CS353 - DATABASE SYSTEMS

FINAL REPORT

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GROUP NO: 5

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Description

Our project is a shipping company data management system that is called Shipmin. This system stores information about customers, shipments, employees (including couriers), branches, complaint reports, cargo trailers, and discount coupons. It aims to help the company to track the shipments. Also, by using this system the company will be able to get informed about customer complaints. The system allows for shipment management for companies. The users who wish to make a shipment are able to sign in to the system as a customer. Customers of our system specify their credentials, location and contact information. This system assigns unique IDs to each shipment made by a customer. These IDs are used for reaching the attributes of the shipment. The system also creates unique tracking numbers for every shipment. The sender or the receiver can track their shipment via using this number.

Our system stores employees as branch workers or as couriers. The branch workers who are working on branches are responsible for creating transfers in order to perform the shipments. For these transfers, cargo trailers and couriers are assigned by the branch workers. Couriers are responsible for transferring cargo from one place to another. These places may be branches or sender/receiver addresses. Receivers of the shipments are able create and submit reports to the relevant branches when they are dissatisfied with their shipment. These reports are assigned to a branch worker in the relevant branch to be reviewed. The reports can be either an online form or a physical form filled in the destination by the receiver. Senders of the shipment are also able to create reports if they are dissatisfied with the shipment.

Finally, users can use a discount coupon that was assigned to them while making a payment.

