

SSD - System Specification Document

Team 1

Revision History

Date	Version	Description	Author
2021-10-13	1.0	Outlines of all sections	Linnea Johnsson
2021-10-15	1.1	Added system setup instructions	Alexander Ekman & Max Fogwall
2021-10-18	1.2	Added all unfulfilled requirements	Alexander Ekman
2021-10-19	1.3	Filled in section 1 and 2	Linnea Johnsson
2021-10-20	1.4	Added unfulfilled requirements left after the internal deadline	Alexander Ekman
2021-10-20	1.5	Updated install instructions	Alexander Ekman
2021-10-20	1.6	Added user instructions for all system features, including figures	Alexander Ekman
2021-10-20	1.7	Updated completed issues, added matched cases in routes figure, and updated figure captions	Alexander Ekman
2021-10-20	1.8	Proofreading	Alexander Ekman

References

- [1] "Programvaruutveckling för Stora System Projekthandledning 2021", Chapter 9, Institutionen för Datavetenskap Lunds Tekniska Högskola, Lunds Universitet, 26 August 2021
- [2] "SDP - Software Development Plan, Team 1 - ETSN05", Alexander Ekman and Linnea Johnsson, url=https://github.com/exook/ETSN05_team1_documents/blob/main/SDP.tex, accessed October 20, 2021
- [3] "PRD - Product Requirements Document, Team 1", Alexander Ekman and Linnea Johnsson, url=https://github.com/exook/ETSN05_team1_documents/blob/main/PRD.tex, accessed October 20, 2021

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1 Introduction

This document aims to present and describe the carpool web-app delivered as part of the course ETSN05. The documents, and which versions of them, that are related to the system are listed. Furthermore, this document describes the system's limitations. The limitations are presented as the differences between the final delivered system and the system described in the Product Requirements Document (PRD) [3]. Lastly, this document provides instructions on how to set up the system and use the web-app.

2 Delivered system

The system consists of the code based product as well as multiple documents that corresponds to the system in different ways. In table 1 these documents, and how they relate to the delivered system, is presented.

Document	Document number	Version	Purpose in the system
PRD	PUSS21412	1.21	Contains the requirements of the system, and more.
STLDD	PUSS21415	1.29	The high level design of the system
SDD	N/A	N/A	The actual code base and its corresponding comments
SVVR	PUSS21417	1.11	Comparisons of the code and the user stories from the PRD. Contains unit tests, integration tests and review protocols.
SSD	PUSS21418	1.8	A description of the delivered system and how it differs from the ordered one

Table 1: The documents, and their current version, related to the delivered system.

3 Limitations

3.1 System objective

The objective of the delivered system is that it should be used as a base for further development. There is no intention to deliver the system to real users in its current state. This is because some functionality is not yet finalized, and the system has not been tested in practice with real users.

3.2 Differences compared to the PRD

3.2.1 Maven support

The PRD did not specify a requirement for Maven. However, Maven is recommended for running the system.

3.2.2 Functional requirement F2: Driver registration

"A prospective user registering as a driver, or a rider and a driver must also register car brand, model, color, and licence plate number" [3]. In the delivered version, drivers can register a car, however this is done in the route submission window seen in Figure 4. When a user selects "driver" on the submissions page, they are asked to add a vehicle to the submission. If they haven't registered a car before, they have the option to add a new car as seen in Figure 5. Once a car is added they can select it from a drop-down menu in any future submissions.

3.2.3 Functional requirement F8: Profile Details

"A logged in user should be able to see and edit some of their profile details" [3]. The delivered system will not support users editing the profile details or a profile page. If a user needs something changed they must contact someone with admin and they would perform the appropriate change.

3.2.4 Functional requirement F10: Necessary contact details

"A logged in user who is matched with a rider/driver should see the upcoming routes and details of that route on their profile page"[3]. In the delivered system, this information is instead shown under "Your routes" as shown in Figure 6.

3.2.5 Functional requirement F11: Upcoming travel

"A logged in user who is matched with a rider/driver needs to accept or decline matches with riders/drivers"[3]. The delivered system does not support users accepting or declining matches. If there is a change of plans, the two users will have to contact each other instead.

