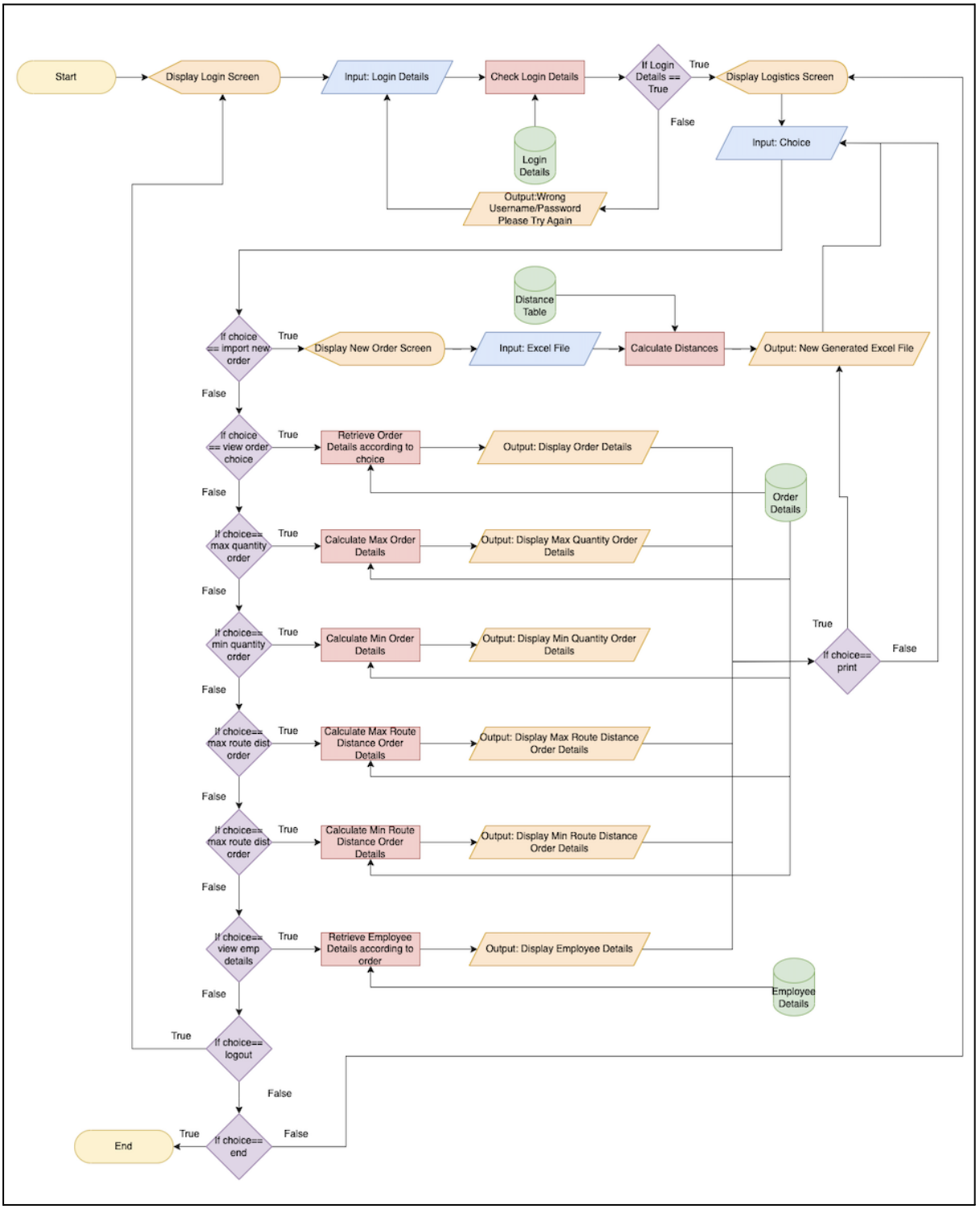
