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Department of Computer Science

Faculty of Science & Technology (FST)

**SOFTWARE ENGINEERING [T]**

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**Delivery Management System**

**Semester: Fall 25-26**

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# **1. PROJECT PROPOSAL**

## **1.1 Background to the Problem**

Now a days, many businesses depend on fast and reliable delivery management services. In a Delivery management system, there are some roles like seller, customer, admin, carrier and employee etc. Sellers need an easy way to send products to customers, customers want to track on there shipment, employees must have to verify the payments and assign carriers into the individual shipment, carriers need to update delivery status. When they do the tasks manually, a lot of mistakes can happen-such as wrong tracking updates by the carriers, lost of shipment information, or miss match in assigning carriers, lost of documentation of the shipments.

If we want solve these problems, the Delivery Management System software was created. It takes all the parts of the delivery process into one Desktop based application so every user can do their own work easily. The employee can add ,update and delete any shipment , carrier and routes, update and check his information and also check payment status. The sellers can create shipments easily, create new account and also delete account. .The carriers can see his appointed shipment, can update tracking information and customers can see the delivery status. Admin is the main role of this project he can Update, Delete, Create simultaneously all the role and he also effect the shipment by changing information if found any wrong.

After getting all information in a database and providing each user with a different dashboard, the system prevent errors, saves time, and keeps data organized. This makes delivery faster, clearer, and more reliable for the users.

### **The target group of users:**

#### **1. Admin**

Admin can create: Employees, Carriers, Routes, Update Payment, Tracking. He view all records and able to delete the Employees, Carriers & Shipments.

#### **2. Employees**

Employee can add carriers with the shipments, check payment status .He can view all shipments and can update payment also update his own profile, can delete shipment from the system.

#### **3. Carrier**

Carrier can view Assigned Shipments . Update Tracking Status and His own Info.

#### 4.Seller

Seller is a client who can create shipment, delete Shipments, can view tracking status, He also can make payment and delete his account.

#### 5. Customer

He can View his shipments which are assign from seller to him . Update his profile and Delete his Account .

### 1.2 Selection of Process Model

In our Delivery Management System, we picked Extreme Programming (XP) as a development model. The XP model works well for our projects where requirements can change and where we can get feedback from customers and use common sense principles to develop our project easily. It helps us to stay flexible and focused on delivering quality at each step of the process.

XP is a software development method which built around the idea of doing simple to understand practices, getting feedback from customers, and improving the system over time. XP encourages continuous communication between the development team and the customer to make sure the software always fulfills the customer's needs.

**Exploration:** In This phase we can gather requirements from the customer and our development team gets knowledge about the tools and technologies that we will use. This phase can take two weeks of our project time.

**Planning:** At first, we can write the user stories (features) and estimate the effort of the working of the user stories for the implementation we can give priorities of the user stories and the releasing schedule will create.

**Iterations to Release:** Before the first release of our system several iterations will include, and it takes two weeks for implementation. In the first iteration the architecture of the hole system will be created. Customers can select the stories in each iteration. When all the iteration is completed, our project will be ready for production.

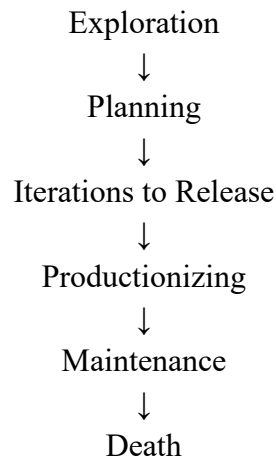
**Productionizing:** When the system is ready for release, we can do extra testing and performance checks. We can also review any last-minute changes that might need to be included in our project.

**Maintenance:** After the first release, we can keep our system running and produce some new iteration simultaneously. We can also have some developers to maintain our project.

**Death:** After the satisfaction of the customer needs this phase occurred and we can write our necessary documents of the system.

#### XP Process Flow

Here's a simple diagram to show the XP process:



### **Why XP is the Best Fit for This Project**

We chose XP for the Delivery Management System for several reasons:

#### **Pair programming:**

In the Pair programming it allows two people to program at a time, one person is brainstorming, another is involved with writing code. By this we can used to write code efficiently for a long time.

#### **Frequent Requirement Changes:**

Our system consists of different user roles- admin, employee, carrier, client, and their needs will likely change as we develop. XP works well here because it's built to adapt quickly to changing requirements through its short development cycles.

**Metaphor:** In metaphor there is a shared story which is a summary of the overall project describes how the system will work for development. By this our project team will get a clear understanding of what the project needs.

**40-hour week:** Developer can maximum 40-hour work in a week. So that the developers' working productivity will increase.

#### **Reduced Risk:**

XP reduces the risk of major issues later in the process because we get constant feedback and release small, incremental updates regularly. If something isn't working, we can address it immediately rather than discovering it later in the project.

#### **On-site customer:**

We can understand the requirements perfectly and the problems because a customer must present full time and available for our team.

XP will work perfectly in our Delivery Management System Because XP values like communication, simplicity, feedback, courage, respect which will enhance our project progress. Besides it's Practices will also help us to develop the project smoothly.

## **2. SOFTWARE REQUIREMENTS SPECIFICATIONS (SRS) / PRODUCT REQUIREMENTS DOCUMENT (PRD)**

### **2.1 Scopes and Features**

#### **2.1.1 Admin**

- Create Admin Profile: Admin can create new profile to enroll themselves in the system.
- Login to Dashboard: Admin securely logs in using email and password to access the dashboard.
- View Shipments, Payments, Employees, Carriers, Routes: Admin can view all records of shipments, payments, employees, carriers, and routes.
- Add and Delete Employees, Carriers, Shipments, Routes: Admin can manage users and system data by adding, updating, or deleting records.
- Access Tracking Information: Admin can check the tracking status of any shipment.
- Update Shipment, Payment, Tracking, Route Data: Admin can modify shipment, payment, or route details.
- Delete Records: Admin can remove incorrect records from the system.

#### **2.1.2 Employee**

- Login to Dashboard: Employees can log in using their user email and password to access the system.
- Verify Shipment Payment Status: Employees can check whether a shipment is paid or unpaid.
- Assign Shipments to Carriers: Employees can assign shipments to carriers after confirming the payment.
- Update Shipment Information: Employees can update shipment details, such as status or delivery updates.
- Remove Shipments: Employees can remove canceled shipments from the system.
- Update Employee Data: Employees can update their personal information.
- Add/Delete Carriers: Employees can add new carriers or delete carriers.
- Add Routes: Employees can define new shipment routes with destination addresses.
- Update Shipment Tracking Status: Employees can update tracking status for shipments in transit.

#### **2.1.3 Customers**

- Login to System: Customers can log in using their client ID and password.
- Sign Up/Register: New customers can register by filling in their details to create an account.
- Create Account/Login: Customers can create new account or log in to the system with their information.

- View Shipment Details: Customers can see detailed information about their shipments, including status and delivery times.

#### 2.1.4 Carriers

- Login to Dashboard: Carriers can log in to access their assigned shipments and manage deliveries.
- View Assigned Shipments: Carriers can view all shipments assigned to them for delivery.
- Update Shipment Tracking Status: Carriers can update the shipment status to inform customers of progress.
- Update Shipments as Delivered: Carriers update shipments as delivered once they are completed.
- Update Profile Information: Carriers can edit their personal and contact details.
- View Route Information: Carriers can access route details, including the origin and destination of shipments.

#### 2.1.5 Sellers

- Create Shipment Order: Sellers can create new shipment orders with product details and delivery information.
- Auto-Assign RouteID: System automatically assigns or creates a route ID for the shipment based on available routes.
- View Shipment Orders Created: Sellers can view and track all the shipments they have created.
- See Delivery Estimate: System calculates an estimated delivery date based on payment status.
- Manage Profile: Sellers can view, update, or delete their own profile and account information.

### 2.2 User Story Table

AS A \ AN	I want to	So that	Acceptance criteria
Admin	Create a new Admin Profile	I can enroll myself in the system	An OTP is sent to user's mobile and confirmation mail to the registered email
	Log in securely to access the admin dashboard with my email and password.	I can oversee and modify shipment, payment, and tracking records.	password System verifies admin credentials from Login table
	View all shipments, payments, employees, carriers, and routes	I can oversee system-wide activities and ensure accuracy	Admin can see all data from Shipment, Payment, Carrier, Employee, and Route tables
	Add new employees, carriers, shipments, and routes	I can expand system functionality and manage operational growth	Admin can create new records using valid forms

	Access tracking information for any shipment	I can verify delivery progress and assist in customer service issues	Tracking Status is visible for all shipments
	Update shipment, payment, tracking, and route information	I can resolve disputes, correct errors, and ensure proper workflow	Admin can modify any field in Shipment, Payment, Carrier, Employee, and Route tables
	Delete employees, carriers, and shipments	I can remove inactive or incorrect records from the system	Deletion allowed for Admin
Employee	log in securely to access the employee dashboard.	I can enroll myself into employee dashboard	need registered employee email and password
	verify whether a shipment is fully paid or unpaid.	I can update the payment status as Paid	need shipment reques
	assign shipment orders to carriers only after payment is confirmed.	i can accept customer shipment and assign a carrier	need carrier id ,and payment id ,shipment id
	remove shipment	I can remove shipment details from the database	need delete button
	update employee information	I can update all information of the employee	need update button
	add or delete carrier	I can remove and add new carrier or delete old carrier	need carrier add and delete button
	add routes	I can add new roots and its address( form -to)	need add routs button
	update the tracking status of shipments.	I can provide customer shipment tracking information	need shipment id
Customer	log in securely	to view shipment details.	providing password & clientID
	track	only shipment tied to clientID	providing clientID
	verify shipment using name and email	to be member	providing contact no., password , DOB, gender.
	System checks details	against the system table	providing contact no., password , DOB, gender.
	be member	order product	providing contact no., password , DOB, gender.
	sign up by filling out a registration form.	to be a new user	providing contact no., password , DOB, gender.
	create an account (new user)	log in to the system.	providing password and clientID
Carrier	Log in securely to my carrier dashboard	I can access my assigned shipments and manage deliveries	Must enter valid email & password



	View all shipment orders assigned to me	I can know which deliveries I am responsible for	Shipment details include: CarrierID, ShipmentID, Client info, Route & Status.
	Update the tracking status of a shipment	Customers and employees can track real-time delivery progress	Editable status options: Pending, In Transit, Shipped to Delivered. System updates Shipment table & timestamp is recorded.
	Update my own profile information	My contact information remains accurate for the company	Carrier can update Name, Contact, Address, Password & Profile updates do not affect Login credentials unless changed.
	Mark a shipment as Delivered	The system can complete the shipment process	Status changes to Delivered & shipment no longer appears in pending lists.
	View route information for assigned shipments	I can understand the origin and destination before starting delivery	RouteID correctly linked to Shipment & No access to edit route data.
Seller	Create a shipment order	I can send goods to my customers	System allows entering goods type, weight, volume, pickup & drop-off address, receiver details. Shipment saved with ClientID. PaymentStatus defaults to Pending.
	Have the system auto-assign a RouteID	I don't manually choose or manage routes	System checks for existing route. If route exists, reuse RouteID; otherwise create new RouteID automatically.
	View all shipment orders I created	I can track and manage my shipments	System shows only shipments linked to my ClientID with details (goods, weight, status, delivery time). Access to others' shipments is blocked.
	See delivery estimate automatically	I know when the shipment should arrive	When payment changes from Pending → Paid/Unpaid, system sets EstimatedDeliveryTime = Today + 3 days.
	Manage my own profile	I can keep my information updated	Seller can view/update own profile only; can delete own account without affecting others.

## 2.2 Requirements Traceability Matrix

### 2.3.1 Functional Requirements

## Admin Requirements

**Table - 1: Functional Requirements for Admin**

Req. ID	Requirement
<b>2.3.1.0</b>	<b>Admin Dashboard</b> – All administrative features accessible after secure login.
<b>2.3.1.1</b>	<b>Admin Profile Management</b>
2.3.1.1.1	Create a new admin profile by entering required details (name, email, password).
2.3.1.1.2	Securely log in to the dashboard using email and password.
2.3.1.1.3	Send OTP to mobile and confirmation email upon profile creation.
<b>2.3.1.2</b>	<b>System Data Overview</b>
2.3.1.2.1	View all records: shipments, payments, employees, carriers, and routes in a list/table.
2.3.1.2.2	Access detailed tracking information for any shipment in the system.
<b>2.3.1.3</b>	<b>Record Management (CRUD Operations)</b>
2.3.1.3.1	Add new employees, carriers, shipments, and routes to the system.
2.3.1.3.2	Update details for shipments, payments, tracking status, and routes.
2.3.1.3.3	Delete (remove) records for employees, carriers, and shipments.
2.3.1.3.4	All changes (add, update, delete) must reflect immediately in the system views.

## Employee Requirements

**Table - 2: Functional Requirements for Employee**

Req. ID	Requirement
<b>2.3.1.4</b>	<b>Employee Dashboard</b> – All employee features accessible after secure login.

<b>Req. ID</b>	<b>Requirement</b>
<b>2.3.1.5</b>	<b>Login &amp; Profile</b>
2.3.1.5.1	Log in securely using registered email and password.
2.3.1.5.2	Update personal employee information.
<b>2.3.1.6</b>	<b>Shipment &amp; Payment Processing</b>
2.3.1.6.1	Verify the payment status (Paid/Unpaid) of a shipment request.
2.3.1.6.2	Assign a confirmed (paid) shipment to an available carrier, linking ShipmentID, CarrierID, and PaymentID.
<b>2.3.1.7</b>	<b>Shipment Lifecycle Management</b>
2.3.1.7.1	Update shipment information and tracking status (e.g., Pending, In Transit).
2.3.1.7.2	Remove (cancel/delete) shipment orders from the system.
<b>2.3.1.8</b>	<b>Carrier &amp; Route Management</b>
2.3.1.8.1	Add new carriers to the system.
2.3.1.8.2	Delete carrier records.
2.3.1.8.3	Define and add new shipment routes with origin and destination addresses.