Final E/R
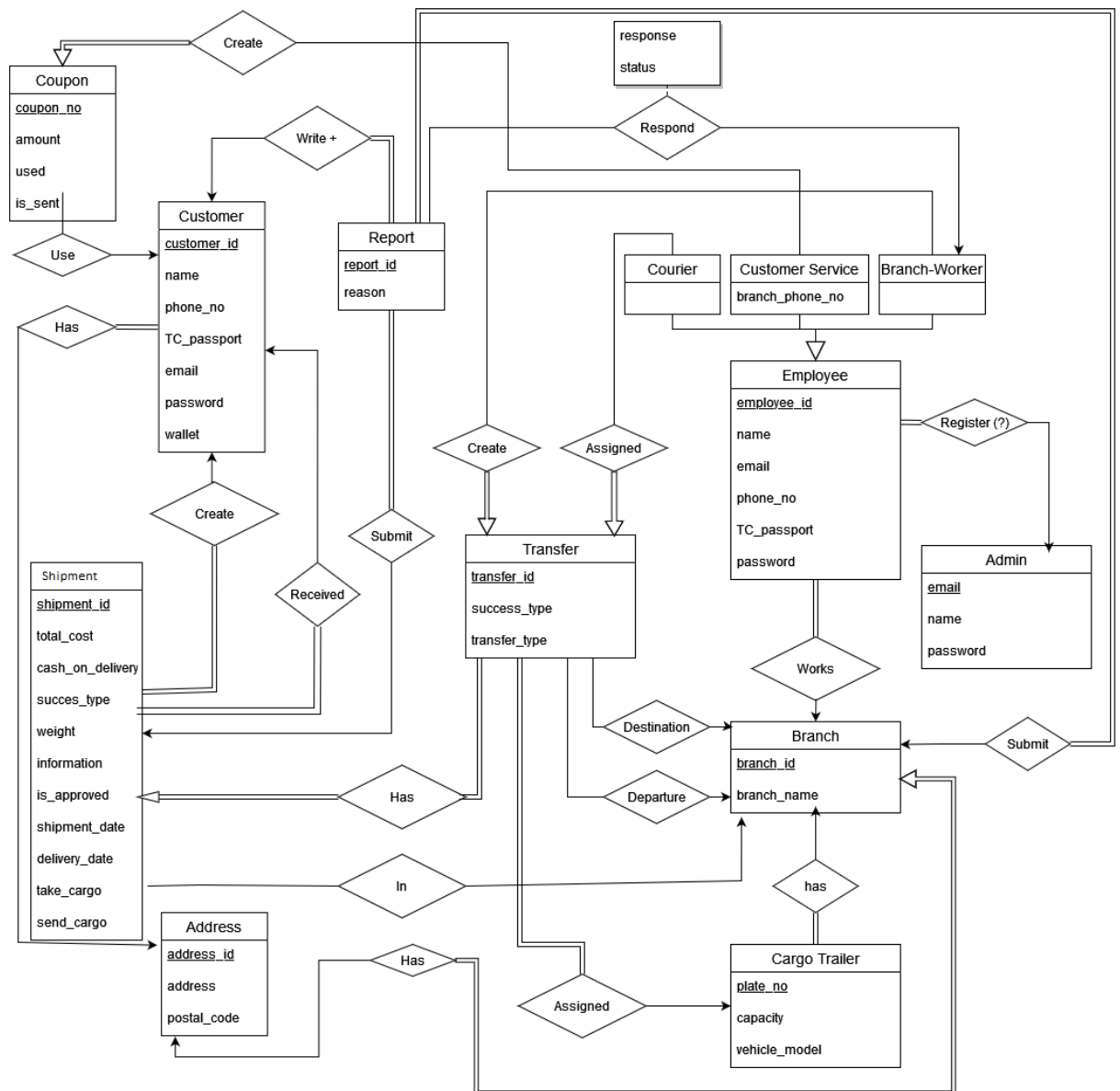
Final list of tables

Address:

PK: address_id

address_id	address	postal_code
0	Dummy Mahallesi Random Sokak	46655

Admin:

PK: email

email	name	password	
aybala	aybala	admin	

Branch:

PK: branch_id
FK: address_id, references Address

branch_id	branch_name	address_id
0	dummy	0 →

Admin:

PK: email

email	name	password	
aybala	aybala	admin	

Branch_worker:

PK: employee_id
FK: employee_id, references Employee

employee_id
1 →

BranchAddress:

PK: (branch_id, address_id)
FK: branch_id, references Branch
FK: address_id, references Address

branch_id	address_id

Coupon:

PK: coupon_no
FK: creator_id, references Employee
FK: owner_id, references Customer

coupon_no	amount	used	creator_id	owner_id	is_sent

Courier:

PK: employee_id
FK: employee_id, references Employee

employee_id
52 →

Customer:

PK: customer_id

customer_id	name	phone_no	TC_passport	email	password	wallet
1	ahmet veli	05077203373	29638747029	mcagridurgut@gmail.com	zaaa	22

Customer_service:

PK: employee_id
FK: employee_id, references Employee

employee_id	branch_phone_no
54 →	03125364564

CustomerAddress:

PK: (customer_id, address_id)
FK: customer_id, references Customer
FK: address_id, references Address

customer_id	address_id	
12 →	1 →	

Employee:

PK: employee_id
FK: branch_id, references Branch
FK: adder_admin, references Admin

employee_id	name	phone_no	TC_passport	email	password	branch_id	adder_admin
0	dummy	02345854365	12312	dummy	dummy	0 →	aybala →

Report:

PK: report_id
FK: reporter_id, references Customer
FK: shipment_id, references Shipment
FK: respondent_id, references Employee
FK: branch_id, references Branch

report_id	reason	reporter_id	shipment_id	respondent_id	response	status	branch_id
1	Its broke	15 →	1 →	NULL →	NULL	NULL	1 →

Shipment:

PK: shipment_id
FK: sender_id, references Customer
FK: receiver_id, references Customer
FK: branch_id, references Branch
FK: employee_id, references Employee

shipment_id	sender_id	total_cost	cash_on_delivery	success_type	weight	information	receiver_id	is_approved	branch_id	employee_id	take_cargo	send_cargo	shipping_date	delivery_date
1	1 →	453		1	453	book	15 →	1	1 →	1 →	0	0	2022-01-03 20:54:44	2022-01-04 00:00:00

shipment_id	sender_id	total_cost	cash_on_delivery	success_type	weight	information

receiver_id	is_approved	branch_id	employee_id	take_cargo	send_cargo	shipping_date	delivery_date

Trailer:

PK: plate_no
FK: branch_id, references Branch

plate_no	capacity	vehicle_model	branch_id

Transfer:

PK: transfer_id
FK: shipment_id, references Shipment
FK: trailer_plate, references Trailer
FK: assigned_employee_id, references Employee
FK: creator_id, references Employee
FK: departure_id, references Branch
FK: destionation_id, references Branch

transfer_id	success_type	transfer_type	shipment_id	trailer_plate	assigned_employee_id	creator_id	departure_id	destination_id

Implementation details

We have used PHP for the project. To style the front-end, we have also used CSS. We have not used any frameworks. We have used MySQLi as our relational database driver. We have used XAMPP to connect to the Apache server and TablePlus to see the database.

