

#### 4. Stock Maintenance system

##### a. SRS Document:

D. Stock Maintenance System		DATE: 01/10/24 PAGE: 1
1.	1. Introduction	3. Functions
1.1	Purpose of Document. Provide automation and streamline inventory management processes, track stock levels in real-time and provide confidence levels for stock replenishment.	4. Integration
1.2	Slope The system will manage inventory for a business includes adding, deleting, marking Stock items, generating stock alerts and produce reports. It helps manages, sales teams, finance team by providing accurate and real-time data.	5.
1.3	Overview. Application that can be integrated with existing software to provide interactive interface for semi-skilled personnel.	
2.	General Description: The stock maintenance system is a centralized solution accessible by multiple departments. It tracks stock levels, supports inventory disposal techniques (FIFO) and provides accurate order quantity to minimize wastage. System also alarms managers on reorder level taking into account the buffer required for restock.	

### 3. Functional Requirements :-

- System must allow authorized users to add, edit, delete stock items with attributes like SKU name, ID, category etc.
- System must maintain and generate monthly reports on stock movements, including purchase, sales and profits.
- System must generate and alert managers when stock levels reach reorder threshold and estimate demand required to place orders.

### 4. Interface Requirements :-

System provides web-based application with easy to use UI similar to proprietary software. Dashboard views to display inventory levels, upcoming orders, edit details, tables, visual techniques to get inferences from data.

System will connect to barcode scanners and printers to generate labels and manage stock entries.

System must integrate with existing sales and finance systems using RESTful API's for seamless data sharing and bring all components under one umbrella.

### 5. Performance Requirements:

System must support upto 5000 SKU's without limit to SKU's parameters or attributes. Average response time for stock queries must be less than 3 seconds.

System must update stock details on same day.

## b.Advanced Class Diagram:

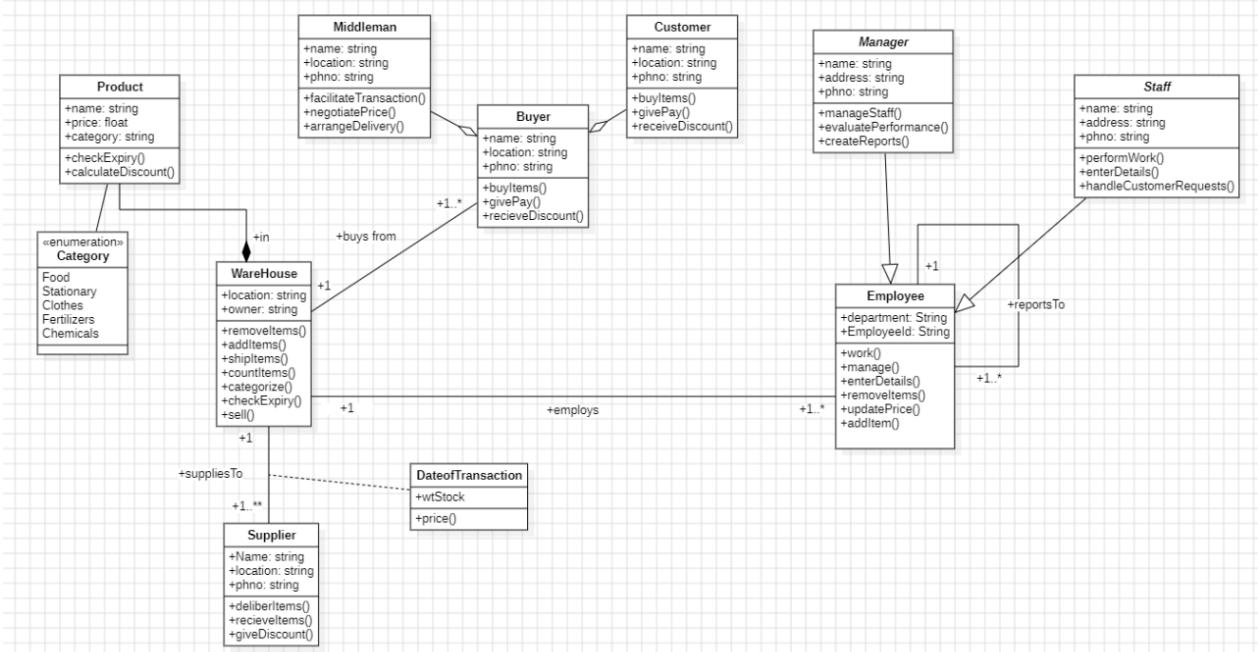


Fig 4.1:

Class diagram represents a system for managing a supply chain or retail business, showcasing the entities involved, their attributes, behaviors, and relationships. It includes classes like Product, Warehouse, Supplier, Middleman, Buyer, Customer, Employee, Manager, and Staff.

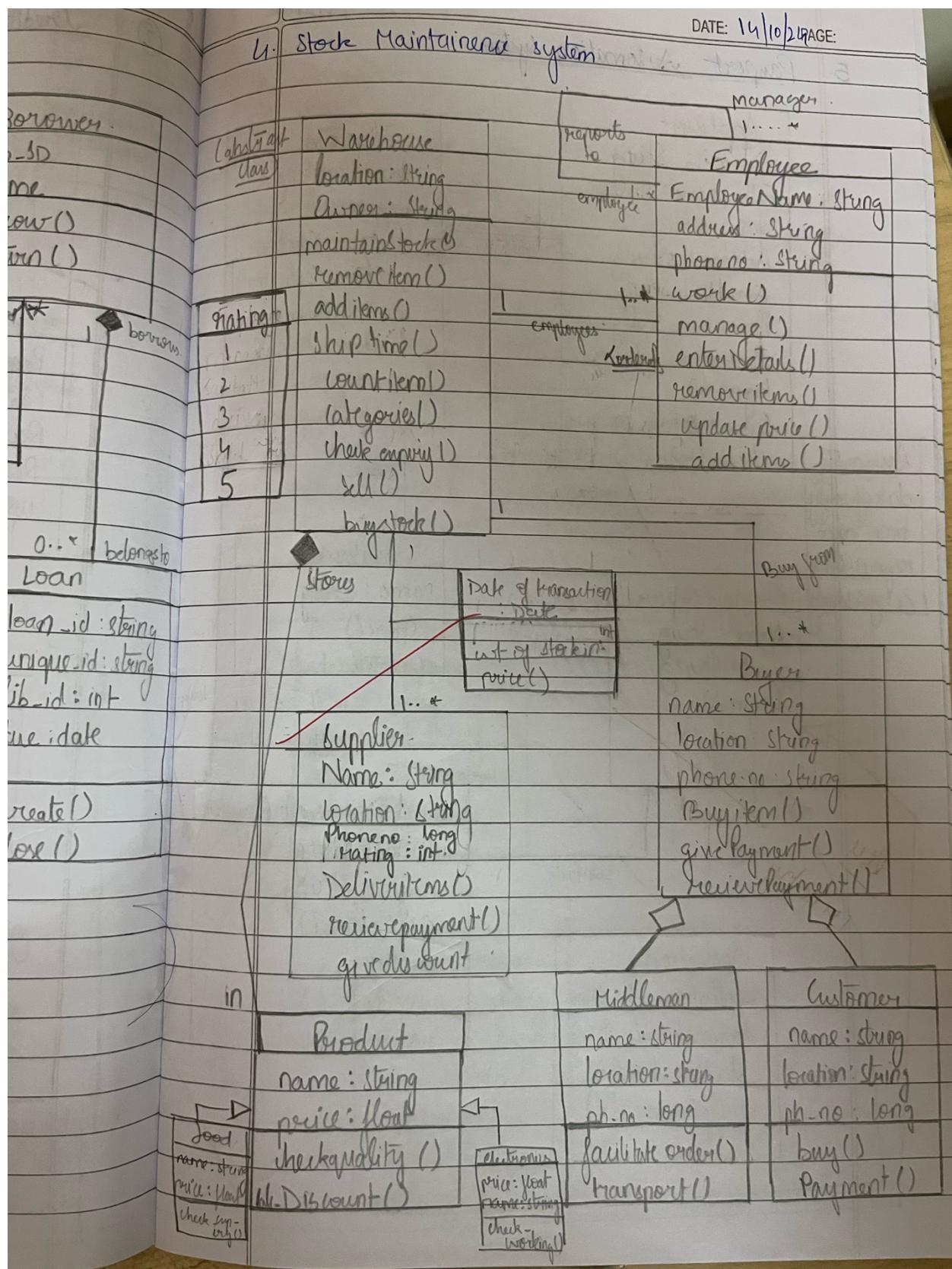
The Product class represents items categorized as Food, Stationary, Clothes, Fertilizers, or Chemicals, with methods to check expiry and calculate discounts. Products are stored and managed in the Warehouse, which handles inventory operations like adding, removing, and categorizing items. Suppliers provide products to the warehouse, while Buyers and Customers purchase them, facilitated by a Middleman who negotiates prices and arranges deliveries.

