Politecnico di Milano
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Software Engineering 2: “myTaxiService”
Design Document

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Contents

1 Introduction

1.1 Purpose

1.2 Scope

1.3 Definitions, acronyms, abbreviations

1.4 Reference documents

1.5 Document structure

2 Architectural design

2.1 Overview

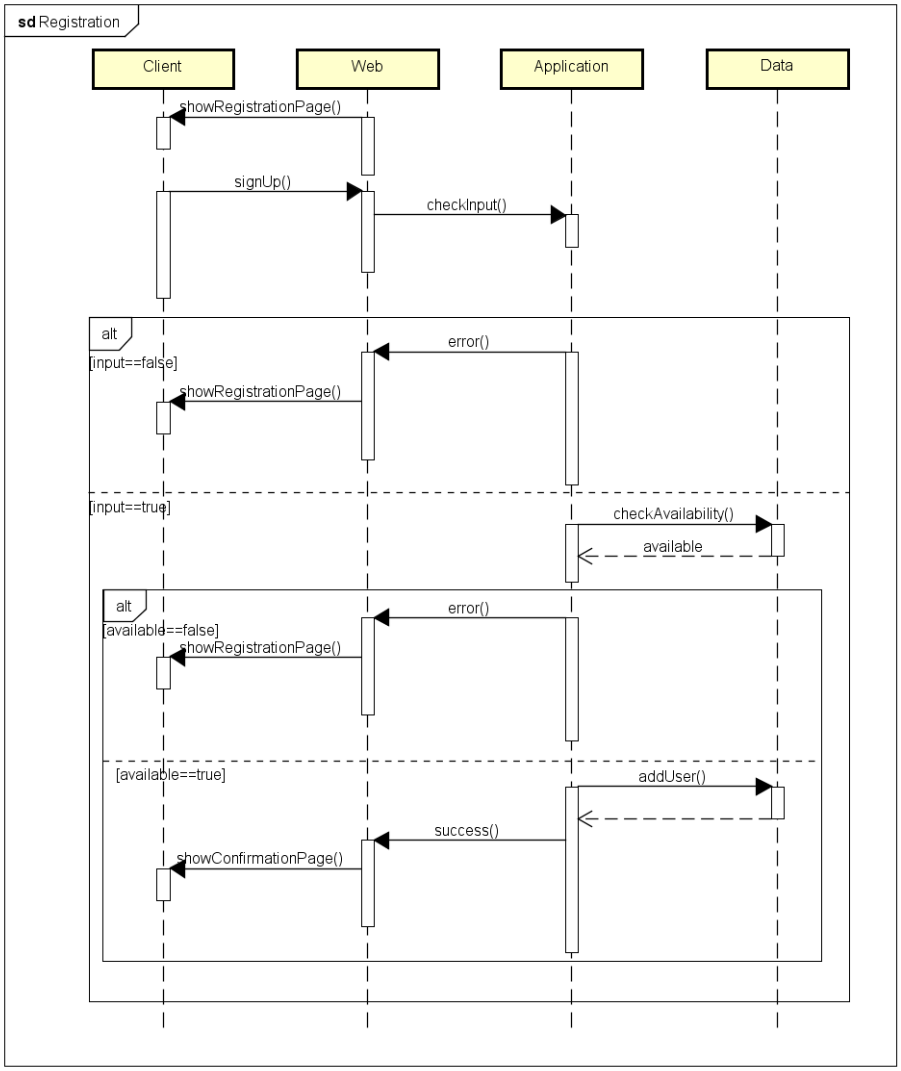
2.2 High level components and their interaction