## **Seller Requirements**

**Table - 3: Functional Requirements for Seller**

<b>Req. ID</b>	<b>Requirement</b>
<b>2.3.1.15</b>	<b>Seller Portal</b> – All seller features accessible after login.
<b>2.3.1.16</b>	<b>Profile Management</b>

<b>Req. ID</b>	<b>Requirement</b>
2.3.1.16.1	View, update, and delete own profile and account information.
<b>2.3.1.17</b>	<b>Shipment Order Creation</b>
2.3.1.17.1	Create a new shipment order by entering goods details, weight, volume, pickup/drop-off addresses, and receiver information.
2.3.1.17.2	System automatically saves the shipment with the seller's ClientID and a default "Pending" payment status.
<b>2.3.1.18</b>	<b>System Automation</b>
2.3.1.18.1	System auto-assigns a RouteID by checking for an existing matching route or creating a new one.
2.3.1.18.2	System automatically calculates and displays an Estimated Delivery Time (Today + 3 days) once payment status changes from "Pending".
<b>2.3.1.19</b>	<b>Order Tracking</b>
2.3.1.19.1	View a list of all shipment orders created under their ClientID.
2.3.1.19.2	Access is restricted to own shipments only; cannot view others's orders.

## Carrier Requirements

**Table - 4: Functional Requirements for Carrier**

<b>Req. ID</b>	<b>Requirement</b>
<b>2.3.1.12</b>	<b>Carrier Dashboard</b> – All carrier features accessible after secure login.
<b>2.3.1.13</b>	<b>Login &amp; Profile</b>
2.3.1.13.1	Log in securely using email and password.

<b>Req. ID</b>	<b>Requirement</b>
2.3.1.13.2	Update personal profile information (Name, Contact, Address).
<b>2.3.1.14</b>	<b>Delivery Management</b>
2.3.1.14.1	View all shipment orders assigned to their CarrierID.
2.3.1.14.2	View route information (origin, destination) for assigned shipments.
2.3.1.14.3	Update the tracking status of a shipment (e.g., to "In Transit").
2.3.1.14.4	Mark a shipment as "Delivered" to complete the delivery process.
2.3.1.14.5	System records a timestamp for all status updates.

## Customer Requirements

**Table-5: Functional Requirements For Customeer**

<b>Req. ID</b>	<b>Requirement</b>
<b>2.3.1.9</b>	<b>Customer Portal – All customer features accessible after login/registration.</b>
<b>2.3.1.10</b>	<b>Account Management</b>
<b>2.3.1.10.1</b>	<b>Register/Sign Up as a new user by providing details (contact, password, DOB, gender).</b>
<b>2.3.1.10.2</b>	<b>Create an account and log in using the provided ClientID and password.</b>
<b>2.3.1.10.3</b>	<b>System validates provided details (name, email) against records during registration.</b>
<b>2.3.1.11</b>	<b>Shipment Interaction</b>
<b>2.3.1.11.1</b>	<b>View detailed information for all shipments linked to their ClientID.</b>
<b>2.3.1.11.2</b>	<b>Track the status and delivery timeline of their shipments.</b>

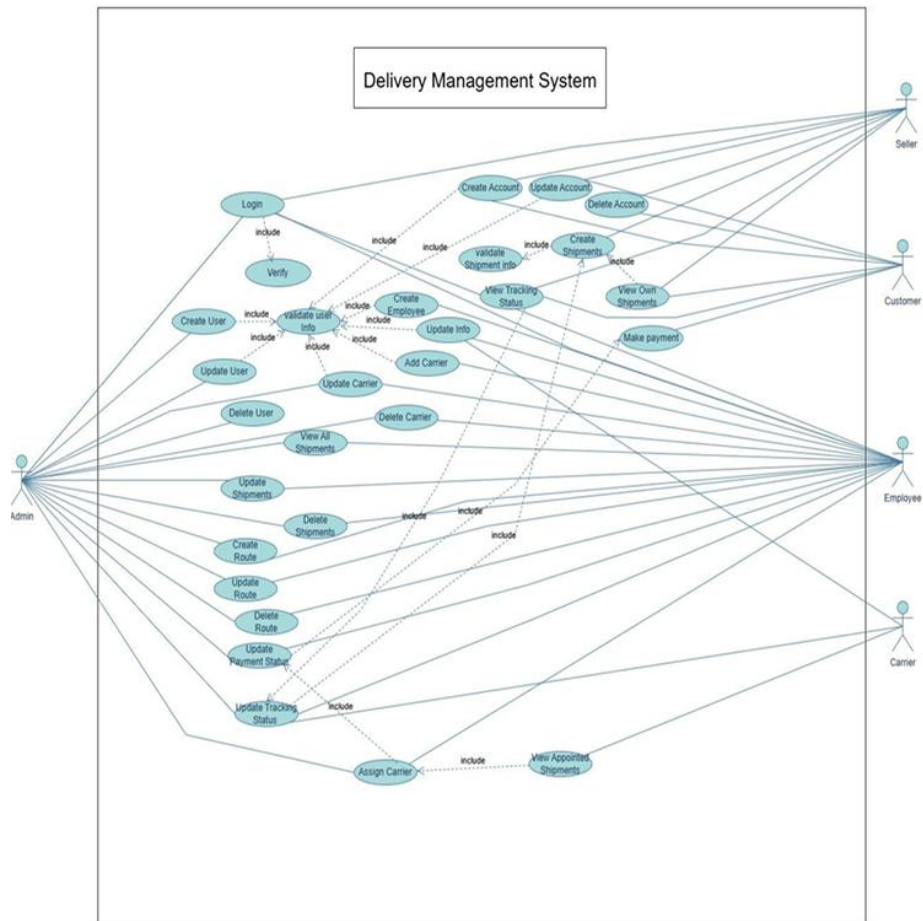
### 2.3.2 Non-Functional Requirements

Category	Requirement
<b>Performance</b>	The system shall allow administrators to view, filter, and update all system records like shipments, users, routes with a page load time of under 3 seconds .
<b>Reliability</b>	Core transaction features Like creating shipments, updating status, processing payments shall maintain 99.5% operational uptime.
<b>Usability</b>	The user interface for Employees, Carriers, and Sellers shall be encompass how easy it is for new or infrequent users to learn to use the System.Common tasks like updating a shipment status should be completable in 3 clicks or less.
<b>Integrity</b>	The system shall ensure that all shipment tracking statuses and financial records like payments are accurate, auditable, prevent un authorized accesses and protect the system from virus or attacks.
<b>Availability</b>	The customer and carrier tracking portals shall be available 24/7. Scheduled maintenance windows shall be communicated at least 48 hours in advance.
<b>Maintainability</b>	The system shall be built with a modular codebase to allow for easy updates, debugging, and feature addition.
<b>Efficiency</b>	System will not use to much Resources And use the bandwidth properly and it will take care about to use minimum hardware when system run.
<b>Testability</b>	The System Should not use complex logic or Algorithm in the system For prevent to perform different test easily or smoothly

### 3. SOFTWARE DESIGN

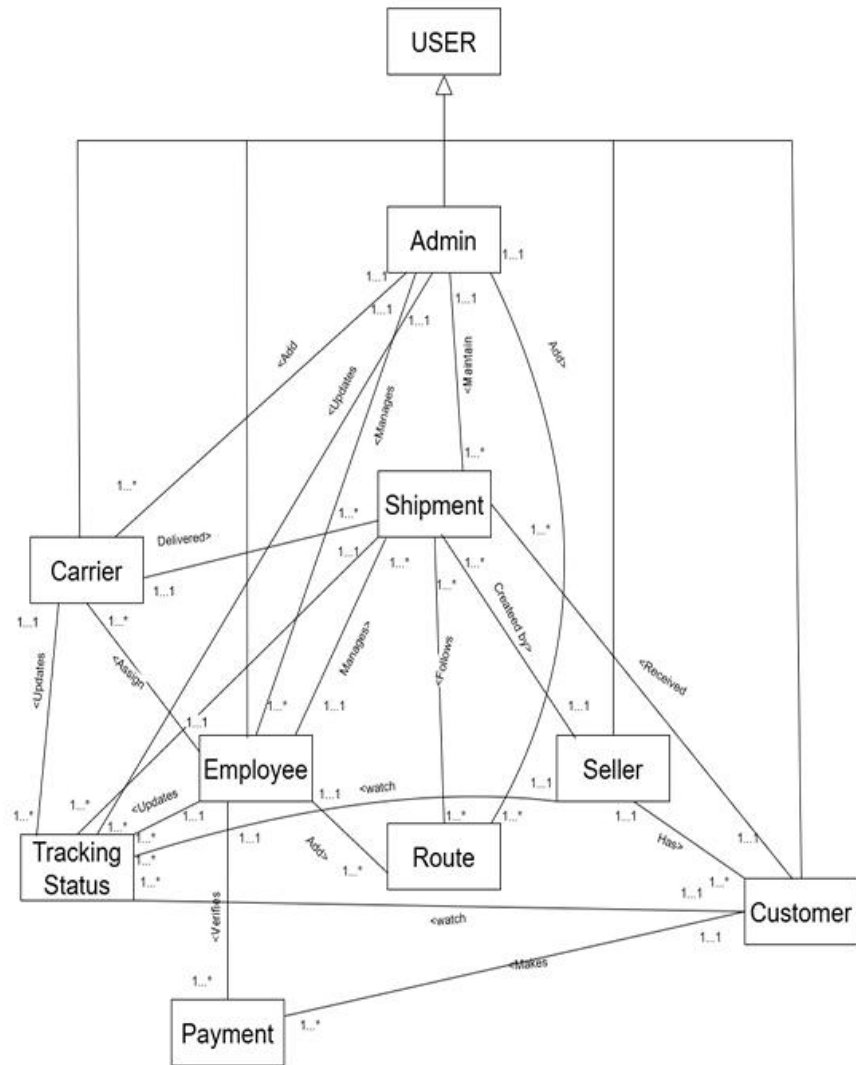
#### 3.1 System Design:

##### Use case Diagram:



**Figure 1:** Use Case Diagram

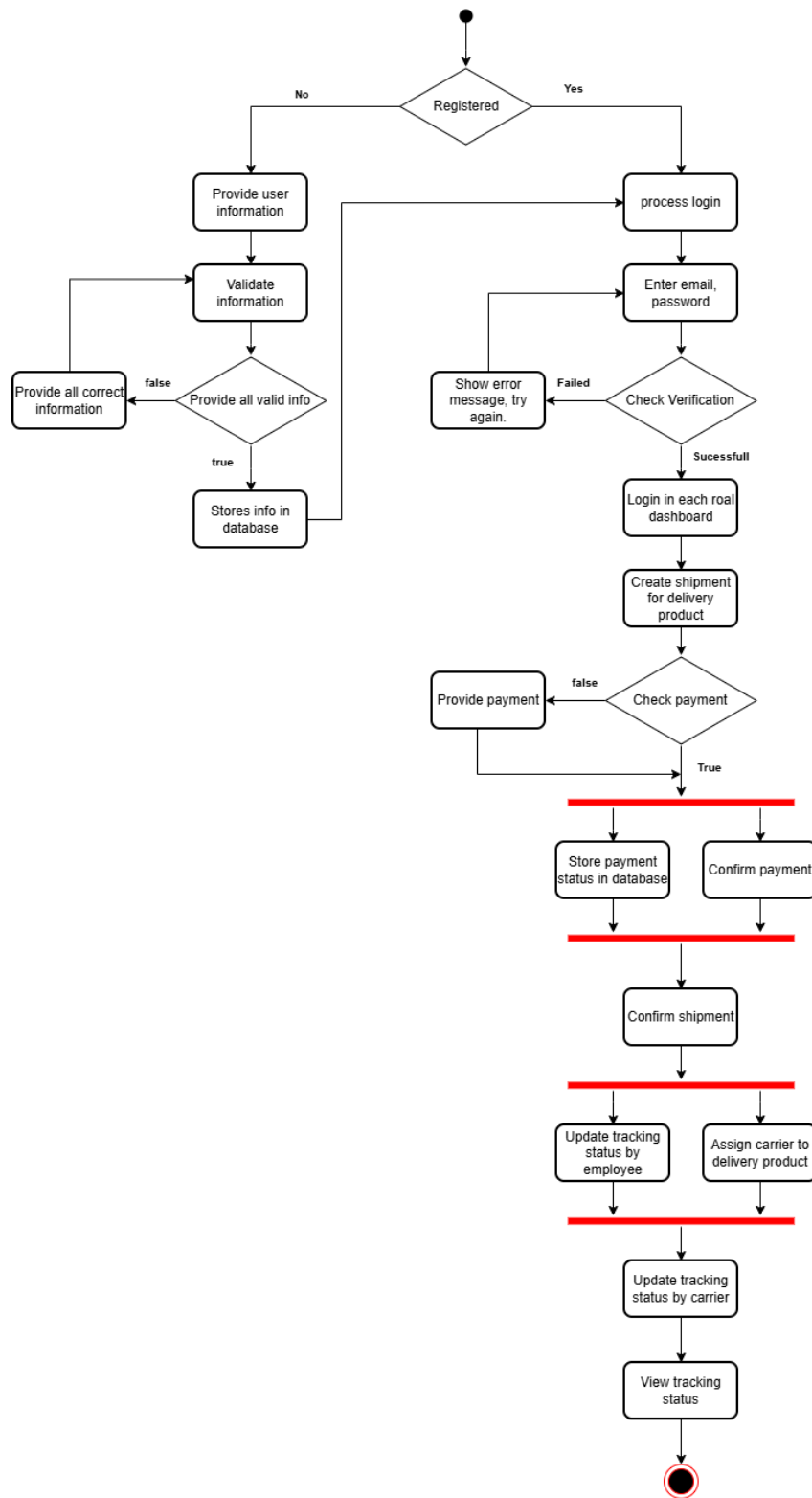
## Class Diagram :



**Figure 2:** Class Diagram



## Activity Diagram :



**Figure 3:** Activity Diagram

## 2.3 UI / Wireframe Design using Figma



Figure 1: Login page

The sign up page features a background image of a wooden floor. The page is titled "Sign up" in the top left corner. A central grey box contains the text "Welcome". Below this, there is a form with the following fields: "Name", "Email", "Gender" (with radio buttons for "Male" and "Female"), "Date of birth" (with dropdown menus for "Day", "Month", and "Year"), "Contact", "Address", and "New Password". At the bottom of the grey box is a "Sign up" button.

