

STOCK MAINTENANCE SYSTEM

Problem Statement:

Develop a robust and secure Stock Management System to streamline inventory control and enhance operational efficiency for businesses. The system should:

- **Accurate Inventory Tracking:** Maintain real-time and accurate records of stock levels across all locations and warehouses.
- **Efficient Order Management:** Facilitate efficient order processing, including order entry, fulfillment, and shipment tracking.
- **Demand Forecasting:** Predict future stock requirements based on historical data, sales trends, and seasonality.
- **Seamless Integrations:** Integrate with existing ERP, POS, and e-commerce platforms.
- **Robust Reporting:** Generate comprehensive reports on stock levels, sales trends, order history, and other key metrics.
- **User-Friendly Interface:** Provide an intuitive interface for easy data entry, stock adjustments, and order management.
- **Compliance Focus:** Adhere to industry standards and regulations related to inventory management and data security.

SOFTWARE REQUIREMENTS SPECIFICATION

Hardware - 25,000
Miscellaneous - 30,000

classmate

Date 20/9/24

Page

Stock Maintenance System

1.0 Introduction

1.1 Purpose of this Document

The SRS document outlines the detailed requirement for stock Maintenance system. This system will help business to manage and track stock levels accurately.

1.2 Scope of this Document

It aims to manage stocks of various products. It helps to monitor and record purchases of the various stocks. The system is intended for business and retail stores.

1.3 Overview

This SMS will help in tracking realtime stock levels and generate reports based on these stock levels, and purchases.

2. General Description

This stock Maintenance system will help in the process of managing stocks. The primary users will be business managers, store employees and owners of various business.

3. Functional Requirements

- The system should be able to track the quantity of stock available for each item.

- Automatically generate purchase order if product quantity goes below the minimum level.

- The system should be able to generate reports based on current stocks, sales trends.

- The system should display alerts if it goes below low.

4. Interface Requirements

The system will feature a user-friendly interface for stock management. It will also provide APIs to integrate with other systems like sales platform.

5. Performance Requirements

o The system should handle real-time stock updates for 1000 products and 10,000 individuals.

o Reports should be generated within 5 sec.

6. Design Constraints

o The system should be compatible with modern web browsers like Chrome.

o The system must support barcode scanning.

7. Non-functional requirements

Security - The system must have implemented access control to protect sensitive information.

Uptime should be atleast 99.99%.

8. Preliminary Schedule

The project is estimated to be complete within 4 months and total development budget of 1 lac.