2.3 Component view

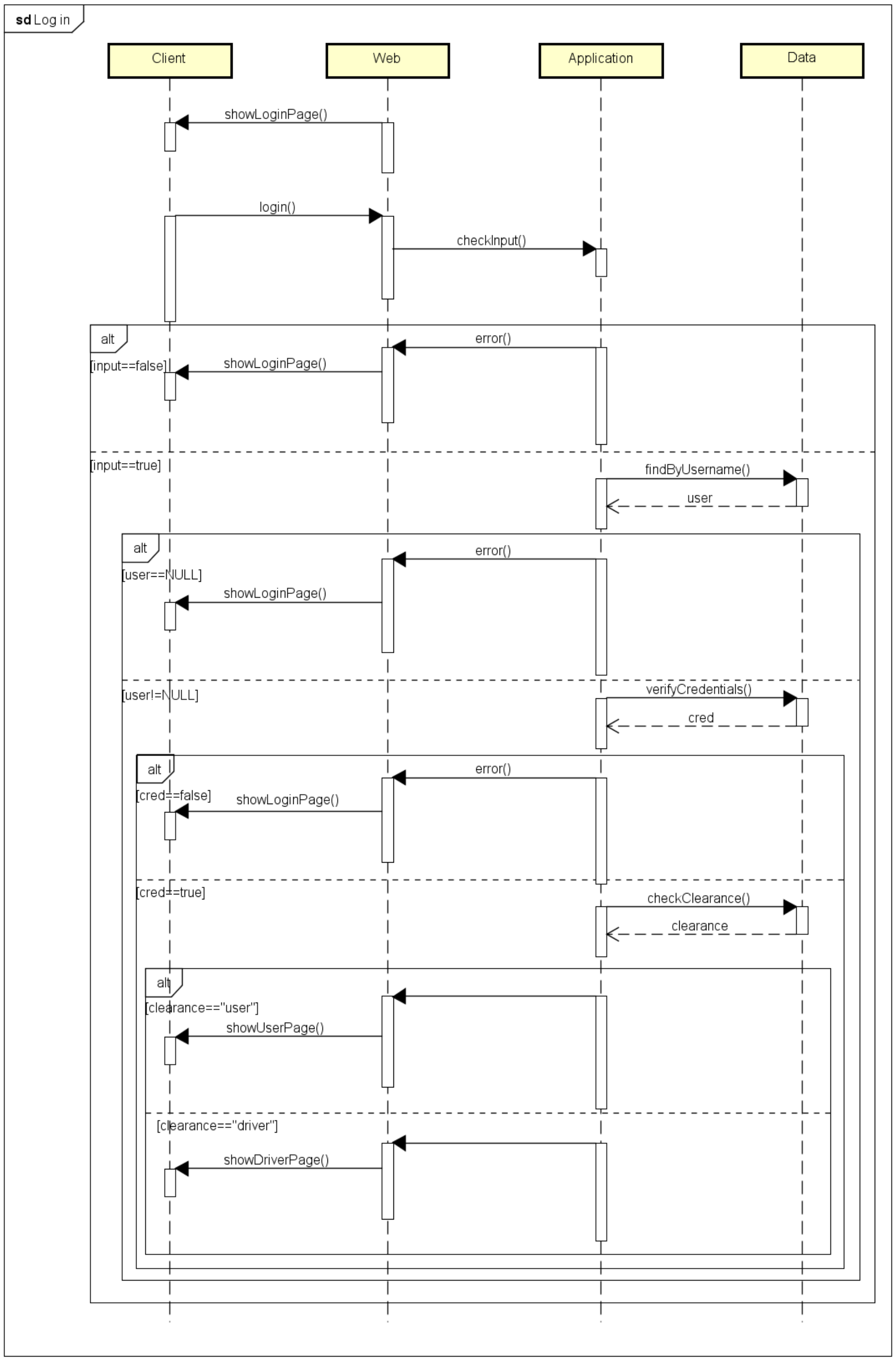
2.4 Deployment view

2.5 Runtime view

2.5.1 Registration

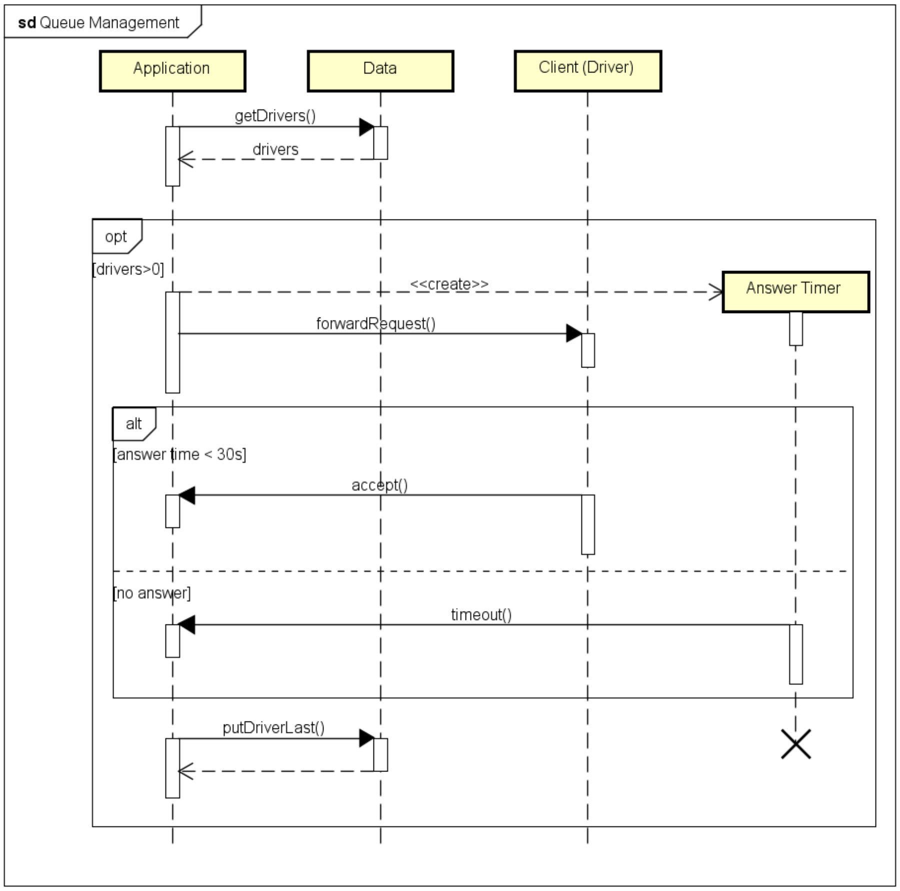


2.5.2 Log in

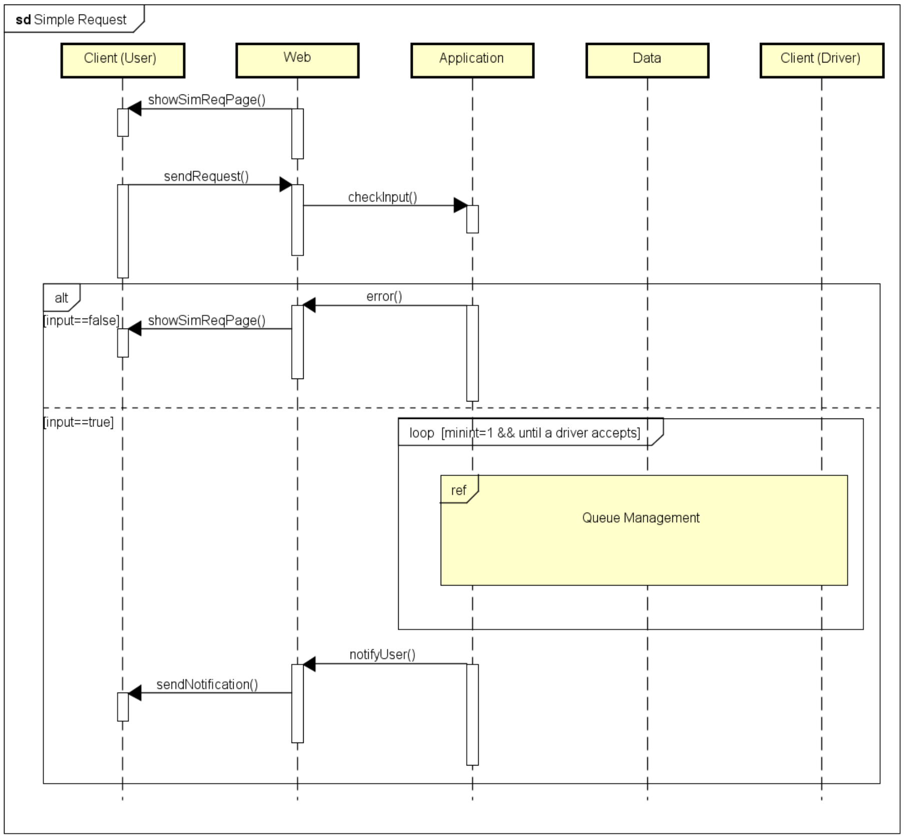

sd Log in
Client
Web
Application
Data
showLoginPage()
login()
checkInput()
alt
[input==false]
error()
showLoginPage()
[input==true]
findByUsername()
user
alt
[user==NULL]
error()
showLoginPage()
[user!=NULL]
verifyCredentials()
cred
alt
[cred==false]
error()
showLoginPage()
[cred==true]
checkClearance()
clearance
alt
[clearance=="user"]
showUserPage()
[clearance=="driver"]
showDriverPage()

2.5.3 Queue management

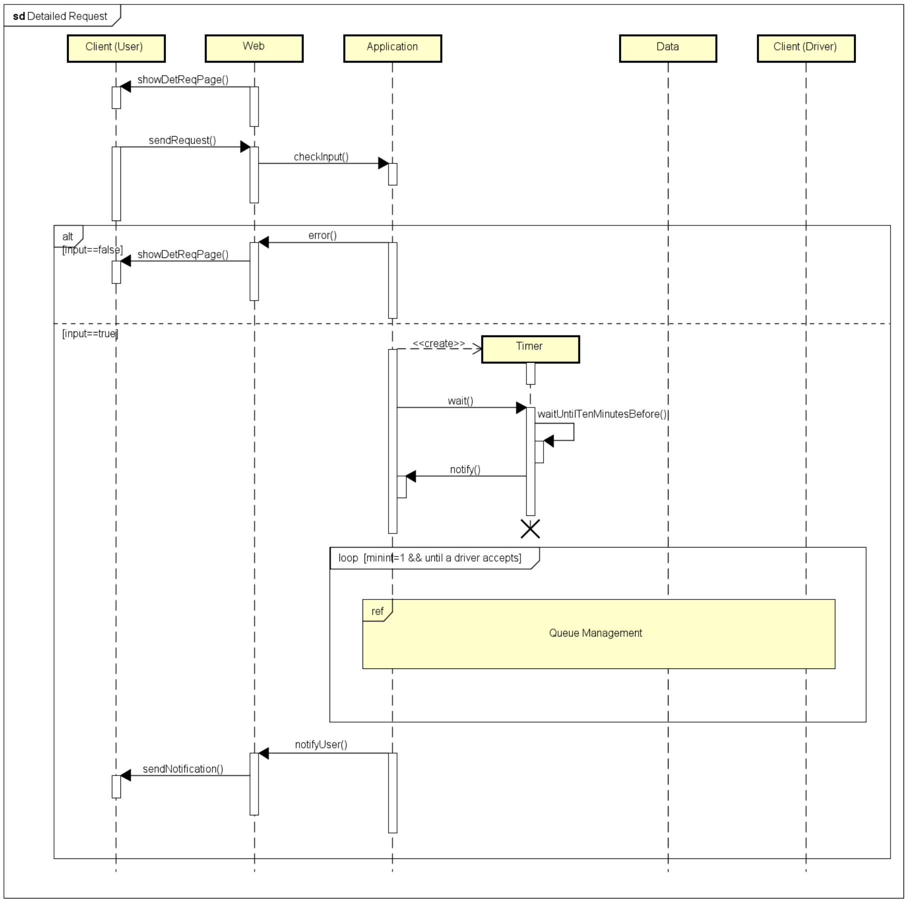
This sequence diagram represents how the application manage to forward a request to a driver.



