

# **ARM Limited**

## **CS262-Design Document**



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# 1 Project Description

We are facing not just a challenging business environment but a rapidly changing one. There is always room for improvement. Running a Distribution System without a proper application can lead to many problems. In the warehouse, by not managing your stock count, cost price changes and not being able to view your stock position can have drastic consequences. The company has no way of knowing how much stock is left in your warehouses and how much you've sold out. If you don't know how much you have left, you can't restock your inventory which will cause delays and frustrate your customers. It is important to track your inventory so that you can plan ahead effectively. The company is unable to keep a record of its employees, day-to-day sales and profits, customer information and transportation cost. Searching a 10-year-old record for the company is extremely challenging. Speed is also critical when ensuring that you get the correct items picked, packed and distributed to the correct address and client. Understanding the right approach to solving these challenges is essential for distributors to adapt, transform and differentiate themselves in this new challenging business landscape.

We are all aware that we live in an increasing electronic world. Simply put if the Distribution Company is not using a proper, well-managed application then it is facing commercial suicide. So, our Project aims to develop such an application for the Company that can address all the above problems and help the company improve the distribution system and management of the company processes.

The administrator of the application is the General Manager of the company. He can hire the company employees (sales agent), riders (to deliver the packages) and an inventory Manager. He is in the charge of each module. Each employee would have their individual accounts. The inventory Manager is in charge of the warehouse, keeping the record of the product as being delivered by the Manufacturing Company. The sales agent will deal with the clients, their orders and assign the delivery task to the riders depending upon the location assigned to them. The rider would be given a specific area in which he would have to deliver all the goods and complete all its orders in the given time. Further bonuses will be given according to the statistic chart at the end of the month.

The Distribution Company that we have plumped for is the Shoe Distribution Company. A well-recognized shoe Manufacturing Company ADIDAS is our manufacturer. The implementation of this application will work with a company called ARM. As a distribution company we deliver the products to numerous retailers, wholesalers, concept stores, buyers and agents all over the Lahore. It operates on its own as it is an independent company establishing a connection between the products and the client.

The Record and performance are also evaluated automatically in order to provide the appraisal. The company established the excellent track record for the best customer satisfaction. As a footwear sourcing company, we also provide sustainable material sourcing options to help our clients choose a greener path. An organization's main focus must be to satisfy its customers and in order to do so we are providing a refund policy for the client and email verification after the order had been sent to them. Sometimes, the rider doesn't deliver the parcel to the exact location. So, to overcome this problem we provide the rider with the exact location

of client on Google map. The client should place the minimum required order then the sales agent would request the inventory manager for the confirmation of the stock. The application also maintains the daily attendance of the employees, the scheduling of the riders and fuel consumption cost. The clients would also be informed of the special offers. Our system is cited as the most efficient tool that is at the company's disposal.

The application offers three modes.

- Manager authorized mode.
- Sales Agent authorized mode.
- Inventory Supervisor mode
- Rider authorized mode.

## 2 Project Features:

- User interface screen will be operated according to the role of the person who signs in.
- Client can pay in installments or pay in advance.
- Rider will be informed with the stock availability during placing orders. If the required order of the client is out of stock, order could not be placed and an email would be sent to the Inventory Supervisor to inform about stock unavailability.
- Sales Agent will assign the location of decided area to the Rider. The rider will take order and will be delivered the very next day.
- Rider have facility of using maps that give the route of minimum journey to deliver all the orders.
- Maintain record of Attendance of all employees.
- Management of salaries and bonuses for employees.
- Password reset feature for users account via Email.

## 3 Technology Stack

Language	1. Python
IDEs	1. Visual Studio Community 2. Visual Studio Code

## 4 Project actors

Actor Name	Manager
Actor Type	Primary
Description	Manager can hire and fire employees to the Company. He can view all the records or monthly reports and stock. He also has to check the performances at all times, check inventory. He gives monthly incentives to all the employees according to their performance.

Actor Name	Inventory Supervisor
Actor Type	Primary
Description	This system will also have an inventory supervisor. He will manage inventory in the warehouse and will notify the general manager whenever a new order should be made. He can buy stock from the supplier after the approval of the General Manager. He will provide authorization to the rider after checking the stock from the warehouse.

Actor Name	Sales Agent
Actor Type	Primary
Description	Sales Agent will also have an account of its own. He will keep a track of all the orders of the riders and their information. He will assign a specific area to a specific rider. He can also update the location of riders. He will sendout email to the client after the delivery of the product.

Actor Name	Rider
Actor Type	Primary
Description	The Rider has most of the responsibilities in the system. Rider will take order from the shopkeepers and deliver the order afterwards. Rider is able to see the products when creating an order. He can view the history of his delivered orders and can also view pending orders (to be delivered). He will send out email to sale agent about the order placement. He can add and update the client data.

Actor Name	FBR
Actor Type	Off-Stage Actor
Description	FBR collect tax from companies from their earned profits under the tax ordinance law, 2001. It is pertinent for all registered companies to pay tax to work legally across country.

## 5 Use Cases

### 5.1 Use Case 1 (Login):

Use Case ID	U01
Name	Login
Actor	The Manager, Rider, Inventory Supervisor, and Sales agent.
Description	It describes how the user logs into the Distribution System application.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1.The user opens the application.</li><li>2.The system asks the actor to enter his email ID and password assigned by the company.</li><li>3.He enters the above details.</li><li>4.The system validates the entered details and logs the actor into the system.</li></ol> <p>Base Flow:</p> <ol style="list-style-type: none"><li>2a.The actor enters an invalid email and/or password.<ol style="list-style-type: none"><li>1.The actor enters an invalid email and/or password.<ol style="list-style-type: none"><li>1a. The actor cancels the login.</li><li>1b. The actor resets the password.</li></ol></li></ol></li></ol>

### 5.2 Use Case 2 (Reset Password):

Use Case ID	U02
Name	Reset Password
Actor	The Manager, Rider, Inventory Supervisor and Sales agent.
Description	If the user forgets his/her password, they can reset it.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1.The user opens the application.</li><li>2.He enters the email and password.</li><li>3.He clicks on login.</li><li>4.A message box appears containing the message "Not matched in Data Base".</li><li>5.He clicks on forget password.</li><li>6.After clicking, he receives an email containing the new password.</li><li>Repeats step 1-3</li><li>7.Successfully login in the main page.</li></ol>

### 5.3 Use Case 3 (Add Employee)

Use Case ID	U03
Name	Add Employee
Actor	The Manager
Description	The Manager can add a new employee to the company. It could either be the rider, sales agent, workers or the inventory supervisor. He would take the name, email, CNIC, address, phone number, bank account of the employee. After filling out the details, he will give them a password and status and a base salary depending upon the status.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1.A person arrives at company.</li> <li>2.Fill out the form to give interview.</li> <li>3.After passing interview, the person will officially be company's employee.</li> <li>4.To give him access to the application, the Manager logs into his system.</li> <li>5.The manager will register that employee by entering all his details.</li> <li>6.The Manager enters the employee's name.</li> <li>7.The Manager enters the employee's CNIC.</li> <li>8.The Manager enters the employee's e-mail.</li> <li>9.The Manager enters the employee's address.</li> <li>10.The Manager selects the employee's status from the combo Box.</li> <li>11.The Manager enters the employee's bank account.</li> <li>12.The Manager enters the employee's telephone number.</li> <li>13.The Manager enters the employee's age.</li> <li>14.The System validates the above given details.</li> <li>15.After entering all his information, Manager generates a User ID and login password that is assigned to the employee.</li> <li>16.The System generates basic salary depending upon the status.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>4a. The Manager forgets the password. <ol style="list-style-type: none"> <li>1. The Manager clicks a button to recover the account.</li> </ol> </li> <li>3-5a. The employee is a simple inventory worker. <ol style="list-style-type: none"> <li>1. The employee will not be given any account, as there is no portal for inventory workers.</li> </ol> </li> <li>6a. The Manager enters invalid name. <ol style="list-style-type: none"> <li>1. The System demands to enter name containing only alphabets.</li> </ol> </li> <li>7a. The Manager enters an invalid CNIC. <ol style="list-style-type: none"> <li>1. The System demands enter CNIC containing only a 13-digit integer.</li> </ol> </li> <li>8a. The Manager enters invalid e-mail. <ol style="list-style-type: none"> <li>1. The System demands to enter E-mail that contains @ in the format.</li> </ol> </li> </ol>

## 5.4 Use Case 4 (Update Employee):

Use Case ID	U04
Name	Update Employee
Actor	The Manager
Description	The Manager is able to update employees by clicking the button that list the employees and then select the employee whose information needs to be update.
Flow	<p>Basic Flow:</p> <ol style="list-style-type: none"> <li>1. The Manager logs into the system.</li> <li>2. An employee comes to him and asks to change some information about him.</li> <li>3. The Manager clicks on the button and gets the list of all the employees of the company.</li> <li>4. The Manager searches for that particular employee.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>1a. The Manager forgets the password.             <ol style="list-style-type: none"> <li>1. The Manager clicks on a button to recover the account</li> </ol> </li> <li>4a. The employee name does not found in the data base.             <ol style="list-style-type: none"> <li>1. The Manager performs an override operation (Add employee)</li> </ol> </li> </ol>

## 5.5 Use Case 5 (Delete Employee):

Use Case ID	U05
Name	Delete Employee
Actor	The Manager
Description	The Manager gets to fire the employee by deleting his information from the Database or when any employee leaves the company.
Flow	<p>Basic Flow:</p> <ol style="list-style-type: none"> <li>1. The Manager logs into the system.</li> <li>2. An employee comes to the Manager and asks to resign.</li> <li>3. The Manager clicks on delete employee option.</li> <li>4. The Manager gets the list of all the employees of the company.</li> <li>5. The Manager searches for that particular employee.</li> <li>6. The System validates the given name of the employee.</li> <li>7. The Manager clicks and deletes that employee.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>1a. The Manager forgets the password.             <ol style="list-style-type: none"> <li>1. The Manager clicks on a button to recover the account</li> </ol> </li> <li>2a. The Manager fires an employee.             <ol style="list-style-type: none"> <li>Repeats 3-6 (Basic Flow)</li> </ol> </li> <li>5a. The employee is a rider.             <ol style="list-style-type: none"> <li>1. The vehicle associated with the rider is now free.</li> </ol> </li> </ol>

## 5.6 Use Case 6 (Add Vehicle):

Use Case ID	U06
Name	Add Vehicle
Actor	The Manager
Description	The Manager buys a new vehicle for the riders to deliver the products to the clients.
Flow	<p>Basic Flow:</p> <ol style="list-style-type: none"> <li>1. The Company bought a new vehicle.</li> <li>2. The Manager logs into the system.</li> <li>3. The Manager clicks on the button of add vehicle.</li> <li>4. The Manager selects the truck model from combo Box.</li> <li>5. The Manager enters fuel average of that truck.</li> <li>6. The Manager enters the truck number.</li> <li>7. The Manager enters the price of that truck.</li> <li>8. The System validates the above details.</li> <li>9. Clicks add.</li> <li>11. Vehicle information is added to the vehicle report by the System.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>2a. The Manager forgets the password.             <ol style="list-style-type: none"> <li>1. The Manager clicks on a button to recover the account.</li> </ol> </li> <li>5a. The Manager enters an invalid format.             <ol style="list-style-type: none"> <li>1. The System demands to enter only float values.</li> </ol> </li> <li>6a. The Manager enters an invalid number.             <ol style="list-style-type: none"> <li>1. The System demands to enter three capital alphabets and three- or four-digit integer after that</li> </ol> </li> <li>7a. The Manager enters an invalid price.             <ol style="list-style-type: none"> <li>1. The System demands to enter only integer values.</li> </ol> </li> </ol>

## **5.7 Use Case 7 (Deduct Fuel Money):**

Use Case ID	U07
Name	Deduct Fuel Money
Actor	The Manager
Description	The rider will send a report to the Manager on a weekly or daily basis about the fuel consumption depending. Depending upon that report money will be deducted from the company account automatically by the confirmation of the Manager.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1.The rider opens the fuel report.</li><li>2.Adds all the information about fuel consumption.</li><li>3.After clicking sent report, the Manager will receive the report.</li><li>4.The Manager will open finance module and will delete the total amount of money spend on fuel of each vehicle.</li></ol>

## **5.8 Use Case 8 (Check attendance):**

Use Case ID	U08
Name	Check attendance
Actor	The Manager
Description	The manager gets to check the daily attendance of each employee that works in the company.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1. The Manager logs into the system.</li><li>2. The Manager clicks to see attendance of all employees.</li><li>3. A table gets displayed with employee name, status and his attendance.</li></ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"><li>1a. The Manager forgets the password.<ol style="list-style-type: none"><li>1. The Manager clicks on a button to recover the account.</li></ol></li><li>3a. The owner asks for a report of attendance.<ol style="list-style-type: none"><li>1. The Managers exports the table into a.csv file.</li></ol></li></ol>

## **5.9 Use Case 9 (Give Salaries):**

Use Case ID	U09
Name	Give Salaries
Actor	The Manager
Description	The Manager is in the charge of giving salaries to all the employees.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1.The Manager logged into the system.</li><li>2.He clicks on the Finance button and from the dropdown menu, he selects "Salaries".</li><li>3.Now he can view the all the employees and the salary that is needed to be paid to them.</li><li>4.When the manager clicks pay button, money will be transferred to their account and deducted from the company account.</li><li>5.A message box will be shown of successfully transaction of money.</li><li>6.An email would be sent out to the employee being paid.</li></ol> <p>Alternative flow:</p> <ol style="list-style-type: none"><li>1a.The Manager forgets his password.<ol style="list-style-type: none"><li>1.He clicks on 'Forgot Password' to recover his account.</li></ol></li><li>4a.Company account does not have enough money to pay the employees.<ol style="list-style-type: none"><li>1.He will debit into the company account.</li><li>2.He requests the employee to get paid in installments.</li></ol></li></ol>

## 5.10 Use Case 10 (Give Bonuses)

Use Case ID	U10
Name	Give Bonus
Actor	The Manager
Description	The Manager give bonuses to riders and sales agent depending upon their monthly performances based upon bar chart.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1.The Manager logged into the system.</li><li>2.He clicks on the Finance button and from the dropdown menu, he selects "Salaries".</li><li>3.Two bar graphs will be shown to him. First will be of the rider performances based on their total orders and sales agent depending upon the working days.</li><li>4.He will select the employee and click on Bonus button.</li><li>5.A pop up will be shown in which he will input the bonus amount ranging from 10 thousand to 20 for rider and 5 to 10 thousand for the sales agent.</li><li>6.He clicks on pay and the money will be transferred to the employee.</li></ol> <p>Alternative flow:</p> <ol style="list-style-type: none"><li>1a.The Manager forgets his password.<ol style="list-style-type: none"><li>1.He clicks on 'Forgot Password' to recover his account.</li></ol></li></ol>