3.2.6 Functional requirement F12: Match notification

"When a user is matched with a driver/rider they should be notified in the web app"[3]. The delivered system does not notify users once a match is achieved between a rider and a driver. Instead users will have to check their "Your routes" page for updates on their upcoming routes and matched routes, as shown in Figure 6.

3.2.7 Performance Requirement Per1: Entering correct username and password

"A user who enters a correct username and password, once pressing the "log in" button, should not wait longer than 2 seconds to see the submission page"[3]. A user entering the correct username and password is logged in within 2 seconds, however, they are not directed to the submissions page as the main page. In the delivered system, the main page is a neutral page which offers the logged in user with a choice to select either "Create Route", "Your routes" as seen in Figure 3. This layout does not affect the core functionality of the system, but it does deviate from the user interface prototypes in Figure 4, 5, 6, and 7, and some of the wording of the PRD[3].

3.2.8 Performance Requirement Per2: Entering incorrect username and password

"A user who enters an incorrect username and password, once pressing the "log in" button, should not wait longer than 2 seconds to be prompted for another attempt"[3]. If the username and password are incorrect the user is allowed to attempt again within 2 seconds. Providing a proper error message has not been a priority, and is not implemented in the delivered system.

3.2.9 Performance Requirement Per3: Notification of new match

"After a driver/rider is matched, their profile pages should update accordingly within 10 seconds"[3]. As specified in Section 3.2.3, the delivered version does not include a profile page. However, the match is displayed on the "Your routes" page within 10 seconds.

3.2.10 Reliability Requirement R1: User input

"The web-app should not crash or freeze due to user input"[3]. With a small team there was not enough time to do the large scale testing which would guarantee that no user input would crash the system. However, no user input should crash the server, but it could perhaps freeze the users browser session.

3.2.11 Usability Requirement U3: User browser and operating system

"The system should work the same for users using Microsoft Edge, Google Chrome, Mozilla Firefox, or Safari web browsers. It should also be independent from their operating system"[3]. The delivered system does not perform well on Firefox due to some issues with sending POST-requests. Chromium based browsers and Safari are known to work.

3.2.12 Portability Requirement Por1: Remote/local host

"The system should be able to run in full on a local or remote host" [3]. The delivered system has only been tested running on a local host. Since this is impractical for any commercial use, making it run on a remote host should be a top priority in the future.

3.2.13 Usability Requirement U2: Multiple users

"Multiple users should be able to be logged in and use the system features in parallel" [3]. As the delivered system has not been tested on a remote host, having users acting in parallel has also not been fully tested. However, it seems to work on a local host.

3.2.14 Usability Requirement U4: Mobile support

"Users should be able to use the web-app from their mobile devices without suffering from decreased usability compared to using a PC" [3]. As the delivered system has not been tested on a remote host, it has been impossible to test the mobile support.

4 Installation instructions

4.1 Setup instructions: Eclipse

4.1.1 Initial setup

- Download and install Eclipse from <https://www.eclipse.org/>
- Clone the repository: using "git clone <https://coursegit.cs.lth.se/alma.orucevic-alagic/etsn05-team1.git>"
- Start Eclipse (Version 4.21.0 or newer)
- Select the cloned repository as the workspace, press "Launch"
- Exit the Eclipse welcome window if there is any
- Go to file -> Import
- Select "Maven" and then "Existing Maven Projects", Press "Next"
- In the "Import Maven Project" window, select the root directory as "etsn05-team1/base/server"
- Back at the "Import Maven Project" window, click the "Add project(s) to working set" box
- Click "Finish"

4.1.2 Starting the server

- Make sure you are in the correct workspace
- Navigate to "etsn05-team1/base/server/src/main/java/se.lth.base.server"
- Select and run "BaseServer.java". On the first execution, this also sets up the database.
- If there are remnants left from a previous system setup (Old routes, profiles etc), navigate to "etsn05-team1/base/server/src/main/java/se.lth.base.server.database" and run "CreateSchema.java"