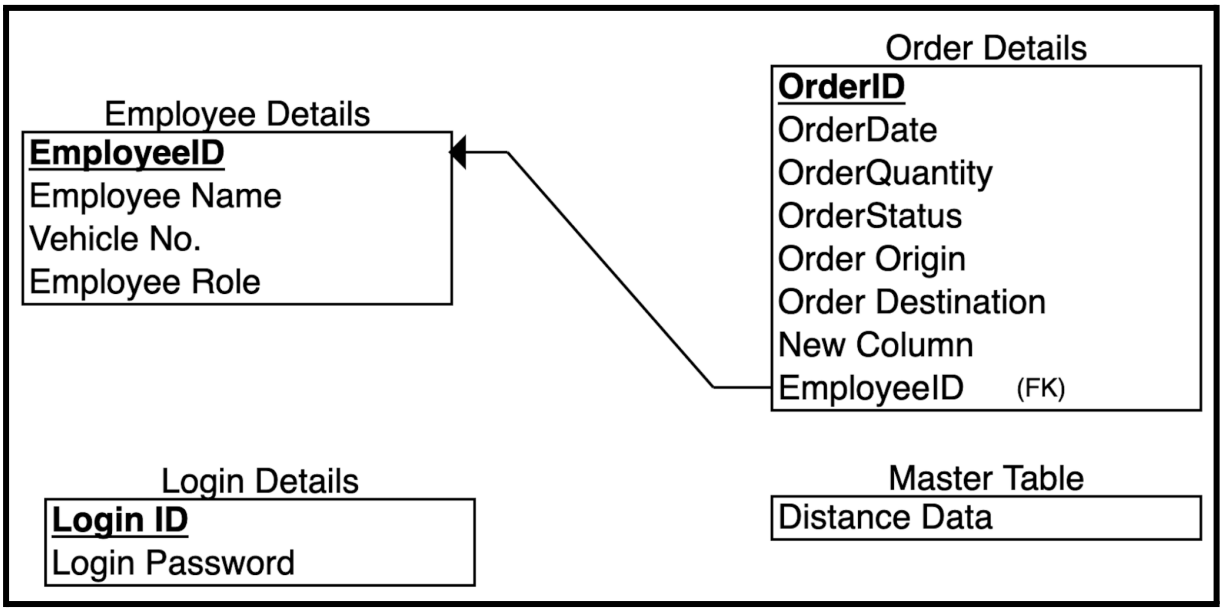
Criterion B: Design