The Employee class represents workers managing warehouse or customer-related tasks, with roles divided into Staff (handling customer requests) and Managers (supervising staff and generating reports). The Date Of Transaction class records transaction details like stock and pricing.

- Warehouses being supplied by Suppliers and serving Buyers.
- Employees reporting to Managers and working within the warehouse or customer service.

This system models the complex interactions between entities in a supply chain, ensuring efficient inventory and transaction management.

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## b. Advanced State Diagram:

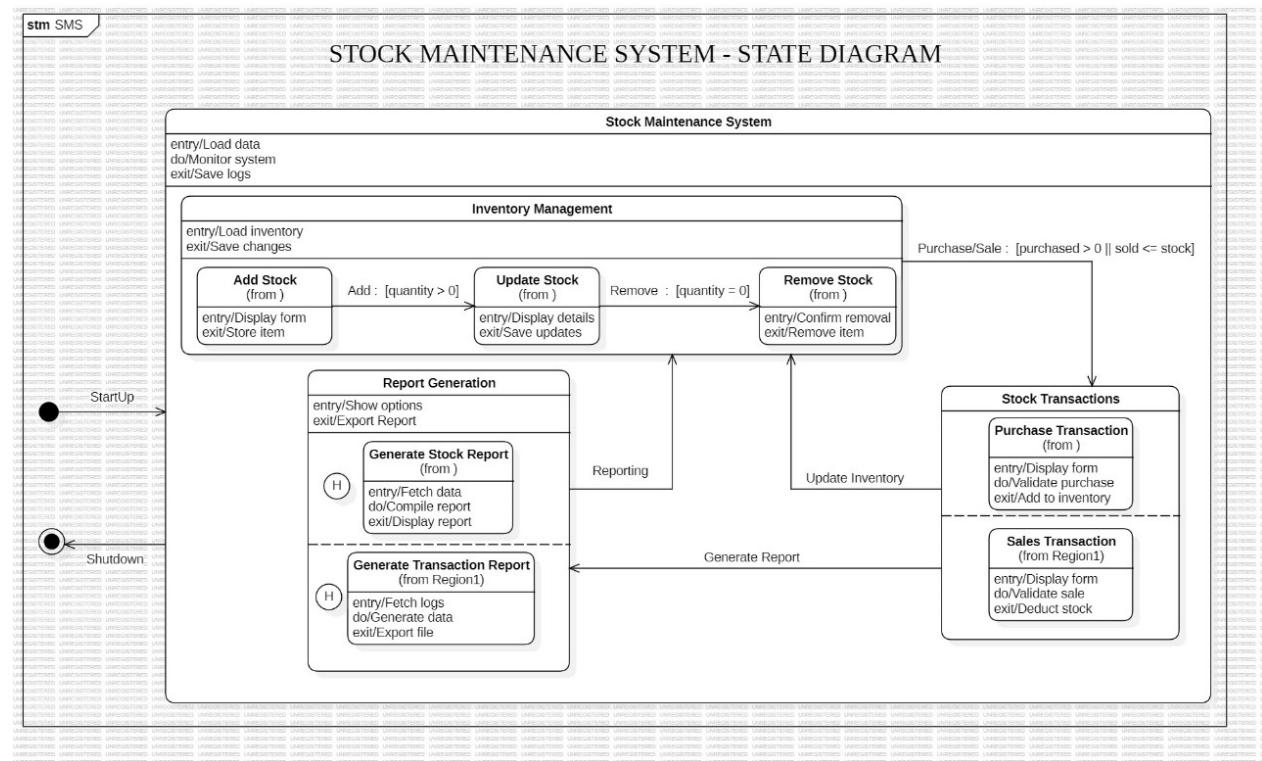
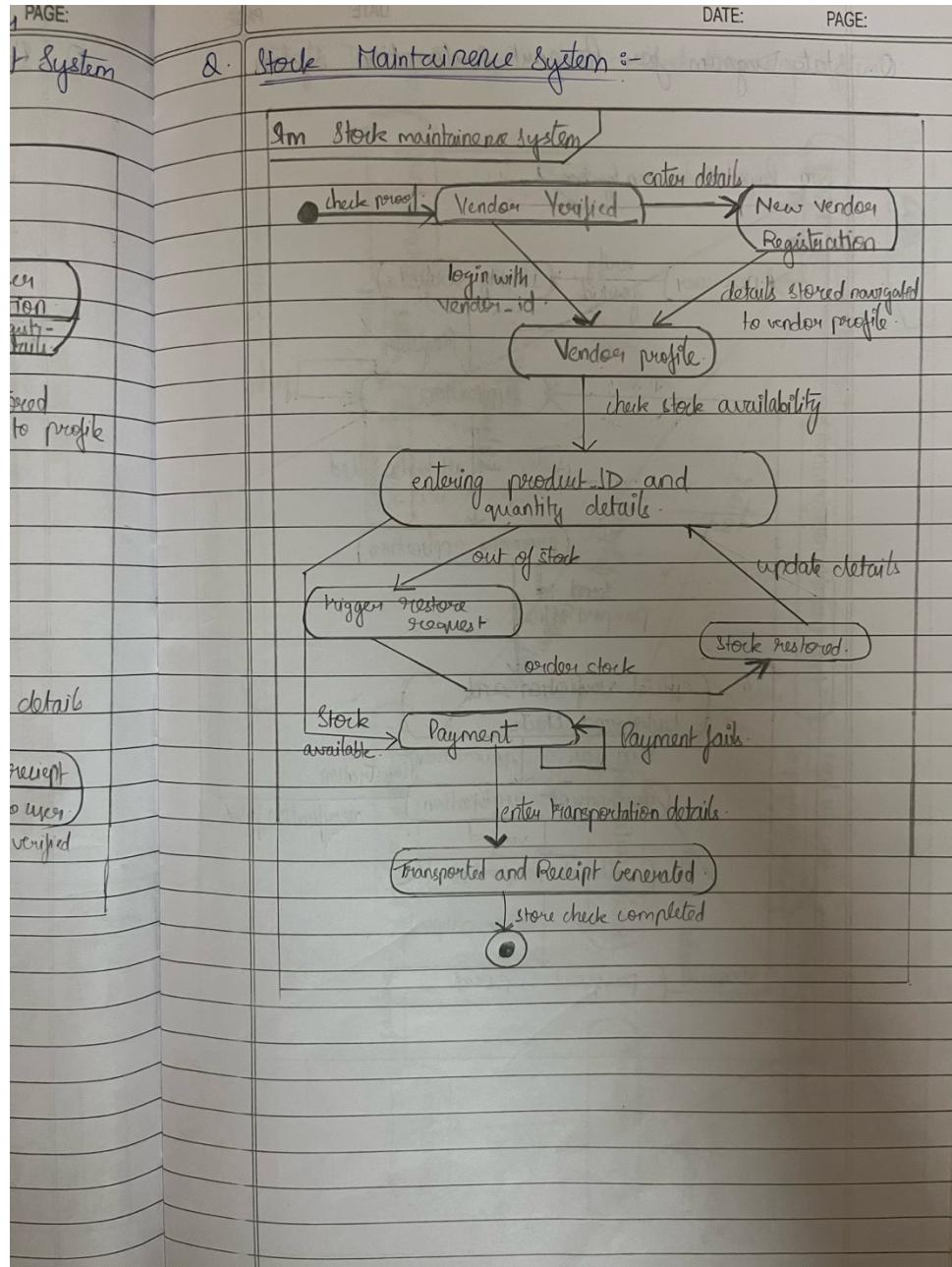


