

CS-353 Database Systems

Final Report



Database of a Logistics Company

Group 18

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1. Description

BilCargo is a logistic company's web application system for managing different users such as customers, employees, and couriers. Every user has the ability to log in with their specified ID and chosen password to a personalized page.

Employees are responsible for assigning packages to the appropriate couriers and delivery branches while managing the status of packages. Couriers and delivery branches are approved by employees and employees are responsible for assigning couriers to delivery branches. They are also able to resolve complaints made by customers on a certain delivery by providing feedback and managing the status of packages. Employee accounts are added by the admin. Employees can view all the details regarding packages, couriers, delivery branches, complaints, and customers related to them and apply filters accordingly.

Customers can freely sign up and make requests for package deliveries to their specified recipient. Each delivery will take place after payment has been done through one of the user's bank accounts. During and after the completion of the delivery the customer can submit a complaint and review the feedback provided by an employee. Customers can view all their current and past transactions and apply filters.

Couriers initially need to apply and then be assigned by employees to a delivery branch in order to start delivering packages. Couriers can update the status and delivery time of the packages assigned to them by the employees.

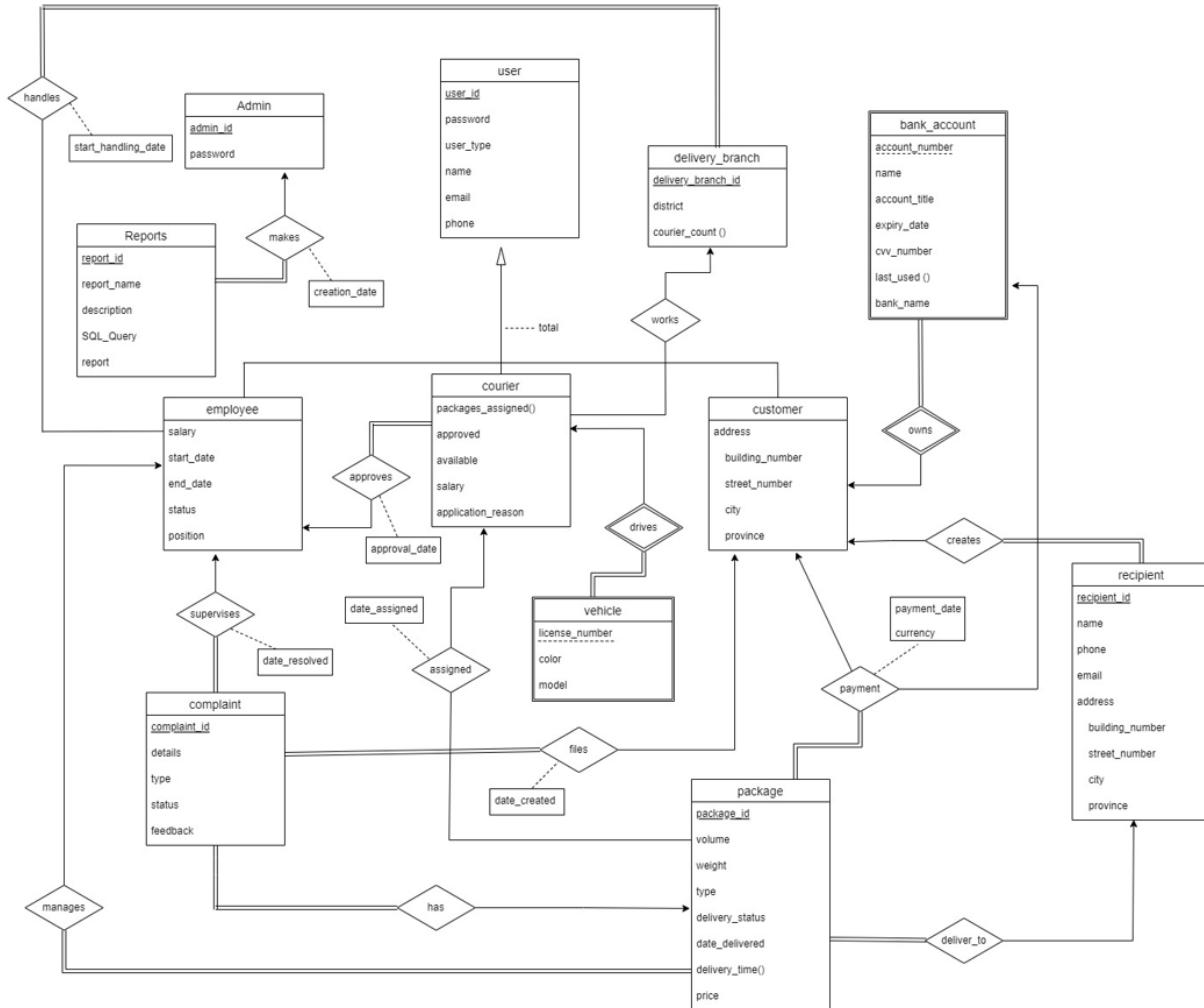
2. Contributions

Members	Contribution
Faaiz Khan	<ul style="list-style-type: none">Created git repositories and managed merge conflicts and overall version controlling problemsWorked mostly on the backend and created api services for Payment, Complaints, Employee, Search and VehiclesHelped with the Report and User Manual

Maher Athar Ilyas	<ul style="list-style-type: none"> Created the Figma mock up of the UI using Ant Design Components. Worked mostly on the Frontend and created all the UI pages. Solved authentication and api call problems related to communication between frontend and backend Helped with the ER Diagram and Report
Amirreza Khoshbakht	<ul style="list-style-type: none"> Maintained the API Collection through postman. Worked mostly on the backend and created api services for Customer, Courier, Login, and Recipient Added triggers, views, and constraints to the database Helped with the Report
Arshia Bakhshayesh	<ul style="list-style-type: none"> Defined scripts for the database and sample data. Worked mostly on the backend and created api services for Sign-up, Admin, Report, Filtering and Delivery branch. Helped with the Report and User Manual

3. Final E/R

- First name, middle name, and last name were merged into name.
- Dimensions is now volume for package.



4. Final Tables

The sections with a star indicate a change for that table.

4.1 user*

user(user_id, password, user_type, name, email, phone)

4.2 employee

employee(user_id, salary, start_date, end_date, status, position)

FOREIGN KEY (user_id) REFERENCES user(user_id)

4.3 delivery_branch

delivery_branch(delivery_branch_id, district, courier_count)

4.4 handles*

handles = (delivery_branch_id, user_id, start_handling_date)

FOREIGN KEY (user_id) REFERENCES employee(user_id)

FOREIGN KEY (delivery_branch_id) REFERENCES delivery_branch(delivery_branch_id)

4.5 courier

courier(user_id, employee_id, delivery_branch_id, packages_assigned, approved, approval_date)

FOREIGN KEY (user_id) REFERENCES user(user_id)

FOREIGN KEY (delivery_branch_id) REFERENCES delivery_branch(delivery_branch_id)

FOREIGN KEY (employee_id) REFERENCES employee(user_id)

4.6 vehicle*

vehicle(user_id, license_number, color, model)

FOREIGN KEY (user_id) REFERENCES courier(user_id)

4.8 customer

customer(user_id, building_number, street_number, city, province)

FOREIGN KEY (user_id) REFERENCES user(user_id)

4.9 bank_account*

```
bank_account(user_id, account_number, account_title, expiry_date, cvv_number)  
FOREIGN KEY (user_id) REFERENCES customer(user_id)
```

4.10 recipient

```
recipient(recipient_id, user_id, first_name, middle_name, last_name, email, phone,  
building_number, street_number, city, province)  
FOREIGN KEY (user_id) REFERENCES customer(user_id)
```

4.11 package*

```
package(package_id, recipient_id, courier_id, employee_id, volume, weight, type,  
delivery_status, date_assigned, date_delivered, delivery_time, price)  
FOREIGN KEY (recipient_id) REFERENCES recipient(recipient_id)  
FOREIGN KEY (courier_id) REFERENCES courier(user_id)  
FOREIGN KEY (employee_id) REFERENCES employee(user_id)
```

4.12 payment

```
payment = (package_id, user_id, account_number, payment_date, currency)  
FOREIGN KEY (package_id) REFERENCES package(package_id)  
FOREIGN KEY (user_id) REFERENCES customer(user_id)  
FOREIGN KEY (account_number) REFERENCES account(account_number)
```

4.13 complaint

```
complaint(complaint_id, package_id, employee_id, customer_id, details, type, status,  
feedback, date_created, date_resolved)  
FOREIGN KEY (package_id) REFERENCES package(package_id)  
FOREIGN KEY (employee_id) REFERENCES employee(user_id)  
FOREIGN KEY (customer_id) REFERENCES customer(user_id)
```

4.14 admin

admin(admin_id, password)

4.14 report

reports(report_id, admin_id, creation_date, report_name, description, SQL_query, report_file)

FOREIGN KEY (admin_id) REFERENCES admin(admin_id)

5. Implementation Details

For this project's implementation, MySQL was used for database systems, Java Springboot was used for the backend side, and React.js, Ant Design Components and Figma were used for the user interface and design.

5.1 Programming Environment Details

For the environments of this project, MySQL was used in the local machines for easier access and modification to the database during the implementation and testing stage. Different IDEs were used to implement various parts of the application; IntelliJ was used to implement the backend side of the project; visual studio code was used to implement the frontend side. Git and Github were used for version control and better collaboration among team members.

Main Framework of the backend side was Java Springboot. Frontend was built using Ant Design components along with HTML and CSS on React.js.

5.2 DB Connection and Access

MySQL was used as the database of the project. During the implementation and testing of the application, MySQL was used on the local machines of the team. Backend side of the project was used to access the database, using the Springboot mysql implementation. Table creation was done using this framework; and the update, deletion, and insertion was done using https requests

sent by the frontend. Raw MySQL queries are used for the insertion, update, and deletion of the data from the database in the backend side of the project. The dependency used to maintain this was Spring Data JPA. Whilst JpaRepository has in-built functionalities for database queries and commands, native custom queries were used as per the requirements of the project.

5.3 GUI Specifications

Mock-up UI design of the application was made using Figma. Even during the design we used only used Ant Design components so that its easier later on for us to copy the UI mock-ups once finalized. The application is based on React.js with most components being from the Ant Design Library along with some custom CSS and HTML tags for additional styling and formatting. The GUI frontend uses the API end points provided by the backend application to fetch data and to do CRUD operations. The data was transfer in the form of JSON for easy manipulation on frontend and backend.

5.4 Constraint Enforcement

For the functionality of the application to remain consistent throughout, the following constraints were enforced:

- The IDs of the users, barring the admin, were sequentially generated, to avoid issues with naming as well as making it easier and more consistent to develop.
- The emails and phones of each user type must be unique. This constraint was enforced to avoid multiple accounts being created for a single employee, courier, and customer.
- The entities employ the use of foreign keys referenced by tables to resolve and map Many-To-One/One-To-Many and One-To-One relationships.
- The application follows a hierarchy with regards to account use: admins create accounts for employees, and while couriers are able to create applications and insert themselves in

the database, their accounts will only be functional when the employee reviews their application and approves it. The customer may create their account of their own accord.

- To avoid misuse of the functionality, a few constraints were enforced:
 - A package can be created and received by only 1 customer and recipient respectively.
 - A customer is only allowed to create one complaint per package.
 - A package is limited to only one payment.

5.5 Problems and Limitations

Due to the addition of these constraints, as well as other unrelated reasons, the app has some problems and limitations:

- Once an account is deleted, since the ID is sequentially generated, a “hole” is left in that database that is never “refilled”.
- A package may not have joint senders or receivers, regardless of the address of these senders and receivers.
- A courier has no other mode of communication with the employees during the time of his application review. Essentially, there is no “interview process”.
- An admin has to be present to create an employee account. All employees, regardless of their position, share the same permissions throughout the application.

6. Advanced Database Components

6.1 Triggers

6.1.1 Deliver date update

A trigger will be used when a package status changes to delivered, delivery date of a package will be updated.

```

DELIMITER $$

CREATE TRIGGER update_delivery_date
    AFTER UPDATE ON package
    FOR EACH ROW
BEGIN
    IF NEW.delivery_status = 'delivered' THEN
        UPDATE package SET delivery_time = NOW() WHERE id = NEW.id;
    END IF;
END$$

DELIMITER ;

```

6.1.2 Customer Deletion

A trigger will delete the bank_account row if all customers related to that bank account and packages that belong to the customer in payment_details relation are deleted since bank_account is a weak entity.

```

DELIMITER $$

CREATE TRIGGER delete_bank_account
    BEFORE DELETE ON customer
    FOR EACH ROW
BEGIN

```

```

DECLARE count INT DEFAULT 0;

SELECT COUNT(*) INTO count FROM payment_details WHERE customer_id = OLD.id;

IF count <> 0 THEN

    DELETE FROM payment_details WHERE customer_id = OLD.id;

    DELETE FROM package WHERE sent_by = OLD.id;

END IF;

END$$

DELIMITER ;

```

6.2 Views

6.2.1 Packages View

A view of the packages that shows the total number of packages delivered in the system. This view will be used by the admin to create reports of the company's performance.

```

CREATE VIEW package_delivery_count AS

SELECT COUNT(*) AS num_delivered

FROM package

WHERE delivery_status = 'delivered';

```

6.2.2 Employee Sorted View

A view of the employees sorted based on their salary that can be useful for the Admin of the company. This sorted information can be useful to the Admin in order to see the range of the salaries and update any of the employee's salary if needed.

```
CREATE VIEW employee_salary_sorted AS  
  
SELECT *  
  
FROM employee  
  
ORDER BY salary DESC;
```

6.3 Report

A report is saved as a medium text attribute of the report table instead of a view as it is more efficient and needs only a slight compromise with extra memory space. Saving a reports MySQL origin query allows the application to let the user recreate the old report using the newly updated data as well.

Generally, the user is allowed to apply a filtering function that filters the columns and searches for specific values using LIKE, BETWEEN, and CONTAINS. These can be done on the tables and the admin can save a table's view after applying all these filters as a report. The admin is allowed to write raw MySQL queries as well to generate completely custom queries.

Each type of user also gets some predefined overview reports on their dashboard. These include total packages sent, total couriers managed, total packages delivered, total packages canceled, and many more. Moreover, there are several premade report queries that the admin can select to generate a report some of these are the following:

6.3.1 The City with the Highest Number of Package Deliveries:

The report will get the count of packages per city and calculate the maximum value among them and will show the city with the highest number of package deliveries

WITH cityCount as (

SELECT count (*) as cityDeliveryCount

FROM deliver_to as D, recipient R

WHERE D.recipient_id = R.recipient_id

GROUP_BY R.city)

SELECT MAX (cityDeliveryCount) as highestDeliveryCount

FROM cityCount C

6.3.2 Number of Package Deliveries per City:

Finding the courier who has made the most deliveries in the last month and has a salary less than the average salary. A courier suitable for a salary raise.

WITH deliveries as (

SELECT count (*) as deliveryCount

FROM package as P, courier as C

WHERE P.courier_id = C.id AND P.delivery_date <= 2022-11-25

GROUP_BY C.id)

SELECT C.id

FROM courier as C, deliveries as D

```
WHERE D.deliveryCount >= ALL (SELECT deliveryCount  
FROM deliveries )  
  
AND C.salary <= (SELECT AVG(courier.salary) AS AverageSalary FROM courier)
```

6.4 Stored Procedure

Some queries for listing the employees, recipients, couriers, and delivery branches can be written as a stored procedure since this information will be accessed often in the application. Stored procedures can also be used to hide sensitive information in the database. For example we use a stored procedure to calculate the cost of a package using the package information on runtime.