## 5.11 Use Case 11 (Tracking Financial record):

Use Case ID	U11
Name	Tracking Financial record
Actor	The Manager
Description	The Manager gets to view all the reports of the company and available balance in the company account
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. The Manager logs into the system</li> <li>2. The Manager clicks on the Finance button and from the dropdown menu; the Manager selects "Company account".</li> <li>3. Analytical reports will be shown to the Manager containing:           <ul style="list-style-type: none"> <li>• Total Salaries</li> <li>• Fuel Consumption</li> <li>• Bonuses</li> <li>• Warehouse Expense</li> <li>• Stock Expense</li> <li>• Vehicles</li> </ul> </li> <li>. 4. The Manager exports these into .csv files.</li> <li>5. The Manager also sees the company's total money.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>1a. The Manager forgets the password.</li> <li>1. The Manager clicks on a button to recover the account.</li> </ol>

## 5.12 Use Case 12 (Buy Stock):

Use Case ID	U12
Name	Buy Stock
Actor	Inventory Supervisor
Description	Inventory Supervisor will be able to buy the products according to its requirement. Before placing the order, he will get confirmation from the manager through the email and we are assuming the products will be reached after one day and check-in by inventory manager. Moreover, manager can also buy stock.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. Supervisor logs into the system.</li> <li>2. Supervisor clicks the Buy stock button in the side bar menu.</li> <li>3. Buy Stock page is shown to the Supervisor.</li> <li>4. Inventory Supervisor places the order by filling the information.</li> <li>5. Inventory Supervisor enters the name of the product.</li> <li>6. Inventory Supervisor enters the size.</li> <li>7. Inventory Supervisor enters the quantity.</li> <li>8. Inventory Supervisor selects the category from the combo Box.</li> <li>9. Inventory Supervisor selects colour from combo Box.</li> <li>10. Inventory Supervisor enters the price of single product.</li> <li>12. The System validates the above details.</li> <li>13. After this, price of individual product and the price of total placed order will be shown to him.</li> <li>14. The manager will receive the confirmation email from the supervisor. It is upon him whether he confirms the order or he cancels the order.</li> <li>15. When Inventory Supervisor receives the confirmation email from the manager then the confirmed order will be placed.</li> <li>16. The order will be added in the stock after one day.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>1a. Inventory Supervisor forgets the password.             <ol style="list-style-type: none"> <li>1. Inventory Supervisor clicks on a button to recover the account.</li> </ol> </li> <li>4a. Inventory Supervisor has to buy another product at the same time.             <ol style="list-style-type: none"> <li>1. Inventory Supervisor clicks on 'Add to cart' for the previous order.</li> <li>2. It will be added to the cart shown on the right side of screen.</li> <li>3. Inventory Supervisor enters the details of the next order.</li> <li>4. Goes to cart and click on request order.</li> </ol> </li> <li>7a. Inventory Supervisor selects the quantity '1'.             <ol style="list-style-type: none"> <li>1. The System demands that he cannot place the order when he buys product less than a certain quantity.</li> </ol> </li> <li>10a. Inventory Supervisor enters invalid price.             <ol style="list-style-type: none"> <li>1. The System demands to enter only float values.</li> </ol> </li> <li>15a. Inventory Supervisor receives the rejection email from the manager.             <ol style="list-style-type: none"> <li>1. He will cancel the order.</li> </ol> </li> </ol>

## 5.13 Use Case 13 (Update Stock):

Use Case ID	U13
Name	Update Stock
Actor	Inventory Supervisor
Description	Inventory supervisor will be able to update the stock when the order will be delivered by the rider. He can also view the pending orders and the completed orders.
Flow	<p><b>Base Flow:</b></p> <ol style="list-style-type: none"> <li>1. The rider comes to the warehouse to pick up his order.</li> <li>2. Supervisor logs into the system.</li> <li>3. Supervisor clicks on the 'Update stock' button.</li> <li>4. A table is displayed that contains all the available stock in the warehouse.</li> <li>5. Inventory Supervisor enters the order number that is required by the rider.</li> <li>6. Automatically these things will be deducted from the warehouse stock.</li> </ol> <p><b>Alternative Flow:</b></p> <ul style="list-style-type: none"> <li>2a. Inventory Supervisor forgets the password.</li> <li>1. Inventory Supervisor clicks on a button to recover the account.</li> <li>5a. The order required by the rider is not available in the warehouse stock.</li> <li>1. The rider will be unable to take the order from the shopkeeper that is not available in the warehouse.</li> <li>5b. Inventory Supervisor enters an invalid format. <ul style="list-style-type: none"> <li>1. The System demands to enter number in integers with ''.</li> <li>2. The System demands to enter number of order present in the database.</li> </ul> </li> </ul>

## **5.14 Use Case 14 (Confirm Stock):**

Use Case ID	U14
Name	Confirm Stock
Actor	The Manager
Description	Manager gives the approval of what to buy from the supplier or what not.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1. The inventory Supervisor has to buy some stock.</li><li>2. He requests the manager for approval.</li><li>3. Supervisor sent an email to Manager.</li><li>4. The Manager logs into the system.</li><li>5. Manager clicks on the 'Notifications' button .</li><li>6. The Manager views the order.</li><li>7. The Manager clicks on accept.</li><li>8. Automatically these things will be added from the warehouse stock after one day.</li></ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"><li>4a. The Manager forgets the password.<ol style="list-style-type: none"><li>1. The Manager clicks on a button to recover the account.</li></ol></li><li>7a. The Manager clicks on decline.<ol style="list-style-type: none"><li>1. The inventory Supervisor gets notification that the order has been declined by the Manager..</li></ol></li></ol>

## 5.15 Use Case 15 (Mark Attendance):

Use Case ID	U15
Name	Mark Attendance
Actor	Inventory Supervisor, Rider, Sales Agent
Description	The actor marks his/her daily attendance and the report is send to the Manager.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. The actor logs into the System.</li> <li>2. The actor goes to attendance section.</li> <li>3. Marks the actor attendance.</li> <li>4. Press OK.</li> <li>5. The System saves and makes a report of attendance.</li> <li>6. Automatically a report will be generated and send out to the Manager.</li> <li>7. The System updates the date the next day.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>1a. The actor forgets the password.             <ol style="list-style-type: none"> <li>1. The actor clicks on a button to recover the account.</li> </ol> </li> <li>1b. The actor does not have an account (inventory worker).             <ol style="list-style-type: none"> <li>1. The inventory Supervisor clicks on attendance.</li> <li>2. A table is displayed that contains all the workers under inventory Supervisor.</li> <li>3. Inventory Supervisor marks their attendance along with his own.</li> </ol> </li> </ol>

## 5.16 Use Case 16 (View Stock):

Use Case ID	U16
Name	View Stock
Actor	Inventory Supervisor
Description	The Supervisor gets to see available stock in warehouse for any purpose.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. The Supervisor logs into the System.</li> <li>2. Inventory Supervisor clicks on View stock button to know how much stock is available in the warehouse.</li> <li>3. A table is displayed to him.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>1a. Inventory Supervisor forgets the password.             <ol style="list-style-type: none"> <li>1. Inventory Supervisor clicks on a button to recover the account.</li> </ol> </li> </ol>

## 5.17 Use Case 17 (Deliver Order):

Use Case ID	U17
Name	Deliver Order
Actor	Rider
Description	The rider will reach his location of shopkeeper and deliver his order. He receives the remaining payable amount of the shopkeeper.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. Rider logs into the system.</li> <li>2. Rider clicks to view which order he has to deliver today.</li> <li>3. Rider arrives at warehouse.</li> <li>4. Rider picks up the order.</li> <li>5. Rider reaches at his destined location.</li> <li>6. Rider delivers the order to the shopkeeper.</li> <li>7. Shopkeeper pays the remaining amount.</li> <li>8. Rider enters the paid amount and mark tick on that client; assuring that the order has been delivered.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>1a. Rider forgets his password.             <ol style="list-style-type: none"> <li>1. Rider clicks on a button to recover the account.</li> </ol> </li> <li>8a. The client is already an existing customer of the company.             <ol style="list-style-type: none"> <li>1. The client pays the total amount of the order.                     <ol style="list-style-type: none"> <li>1a. The client asks the rider to pay later.                             <ol style="list-style-type: none"> <li>1. Rider enters the amount of that client into the cash book</li> </ol> </li> </ol> </li> </ol> </li> </ol>

## 5.18 Use Case 18 (Make Report Cost):

Use Case ID	U18
Name	Make Report Cost
Actor	Inventory Supervisor
Description	Inventory supervisor can report holding, carrying and total costs. He will calculate the selling cost of the product after calculating all the company expenses.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. Supervisor when click on the Report Cost button, the UI screen containing the inputs will be shown.</li> <li>2. He will fill out all the inputs like Product buying cost, Company expenses, Government Tax, Profit percentage, etc. and then click on the calculate button.</li> <li>3. After clicking the calculate button the selling price of this product will be shown and that product will be delivered to the customer at that price</li> </ol>

## 5.19 Use Case 19 (Take Order):

Use Case ID	U19
Name	Take Order
Actor	Rider
Description	Rider will reach his assigned location and take order from the Shop Keeper. The information taken by the rider will reach to the sales agent and then sales agent will perform its certain actions.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. Rider reaches the Shop Keeper.</li> <li>2. Rider logs into the system.</li> <li>3. Rider presses the Take Order button.</li> <li>4. Take Order screen opens and he takes the order details.</li> <li>5. Rider selects the product category from the combo Box.</li> <li>6. Rider chooses the name of the available products of that category.</li> <li>7. Rider enters the quantity.</li> <li>8. Rider chooses a colour from the combo Box.</li> <li>9. Rider chooses the available size of that product from the combo Box.</li> <li>10. The System displays the price of a single product.</li> <li>11. The System displays the total amount to be paid.</li> <li>12. Rider presses the place order button.</li> <li>13. The information will be delivered to the sales agent.</li> <li>14. The receipt gets generated on which the total payment will be shown.</li> <li>15. Customer pays the advance.</li> <li>16. Rider enters the paid amount by the client into the system.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>2a. Rider forgets the password.             <ol style="list-style-type: none"> <li>1. Rider clicks on a button to recover the account.</li> </ol> </li> <li>4a. Required order of the client is not available in stock.             <ol style="list-style-type: none"> <li>1. Rider sends an email to the Supervisor about the unavailability of hspace1em the product.</li> <li>2. Rider tells the client about the unavailability.</li> <li>3. Client places a new order.</li> </ol> </li> <li>3a. Client cancels to place any order.</li> <li>7a. Rider enters an invalid quantity.             <ol style="list-style-type: none"> <li>1. The System demands for the quantity to be in integers.</li> <li>2. The System demands for the quantity to be greater than 10.</li> </ol> </li> <li>15a. The client is already an existing customer of the company.             <ol style="list-style-type: none"> <li>1. The client can/cannot pay the advance</li> </ol> </li> </ol>

## 5.20 Use Case 20 (Add Client):

Use Case ID	U20
Name	Add Client
Actor	Rider
Description	Rider will reach his assigned location and take details from the Shop Keeper. The information taken by the rider will reach to the sales agent and then sales agent will perform its certain actions.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. Rider reaches the Shop Keeper and presses the button to take order.</li> <li>2. Take Order screen will open where he can see all the products available with their prices.</li> <li>3. Rider adds the information of the client.</li> <li>4. Rider enters the name of the client.</li> <li>5. Rider enters the CNIC of the client.</li> <li>6. Rider enters the email of the client.</li> <li>7. Rider enters the address of the shop from Google Maps.</li> <li>8. Rider enters the number of the client.</li> <li>9. Rider selects the area of the shop from the combo Box.</li> <li>10. Rider enters the shop name.</li> <li>11. The System validates the above details.</li> <li>12. Then the client has been created and the rider takes the order.</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>1a. The rider forgets the password.             <ol style="list-style-type: none"> <li>1. Rider clicks on a button to recover the account</li> </ol> </li> <li>3a. The client is already an existing customer of the company.             <ol style="list-style-type: none"> <li>1. Rider just enters the CNIC and the remaining information is automatic fills out.</li> </ol> </li> <li>1a. Two or more shops are registered on the same CNIC.             <ol style="list-style-type: none"> <li>1. Combo Box will appear on the address from which the rider selects the required address.</li> </ol> </li> <li>4a. Rider enters the invalid name.             <ol style="list-style-type: none"> <li>1. The System demands to enter names containing only alphabets.</li> </ol> </li> <li>5a. Rider enters invalid CNIC.             <ol style="list-style-type: none"> <li>1. The System demands to enter CNIC containing only 13 digit integer.</li> </ol> </li> <li>6a. Rider enters invalid e-mail.             <ol style="list-style-type: none"> <li>1. The System demands to enter an e-mail that contains @ in the format.</li> </ol> </li> <li>7a. Address is not available on Google Maps.             <ol style="list-style-type: none"> <li>1. The rider chooses the nearest location to the shop.</li> </ol> </li> <li>8a. Rider enters an invalid phone number.             <ol style="list-style-type: none"> <li>1. The System demands to enter the number that contains only 11 digit integer.</li> </ol> </li> </ol>

## 5.21 Use Case 21 (Cancel Order):

Use Case ID	U21
Name	Cancel Order
Actor	Rider
Description	The rider can check the orders created. He has an option to view all the pending orders that have to be delivered in the given amount of time. He can also cancel the order if asked by the customer.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. The rider logs in to the system.</li> <li>2. Rider clicks the button to check the to-do-list.</li> <li>3. After clicking, all the order that have not been delivered to the required customers will be shown to rider.</li> <li>4. Rider is taking order and at that time, opens this window, rider will also have an option to delete or cancel the order.</li> </ol> <p>Alternative flow:</p> <ol style="list-style-type: none"> <li>1a. The rider forgets his password.             <ol style="list-style-type: none"> <li>1. He clicks on 'Forgot Password' to recover his account.</li> </ol> </li> <li>6a. The shopkeeper wants to cancel half, less than half or more from the order he just placed.             <ol style="list-style-type: none"> <li>1. When rider clicks on the 'cancel' button of that order, he will be displayed the quantity which he can increment or decrement according to the wish of the shopkeeper</li> </ol> </li> <li>6b. The shopkeeper wants to cancel half, less than half or more from the order he placed at the time of delivery.             <ol style="list-style-type: none"> <li>1. A message box will be shown that the client cannot cancel his order now.</li> <li>1a. He insists on cancel the order and refuse to receive.                     <ol style="list-style-type: none"> <li>1. When rider clicks on the 'cancel' button of that order, 10% will be deducted from the advanced payment of the order.</li> <li>2. The order is delivered back to the warehouse and gets added in the stock.</li> </ol> </li> </ol> </li> </ol>