Requirements - 1 month

Design Phase - 0.5 month

Development Phase - 2 months

Testing Phase - 0.5 months

Development - 35,000; Miscellaneous -

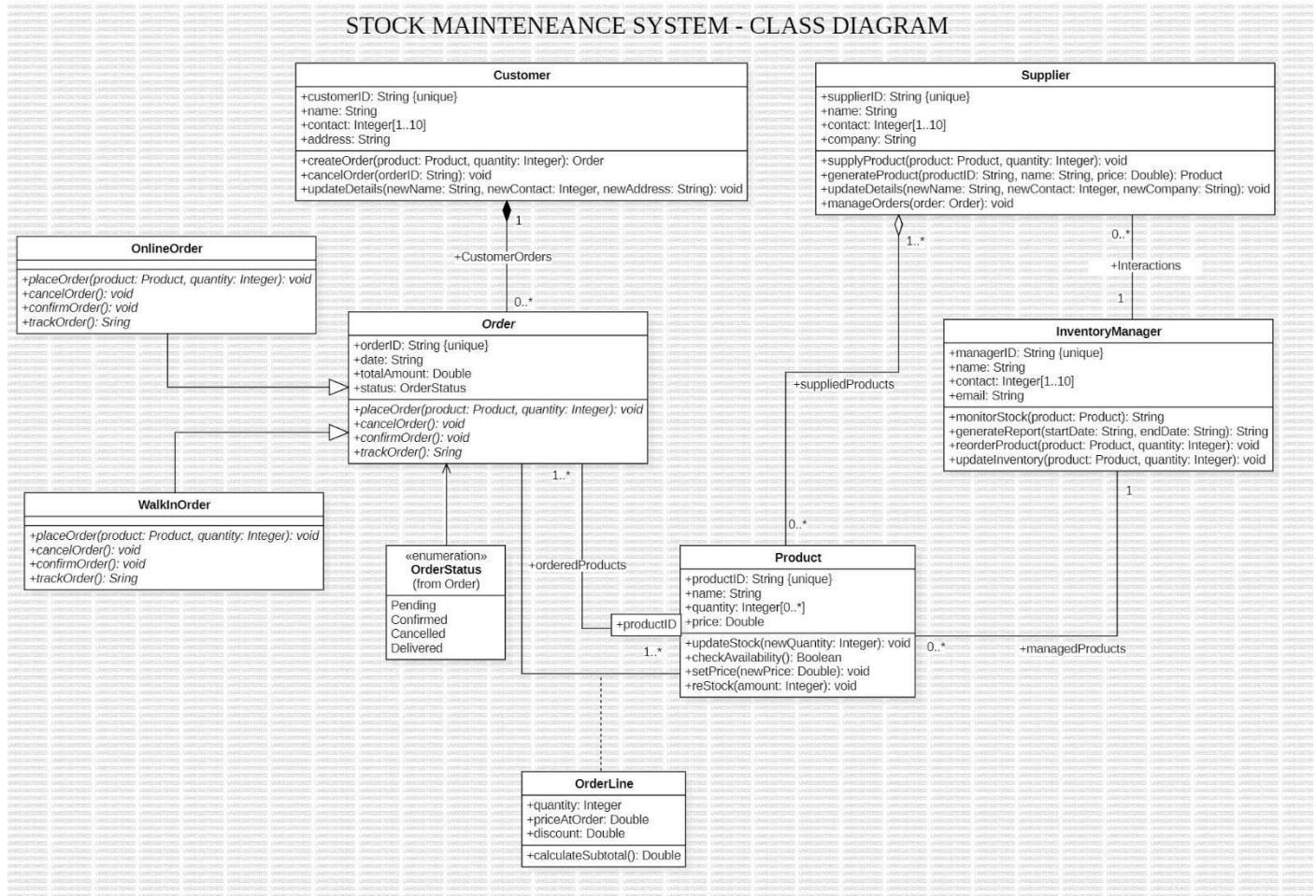
Software License - 10,000

30,000

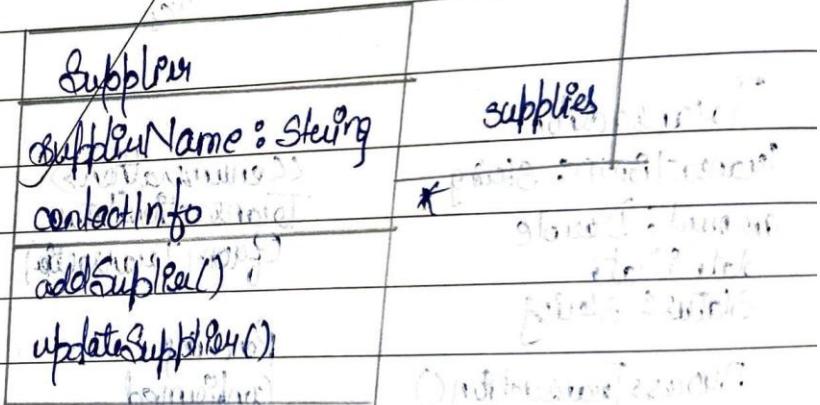
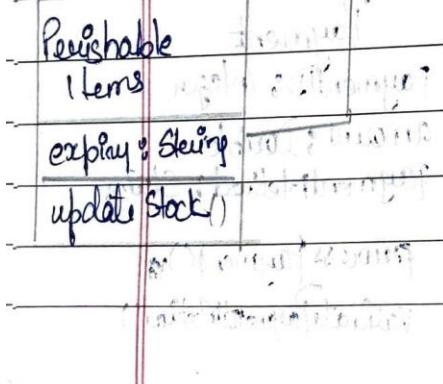
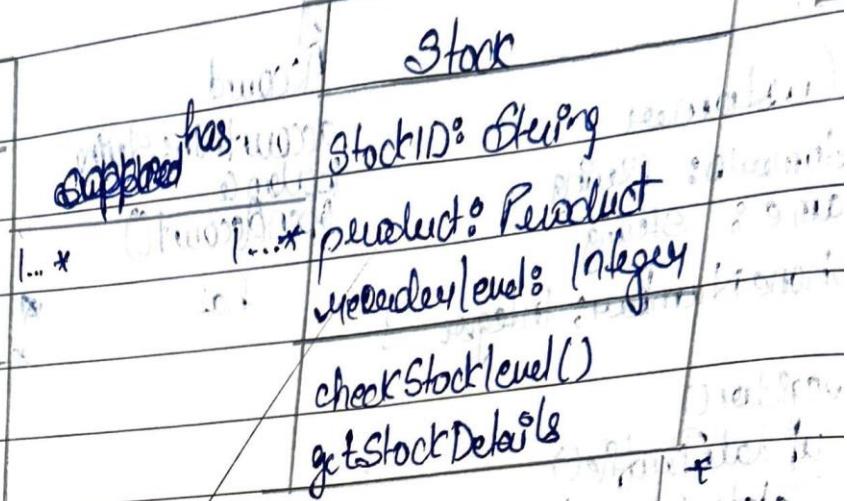
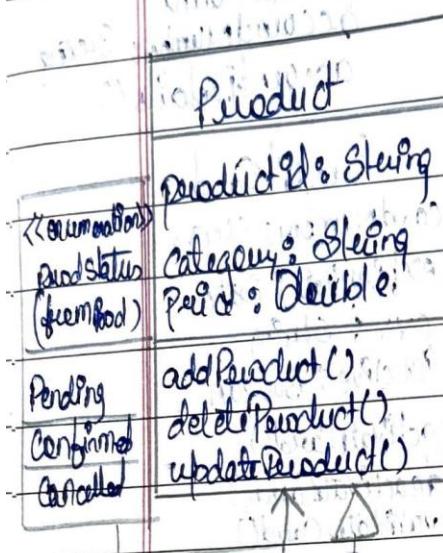
Hardware - 25,000