7. User Manual

7.1 Main Pages

7.1.1 Login Page

The login page is the first page that everyone sees whenever they access the website. This page serves the purpose of verification as only the users with valid accounts and details - namely user ID and password - will be allowed to access the rest of the pages and features of the website.

The page contains a form, that prompts the user to input their ID and password in clearly defined fields. Once the user inputs the information and submits the form. The information is verified and the user is logged in if their information corresponds to a valid account in the database. If the admin wants to log in, they can also enter the admin ID and password to log in using the same login page.

Furthermore, this page contains customer sign-up and courier application buttons on the top left in case a new potential customer wants to be able to access the service or if someone looking for a job as a courier would like to apply to be considered for a position.

In case of an invalid ID or password a pop up error message is shown.

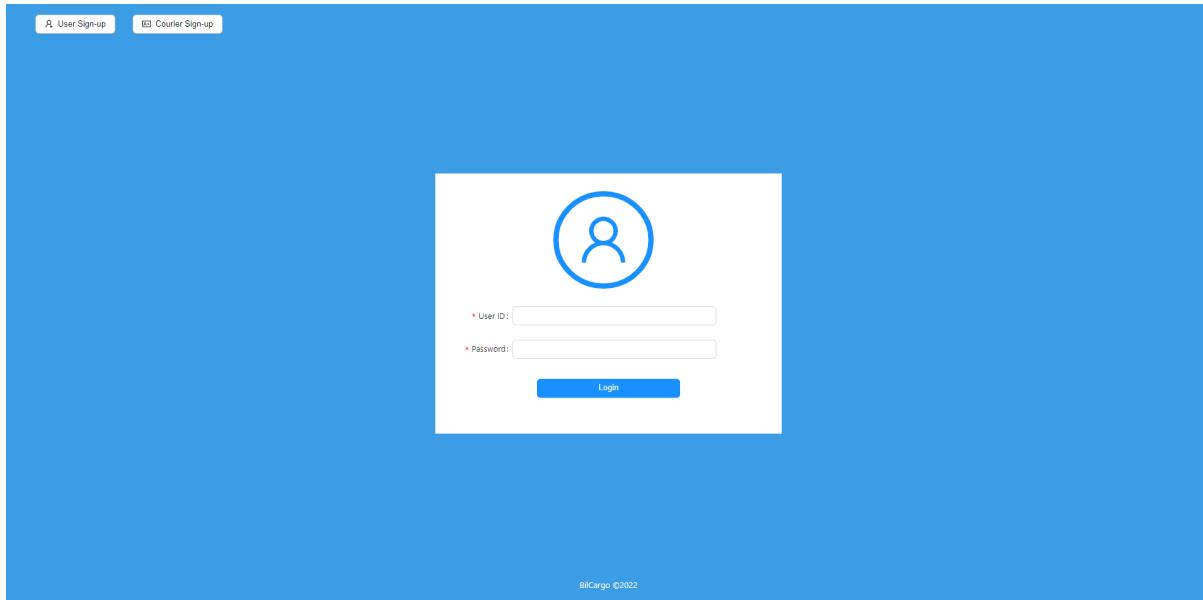


Fig. 1: Login Page

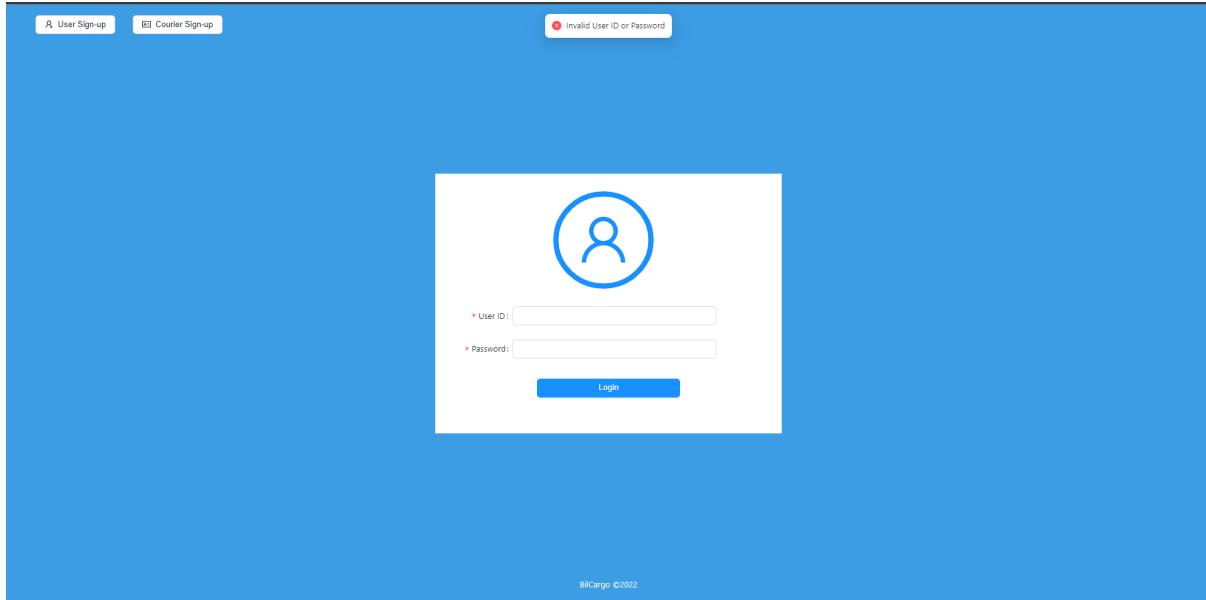


Fig. 2: Failed Login Attempt

7.1.2 Customer Sign-Up Page

This page of the site allows new potential customers to sign-up to the website to be able to access its services in the future. Once signed up, the user is provided with a unique user ID that they will use to log in to the website in the future.

The page contains a form, prompting the user to input all of the required information in their respective fields that are clearly defined. Once the customer has inputted every field of the information correctly, and once the email and phone fields are verified for duplicates, the customer is redirected to the login page and an email is sent to them containing their user_id.

The page also has buttons so that a user can be redirected to either the login page or the courier application page.

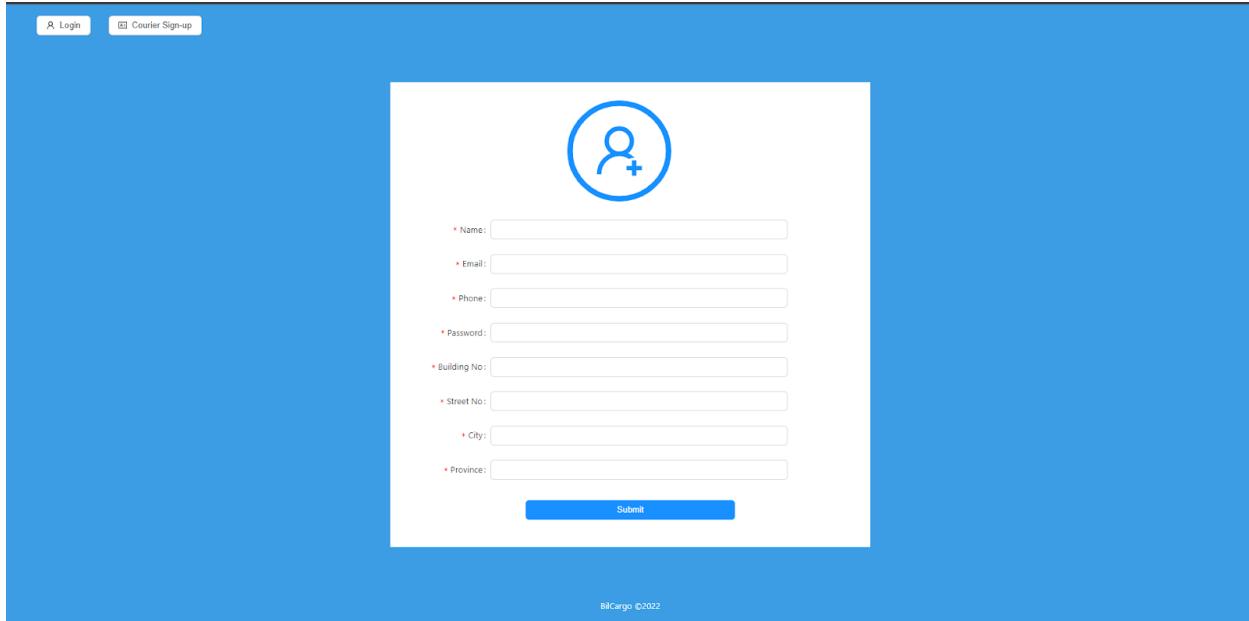


Fig. 3. Customer Sign-Up Page

7.1.3 Courier Sign-Up Page

This page of the site lets people that want to sign up as couriers create accounts. However, these accounts will not be fully functional until their application is approved. Once a potential courier fills the form correctly and submits it, they are provided with a unique user ID that they can use to log in and check the result of their application.

The page contains a form with all the information fields required to be submitted when a potential courier is signing up. Once every field is filled out and submitted, the courier table is checked to see whether the email or phone are already present in the table. If the form passes these verification checks, the user is redirected to the login page and an email is sent to them containing their user ID.

The page also contains two buttons on the top left so that the user can navigate to the other main pages of the website before logging in. These pages are namely the login page and the customer sign-up page.

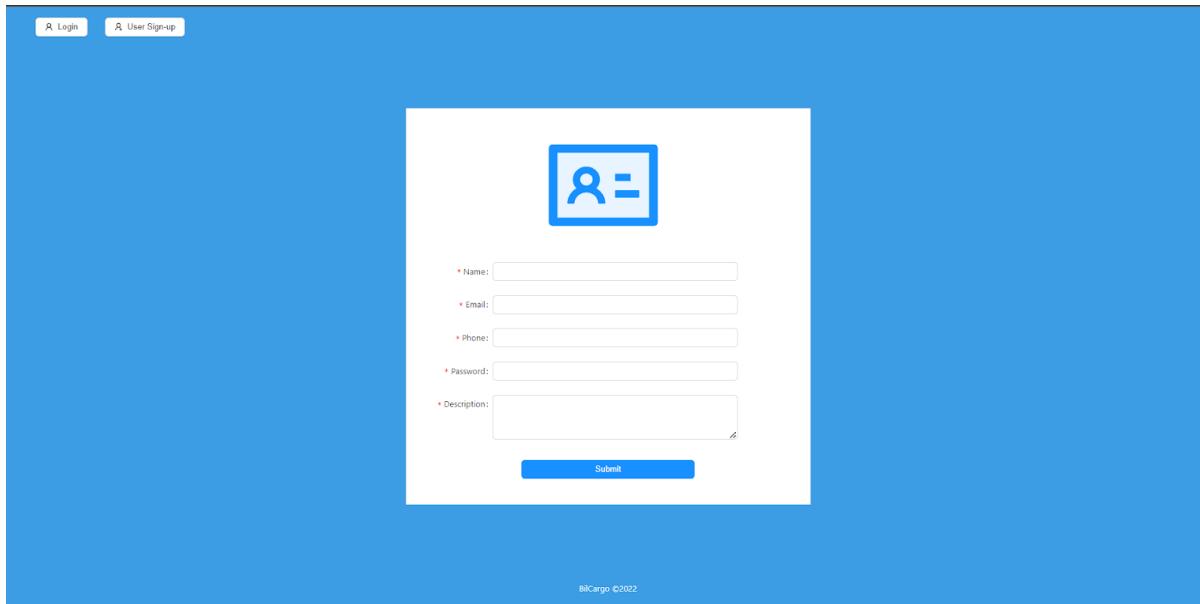


Fig. 4: Courier Sign-Up Page

7.2 Customer Pages

7.2.1 Customer Homepage

After the customer logs in with their correct user ID and password, they are directed to this page. This page essentially serves the purpose of a dashboard and a welcome page, displaying a welcome message and providing easy navigation to all the other functional pages on the site.

The dashboard also provides some statistics for the customer as an easy way of monitoring their activity on the website, etc. These will include the number of packages delivered, canceled, etc.

The left side of the page contains a navigation bar containing all the other pages including the currently selected page. The bottom left of the page contains a log-out button to let the customer log out whenever they want to or whenever they are done with what they want to do. The page also contains a button allowing the user to create a package to be delivered.

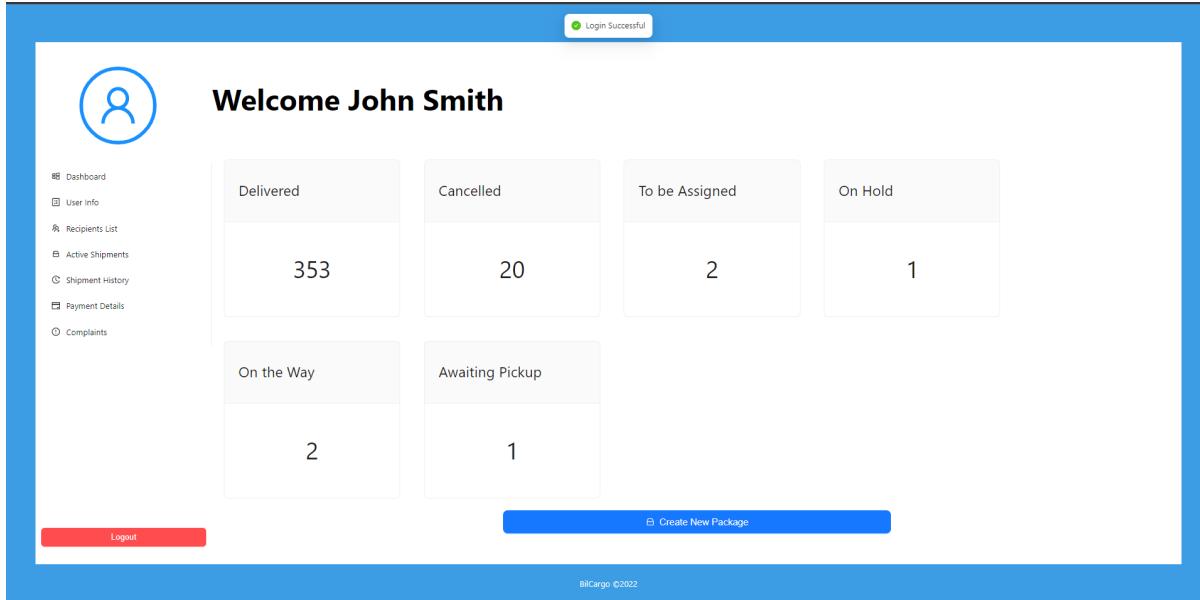


Fig. 5: Customer Homepage

7.2.2 Create New Package Page

This page can be reached by clicking on the button present in Fig. 5 on the customer homepage. On this page, the user is prompted to fill in the details of the package as well as the recipient of the package and the payment details. The payment is made once the package is created and is ready to be assigned to a courier.

The page contains a form with all the information fields required to be submitted when a new package is being created. Once every field is filled out and submitted, the customer is prompted with the amount that they will pay for the shipping and whether they accept the charges. If the customer selects yes, they are redirected to the customer homepage, otherwise, they remain on the current screen.

The left side of the page contains a navigation bar containing all the other pages including the currently selected page. The bottom left of the page contains a log-out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The price of the package will be calculated based on the package type, weight, and volume. The bigger or heavier the package, the price of the package will increase. The package type also affects the price, Luxury, heavy, and fragile packages will cost more than the other types.