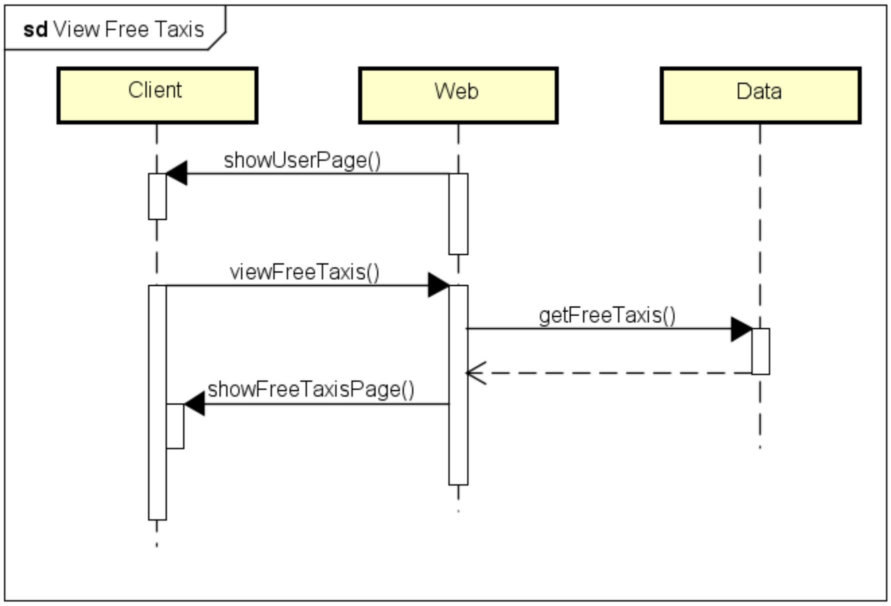
2.5.4 Simple request



2.5.5 Detailed request



2.5.6 View free taxis



2.6 Component interfaces

2.7 Selected architectural styles and patterns

2.8 Other design decisions

3 Algorithm design

3.1 Registration

The algorithm takes in account the completeness, the correctness and the availability of the information inserted.

After the guest submits the information the application checks if all the mandatory fields are filled and if the "confirmation" fields, such as password and email, correspond to the respective previous ones.

If one of the above doesn't apply, the application shows again the registration page to the guest. If they do, then it looks up into the database to verify that the username and email inserted are not already in use.