UML DIAGRAMS

CLASS DIAGRAM



Stock Management System

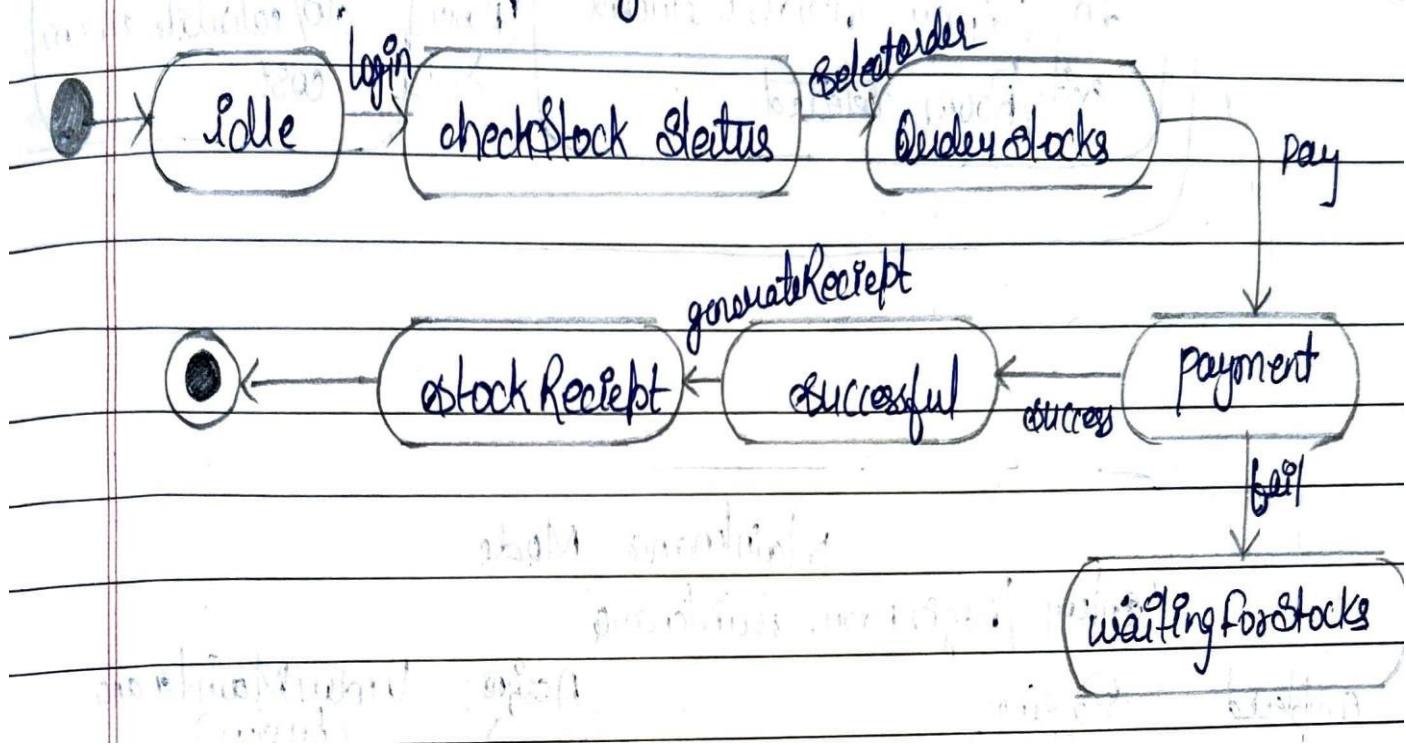


Brief descriptions:

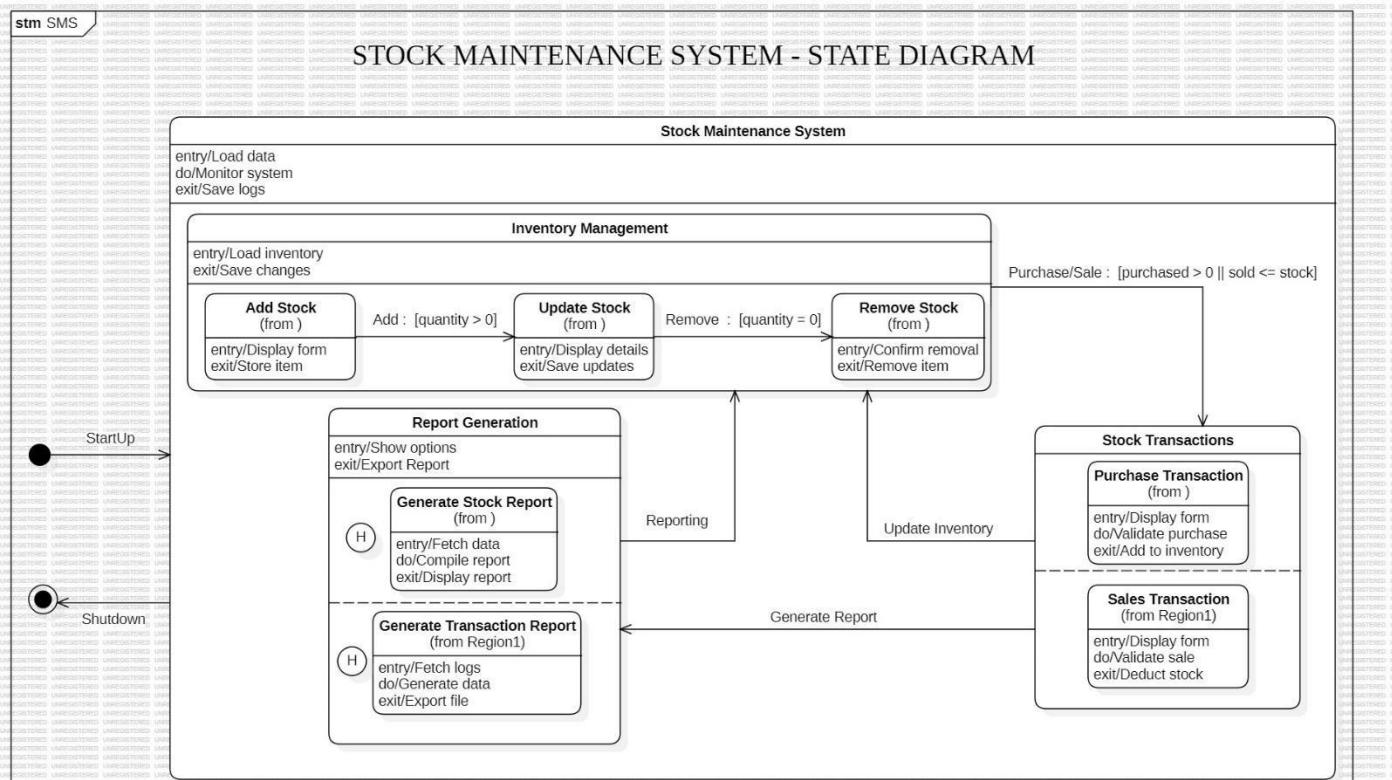
1. **Customer:** Represents a customer with attributes like customer ID, name, contact, and address.
2. **Supplier:** Represents a supplier with attributes like supplier ID, name, contact, and company.
3. **Product:** Represents a product with attributes like product ID, name, price, and quantity.
4. **Order:** Represents an order with attributes like order ID, date, total amount, and status.
5. **OnlineOrder:** Represents an online order, inheriting from the Order class.
6. **WalkinOrder:** Represents a walk-in order, inheriting from the Order class.
7. **InventoryManager:** Represents the manager responsible for managing inventory, with methods for monitoring stock, generating reports, and reordering products.
8. **OrderLine:** Represents a line item within an order with details like product, quantity, price, and discount.
9. **Interactions:** Represents interactions between customers, suppliers, and the inventory manager.