Fig 4.2:



### c. Use Case Diagram:

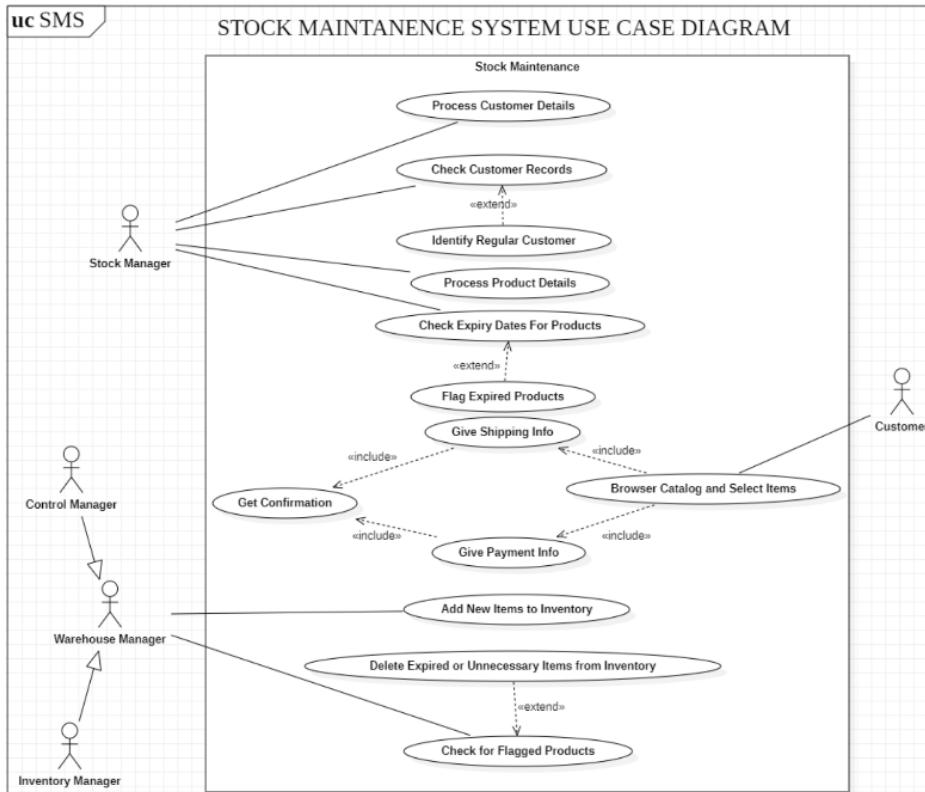


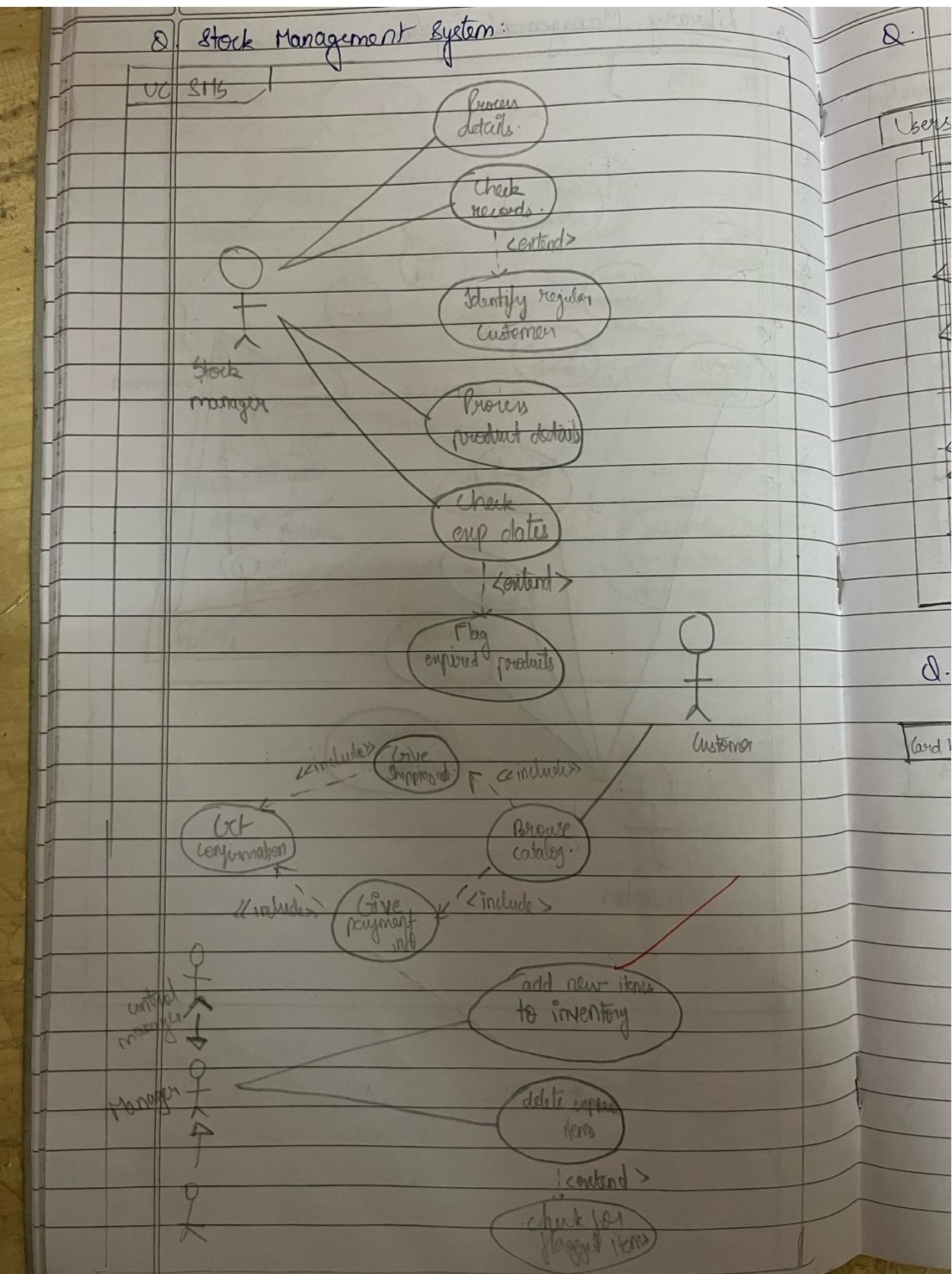
Fig 4.3:

Use case diagram represents a Stock Maintenance System, highlighting the interactions between key actors and system processes:

1. Actors:
  - Stock Manager: Handles customer and product details, checks expiry dates, and flags expired products.
  - Warehouse Manager: Adds new items to inventory.
  - Inventory Manager: Deletes expired or flagged items from inventory.
  - Customer: Browses the catalogue, selects items, and provides payment and shipping details.
2. Key Use Cases:
  - Stock Maintenance: Includes managing customer records, identifying regular customers, and processing product details.
  - Inventory Management: Adding new items and removing expired or unnecessary products.
3. Relationships:
  - Include: Mandatory actions, such as payment info during order processing.
  - Extend: Optional tasks, like flagging expired products during expiry checks.

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#### d. Sequence Diagram:

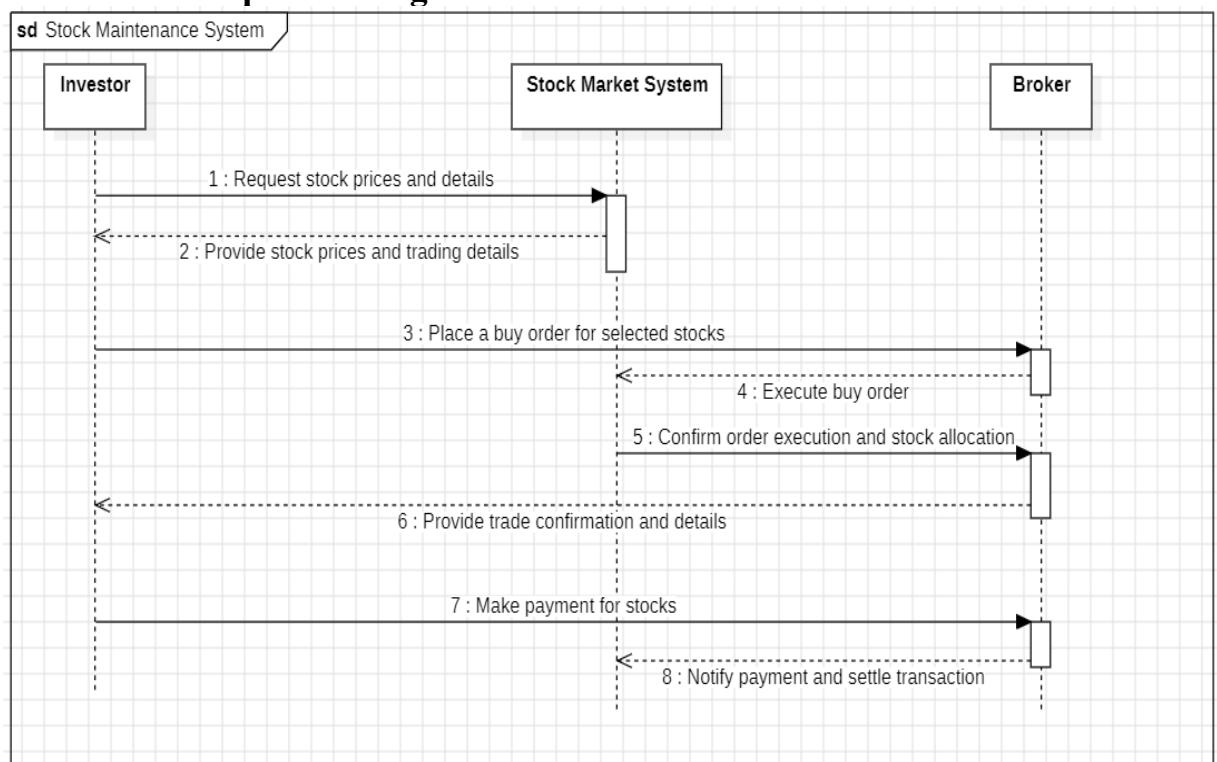
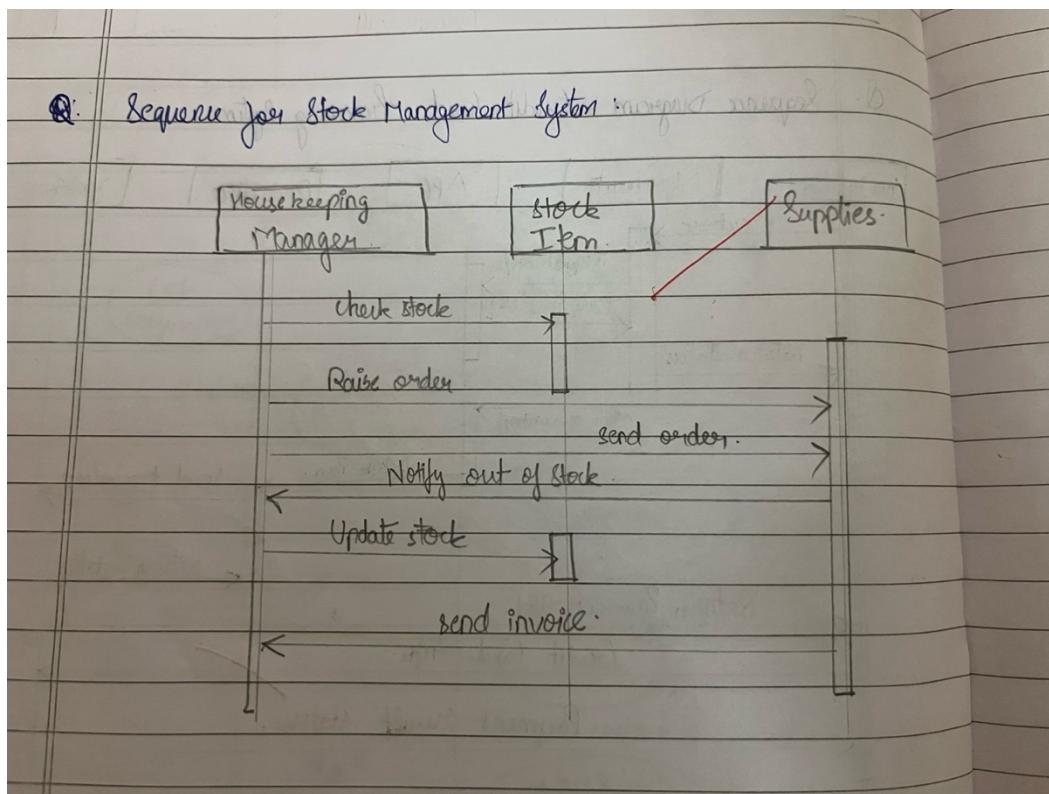