Figure 2: Sign up page

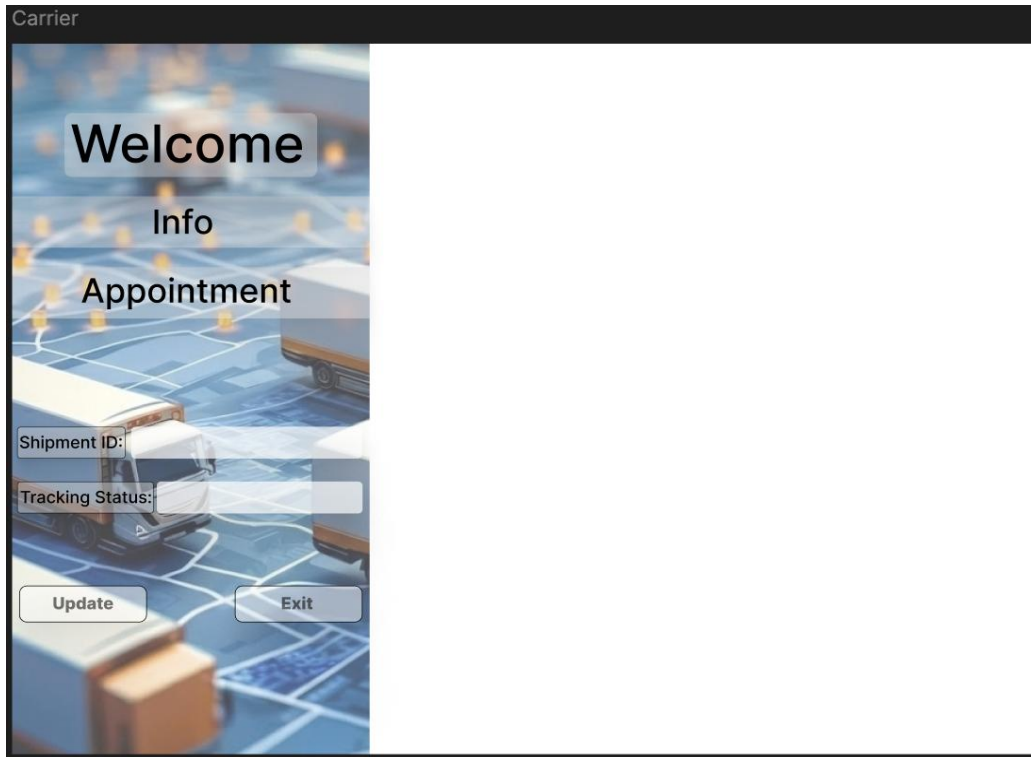


Figure 3: Carrier info page

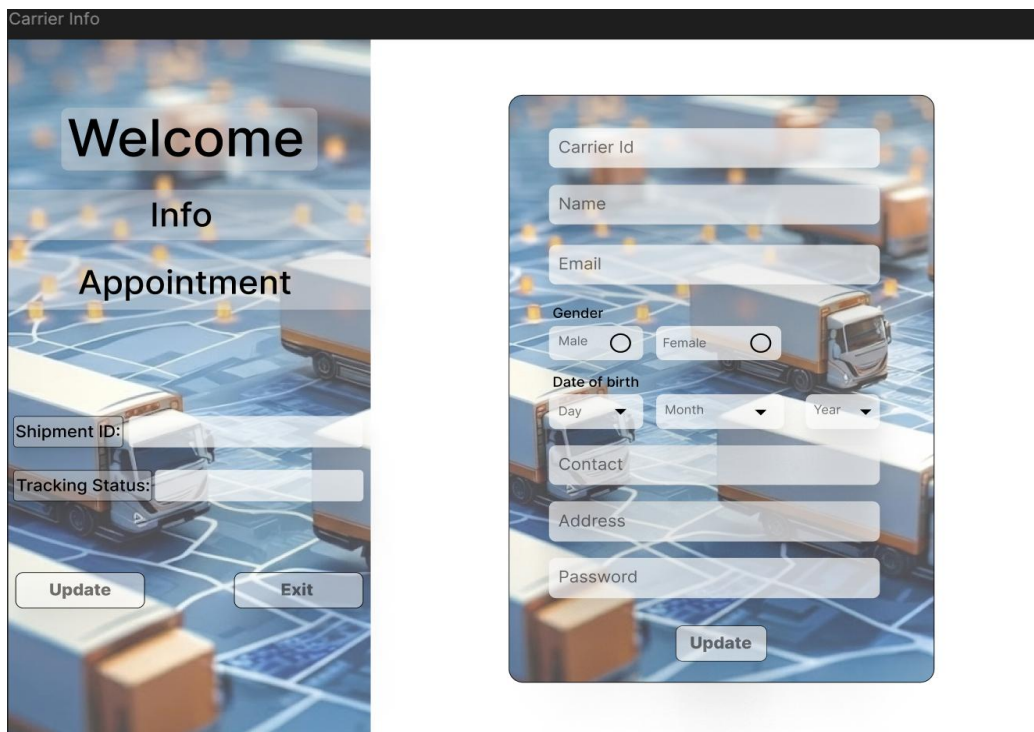


Figure 4: Carrier info page

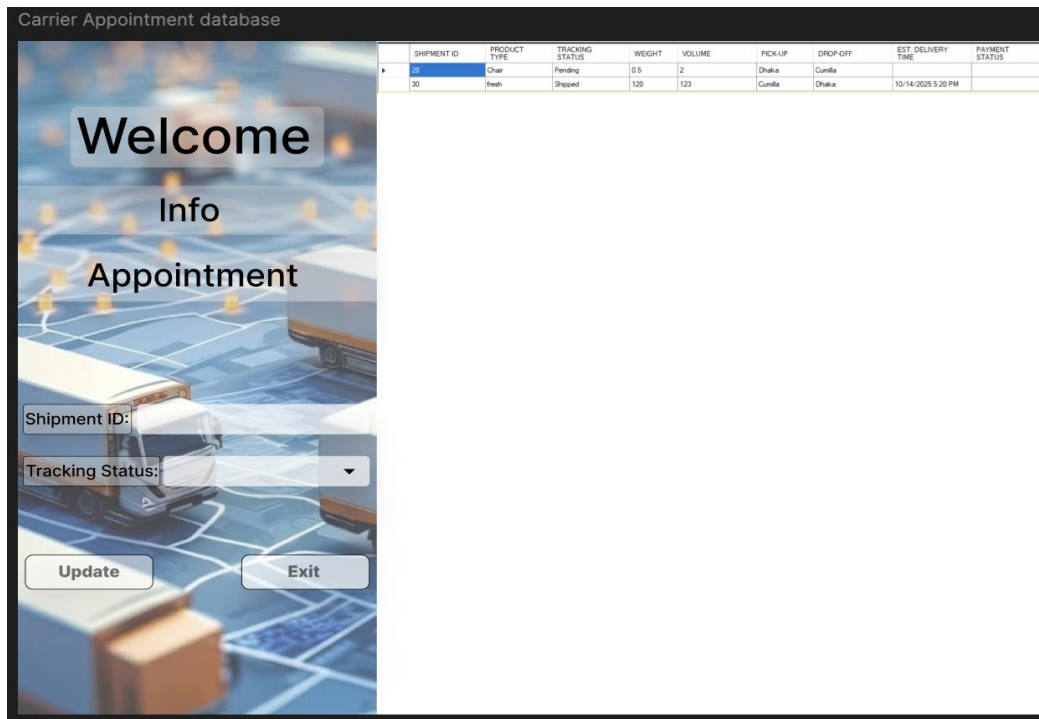


Figure 5: Carrier Appointment database page

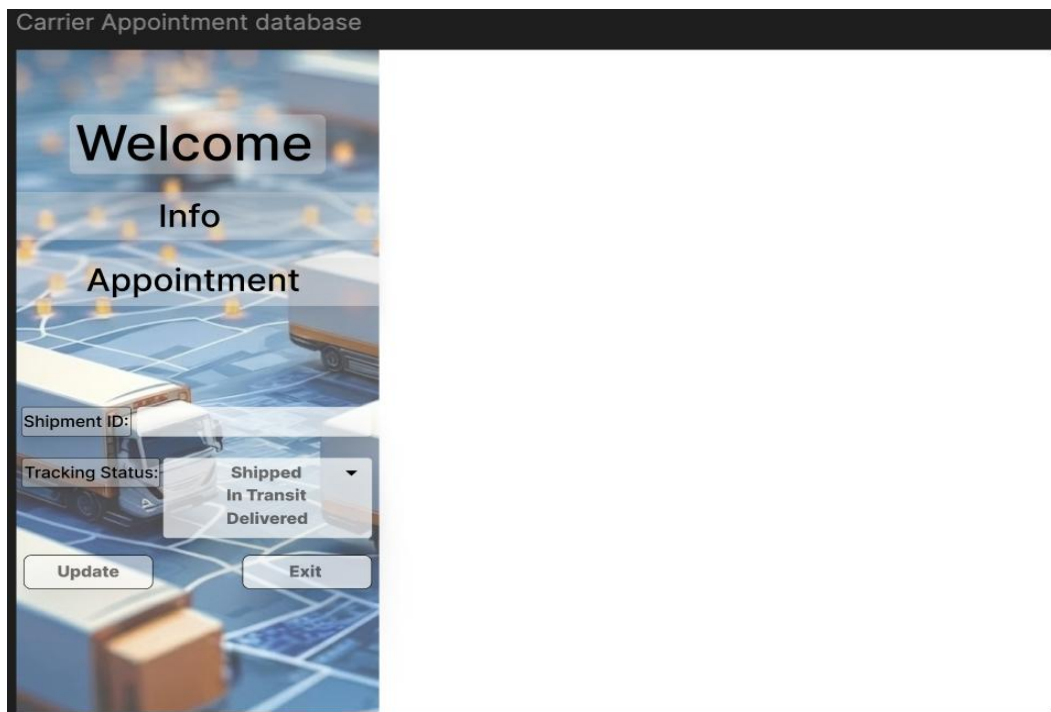


Figure 6: Carrier Appointment database page

Carrier Appointment database

ShipmentID	ClientID	TypeOfGoods	Weight	Volume	Pick-Up-Address	Destination	EstimatedDeliveryT	Carrier	TrackingStatus	PaymentStatus
30	2	fresh	120	123	Coxsila	Dhaka	10/14/2025 5:20	7	Shipped	Fail
32	19	Water	100	10	Rangpur	Dhaka	10/15/2025 12:4	7	Shipped	Fail

Welcome

Info

Appointment

Shipment ID:

Tracking Status:

Shipped

Update

Exit

Figure 7: Carrier Appointment when Tracking Status Shipped

Carrier Appointment database

ShipmentID	ClientID	TypeOfGoods	Weight	Volume	Pick-Up-Address	Destination	EstimatedDeliveryT	Carrier	TrackingStatus	PaymentStatus
30	2	fresh	120	123	Coxsila	Dhaka	10/14/2025 5:20	7	Shipped	Fail
32	19	Water	100	10	Rangpur	Dhaka	10/15/2025 12:4	7	Shipped	Fail

Welcome

Info

Appointment

Shipment ID:

Tracking Status:

Shipped

Update

Exit

Figure 8: Carrier Appointment when Tracking Status Shipped



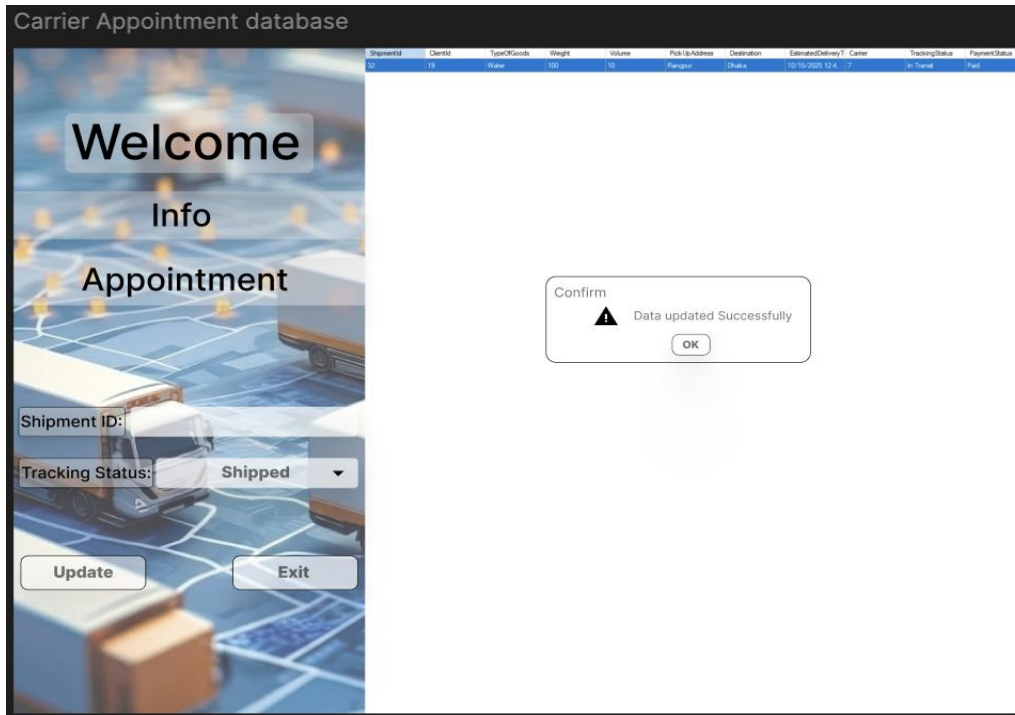


Figure 9: Carrier Appointment when Tracking Status Shipped

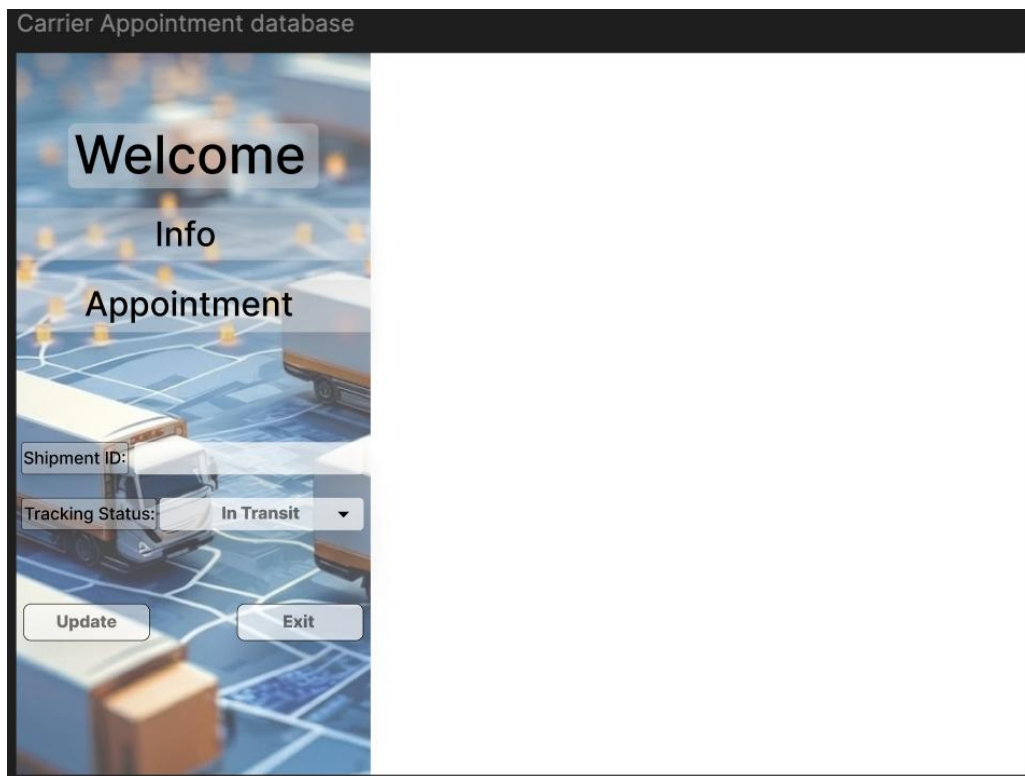


Figure 10: Carrier Appointment when Tracking Status in Transit

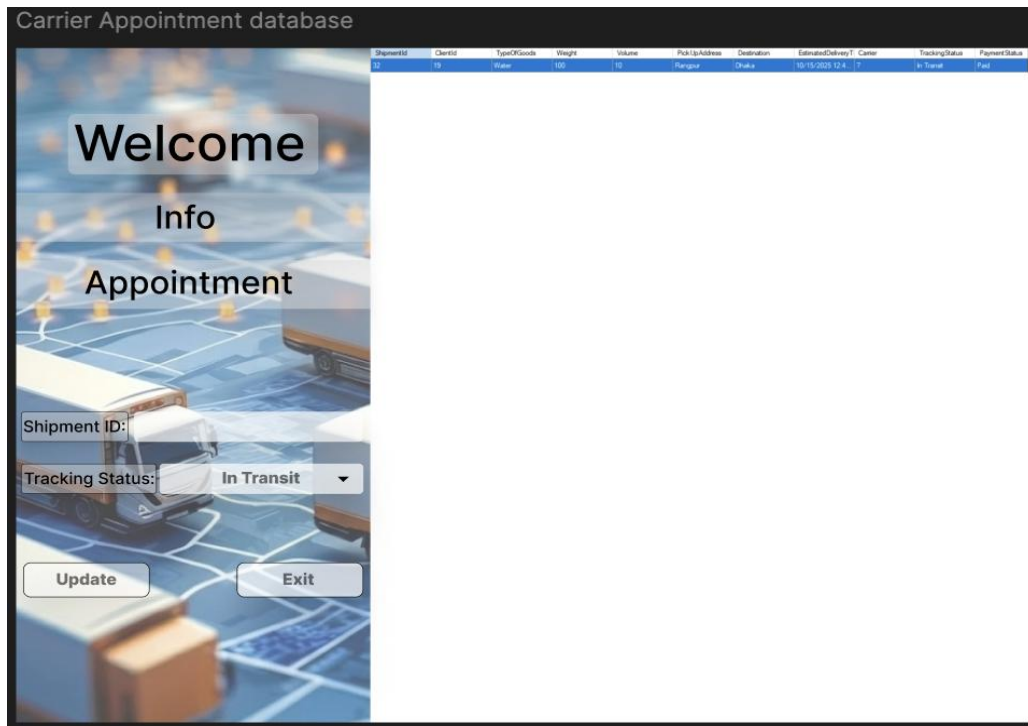


Figure 11: Carrier Appointment when Tracking Status in Transit

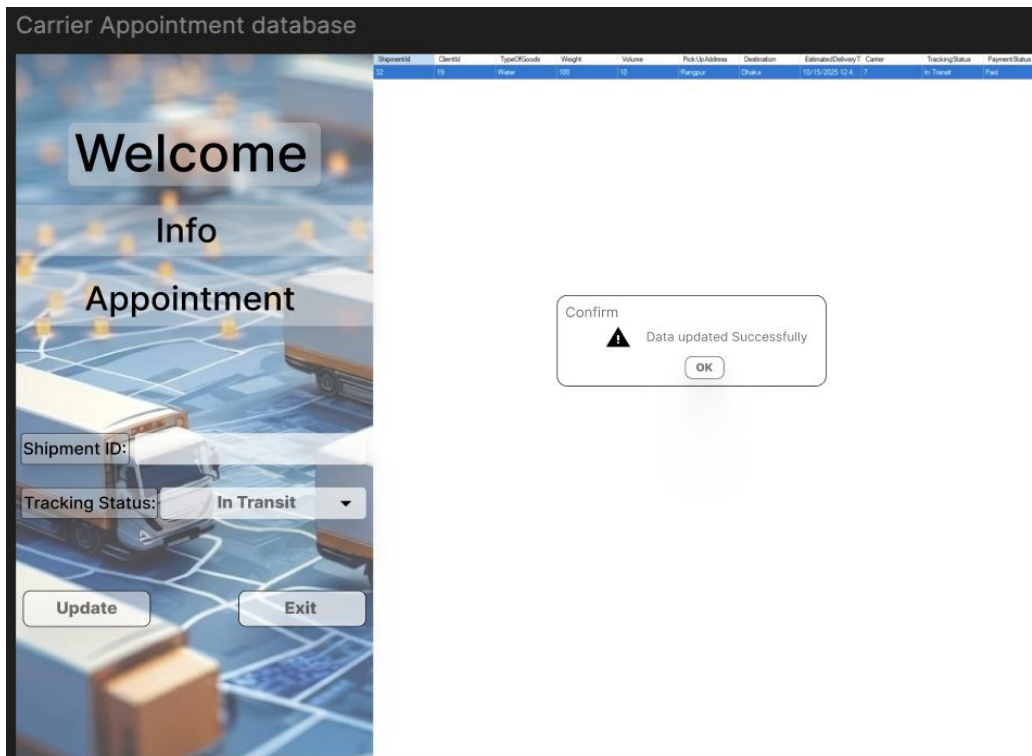


Figure 12: Carrier Appointment when Tracking Status in Transit

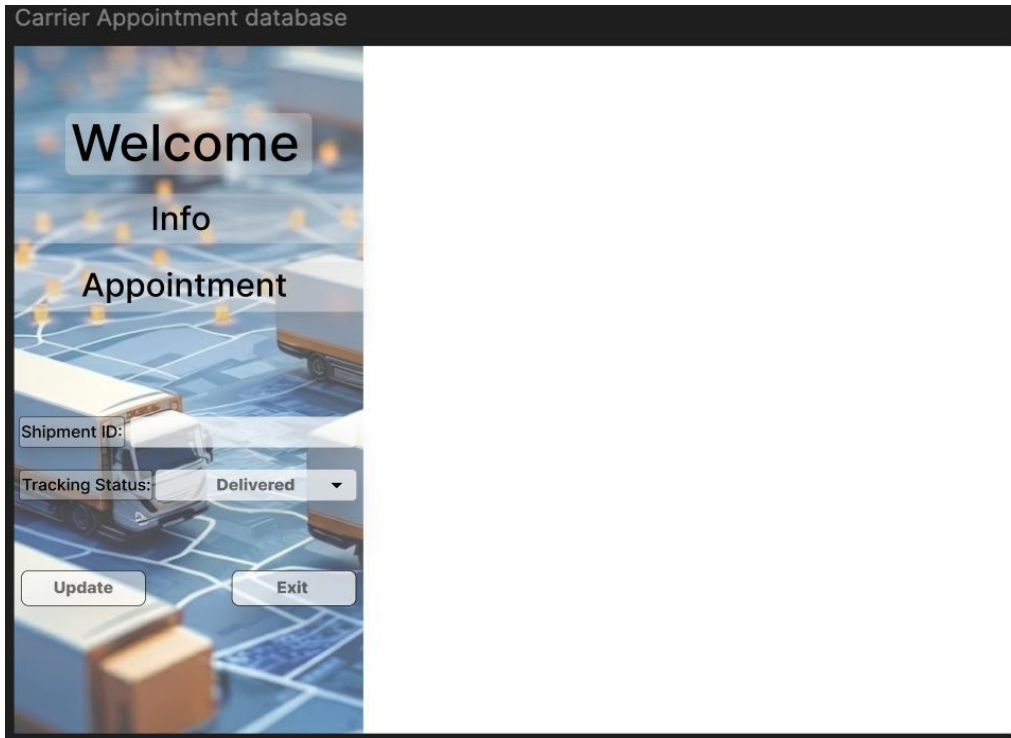


Figure 13: Carrier Appointment when Tracking Status Delivered

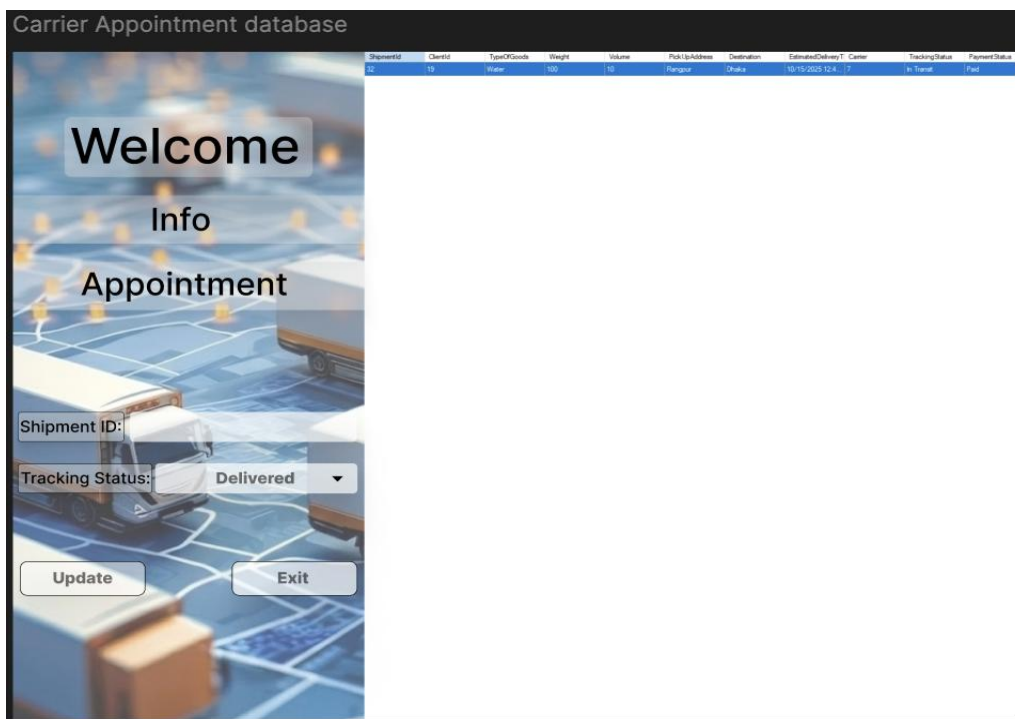


Figure 14: Carrier Appointment when Tracking Status Delivered



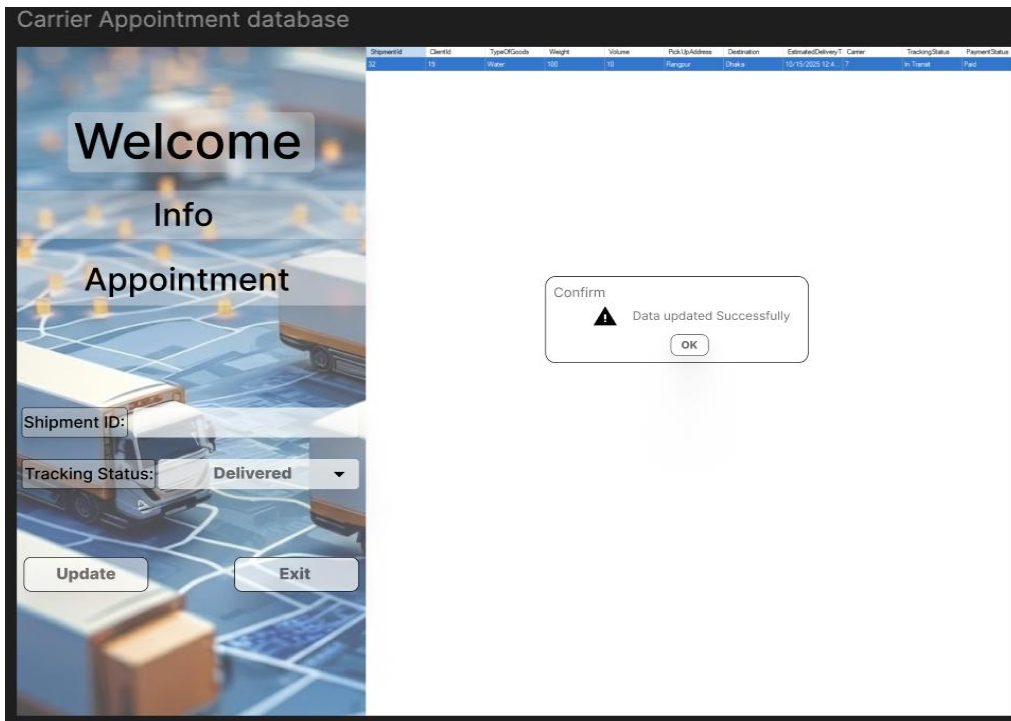


Figure 15: Carrier Appointment when Tracking Status Delivered

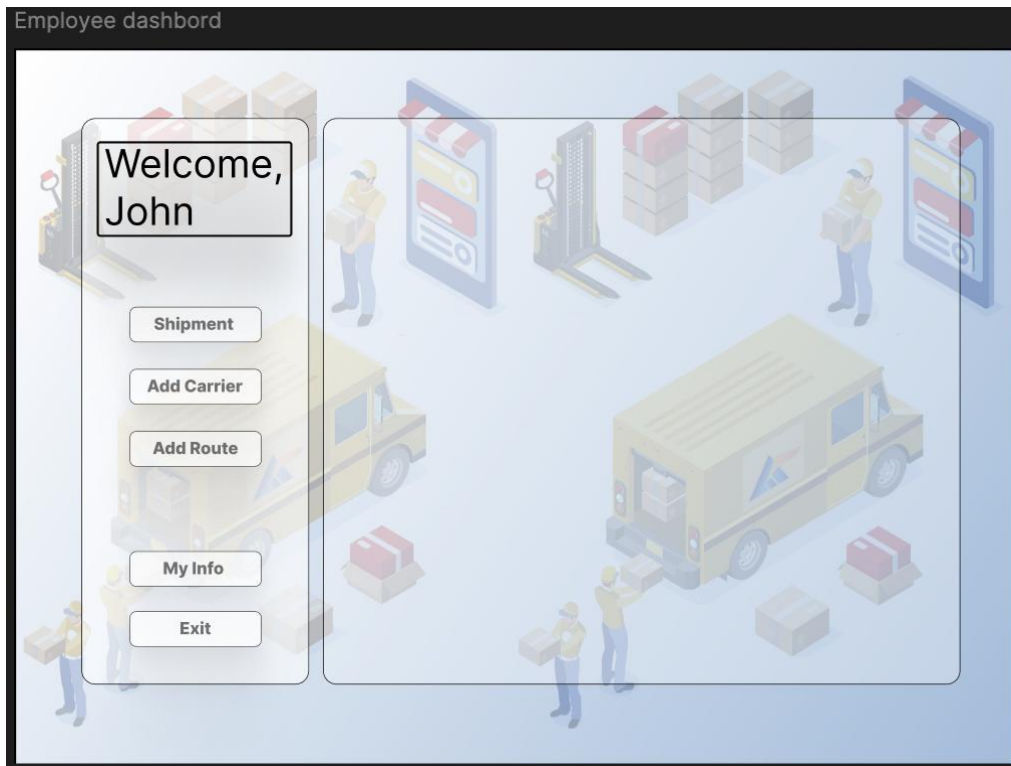


Figure 16: Employee dashboard page

Add carrier

Welcome, John

Shipment

Add Carrier

Add Route

My Info

Exit

Id

Name

Email

Password

Contact

Date of Birth:

Day

Month

Year

Gender

Male

Female

Address

Search

CarrierId	LogInId	Name	Email	Password	DateOfBirth	Gender	Contact
7	29	JOHIR ISLAM	hsl@gmail.com	12345	1/2/1989	Male	01754854548
15	46	Reday Islam	reday@gmail.com	1234@	2/9/2000 10:15	Male	01754821547
16	47	Rimun Islam	rmun@gmail.c...	1234@	1/29/2002 10:17	Male	01754821564
17	48	Mahr	Mahr12@gmail.c...	1234@	6/15/2004 10:25	Male	01578451245
18	49	uyducb	ki@gmail.com	12341@	1/31/2001 10:52	Male	01754542154
20	51	siam	brand@cumilla.c...	brandofcumilla	2/1/2000 12:49	Male	01634567891
21	52	david	david@gmail.com	12345	2/1/2000 2:06 PM	Male	01475485458

Refresh

Save

Load

Delete

Figure 17: Add carrier page

MY INFO

Welcome, John

Shipment

Add Carrier

Add Route

My Info

Exit

Client Id

Name

Email

Gender

Male

Female

Date of birth

Day

Month

Year

Contact

Address

Password

Update

Figure 18: My Info page

Add Route

Welcome, John

Shipment

Add Carrier

Add Route

My Info

Exit

Route Id

Origin

Destination

Search

RouteId	Origin	Destination
5	Dhaka	Rangpur
6	Dhaka	Cumilla
7	Rangpur	Cumilla
8	Rangpur	Dhaka
9	Cumilla	Dhaka

Refresh

Save

Delete

Figure 19: Add Route page

Employee Shipment

Welcome, John

Shipment

Add Carrier

Add Route

My Info

Exit

Shipment Id

Client Id

Route Id

Types of goods

Drop-off

Weight

Est. Del. Date:

Day

Month

Year

Volume

Pick-up

Carrier:

Tracking Status:

Search

ShipmentId	ClientId	TypeOfGoods	Weight	Volume	PickUpAddress	Destination	EstimatedD
23	18	Fish	20	3	Rangpur	Dhaka	10/14/2025
24	19	Car	300	30	Rangpur	Dhaka	10/14/2025
25	19	Fish	20	3	Dhaka	Cumilla	10/13/2025
26	2	Siam	120	2	Dhaka	Rangpur	10/14/2025
27	19	Table	20	2	Cumilla	Dhaka	10/14/2025

Payment

Confirm

Load

Delete

Figure 20: Employee Shipment page

Page 27 of 48

Payment Management

Search

Payment Id:

Shipment Id:

Amount:

Payment Method:

Payment Date:

Day

Month

Year

Payment Status:

Save

Refresh

Delete

PaymentID	ShipmentId	PaymentMethod	PaymentDate	PaymentStatus	Amount
15	24	Cash	2025-10-10 00:00:00.000	Paid	1000
17	23	Cash	2025-10-10 00:00:00.000	Paid	100