SIMPLE STATE DIAGRAM

40 Stock Maintenance System

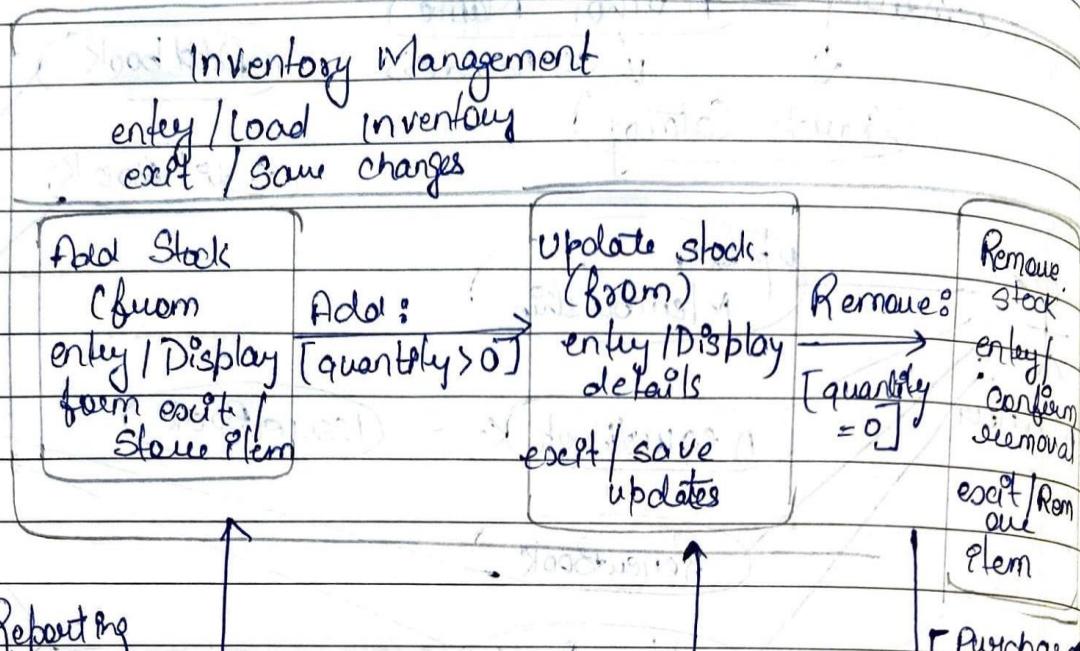


ADVANCE STATE DIAGRAM



Advanced State Diagram

STM 'SMS'



Report Generation

entry / show options
exit / export report

Generate Stock Report
(from)

entry / fetch data
exit / display report

Generate Transaction Report

entry / fetch logs
exit / export data

Stock Transactions

Purchase Transaction
(from)

