GTU Department of Computer Engineering
CSE 222/505 - Spring 2021
Project Report 1
Group-9

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Warehouse Automation

Problem Definition

This warehouse automation application provides good features for companies that needs fast and si mple UI for their product supplying. There are many supermarket chains that keep track of their stoc ks manually and this causes conflicts between the warehouse and branches. Some of these problems are inconsistencies in registration of the products, products being delivered later than expected, qua ntities of the products in the branches not matching the warehouse's stock , since the stock is not trackable, products cannot be delivered to the branches at the predicted time.
It is aimed to eliminate these problems for companies with the automation system we will prepare.

Functional Requirements

- The system shall provide one admin user initially.
- The system shall provide addition and deletion of user operations managed by admin.
- The system shall let users to login to the system with their information.
- The system shall assign roles to users.
- The system shall provide addition, deletion and searching of branches.
- The system shall provide product categorization.
- The system shall provide addition, deletion and searching of products.
- The system shall provide the uniqueness of each product in the warehouse.
- The system shall inform authorized users in case of stock shortage of products.
- The system shall let branch users to request products from warehouse.
- The system shall let warehouse users to accept or reject branch requests.
- The system shall provide to inform authorized users in case of rejection and acception of branch requests.
- The system shall provide the tracking of products transferred to branches.
- The system shall store users' passwords encrypted.Posts will be edited only by its creators and administrators.
- The system shall provide accesing/searching all product transfers.
- The system shall provide automatic selection of couriers for shipment operations.

Non-functional Requirements

Utility

- The system shall be user friendly.
- The system shall be constructed by a trained administrator firstly then can be used by non-expert personal.
- The system UI must be not complex for users.

Reliability

- The system should give error messages against the illogical process attempts.
- The system should provide error handling mechanisms to prevent system crashes.

Performance

- The system would have veriy little amount of data at the begining, but as the users use the system, the amount of data in the system increases and here, the system needs to increase efficincy by using fast algorithms on top of these data. The system targets this in terms of efficiency.

Space requirements

- The system will store old users' data on the server side. These are the login information of the users,products,requests that were created by the users. Since, all these data tend to be enlarged as the new users register the system, and the users make use of the system. Therefore the system sholud be scalable.

Supportability

- The system should be portable, so moving from one OS to the another OS shall not create any problem.

User Interface

- All the user operations will be done through any standart PC and user will not need another hardware.

Domain Requirements

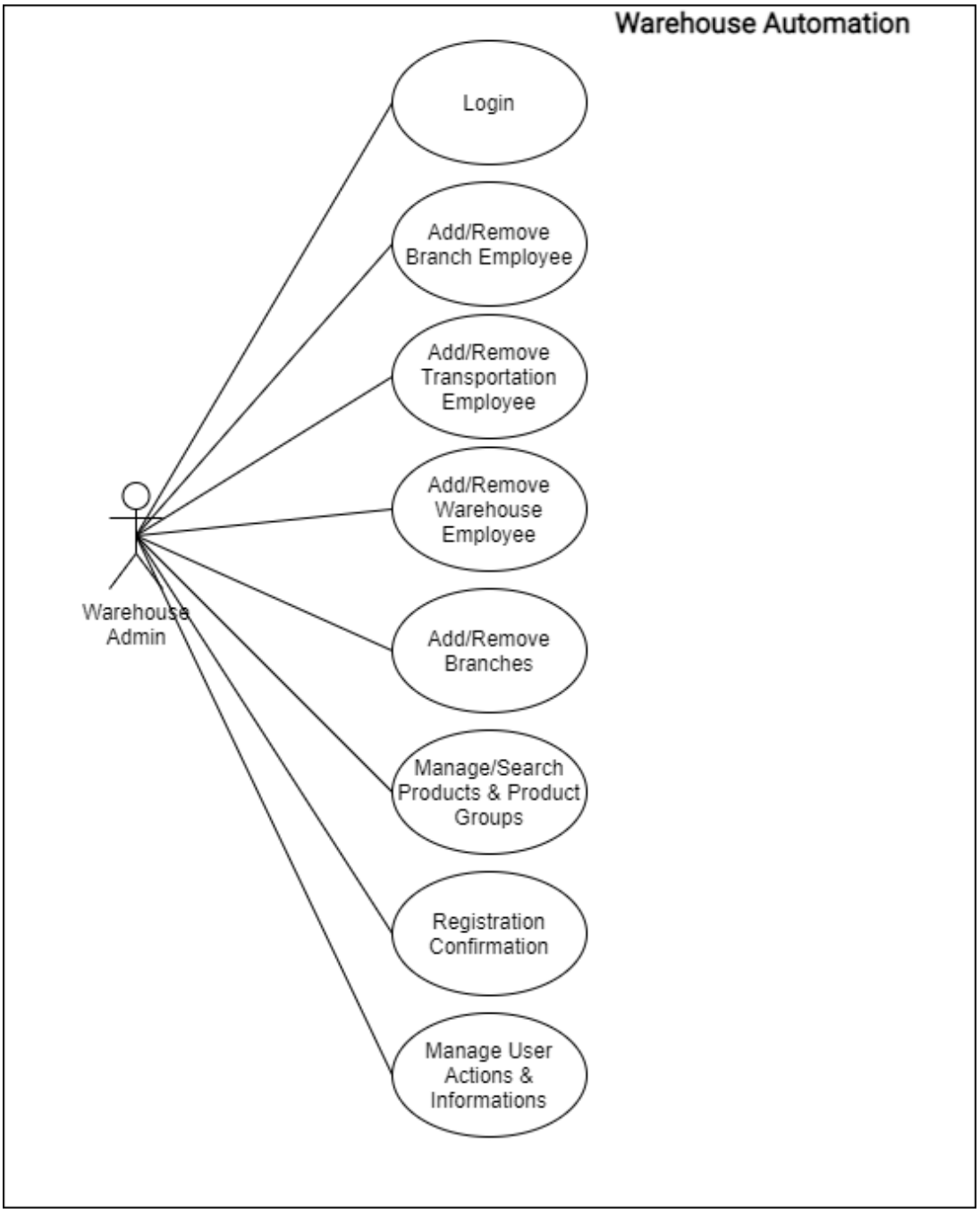
- The system server shall work on Windows, Linux –Ubuntu and Mac Os.