This screenshot shows the 'Create New Package' page. The interface has a blue header and sidebar. The sidebar contains links for Dashboard, User Info, Recipients List, Active Shipments, Shipment History, Payment Details, and Complaints. The main area features a large circular user icon and the title 'Create New Package'. Below the title is a form with the following fields:

- * Package Type: A dropdown menu labeled 'Choose Package Type'.
- * Weight: An input field labeled 'Enter Weight in grams'.
- * Volume: An input field labeled 'Enter Volume in meter cube'.
- * Recipient: A dropdown menu labeled 'Select Recipient'.
- * Payment Method: Buttons for 'Business', 'Yapi Kredi', and 'Is Bank'.

A large blue 'Submit' button is at the bottom of the form. At the very bottom left is a red 'Logout' button, and at the bottom center is the text 'BilCargo ©2022'.

Fig. 6: Create New Package Page

This screenshot shows the 'Create New Package' page with filled-in data. The sidebar and layout are identical to Fig. 6. The form fields now contain:

- * Package Type: Document
- * Weight: Fragile
- * Volume: Heavy
- * Recipient: Luxury
- * Payment Method: Other

The rest of the page, including the 'Submit' button, 'Logout' button, and copyright notice, remains the same as in Fig. 6.

Fig. 7: Select Package Type

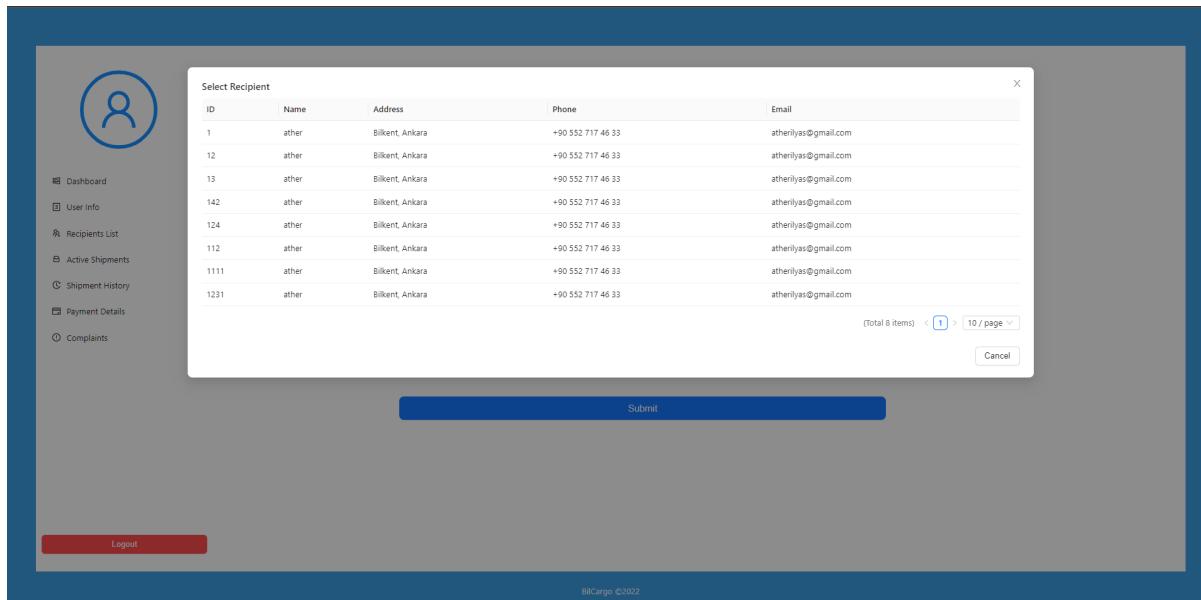


Fig. 8: Select Recipient

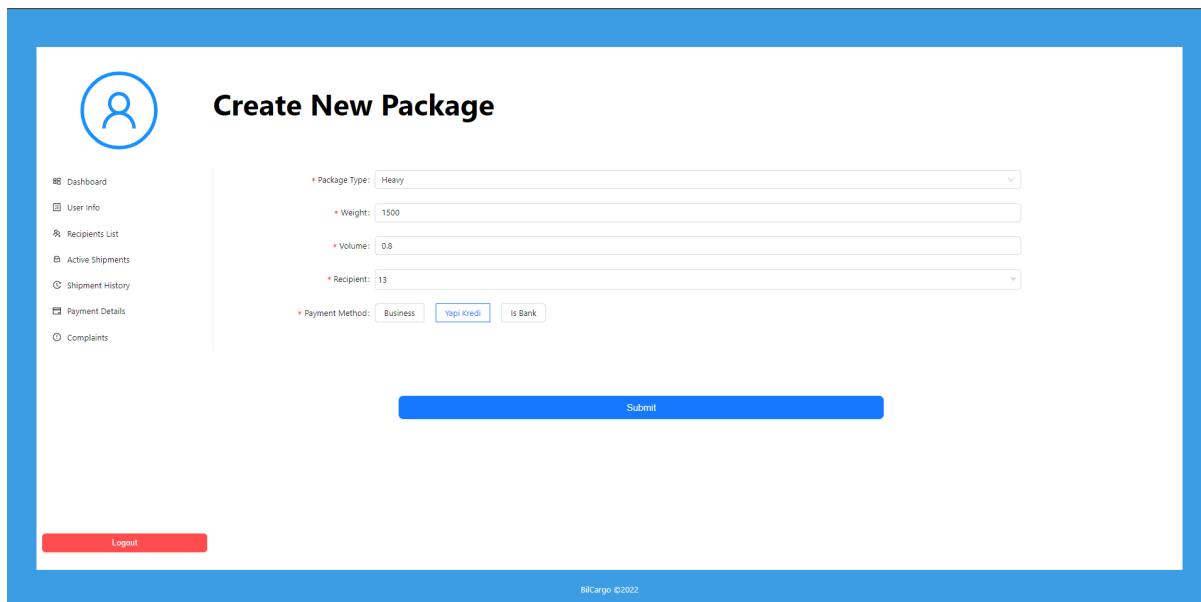


Fig. 9: Select Payment Method

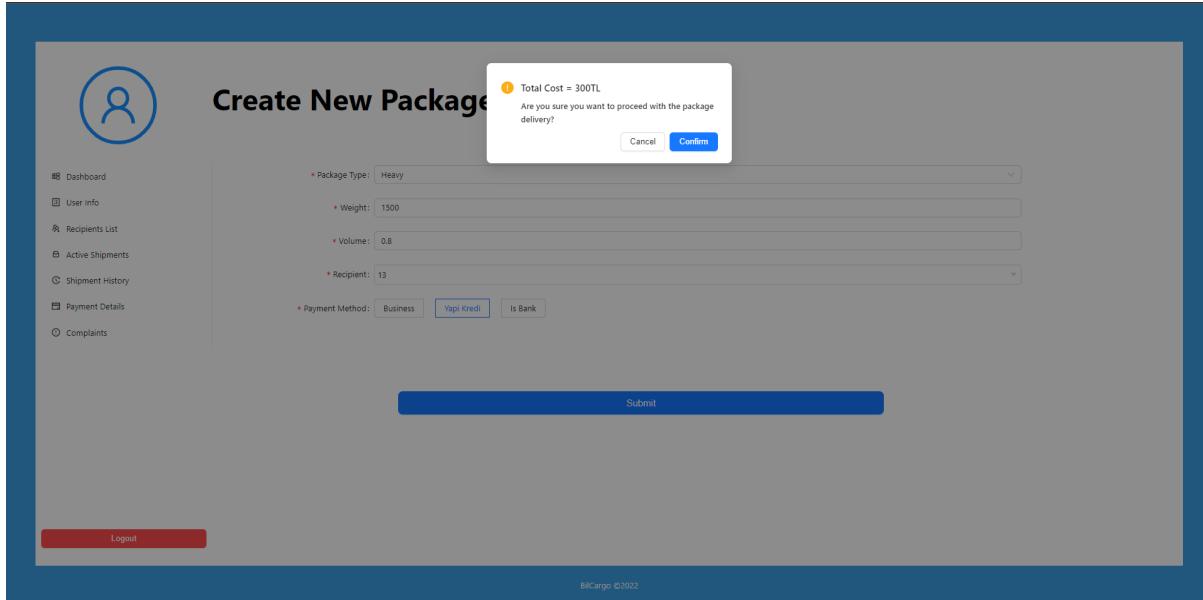


Fig. 10: Confirm Payment

7.2.3 Customer Information Page

This page can be navigated by the customer by clicking the navigation bar on the left. Once clicked, it will open a page containing all of the information of the customer. This information can be edited if the customer so chooses.

The page contains a non-interactive form that displays the information of the user next to their respective fields. The information can be edited by the customer to change one or more of the fields if they want to. However, the customer may not change their user ID, for ease of maintenance purposes. Customers may frequent this page when they want to update their email, phone number, password, or even address.

The left side of the page contains a navigation bar containing all the other pages including the currently selected page. The bottom left of the page contains a log-out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a user profile interface titled "User Info". On the left, there is a sidebar with navigation links: Dashboard, User Info (which is highlighted in blue), Recipients List, Active Shipments, Shipment History, Payment Details, and Complaints. The main content area has a title "User Info" with a person icon. Below it is a form with the following fields:

- User ID: 2
- Name: John Smith
- Email: john@example.com
- Phone: 534353890
- Password: (redacted)
- Building No.: Yurt 78
- Street No.: Universiteler Mahalesi
- City: Ankara
- Province: cankaya

A blue "Edit" button is located at the bottom of the form. At the very bottom of the page is a red "Logout" button.

Fig. 11: Customer Information Page

This screenshot is identical to Fig. 11, but the "Phone" field has been changed to "0534353890". All other fields and the overall layout remain the same.

Fig. 12: Edit Customer Information

7.2.4 Customer Recipient Page

This page can be navigated by the customer by clicking the navigation bar on the right. Once clicked, it will open a page containing information about the recipients of the customer. This information can be edited or deleted if the customer so chooses.

The page contains a list of all recipients and their information. The list can be filtered by clicking on one of the fields and entering a specific value. The recipients can be deleted and edited using the icons on the right. The page contains a button to add a new recipient as well.

The left side of the page contains a navigation bar containing all the other pages including the currently selected page. The bottom left of the page contains a log-out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a user interface titled "Recipient List". On the left, there is a sidebar with navigation links: Dashboard, User info (which is selected and highlighted in blue), Recipients List (selected), Active Shipments, Shipment History, Payment Details, and Complaints. At the bottom left of the sidebar is a red "Logout" button. The main content area has a title "Recipient List" with a person icon. Below the title is a table with the following data:

ID	Name	Address	Phone	Email	Action
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	

At the bottom right of the table, there is a pagination indicator showing page 1 of 1. The footer of the page includes the text "BilCargo ©2022".

Fig. 13: Recipient List

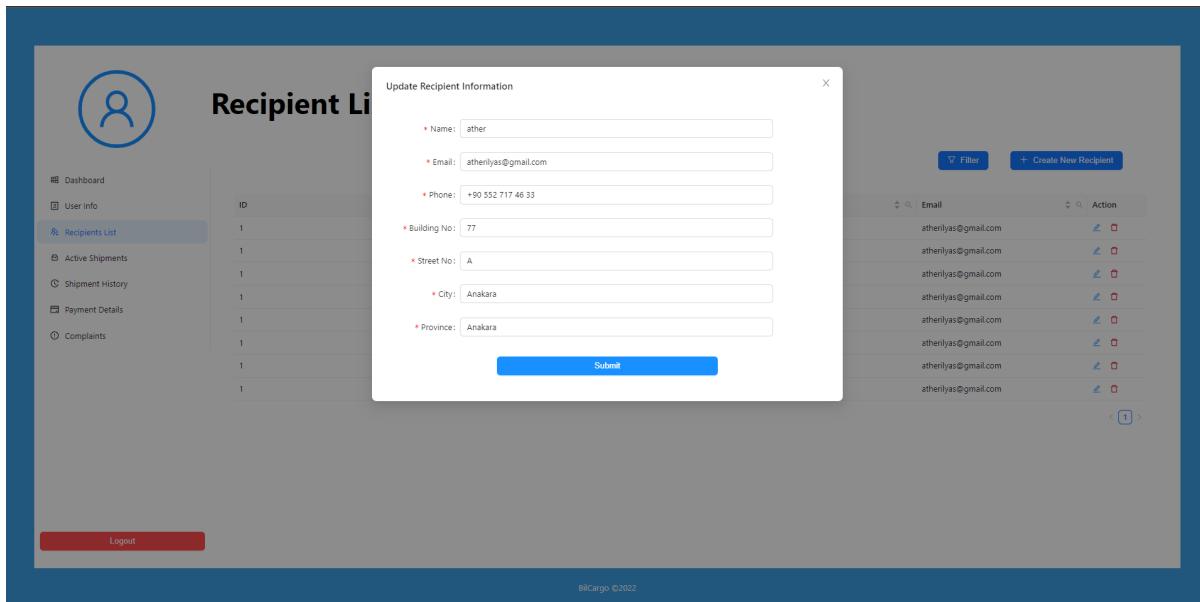


Fig. 14: Edit Recipient Information

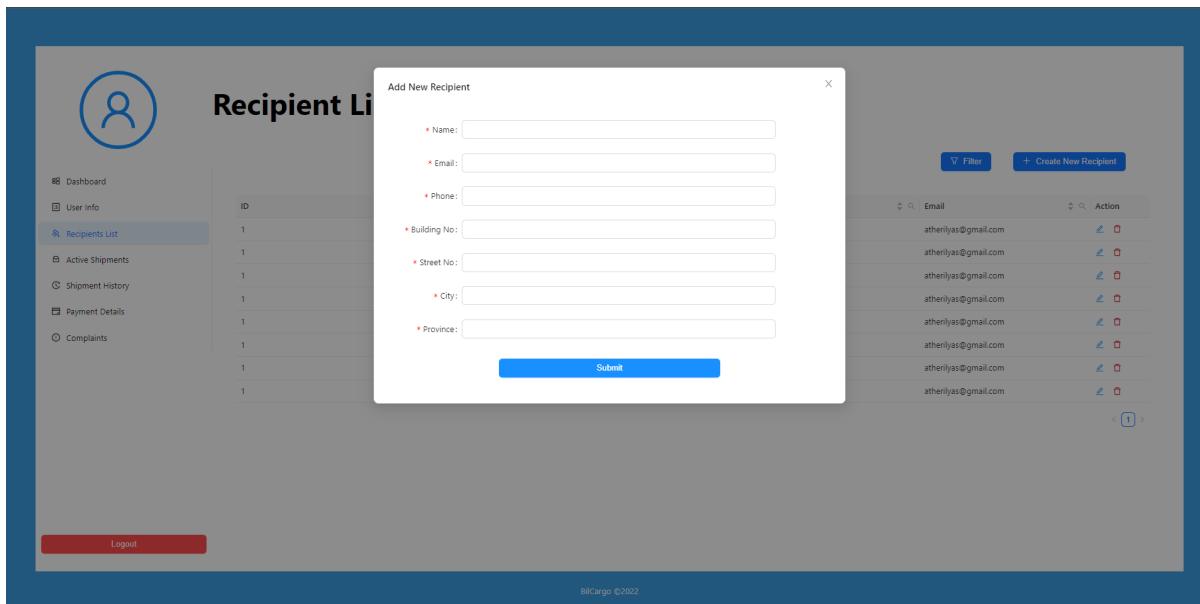


Fig. 15: Add New Recipient

The screenshot shows a user interface for managing recipients. On the left, there's a sidebar with a user icon and links for Dashboard, User Info, Recipient List (which is currently selected), Active Shipments, Shipment History, Payment Details, and Complaints. A red "Logout" button is at the bottom of the sidebar.