entry / display form
do validate purchase
exit / Add to inventory

Sales Transaction

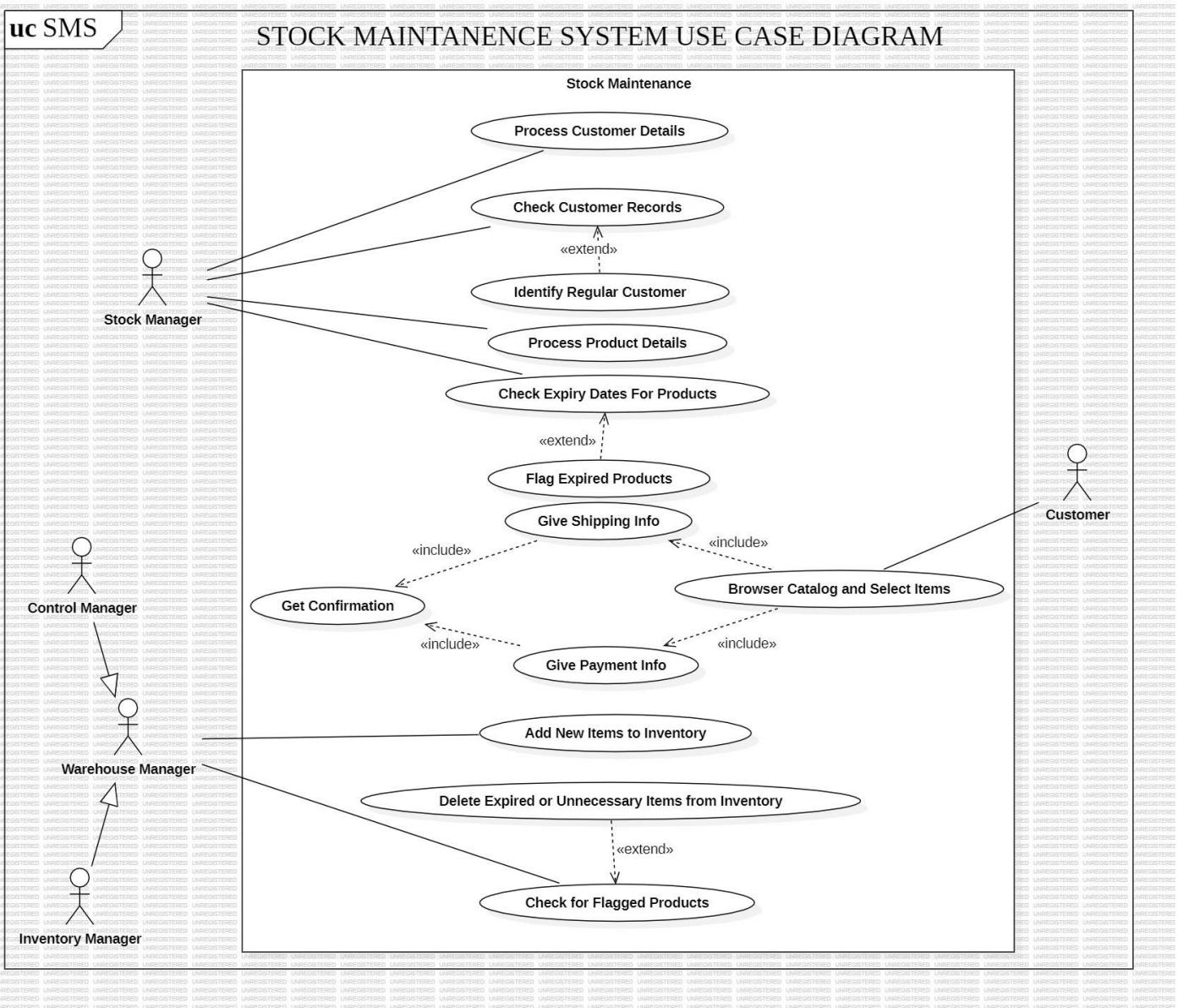
(from Region 1)

entry / Display form
exit / Deduct stock

Brief Description:

- **StartUp:** System starts and loads data.
- **Shutdown:** System shuts down and saves logs.
- **Inventory Management:** System transitions to inventory management state.
- **Add Stock:** Transitions to add stock state when new stock is added.
- **Update Stock:** Transitions to update stock state when existing stock levels are modified.
- **Remove Stock:** Transitions to remove stock state when stock is removed.
- **Report Generation:** Transitions to report generation state.
- **Generate Stock Report:** Transitions to generate stock report state.
- **Generate Transaction Report:** Transitions to generate transaction report state.
- **Stock Transactions:** Transitions to stock transactions state.
- **Purchase Transaction:** Transitions to purchase transaction state.
- **Sales Transaction:** Transitions to sales transaction state.