Users of the system

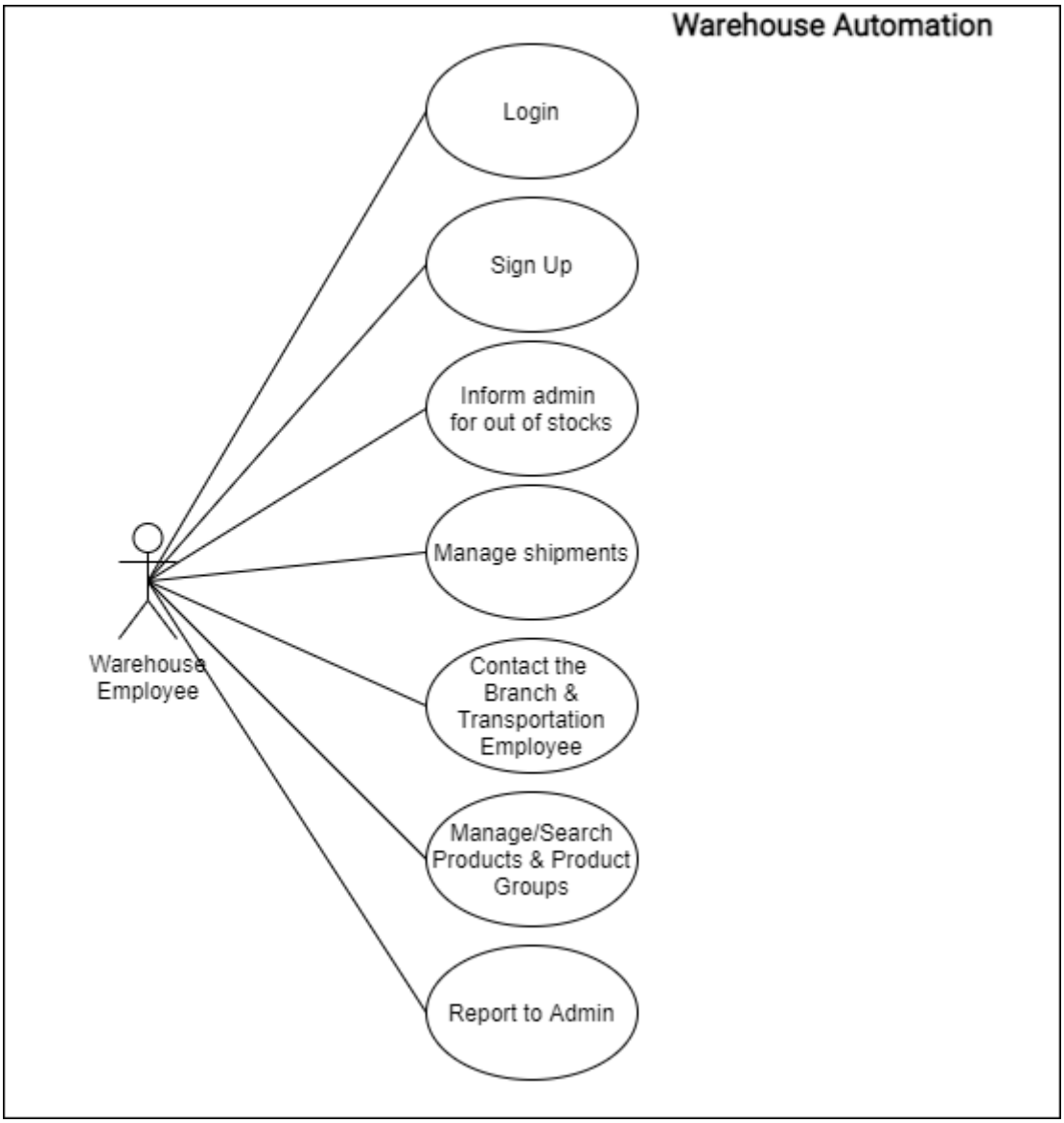
- Warehouse Admin
- Warehouse Employee
- Branch Employee
- Warehouse Transportation Employee