## 5.22 Use Case 22 (To do List):

Use Case ID	U22
Name	To Do list
Actor	Rider
Description	The rider can check the orders created. He has an option to view all the pending orders that have to be delivered in the given amount of time.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1.The rider logged in to the system.</li> <li>2.He clicks the button to check the to-do-list.</li> <li>3.After clicking, all the order that have not been delivered to the required customers will be shown to him.</li> <li>4.He can click on any specific pending order to check its details.</li> <li>5.Remaining delivery time of all orders is also shown on the right side.</li> <li>6.He clicks on tick button when the order is delivered and payment is received.</li> </ol> <p>Alternative flow:</p> <ol style="list-style-type: none"> <li>1a. The rider forgets his password.</li> <li>1.He clicks on 'Forgot Password' to recover his account.</li> </ol>

## 5.23 Use Case 23 (Assign Location):

Use Case ID	U23
Name	Assign Location
Actor	Sales Agent
Description	Sales Agent will assign the location to all the riders on weekly basis.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1.The sales agent logged into the system.</li> <li>2.He clicks on the assign location button in side bar menu and the screen will be shown to him.</li> <li>3.He will select the rider from the dropdown.</li> <li>4.He can then select the location from the drop down and clicks on the assign button . The location will be assigned.</li> <li>5.He can also view a data grid that show the details of all the riders with their locations assigned</li> </ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"> <li>1a. The sales agent forgot its password.</li> <li>1.The sales agent clicks on "Forgot Password" to recover his account.</li> </ol>

## 5.24 Use Case 24 (Track Order):

Use Case ID	U24
Name	Track Order
Actor	Sales Agent
Description	Sales Agent has the power to view all the riders current and previous orders history.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1.The Sales Agent logged into the system.</li> <li>2.He clicks on the track order button to get the information about an order.</li> <li>3.He selects the name of the riders from the dropdown menu.</li> <li>4.The agent gets to view the rider and all his delivered orders and pending orders.</li> </ol> <p>Alternative flow:</p> <ol style="list-style-type: none"> <li>1a. The rider forgets his password.</li> <li>1.He clicks on 'Forgot Password' to recover his account.</li> </ol>

## 5.25 Use Case 25 (Add Fuel Details):

Use Case ID	U25
Name	Add Fuel Details
Actor	The Rider
Description	The rider is also assigned a vehicle by the Manager. The rider adds the Refueling date in the report of fuel consumption. The cost of each day and number of kilometers the vehicle is driven are also added into the report.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"> <li>1. The First thing Rider does in the morning is arriving at the gas station.</li> <li>2. Rider asks the pump employee to fill the gas.</li> <li>3. Rider logs into the system.</li> <li>4. Rider clicks on the fuel report.</li> <li>5. Rider adds truck number at the top only for one time and fuel cost per litre.</li> <li>6. The System displays the current date.</li> <li>7. The Rider enters kilometre being shown on the vehicle's odometer.</li> <li>8. The Rider enters total volume of fuel in litres.</li> <li>9. The System calculates the cost.</li> <li>10. The System validates the given details.</li> <li>11. Rider clicks on update and the report is send to the Sales agent.</li> <li>12. The Sales agent validates the report.</li> <li>13. Report is sent to the Manager.</li> </ol> <p>Alternative flow:</p> <ol style="list-style-type: none"> <li>5a. The Rider enters an invalid truck number.</li> <li>1. Sales Agent will check either it is the same vehicle that has been assigned to rider or not.</li> </ol>

## **5.26 Use Case 26 (Find Route):**

Use Case ID	U26
Name	Find route
Actor	Rider
Description	The rider reaches the location where the order is to be delivered using the application map and Google map.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1. The rider logs into the system.</li><li>2. Rider clicks the button to check the to-do-list.</li><li>3. Rider views all the orders that are needed to be delivered.</li><li>4. Rider clicks on any particular that rider is going to deliver.</li><li>5. Rider clicks on the location of that order.</li><li>6. The application map opens providing him with the shortest path to that area.</li></ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"><li>1a. The rider forgets the portal password.<ol style="list-style-type: none"><li>1. Rider clicks on a button to recover the account.</li></ol></li></ol>

## **5.27 Use Case 27 (View Cashbook):**

Use Case ID	U27
Name	View Cashbook
Actor	Sales Agent
Description	The sales Agent gets to see which clients have not paid the order amount and send out an email to remind them after 15 days.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1. The Sales Agent logs into the system.</li><li>2. Sales Agent clicks on 'Clients'.</li><li>3. A table is displayed containing all clients and their due amount of money.</li><li>4. Sales agents click on the email button to send them a reminder</li></ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"><li>1a. Sales Agent forgets the password.<ol style="list-style-type: none"><li>1. Sales Agent clicks on a button to recover the account.</li></ol></li><li>3a. Client has zero due amounts.<ol style="list-style-type: none"><li>1. Email option gets removed</li></ol></li></ol>

## **5.28 Use Case 28 (Assign Vehicle):**

Use Case ID	U28
Name	Assign Vehicle
Actor	Sales Agent
Description	Sales Agent will assign vehicles to all the riders
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1. The Sales agent logs into the system.</li><li>2. Sales Agent clicks on the assign vehicle button in sidebar menu and the screen will be shown to Sales Agent.</li><li>3. Sales Agent will select the rider from the dropdown.</li><li>4. Sales Agent selects the vehicle from the drop-down and clicks on the assign button.</li><li>5. The vehicle will be assigned.</li></ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"><li>1a. The sales agent forgot the password.<ol style="list-style-type: none"><li>1. The sales agent clicks on a button to recover the account.</li></ol></li><li>3a. Rider already has an assigned vehicle.<ol style="list-style-type: none"><li>1. An error message will be displayed.</li></ol></li></ol>

## **5.29 Use Case 29 (View Order History):**

Use Case ID	U29
Name	View Order History
Actor	Rider
Description	The rider can check the orders created. He has an option to view all the orders that have been delivered to the required clients.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1. The rider logged in to the system.</li><li>2. Rider clicks the view the history of all the orders that have been delivered.</li><li>3. A table is displayed to him accounting all the information.</li></ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"><li>1a. The rider forgets the password.<ol style="list-style-type: none"><li>1. Rider clicks on a button to recover the account.</li></ol></li></ol>

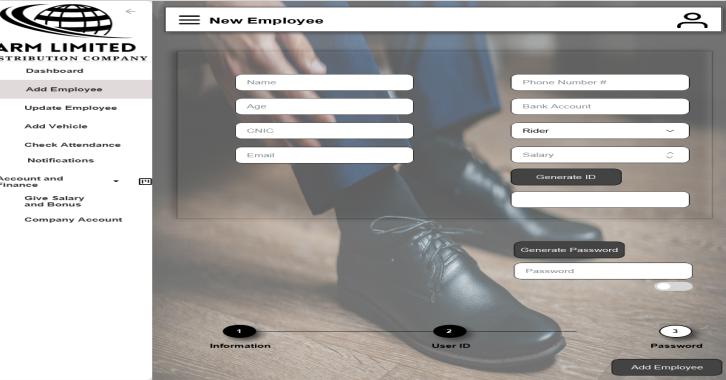
### **5.30 Use Case 30 (View Notifications):**

Use Case ID	U30
Name	View Notifications
Actor	Sales Agent, Inventory supervisor
Description	The Sales Agent and Inventory supervisor can check the notifications related to the confirmed and pending orders.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1. The Actor logged in to the system.</li><li>2. Actor clicks the notification button.</li><li>3. A table is displayed to them accounting all the information related to the confirmed and pending orders and also notifications related to their job from the manager.</li></ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"><li>1a. The Actor forgets the password. 1. Actor clicks on a button to recover the account.</li></ol>

### **5.31 Use Case 31 (View Dashboard):**

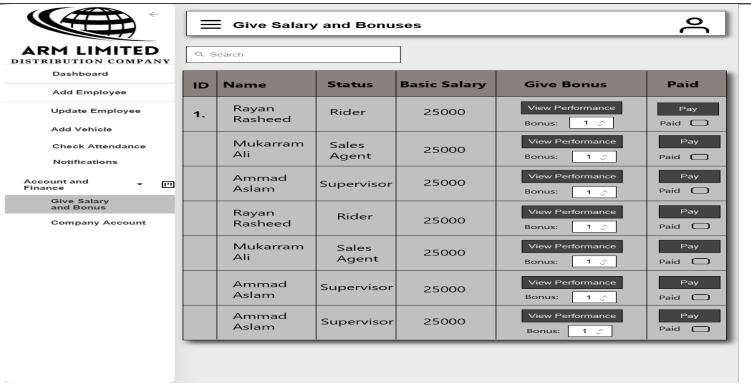
Use Case ID	U31
Name	View Dashboard
Actor	Sales Agent, Manager
Description	The Sales Agent and Manager can see the dashboard that is the visual display of all of their data. Its primary intention is to provide information at a glance.
Flow	<p>Base Flow:</p> <ol style="list-style-type: none"><li>1. The actor logged in to the system.</li><li>2. Actor clicks the notification button.</li><li>3. A Dashboard is displayed to them that is the visual display of all of their data. Its primary intention is to provide information at a glance.</li></ol> <p>Alternative Flow:</p> <ol style="list-style-type: none"><li>1a. The actor forgets the password. 1. Actor clicks on a button to recover the account.</li></ol>

## 6 User Interface

Interface ID	I01
Name	Add Employee
LinkedUseCase	U03
UI Screen	
Validators	<ol style="list-style-type: none"> <li>1. Name: Name should be entered in string.</li> <li>2. Phone Number: It would be of string type with minimum 11 words.</li> <li>3. Age: It would be of int type ranges from 0 to 120.</li> <li>4. Bank Account: It should be input of integers with atleast 15 numbers.</li> <li>5. CNIC: CNIC will be of string type with 13 characters.</li> <li>6. Category: Manager can either select Rider, Supervisor, Sales agent.</li> <li>7. Email: Email will be validated with @gmail.com and it is of string type.</li> <li>8. Salary: It is of int type.</li> <li>9. ID: It is of string type.</li> <li>10. Password: It is of string type.</li> <li>.</li> </ol>

Interface ID	I02
Name	Update Employee
LinkedUseCase	U04
UI Screen	

	 <p>The screenshot shows an 'Update Employee' form. It has fields for Name (Ammad), CNIC (35102-6690185-3), Age (20), Email (hammadaslam07@gmail.com), Phone number (0323-9080765), Bank Account (1000293837339330), Status (Rider), and Salary (50000). There is also an 'Update' button at the bottom.</p>
Validators	<ol style="list-style-type: none"> <li>1. Name: Name should be entered in string.</li> <li>2. Phone Number: It would be of string type with minimum 11 words.</li> <li>3. Age: It would be of int type ranges from 0 to 120.</li> <li>4. Bank Account: It should be input of integers with atleast 15 numbers.</li> <li>5. CNIC: CNIC will be of string type with 13 characters.</li> <li>6. Category: Manager can either select Rider, Supervisor, Sales agent.</li> <li>7. Email: Email will be validated with @gmail.com and it is of string type.</li> <li>8. Salary: It is of int type.</li> <li>9. ID: It is of string type.</li> <li>10. Password: It is of string type.</li> </ol>

Interface ID	I03																																																
Name	Give Salary and Bonus																																																
LinkedUseCase	U09, U10																																																
UI Screen	 <p>The screenshot shows a 'Give Salary and Bonuses' table. The columns are ID, Name, Status, Basic Salary, Give Bonus, and Paid. The table contains the following data:</p> <table border="1"> <thead> <tr> <th>ID</th><th>Name</th><th>Status</th><th>Basic Salary</th><th>Give Bonus</th><th>Paid</th></tr> </thead> <tbody> <tr> <td>1.</td><td>Rayan Rasheed</td><td>Rider</td><td>25000</td><td><input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/></td><td><input type="button" value="Pay"/> <input type="checkbox"/></td></tr> <tr> <td></td><td>Mukarram Ali</td><td>Sales Agent</td><td>25000</td><td><input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/></td><td><input type="button" value="Pay"/> <input type="checkbox"/></td></tr> <tr> <td></td><td>Ammad Aslam</td><td>Supervisor</td><td>25000</td><td><input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/></td><td><input type="button" value="Pay"/> <input type="checkbox"/></td></tr> <tr> <td></td><td>Rayan Rasheed</td><td>Rider</td><td>25000</td><td><input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/></td><td><input type="button" value="Pay"/> <input type="checkbox"/></td></tr> <tr> <td></td><td>Mukarram Ali</td><td>Sales Agent</td><td>25000</td><td><input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/></td><td><input type="button" value="Pay"/> <input type="checkbox"/></td></tr> <tr> <td></td><td>Ammad Aslam</td><td>Supervisor</td><td>25000</td><td><input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/></td><td><input type="button" value="Pay"/> <input type="checkbox"/></td></tr> <tr> <td></td><td>Ammad Aslam</td><td>Supervisor</td><td>25000</td><td><input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/></td><td><input type="button" value="Pay"/> <input type="checkbox"/></td></tr> </tbody> </table>	ID	Name	Status	Basic Salary	Give Bonus	Paid	1.	Rayan Rasheed	Rider	25000	<input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/>	<input type="button" value="Pay"/> <input type="checkbox"/>		Mukarram Ali	Sales Agent	25000	<input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/>	<input type="button" value="Pay"/> <input type="checkbox"/>		Ammad Aslam	Supervisor	25000	<input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/>	<input type="button" value="Pay"/> <input type="checkbox"/>		Rayan Rasheed	Rider	25000	<input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/>	<input type="button" value="Pay"/> <input type="checkbox"/>		Mukarram Ali	Sales Agent	25000	<input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/>	<input type="button" value="Pay"/> <input type="checkbox"/>		Ammad Aslam	Supervisor	25000	<input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/>	<input type="button" value="Pay"/> <input type="checkbox"/>		Ammad Aslam	Supervisor	25000	<input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/>	<input type="button" value="Pay"/> <input type="checkbox"/>
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	Ammad Aslam	Supervisor	25000	<input type="button" value="View Performance"/> Bonus: <input type="text" value="1"/>	<input type="button" value="Pay"/> <input type="checkbox"/>																																												
Validators	<ol style="list-style-type: none"> <li>1. Searching: Searching will be according to the name of the employee.</li> <li>2. Checkbox: If the salary is paid then it will be checked otherwise it will be unchecked.</li> <li>3. Bonus: It should be of int type.</li> </ol>																																																