System Flowchart



ER Diagrams


Order Details
OrderID
OrderDate
OrderQuantity
OrderStatus
Order Origin
Order Destination
New Column
EmployeeID (FK)
Employee Details
EmployeeID
Employee Name
Vehicle No.
Employee Role
Login Details
Login ID
Login Password
Master Table
Distance Data

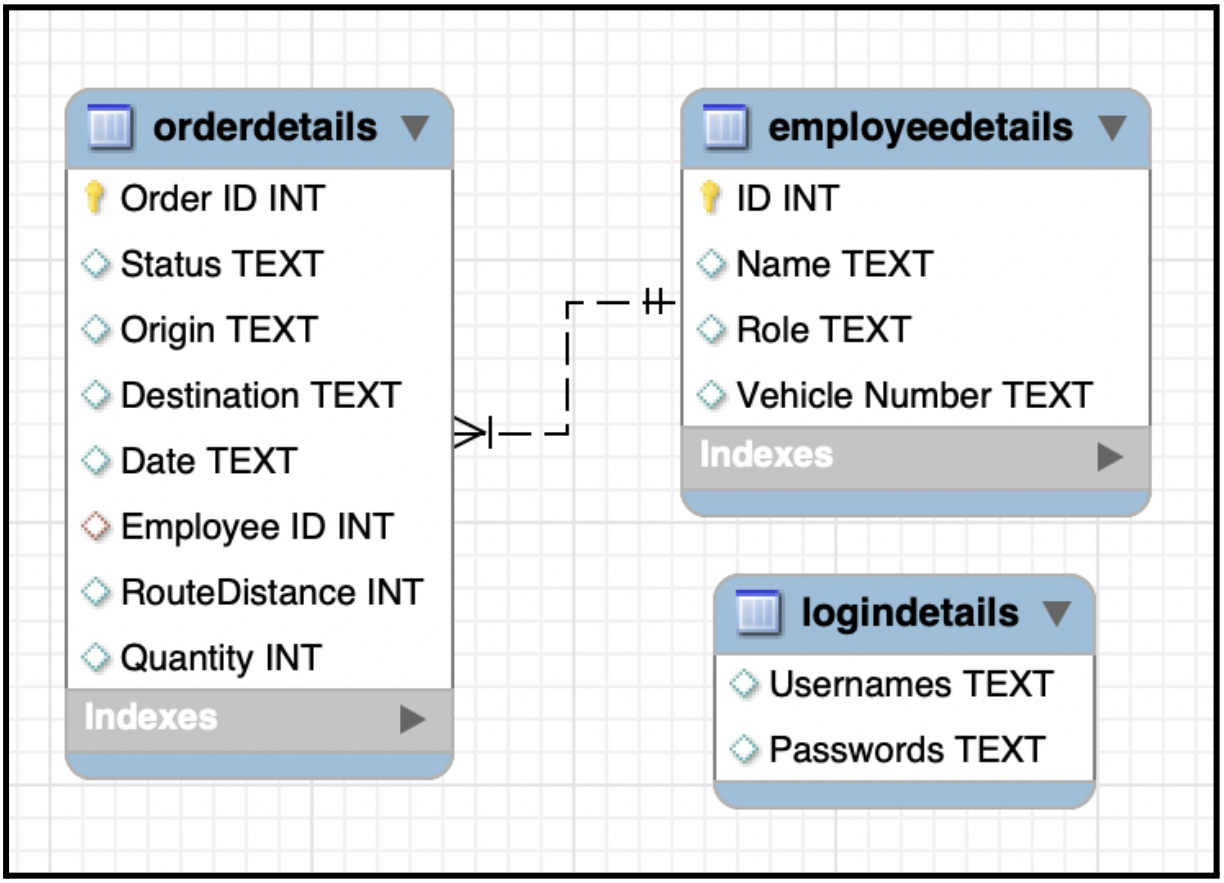

orderdetails
Order ID INT
Status TEXT
Origin TEXT
Destination TEXT
Date TEXT
Employee ID INT
RouteDistance INT
Quantity INT
Indexes
employeedetails
ID INT
Name TEXT
Role TEXT
Vehicle Number TEXT
Indexes
logindetails
Usernames TEXT
Passwords TEXT

Table Structure

EmpDetails:

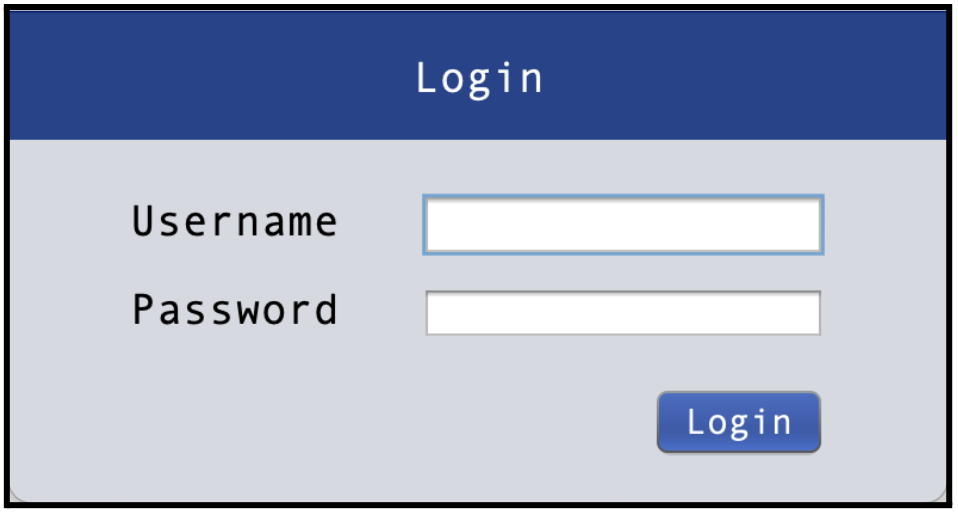
Field Name	Data Type	Validation	Description
Employee ID	String	Character Check	Primary Key
Employee Name	String	Length Check	Name of employee, Max 32 characters
Employee Role	String	Length Check	Security/Description Reasons
Vehicle No.	Int	Length Check	Stores vehicle number, for verification purposes