If they don't, then the user is added to the database and is shown a confirmation page, inviting him to log in., otherwise the registration page is shown again.

3.2 Log in

After the guest inputs his credentials, the application first checks if both fields are filled, then looks for the username in the database to see if it exists. If it does, it checks if the password matches too.

If all of these steps are verified, the guest is logged in and is shown his personal page, otherwise the application shows the login page again.

After the password verification, the application will check the privileges of the account that is about to log in and will consequently show the respective page, be it user's or driver's.

3.3 Simple request

After the user clicks on the "Simple request" button, he is shown the simple request page.

After he inserts the origin of his ride and press the "Request" button, the application will then begin to allocate the first available taxi, otherwise if there's none it will just wait until one becomes available.

After forwarding the request to the taxi, the system will wait 30 seconds, if the driver answers the call he will be in charge for that request, or else the system forwards the request to the next available taxi in queue. In both cases the driver will be put at th end of the queue.

Once the taxi is allocated, the user is informed with a notification containing the code of the taxi and the waiing time.

3.4 Detailed request

After the user click on the "Detailed request" button, he is shown the detiled request page.

The user must fill the form and click on the "Request" button. The application will then check if all the fields are filled and if time and date are formally correct. If that's so, the system will wait until 10 minutes before the ride and then begin to allocate a taxi for the request.

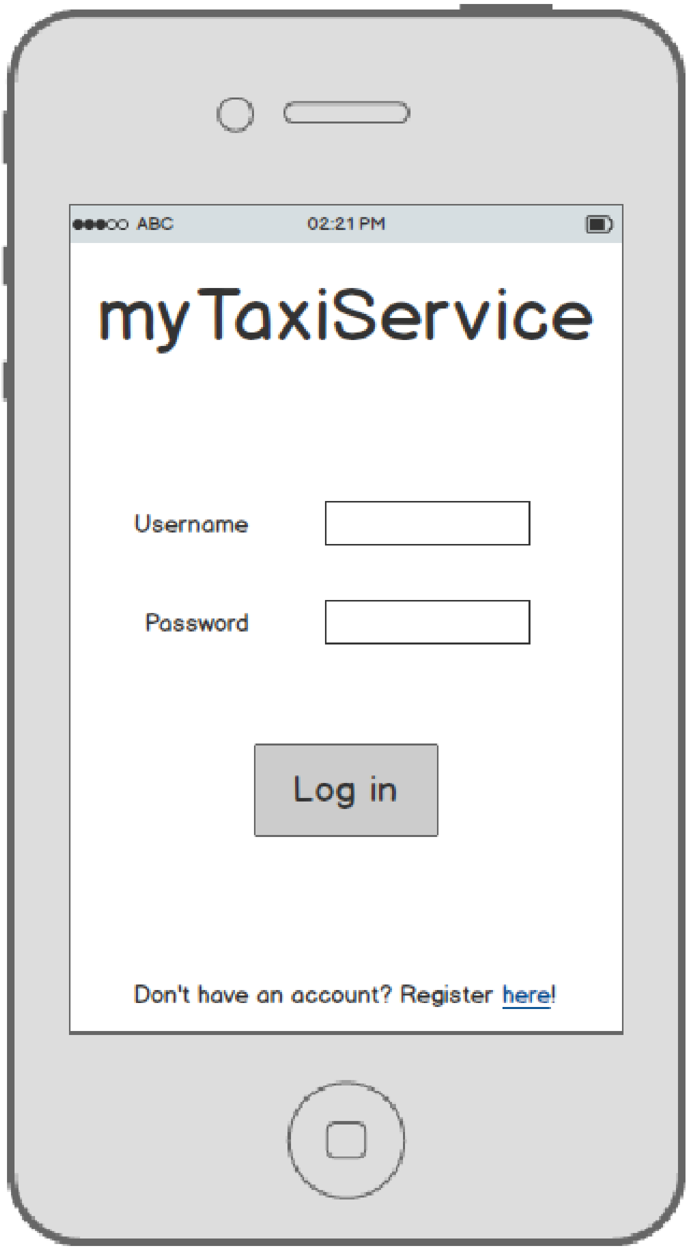
The following taxi allocation, queue management and notification works as the one in the simple request.

3.5 View free taxis

The users can look at the number of available taxis in their zone. By clicking on the "View available taxis" button, the application will query the database about it, and then return the result to a new page.