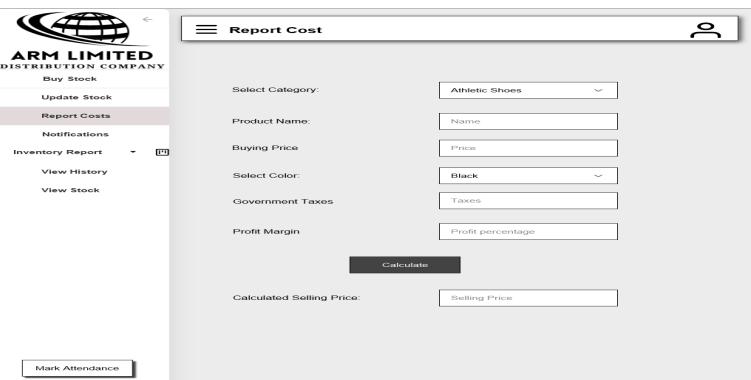
Interface ID	I04
Name	Company account
LinkedUseCase	U11,U07
UI Screen	

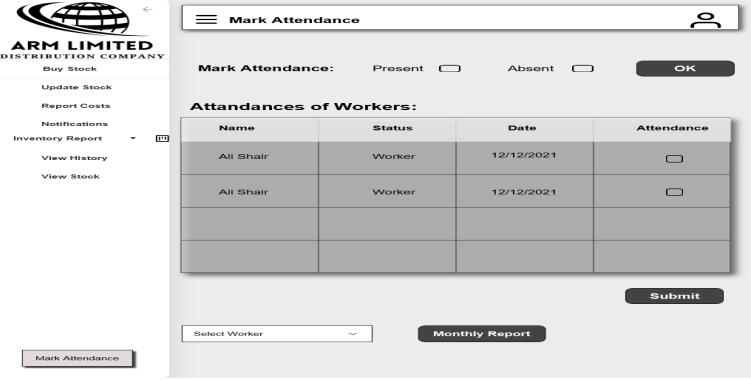
Interface ID	I05
Name	Buy Stock
LinkedUseCase	U12
UI Screen	
Validators	<ol style="list-style-type: none"> <li>Select Category: It is of dropdown menu that contains the value of string type.</li> <li>Company Total: It contain the company total in int.</li> </ol>

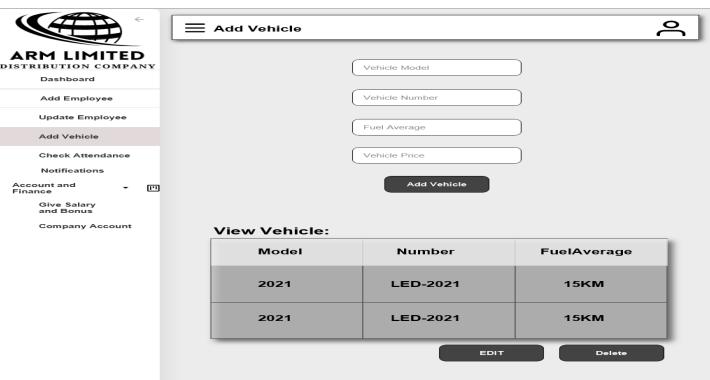
Interface ID	I06
Name	Update Stock
LinkedUseCase	U13
UI Screen	

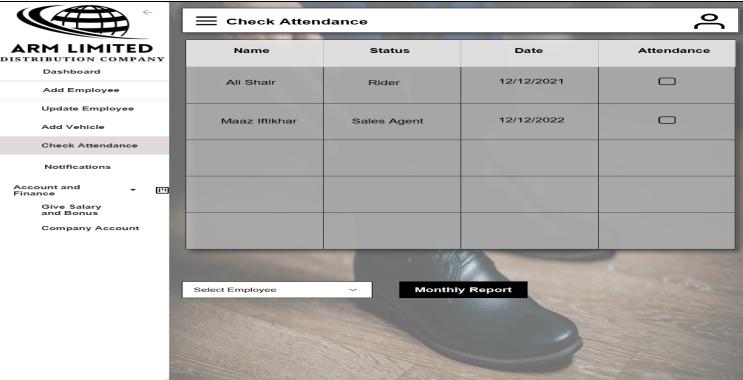
Interface ID	I07
Name	View History
LinkedUseCase	
UI Screen	

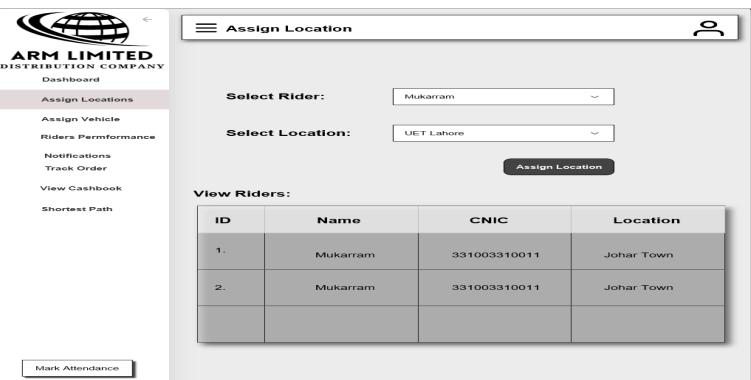
Interface ID	I08
Name	View Stock
LinkedUseCase	U16
UI Screen	

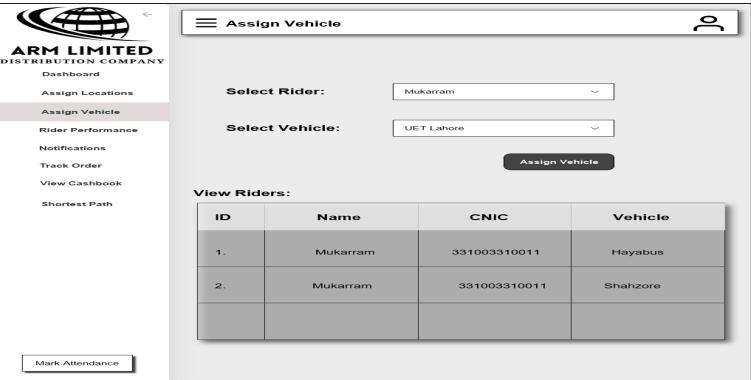
Interface ID	I09
Name	Report Costs
LinkedUseCase	U18
UI Screen	

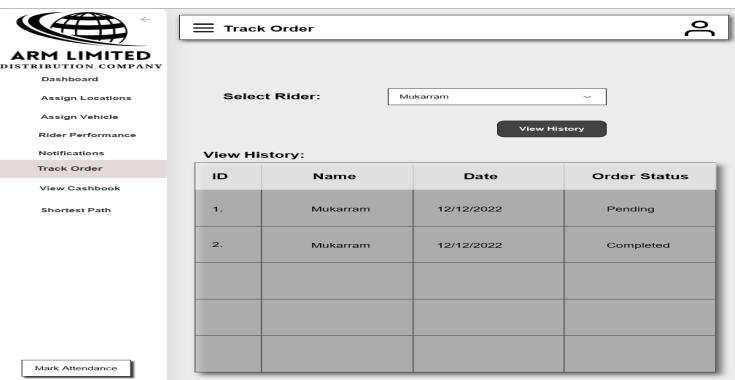
Interface ID	I10
Name	Mark Attendance Supervisor
LinkedUseCase	U15
UI Screen	
Validators	<ol style="list-style-type: none"> <li>1. Name is of string type.</li> <li>2. Price is of int type</li> <li>3. Taxes are of float type.</li> <li>4. Profit margin is also of float type.</li> <li>5. Selling price is also of float type.</li> </ol>

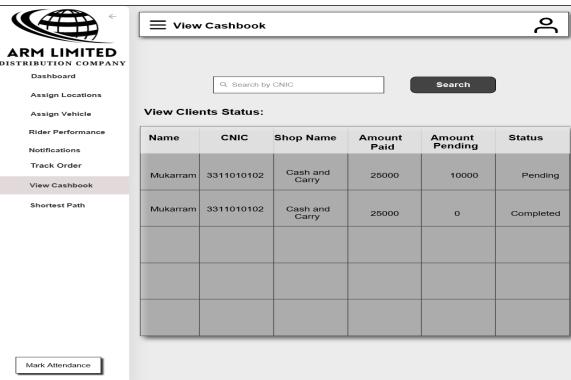
Interface ID	I11
Name	Add Vehicle
LinkedUseCase	U06
UI Screen	

Interface ID	I12
Name	Check Attendance
LinkedUseCase	U08
UI Screen	
Validators	<ol style="list-style-type: none"> <li>Model is of int type</li> <li>Vehicle number is of string type.</li> <li>Fuel average is of float type.</li> <li>Vehicle price is of int type.</li> </ol>

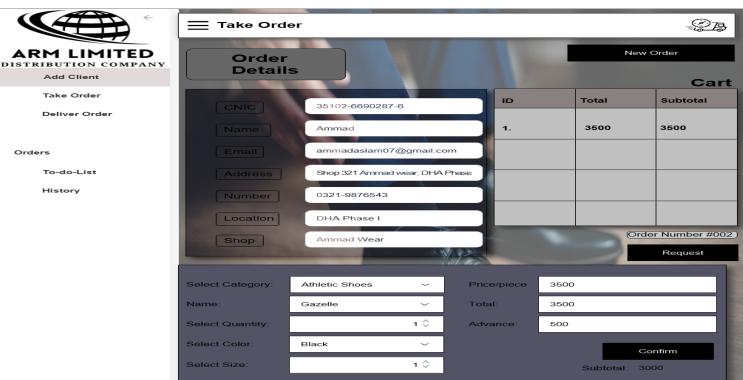
Interface ID	I13												
Name	Assign Location												
LinkedUseCase	U23												
UI Screen	 <table border="1" data-bbox="644 506 1166 654"> <thead> <tr> <th>ID</th> <th>Name</th> <th>CNIC</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Mukarram</td> <td>331003310011</td> <td>Johar Town</td> </tr> <tr> <td>2.</td> <td>Mukarram</td> <td>331003310011</td> <td>Johar Town</td> </tr> </tbody> </table>	ID	Name	CNIC	Location	1.	Mukarram	331003310011	Johar Town	2.	Mukarram	331003310011	Johar Town
ID	Name	CNIC	Location										
1.	Mukarram	331003310011	Johar Town										
2.	Mukarram	331003310011	Johar Town										

Interface ID	I14												
Name	Assign Vehicle												
LinkedUseCase	U28												
UI Screen	 <table border="1" data-bbox="644 1214 1166 1362"> <thead> <tr> <th>ID</th> <th>Name</th> <th>CNIC</th> <th>Vehicle</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Mukarram</td> <td>331003310011</td> <td>Hayabus</td> </tr> <tr> <td>2.</td> <td>Mukarram</td> <td>331003310011</td> <td>Shahzore</td> </tr> </tbody> </table>	ID	Name	CNIC	Vehicle	1.	Mukarram	331003310011	Hayabus	2.	Mukarram	331003310011	Shahzore
ID	Name	CNIC	Vehicle										
1.	Mukarram	331003310011	Hayabus										
2.	Mukarram	331003310011	Shahzore										
Validators	<ol style="list-style-type: none"> <li>Rider name will be selected from the dropdown menu that is of string type.</li> <li>Location will be of string type selected from dropdown.</li> <li>Assign Location button will work when both these Inputs are filled.</li> </ol>												

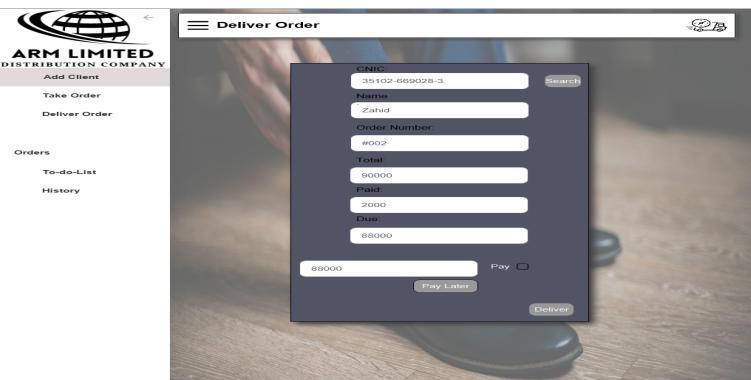
Interface ID	I15
Name	Track Order
LinkedUseCase	U24
UI Screen	
Validators	<ol style="list-style-type: none"> <li>Rider name will be selected from the dropdown menu that is of string type.</li> <li>View History button will work when the Inputs are filled.</li> </ol>

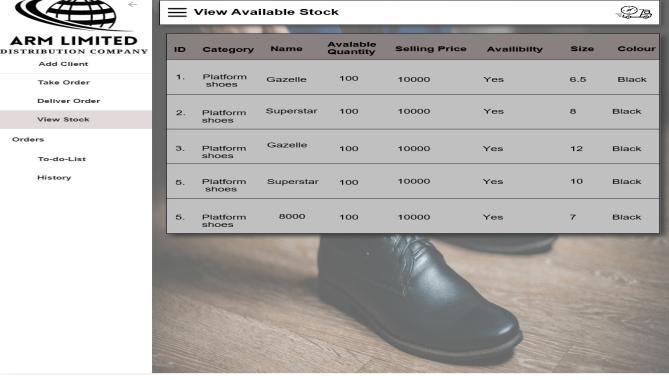
Interface ID	I16
Name	View Cashbook
LinkedUseCase	U27
UI Screen	
Validators	<ol style="list-style-type: none"> <li>Search button will work when cnic input will be filled.</li> </ol>

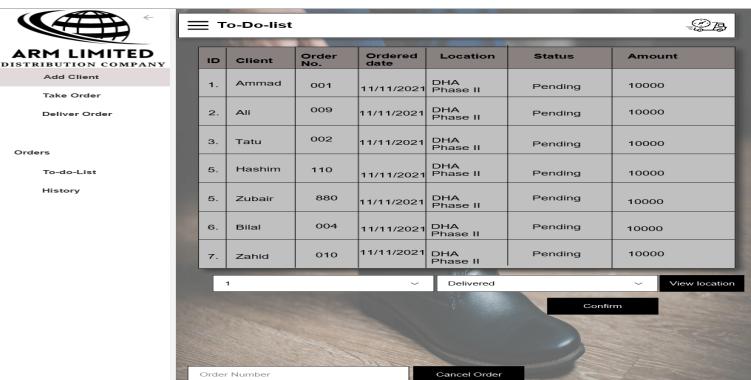
Interface ID	I17
Name	Add Client
LinkedUseCase	U20
UI Screen	
Validators	<ol style="list-style-type: none"> <li>1. Cnic is of string type and its length is 13.</li> <li>2. Name is of string type and should be greater than 2 characters.</li> <li>3. Email is of string type and should contain "@".</li> <li>4. Address is of string type.</li> <li>5. Phone Number is of string type and its length is 11 characters.</li> <li>6. Location is of string type.</li> <li>7. Shop name is of string type.</li> </ol>