USE CASE DIAGRAM



Stock Maintenance System use case

Process Customer Details



Check customer Records
Reextends

Stock Manager

Identify regular customer

Process Product Details

Check Expiry Dates for Products

↑ Extends

Flag expired products

Customer Manager

<includes> Give Shipping Info

<includes>

Browsing catalog and selected items

<include>

Give Payment Info

<includes>

Warehouse Manager

Add New Items to Inventory

Delete expired or unnecessary items from inventory

↓ Extends

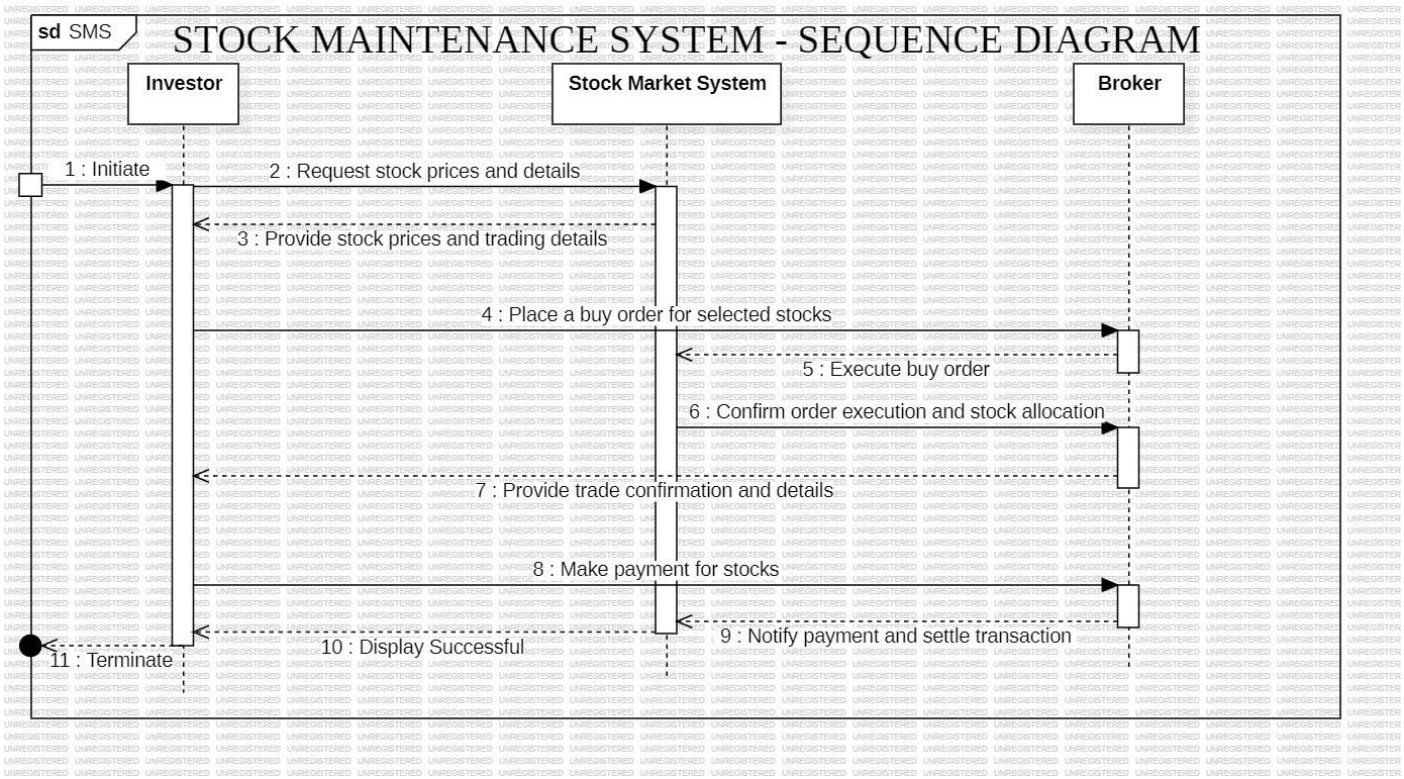
Inventory Manager

Check for flagged products

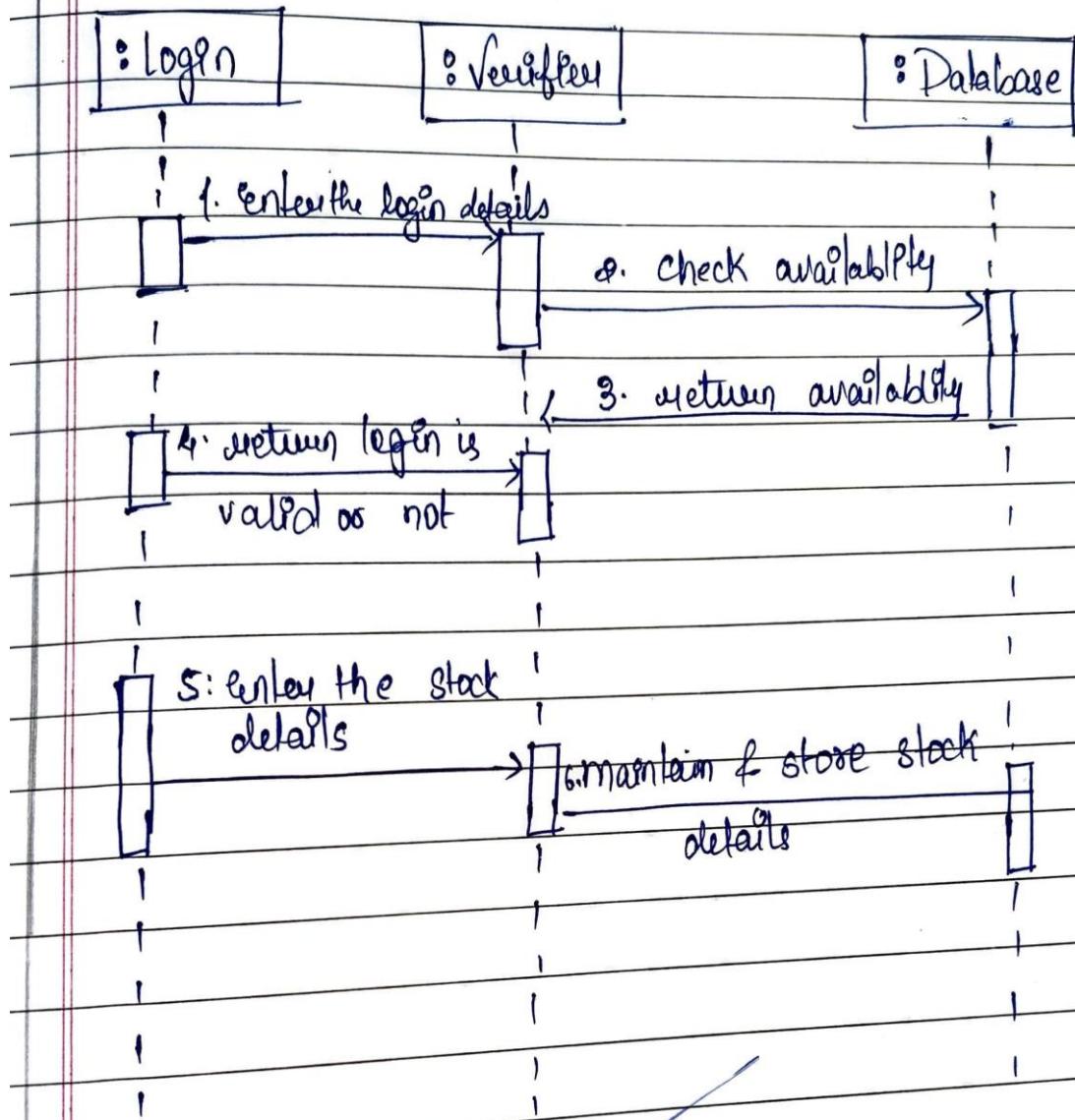
Brief descriptions:

- **Stock Maintenance:** The overarching use case encompassing all stock-related activities.
- **Process Customer Details:** Use case for managing customer information.
- **Check Customer Records:** Use case for verifying customer details.
- **Identify Regular Customer:** An extension of Check Customer Records, used to identify frequent customers.
- **Process Product Details:** Use case for managing product information.
- **Check Expiry Dates For Products:** Use case for checking and tracking product expiration dates.
- **Flag Expired Products:** An extension of Check Expiry Dates, used to flag expired products.
- **Get Confirmation:** Use case for obtaining confirmation from relevant parties (e.g., Warehouse Manager) on various actions.
- **Give Shipping Info:** Use case related to providing shipping information.
- **Give Payment Info:** Use case related to managing payment information.
- **Browser Catalog and Select Items:** Use case for customers to browse the product catalog and select items.
- **Add New Items to Inventory:** Use case for adding new products to inventory.
- **Delete Expired or Unnecessary Items from Inventory:** Use case for removing expired or obsolete products from inventory.
- **Check for Flagged Products:** An extension of Delete Expired or Unnecessary Items, used to specifically check for and remove flagged products.

SEQUENCE DIAGRAM



Stock Maintenance System

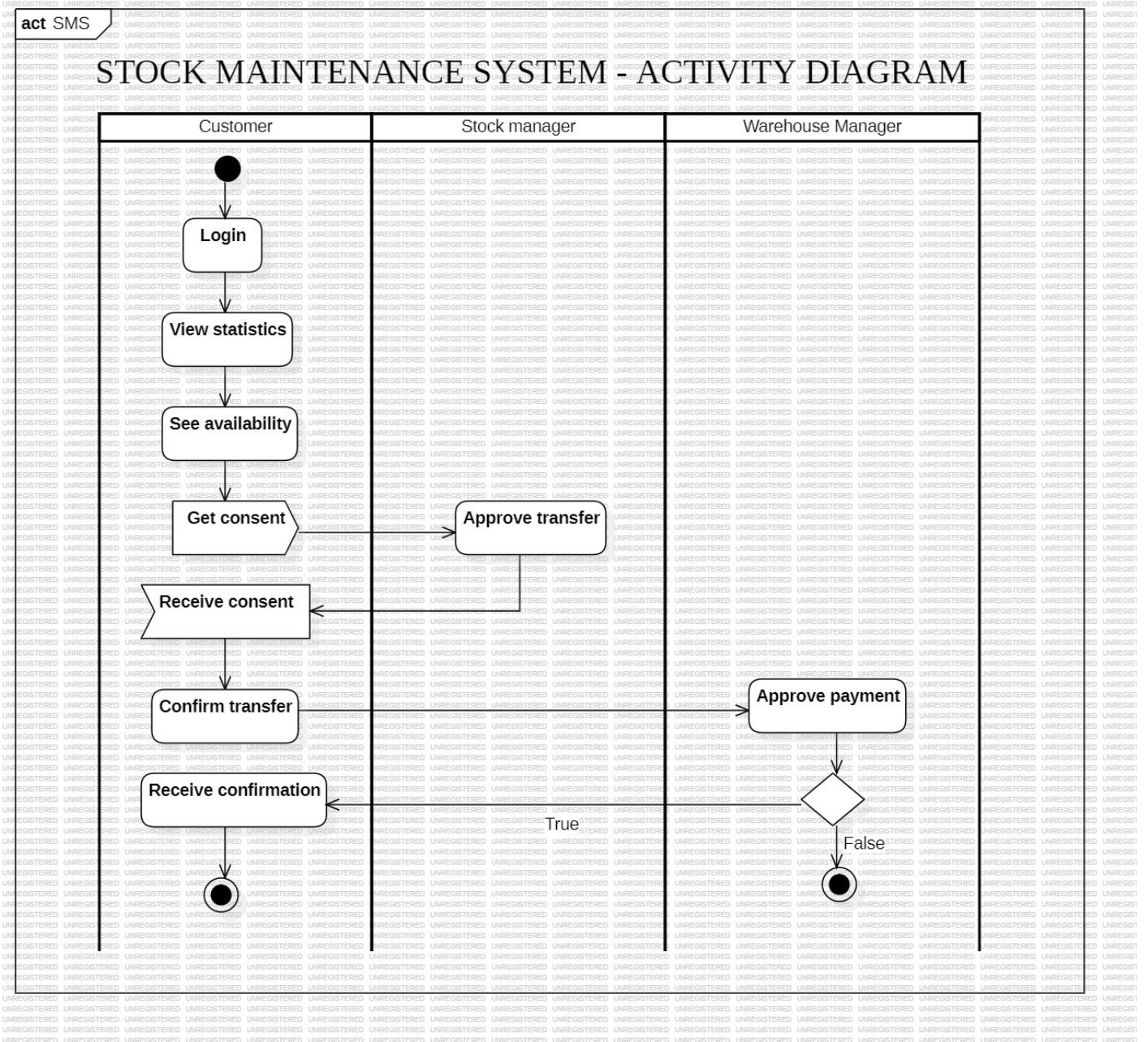


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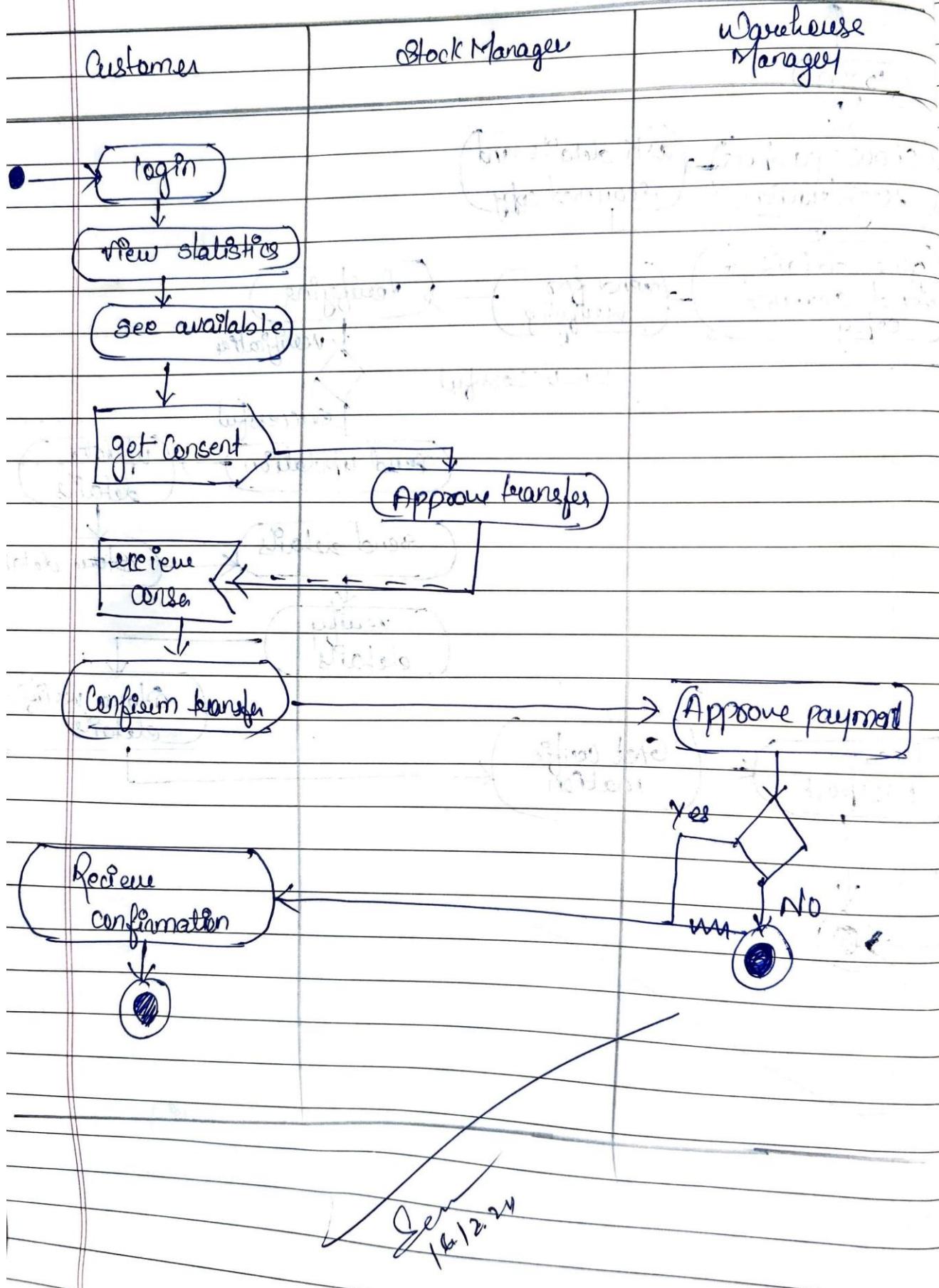
Brief descriptions:

1. **Initiate:** The investor initiates the stock trading process.
2. **Request stock prices and details:** The investor requests stock prices and trading details from the Stock Market System.