20	25	Bkash	2025-10-10 00:00:00.000	Paid	100
21	26	Cash	2025-10-11 00:00:00.000	Paid	100
22	27	Nagad	2025-10-11 00:00:00.000	Paid	1200

Exit

Figure 21: Payment Management page

Add Carrier

Welcome, John

Add Employee

Add Shipment

Add Carrier

Add Route

Exit

Id

Name

Email

Password

Contact

Date of Birth:

Day

Month

Year

Gender

Male

Female

Address

Search

CarrierId	LogId	Name	Email	Password	DateOfBirth	Gender	Contact
7	29	JOHIR ISLAM	hi@gmail.com	12345	1/2/1989	Male	01754854543
15	46	Redey Islam	redey@gmail.com	1234@	2/3/2000 10:15...	Male	01754821547
16	47	Rimun Islam	rimun@gmail.com	1234@	1/29/2002 10:17...	Male	01754821564
17	48	Mahir	Mahir12@gmail.c...	1234@	6/15/2004 10:25...	Male	01578451245
18	49	uyducb	ki@gmail.com	12341@	1/31/2001 10:52...	Male	01754542154
20	51	siam	brand@cumilla.c...	brandofcumilla	2/1/2000 12:49...	Male	01634567891
21	52	david	david@gmail.com	12345	2/1/2000 2:06 PM	Male	01475485458

Refresh

Save

Load

Delete

Figure 22: Add Carrier page



Add Route

Welcome, John

Add Employee

Add Shipment

Add Carrier

Add Route

Exit

Route Id

Origin

Destination

Search

RouteId	Origin	Destination
5	Dhaka	Rangpur
6	Dhaka	Cumilla
7	Rangpur	Cumilla
8	Rangpur	Dhaka
9	Cumilla	Dhaka

Refresh

Save

Delete

Figure 23: Add Route page

Add Employment

Welcome, John

Add Employee

Add Shipment

Add Carrier

Add Route

Exit

Employee Id

Name

Gender

Male ☐ Female ☐

Email

Contact

Date of birth

Day  Month  Year

Address

Password

Search

EmployeeId	LogId	Name	Email	Password	DateOfBirth	Gender	Contact
4	37	Sultana Razia M...	razia@gmail.com	1234	5/6/1995	Female	01754852
5	38	Samaher	samaher@gmail...	1234	10/19/2012	Female	01795658
7	43	Mahabubur Rah...	siam@gmail.com	1234@	5/24/2004 6:57 ...	Male	01457845

Refresh

Save

Delete

Figure 24: Add Employment page

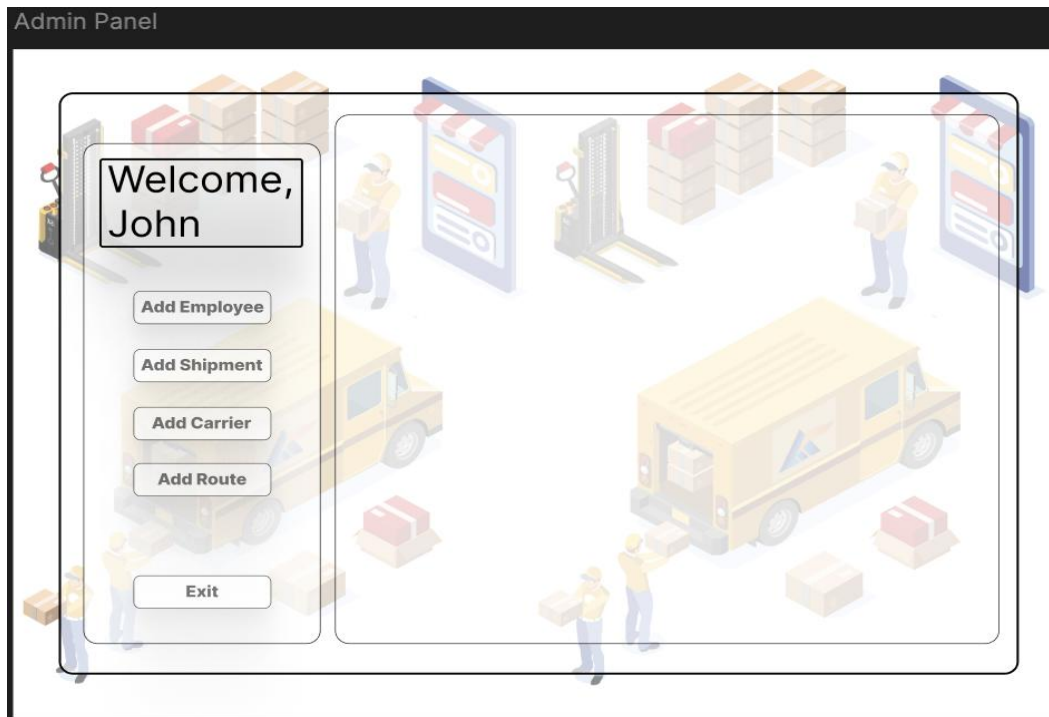


Figure 25: Admin Panel page

The Add shipment page features a header with the title "Add shipment". Below the header, there is a large illustration of a warehouse with workers, a forklift, and a delivery van. On the left side, there is a sidebar with a "Welcome, John" message and five buttons: "Add Employee", "Add Shipment", "Add Carrier", "Add Route", and "Exit".

The main content area contains a form to add a new shipment. The form includes the following fields:

- Shipment Id
- Client Id
- Route Id
- Types of goods
- Drop-off
- Weight
- Est. Del. Date: (Day, Month, Year)
- Volume
- Pick-up
- Carrier: (dropdown)
- Tracking Status: (dropdown)

Below the form, there is a search bar and a table of existing shipments. The table has the following columns: ShipmentId, ClientId, TypeOfGoods, Weight, Volume, PickUpAddress, Destination, and EstimatedDate. The table contains 5 rows of data.

ShipmentId	ClientId	TypeOfGoods	Weight	Volume	PickUpAddress	Destination	EstimatedDate
23	18	Fish	20	3	Rangpur	Dhaka	10/14/2025
24	19	Car	300	30	Rangpur	Dhaka	10/14/2025
25	19	Fish	20	3	Dhaka	Cumilla	10/13/2025
26	2	Siam	120	2	Dhaka	Rangpur	10/14/2025
27	19	Table	20	2	Cumilla	Dhaka	10/14/2025

Below the table, there are four buttons: "Refresh", "Save", "Load", and "Delete".

