

Design Document for Inventory Management System

Introduction:

This system helps retail stores manage their inventory. It uses Object-Oriented Programming (OOP) principles like encapsulation, inheritance, polymorphism, and abstraction.

Design Choices:

- Encapsulation: Product, inventory, and transaction data are bundled into classes.
- Inheritance: Different product categories - *Electronics*, *Clothing*, and *Groceries* - inherit common attributes and behaviours.
- Polymorphism: Methods can handle transactions differently based on product type.
- Abstraction: Interfaces - *IProduct* and *ITransaction* - define common characteristics, and concrete classes - *Product* and *Transaction* - implement them.

Additional Features:

- User Authentication: Secure access for store employees. Login credentials are stored in a private static dictionary.

Sample Interactions:

The `Program.cs` file contains code demonstrating the application's functionality. You can modify this file to test different scenarios.