4.2 Setup instructions: Visual Studio Code

4.2.1 Initial and starting the server

- Download and install Visual Studio Code (<https://code.visualstudio.com/>)
- Clone the repository: "git clone <https://coursegit.cs.lth.se/alma.orucevic-alagic/etsn05-team1.git>"
- Open the cloned repository with Visual Studio Code
- Navigate to "etsn05-team1/base/server/src/main/java/se/lth/base/server"
- Select and run "BaseServer.java"
- Go to Run and Debug in the left-hand menu bar
- Click on Run and Debug. On the first execution, this also sets up the database.
- If there are remnants left from a previous system setup (Old routes, profiles etc), navigate to "etsn05-team1/base/server/src/main/java/se.lth.base.server.database" and run "CreateSchema.java"

4.3 Logging in and registering new user

Once the server is started you can go to <http://localhost:8080/login/login.html> and log in using one of the pre-existing credentials found in Table 4.3. To register a new user, go to (<http://localhost:8080/register/register.html>)

Username	Password	Role
Admin	password	ADMIN
Test	password	DRIVER
Passenger	password	PASSENGER
Driver	password	DRIVER
Both	password	BOTH

Table 2: The available credentials after the first time setup of the system

5 User instructions

5.1 Log in screen

The log in screen when the local host server is running can be found at <http://localhost:8080/login/login.html>. Here, the user or admin is prompted to log in or register, as shown in Figure 1

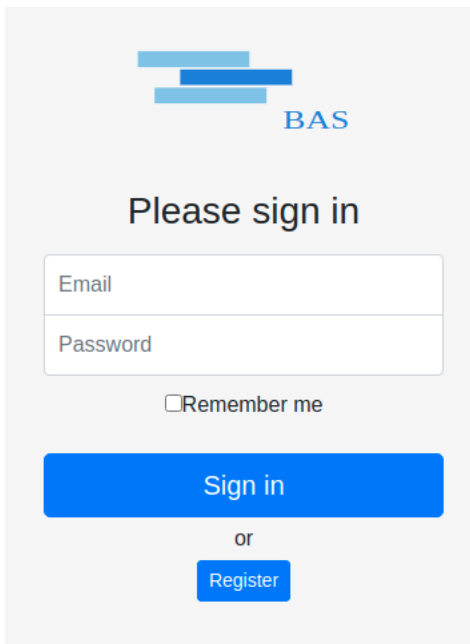
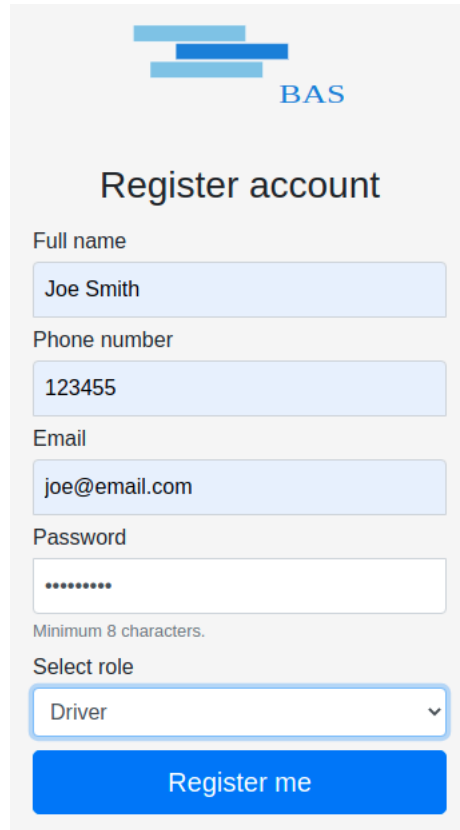


Figure 1: The log in page

5.2 User registration

By clicking the "Register" button seen in Figure 1, the user is taken to the registration screen shown in Figure 2. The user here selects a "role", i.e. if they will be a driver, passenger, or both. Choosing "both" will give them the most flexibility later on. Once all the fields are filled in, they click "Register me".



The image shows a user registration page for a company named BAS. At the top, there is a logo consisting of three horizontal bars (two light blue, one dark blue) and the text "BAS" in blue. Below the logo, the title "Register account" is centered. The form contains several input fields: "Full name" with the value "Joe Smith", "Phone number" with the value "123455", "Email" with the value "joe@email.com", and "Password" with masked characters ".....". Below the password field, there is a note "Minimum 8 characters." and a "Select role" dropdown menu currently showing "Driver". At the bottom of the form is a large blue button labeled "Register me".

