Project Report

Web application project

Project name: Co-Mute
Project creator: Mpumelelo Mpanza

Programming software used:

JavaScript Node JS

Express JS

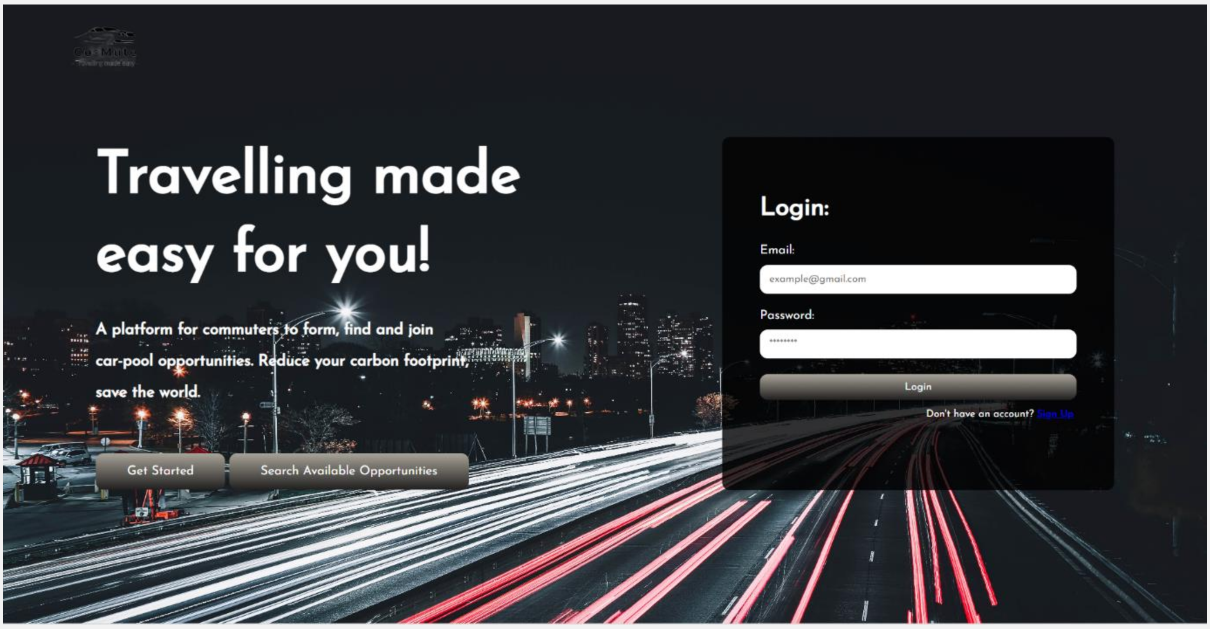
View engine:

Embedded JavaScript templates (EJS)

Database:

MongoDB (NoSQL)

The landing page



Travelling made easy for you!

A platform for commuters to form, find and join car-pool opportunities. Reduce your carbon footprint, save the world.

Login:

Email: example@gmail.com

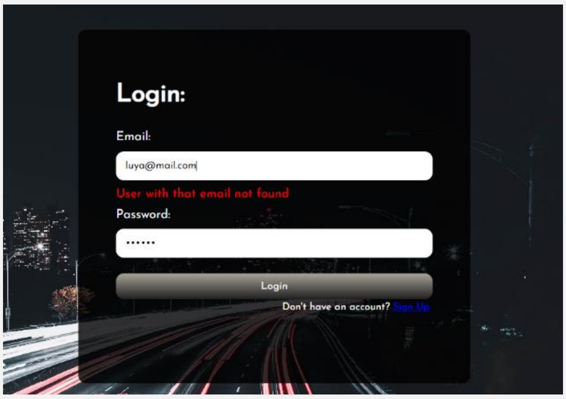
Password: ••••••••

Don't have an account? Sign Up

The above picture is the landing page for the web application. When users visit the link to the web application, this is the page they will be directed to. As can be seen, the page has a hero section containing a text, call-to-action buttons as well as the login field. The button "Search Available Opportunities" directs users to another page called 'general' where only registered users have access to and allows registered users to search for available car-pool opportunities without logging in. Furthermore, the "Get started" call-to-action button is enabled to everyone, it directs users to the sign-up page.

To the right is the login field where registered users can login using the email and password they provided when signing up.

The login field does not just take the given email and password then log the user in. There is a user authentication that takes place in the backend before the user can be signed in. If the user provides an email that is not registered, or an incorrect password the app passes an error message (shown below).



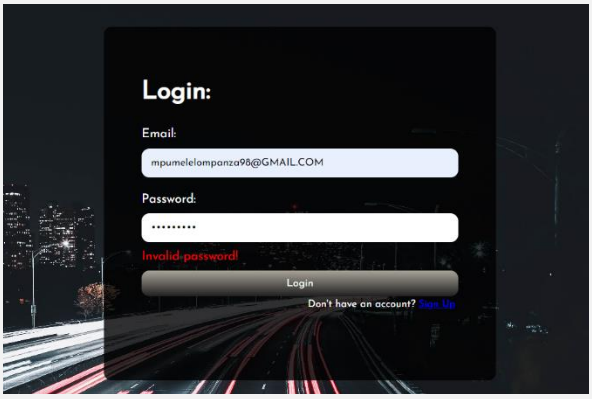
Login:

Email: luya@mail.com

User with that email not found

Password: ••••••

Don't have an account? Sign Up



Login:

Email: mpumelelompanza98@GMAIL.COM

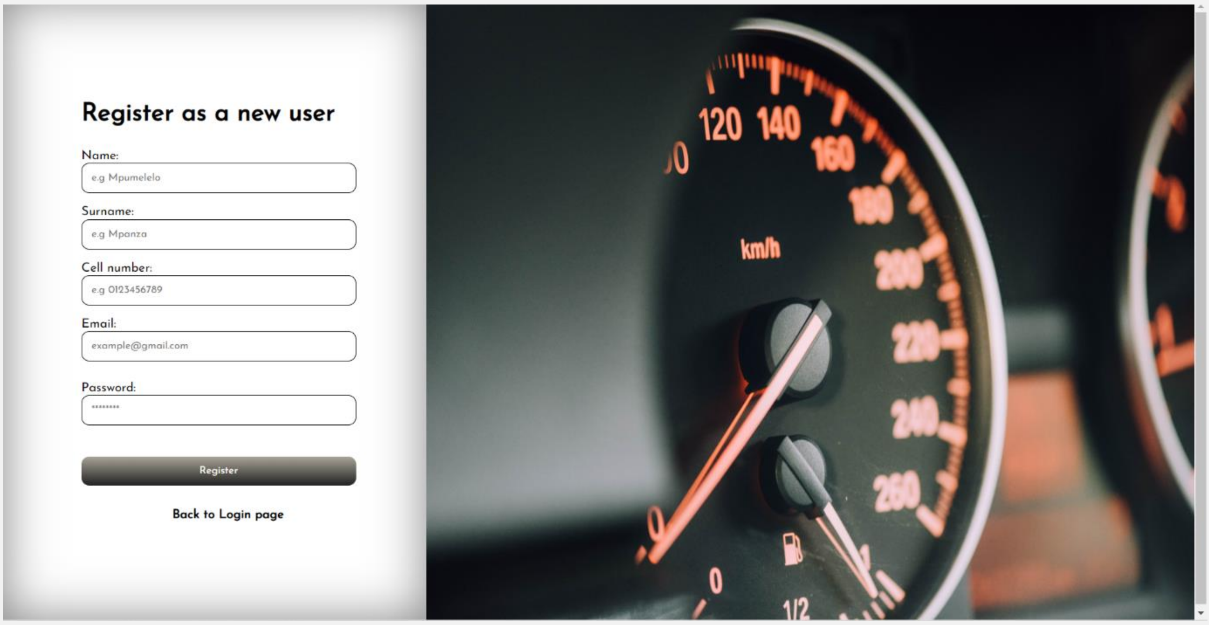
Password: •••••••••

Invalid password!