Use Case Diagrams

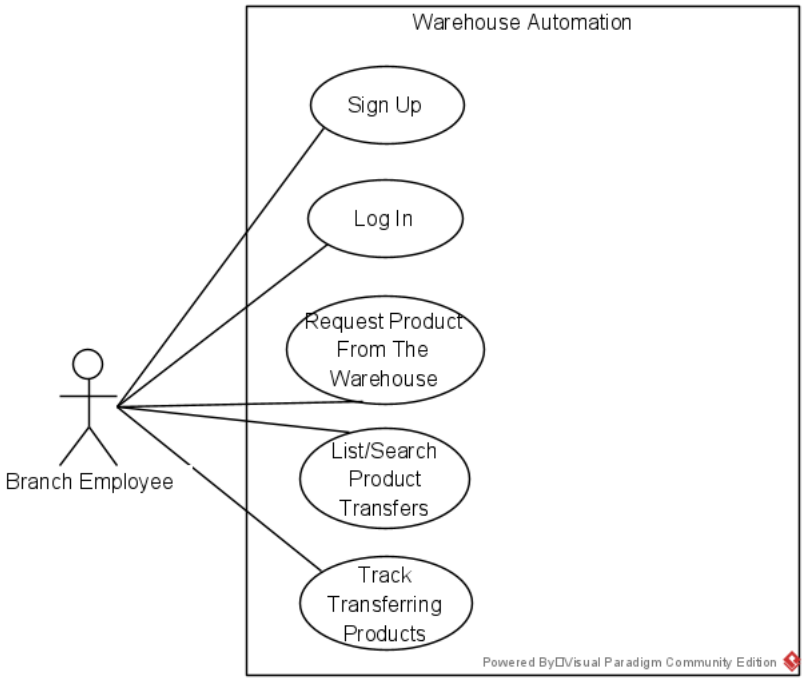
Warehouse Admin Use Case Diagram



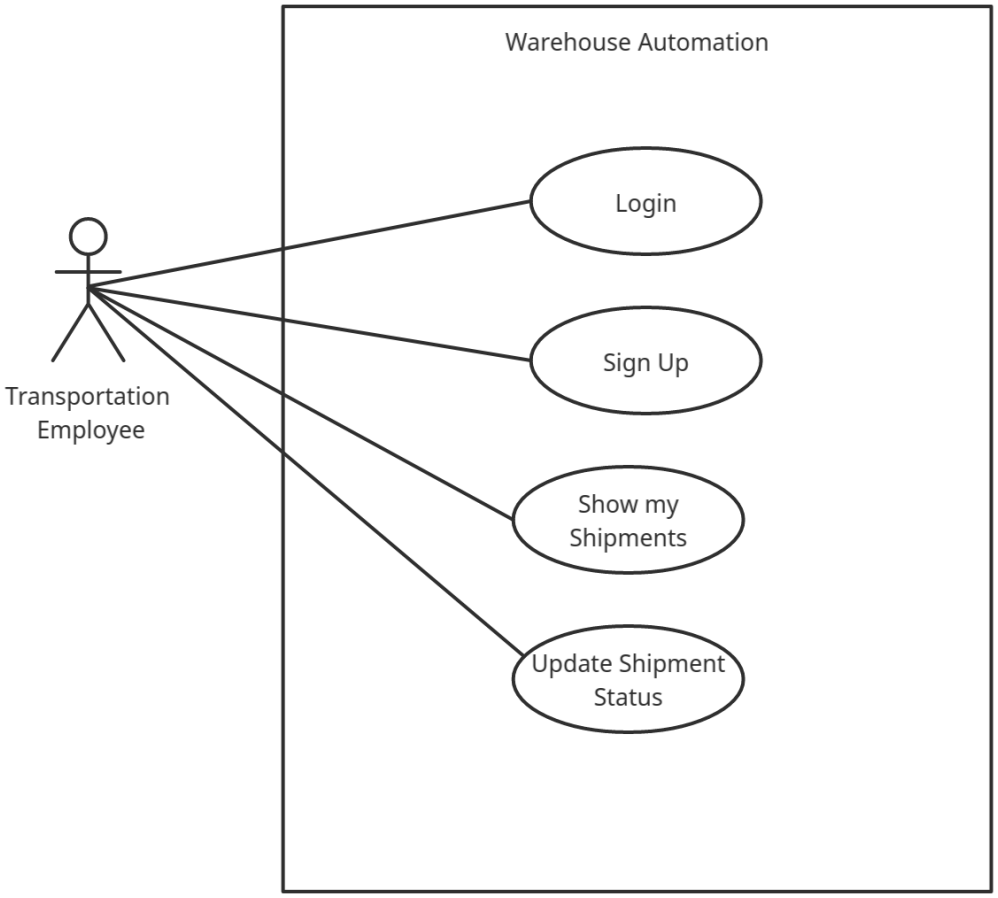
Warehouse Employee Use Case Diagram:



Branch Employee Use Case Diagram:

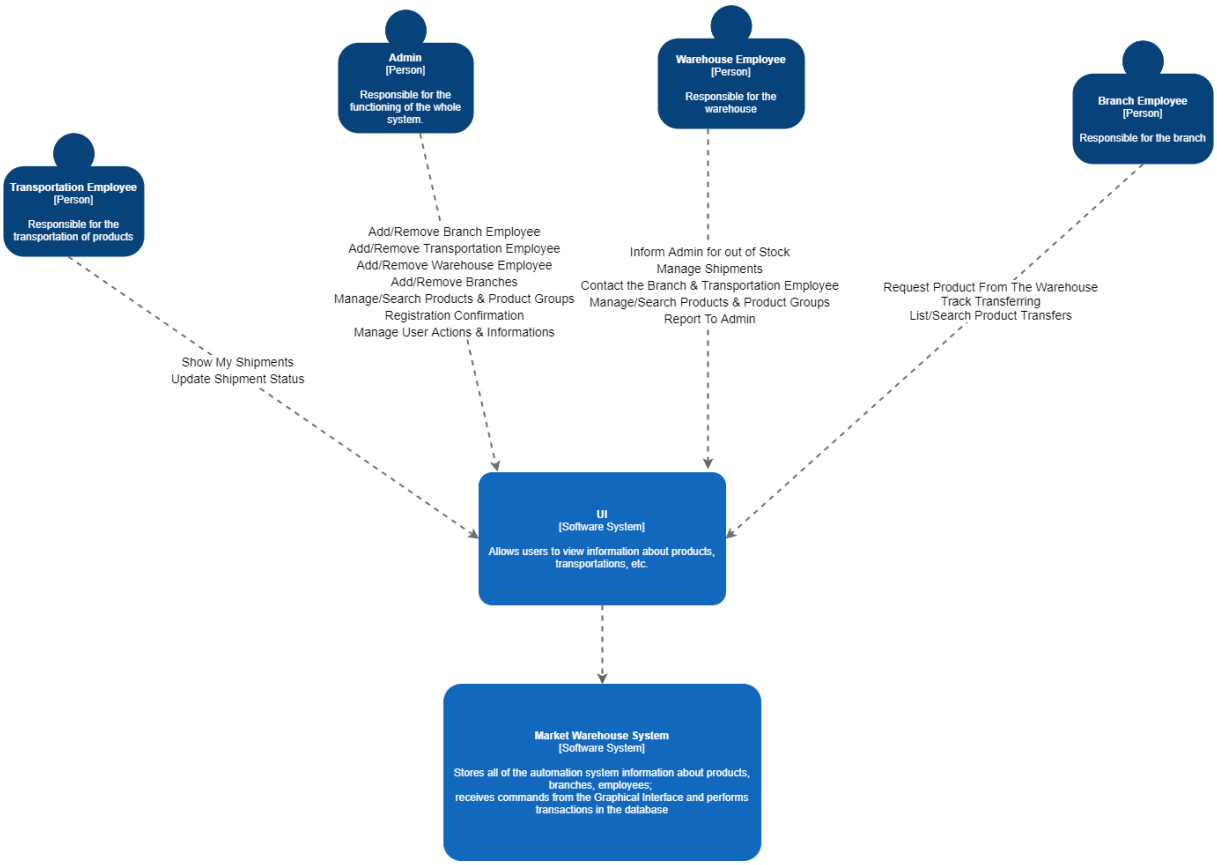


Warehouse Transportation Employee Use Case Diagram:



C4 Diagrams

Level 1: Context Diagram



Level 2: Container Diagrams