Fig 4.4:



e. Activity Diagram:

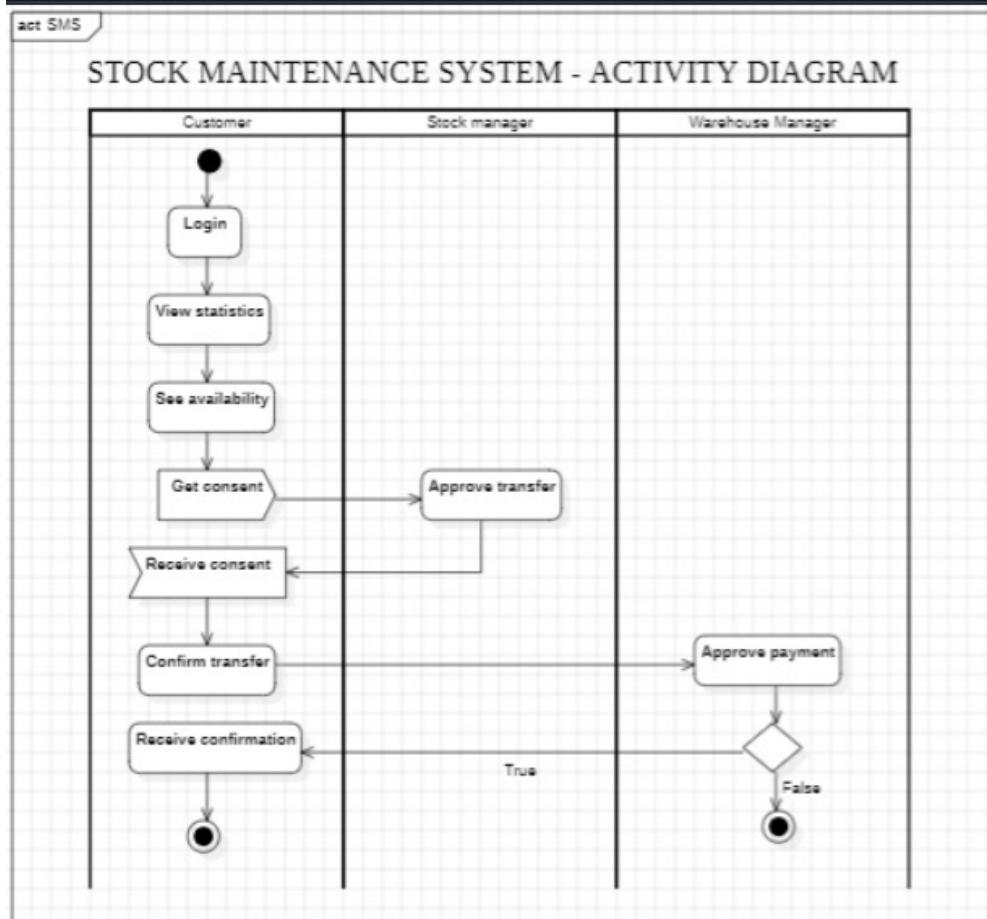


Fig 4.5:

