# Inventory Management System - Domain Description & Initial Modeling

## 1. Domain Description

The Inventory Management System is designed to assist businesses in monitoring and controlling their product inventory. This system supports the tracking of items, recording of incoming and outgoing stock, and management of supplier data. It ensures accurate inventory levels and minimizes losses due to overstocking or shortages. Primary users include inventory clerks, store managers, and system administrators.

## 2. Initial Object Identification Table

| Object Name | Description |
|---|---|
| Product | An item tracked in the inventory |
| Supplier | Entity supplying the products |
| Transaction | Record of inventory movement (in/out) |
| InventoryManager | System user managing the inventory |
| Report | Document summarizing inventory status |

## 3a. Initial Attribute Table

| Class | Attribute | Type | Visibility | Rationale |
|---|---|---|---|---|
| Product | productID | int | private | Unique identifier |
| Product | name | String | private | Product name |
| Product | quantity | int | private | Available stock |
| Product | price | double | private | Unit price |
| Supplier | supplierID | int | private | Supplier identifier |
| Supplier | name | String | private | Supplier name |
| Transaction | transactionID | int | private | Transaction identifier |
| Transaction | type | String | private | IN or OUT stock movement |
| Transaction | quantity | int | private | Amount moved |
| InventoryManager | name | String | private | Manager's name |

## 3b. Initial Method Table

| Class | Method | Return Type | Visibility | Rationale |
|---|---|---|---|---|
| Product | updateQuantity() | void | public | Updates stock count |

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| InventoryManager | addProduct() | void | public | Adds new product |
|---|---|---|---|---|
| InventoryManager | removeProduct() | void | public | Deletes product |
| InventoryManager | generateReport() | Report | public | Creates inventory report |
| Transaction | recordTransaction() | void | public | Logs transaction |

## 4. UML Class Diagram (Initial Draft)