One of the problems that we faced was creating a central database to provide a developing environment. We used the dijkstra server that was provided to us from the University. We created a MySQL database in the Dijkstra server and reached it. In that way we were able to develop on the same database. Another frustrating point was seeing the contents of the database. We used a free software called TablePlus in order to see and edit the contents of our database.

Aybala Karakaya: Front-end of the courier profile page, courier "see transfers" page, admin profile page, admin register page. On the back-end, I implemented registering a new employee and removing existing employee functionality.

Halil Özgür Demir: Front-end of the customer, branch worker, and customer service pages. Implemented retrieval parts from the database and made dynamically growing lists from retrieved data. Implemented range function for previous shipments.

Oğuzhan Özçelik: Mainly worked on back-end. Connected already existing pages to the database. Worked on Customer functionalities such as editing the profile, changing the password, loading money to the account, creating a shipment request, accepting a shipment request, submitting a report about the shipment, etc.

Mustafa Çağrı Durgut: Worked on the construction of the database. Initialized the project and set up the connection. Implemented the login, logout and session systems of the project. Worked on the connection between back-end and front-end of the application.

Advanced DB features

A search GUI including range conditions:

```
$query = "select * from Shipment
                where (receiver_id = '$id' OR sender_id = '$id')
and
                success_type = 1
                and is_approved = 1 and
                shipping_date between '$start_date' and
'$end_date';";
```

User's Manual

You can login to the system by using the opening page above. If you do not have an account, you can register to the system by clicking the "Register" and you will be directed to the following page.

When you login to the system by using your email and password, you will be directed to a profile page depending on your user type. Possible user types are customer, branch worker, courier, customer service, and admin.

1. Customer:

1.1 Customer Profile Page

This page is the Customer Profile Page, with the help of this page users will be able to edit and see their information. They can change their password and top up

money to their wallet and switch to other pages. The button on the top right allows users to log off from the system. Customers are able to switch pages in the application using the menu on the left. Users can also choose to use a discount coupon that was assigned to them. Note that the coupon no would have been sent to the email address of the user. To use a coupon, the users should enter the coupon no from the bottom-right of the page and press the "submit" button.

1.2 Create Shipment

This page is Create Shipment Page in which customers can create new shipment requests and also cancel waiting shipment requests. When a new shipment is created, some shipment id is assigned to that shipment by the system.

Customers can also cancel non-approved shipments by using the "CANCEL SHIPMENT REQUEST" button on the left.

1.3 Ongoing Shipment

Customers can see their coming, going, waiting, and previous shipments that were sent at a given date range using this page. For the waiting shipments, they can approve the shipment by using the "Approve Shipment" button.

1.4 Reports

This page is Customer Reports Page which is used for creating reports for received shipments and tracking the previous reports. Customers can create a new report by filling the space under the shipment information and pressing the "SUBMIT

REPORT" button. They can also see the result of a report that they previously submitted.

2. Branch worker

2.1 Branch Worker Profile Page
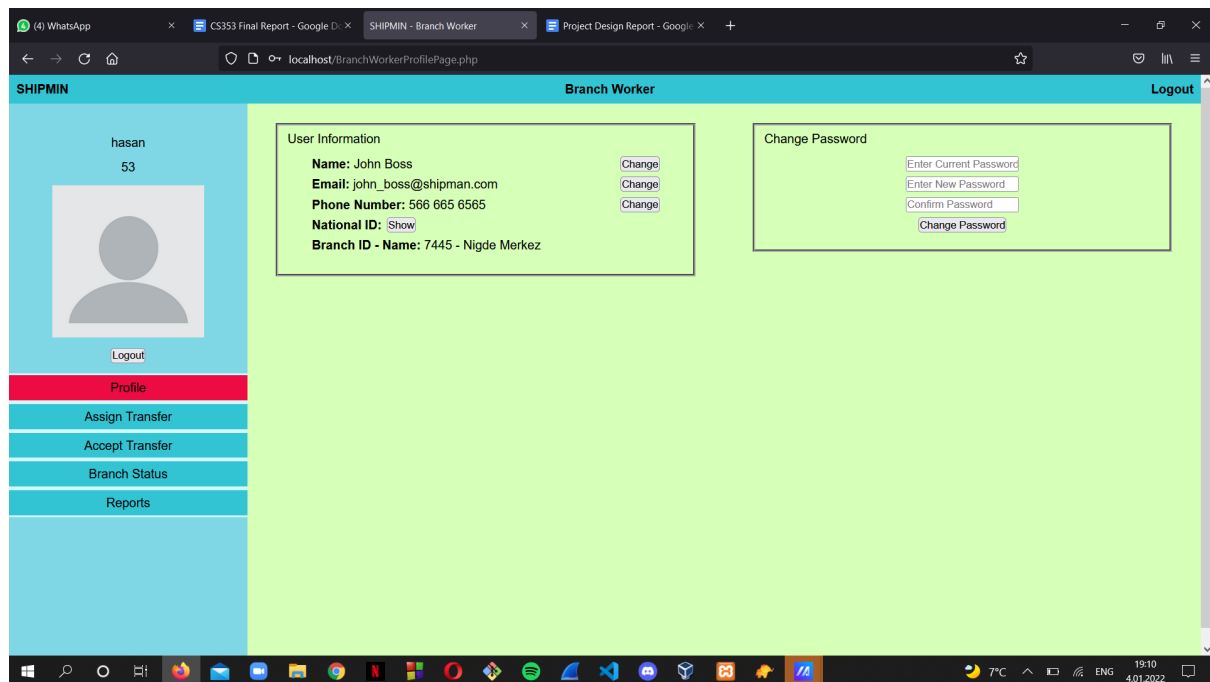
This page is the Branch Worker Profile Page, with the help of this page users will be able to edit and see their information. They can change their password and top up money to their wallet and switch to other pages. The button on the top right allows users to log off from the system.

2.2 Assign Transfer

This page is Assign Transfer Page where branch workers can assign new transfers to current shipments in branch and couriers. It also provides canceling option to lately assigned transfers

2.3 Accept Transfer

This page is the Accept Transfer Page which displays incoming transfers to the branch of the logged in branch worker. Also branch worker can accept or decline these transfers via "ACCEPTED" and "DECLINED" buttons
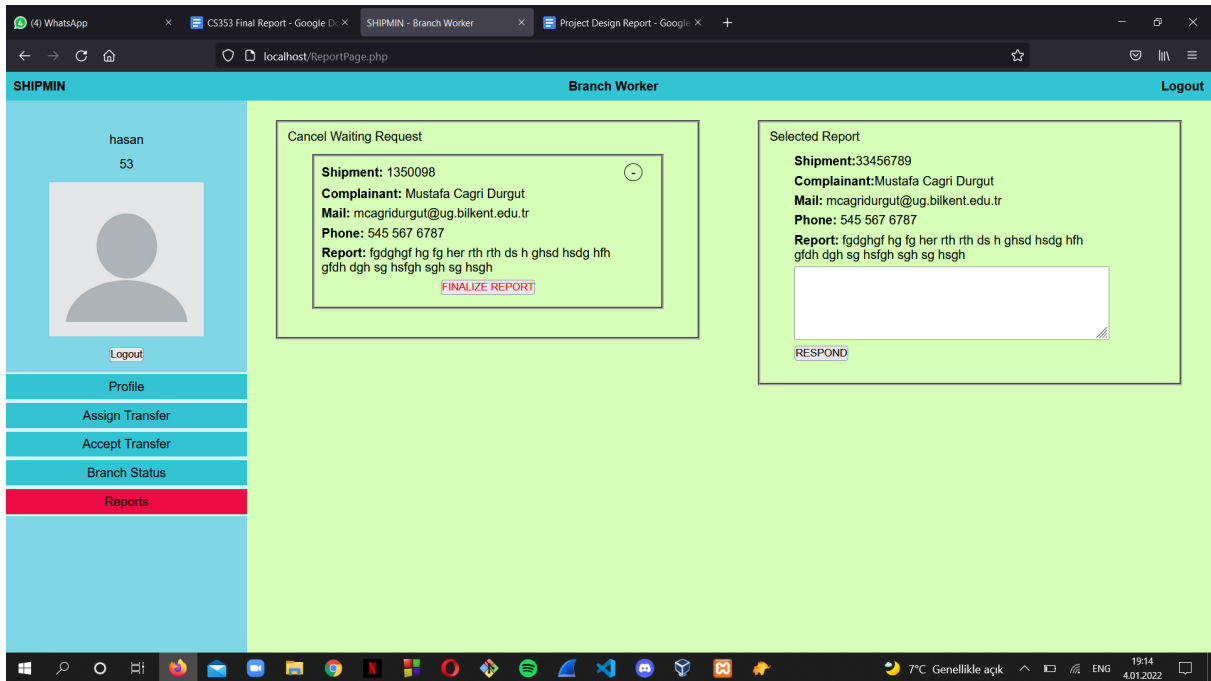
2.4 Branch Status
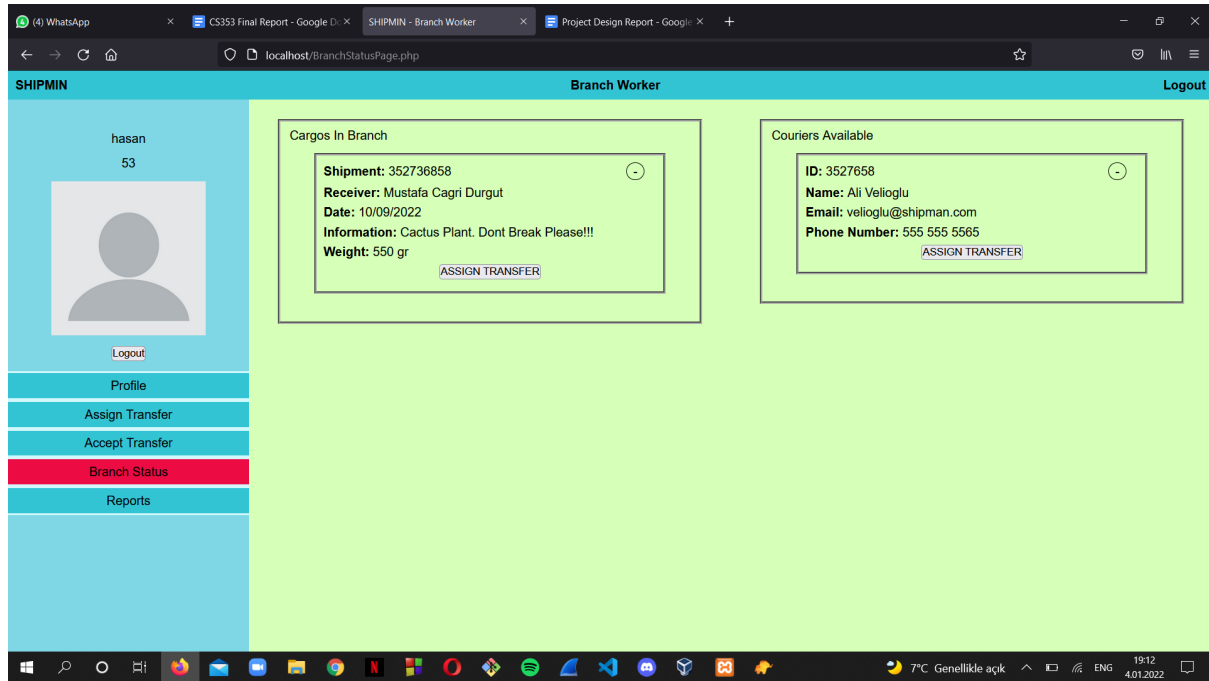
This page is Branch Status Page which is used for displaying current couriers and cargos exist in branch.

When branch worker clicks on "ASSIGN TRANSFER" button, page will become assign transfer page with spaces in assigning transfer area is filled with necessary information which comes with clicked button.

2.5 Reports

This page is Reports Page where branch workers can select among incoming reports and respond to them. When a branch worker clicks on the "FINALIZE REPORT" button, an extended version of that report will appear on the left as seen above. By clicking the "RESPOND" button, branch workers can respond to that report.
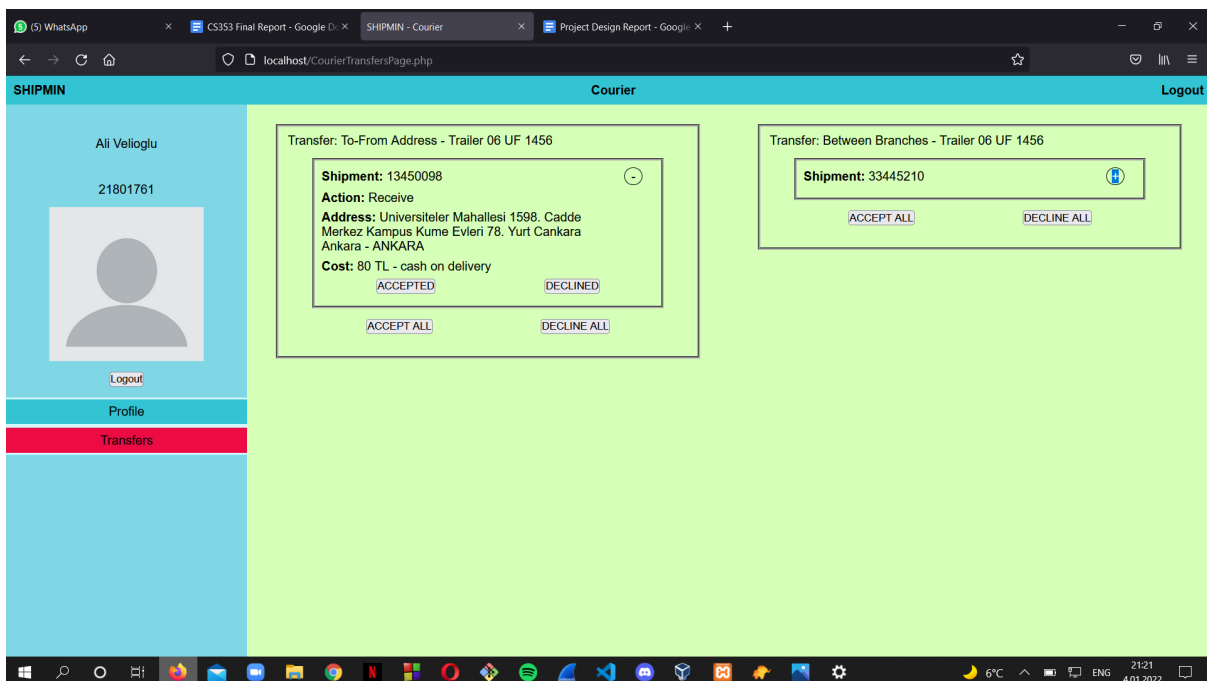
3. Courier:

3.1 Courier Profile Page
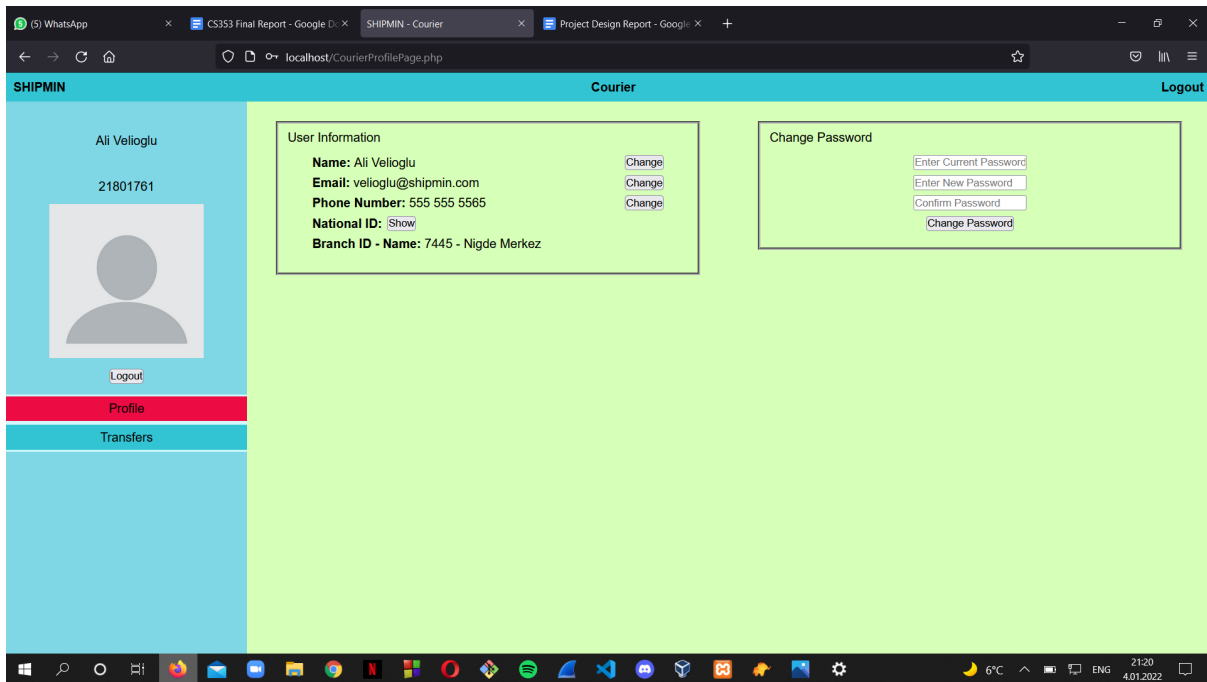
This page is the Courier Profile Page, with the help of this page couriers will be able to edit and see their information. They will be able to change their password and switch to other pages.

3.2 Transfers

This page is Courier Transfers Page in which couriers can see the transfer assigned to them which are grouped by their type and cargo trailer. Couriers also accept or decline transfers by using "ACCEPTED" and "DECLINED" buttons. Also the courier can accept or decline all the transfers by using "ACCEPT ALL" and "DECLINE ALL" buttons.

4 Customer service

4.1 Customer Service Profile Page

This page is the Customer Service Profile Page. Customer Service employees can change their passwords using that page. They can also switch to other pages and logout from the button on the right top.

4.2 Create Coupons

Customer service employees can create coupons, see unsent coupons and send coupons using this page. To create a coupon, they should enter a coupon code or choose to use a random available code and they should enter the amount.

Then, for a coupon the customer service employee can enter an email address and send the coupon to the email address by pressing the "send coupon" button.
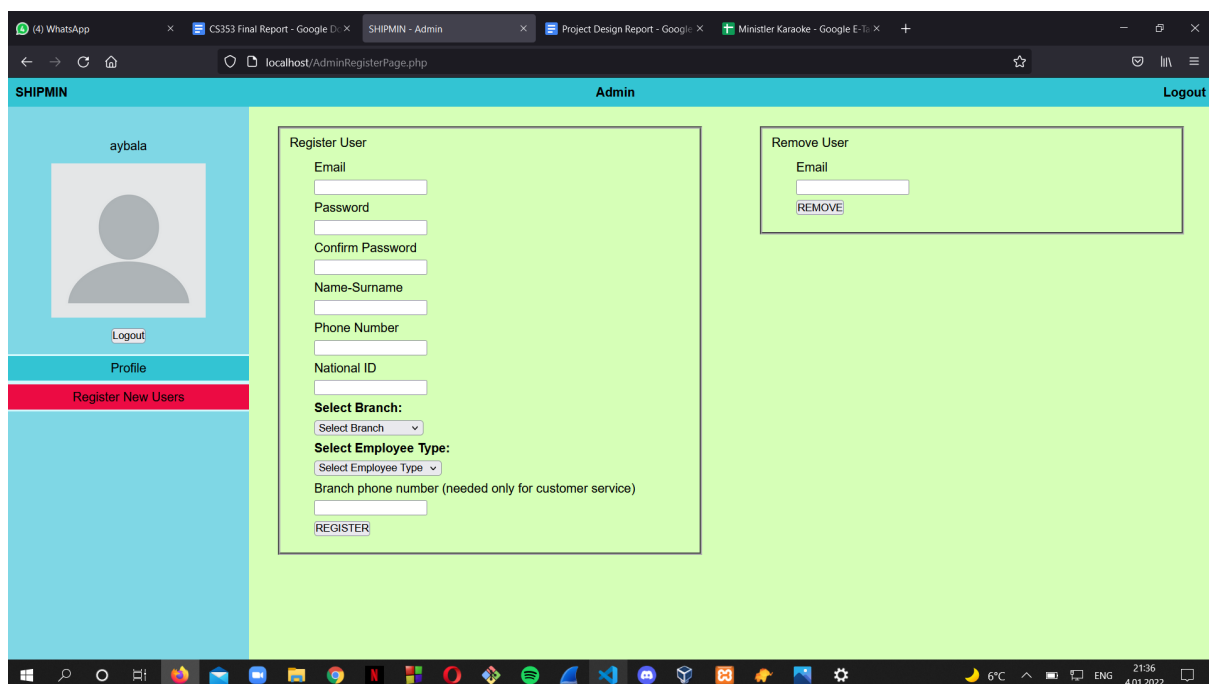
5 Admin