Don't have an account? Sign Up

There is also a link to the sign-up page for unregistered users. When users click on either the "Get started" button or the sign-up link, they are directed to the page shown below.

The Sign-up page



Register as a new user

Name: e.g Mpumelelo

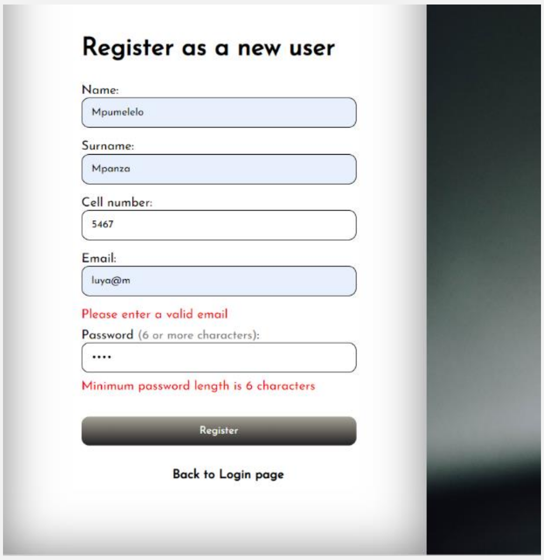
Surname: e.g Mpanza

Cell number: e.g 0123456789

Email: example@gmail.com

Password: ••••••••

The picture above is the sign-up page where new users can create an account with Co-Mute and start joining car-pool opportunities. All the filed shown above have the 'required' attribute, as requested in the requirements document. The sign-up field also has some validation it does for the email provided. It also checks if the email has not registered and if it has, it shows an error message to the user (shown below).