Figure 2: The user registration page

5.3 Main page

Once a registered user logs in they are taken to the main page, seen in Figure 3. By clicking "Create Route" they are taken to the "Create Route Page", where drivers can submit that they are driving somewhere, and passengers can submit that they would like to carpool somewhere. By clicking "Your routes" the user will be taken to the "Your routes page", here they can see information of upcoming travel, and matches with other drivers/passengers. At the top of the main page the users can navigate between the pages and sign out.

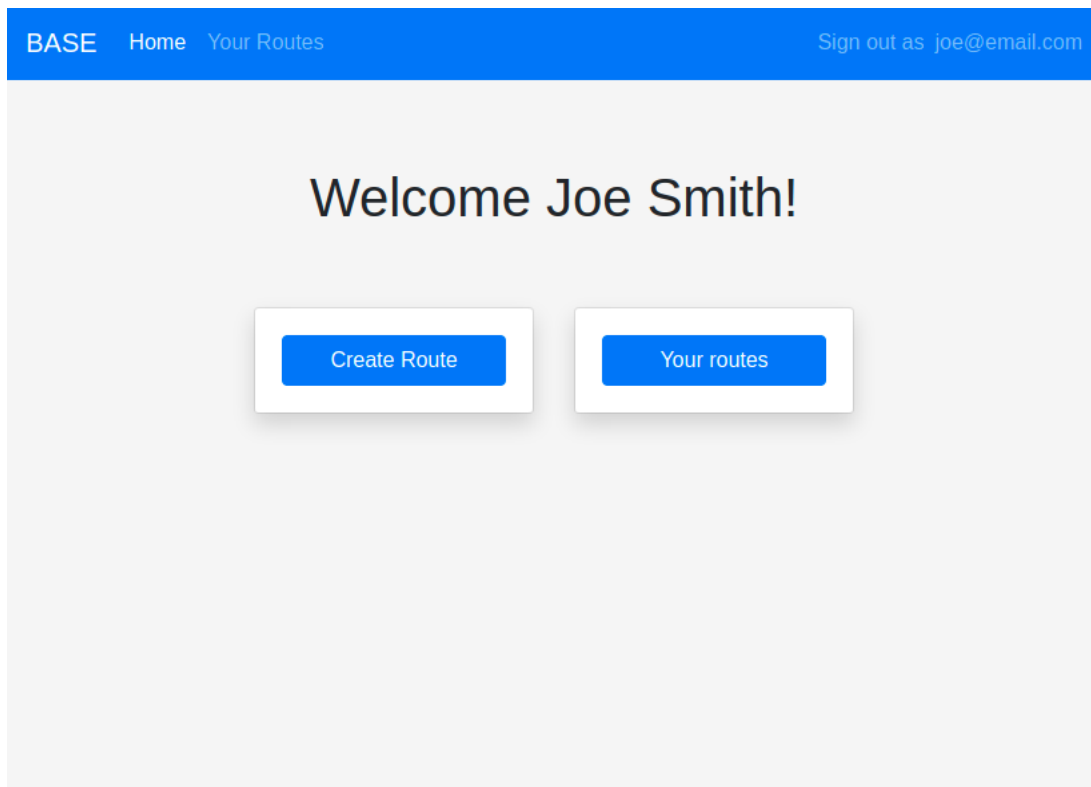
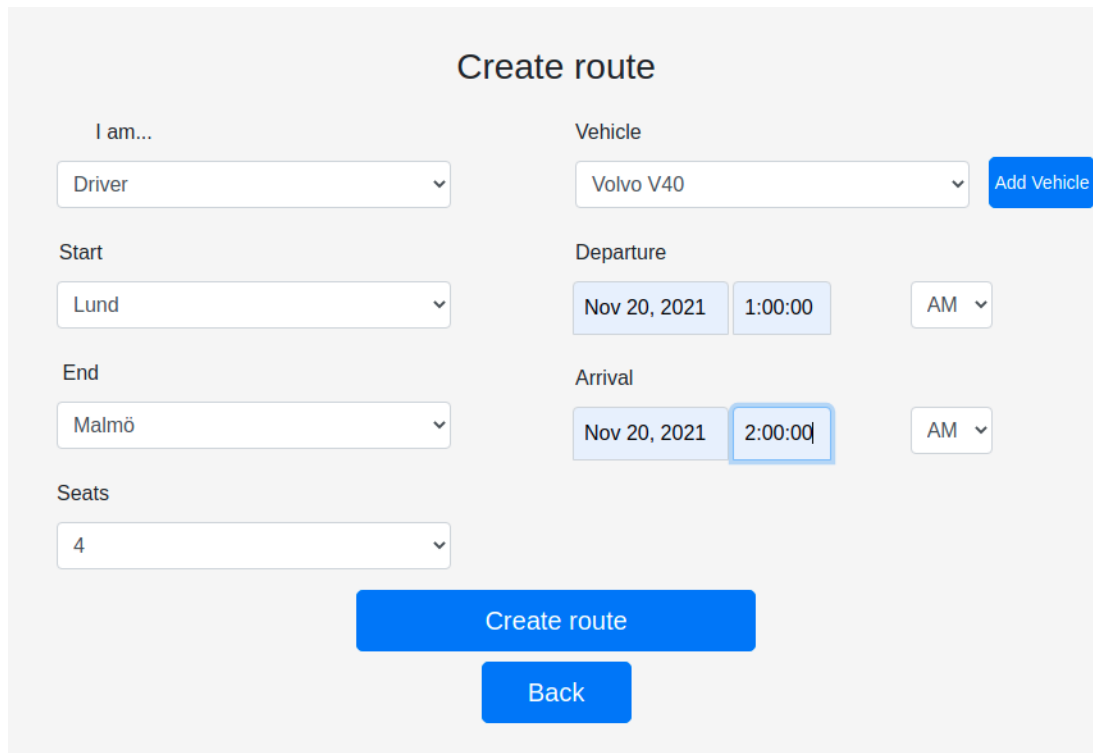