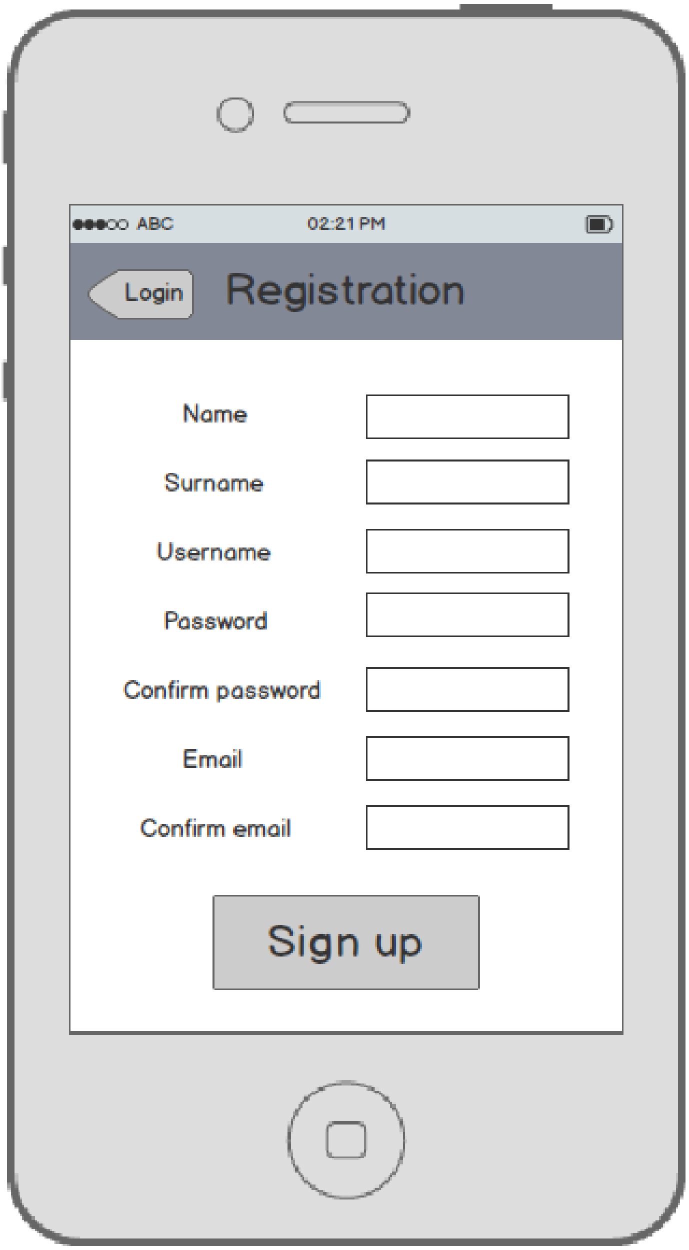
4 User interface design

4.1 Log in page

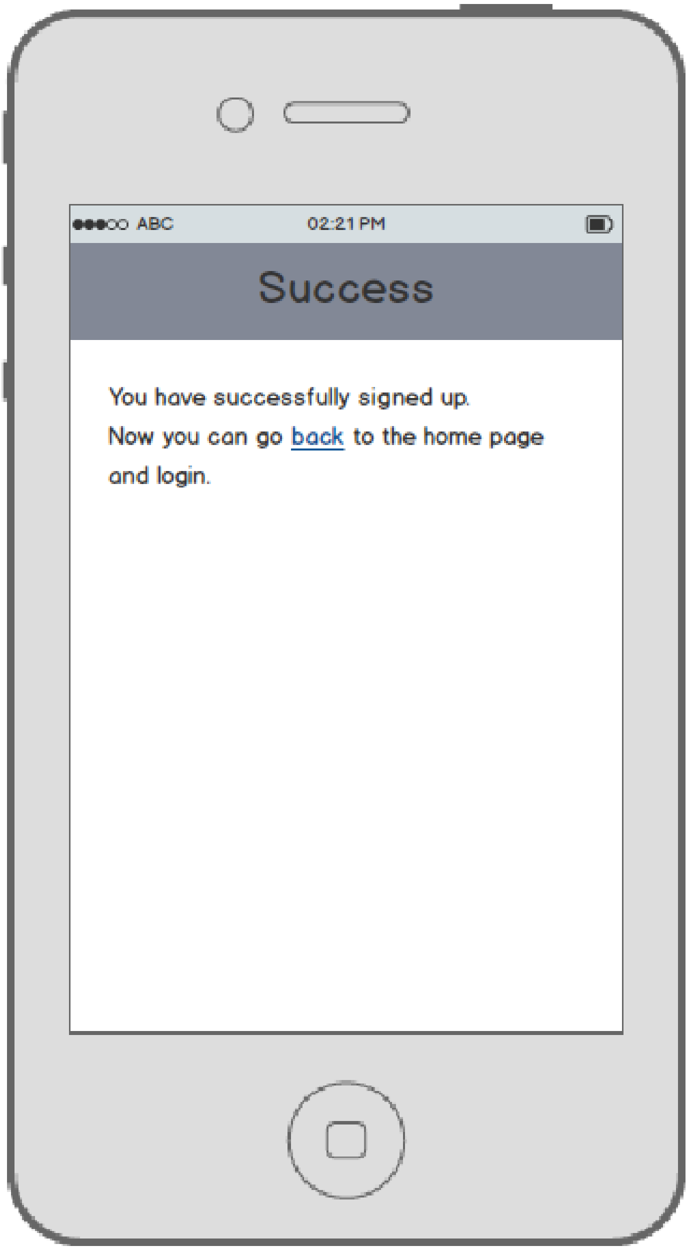


Don't have an account? Register here!