Register as a new user

Name: Mpumelelo

Surname: Mpanza

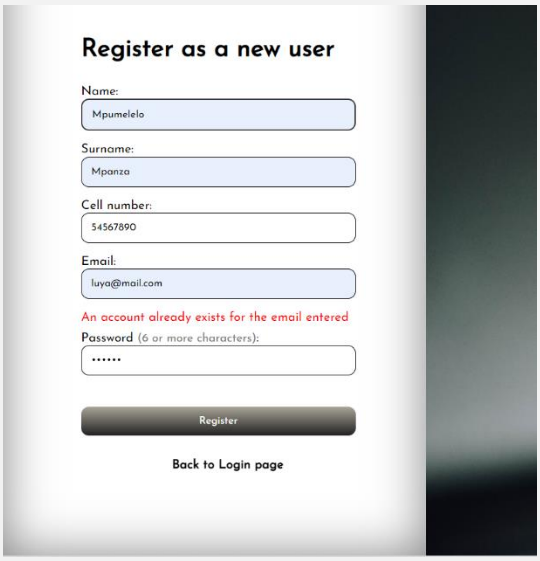
Cell number: 5467

Email: luya@m

Please enter a valid email

Password (6 or more characters): ••••

Minimum password length is 6 characters



Register as a new user

Name: Mpumelelo

Surname: Mpanza

Cell number: 54567890

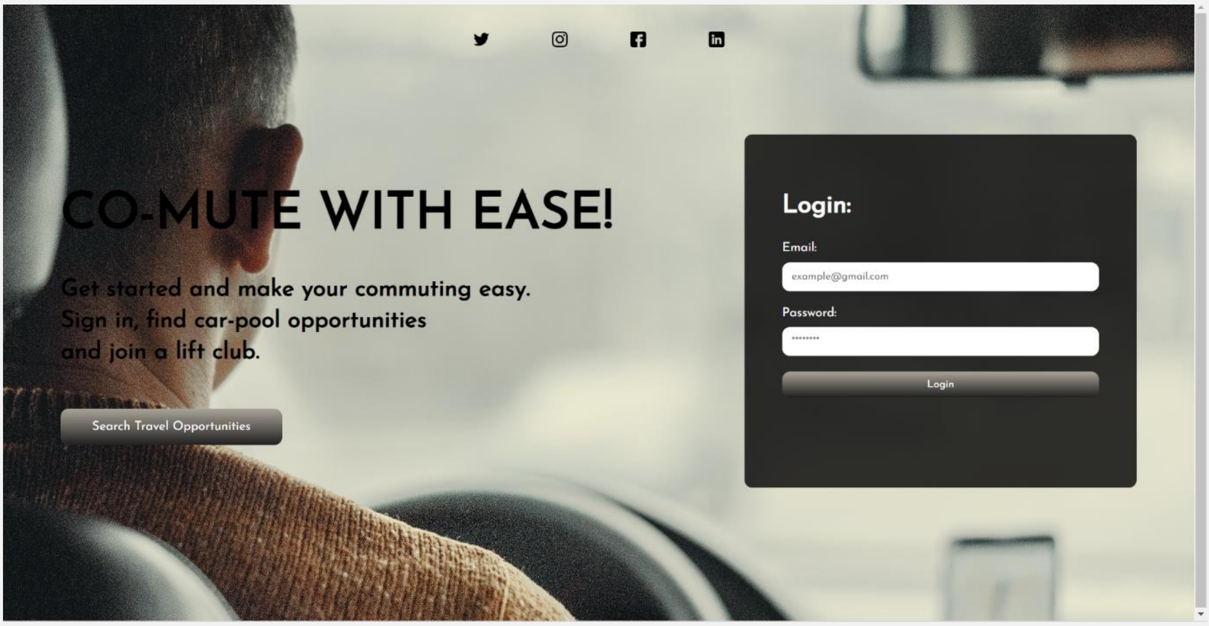
Email: luya@mail.com

An account already exists for the email entered

Password (6 or more characters): ••••••

When the user has successfully registered an account, they are redirected to the 'general' page where they can search for available car-pool opportunities without having to login.

The General page



CO-MUTE WITH EASE!

Get started and make your commuting easy.
Sign in, find car-pool opportunities
and join a lift club.

Login:

Email: example@gmail.com

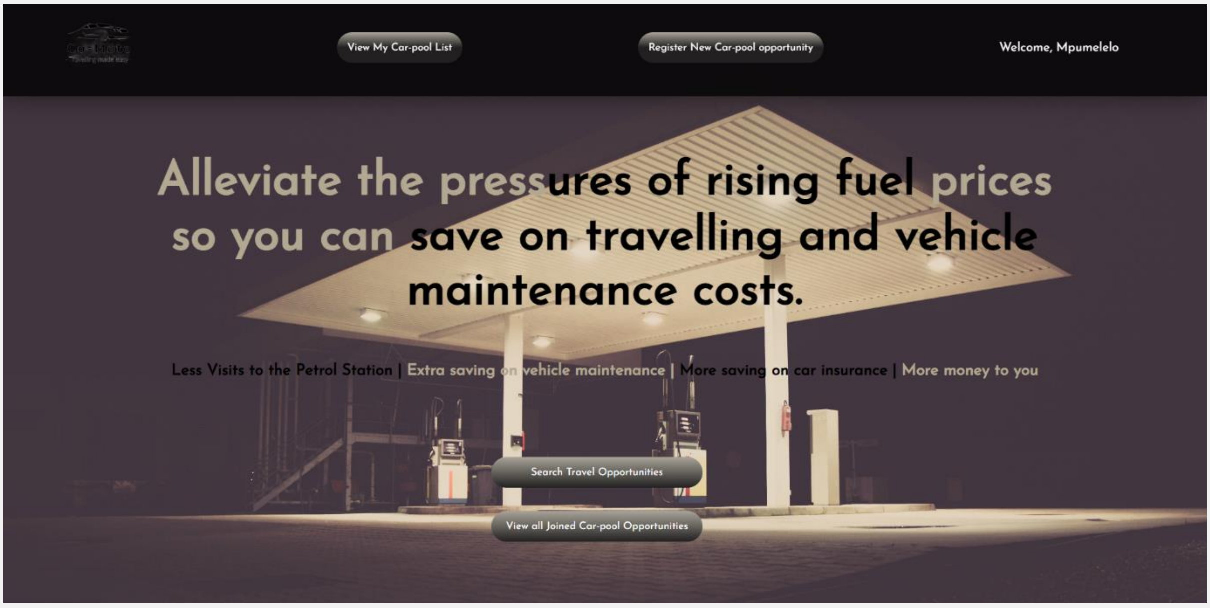
Password: ••••••••

The page above also has links to different media platforms. At the moment they just take you to my media account excepts for the twitter icon which directs you back to the 'general' page. Users can then click the "Search Travel Opportunities" button to look for available car-pool opportunities. If there are no car-pool opportunities listed for the date requested by the user, the app displays a message telling them so.

Signing the user in

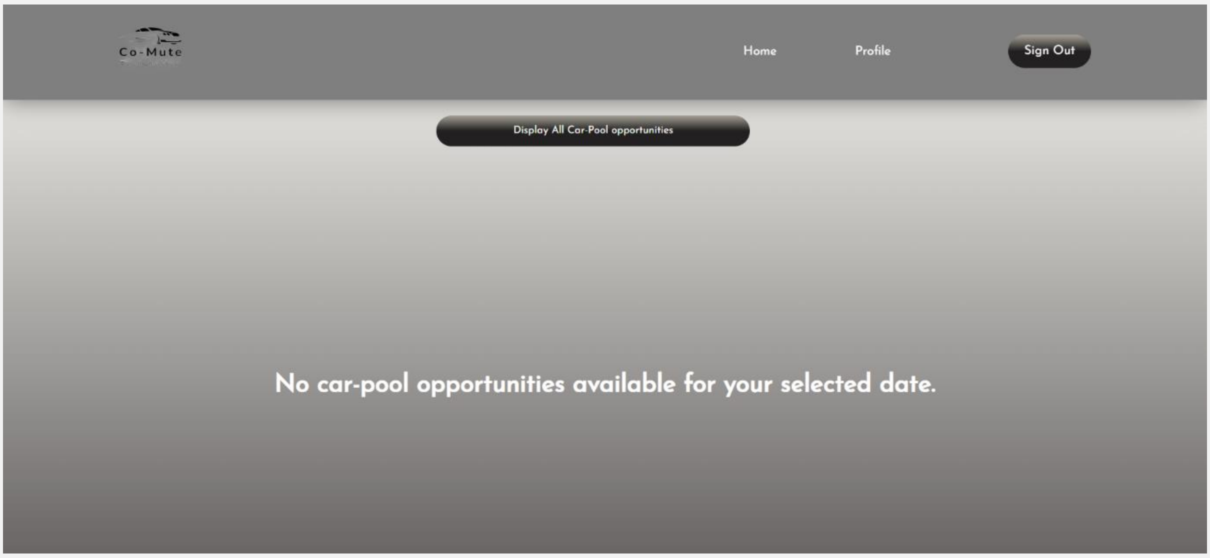
Once the user enters their correct email and password, they are directed to the home page (shown below).

The Home page


View My Car-pool List
Register New Car-pool opportunity
Welcome, Mpumelelo
Alleviate the pressures of rising fuel prices so you can save on travelling and vehicle maintenance costs.
Less Visits to the Petrol Station | Extra saving on vehicle maintenance | More saving on car insurance | More money to you
Search Travel Opportunities
View all Joined Car-pool Opportunities