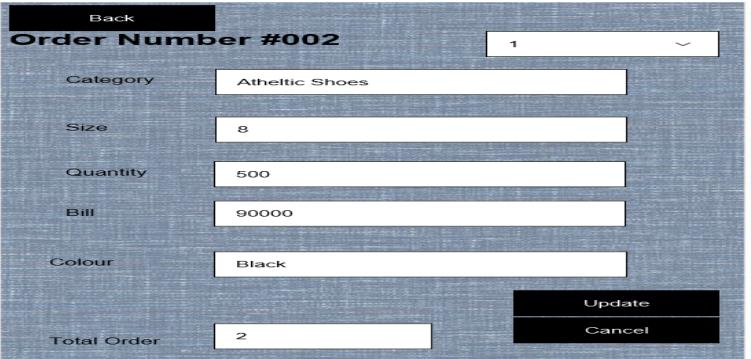
Interface ID	I18
Name	Take Order Rider
LinkedUseCase	U19
UI Screen	 <p>The screenshot shows the 'Take Order' screen for 'ARM LIMITED DISTRIBUTION COMPANY'. The 'Order Details' section contains fields for CNIC (35102-6660287-6), Name (Aminad), Email (aminadaslam07@gmail.com), Address (Shop 321 Armad Wear, DHA Phase I), Number (0321-9876543), Location (DHA Phase I), and Shop (Armad Wear). The 'Cart' section shows a single item with ID 1, Total 3600, and Subtotal 3600. Below this is a modal dialog for adding a new item, with fields for Select Category (Athletic Shoes), Name (Gazelle), Price/piece (3600), Total (3600), Advance (500), and Confirm. The main screen also includes sections for Orders (To-do-List, History), Add Client, Take Order, Deliver Order, and a sidebar with a globe icon.</p>
Validators	<ol style="list-style-type: none"> <li>CNIC is of string type and its length is 13.</li> <li>Name is of string type</li> <li>Email is of string type and should contain "@".</li> <li>Address is of string type.</li> <li>Phone Number is of string type and its length is 11 characters.</li> <li>Location is of string type.</li> <li>Shop name is of string type.</li> <li>Select Category: Category must be selected from drop down that is of string type.</li> </ol>

Validators	<ol style="list-style-type: none"> <li>Select Name: Name must be selected from drop down that is of string type</li> <li>Quantity is of int type.</li> <li>Select Color: Color must be selected from drop down that is of string type</li> <li>Size is of int type and should be greater than zero.</li> <li>Price is of int type.</li> <li>Total Amount is of int type.</li> <li>Advance Amount is of int type.</li> <li>Confirm button will work when all these inputs are filled.</li> </ol>
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Interface ID	I19
Name	Deliver Order
LinkedUseCase	U17
UI Screen	

Interface ID	I20
Name	View Stock
LinkedUseCase	U16
UI Screen	
Validators	

Interface ID	I21																																																								
Name	To Do List																																																								
LinkedUseCase	U22																																																								
UI Screen	 <p>The screenshot shows a mobile application interface for 'ARM LIMITED DISTRIBUTION COMPANY'. The top navigation bar includes 'Add Client', 'Take Order', 'Deliver Order', 'Orders', 'To-do-List' (selected), and 'History'. The main content area is titled 'To-Do-list' and displays a table of pending orders:</p> <table border="1"> <thead> <tr> <th>ID</th> <th>Client</th> <th>Order No.</th> <th>Ordered date</th> <th>Location</th> <th>Status</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Ammad</td> <td>001</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Pending</td> <td>10000</td> </tr> <tr> <td>2.</td> <td>All</td> <td>009</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Pending</td> <td>10000</td> </tr> <tr> <td>3.</td> <td>Tatu</td> <td>002</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Pending</td> <td>10000</td> </tr> <tr> <td>5.</td> <td>Hashim</td> <td>110</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Pending</td> <td>10000</td> </tr> <tr> <td>6.</td> <td>Zubair</td> <td>880</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Pending</td> <td>10000</td> </tr> <tr> <td>6.</td> <td>Bilal</td> <td>004</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Pending</td> <td>10000</td> </tr> <tr> <td>7.</td> <td>Zahid</td> <td>010</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Pending</td> <td>10000</td> </tr> </tbody> </table> <p>At the bottom, there are buttons for 'Delivered', 'View location', 'Confirm', 'Order Number', and 'Cancel Order'.</p>	ID	Client	Order No.	Ordered date	Location	Status	Amount	1.	Ammad	001	11/11/2021	DHA Phase II	Pending	10000	2.	All	009	11/11/2021	DHA Phase II	Pending	10000	3.	Tatu	002	11/11/2021	DHA Phase II	Pending	10000	5.	Hashim	110	11/11/2021	DHA Phase II	Pending	10000	6.	Zubair	880	11/11/2021	DHA Phase II	Pending	10000	6.	Bilal	004	11/11/2021	DHA Phase II	Pending	10000	7.	Zahid	010	11/11/2021	DHA Phase II	Pending	10000
ID	Client	Order No.	Ordered date	Location	Status	Amount																																																			
1.	Ammad	001	11/11/2021	DHA Phase II	Pending	10000																																																			
2.	All	009	11/11/2021	DHA Phase II	Pending	10000																																																			
3.	Tatu	002	11/11/2021	DHA Phase II	Pending	10000																																																			
5.	Hashim	110	11/11/2021	DHA Phase II	Pending	10000																																																			
6.	Zubair	880	11/11/2021	DHA Phase II	Pending	10000																																																			
6.	Bilal	004	11/11/2021	DHA Phase II	Pending	10000																																																			
7.	Zahid	010	11/11/2021	DHA Phase II	Pending	10000																																																			
Validators	<ol style="list-style-type: none"> <li>Order number is of string type and it is mandatory to cancel the order.</li> </ol>																																																								

Interface ID	I22
Name	Cancel Order
LinkedUseCase	U21
UI Screen	 <p>The screenshot shows a form titled 'Order Number #002' with a 'Back' button. It contains fields for Category (Athletic Shoes), Size (8), Quantity (500), Bill (90000), Colour (Black), and Total Order (2). There are 'Update' and 'Cancel' buttons at the bottom.</p>
Validators	<ol style="list-style-type: none"> <li>Category is of string type.</li> <li>Size is of int type and should be greater than zero.</li> <li>Quantity is of int type and should be greater than zero.</li> <li>Bill is of int type and should be greater than zero.</li> <li>Color is of string type.</li> <li>Cancel or update button will work when all of these inputs are filled otherwise an error will be shown.</li> </ol>

Interface ID	I23																																																								
Name	View Order History																																																								
LinkedUseCase	U29																																																								
UI Screen	<table border="1"> <thead> <tr> <th>ID</th> <th>Client</th> <th>Order No.</th> <th>Delivered Date</th> <th>Location</th> <th>Status</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Ammad</td> <td>001</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Completed</td> <td>10000</td> </tr> <tr> <td>2.</td> <td>Ali</td> <td>009</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Completed</td> <td>10000</td> </tr> <tr> <td>3.</td> <td>Tatu</td> <td>002</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Completed</td> <td>10000</td> </tr> <tr> <td>5.</td> <td>Hashim</td> <td>110</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Completed</td> <td>10000</td> </tr> <tr> <td>6.</td> <td>Zubair</td> <td>880</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Completed</td> <td>10000</td> </tr> <tr> <td>7.</td> <td>Bilal</td> <td>004</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Completed</td> <td>10000</td> </tr> <tr> <td>7.</td> <td>Zahid</td> <td>010</td> <td>11/11/2021</td> <td>DHA Phase II</td> <td>Completed</td> <td>10000</td> </tr> </tbody> </table>	ID	Client	Order No.	Delivered Date	Location	Status	Amount	1.	Ammad	001	11/11/2021	DHA Phase II	Completed	10000	2.	Ali	009	11/11/2021	DHA Phase II	Completed	10000	3.	Tatu	002	11/11/2021	DHA Phase II	Completed	10000	5.	Hashim	110	11/11/2021	DHA Phase II	Completed	10000	6.	Zubair	880	11/11/2021	DHA Phase II	Completed	10000	7.	Bilal	004	11/11/2021	DHA Phase II	Completed	10000	7.	Zahid	010	11/11/2021	DHA Phase II	Completed	10000
ID	Client	Order No.	Delivered Date	Location	Status	Amount																																																			
1.	Ammad	001	11/11/2021	DHA Phase II	Completed	10000																																																			
2.	Ali	009	11/11/2021	DHA Phase II	Completed	10000																																																			
3.	Tatu	002	11/11/2021	DHA Phase II	Completed	10000																																																			
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6.	Zubair	880	11/11/2021	DHA Phase II	Completed	10000																																																			
7.	Bilal	004	11/11/2021	DHA Phase II	Completed	10000																																																			
7.	Zahid	010	11/11/2021	DHA Phase II	Completed	10000																																																			
Validators																																																									

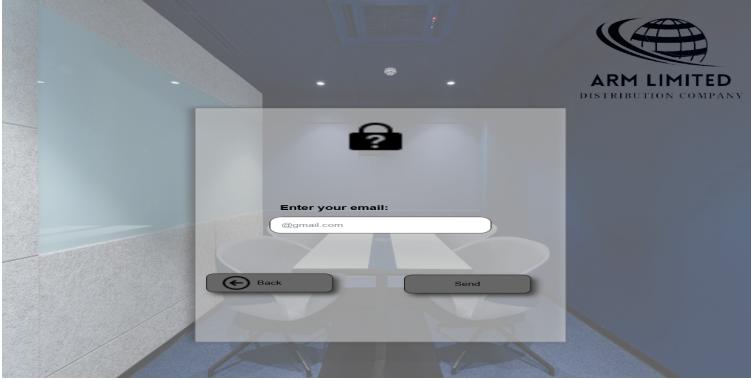
Interface ID	I24
Name	Login
LinkedUseCase	U01
UI Screen	
Validators	<ol style="list-style-type: none"> <li>Email cannot be empty and must contain @gmail.com and it is of string type.</li> <li>Password length should be greater than 8 characters and it is of string type.</li> <li>Login button will work when both these inputs are filled.</li> </ol>

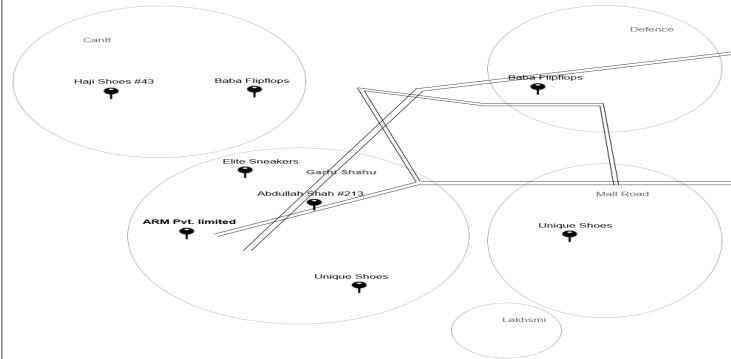
Interface ID	I25
Name	Add Fuel Details Rider
LinkedUseCase	U25
AUI Screen	

Interface ID	I26
Name	Notifications
LinkedUseCase	U30
UI Screen	
Validators	

Interface ID	I27
Name	Manager Dashboard
LinkedUseCase	U31
UI Screen	
Validators	

Interface ID	I28
Name	Sales Agent Dashboard
LinkedUseCase	U31
UI Screen	
Validators	

Interface ID	I29
Name	Reset Password
LinkedUseCase	U02
UI Screen	 
Validators	<ol style="list-style-type: none"> <li>1. Email cannot be empty and must contain @gmail.com and it is of string type.</li> <li>2. Send button will work when the email is entered.</li> <li>3. 6 digit-code must be valid.</li> <li>4. Password length should be greater than 8 characters and it is of string type.</li> <li>5. New password and confirm password must match</li> <li>6. Reset button will work when all the inputs are filled correctly.</li> </ol>

Interface ID	I30
Name	Find Route
LinkedUseCase	U26
UI Screen	
Validators	

## 7 Classes

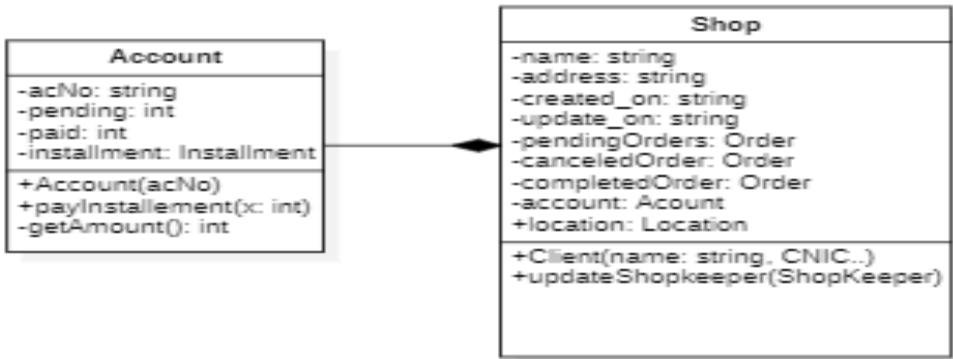
Class Name	Software/ Domain	Is Abstract (Yes/No)	Is Singleton (Yes/No)	Is the class will have parametrized constructor (Yes/No)
Manager	Domain	No	No	Yes
SalesAgent	Domain	No	No	Yes
InventorySupervisor	Domain	No	No	Yes
Rider	Domain	No	No	Yes
User	Software	No	No	Yes
Employee	Software	Yes	No	No
UserCrud	Software	No	Yes	No
Shop	Software	No	No	Yes
Shopkeeper	Software	No	No	Yes
Account	Software	No	No	Yes
Location	Software	No	No	No
AttendDate	Software	No	No	Yes
Attendance	Software	No	No	Yes
AttendanceRecord	Software	No	Yes	No
ProductList	Software	No	No	Yes
Shoe	Software	No	No	Yes
Order	Software	No	No	Yes
OrderLine	Software	No	Yes	No
Inventory	Software	No	Yes	No
Bill	Software	No	No	Yes
Installment	Software	No	No	Yes
Vehicle	Software	No	No	Yes
VehicleCrud	Software	No	Yes	No