Figure 26: Add shipment page

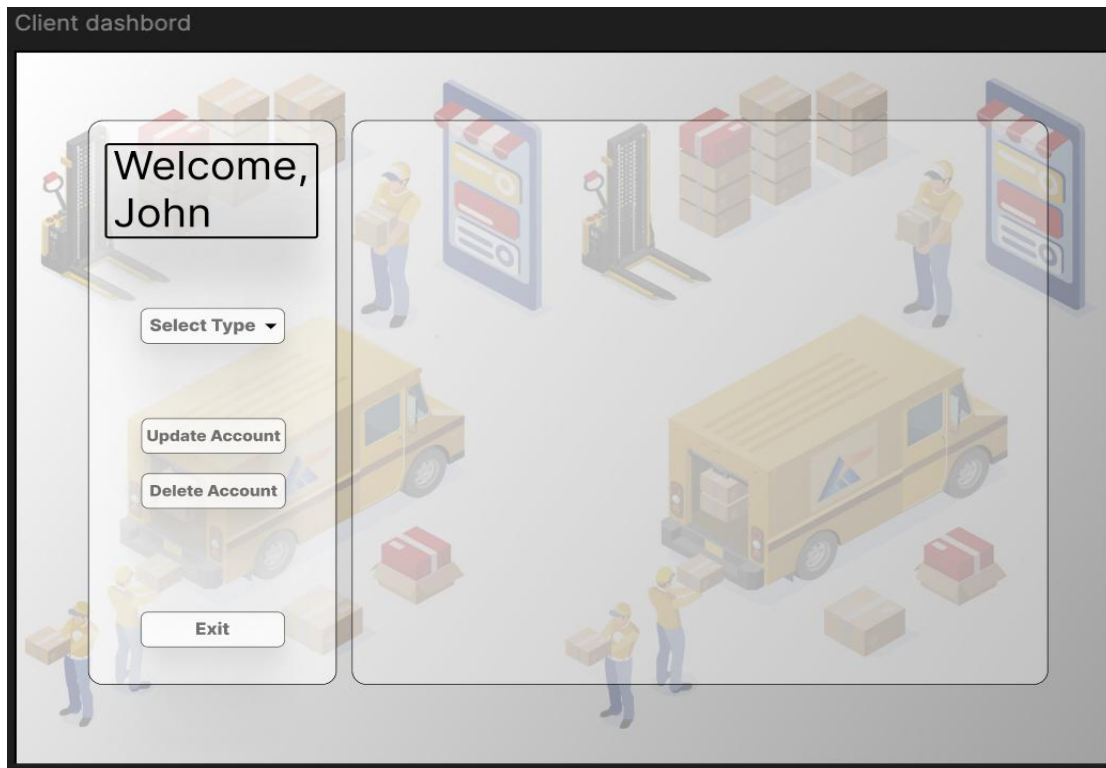


Figure 27: Client dashboard page

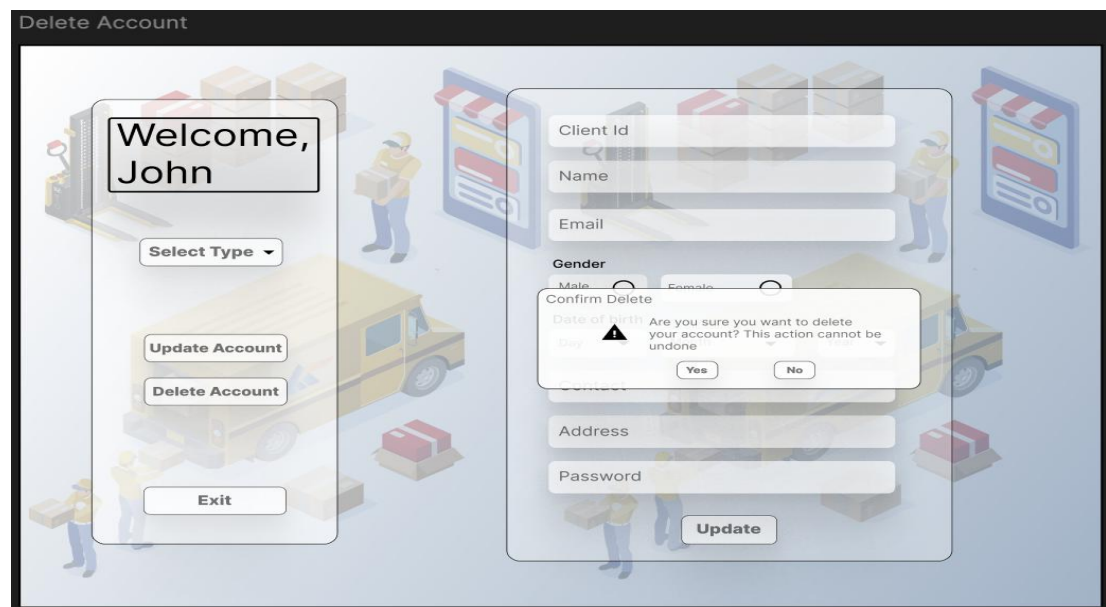


Figure 28: Delete Account page

Update Account

Welcome,  
John

Select Type ▼

Update Account

Delete Account

Exit

Client Id

Name

Email

Gender

Male ☐ Female ☐

Date of birth

Day ▼ Month ▼ Year ▼

Contact

Address

Password

Update

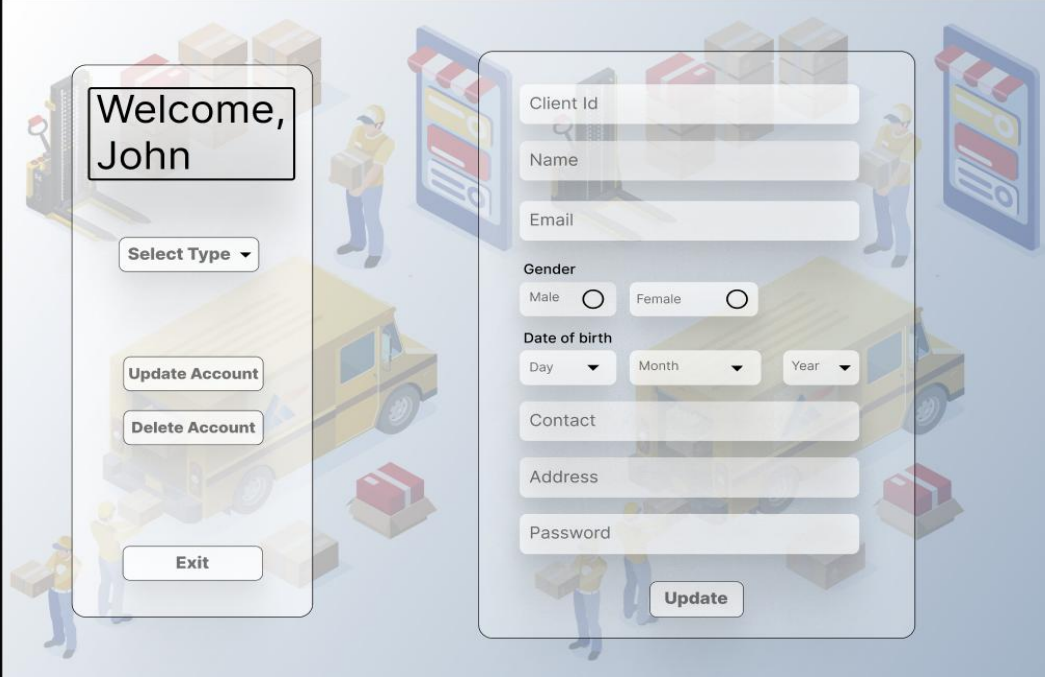


Figure 29: Update Account page

Client dashboard

Welcome,  
John

Select Type ▼  
Customer  
Seller

Update Account

Delete Account

Exit

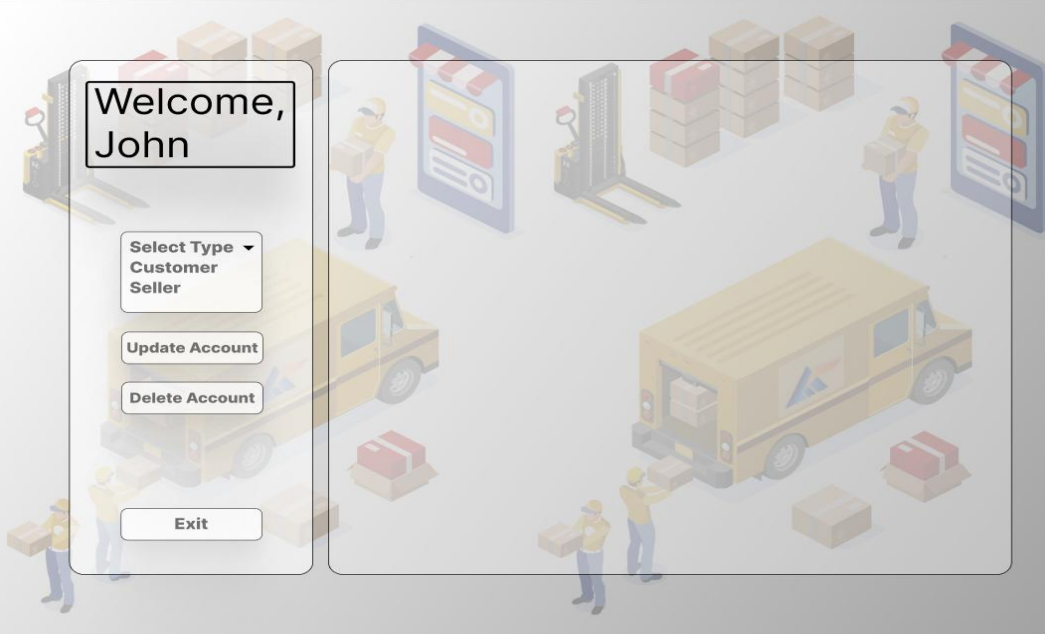


Figure 30: Client dashboard page



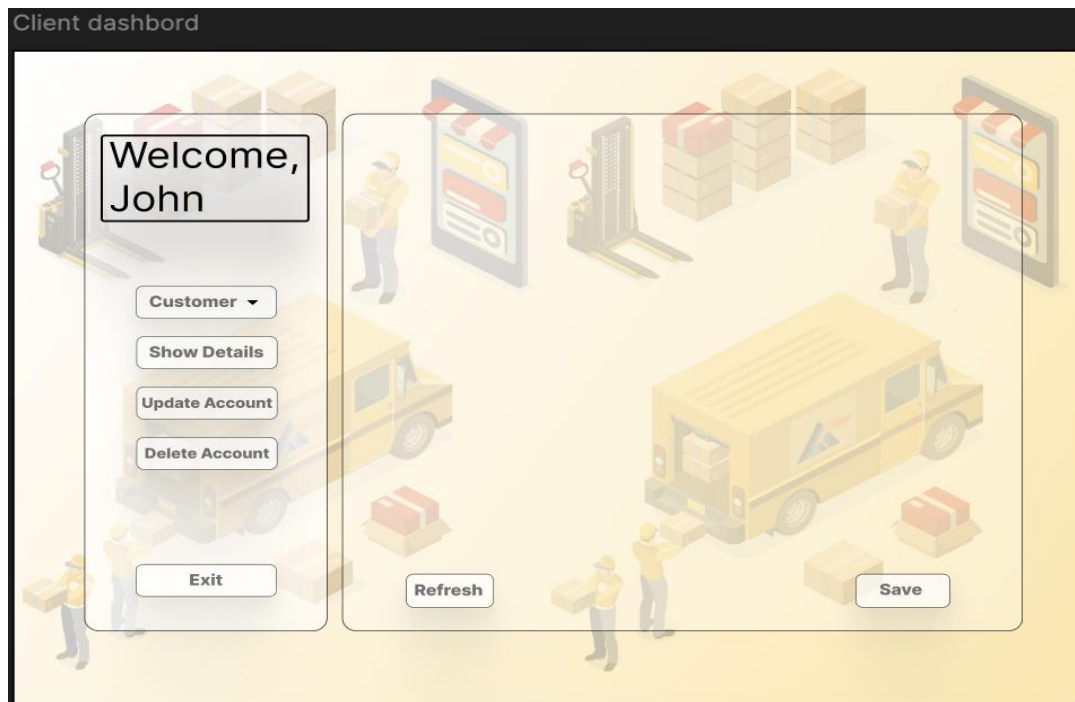


Figure 31: Client dashboard for Customer

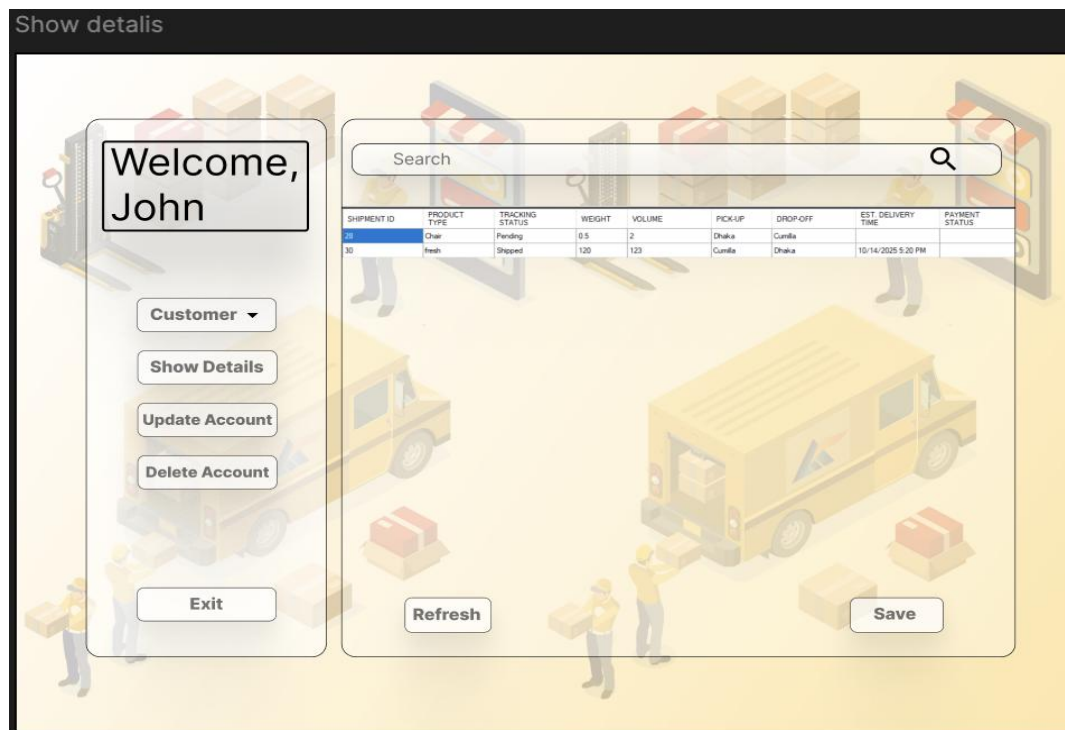


Figure 32: Show details for Customer page

Update Account

Welcome,  
John

Customer ▾

Show Details

Update Account

Delete Account

Exit

Client Id

Name

Email

Gender

Male ☐ Female ☐

Date of birth

Day ▾ Month ▾ Year ▾

Contact

Address

Password

Update

Figure 33: Update Account for Customer page

Delete Account

Welcome,  
John

Customer ▾

Show Details

Update Account

Delete Account

Exit

Client Id

Name

Email

Confirm Delete

☐ Yes ☐ No

Are you sure you want to delete your account? This action cannot be undone

Date of birth

Day ▾ Yes No Year ▾

Contact

Address

Password

Update

Figure 34: Delete Account for Customer page

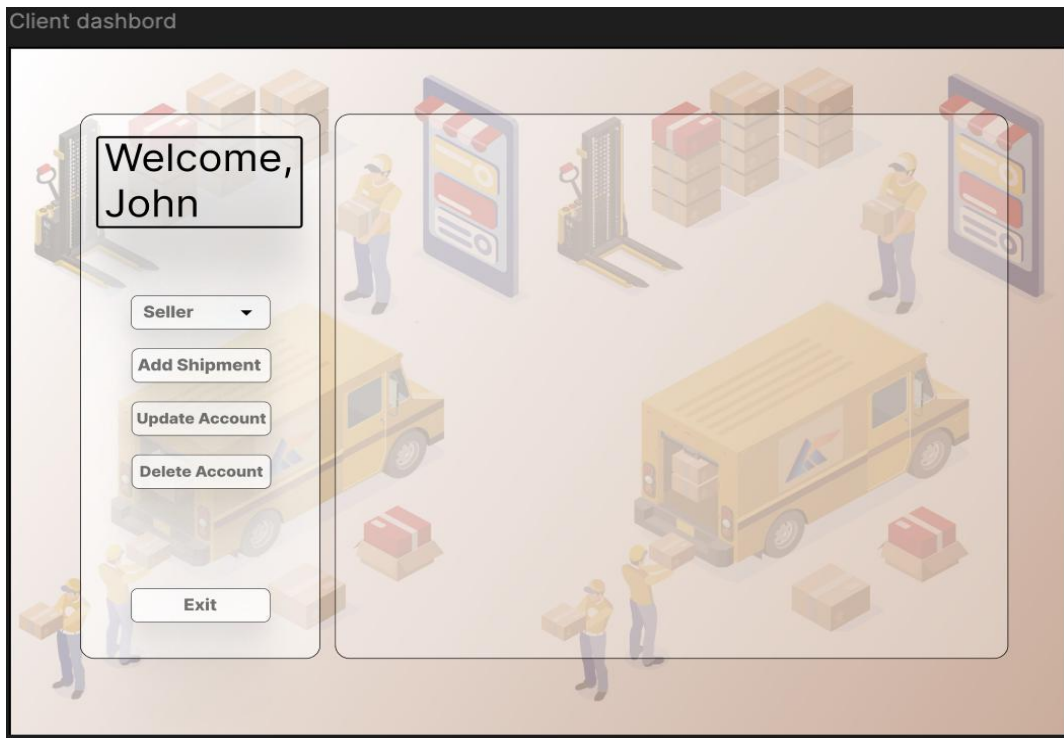


Figure 35: Client dashboard for Seller

The "Add Shipment" form includes the following components:

- Left Sidebar:** Identical to Figure 35, with the "Add Shipment" button highlighted.
- Form Fields:**
  - Shipment Id
  - Type of Goods
  - Receiver Email
  - Receiver Name
  - Weight
  - Volume
  - Pick up: (dropdown)
  - Drop-off: (dropdown)
- Search:** A search bar with a magnifying glass icon.
- Table:**

SHIPMENT ID	PAYMENT STATUS	TRACKING STATUS	TYPE OF GOODS	WEIGHT	VOLUME	PICK-UP
25	Paid	Pending	Stem	120	2	Dhaka
30	Paid	Shipped	fresh	120	123	Cumilla
- Buttons:** "Refresh" and "Save" buttons are located at the bottom of the form area.