Figure 3: The main page

5.4 Create Route Page

The "Create Route Page" is where drivers can submit that they are driving somewhere, and passengers can submit that they would like to carpool somewhere. This page looks different for drivers and passengers. Both user roles submit a Start, End, Departure, and Arrival. But only the driver adds a vehicle and the number of available seats. To add a vehicle from the drop-down menu, the driver first needs to click "Add Vehicle", if this hasn't been done before for that user. When the user clicks "Create route", their route is registered in the database and matched to any users with similar routes.

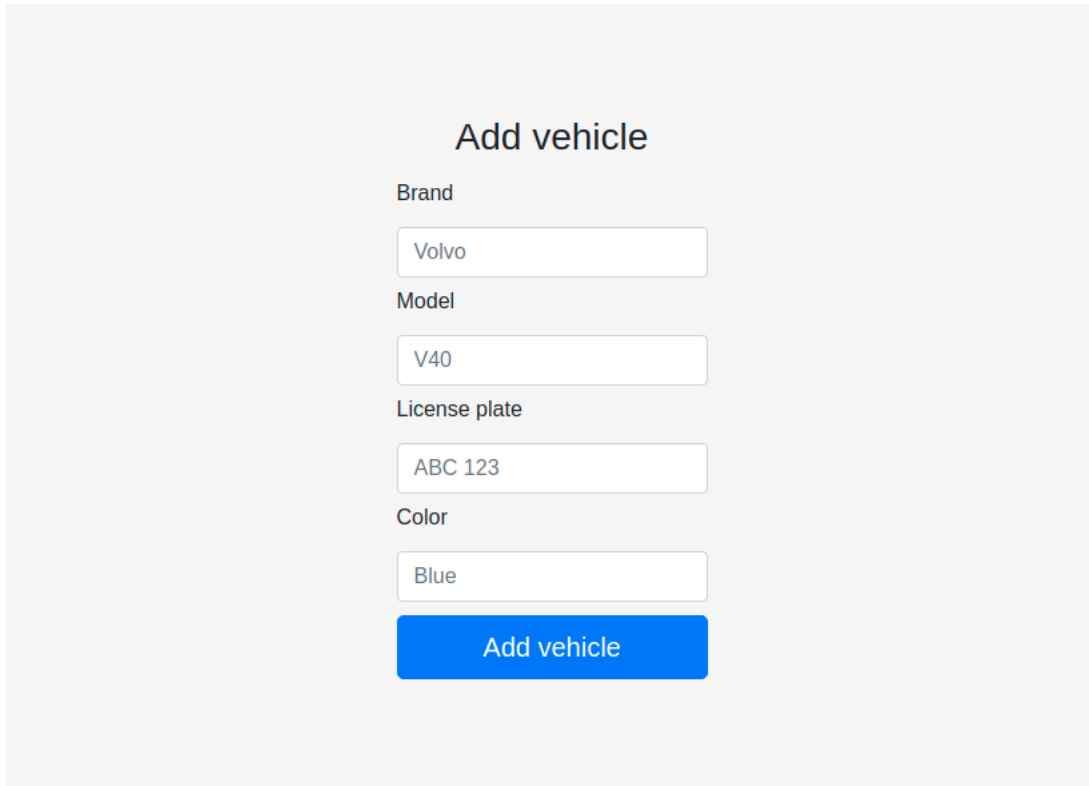


The screenshot shows a web form titled "Create route". It is divided into two main columns. The left column contains a dropdown menu for "I am..." with "Driver" selected, a "Start" dropdown with "Lund", an "End" dropdown with "Malmö", and a "Seats" dropdown with "4". The right column contains a "Vehicle" dropdown with "Volvo V40" and an "Add Vehicle" button, a "Departure" section with a date dropdown (Nov 20, 2021), a time dropdown (1:00:00), and an AM/PM selector (AM), and an "Arrival" section with a date dropdown (Nov 20, 2021), a time dropdown (2:00:00), and an AM/PM selector (AM). At the bottom, there are two large blue buttons: "Create route" and "Back".

Figure 4: The "Create Route Page"

5.5 Add Vehicle

When a driver clicks on the "Add Vehicle" button in the "Create route page" they are taken to the "Add Vehicle page". Here drivers enter details regarding their vehicle as shown in Figure 5. These details will be crucial for passengers to identify the driver when being picked up.