The main content area has a title "Recipient List" and a red error message box at the top right containing "Recipient Add Failed" and "Invalid value for First Name". Below the message is a "Add New Recipient" button. A table lists 8 recipients with columns for ID, Name, Address, Phone Number, Email, and Actions (edit and delete).

ID	Name	Address	Phone Number	Email	Actions
1	FirstName	Table cell text	+90 552 758 86	test@smth.com	
2	FirstName	Table cell text	+90 552 758 86	test@smth.com	
3	FirstName	Table cell text	+90 552 758 86	test@smth.com	
4	FirstName	Table cell text	+90 552 758 86	test@smth.com	
5	FirstName	Table cell text	+90 552 758 86	test@smth.com	
6	FirstName	Table cell text	+90 552 758 86	test@smth.com	
7	FirstName	Table cell text	+90 552 758 86	test@smth.com	
8	FirstName	Table cell text	+90 552 758 86	test@smth.com	

Pagination controls are located below the table, showing pages 1 through 5.

Fig. 16: Recipient Add Failed

The screenshot shows a user interface for managing recipients. On the left, there's a sidebar with a user icon and links: Dashboard, User Info, Recipient List (which is selected and highlighted in blue), Active Shipments, Shipment History, Payment Details, and Complaints. At the bottom of the sidebar is a red 'Logout' button. The main content area has a title 'Recipient List' and a success message 'New Recipient Added Successfully' with a green checkmark icon. Below this is a table with columns: ID, Name, Address, Phone Number, Email, and Actions. The table contains 8 rows, each with an ID from 1 to 8, a 'FirstName' placeholder name, and the same address, phone number, and email ('test@smth.com'). Each row has edit and delete icons in the 'Actions' column. At the bottom of the table is a pagination control with buttons for < > and numbers 1 through 5.

Fig. 17: Recipient Added Successfully

This screenshot shows the same interface as Fig. 17, but with a modal dialog box overlaid. The dialog asks 'Are you sure you want to delete this Recipient?' and provides 'Cancel' and 'OK' buttons. The rest of the page, including the sidebar and recipient list table, remains visible.

Fig. 18: Recipient Delete Prompt

The screenshot shows a web application interface for managing recipients. On the left, there's a sidebar with navigation links: Dashboard, User Info, Recipients List (which is selected and highlighted in blue), Active Shipments, Shipment History, Payment Details, and Complaints. Below the sidebar is a red 'Logout' button. The main content area has a title 'Recipient List'. A modal dialog titled 'Filter' is open, containing a single input field with placeholder text 'Please select...' and two buttons: 'Cancel' and 'OK'. To the right of the dialog is a table with columns: ID, Name, Address, Phone, Email, and Action. The table contains 8 rows, all with the same data: ID 1, Name 'ather', Address 'Bilkent, Ankara', Phone '+90 552 717 46 33', Email 'atheriliyas@gmail.com', and Action icons. At the bottom right of the table is a small pagination indicator '(1)'. At the top right of the main content area are two buttons: 'Filter' and '+ Create New Recipient'. The footer of the page says 'BilCargo ©2022'.

Fig.19 : Recipient Filter Prompt

This screenshot is similar to Fig.19 but shows the filter dialog expanded to reveal more options. The dialog now includes four input fields: 'id', 'name', 'phone', and 'email', each with a clear ('x') button next to it. The 'id' field is currently selected. Below the input fields is a dropdown menu listing the same four fields: 'id', 'name', 'address', and 'phone'. The rest of the page is identical to Fig.19, including the sidebar, the main recipient list table, and the footer.

Fig.20 : Recipient Filter Specification

The screenshot shows a user interface for managing recipients. On the left, there's a sidebar with navigation links: Dashboard, User Info, Recipients List (which is selected and highlighted in blue), Active Shipments, Shipment History, Payment Details, and Complaints. Below the sidebar is a red 'Logout' button. The main content area has a title 'Recipient List' with a person icon. It features a search bar where 'ather' is typed, a 'Search' button, and a 'Reset' button. There are also 'Filter' and 'Create New Recipient' buttons. A table lists recipient data with columns: ID, Name, Address, Phone, Email, and Action. The table shows multiple entries for 'ather' with varying addresses and emails. At the bottom right of the table is a pagination control with '< 1 >'.

ID	Name	Address	Phone	Email	Action
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	notAther	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	notAther	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	notAther	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	notAther	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	notAther	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	notAther	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	notAther	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	

Fig. 21: Recipient Search Prompt

This screenshot is identical to Fig. 21, showing the 'Recipient List' page with a search input containing 'ather'. The table below shows the same eight rows of data, each with a different address and email, corresponding to the search results.

ID	Name	Phone	Action
1	ather	+90 552 717 46 33	
1	ather	+90 552 717 46 33	
1	ather	+90 552 717 46 33	
1	ather	+90 552 717 46 33	
1	ather	+90 552 717 46 33	
1	ather	+90 552 717 46 33	
1	ather	+90 552 717 46 33	

Fig. 22: Recipient Filter Results

The screenshot shows a user interface for managing recipients. At the top left is a circular profile icon. To its right, the title "Recipient List" is displayed in bold black font. Below the title is a navigation bar with several items: "Dashboard", "User Info", "Recipients List" (which is highlighted in blue), "Active Shipments", "Shipment History", "Payment Details", and "Complaints". On the far right of the navigation bar are two buttons: "Filter" and "Create New Recipient". The main content area features a table with the following columns: ID, Name, Address, Phone, Email, and Action. A single row is present in the table, corresponding to the search results. The row contains the following data: ID 1, Name "ather", Address "Bilkent, Ankara", Phone "+90 552 717 46 33", Email "atherlyas@gmail.com", and Action buttons. At the bottom of the table are navigation arrows. At the very bottom of the page, there is a red "Logout" button.

ID	Name	Address	Phone	Email	Action
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherlyas@gmail.com	

Fig. 23: Recipient Search Results

7.2.5 Active Shipments

This page can be navigated to by the customer using the navigation bar on the left of the website. This page provides an overview of the packages that are not yet delivered or cancelled.

The page contains a list of all active shipments - or shipments that do not have the 'delivered' or 'cancelled' status. The customer has the ability to request to have a shipment put on hold or create a complaint about the shipment. The customer can also filter the table by clicking on the search icon next to each field. The page provides a button that lets the customer create a new package, redirecting to the page previously shown and explained in Fig. 6.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows the 'Active Shipments' section of a logistics management application. On the left, a sidebar menu includes 'Dashboard', 'User Info', 'Recipients List', 'Active Shipments' (which is selected and highlighted in blue), 'Shipment History', 'Payment Details', and 'Complaints'. A large circular profile icon is at the top left of the main content area. The main title 'Active Shipments' is centered above a table. The table has columns for ID, Recipient Name, Weight, Dimensions, Type, Status, and Action. Each row represents a package with values like ID 1, Recipient Name 'ather', Weight 300, Dimensions '50x34x23', Type 'Fragile', and Status 'On the way'. The Action column contains buttons for 'Filter', 'Create New Package', and several status icons: 'On Hold' (yellow), 'Awaiting Pick-up' (green), 'To Be Assigned' (orange), and 'On the way' (blue). At the bottom right of the table, there are navigation arrows (< 1 >). A red 'Logout' button is at the bottom left, and the footer says 'BilCargo ©2022'.

Fig. 18: Active Shipments

This screenshot is identical to Fig. 18, showing the 'Active Shipments' page. However, a modal dialog box is overlaid on the 'On Hold' status button for the first package. The dialog asks 'Are you sure you want to put this package on Hold?' with 'Cancel' and 'OK' buttons. The rest of the interface, including the sidebar, table, and footer, remains the same.

Fig. 19: Active Shipments: Request Hold

The screenshot shows a user interface for managing shipments. On the left is a sidebar with a user icon and links: Dashboard, User Info, Recipient List, Active Shipments (which is selected and highlighted in blue), Shipment History, Payment Details, and Complaints. At the bottom of the sidebar is a red 'Logout' button. The main content area has a title 'Active Shipments' and a 'Create New Package' button. Below is a table with columns: Package ID, Recipient Name, Weight, Dimensions, Type, Status, and Actions. A search bar labeled 'Search Type' is overlaid on the table. The table contains six rows of placeholder data. At the bottom are navigation arrows and page numbers 1 through 5.

Fig. 20: Filtering Table

The screenshot shows the same user interface as Fig. 20. A modal dialog titled 'Create Complaint' is open over the 'Active Shipments' table. The dialog has fields for 'Package ID' (set to 1), 'Details' (a text area), 'Complaint Type' (a dropdown menu set to 'Choose Complaint Type'), and a 'Submit' button. In the background, the table from Fig. 20 is visible with its data and search overlay. A footer at the bottom of the screen says 'BICargo ©2022'.

Fig. 21: Submit Complaint

7.2.6 Shipment History

This page can be navigated to by the customer using the navigation bar on the left of the website. This page provides an overview of the packages that are delivered or canceled.

The page contains a list of all inactive shipments - or shipments that have the ‘delivered’ or ‘canceled’ status. The customer has the ability to create a complaint about a certain shipment by clicking the icon on the far right of each row. The customer can also filter the table by clicking on the search icon next to each field, as shown in Fig. 20. The page provides a button that lets the customer create a new package, redirecting to the page previously shown and explained in Fig. 6.

The left side of the page contains a navigation bar containing all the other pages including the currently selected page which is highlighted. The bottom left of the page contains a log-out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web application interface titled "Shipments History". On the left, there is a vertical navigation menu with the following items: Dashboard, User Info, Recipients List, Active Shipments, **Shipment History** (highlighted in blue), Payment Details, and Complaints. At the top right, there are two buttons: "Filter" and "+ Create New Package". The main content area features a table with the following data:

ID	Recipient Name	Weight	Dimensions	Type	Status	Action
1	ather	300	50x34x23	Fragile	Delivered	Details
1	ather	300	50x34x23	Fragile	Canceled	Details
1	ather	300	50x34x23	Fragile	Delivered	Details
1	ather	300	50x34x23	Fragile	Delivered	Details
1	ather	300	50x34x23	Fragile	Delivered	Details
1	ather	300	50x34x23	Fragile	Canceled	Details
1	ather	300	50x34x23	Fragile	Delivered	Details

At the bottom left is a red "Logout" button, and at the bottom center is the text "BICargo ©2022".

Fig. 22: Shipment History

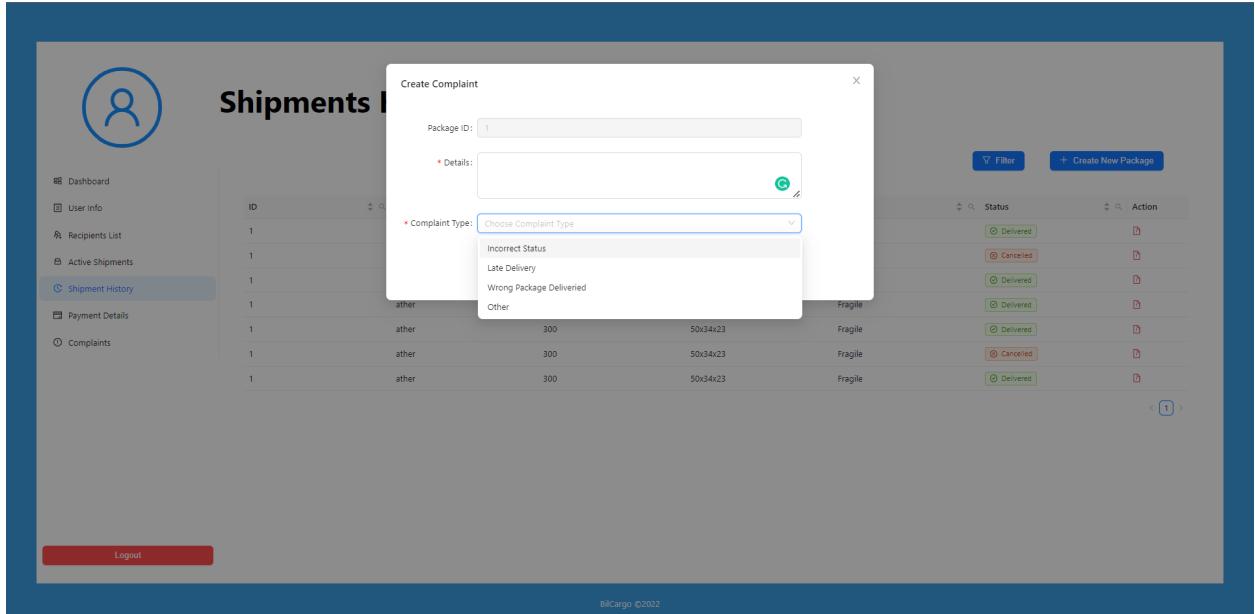


Fig. 23: Submit Complain

7.2.7 Payment Details

This page can be navigated to by the customer using the navigation bar on the left of the website. This page provides a list of the payment options the customer has saved on their account.

The page contains a list of all payment options - shown neatly as a card for each option. The customer has the ability to delete a card by clicking on the red bin icon on the top right of each “card”. The user can also add a new card by clicking on the button on the bottom middle of the page, which will open a pop-up prompting the user to fill in the bank details.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows the 'Payment Details' section of a user interface. On the left, a sidebar menu includes 'Dashboard', 'User Info', 'Recipients List', 'Active Shipments', 'Shipment History', 'Payment Details' (which is selected and highlighted in blue), and 'Complaints'. The main area displays five payment method cards:

- Personal Card**: Yapi Kredi, 4234 2432 4324, Last used on 17-10-2022.
- Business Card**: Yapi Kredi, 4234 2432 4324, Last used on 17-10-2022.
- Friend's Card**: Yapi Kredi, 4234 2432 4324, Last used on 17-10-2022.
- Business Card**: Yapi Kredi, 4234 2432 4324, Last used on 17-10-2022.
- Friend's Card**: Yapi Kredi, 4234 2432 4324, Last used on 17-10-2022.

A blue button at the bottom center says 'Create New Payment Method'. At the very bottom, there is a red 'Logout' button and the text 'BilCargo ©2022'.

Fig. 24: Payment Details

This screenshot shows the 'Add New Payment Method' dialog box overlaid on the 'Payment Details' page. The dialog has fields for 'Card Name', 'Bank', and 'Account Number', each with a red asterisk indicating it is required. A 'Submit' button is at the bottom right. The background shows the same payment method list as Fig. 24, with one additional card visible: 'Business Card' (Yapi Kredi, 4234 2432 4324, Last used on 17-10-2022). The bottom of the screen includes a red 'Logout' button and the text 'BilCargo ©2022'.

Fig. 25: Add New Card

7.2.8 Complaints

This page can be navigated to by the customer using the navigation bar on the left of the website. This page provides a list of the complaints the customer has made on their account.

The page contains a list of all complaints. The customer has the ability to filter these complaints by clicking on the search icon at the top next to each field, as shown in Fig. 20. Each complaint shows a status on the right side and takes an extra space to display a feedback if given.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a user interface for managing complaints. On the left, there's a sidebar with icons and links: Dashboard, User Info, Recipients List, Active Shipments, Shipment History, Payment Details, and Complaints (which is highlighted). The main area is titled 'Complaints'. It features a table with the following data:

Complaint ID	Type	Details	Date Resolved	Package ID	Status
1	Late Delivery	damage to package	14-30-20	503	Resolved
1	Late Delivery	damage to package	14-30-20	503	Invalid Complaint
1	Wrong Delivery	damage to package	14-30-20	503	Processing
1	Incorrect Status	damage to package	14-30-20	503	Resolved
1	Late Delivery	damage to package	14-30-20	503	Resolved

At the bottom left is a red 'Logout' button, and at the bottom center is the text 'BICargo ©2022'.