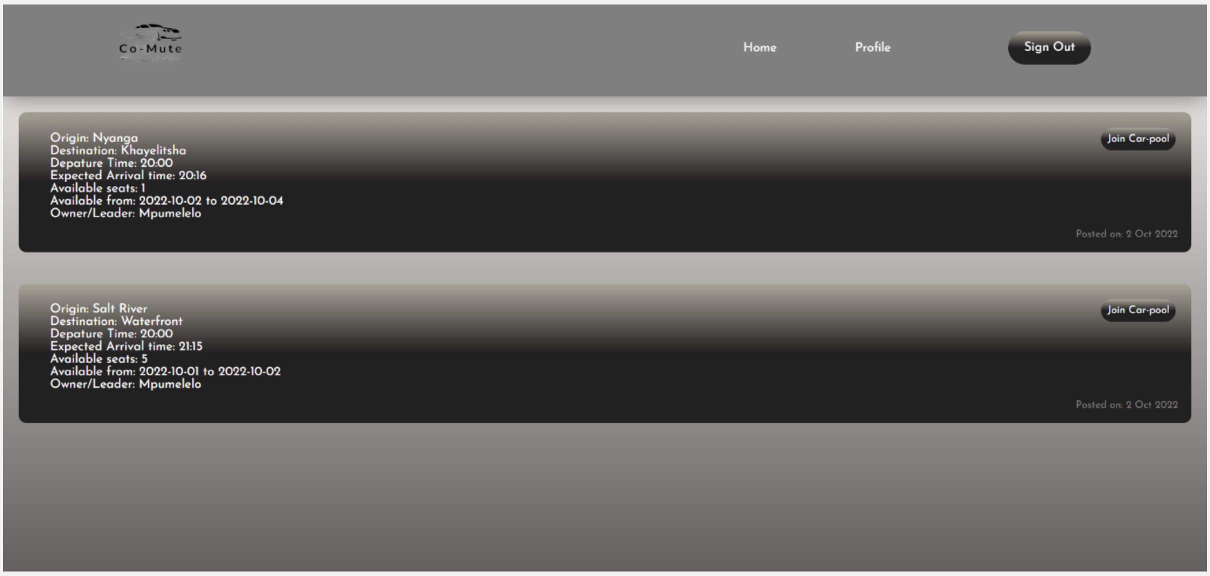
As requested in the requirements documents, the page has a button, "View My Car-pool List" to show all car-pool opportunities created by the user. It has a button, "Register New Car-pool opportunity" to enable users to create and list a car-pool opportunity for other users to see. This part of the app is coded such that a user cannot register car-pool opportunities with overlapping timeframes. If they attempt to do to, an alert message pops up and does not allow them to go through with the creation unless they change timeframes. Moreover, the home page has two more buttons named "Search Travel Opportunities" which searches and finds car-pool opportunities according to the user's given date. If there are no car-pool opportunities available on the date given by the user, a message is displayed telling them so.

It is worth noting that the searching of car-pool opportunities displays available car-pool opportunities on a different page (shown below).



No car-pool opportunities available for your selected date.

If no car-pools found for the given date, the user can view all available car-pools by clicking on the "Display All Car-Pool opportunities" button shown above, which will then fetch all listed car-pools and display them as shown below.



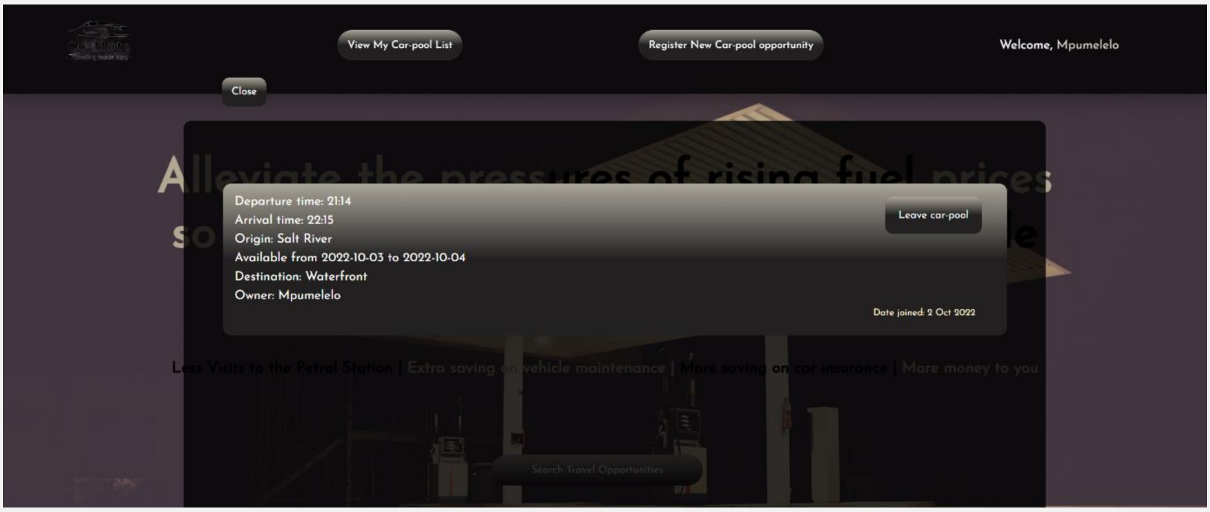
Origin: Nyanga
Destination: Khayelitsha
Depature Time: 20:00
Expected Arrival time: 20:16
Available seats: 1
Available from: 2022-10-02 to 2022-10-04
Owner/Leader: Mpumelelo
Posted on: 2 Oct 2022