Order Details:

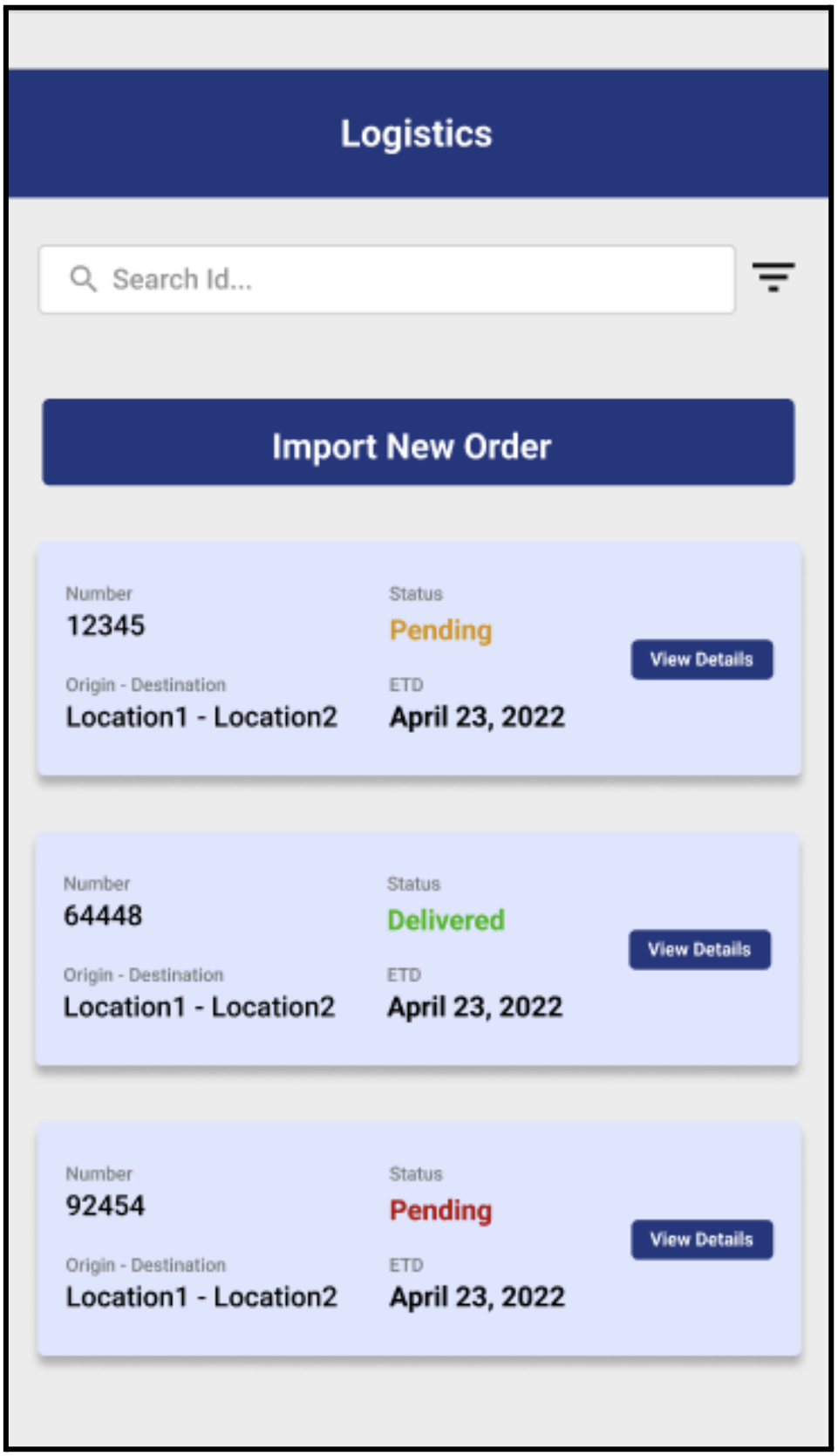
Field Name	Data Type	Validation	Description
OrderID	String	Character	Primary Key
Order Quantity	Int	Range Check	Order quantity in kgs/litres
Order Status	String	Length Check	Order Status - Delivered, In Progress(drop down)
Order Origin	String	Length Check	Order - Stores Start Location of Order
Order Destination	String	Length Check	Order - Stores End Location of Order
Order Date	String	Length Check	Stores Order Date
Employee ID	String	Character Check	Foreign Key

