

Basic Inventory Management System Documentation

System Overview

A console-based inventory management application designed for retail stores to handle basic product management operations.

Core Features

- Add new products to inventory
- Remove existing products
- Update product quantities
- View complete product listing
- Calculate total inventory value

System Architecture

1. Product Class

Core class for storing product information

Properties:

- ProductId (unique identifier)
- Name (product name)
- QuantityInStock (available units)
- Price (unit price)

Methods:

- Calculate total value (Quantity × Price)

2. InventoryManager Class

Primary management class for product operations

Core Methods:

Method	Description
AddProduct()	Creates new product entry with duplicate checking
RemoveProduct()	Removes product using ID
UpdateProduct()	Modifies product quantity
ListProducts()	Displays tabulated product list
GetTotalValue()	Computes total inventory value

3. User Interface

Menu Structure:

1. Add Product
2. Remove Product
3. Update Product
4. View Products
5. Check Total Value
6. Exit

Operational Flow

```
graph TD;
  A["Start Program"] → B["Display Menu"];
  B → C["User Selection"];
  C → D["Input Validation"];
  D → E["Execute Operation"];
  E → F["Display Result"];
```

```
F → B;  
F → G["Exit Program"];
```

Input Validation

- Prevents negative numerical values
- Validates product ID existence
- Confirms successful operations
- Displays error messages for invalid inputs

Current Limitations

- No product search functionality
- Product name and price updates not supported
- Basic error handling implementation