## 8 Object Oriented Features

### 8.1 Composition:

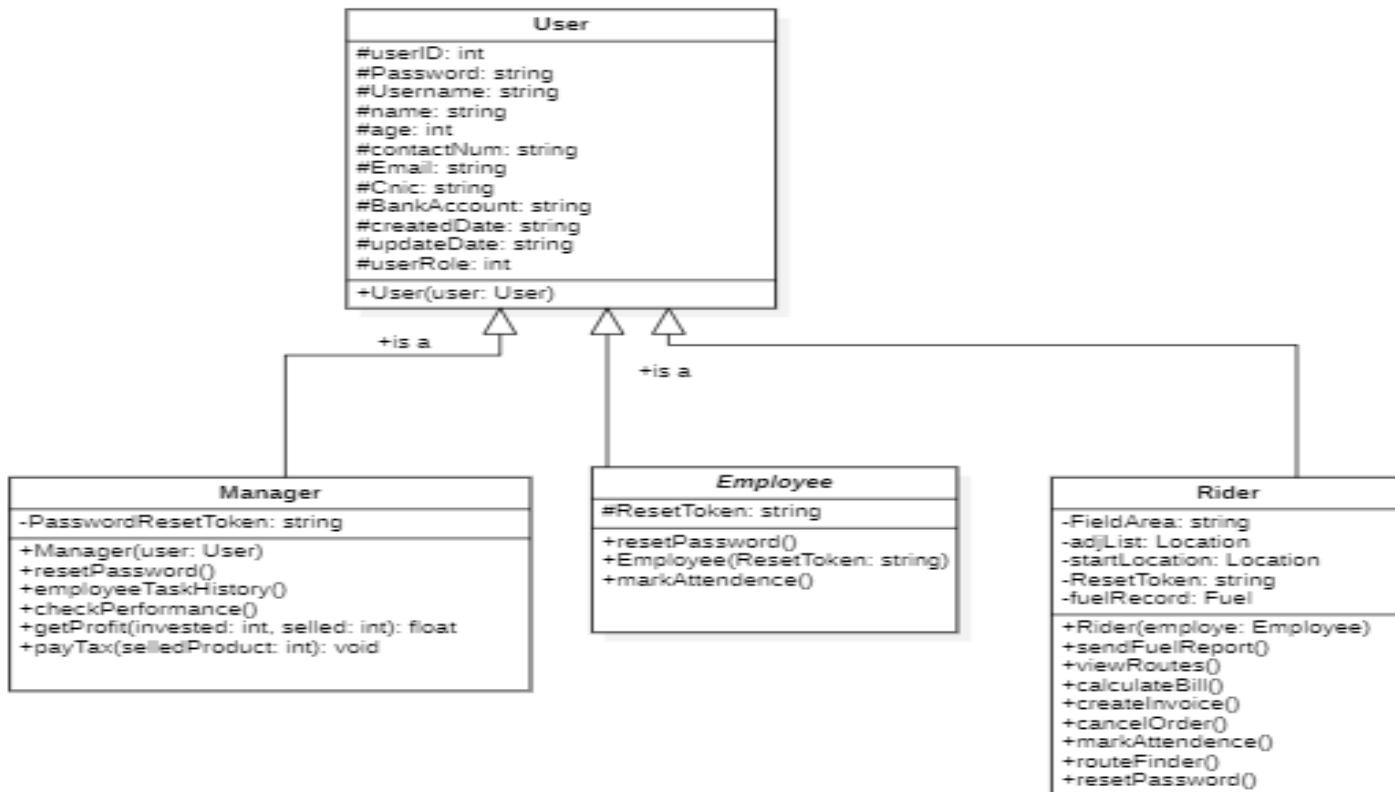


**Figure 1:** Example 1: Composition between Shoe and ProductList.

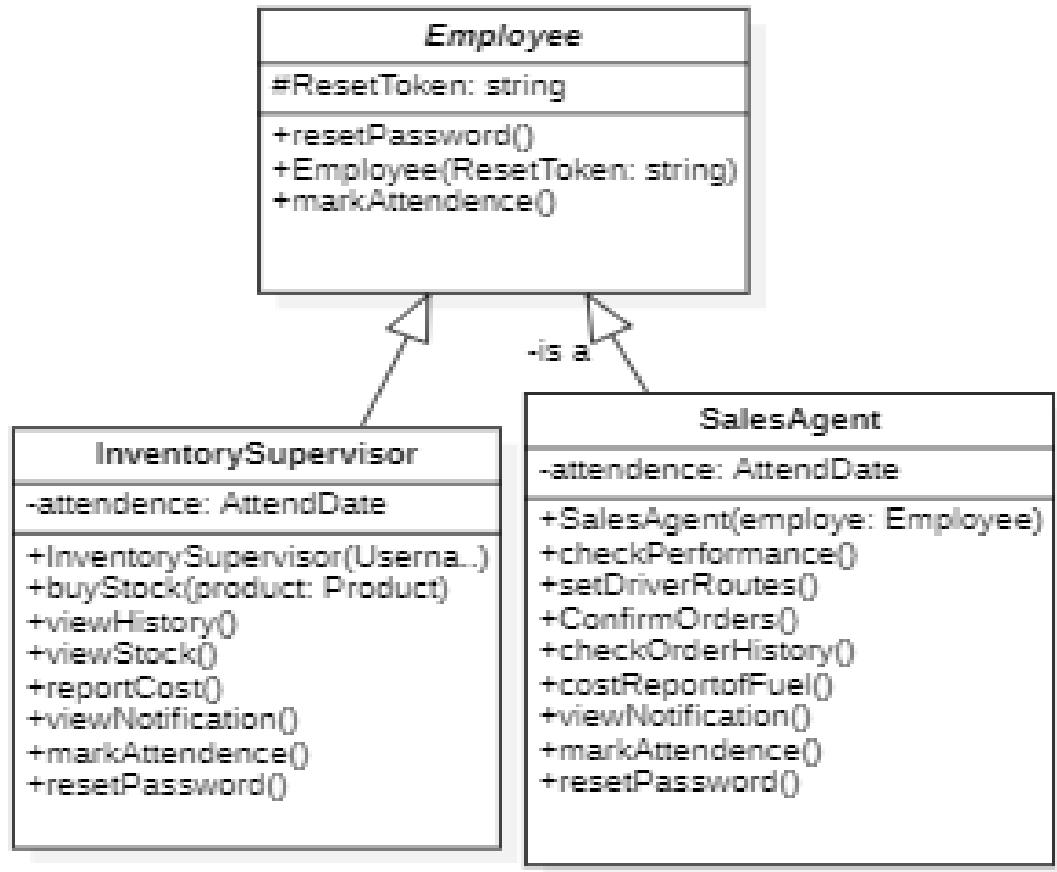


**Figure 2:** Example 2: Composition between Account and shop.

## 8.2 Inheritance:

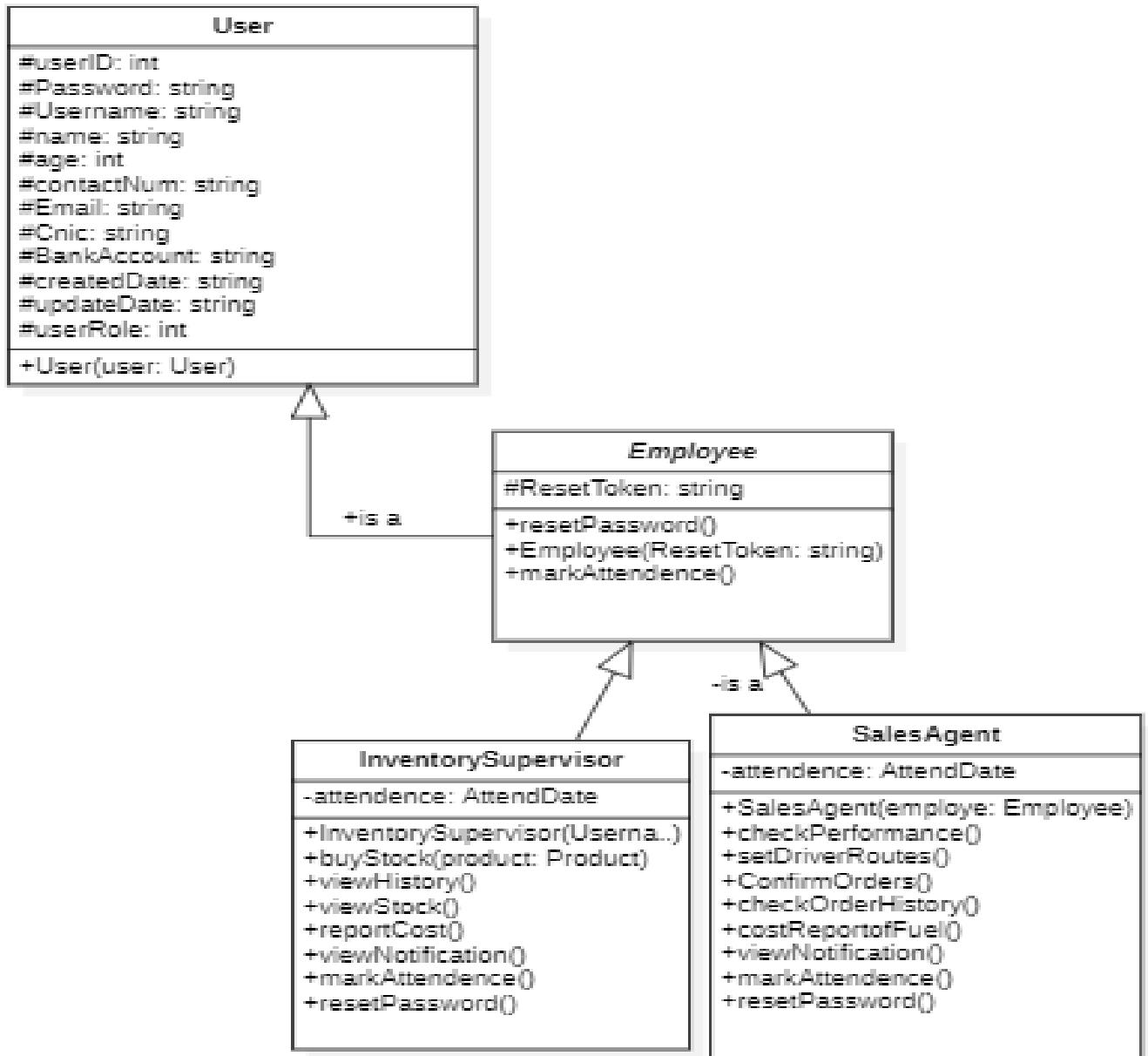


**Figure 3:** Example 1: Extending the User class from Manager and Employee and Rider.



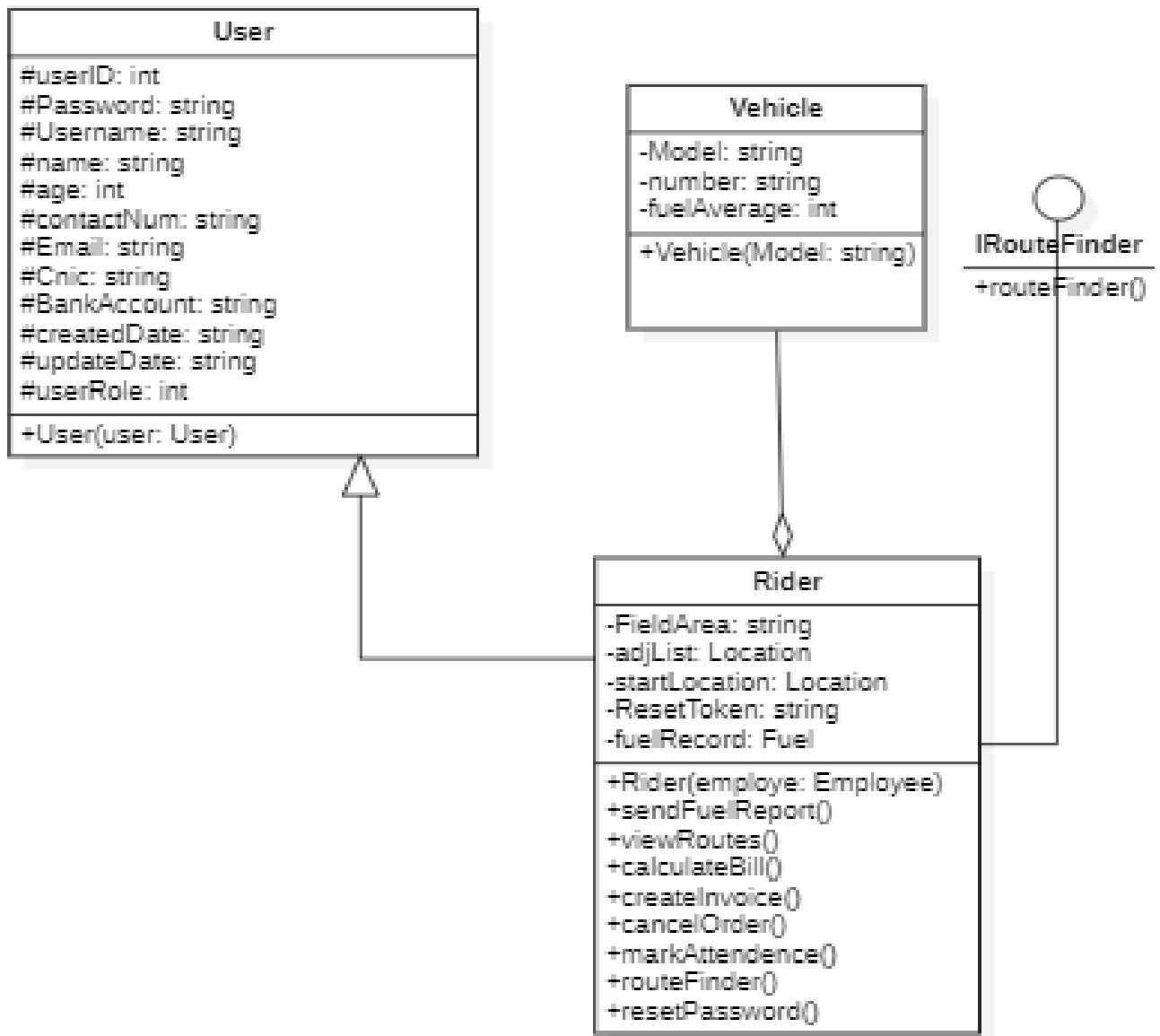
**Figure 4:** Example 2: Extending the employee from inventory supervisor, and sales agent.