4.2 Registration page

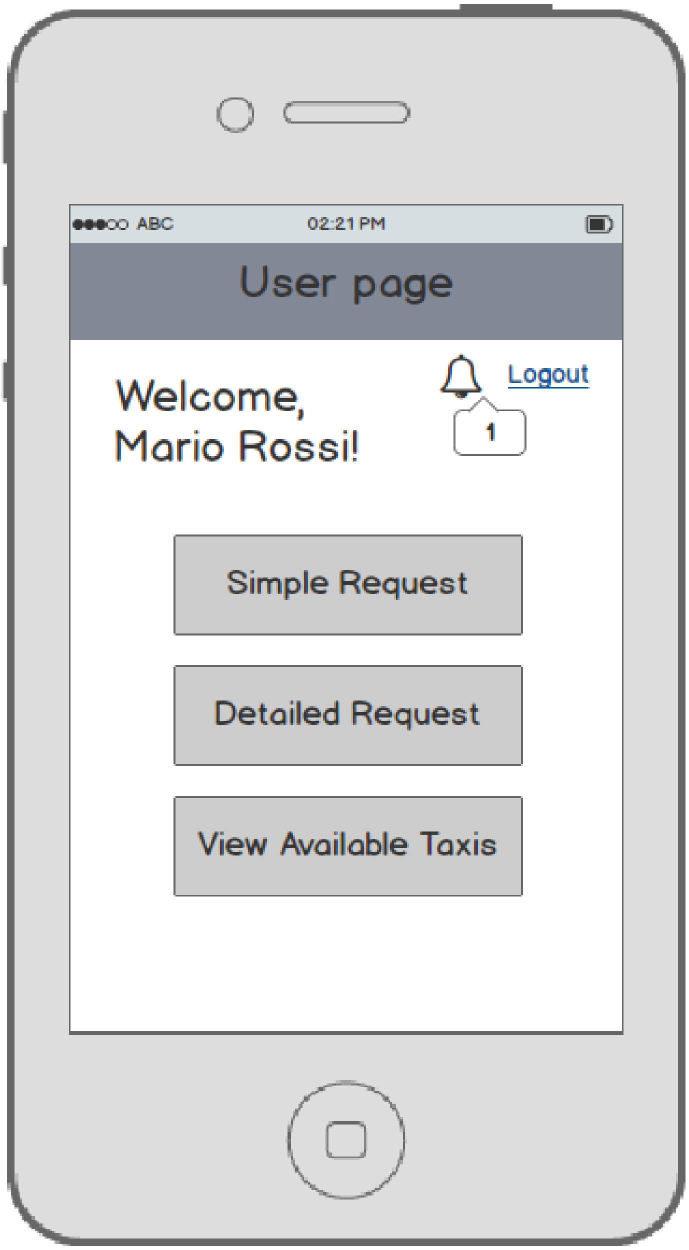


4.3 Confirmation page



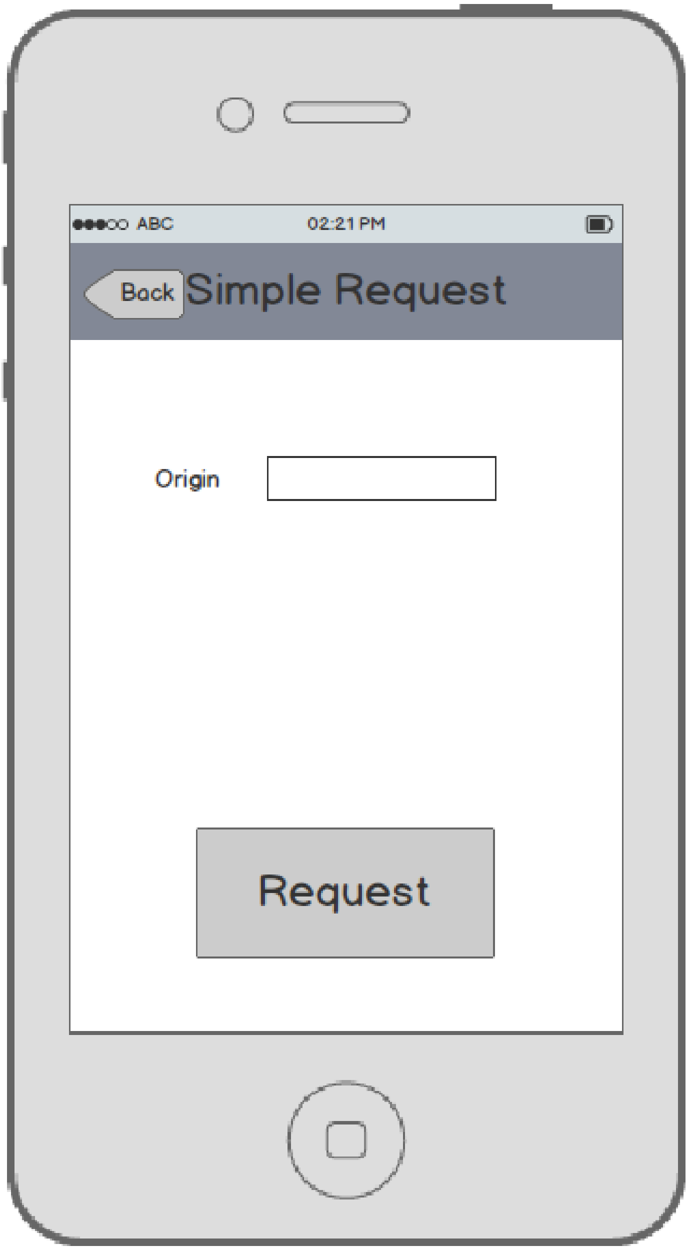
You have successfully signed up.
Now you can go back to the home page
and login.

4.4 User page

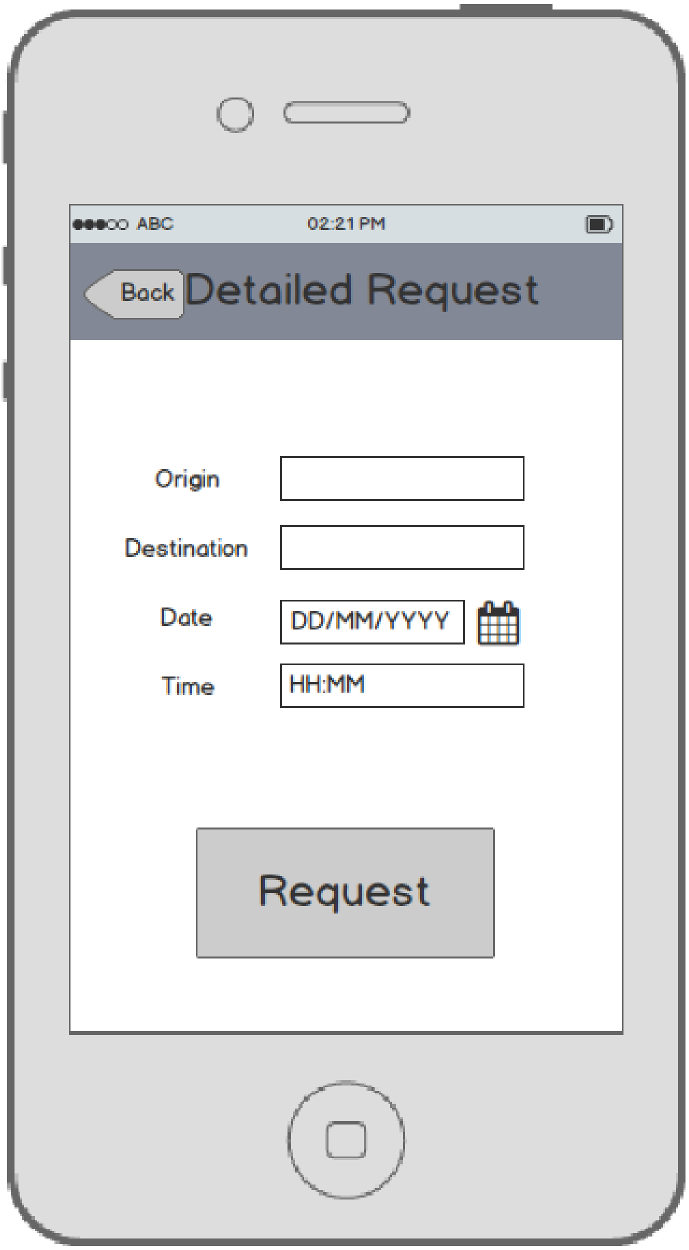


Welcome,
Mario Rossi!