The image shows a web form titled "Add vehicle" centered on a light gray background. The form contains four text input fields, each with a label above it: "Brand" with the value "Volvo", "Model" with the value "V40", "License plate" with the value "ABC 123", and "Color" with the value "Blue". Below these fields is a prominent blue button with the text "Add vehicle" in white.

Figure 5: The "Add Vehicle Page"

5.6 Your Routes page

By clicking "Your Routes" from the main page, a user can see the routes that they have submitted, as well as routes which have been matched with other drivers/passengers. This is shown in Figure 6.

BASE Home Your Routes Sign out as: joe@email.com

Your routes

Matched routes

Lund to Malmö Hours to departure: 727
Depart at: 11/20/2021, 01:00 | Arrive at: 11/20/2021, 02:00
Your role: Driver

Båstad to Torekov Hours to departure: 751
Depart at: 11/21/2021, 01:00 | Arrive at: 11/21/2021, 02:00
Your role: Passenger

All routes

Klippan to Landskrona Hours to departure: 775
Depart at: 11/22/2021, 01:00 | Arrive at: 11/22/2021, 02:00
Your role: Driver | Available seats: 3

Båstad to Torekov Hours to departure: 751
Depart at: 11/21/2021, 01:00 | Arrive at: 11/21/2021, 02:00
Your role: Passenger

Lund to Malmö Hours to departure: 727
Depart at: 11/20/2021, 01:00 | Arrive at: 11/20/2021, 02:00
Your role: Driver | Available seats: 2

Figure 6: The "Your Routes Page"

5.7 Admin Main Page

Logging in as admin shows a very similar page as a regular user. However, in the top navigation bar there is the added "User Admin" tab as seen in Figure 7.