5.1 Admin Profile Page
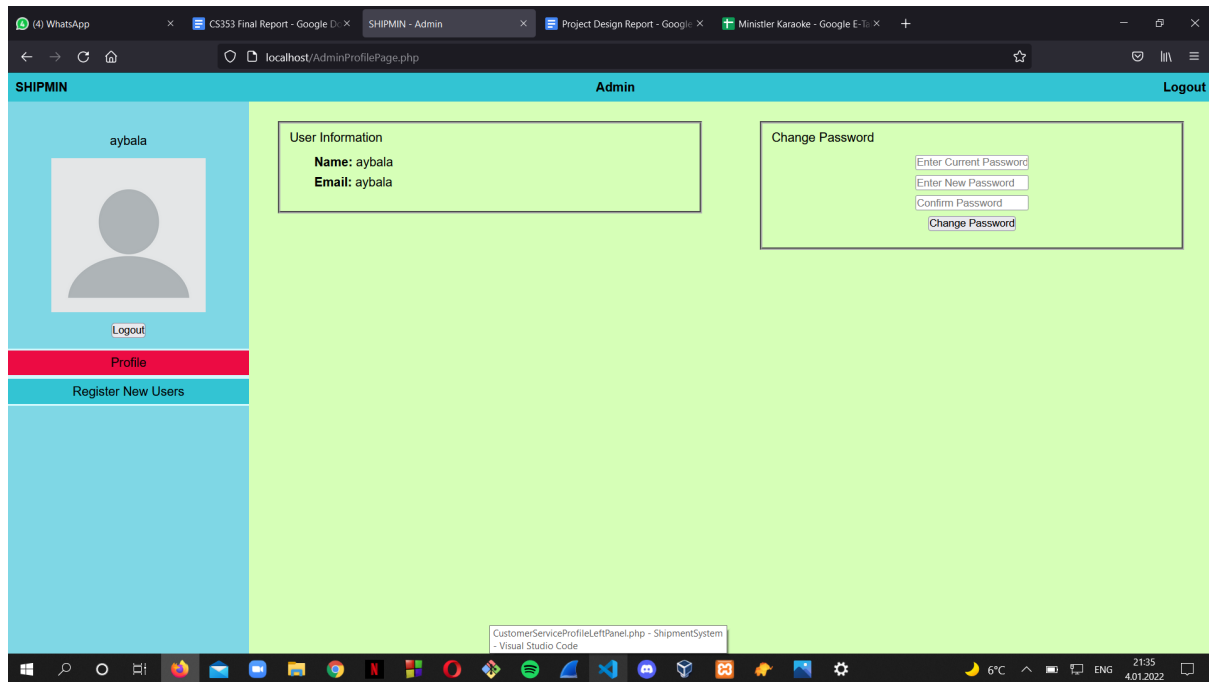
This page is the Admin Profile Page, with the help of this page the admins will be able to update their information and see their information. They can also switch to other pages.

5.2 Admin Register Page

This page is the Admin Register Page. Admins can register new employees and remove the existing ones using this page. They can also switch to other pages and logout from the button on the right top.

To register an employee, an admin should fill the fields of the form on the left side (email, password, confirm password, name-surname, phone number, national ID) and they should choose a branch and employee type for the employee and click

on the "register" button. Please note that if the employee will be a customer service employee, they should also enter a branch phone number.