### 8.3 Multi-Level Inheritance:



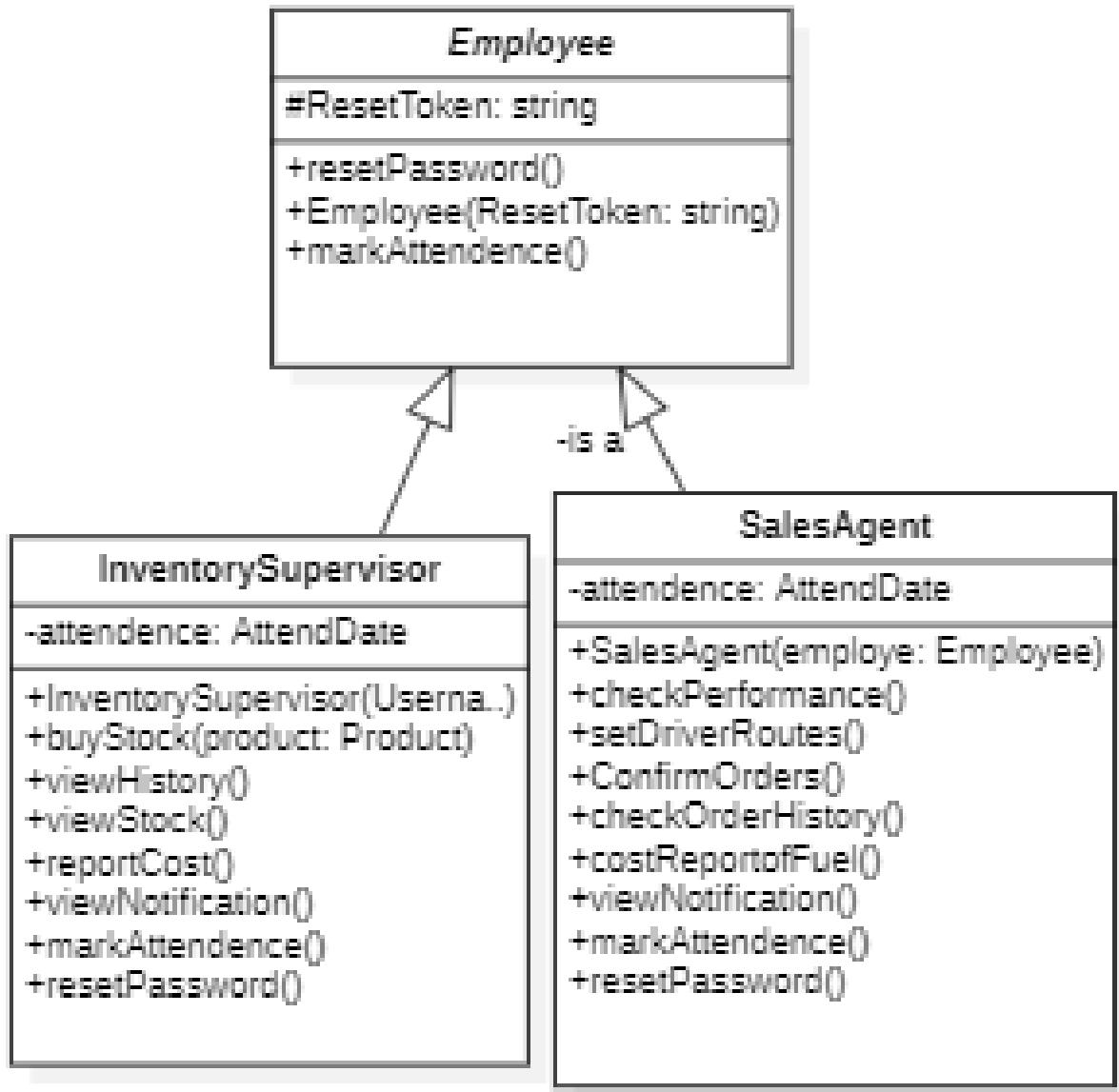
**Figure 5:** Example: Extending the User class from Employee and Employee from Inventory Supervisor, Sales Agent, and Rider class.

## 8.4 Multiple Inheritance:



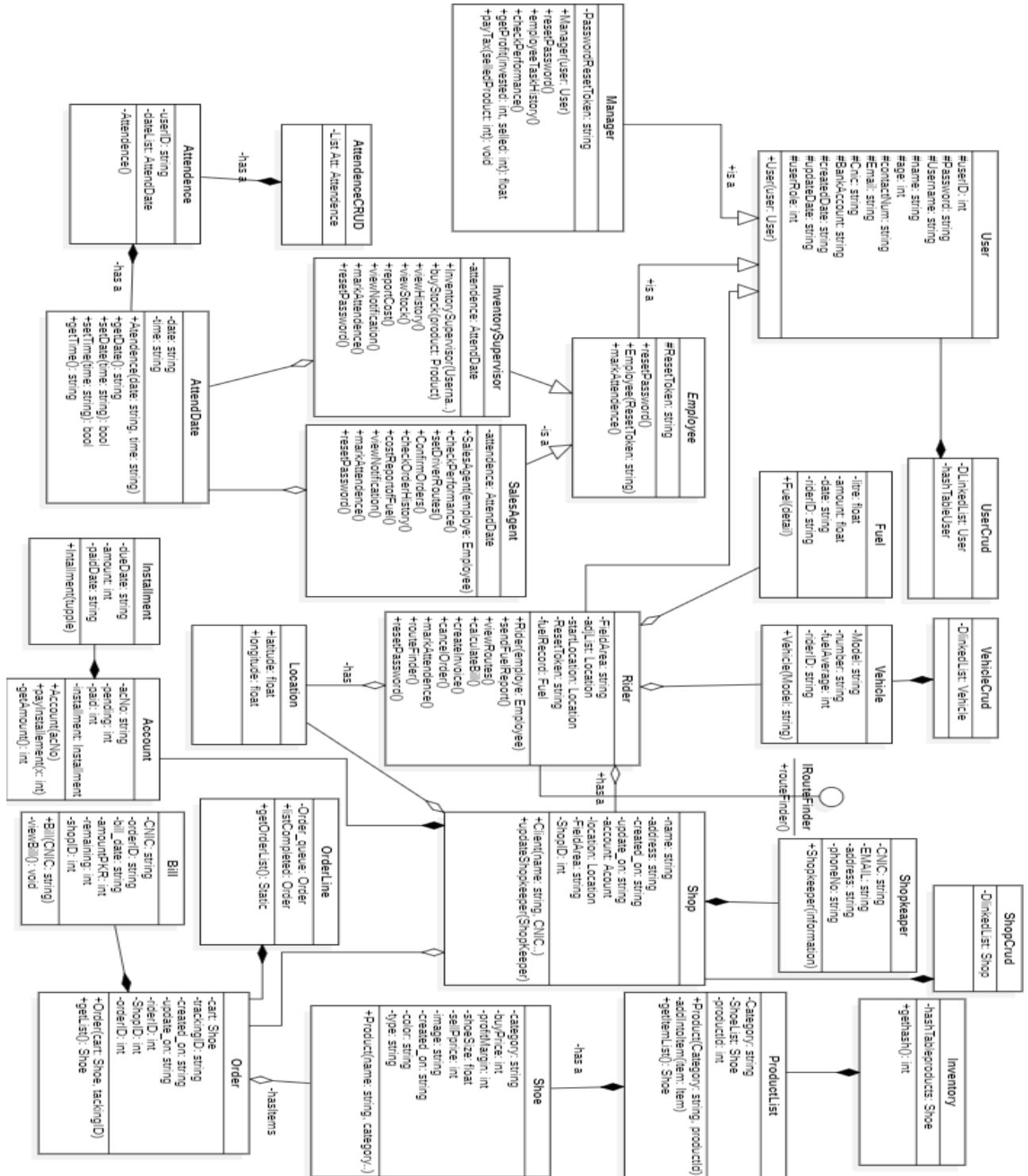
**Figure 6:** Example: Employee and I Pathfinder are extended the Rider class.

## 8.5 Polymorphism:



**Figure 7:** Example: Inventory Supervisor and Sales Agent share common properties using abstract function in super class and defining it in sub-classes.

## 9 Detailed Object-Oriented Design:



## 10 User Interface Details

Interface Id	Text Box	Drop Down	Password Box	Table	Date Field	Buttons	Auto Complete	Radio Button	Check Box	Menu	Text Area	Progress Bar
I01	8	1	0	0	0	5	0	0	0	1	0	0
I02	8	0	0	1	3	5	0	0	0	1	0	0
I03	1	0	0	1	6	4	0	0	1	1	0	0
I04	2	1	0	0	0	3	0	0	0	1	0	0
I05	2	2	0	1	5	4	0	0	0	1	0	0
I06	0	0	0	1	2	3	0	0	0	1	0	0
I07	0	0	0	1	6	2	0	0	0	1	0	0
I08	0	0	0	1	7	3	0	0	0	1	0	0
I09	5	2	0	0	0	3	0	0	0	1	0	0
I10	0	1	0	1	4	5	0	0	3	1	0	0
I11	4	0	0	1	3	5	0	0	0	1	0	0
I12	0	1	0	1	4	3	0	0	1	1	0	0
I13	0	2	0	1	4	3	0	0	0	1	0	0
I14	0	2	0	1	4	3	0	0	0	1	0	0
I15	0	1	0	1	4	3	0	0	0	1	0	0
I16	1	0	0	1	6	3	0	0	0	1	0	0
I17	4	1	0	0	0	3	1	0	0	1	1	0
I18	16	5	0	1	3	5	6	0	0	1	1	0
I19	7	0	0	0	0	3	5	0	1	1	0	0
I20	0	0	0	1	8	0	0	0	0	1	0	0
I21	1	2	0	1	1	3	1	0	0	1	0	0
I22	6	1	0	0	0	3	6	0	0	0	0	0
I23	0	0	0	1	0	0	0	0	0	1	0	0
I24	1	0	1	0	0	2	0	0	0	0	0	0
I25	5	1	0	1	1	1	1	0	0	1	0	0
I26	0	0	0	1	2	2	0	0	0	1	0	0
I27	0	0	0	2	4	5	0	0	0	1	0	3
I28	0	0	0	2	4	2	0	0	0	1	0	0
I29	2	0	2	0	0	4	0	0	0	0	0	0
I30	0	0	0	0	0	0	0	0	0	0	0	0

## 11 Data Structure

Use Case Id	Data Structures Used	Justification for the usage of data structure
U01, U02	Hashing table	<p>As user objects are stored in Link list. Because manager do not know exact number of users.</p> <p>Following are justification for using link list:</p> <ol style="list-style-type: none"><li>1.Insertion and deletion in easier than contiguous array.</li><li>2.For storing large record, moving pointer in link list is easier than moving object itself.</li><li>3.No memory wastage using link list.</li><li>4.Time complexity for insert and delete using hash table is <math>O(1)</math>, and search in hashtable also table <math>O(1)</math></li></ol>
U03, U04	Doubly LinkedList	<p>As user objects are stored in Link list. Because manager do not know exact number of users.</p> <p>Following are justification for using link list:</p> <ol style="list-style-type: none"><li>1.Link list is dynamic data structure there will be no memory overflow.</li><li>2.Insertion and deletion in easier than contiguous array</li><li>3.For storing large record, moving pointer in link list is easier than moving object itself.</li><li>4.Insertio and deletioon is in <math>O(1)</math>.</li></ol>

		Manager give salary to employees from company account. So, the employee who has given salary at last is showing in the top. As stack works on LIFO operation so salaries history is storing in stack using link list.
U09	Stack (using LinkedList)	<p>1.As stack using link list will shrink or grow as manager as needed.</p> <p>2.Their will be no memory usage as stack using link list grows as needed.</p> <p>3.No memory usage as it shrinks as needed.</p>
U08	BST	<p>Binary Search tree (AVL) tree will be used to keep track of employee having maximum attendance. Whereas, the rider also gets bonuses depending upon their number of completed orders and this record will be save in BST.</p> <p>Justification for using BST is because:</p> <p>1.In order traversal of BST would give sorted data in <math>O(n)</math> time.</p> <p>2.It will reduce the time complexity for choosing the employee having maximum order from <math>O(n)</math> which is case of using array to <math>O(1)</math>time.</p>
U05	LinkedList	<p>As user objects are stored in Link list. Because manager do not know exact number of users. Following are justification for using link list:</p> <p>1.Link list is dynamic data structure there will be no memory overflow when number of employees are increasing.</p> <p>2.Insertion and deletion in easier than contiguous array.</p> <p>3.For storing large record, moving pointer in link list is easier than shifting object itself.</p> <p>4.No memory wastage using link list.</p>
U06	LinkedList (doubly)	<p>Company will keep buying vehicles with the growth in the business and riders. So, vehicles keep on increasing or may be decrease because of some loss. So, we need a dynamic data structure that will keep record of vehicles.</p> <p>1.Insertion and deletion in easier than contiguous array.</p> <p>2.It is dynamic data structure. Hence, there will be no usage of memory as there is no need to pre-allocate the memory.</p> <p>3.Insertion and deletion are efficient as compared to array because it just moves the pointer instead to shifted object itself.</p> <p>4.As we are using doubly link list so insertion and deletion will be done in <math>O(1)</math></p>

U12	ArrayList	<p>In buying stock, the user will exactly know how many items he wants to order so using array is best option as access of specified product is easy from array.</p> <ul style="list-style-type: none"> <li>1.Array allocate contiguous memory location so it will provide random access to product.</li> <li>2.It is good option to store fixed amount of data (orders).</li> <li>3.As it has fixed size. Hence, no memory overflow will occur.</li> </ul>
U20	Doubly LinkedList	<p>New added client will be stored in doubly LinkedList.</p> <ul style="list-style-type: none"> <li>1.Insertion and deletion is easier than contiguous array.</li> <li>2.For storing large record, moving pointer in link list is easier than moving object itself.</li> <li>3.No memory wastage using link list.</li> <li>4.In doubly LinkedList the insertion and deletion will be in O(1).</li> </ul>
U22	Queue	<p>As order to do from client is stored in queue to perform FIFO operation on it. So, it will use that stack to delete order from queue.</p> <ul style="list-style-type: none"> <li>1.Using queue, we can process items in order.</li> <li>2.Using queue, number of orders can be managed Ease.</li> </ul>
U13	Hash Table, Doubly LinkedList	<p>As keeping the products and updating it require a fast lookup over the products. Following is use of given data structure:</p> <ul style="list-style-type: none"> <li>1.For large amount of data good hash function if used, hash table will take O(1) to search, delete and insert in its average case.</li> <li>2.Doubly link list is used because insertion in doubly link list takes O(1) as it has next and back both pointers.</li> <li>3.Hash table stores products in form of key value pair which will offer fast look up at large number of products.</li> </ul>

U22	LinkedList	<p>We have to store ordered that has been completed. So, we will store in LinkedList.</p> <p>1.Link list is dynamic data structure there will be no memory overflow unless memory completely filled when number of orders are increasing.</p> <p>2.Insertion and deletion is easier than contiguous array.</p> <p>3.Deletion is efficient as compared to array because it just moves the pointer instead to shifted object itself in <math>O(n)</math>.</p>
U19	Queue using LinkList	<p>Order to do from client is stored in queue to perform FIFO operation on it. The ordered taken first will be delivered first from queue.</p> <p>1.Using queue, we can process items in order.</p> <p>2.As rider have to manage multiple orders from client so queue will be useful to manage order in order.</p> <p>3.Using queue, number of orders can be managed.</p>
U18	stack	<p>Sales agent will inform the latest status about that order from inventory manager, and rider.</p> <p>1.Stack use LIFO operation. So, the sales agent will know the latest status of order.</p> <p>2.Stack will maintain the order process by displaying latest status at top.</p>
U25	BST	<p>To store fuel details of a month or week. We will use BST.</p> <p>1.We will get fuel report according to date by In order walk.</p> <p>2.Time complexity for searching in accordance with date is <math>O(\lg n)</math></p>
U26	Graph	<p>Graph can be used to represent paths.</p> <p>Minimum Spanning tree will represent the shortest path in weighted graph</p> <p>2.Graph will represent the route that rider will follow.</p>



## 12 Exceptions

Type of Exception	Why this exception will occur	Use Case Id in which exception could be occurred	How you will handle the exception
Login exception	Due to the user forgets his/her login password.	All Use Case Id's	Click on option of 'Forget your password'. An email will be sent to the user containing the new password.
Update Stock exception	If the inventory Supervisor tries to deceive the company.	U13	The inventory manager can press on checkout button of that order after a day (meaning the order has been delivered in the warehouse). Otherwise, a message box will be shown.
Stock Unavailability exception	If the required product by the client is not available in the warehouse.	U19	An email would be sent out to the inventory Supervisor to buy the required product. If the Supervisor buys it from the supplier, then it will be shown to the rider in the available product list.
Cancel-Order exception	If the user clicks on delete order button asked by the client when the delivery of that order is on the way.	U21	He would be shown a message box containing that the client cannot change or delete his order now.
Cancel-Order exception	If the client does not receive the delivery.	U21	The company will refund 90% of the advance payment of the order.
Insufficient-Balance exception	When the manager is paying salaries to the employees and the company account runs out of cash.	U9	The manager pays the employee in installments or after some days when orders get delivered and company gets cash.
Client-Email exception	When the rider is taking the information of client during placing his order and the client tells he doesnot have an email account.	U20	The email would be optional and all the report of the client will be dealt keeping the CNIC in consideration.

