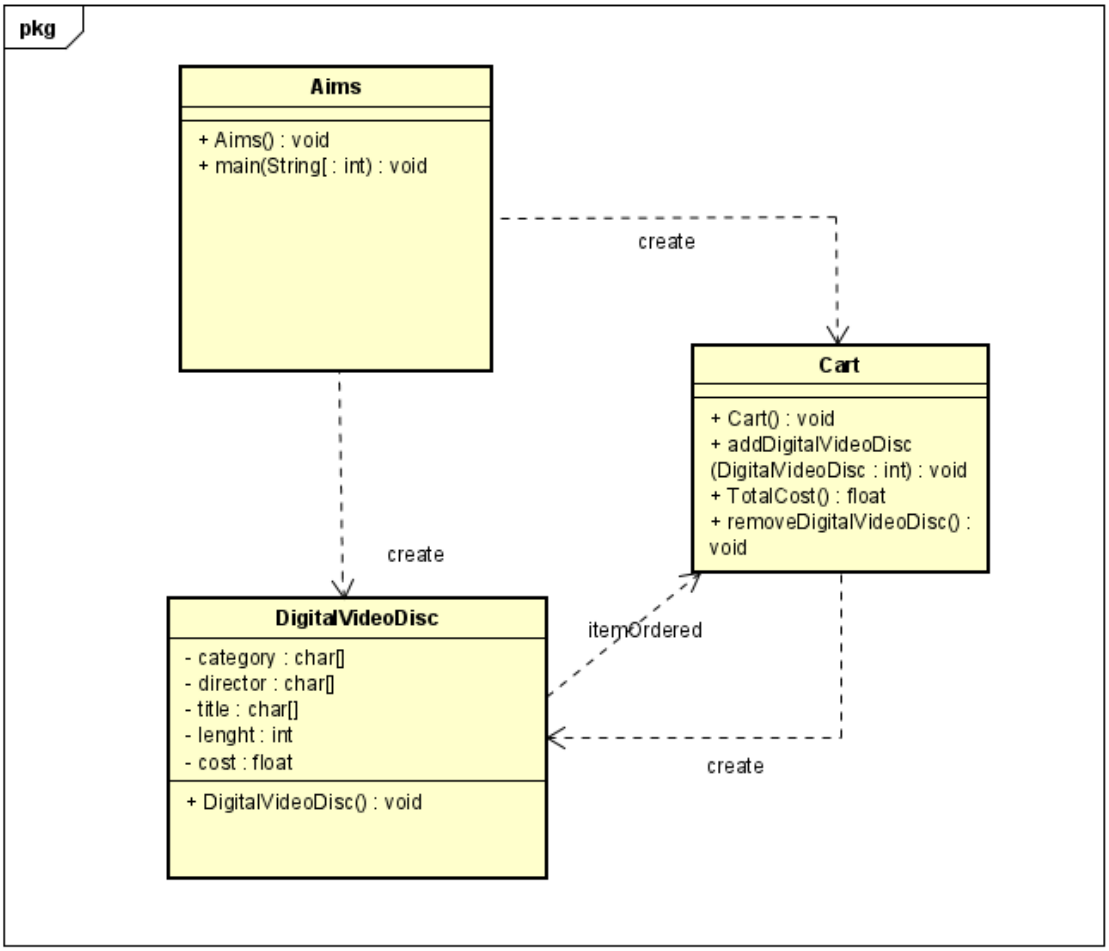
I. Use case diagram



II. Class diagram



III. Reading assignment

When should accessor methods be used?

Accessor methods should be used to return objects through interfaces, especially when a method needs to return an object that implements a specific interface.

Explanation:

- Interface Isolation: Accessor methods help in separating the interface (contract) from the underlying implementation of an object. This allows the code that interacts with the object to use a consistent behavior without depending on the internal structure. It enables flexibility in changing the underlying implementation without affecting the calling code.
- Encapsulation Protection: If the internal details of the object change but it still meets the same interface contract, the code using it remains unaffected. This preserves encapsulation, ensuring data integrity and reducing the chance of errors caused by changes in implementation.

IV. Answering questions

If you create a constructor method to build a DVD by title then create a constructor method to build a DVD by category. Does JAVA allow you to do this?

Answer: No, Java does not allow you to define two constructors with only a single String parameter for both title and category.

Explanation: Although Java supports constructor overloading (having multiple constructors in a class), each constructor must have a unique parameter list. Since both "title" and "category" are of type String, Java cannot distinguish between them when only a single String is passed. This would lead to a compile-time error because the compiler wouldn’t know if the input should represent a title or a category.