Fig. 26: Complaints

7.3 Courier Pages

7.3.1 Courier Homepage

After the courier logs in with their correct user ID and password, they are directed to this page. This page essentially serves the purpose of a dashboard and a welcome page, displaying a welcome message and providing easy navigation to all the other functional pages on the site.

The dashboard also provides some statistics for the courier as an easy way of his work progress, etc. These will include the number of packages delivered, awaiting pick-up, as well as on the way. However, before a courier can access the website, their account needs to be approved. In this case, if the account is not approved yet, and the courier attempts to log in, they will be greeted with a different screen, shown in Fig. 28.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the courier log out whenever they want to or whenever they are done with what they want to do.

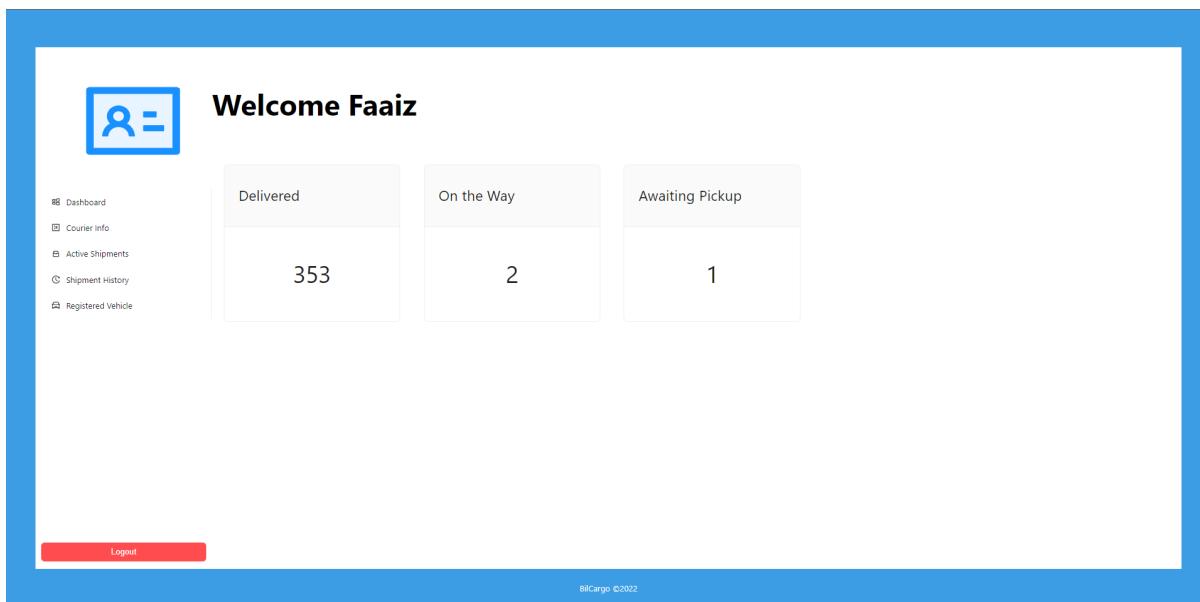


Fig. 27: Courier Homepage

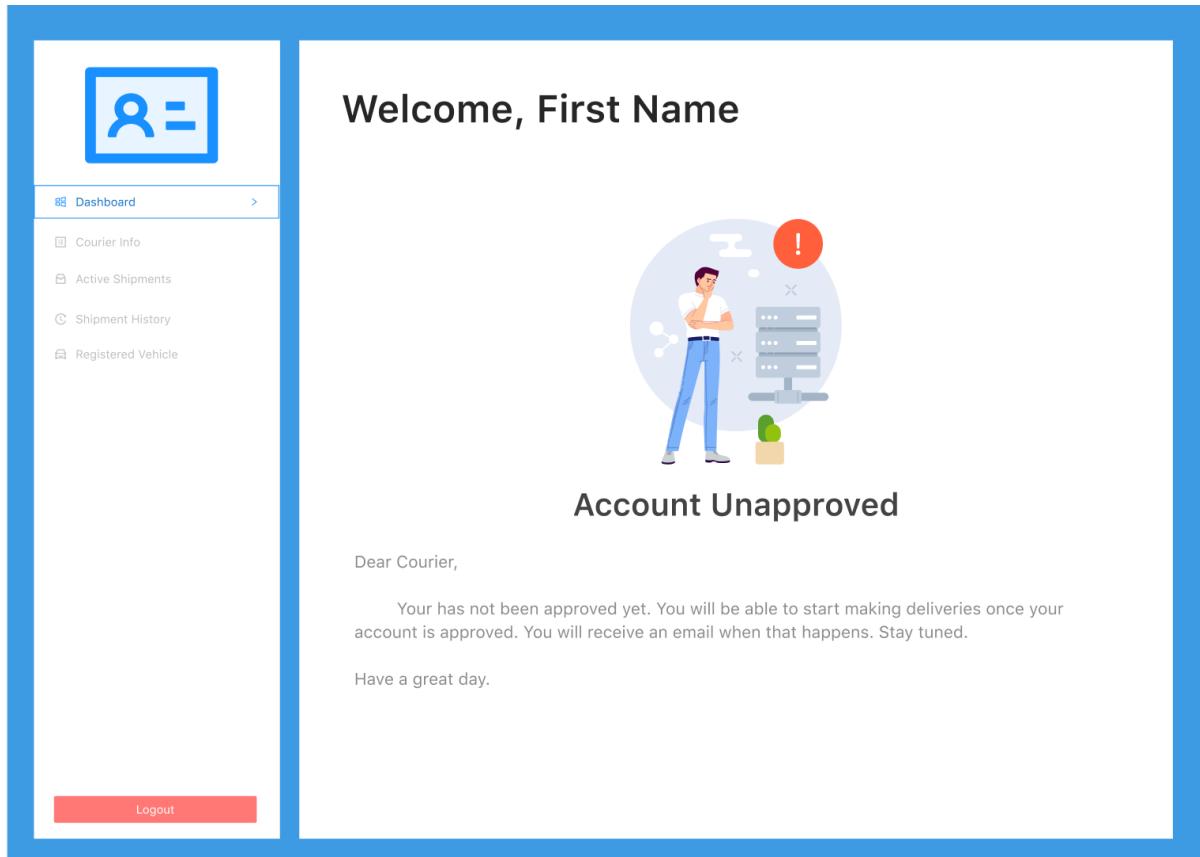


Fig. 28: Courier Home Page Unapproved

7.3.2 Courier Information Page

This page can be navigated to by the courier by clicking the navigation bar on the right. Once clicked, it will open a page containing all of the information of the courier. This information can be edited if the courier so chooses.

The page contains a non-interactive form that displays the information of the user next to their respective fields. The information can be edited by the courier to change one or more of the fields if they want to. However, the courier may not change their user ID, for ease of maintenance purposes. The courier may frequent this page when they want to update their email, phone number, or password.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the courier log out whenever they want to or whenever they are done with what they want to do.

This screenshot shows the 'Courier Info' page. At the top, there is a logo icon consisting of two overlapping blue squares with white symbols. Below it, the title 'Courier Info' is displayed. On the left, a vertical navigation menu lists 'Dashboard', 'Courier Info' (which is highlighted with a light blue background), 'Active Shipments', 'Shipment History', and 'Registered Vehicle'. The main content area contains five input fields with validation stars: 'User ID' (11), 'Name' (Faiz), 'Email' (Faiz@example.com), 'Phone' (5536890), and 'Password' (three dots). Below these is a 'Available' switch set to 'True'. A blue 'Edit' button is located at the bottom right of the form. At the very bottom, there is a red 'Logout' button and the text 'BilCargo ©2022'.

Fig. 29: Courier Information

This screenshot shows the 'Edit Courier Info' page, identical in layout to Fig. 29. The 'Courier Info' item in the navigation menu is now highlighted. The 'Password' field now contains '...'. The 'Edit' button has been replaced by a blue 'Update' button at the bottom right. The rest of the interface, including the input fields, available status, and footer, remains the same.

Fig. 30: Edit Courier Information

7.3.3 Active Shipments

This page can be navigated to by the courier using the navigation bar on the left of the website.

This page provides an overview of the packages that are assigned to the courier but have not been delivered yet.

The page contains a list of all active shipments - or shipments that do not have the ‘delivered’ or ‘cancelled’ status - that are assigned to the courier. The courier has the ability to edit the status of the shipment by clicking on the icon next to its row. The courier can also filter the table by clicking on the search icon next to each field, as shown in Fig. 20.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the courier log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web application interface for a courier. On the left, there is a vertical navigation bar with the following items:

- Dashboard
- Courier Info
- Active Shipments** (highlighted)
- Shipment History
- Registered Vehicle

The main content area is titled "Active Shipments". It features a table with the following columns:

ID	Recipient Name	Weight	Dimensions	Type	Status	Action
1	ather	300	50x34x23	Fragile	On the way	
1	ather	300	50x34x23	Fragile	On Hold	
1	ather	300	50x34x23	Fragile	Awaiting Pick-up	
1	ather	300	50x34x23	Fragile	To Be Assigned	
1	ather	300	50x34x23	Fragile	On the way	
1	ather	300	50x34x23	Fragile	Awaiting Pick-up	
1	ather	300	50x34x23	Fragile	To Be Assigned	

At the bottom left is a red "Logout" button, and at the bottom center is the text "BilCargo ©2022".

Fig. 31: Courier Active Shipments

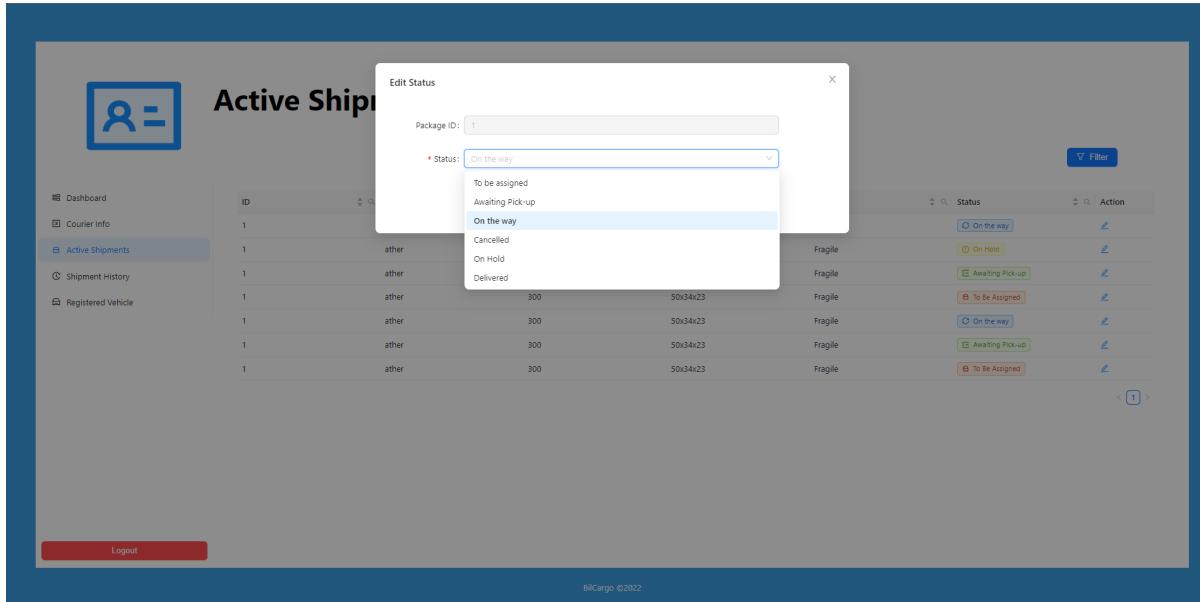


Fig. 32: Edit Shipment Status

7.3.4 Shipment History

This page can be navigated to by the courier using the navigation bar on the left of the website. This page provides an overview of the packages assigned to the courier that are delivered or cancelled.

The page contains a list of all inactive shipments - or shipments that have the 'delivered' or 'cancelled' status - assigned to the courier. The courier can filter the table by clicking on the search icon next to each field, as shown in Fig. 20.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the courier log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web application interface titled "Shipments History". On the left, there is a navigation bar with links: Dashboard, Courier Info, Active Shipments, Shipment History (which is highlighted in blue), and Registered Vehicle. Below the navigation bar is a red "Logout" button. The main content area features a table with columns: ID, Recipient Name, Weight, Dimensions, Type, and Status. There are 8 rows of data, each representing a shipment record. The "Status" column uses color-coded icons: green for Delivered (6 entries) and orange for Canceled (2 entries). A "Filter" button is located at the top right of the table. The bottom of the page includes a copyright notice: "BilCargo ©2022".

ID	Recipient Name	Weight	Dimensions	Type	Status
1	ather	300	50x34x23	Fragile	Delivered
1	ather	300	50x34x23	Fragile	Canceled
1	ather	300	50x34x23	Fragile	Delivered
1	ather	300	50x34x23	Fragile	Delivered
1	ather	300	50x34x23	Fragile	Canceled
1	ather	300	50x34x23	Fragile	Delivered
1	ather	300	50x34x23	Fragile	Delivered

Fig. 33: Shipment History

7.3.5 Registered Vehicles Page

This page can be navigated to by the courier using the navigation bar on the left of the website. This page provides a list of the vehicles that the courier has registered on their account.

The page contains an unordered list of all registered vehicles. The courier has the ability to delete a vehicle by clicking on the red bin icon on the top right of each list item. The courier can also add a new vehicle by clicking on the button on the top left, which will open a pop-up prompting the user to fill in the details of the new vehicle.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the courier log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web application interface titled "Registered Vehicles". On the left, there is a sidebar with icons for Dashboard, Courier Info, Active Shipments, Shipment History, and a selected "Registered Vehicle" icon. The main content area displays a table with three rows, each representing a registered vehicle:

Vehicle	Color	Number
Toyota Corolla	black	LEA 4234
Fiat	White	LEA 1234
Suzuki Swift	black	LEA 3124

A blue button labeled "Register New Vehicle" is located at the bottom right of the main content area. At the very bottom of the screen, there is a red "Logout" button.

Fig. 34: Registered Vehicles

This screenshot shows the same web application interface as Fig. 34, but with a modal dialog box overlaid on the "Registered Vehicles" page. The modal is titled "Add New Vehicle" and contains three input fields with validation requirements:

- * Car Name:
- * Color:
- * Number:

A blue "Submit" button is positioned at the bottom right of the modal. The background of the page is dimmed to indicate the modal is active.

Fig. 35: Add New Vehicle

7.4 Employee Pages

7.4.1 Employee Homepage

After the admin logs in with their correct user ID and password, they are directed to this page. This page essentially serves the purpose of a dashboard and a welcome page, displaying a welcome message and providing easy navigation to all the other functional pages on the site.

The dashboard also provides some statistics for the employee as an easy way of monitoring website traffic and their progress. These will include the number of packages managed, complaints resolved, as well as the number of courier applications and delivery branches resolved.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the employee log out whenever they want to or whenever they are done with what they want to do.