## **13 Data Storage**

Data will be Stored in the following tables using sqlite.

### **13.1 Manager**

Column ID	Entity
1	userID
2	Password
3	Username
4	name
5	age
6	contactNum
7	Email
8	Cnic
9	BankAccount
10	ResetToken
11	userRole

### **13.2 Employee**

Column ID	Entity
1	userID
2	Password
3	Username
4	name
5	age
6	contactNum
7	Email
8	Cnic
9	BankAccount
10	ResetToken
11	userRole
11	date
12	time

### **13.3 Rider**

Column ID	Entity
1	userID
2	Password
3	Username
4	name
5	age
6	contactNum
7	Email
8	Cnic
9	BankAccount
10	ResetToken
11	userRole
11	date
12	time
13	latitude
14	longitude
15	fieldArea
16	VehicalModel
15	VehicalNumber
17	VehicalfuelAverage

### **13.4 Fuel**

Column ID	Entity
1	litres
2	amount
3	date
4	riderID

### **13.5 Attendence**

Column ID	Entity
1	userID
2	Date
3	Time

## **13.6 Vehicle**

Column ID	Entity
1	Model
2	Number
3	fuelAverage

## **13.7 Shops**

Column ID	Entity
1	name
2	address
3	latitude
4	longitude
5	acNo
6	pending
7	paid
8	dueDateInst
9	amountInst
10	paidDateInst
11	FieldArea
12	Cnic
13	Email
14	phoneNo
15	shopKeeperAdress

## **13.8 Inventory**

Column ID	Entity
1	prodID
2	prodCategory
3	quantity
4	buyPrice
5	profitMargin
6	ShoeSize
7	SellPrice
8	imageString
9	color
10	type

## **13.9 OrdersToDo**

Column ID	Entity
1	riderID
2	prodCategory
3	quantity
4	buyPrice
5	profitMargin
6	ShoeSize
7	SellPrice
8	imageString
9	color
10	type
11	shopID
12	riderID
13	orderID

## **13.10 OrdersCompleted**

Column ID	Entity
1	riderID
2	prodCategory
3	quantity
4	buyPrice
5	profitMargin
6	ShoeSize
7	SellPrice
8	imageString
9	color
10	type
11	shopID
12	riderID
13	orderID

## **13.11 Bills**

Column ID	Entity
1	Cnic
2	OrderID
3	Bill <sub>date</sub>
4	amountPKR
5	remaining
6	shopID

## **14 Email Sending**

We are sending emails to different users on different occasions. All of them are listed below:

1. The Manager receives an email from the inventory Supervisor regarding the purchasing of the products from the supplier.
2. An email is also sent out by the Sales agent to the client when his order gets delivered.
3. An email is sent out to the user requesting for password update.
4. An email is also sent out when the rider is taking the order from the shopkeeper.
  - i. If the stock is available then it is sent out to the Sales agent for the confirming the order.
  - ii. If the stock is not available then to the inventory Supervisor.

### **14.1 Email 1:**

Subject: Products Purchasing

Dear Manager,

Please check your notification for confirmation of the order 001 from ADIDAS New York.

The details are given below:

- Quantity: 1000 pieces
- Size: 8.5
- Color: Black
- Type: Flip Flops
- Price: 2000 per piece
- Total amount: 2000000

Kindly, let us know about the status of this order as soon as possible.

Thanks

Regards,

ABC

## **14.2 Email 2**

Subject: Order have been Delivered

Dear Customer,

Your Order 2120 from ARM limited have been Delivered today. The order summary is:

- Quantity: 1000 pieces
- Size: 8.5
- Color: Black
- Type: Flip Flops
- Price: 2200 per piece

Subtotal: PKR 2200000

Taxes: PKR 0

Total: 222210000

Customer Information:

Ammad Aslam

Panorama Shop123

Lahore 55000

Pakistan

Thank you very much for your purchase. We look forward to do further Business with you.

## **14.3 Email 3**

Subject: Forget Password

Dear User,

Your new password of the account is puy78992. Enter this now to have access to your account.

Regards,

ARM limited.

## **14.4 Email 4:**

Email 4i:

Subject: Order Confirmation

Dear Sales Agent,

There has been a placement of order from Shop 99 Ali Shoes DHA, Phase I Lahore. The order details are:

- Quantity: 500 pieces
- Size: 8
- Color: Black
- Type: Flip Flops
- Price: 2500 per piece

- Total: 12500000

Kindly, give permission to place the order. Waiting for reply.

Rider Information

Abdullah Ali

0321-7893457

" Area: DHA, Phase I Lahore

## 14.5 Email 4a

Subject: Order Unavailability

Dear Supervisor,

While placing order from Shop 99 Ali Shoes DHA, Phase I Lahore, the product was unavailable in the warehouse. The product details were:

- Size: 8
- Color: White
- Type: Sneakers
- Present Quantity in Warehouse: 10
- Required: 1200

Kindly, give notification of the availability of the stock.

Rider Information

Abdullah Ali

0321-7893457

" Area: DHA, Phase I Lahore

## 15 Project Plan

This section should include the implementation plan and work division among the members. All the estimated dates should be before December 20, 2022 including report and presentation.

Use Case Id	Use Case Name	Member Name	Estimated Completion Date
U01	Login	Rayan	8 December
U02	Reset Password	Ammad	8 December
U03	Add Employee	Mukaram	9 December
U04	Update Employee	Mukaram	10 December
U05	Delete Employee	Ammad	10 December
U06	Add Vehicle	Rayan	11 December
U07	Deduct Fuel Money	Rayan	14 December
U08	Check attendance	Ammad	14 December
U09	Give Salaries	Rayan	15 December
U10	Give Bonus	Rayan	15 December
U11	Track Financial record	Ammad	16 December
U12	Buy Stock	Ammad	11 December
U13	Update Stock	Ammad	12 December
U14	Confirm Stock	Mukaram	13 December

Use Case Id	Use Case Name	Member Name	Estimated Completion Date
U15	Mark Attendance	Mukaram	15 December
U16	View Stock	Ammad	12 December
U17	Determine Price	Mukaram	16 December
U18	Make Report Cost	Mukaram	16 December
U19	Take Order	Rayan	16 December
U20	Add Client	Rayan	14 December
U21	Cancel Order	Ammad	16 December
U22	To Do list	Ammad	16 December
U24	Track Order	Rayan	18 December
U25	Add Fuel Details	Mukaram	16 December
U26	Find Route	Rayan	19 December
U27	Assign Vehicle	Ammad	12 December
U28	Assign Location	Mukaram	14 December
U29	View Order History	Mukaram	18 December
U30	Deliver Order	Ammad	19 December

## 16 Analytical Reports

### 16.1 Customer Relation management report:

CRM analytical report will give us information about the customer who ordered the most expensive products. In addition, graph of the customer who ordered the most products this

month.

## 16.2 Fuel report:

This report provides a table of the fuel information of the vehicle assigned to each rider. Each rider would have its own fuel report.

The screenshot shows a mobile application interface titled "Fuel Details". At the top, there are input fields for "Truck Number" (2033) and "Fuel litres" (235.67). Below these are fields for "Km in odometre" (24000), "Fuel" (20), and "Time" (18:40 AM). To the right, the date is displayed as 12/5/2022. The main area is a table with four columns: "Kilometre in odometre", "Filled Gas (litres)", "Time", and "Cost". The table contains five rows of data, with the last three being empty. The data in the first three rows is as follows:

Kilometre in odometre	Filled Gas (litres)	Time	Cost
23550	10	04:44 P.M	2350
23600	15	04:00 P.M	3300
23670	10	07:44 A.M	2350
24000	20	18:40 P.M	4700

**Figure 8:** Fuel report of rider

## 16.3 Sales and purchase Analytical report:

Analytical report display the analysis of the purchase orders raised against the suppliers daily.

## 16.4 Analytical Report Format:



**ARM LIMITED**  
DISTRIBUTION COMPANY

- [Dashboard](#)
- [Assign Locations](#)
- [Assign Vehicle](#)
- [Rider Performance](#)
- [Notifications](#)
- [Track Order](#)
- [View Cashbook](#)
- [Shortest Path](#)
- [Mark Attendance](#)

≡
Dashboard


**Customer Details:**

ID	Name:	Order ID	Date
1.	Rayan ras	#112112	11/12/2022
2.	Rayan ras	#112112	11/12/2022
3.	Rayan ras	#112112	11/12/2022
4	Rayan ras	#112112	11/12/2022

**Best Customers:**

ID	Name:	Gross	Date
1.	Mukarram	123456	11/12/2022
2.	Mukarram	123456	11/12/2022
3.	Mukarram	123456	11/12/2022
4	Mukarram	123456	11/12/2022

**Sales Graph:**

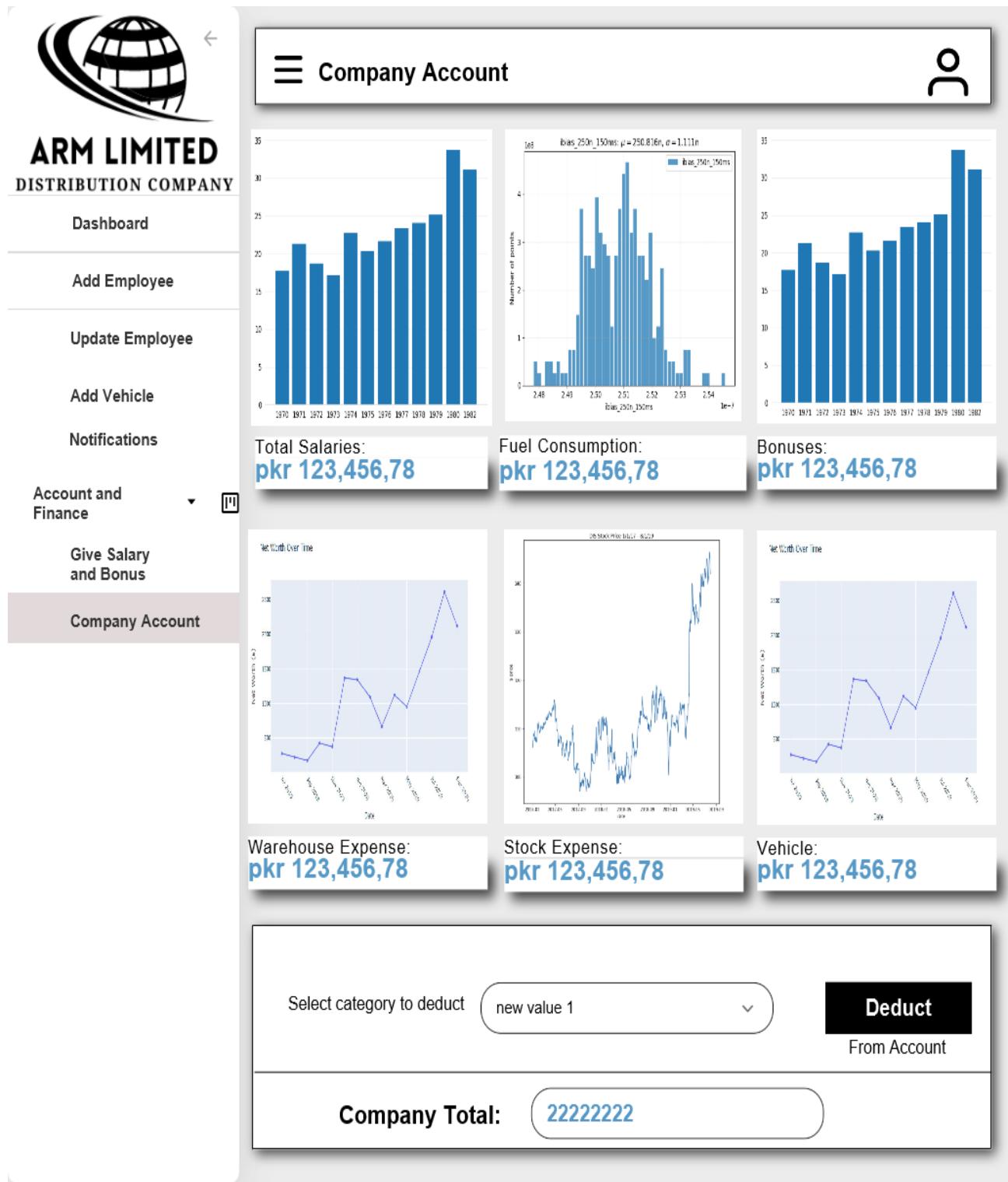
Net Worth Over Time



Date	Net Worth (£)
Jul 2019	~350
Aug 2019	~300
Sep 2019	~250
Oct 2019	~450
Nov 2019	~450
Dec 2019	~1400
Jan 2020	~1350
Feb 2020	~1050
Mar 2020	~700
Apr 2020	~1100
May 2020	~950
Jun 2020	~1450
Jul 2020	~1950
Aug 2020	~2600
Sep 2020	~2100

**Figure 9:** Dashboard of sales agent

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**Figure 10:** Company account of manager