Figure 36: Add Shipment for Seller

Update Account

Welcome,  
John

Customer

Show Details

Update Account

Delete Account

Exit

Client Id

Name

Email

Gender

Male ☐

Female ☐

Date of birth

Day

Month

Year

Contact

Address

Password

Update

Figure 37: Update Account for Seller

Delete Account

Welcome,  
John

Customer

Show Details

Update Account

Delete Account

Exit

Client Id

Name

Email

Confirm Delete

Are you sure you want to delete your account? This action cannot be undone

Yes

No

Contact

Address

Password

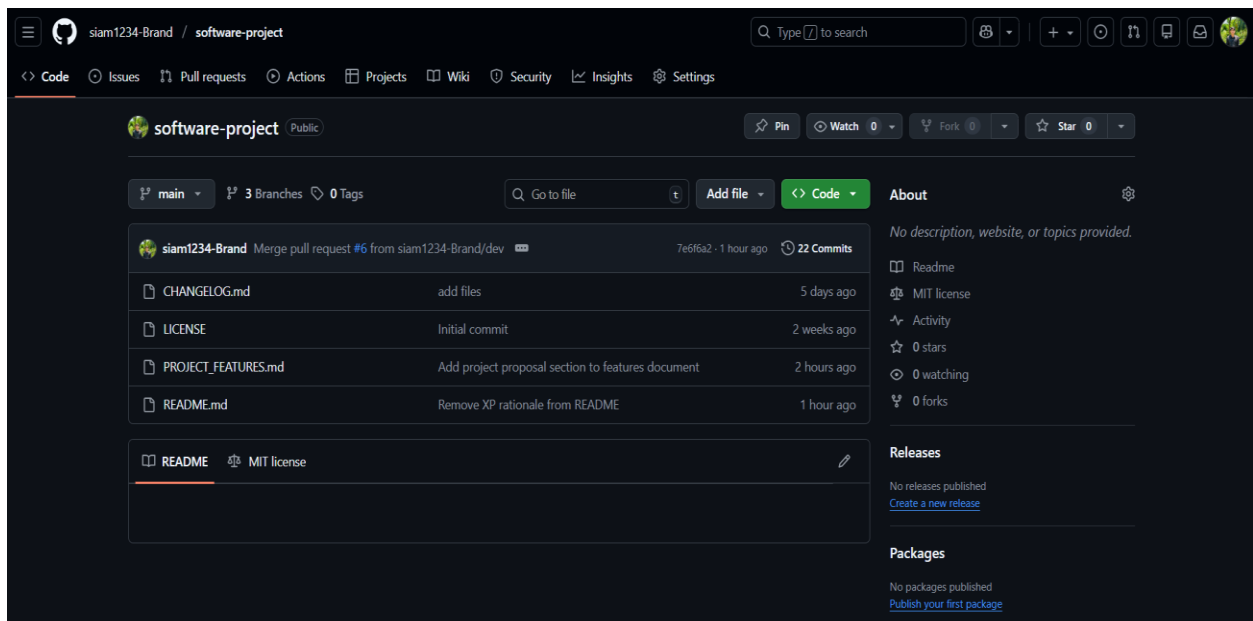
Update

Figure 38: Delete Account for Seller

## 4. GIT WORKFLOW

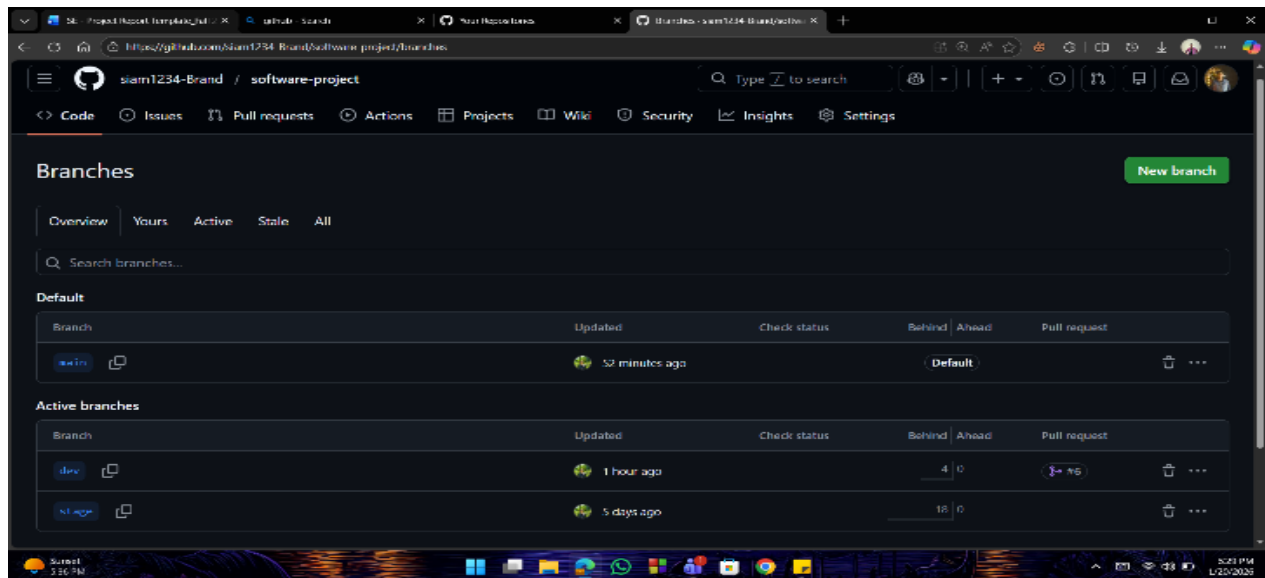
### Workflow Process:

1. **Central Repository** – Created on GitHub with main branch
2. **Clone Repository** – Each member clones the main repository
3. **Feature Branching** – Create individual branches for specific tasks
4. **Regular Commits** – Stage and commit changes with descriptive messages
5. **Push Updates** – Push changes to remote feature branches
6. **Pull Requests** – Create PRs for code review
7. **Merge to Main** – After approval, merge feature branches to main
8. **Continuous Integration** – Regular updates and conflict resolution

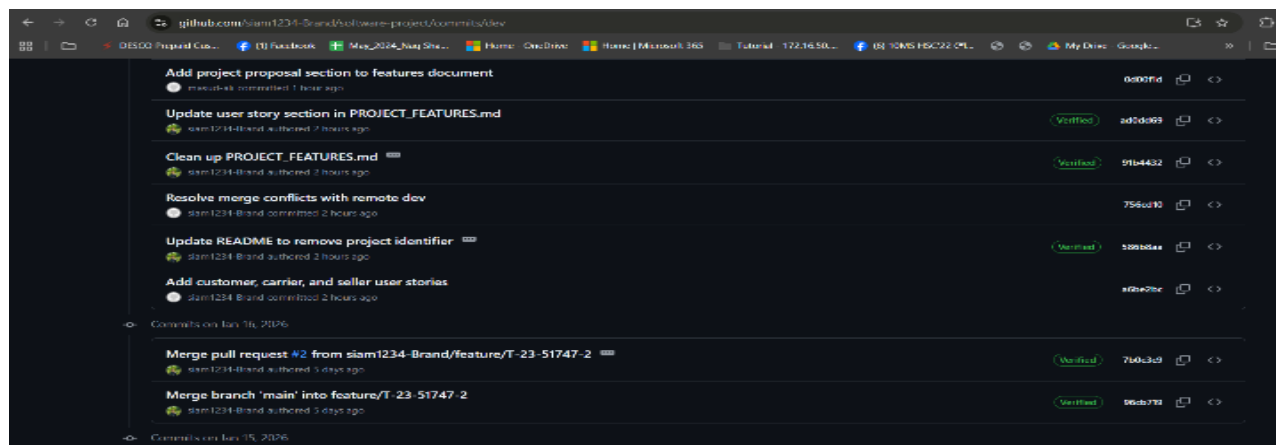


Mother Repository

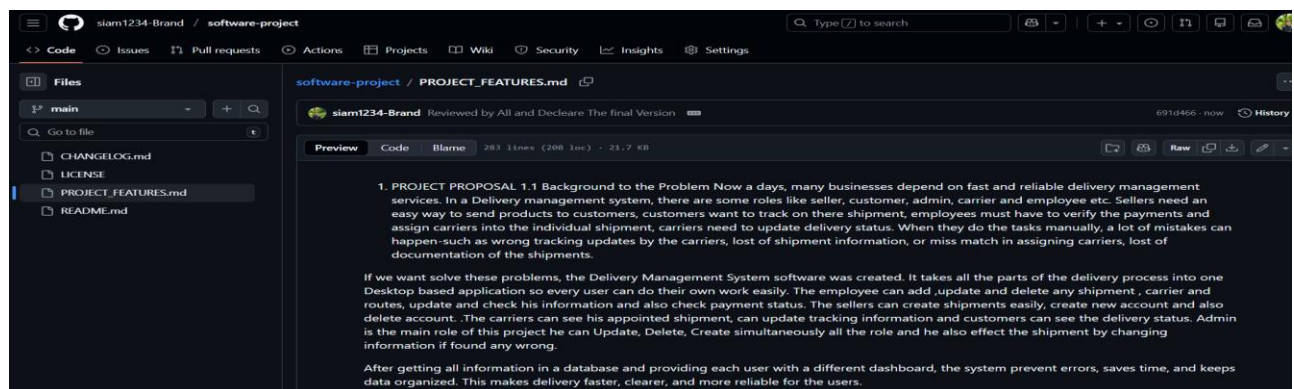




### Clone Branch



### Git Logs



### Final Marge In Main

## 5. SOFTWARE TRACKING

### Test Case: Login & Validation

Project Name: Delivery Management System		Test Designed by: Md. Mahabubur Rahaman Siam		
Test Case ID: SMS_01		Test Designed date: 06 Jan 2026		
Test Priority: High		Test Executed by: Siam		
Module Name: Login & Validation		Test Execution date: 06 Jan 2026		
Test Title: Verify login with Email & Password				
Description: Ensure user can log in with Email & Password				
Precondition: User must have registered Email				
Dependencies: If any				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Go To The Side Enter The Email 2. Enter the Password 3. Click Verify	Email:Siam@gmail.com Password:1234	User should successfully login	As expected,	Pass

