1. Class Diagram – Inventory Control System

The Class Diagram gives a static view of your system. It shows the classes (objects) involved, their attributes, operations (methods), and relationships between them.

Product:

- Represents an item in the inventory.
- Contains details like productId, productName, quantity, and price.
- Has methods to update quantity and retrieve product details.

Inventory:

- Manages the overall list of products.
- Includes methods to add/remove products and check stock levels.

Supplier:

- Represents an entity that supplies products.
- Has supplier details like name and contactInfo.

Order:

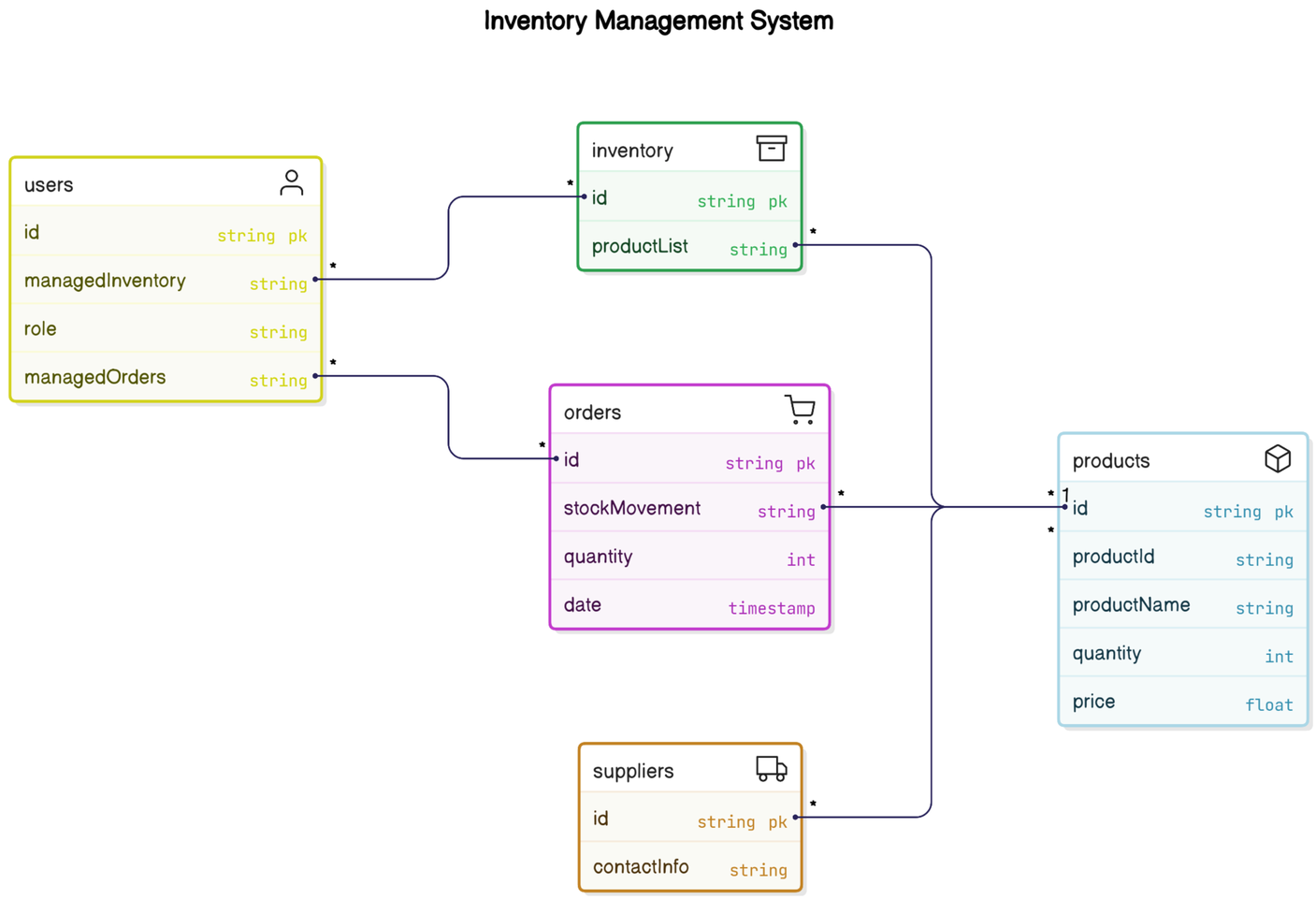
- Keeps track of inventory orders (in or out).
- Contains orderId, productId, quantity, and orderDate.
- Allows placing and tracking orders.

User:

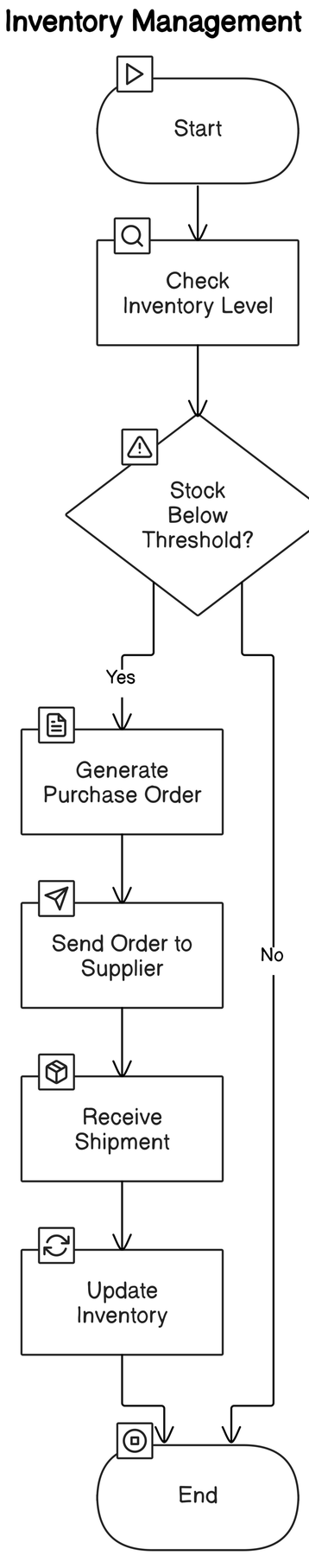
- Refers to system users like Admin or Staff.
- Contains userId, username, and role.
- Can log in and manage inventory/orders.

Relationships:

- Inventory manages multiple Products.
- Product is supplied by a Supplier.
- Order is placed for a Product.
- User can place multiple Orders.



Inventory Management Process



2. Activity Diagram – Inventory Replenishment Process

The Activity Diagram gives a dynamic view of the system by showing the workflow of the replenishment process (i.e., restocking inventory when it's low).

Activity Steps:

1. Start: The process begins with checking the inventory level.
2. Check Inventory Level: The system checks the quantity of each product.
3. Decision – Is stock below threshold?
   - Yes:
     - A purchase order is generated.
     - The order is sent to the supplier.
     - The shipment is received.
     - Inventory is updated with the new stock.
   - No:
     - No action needed; process ends.
4. End: The process concludes.

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