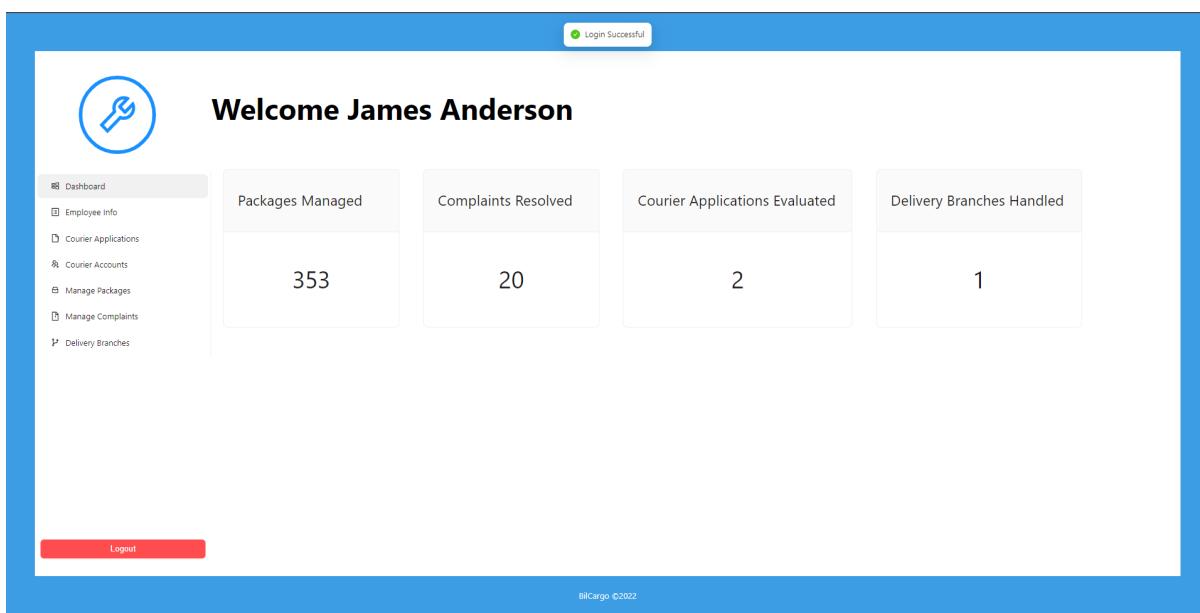


Fig. 36: Employee Homepage

7.4.2 Employee Information Page

This page can be navigated to by the employee by clicking the navigation bar on the left. Once clicked, it will open a page containing all of the information of the employee. This information can be edited if the courier so chooses.

The page contains an non-interactive form that displays the information of the user next to their respective fields. The information can be edited by the employee to change one or more of the fields if they want to. However, the employee may not change their user ID, position, status, salary, etc. The employee may frequent this page when they want to update their email, phone number, or password.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the employee log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web-based application interface for managing employee information. On the left, there is a vertical navigation bar with the following items:

- Dashboard
- Employee Info** (highlighted in blue)
- Courier Applications
- Courier Accounts
- Manage Packages
- Manage Complaints
- Delivery Branches

The main content area is titled "Employee Info". It displays various employee details in input fields, each with a red asterisk indicating it is a required field:

* Employee ID:	1
* Name:	James Anderson
* Email:	James@example.com
* Phone:	55367890
* Password:	***
* Position:	MANAGER
* Status:	ACTIVE
* Salary:	\$0000
* Start Date:	2022-01-01

At the bottom of the form is a blue "Edit" button with a pencil icon. At the very bottom left is a red "Logout" button. The footer of the page contains the text "BICargo ©2022".

Fig. 37: Employee Information

The screenshot shows a web-based application interface titled "Employee Info". On the left, there is a vertical navigation bar with the following items: Dashboard, Employee Info (which is highlighted with a blue background), Courier Applications, Courier Accounts, Manage Packages, Manage Complaints, and Delivery Branches. The main content area has a title "Employee Info" with a wrench icon. Below it is a form with the following fields:

- * Employee ID: 1
- * Name: James Anderson
- * Email: James@example.com
- * Phone: 55367890
- * Password: (redacted)
- * Position: MANAGER
- * Status: ACTIVE
- * Salary: 50000
- * Start Date: 2022-01-01

At the bottom of the form is a blue "Update" button with a gear icon. In the bottom left corner of the main area is a red "Logout" button. At the very bottom center of the page is the text "BICargo ©2022".

Fig. 38: Edit Employee Information

7.4.3 Courier Applications Page

This page can be navigated to by the employee by clicking the navigation bar on the left. Once clicked, it will open a page containing all of the unprocessed courier applications for the employer to approve or reject.

The page contains a table that has information on all applications that have not been approved or rejected. Employees can filter this table by using the search icon on the top next to each field, as shown in Fig. 20. The employees can reject or approve these applications based on the company's needs. This is done by using the interactive icons on the right of each row in the table. The table may use an extra row if an application detail is provided by the courier applying. Once an application is rejected, it is deleted from the table. However, if an application is accepted, a pop-up window opens to allow the employee to assign the courier to a delivery branch.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the employee log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web application interface titled "Courier Applications". On the left is a sidebar with icons and links: Dashboard, Employee Info, Courier Applications (which is selected), Courier Accounts, Manage Packages, Manage Complaints, and Delivery Branches. The main content area has a title "Courier Applications" with a wrench icon. Below it is a table with columns: ID, Courier Name, Email, Phone, and Action. The table contains several rows of data. A modal window titled "Courier Approval" is open over the table, showing fields for "Courier ID" (set to 12) and "Delivery Branch" (a dropdown menu labeled "Select Delivery Branch"). A "Submit" button is at the bottom of the modal. At the bottom of the page is a red "Logout" button.

ID	Courier Name	Email	Phone	Action
1	ather	smth@gmail.com	50x34x23	✓ ✗
12	ather	smth@gmail.com	50x34x23	✓ ✗
13	ather	smth@gmail.com	50x34x23	✓ ✗
14	ather	smth@gmail.com	50x34x23	✓ ✗
15	ather	smth@gmail.com	50x34x23	✓ ✗
16	ather	smth@gmail.com	50x34x23	✓ ✗
111	ather	smth@gmail.com	50x34x23	✓ ✗

Fig. 39: Courier Applications

This screenshot is identical to Fig. 39, showing the "Courier Applications" page. However, a modal window titled "Courier Approval" is now displayed in the center. It contains two input fields: "Courier ID" set to 12, and a dropdown menu for "Delivery Branch" which is currently empty ("Select Delivery Branch"). Below these fields is a blue "Submit" button. The rest of the page, including the sidebar and the main table, remains the same.

Fig. 40: Assign Courier to Branch (approval)

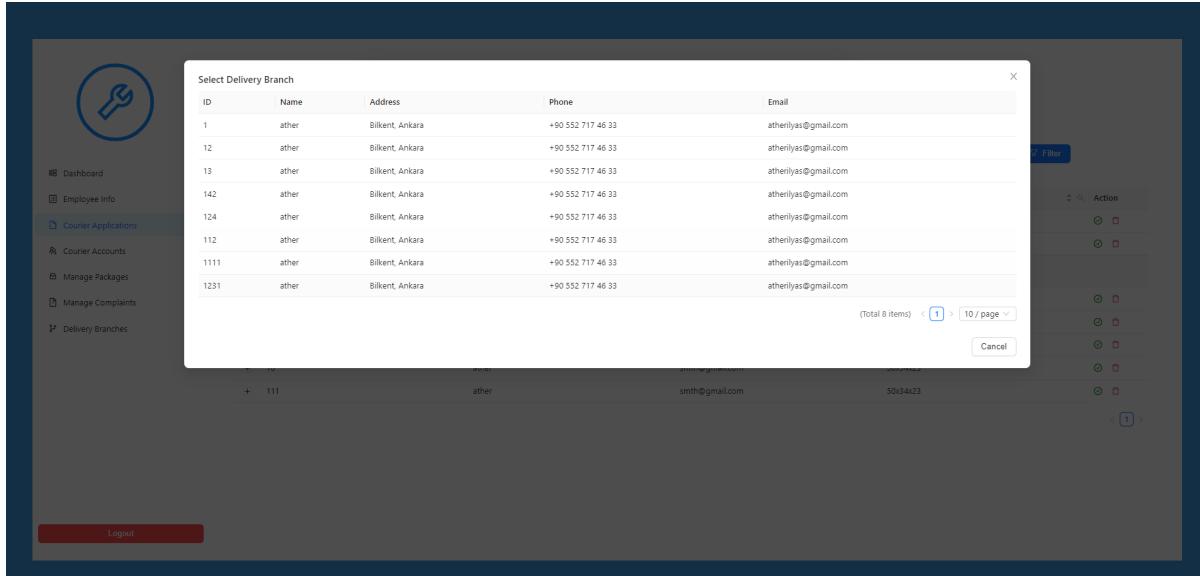


Fig. 41: Branch Selection

7.4.4 Manage Courier Accounts

This page can be navigated to by the employee by clicking the navigation bar on the right. Once clicked, it will open a page containing information of the couriers of the company. This information can be edited or deleted if the employee so chooses.

The page contains a list of all couriers and their information. The list can be filtered by clicking on one of the fields and entering a specific value as shown in Fig. 20. The couriers can be deleted and edited using the icons on the right. However, the only field that an employee can update is a courier's salary.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web-based application for managing courier accounts. At the top left is a circular icon with a wrench and screwdriver. The title "Courier Accounts" is centered above a table. The table has columns for ID, Name, Address, Phone, Email, and Action. Each row contains the value "1" under ID and "ather" under Name. The "Action" column for each row features two icons: a blue edit icon and a red delete icon. A "Filter" button is located at the top right of the table. On the left side, there is a sidebar with navigation links: Dashboard, Employee Info, Courier Applications, Courier Accounts (which is highlighted in blue), Manage Packages, Manage Complaints, and Delivery Branches. At the bottom left is a red "Logout" button.

ID	Name	Address	Phone	Email	Action
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherilyas@gmail.com	

Fig. 42: Manage Courier Accounts

This screenshot shows the same application interface as Fig. 42, but with a modal dialog box overlaid. The dialog is titled "Update Courier Information". It contains several input fields with validation stars: "Name" (ather), "Email" (atherilyas@gmail.com), "Phone" (+90 552 717 46 33), "Building No.", "Street No.", "City", and "Province". Below these fields is a blue "Submit" button. The background of the main interface is dimmed. The sidebar and footer elements are identical to Fig. 42.

Fig. 43: Update Courier Info

7.4.5 Manage Packages

This page can be navigated to by the employee by clicking the navigation bar on the right. Once clicked, it will open a page containing information of the packages that are currently active. The employees can filter these shipments, assign couriers to them, and edit their status when needed.

The page contains a list of all active shipments and their information. The list can be filtered by clicking on one of the fields and entering a specific value as shown in Fig. 20. The packages can be assigned a courier by clicking the green car icon on the right of each row. Once clicked, a pop-up will prompt the employee to select a courier. Once selected, the car icon will become non-interactive and will be greyed out. An employee may also wish to update the status of a package by clicking on the icon on the right of each row. This will open a pop-up prompting the employee to select the status.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web-based application interface titled "Manage Packages". On the left, there is a vertical navigation bar with the following items:

- Dashboard
- Employee Info
- Courier Application
- Courier Accounts
- Manage Packages** (highlighted in blue)
- Manage Complaints
- Delivery Branches

The main content area is titled "Manage Packages" and displays a table of active shipments. The table has the following columns:

ID	Recipient Name	Weight	Dimensions	Type	Status	Action
12	ather	300	50x34x23	Fragile	On the way	
13	ather	300	50x34x23	Fragile	On Hold	
111	ather	300	50x34x23	Fragile	Awaiting Pick-up	
15	ather	300	50x34x23	Fragile	To Be Assigned	
16	ather	300	50x34x23	Fragile	On the way	
17	ather	300	50x34x23	Fragile	Awaiting Pick-up	
11	ather	300	50x34x23	Fragile	To Be Assigned	

At the bottom left, there is a red "Logout" button. At the bottom center, it says "BilCargo ©2022".

Fig. 44: Manage Packages

The screenshot shows a web-based application for managing packages. On the left, there's a sidebar with icons for Dashboard, Employee Info, Courier Applications, Courier Accounts, Manage Packages (which is selected), Manage Complaints, and Delivery Branches. The main area has a title 'Manage Packages' and a sub-section 'Assign Courier'. A modal window titled 'Assign Courier' is open, containing fields for 'Package ID' (set to 12) and 'Assigned Courier' (a dropdown menu with 'Select Courier'). Below the modal is a table of package details:

ID	Name	Address	Phone	Email
12	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
13	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
111	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
15	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
16	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
17	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
11	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com

At the bottom right of the modal, there are 'Submit' and 'Cancel' buttons. The status column shows various delivery stages: 'On the way', 'On Hold', 'Awaiting Pick-up', 'To Be Assigned', 'On the way', 'Awaiting Pick-up', and 'To Be Assigned'. There are also 'Edit' and 'Delete' icons for each row.

Fig. 45: Assign Courier to Package

This screenshot shows the 'Select Courier' dialog box. It lists eight couriers with their details: ID, Name, Address, Phone, and Email. The couriers are all named 'ather' and are located in 'Bilkent, Ankara'. Their phone numbers are identical, and their emails end in '@gmail.com'. The dialog includes a 'Filter' button at the top right and a 'Cancel' button at the bottom right. At the bottom left, it says '(Total 8 items)' and '10 / page' with a dropdown arrow. The background shows the same application interface as Fig. 45.

ID	Name	Address	Phone	Email
1	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
12	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
13	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
142	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
124	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
112	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
1111	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com
1231	ather	Bilkent, Ankara	+90 552 717 46 33	atherihay@gmail.com

Fig. 46: Courier Selection

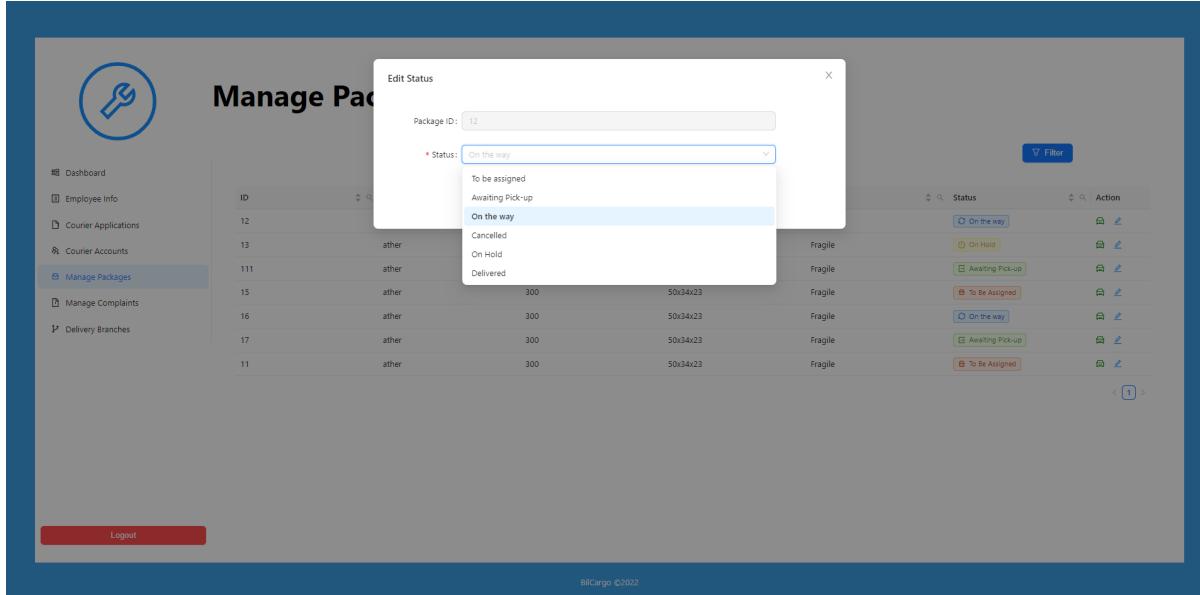


Fig. 47: Update Package Status

7.4.6 Manage Complaints

This page can be navigated to by the employee by clicking the navigation bar on the left. Once clicked, it will open a page containing information of the complaints made by customers on packages. The employee can manage these complaints and resolve them by providing feedback to them.