### Test Case: Add Employee Account by Admin

<b>Project Name:</b> Delivery Management System		<b>Test Designed by:</b> Md. Mahabubur Rahaman Siam		
<b>Test Case ID:</b> SMS_02		<b>Test Designed date:</b> 06 Jan 2026		
<b>Test Priority:</b> High		<b>Test Executed by:</b> Siam		
<b>Module Name:</b> Add Employee Account		<b>Test Execution date:</b> 06 Jan 2026		
<b>Test Title:</b> Verify That the Admin add Employee				
<b>Description:</b> Ensure Admin to Add Employees Account.				
<b>Precondition:</b> Admin must be Login				
<b>Dependencies:</b> No				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Click add Employee 2.Fill Up Employee Information 3.Click Save	Emp. name:raju Emp.Password:1234 Emp. Date of Brith:14 feb ,1999	Employee Account should Created Successfully	As expected,	Pass

**Test Case: Create Shipment**

Project Name: Delivery Management System		Test Designed by: Md. Mahabubur Rahaman siam		
Test Case ID: SMS_03		Test Designed date: 06 Jan 2026		
Test Priority: Medium		Test Executed by: Siam		
Module Name: Create Shipment		Test Execution date: 06 Jan 2026		
Test Title: verify the user				
Description: Ensure user that he can create Shipment.				
Precondition: User must have registered Email.				
Dependencies: No				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Click to Create Shipment 2. Fill up the information for create the shipment	TypeOfGood:dry Weight:100kg Volume:120 ReciverEmail:siam@gmail.com Reciever Name :siam Pickup:cumilla DropOff:Dhaka	Shipment Create Successfully	Not As expected,	Fail

**Test Case: Manage Shipment**

Project Name: Delivery Management System		Test Designed by: Mohammad Ali Masud			
Test Case ID: SMS_04		Test Designed date: Jan 06, 2026			
Test Priority: High		Test Executed by: Mohammad Ali Masud			
Module Name: Manage Shipment		Test Execution date: Jan 06, 2026			
Test Title: Confirm shipment					
Description: Ensure client confirms his shipment.					
Precondition: Employee must login valid username and password					
Dependencies: No					
Test Steps		Test Data	Expected Results	Actual Results	Status
1. Press shipment button 2. Select shipment from dashboard 3. Assigning career 4. Update Tracking status 5. Press confirm button		Carrier: Ready Tracking status: In transit	Shipment should be confirmed.	As expected,	Pass



**Test Case: Add carrier**

Project Name: Delivery Management System		Test Designed by: Mohammad Ali Masud		
Test Case ID: SMS_05		Test Designed date: Jan 06, 2026		
Test Priority: Medium		Test Executed by: Mohammad Ali Masud		
Module Name: Add carrier		Test Execution date: Jan 06, 2026		
Test Title: verify add new carrier by providing personal information.				
Description: Ensure employee that he /she can add carrier.				
Precondition: Employee must login valid username and password				
Dependencies: No				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Press add carrier button 2.Provide carrier information such as name, email, password, dob, gender, contact number, address. 3.Press save button.	Name: Mohammad Ali Masud Email: <a href="mailto:ali@gmail.com">ali@gmail.com</a> Pass:1234 Dob:12/01/2001 Gender: Male Number:01791842989 Address: Kuril, Dhaka	Add carrier successfully.	As expected.	Pass

**Test Case: Add Routes**

Project Name: Delivery Management System		Test Designed by: Mohammad Ali Masud			
Test Case ID: SMS_06		Test Designed date: Jan 06, 2026,			
Test Priority: Medium		Test Executed by: Mohammad Ali Masud			
Module Name: Add Routes		Test Execution date: Jan 06, 2026,			
Test Title: verify add new routes by providing origin and destination.					
Description: Ensure employe that he /she can add routes.					
Precondition: Employee must login valid username and password					
Dependencies: No					
Test Steps		Test Data	Expected Results	Actual Results	Status
1. Press add route button 2. Provide new origin name and destination name. 3. Press save button		Route Id: 2 Origin: Dhaka Destination: Feni	Invalid Id, it should me auto incremented	Not expected.	Fail

**Test Case: Update Employee information**

Project Name: Delivery Management System		Test Designed by: Shuvo			
Test Case ID: SMS_07		Test Designed date: Jan 06, 2026,			
Test Priority: Medium		Test Executed by: Shuvo			
Module Name: Update Employee information		Test Execution date: Jan 06, 2026,			
Test Title: verify that employee can update his own information					
Description: Ensure employe that he /she can add routes.					
Precondition: Employee must login valid username and password					
Dependencies: No					
Test Steps		Test Data	Expected Results	Actual Results	Status
1. Press My Info button 2. New dashboard open 3. Provide information such as name, email, password,dob,gender,contact, address. 4. Press update button		Password:12345 DOB:01/12/2002 Gender:Female	Update employee information successfully.	As expected.	Pass

**Test Case: Delete Client account**

Project Name: Delivery Management System		Test Designed by: Shuvo		
Test Case ID: SMS_08		Test Designed date: Jan 06, 2026,		
Test Priority: Medium		Test Executed by: Shuvo.		
Module Name: Delete Client account		Test Execution date: Jan 06, 2026,		
Test Title: Verify delete account successfully.				
Description: Ensure clients can delete account if needed.				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Press Delete button. Press ok in popup window.	No data needed	Your account has been deleted Successfully.	As expected,	Pass

**Test Case: Update tracking status**

<b>Project Name:</b> Delivery Management System		<b>Test Designed by:</b> Shuvo		
<b>Test Case ID:</b> SMS_09		<b>Test Designed date:</b> Jan 06, 2026,		
<b>Test Priority:</b> Medium		<b>Test Executed by:</b> Shuvo		
<b>Module Name:</b> Tracking status update by carrier		<b>Test Execution date:</b> Jan 06, 2026,		
<b>Test Title:</b> Verify tracking status update when appointed shipment to the carrier.				
<b>Description:</b> Ensure carrier can update tracking status after picking up shipment				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Login into carrier dashboard 2. Press appointment button. 3. Select an appointed shipment. 4. Change tracking status. 5. Press update button.	Tracking status: In transit.	Update tracking status Successfully.	As expected,	Pass

**Test Case: Confirm payment**

<b>Project Name:</b> Delivery Management System		<b>Test Designed by:</b> Rezwan Ahmed Prottoy		
<b>Test Case ID:</b> SMS_10		<b>Test Designed date:</b> Jan 06, 2026,		
<b>Test Priority:</b> Medium		<b>Test Executed by:</b> Rezwan Ahmed Prottoy		
<b>Module Name:</b> Confirm payment		<b>Test Execution date:</b> Jan 06, 2026,		
<b>Test Title:</b> Verify Confirm payment by Employee.				
<b>Description:</b> Ensure employee can update and confirm tracking status when seller pay for shipment.				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Press Payment button. 2. Select a shipment . 3.Select payment method, payment date. Update payment status. 4.Press save button	Amount:120, Payment Method: Bkash. Payment Date:20/01/2026 Payment status: Paid	Update payment status Successfully.	As expected,	Pass

**Test Case: Update shipment Info**

<b>Project Name:</b> Delivery Management System		<b>Test Designed by:</b> Rezwan Ahmed Prottoy.		
<b>Test Case ID:</b> SMS_11		<b>Test Designed date:</b> Jan 06, 2026,		
<b>Test Priority:</b> Medium		<b>Test Executed by:</b> Rezwan Ahmed Prottoy.		
<b>Module Name:</b> Update shipment Info		<b>Test Execution date:</b> Jan 06, 2026,		
<b>Test Title:</b> Verify update shipment information by Employee.				
<b>Description:</b> Ensure employees can update any shipment information if there any mistakes .				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Press shipment button. 2. Select a shipment. 3.Change information of the shipment as like volume, weight, pickup address, dropping address, add new carrier, Tracking status. 4.Press Confirm button	Weight:123Kg Volume:15 m^3 Pick-up address: Dhaka. Tracking status: IN transit.	Update information Successfully.	As expected,	Fail

**Test Case: Delete Routes by Admin**

<b>Project Name:</b> Delivery Management System		<b>Test Designed by:</b> Rezwan Ahmed Prottoy		
<b>Test Case ID:</b> SMS_12		<b>Test Designed date:</b> Jan 06, 2026,		
<b>Test Priority:</b> Medium		<b>Test Executed by:</b> Rezwan Ahmed Prottoy		
<b>Module Name:</b> Delete Routes by Admin		<b>Test Execution date:</b> Jan 06, 2026,		
<b>Test Title:</b> Verify delete Route successfully.				
<b>Description:</b> Ensure that admin can delete route if needed.				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Login into admin dashboard. Press add route button.	No data needed	Route has been deleted Successfully.	As expected,	Pass

Select route that want to delete. Press delete button. Press ok in popup dash board.				
--	--	--	--	--

**Test Case:** Create new account by client

<b>Project Name:</b> Delivery Management System		<b>Test Designed by:</b> Mahbub Hasnain		
<b>Test Case ID:</b> SMS_13		<b>Test Designed date:</b> Jan 06, 2026,		
<b>Test Priority:</b> Medium		<b>Test Executed by</b> Mahbub Hasnain		
<b>Module Name:</b> Create new account by client		<b>Test Execution date:</b> Jan 06, 2026,		
<b>Test Title:</b> Verify any type of client can create new account.				
<b>Description:</b> Ensure clients can create account by providing their information.				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Press signup button. Provide information like Name, Email, Password, DOB, Gender, Contact, Address. Press create Button.	Name: Mohammad Ali Masud Email: <a href="mailto:ali@gmail.com">ali@gmail.com</a> Pass:1234 Contact:01787872831 Address: Kuril, Dhaka	Your account is created Successfully.	As expected,	Pass

**Test Case:** Delete Carrier account by Admin

<b>Project Name:</b> Delivery Management System	<b>Test Designed by:</b> Mahbub Hasnain
<b>Test Case ID:</b> SMS_14	<b>Test Designed date:</b> Jan 06, 2026,
<b>Test Priority:</b> Medium	<b>Test Executed by:</b> Mahbub Hasnain
<b>Module Name:</b> Delete Carrier account by Admin	<b>Test Execution date:</b> Jan 06, 2026,
<b>Test Title:</b> Verify delete carrier account successfully.	

<b>Description:</b> Ensure that admin can delete carrier account if needed.				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Login into admin dashboard. 2.Press add carrier button. 3.Select carrier that want to delete. 4.Press delete button. 5.Press ok in popup dash boad.	No data needed	Mahir account has been deleted Successfully.	As expected,	Pass

**Test Case:** Tracking Status Update by Employee

<b>Project Name:</b> Delivery Management System		<b>Test Designed by:</b> Mahbub Hasnain		
<b>Test Case ID:</b> SMS_15		<b>Test Designed date:</b> Jan 06, 2026,		
<b>Test Priority:</b> Medium		<b>Test Executed by</b> Mahbub Hasnain		
<b>Module Name:</b> Tracking Status Update By Employee		<b>Test Execution date:</b> Jan 06, 2026,		
<b>Test Title:</b> Verify Tracking Status Update by Employee				
<b>Description:</b> Ensure Employee can Update Tracking Status by Employee				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Login to the Employee Account & Select the Shipment  2.Update The Tracking Status	Shipment	Tracking Status Updated Success Fully	As Expected	Pass

## 6.EFFORT ESTIMATION

In Our Project SLOC = **3525**

Based on the COCOMO model, Our project type is Organic Because it is relatively small, simple software projects

Software Project Type	Coefficient <Effort Factor>	P	T
Organic	2.4	1.05	0.38

### Effort (PM)

$$PM = 2.4 \times \left( \frac{3525}{1000} \right)^{1.05}$$
$$= 9.01 \text{ person-months}$$

### Development Time (DM)

$$DM = 2.50 \times (PM)^{0.38}$$
$$= 5.76 \text{ months}$$

### Average Staffing (ST)

$$ST = \frac{PM}{DM} = \frac{9.01}{5.76} = 2 \text{ people}$$

### Summary

Based on the COCOMO model in Organic mode, a project with 3,525 SLOC requires approximately 9.01 person-months of effort and a development timeline of 5.76 months with an average staffing of about 2 people.

Our actual team of 5 members exceeds this recommended staffing, meaning we could complete the project faster than 5.76 months, or allocate additional resources to quality assurance, documentation, or enhanced features while maintaining the original schedule.

## 7. CONCLUSION

In the Delivery Management System project we are try to create a user-friendly software to manage all delivery steps easily. This project solves common problems as like lost shipments info, wrong tracking status updates, and a lot of paperwork by bringing everything into one organized system. There are different users get their own dashboards like Admins control everything, Employees are checking payments and assigning deliveries, Carriers update delivery status, Sellers create shipments and can delete shipments, Customers track their orders. We used Extreme Programming (XP) in our Delivery Management System project which help us to adapt quickly to changes and build the system step by step with constant feedback from our customers. The Testing showed most of the features work well, though we found some of small issues to fixed them later.

The final system is very secure, easy to use, and helps everyone involved save time while reducing the mistakes. It makes the entire delivery process faster, clearer, and more reliable for businesses and their customers.