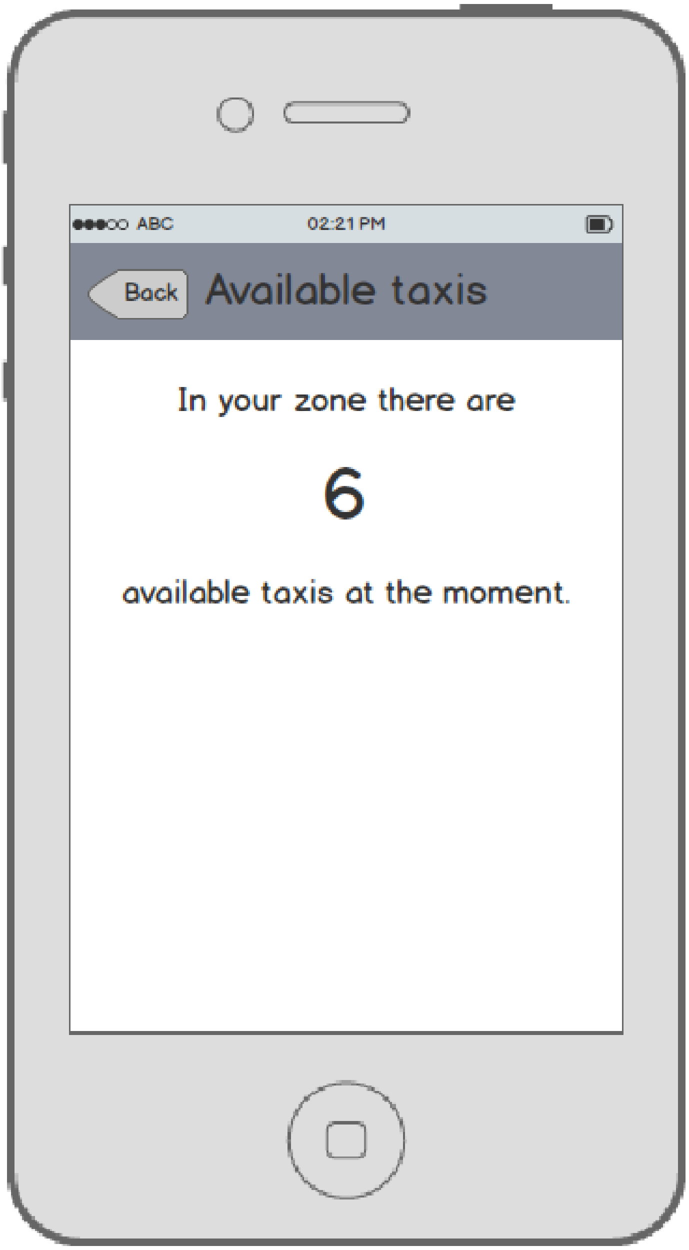
4.5 Simple Request



4.6 Detailed Request



4.7 Available taxis page

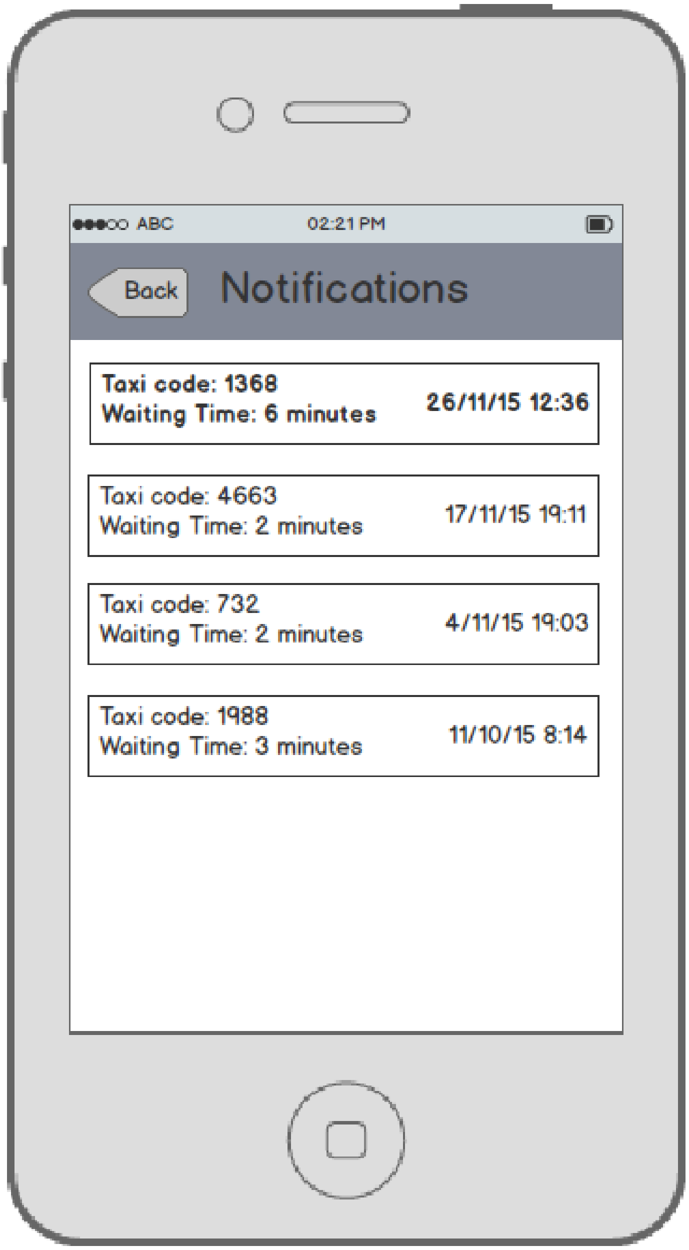


In your zone there are

6

available taxis at the moment.