3. **Provide stock prices and trading details:** The Stock Market System provides the requested information to the investor.
4. **Place a buy order for selected stocks:** The investor places a buy order for selected stocks with the Stock Market System.
5. **Execute buy order:** The Stock Market System executes the buy order and allocates the stocks.
6. **Confirm order execution and stock allocation:** The Stock Market System confirms the order execution and stock allocation to the investor.
7. **Provide trade confirmation and details:** The Stock Market System provides trade confirmation details to the investor.
8. **Make payment for stocks:** The investor makes payment for the stocks.
9. **Notify payment and settle transaction:** The Stock Market System notifies the broker about the payment and settles the transaction.
10. **Display Successful:** The Stock Market System displays a successful transaction message to the investor.
11. **Terminate:** The trading process is completed.

ACTIVITY DIAGRAM



5. Stock Maintenance System



Brief descriptions:

Customer:

- **Login:** The customer logs into the system.
- **View statistics:** The customer views stock availability statistics.
- **See availability:** The customer checks the availability of a particular product.
- **Get consent:** The customer requests consent from the Warehouse Manager for a transfer.
- **Receive consent:** The customer receives confirmation from the Warehouse Manager.
- **Confirm transfer:** The customer confirms the transfer.
- **Receive confirmation:** The customer receives confirmation of the completed transfer.

Stock Manager:

- **Approve transfer:** The Stock Manager approves the transfer request from the customer.

Warehouse Manager:

- **Approve payment:** The Warehouse Manager approves the payment for the transfer.