Origin: Salt River
Destination: Waterfront
Depature Time: 20:00
Expected Arrival time: 21:15
Available seats: 5
Available from: 2022-10-01 to 2022-10-02
Owner/Leader: Mpumelelo
Posted on: 2 Oct 2022

The car-pool opportunities shown above have been created only for demonstration purposes in this report.

After displaying the available car-pool opportunities, the user can then join the car-pool they wish to join. This part of the app has been coded in a way that does not allow a user to join the same car-pool opportunity more than once. They also cannot join another car-pool opportunity of the same timeframe. In addition, every time a car-pool is joined, the number of seats available is decremented by one until it gets to zero, in which case if a user clicks the "Join Car-pool" button, the app sends an alert message that no more seats available.

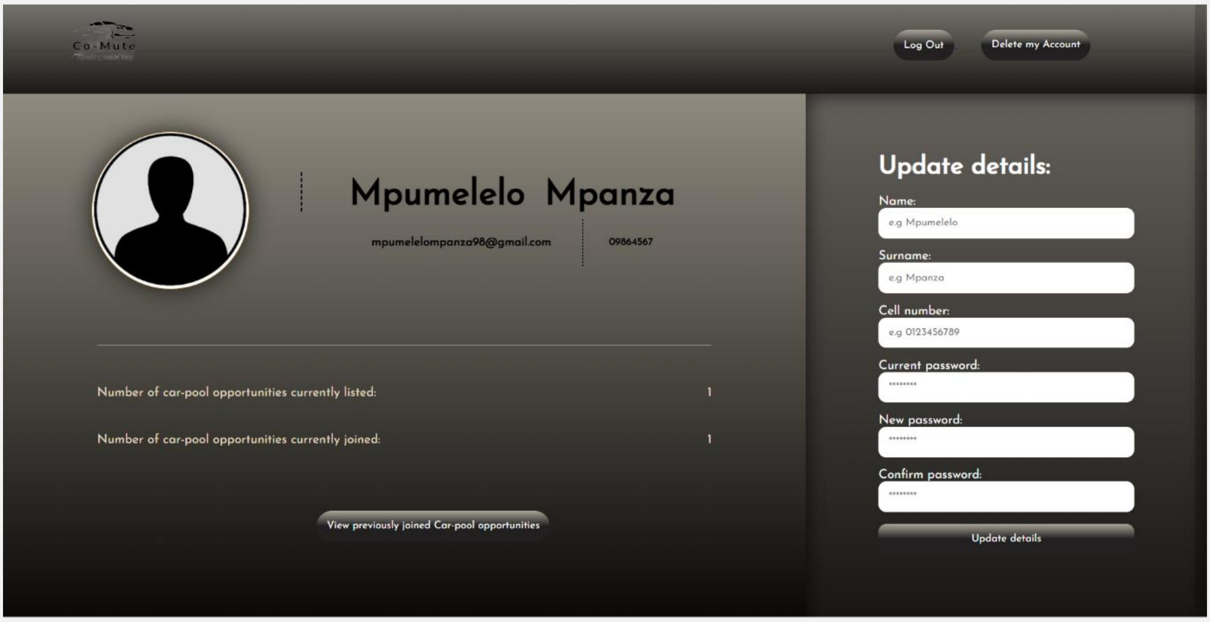
Going back to the home page, there is a "View joined Car-pool Opportunities" button that enables users to view all car-pool opportunities they have joined (shown below).