4.8 User notifications page



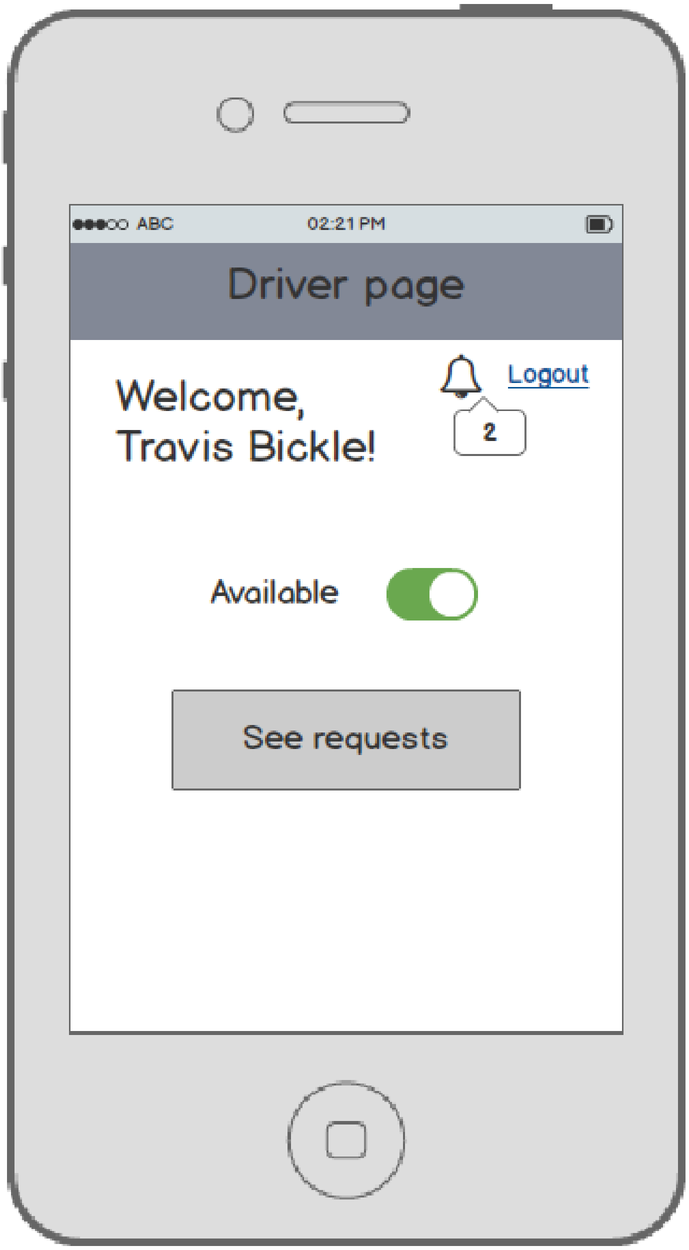
Taxi code: 1368
Waiting Time: 6 minutes **26/11/15 12:36**

Taxi code: 4663
Waiting Time: 2 minutes 17/11/15 19:11

Taxi code: 732
Waiting Time: 2 minutes 4/11/15 19:03

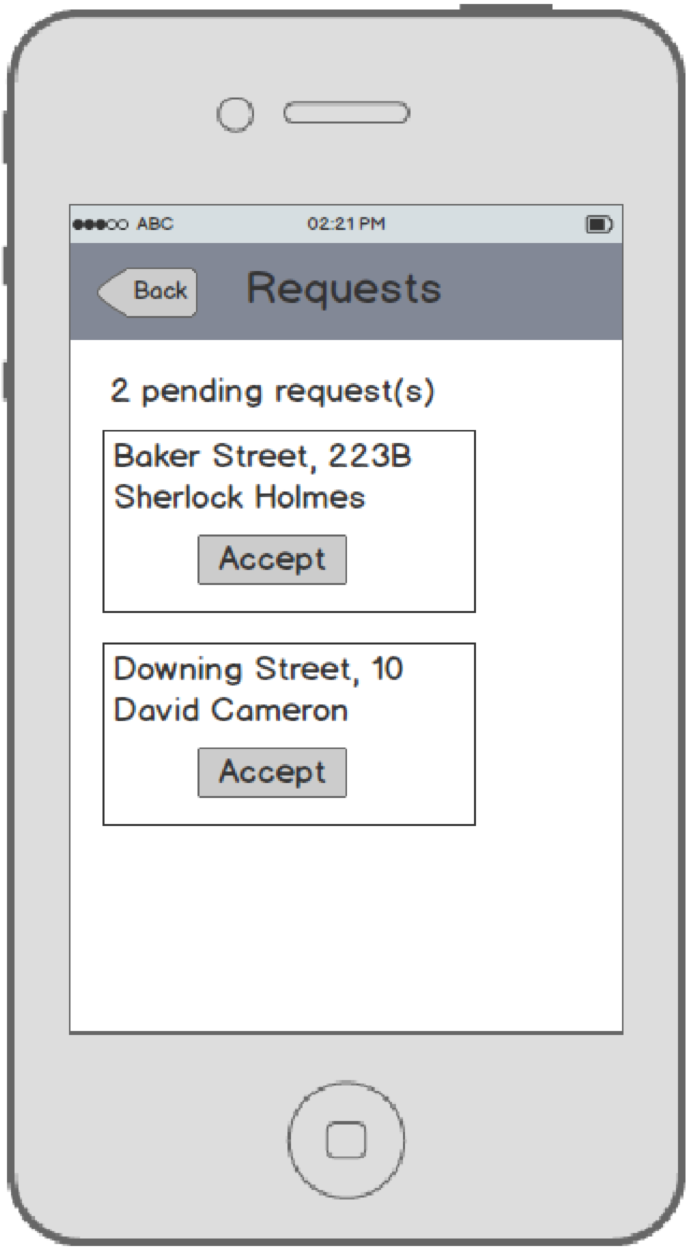
Taxi code: 1988
Waiting Time: 3 minutes 11/10/15 8:14

4.9 Driver page



Welcome,
Travis Bickle!

4.10 Requests page



2 pending request(s)

Baker Street, 223B
Sherlock Holmes

Downing Street, 10
David Cameron

5 Requirements traceability

6 References