The page contains a list of all complaints and their information. The list can be filtered by clicking on one of the fields and entering a specific value as shown in Fig. 20. The status of the complaints and their feedback can be edited using the icons on the right. This will open a pop-up window prompting the employee to fill out the required information before submitting it so that a complaint can be edited.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web-based application interface titled "Manage Complaints". On the left, there is a sidebar with various menu items: Dashboard, Employee Info, Courier Applications, Courier Accounts, Manage Packages, **Manage Complaints** (which is currently selected), and Delivery Branches. Below the sidebar is a red "Logout" button. The main content area has a title "Manage Complaints" with a wrench icon. It displays a table of complaints with the following data:

Complaint ID	Type	Date Resolved	Package ID	Status	Action
+ 1	Late Delivery	14-30-20	503	Invalid Complaint	Edit
- 2	Late Delivery	14-30-20	503	Resolved	Edit
Package still not delivered					
+ 3	Wrong Delivery	14-30-20	503	Processing	Edit
- 4	Processing	14-30-20	503	Resolved	Edit
Package was damaged when delivered					
+ 5	Late Delivery	14-30-20	503	Resolved	Edit

At the bottom right of the table, there is a small navigation bar with arrows and a count of 1. At the very bottom of the page, it says "BilCargo ©2022".

Fig. 48: Manage Complaints

This screenshot shows the same application interface as Fig. 48, but with a modal dialog box open over the main content. The modal is titled "Create Complaint" and contains the following form fields:

- Package ID: 503
- Details: Package still not delivered
- Complaint Type: Late Delivery
- Status: Resolved (selected)

The background of the application shows the same list of complaints as Fig. 48, with one additional row for a damaged package.

Fig. 49: Update Complaint Status

7.4.7 Delivery Branches Page

This page can be navigated to by the employee by clicking the navigation bar on the left. Once clicked, it will open a page containing information of the currently present delivery branches of the company. The employee can add a new branch if needs be.

The page contains a list of all branches and their information. The list can be filtered by clicking on one of the fields and entering a specific value as shown in Fig. 20. A new delivery branch can be added by clicking the button on the top right. This will open a pop-up window prompting the employee to fill out the required information before submitting it so that a delivery branch can be added.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web-based application interface for managing delivery branches. On the left, there is a vertical navigation bar with several options: Dashboard, Employee Info, Courier Application, Courier Accounts, Manage Packages, Manage Complaints, and Delivery Branches. The 'Delivery Branches' option is highlighted with a blue background. The main content area is titled 'Delivery Branches'. It features a table with three columns: ID, District, and Courier Count. The table contains five rows of data:

ID	District	Courier Count
1	Bilkent	5
2	Cankaya	3
3	Istanbul	2
4	Turus	15
5	Metro	5

At the top right of the main area, there are two buttons: 'Filter' and '+ Create New Delivery Branch'. At the bottom left, there is a red 'Logout' button. The footer of the page includes the text 'BICargo ©2022'.

Fig. 50: Add Delivery Branch

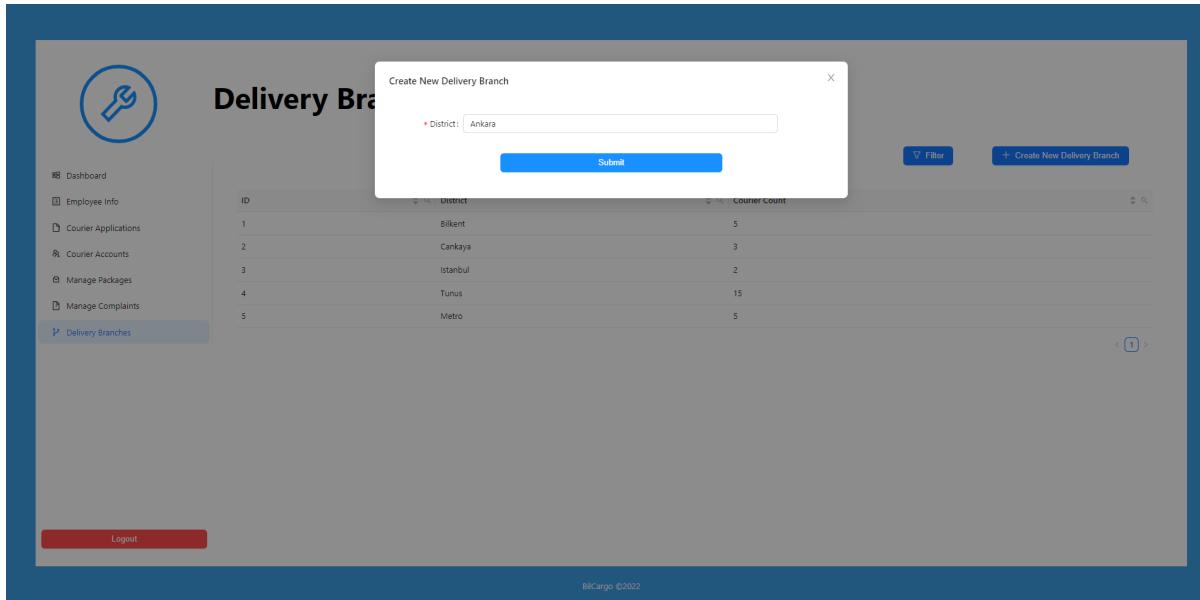


Fig. 51: Create Delivery Branch

7.5 Admin Pages

7.5.1 Admin Homepage

After the admin logs in with their correct user ID and password, they are directed to this page. This page essentially serves the purpose of a dashboard and a welcome page, displaying a welcome message and providing easy navigation to all the other functional pages on the site.

The dashboard also provides some statistics for the website as an easy way of monitoring website traffic, etc. These will include the number of packages shipped, complaints, as well as the number of accounts of each type, excluding admin accounts.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button

to let the admin log out whenever they want to or whenever they are done with what they want to do.

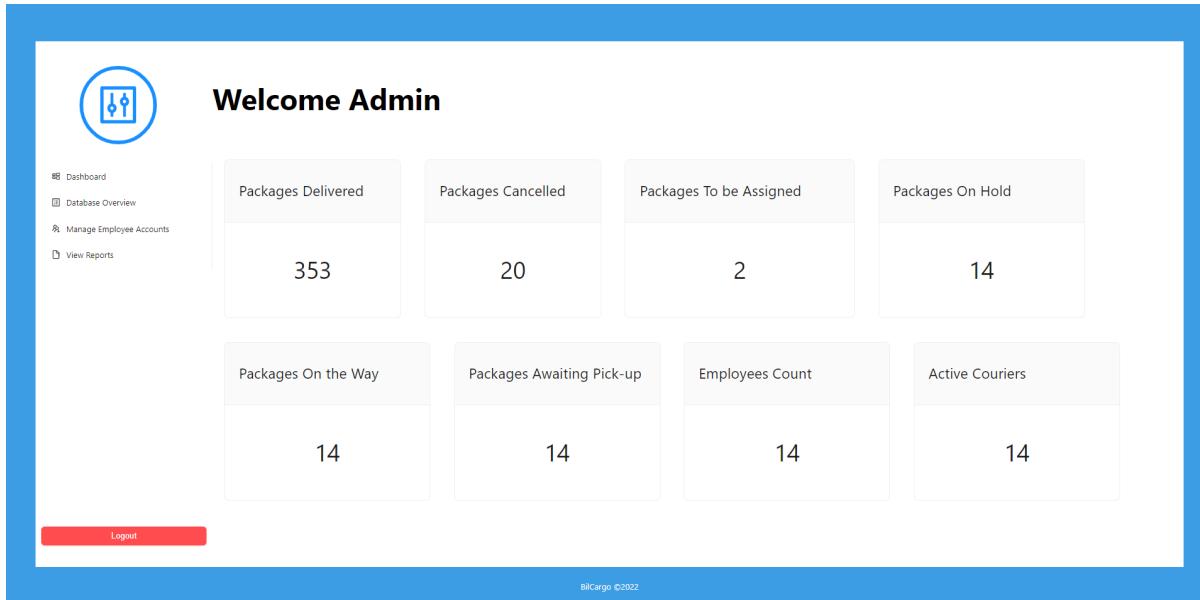


Fig. 52: Admin Homepage

7.5.2 Database Overview

The main purpose of this page is to provide a more detailed overview of the tables present in the database as well as what is stored inside these tables.

The page provides an expandable list of all tables present in the database currently. The list contains a button on the left of each element, that will expand the list into the table that the admin wants to view. These tables can then be filtered further if the admin wishes by clicking on the search icons as shown in Fig. 20. The admin may also choose to save the current view as a report by clicking on the button on the top right. This will display a pop-up prompting the admin to fill out necessary information to file that report.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the admin log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a user interface for a database management system. On the left, there's a sidebar with a circular profile icon at the top. Below it are three main navigation items: "Dashboard", "Database Overview" (which is currently selected and highlighted in blue), and "View Reports". Under "Database Overview", there's a sub-menu with ten categories: "User", "Employee", "Delivery Branch", "Handles", "Recipient" (which is also highlighted in blue), "Courier", "Vehicle", "Customer", "Bank Account", "Package", "Payment", "Complaint", "Admin", and "Reports". At the bottom of the sidebar is a red "Logout" button. The main content area has a title "Database Overview" and a "Save View as Report" button. The central part of the screen displays a table with the following data:

Recipient ID	Name	Address	Phone Number	Email	User ID
1	FirstName	Table cell text	+90 552 758 86	test@smth.com	1
2	FirstName	Table cell text	+90 552 758 86	test@smth.com	1
3	FirstName	Table cell text	+90 552 758 86	test@smth.com	14
4	FirstName	Table cell text	+90 552 758 86	test@smth.com	144
5	FirstName	Table cell text	+90 552 758 86	test@smth.com	11
6	FirstName	Table cell text	+90 552 758 86	test@smth.com	21
2	FirstName	Table cell text	+90 552 758 86	test@smth.com	1
3	FirstName	Table cell text	+90 552 758 86	test@smth.com	14
4	FirstName	Table cell text	+90 552 758 86	test@smth.com	144
5	FirstName	Table cell text	+90 552 758 86	test@smth.com	11
6	FirstName	Table cell text	+90 552 758 86	test@smth.com	21

At the bottom right of the table, there are navigation buttons for page numbers: < 1 2 3 4 5 >. A red "Logout" button is located at the bottom left of the main content area.

Fig. 53: Database Overview

The screenshot shows a web application interface. On the left, there's a navigation sidebar with a logo and links for Dashboard, Database Overview (which is highlighted in blue), Manage Employee Accounts, and View Reports. At the bottom left is a red 'Logout' button. The main content area has a title 'Database Overview' and a 'Save View as Report' button. A 'Save Report' modal is open, containing fields for Report Name (with placeholder 'Enter Report Name'), Description (placeholder 'Enter Description'), and SQL Query (containing 'SELECT * FROM Recipient'). Below the modal is a table with columns: Recipient ID, Name, Address, Phone Number, Email, and User ID. The table contains 10 rows of sample data. At the bottom right of the main area is a pagination control with buttons for <, 1, 2, 3, 4, 5, and >.

Fig. 54: Save View as Report

7.5.3 Manage Employee Accounts

This page can be navigated to by the admin by clicking the navigation bar on the right. Once clicked, it will open a page containing information of the employees of the website. This information can be edited or deleted if the admin so chooses.

The page contains a list of all employees and their information. The list can be filtered by clicking on one of the fields and entering a specific value as shown in Fig. 20. The employees can be deleted and edited using the icons on the right. The page contains a button to add a new employee as well.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button to let the customer log out whenever they want to or whenever they are done with what they want to do.

The screenshot shows a web-based application titled "Employee Accounts". On the left, there's a sidebar with navigation links: "Dashboard", "Database Overview", "Manage Employee Accounts" (which is highlighted in blue), and "View Reports". The main content area has a title "Employee Accounts" with a circular icon containing a key and padlock. Below the title is a table with columns: ID, Name, Address, Phone, Email, and Action. There are 10 rows of data, all showing the same values: ID 1, Name "ather", Address "Bilkent, Ankara", Phone "+90 552 717 46 33", Email "atherilyas@gmail.com", and Action icons (edit and delete). At the top right of the table are buttons for "Filter" and "Create New Employee". A red "Logout" button is at the bottom left, and a copyright notice "BilCargo ©2022" is at the bottom right.

Fig. 55: Manage Employee

This screenshot shows the same application as Fig. 55, but with a modal dialog box open over the employee list. The dialog is titled "Update Employee Information" and contains fields for Name, Email, Phone, Building No., Street No., City, and Province. All fields are populated with the value "atherilyas@gmail.com". At the bottom of the dialog is a blue "Submit" button. The background shows the same employee list as Fig. 55, with the "Edit" and "Delete" icons visible next to each row. The "Logout" and copyright notices are also present.

Fig. 56: Update Employee Information

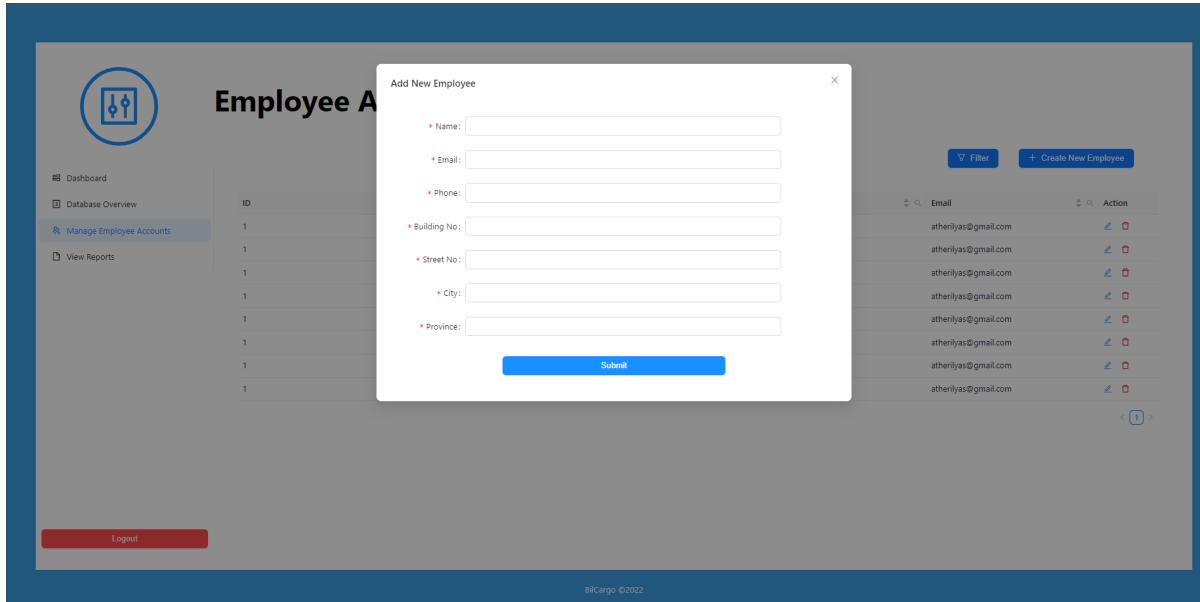


Fig. 57: Add New Employee

7.5.4 Reports Page

This page can be navigated to by the admin by clicking the navigation bar on the right. Once clicked, it will open a page containing information of previously saved reports. These reports can be deleted, downloaded, and even refreshed (updated with the values of present).