View My Car-pool List
Register New Car-pool opportunity
Welcome, Mpumelelo
Close
Alleviate the pressures of rising fuel prices
Leave car-pool
Less Visits to the Petrol Station | Extra saving on vehicle maintenance | More saving on car insurance | More money to you
Search Travel Opportunities

Departure time: 21:14
Arrival time: 22:15
Origin: Salt River
Available from 2022-10-03 to 2022-10-04
Destination: Waterfront
Owner: Mpumelelo
Date joined: 2 Oct 2022

As can be seen that when a user joins a car-pool, it gets updated in the database so that it shows when they request to view their joined car-pool opportunities. This number of joined car-pools can be tracked on the user's profile page, which they are redirected to when they click on their name next to welcome, in this case it is 'Mpumelelo'.

The Profile page



Mpumelelo Mpanza

mpumelelompanza98@gmail.com | 09864567

Number of car-pool opportunities currently listed: 1

Number of car-pool opportunities currently joined: 1

Update details:

Name: e.g Mpumelelo

Surname: e.g Mpanza

Cell number: e.g 0123456789

Current password: ********

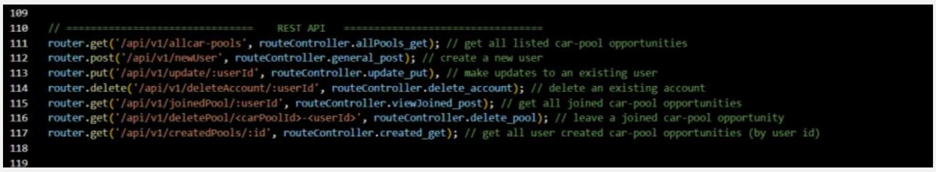
New password: ********

Confirm password: ********

This is the profile page. The number of car-pool opportunities joined and listed at that time can be tracked on the user's profile. On the profile, the user can update their details provided they enter a correct current password. If the current password is not correct, their details will not be changed. Users can also view all car-pool opportunities they have joined since creation of their account.

The logout button at the top deletes a token given to the user on login then logs them out. They can also delete their account, which will delete the user document in the database.

REST API



```

// ================================    REST API    ==================================
router.get('/api/v1/allcar-pools', routeController.allPools_get); // get all listed car-pool opportunities
router.post('/api/v1/newUser', routeController.general_post); // create a new user
router.put('/api/v1/update/:userId', routeController.update_put), // make updates to an existing user
router.delete('/api/v1/deleteAccount/:userId', routeController.delete_account); // delete an existing account
router.get('/api/v1/joinedPool/:userId', routeController.viewJoined_post); // get all joined car-pool opportunities
router.get('/api/v1/deletePool/<carPoolId>-<userId>', routeController.delete_pool); // leave a joined car-pool opportunity
router.get('/api/v1/createdPools/:id', routeController.created_get); // get all user created car-pool opportunities (by user id)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Authorisation

The website prevents unauthorized users from accessing some features of the web application. If a user is not logged in, they cannot access the home page. Once the user creates an account, a unique token is sent to the user to tag them as a registered user, after which they can access the general page. However,

this token does not authorise the user to access the home page, they first need to login and only then do they get the token that authorizes them to access all pages of the web application.

Notes

I have not included the ‘node_modules’ folder containing all packages used in the making of this web application. The file was too large. To ensure that the app runs, please run ‘npm install’ to get the ‘node_modules’ folder.