Mock User Interface

Login Screen:

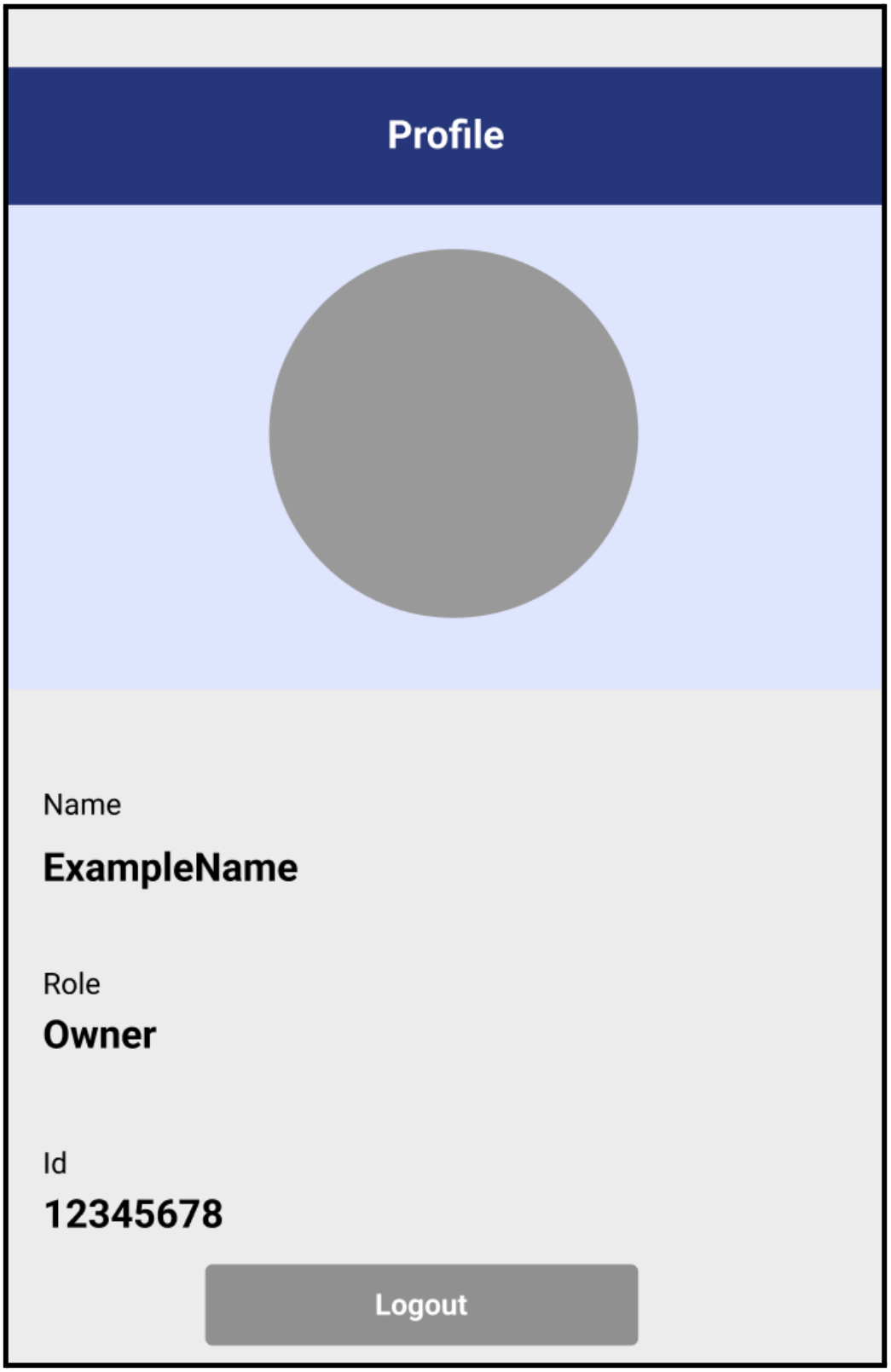


Home Screen:


Logistics
Search Id...
Import New Order
Number
12345
Status
Pending
Origin - Destination
Location1 - Location2
ETD
April 23, 2022
View Details
Number
64448
Status
Delivered
Origin - Destination
Location1 - Location2
ETD
April 23, 2022
View Details
Number
92454
Status
Pending
Origin - Destination
Location1 - Location2
ETD
April 23, 2022
View Details

Vehicle Data Screen:

Profile Screen:



Testing Plan

# Success Criteria	Action to Test	Method of Testing	Expected Result
1.	The system should be able to read from Excel spreadsheets.	Click on the button that allows the user to choose an excel file to be imported from a file chooser interface. Select the Excel file to be imported. Trying to upload other file types should give an error message.	All cell data from the excel file will be displayed in the jTable in their respective columns.
2.	The system should be able to generate new Excel spreadsheets.	Click on the Button that allows the user to to convert the contents in the jTable to an editable Excel file. Select location to store the generated Excel file.	All cell data from the jTable will be inserted into a new generated excel file.
3.	The system should reduce distance calculation time for the client.	Check if the system is highly efficient in terms of data processing time and the entire process of populating required details to be displayed and reports to be generated do not take more than a few seconds.	All required details to be displayed and reports to be generated are processed and generated with a few seconds to reduction cal
4.	The system should encrypt the data and protect it from being accessed by any	Enter the Username and Password through the login page that is connected to a login details table in the mysql	Allows login only when Username and Password match the details in the login details table in the

	unauthorised source.	database.	mysql database. Incorrect entries will lead to an error message being displayed.
5.	The system should be accessible by all employees across various platforms.	Run and test the system on other platforms such as Windows, Linux	The system runs on all platforms without any errors.
6.	The client should be able to generate reports such as order with max quantity, order with min quantity the database accordingly.	Click the Buttons that sorts the details into the required order and provides the appropriate outputs, such as order details and employee details.	The system should effectively sort the data and display the appropriate outputs desired by the user.
7.	Warning messages should be displayed in case of incorrect data entry.	Check if the system displays error messages by purposely entering incorrect details, for example incorrect username and passwords.	Incorrect entries will lead to an error message being displayed.
8.	The system should be in sync with the databases.	Select an option to display an order. Check if the system displays the values according to the latest updated values of the database.	The system should be able to populate data from the mysql databases and appropriately display it on the screen for the client.
9.	GUI should be user friendly by having buttons for navigation buttons, drop down menu, tables etc.	Click on every button, drop down menu and navigate through the system.	All buttons work and menus work, colour scheme matches the client's preference, buttons are large with legible text with custom font.

Queries

SQL Query	Function	Table
SELECT * FROM orderdetails LIMIT ?, 1;	Selects all fields from the order details table for the record chosen by the user determined by the '?' which is automatically calculated by the program by retrieving the index which is then substituted.	Order Details
SELECT * FROM orderdetails ORDER BY Quantity DESC LIMIT 0,1;	Sorts all records in the order details database in descending order based on the value of quantity and then selects all fields of the first record which will automatically become the order with the largest quantity.	Order Details
SELECT * FROM orderdetails ORDER BY QuantityASC LIMIT 0,1;	Sorts all records in the order details database in ascending order based on the value of quantity and then selects all fields of the first record which will automatically become the order with the smallest quantity.	Order Details