The page contains a list of all reports and their information. The reports are shown in boxes describing them and showing their creation date. The admin also has the option to generate a new report by clicking on the button on the top right. Using this button will initiate a pop-up that will prompt the admin to fill out information about the report. The report can either be a preset query that will perform some basic filtering or the admin can write his own MySQL query to see whatever they choose to.

The left side of the page contains a navigation bar containing all the other pages including the current selected page which is highlighted. The bottom left of the page contains a log out button

to let the user log out whenever they want to or whenever they are done with what they want to do.

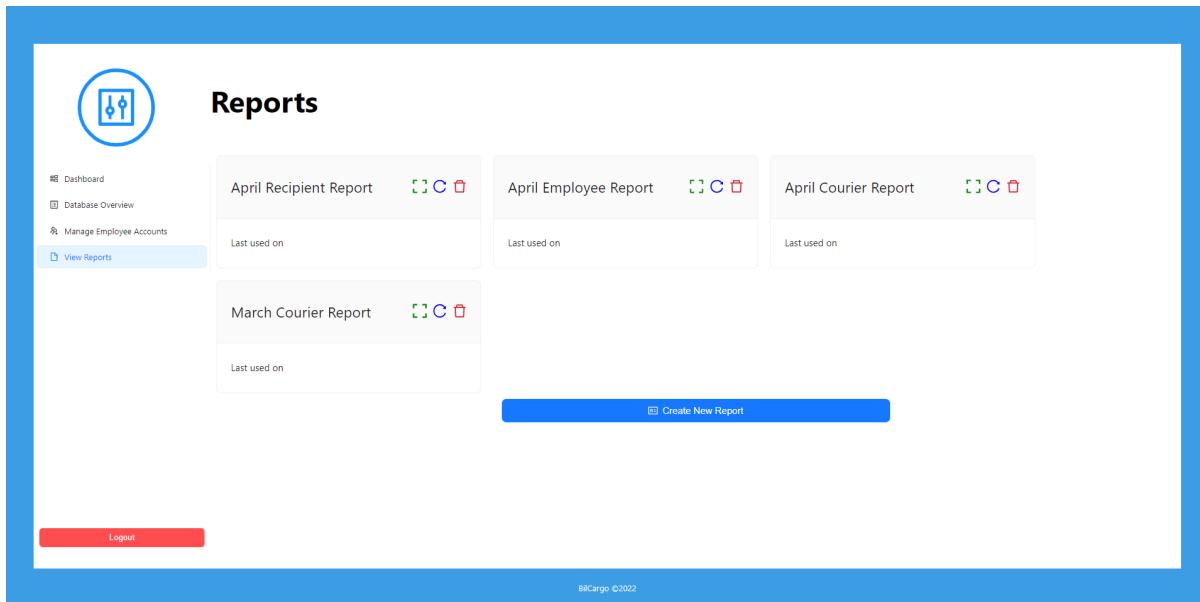


Fig. 58: View Reports

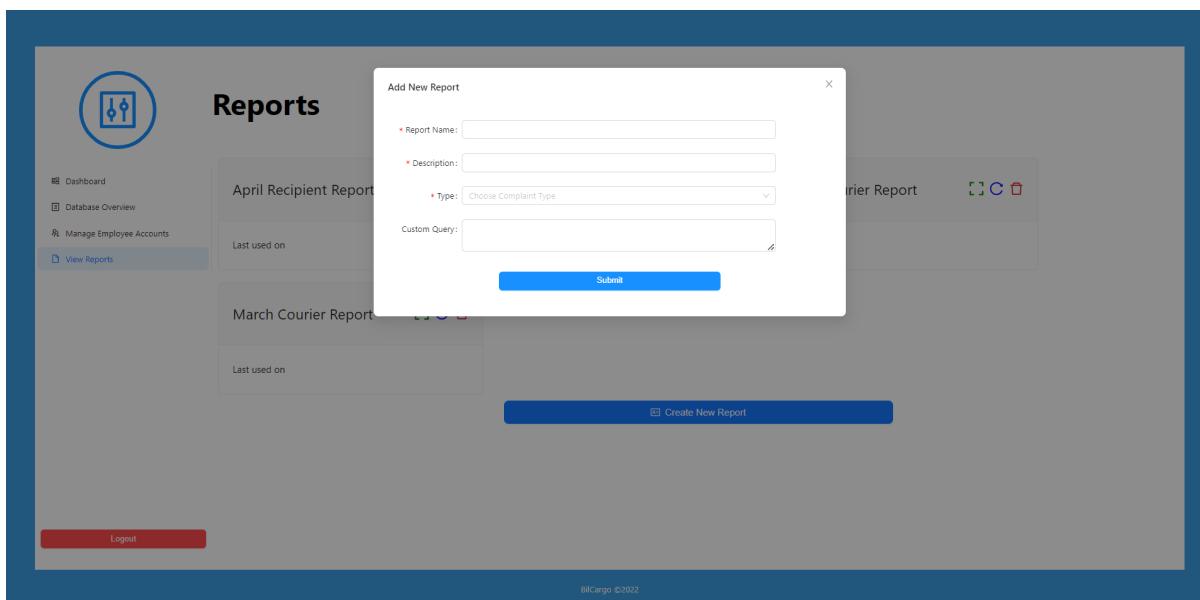


Fig. 59: Create New Reports

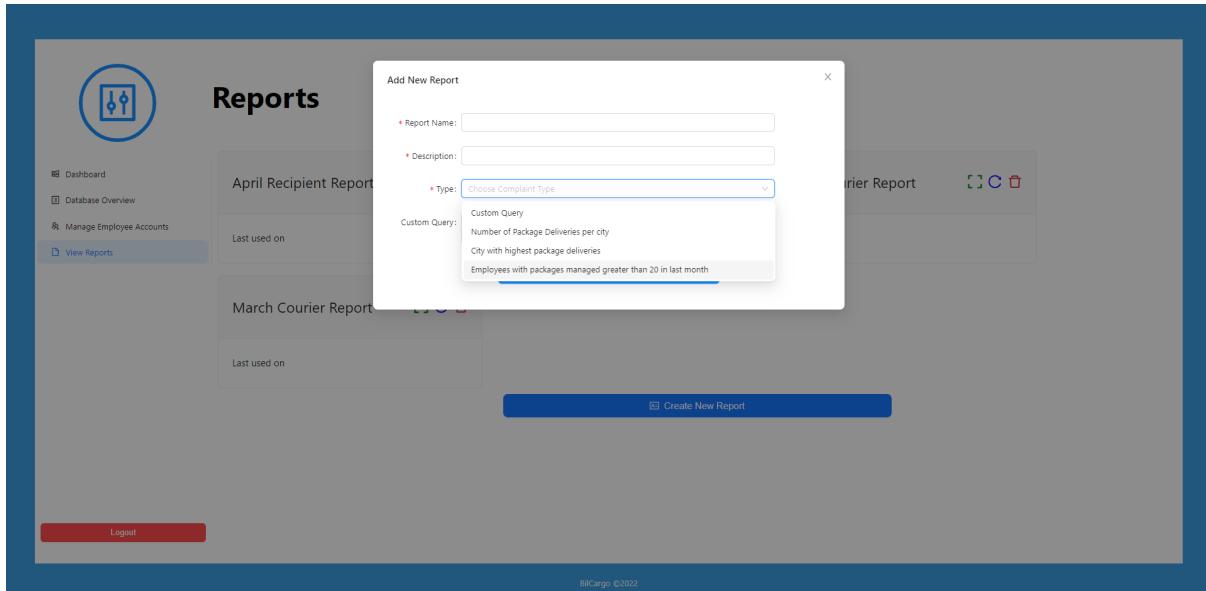


Fig. 60: Create New Reports Selection

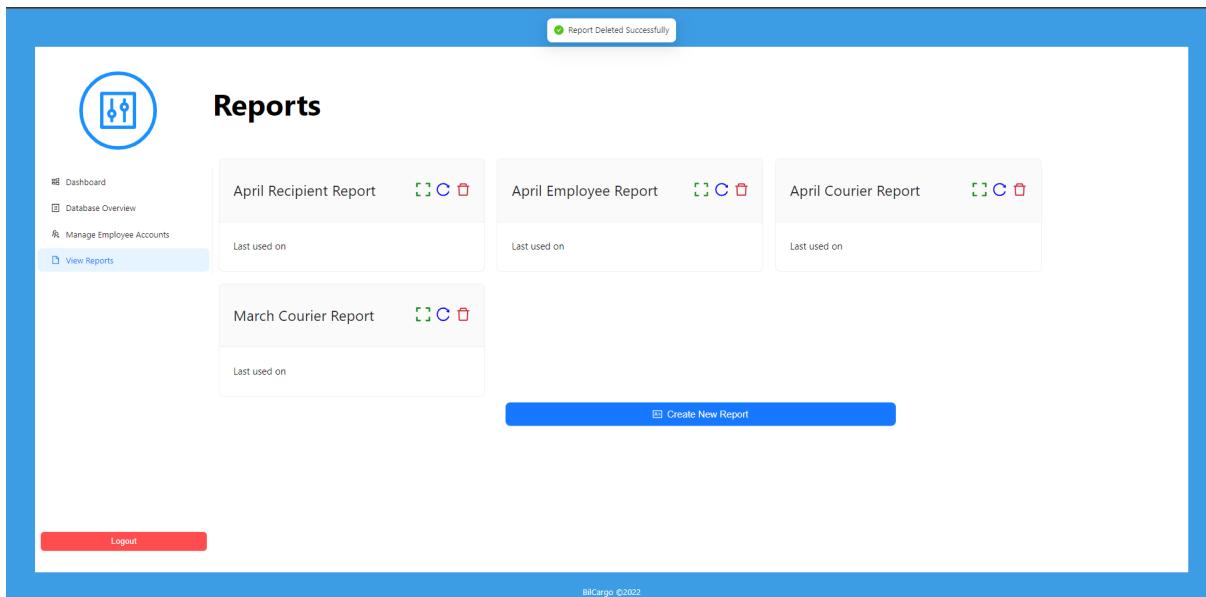


Fig. 61: Delete Reports successfully

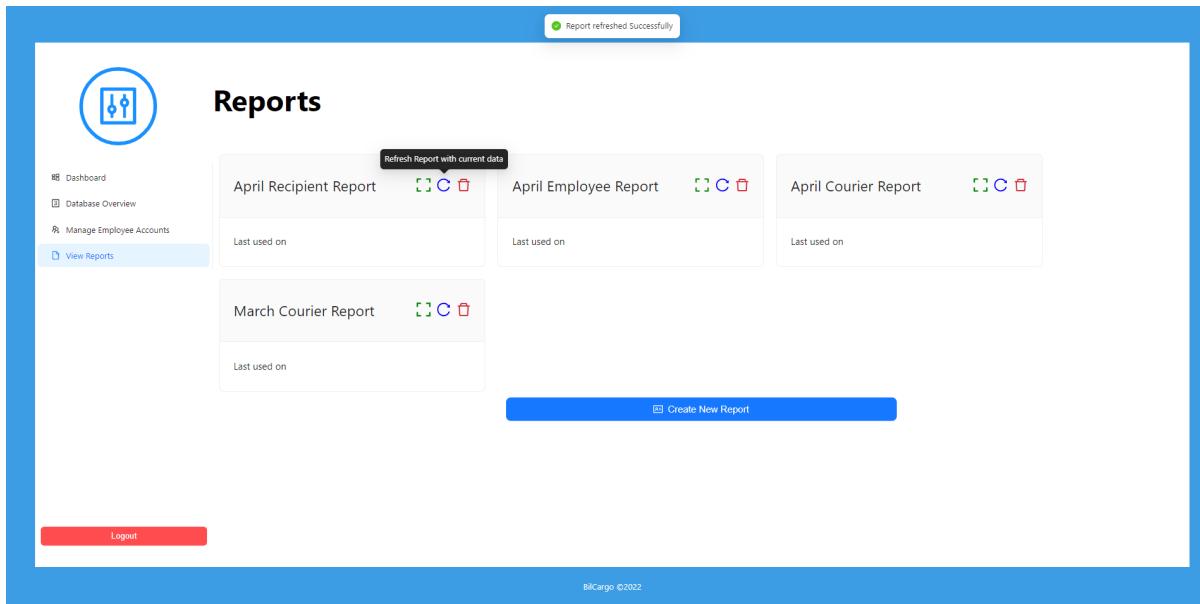


Fig. 62: Refreshed Reports successfully

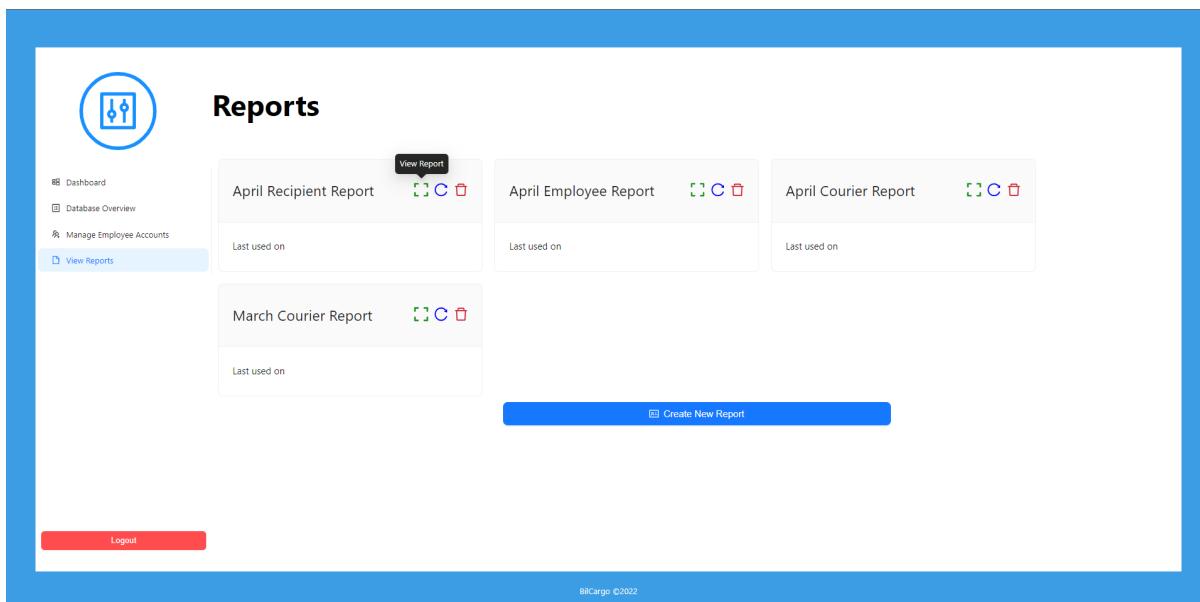


Fig. 63: View Reports Button

The screenshot shows a web-based application interface. At the top, there is a dark blue header bar with a circular logo containing a stylized icon. Below the header, a navigation menu on the left includes links for 'Dashboard', 'Database Overview', 'Manage Employee Accounts', and 'View Reports'. The main content area features a modal window titled 'Report' which displays a table of data. The table has columns for 'ID', 'District', and 'Courier Count'. The data is as follows:

ID	District	Courier Count
1	Bilkent	5
2	Cankaya	3
3	Istanbul	2
4	Tunus	15
5	Metro	5

Below the modal, the main dashboard area is visible. It includes a title 'March Courier Report' with three small colored icons (blue, green, red) next to it. A button labeled 'Create New Report' is located in a blue bar. At the bottom of the dashboard, there is a red 'Logout' button.

Fig. 64: Displaying Reports