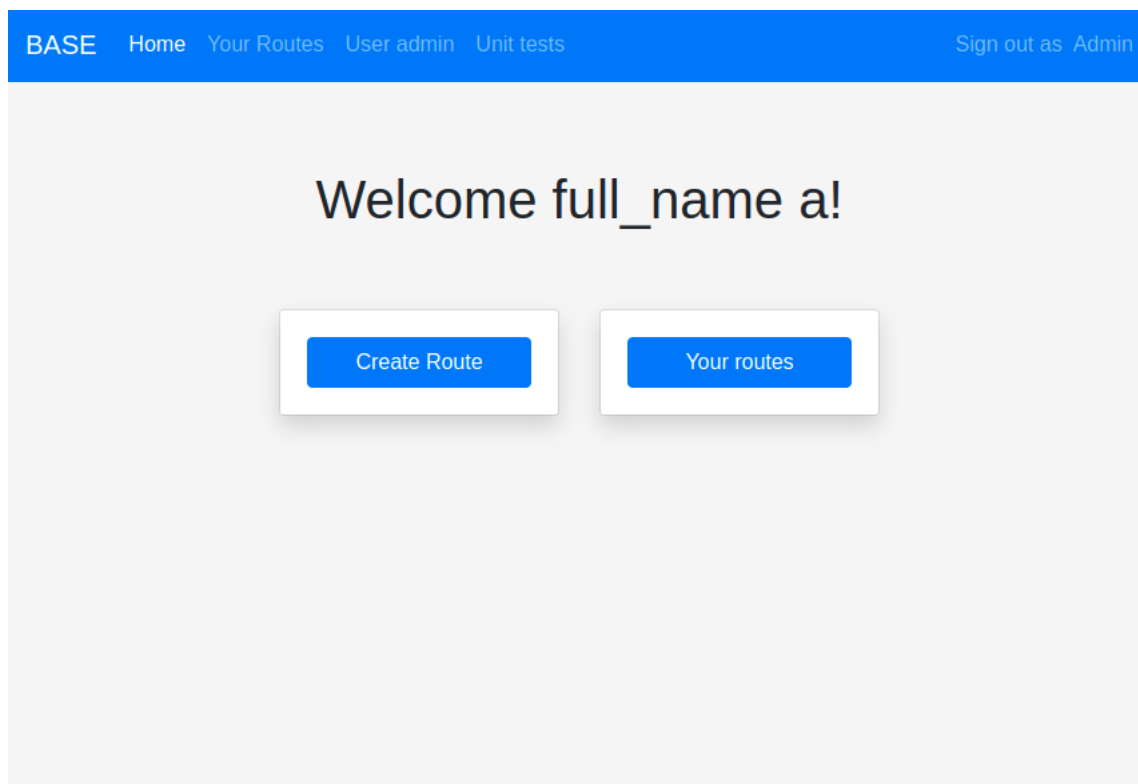


Figure 7: The admin main page, which has the addition to navigate to the "User admin" page

5.8 Admin Changing User Profiles

As seen in Figure 8, an admin in the "User Admin page" can add or remove users. They can also change the profile details of users. This is a very important admin feature since the delivered system does not allow users to edit this themselves.

The screenshot shows the "User Admin" interface. At the top is a blue navigation bar with links: "BASE", "Home", "Your Routes", "User admin" (active), and "Unit tests". On the right of the bar is a "Sign out as: Admin" link. Below the navigation bar is the "User Admin" title. On the left is a sidebar with a list of roles: "Admin", "Test", "Passenger", "Driver", "Both", and "joe@email.com" (highlighted in blue). Below the roles is a green button with a plus icon and the text "Add New User". The main area contains a form for editing a user profile. The form fields are: "Id" (6), "Email" (joe@email.com, with a note "Minimum 4 characters."), "Full Name" (Joe Smith, with a note "Minimum 4 characters."), "Phone number" (123455, with a note "Minimum 10 digits."), "Password" (Password, with a note "Minimum 8 characters." and a "Change" button), and "Select role" (Driver, with a dropdown arrow). Below the form are three buttons: "Submit" (blue), "Reset" (grey), and "Delete" (red). At the bottom is a section titled "Users vehicles" with a text input containing "ABC 123" and a red "Remove" button.

Figure 8: The user admin page where the admin can change profile details