

Software Engineering 2: myTaxiService

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Context

- Aim: build a taxi management system for a medium-large city
- The city area is divided in taxi zones, there must be a taxi queue for each zone
- Taxis are matched with requests depending on the zone they come from
- Interaction with the system happens through smartphones, tablets and web browser
- Support both immediate requests and reservations (for registered users only)
- The existing taxi management service of the city is fully migrated and decommissioned
- 24/7 service (ideally)

Domain Assumptions (I)

- Taxis are uniquely associated to drivers and viceversa
- Passengers don't need to choose a particular taxi driver among those available for their ride.
- Taxi drivers are provided with a mobile phone with an active data plan by the city council.
- Passengers are not allowed to place reservations more than 15 days in advance or cancel reservations after a taxi has already been scheduled for them
- Rides can be requested by all passengers, while reservations can only be placed by registered passengers.
- The only taxis eligible for fulfilling a reservation are the ones present in the queue of the zone associated with the reservation source address 10 minutes before the scheduled meeting time.

Domain Assumptions (II)

- In order to receive ride requests, a taxi driver must explicitly mark himself as available.
- A taxi driver will not be able to receive ride requests while he's unavailable.
- Taxis that are considered to be out-of-city will not be able to receive calls.
- A taxi driver who is currently on a ride will not be able to receive calls.
- A taxi driver must always notify the system when he terminates a ride.
- After a taxi driver has been associated to a call, he must confirm or refuse the request within two minutes. After that period of time, the call is considered refused.
- If no taxis are available to fulfill a reservation 10 minutes before the scheduled meeting time, attempts of rescheduling are to be made at intervals of 2 minutes for at most 20 times.

Functional Requirements

- The city administration must have the possibility to enter and update taxi driver data and the taxi zone division
- Taxi drivers must be able to
 - communicate their availability status
 - receive, accept, refuse and drop ride requests
 - communicate they have terminated a ride
- Passengers must be able to request rides and, if logged in, also place and manage their reservations
- The system must support third party expansion through plugins and remote services
- It must be possible to verify the identity of a passenger before taking him onboard

Stakeholders and actors

STAKEHOLDERS

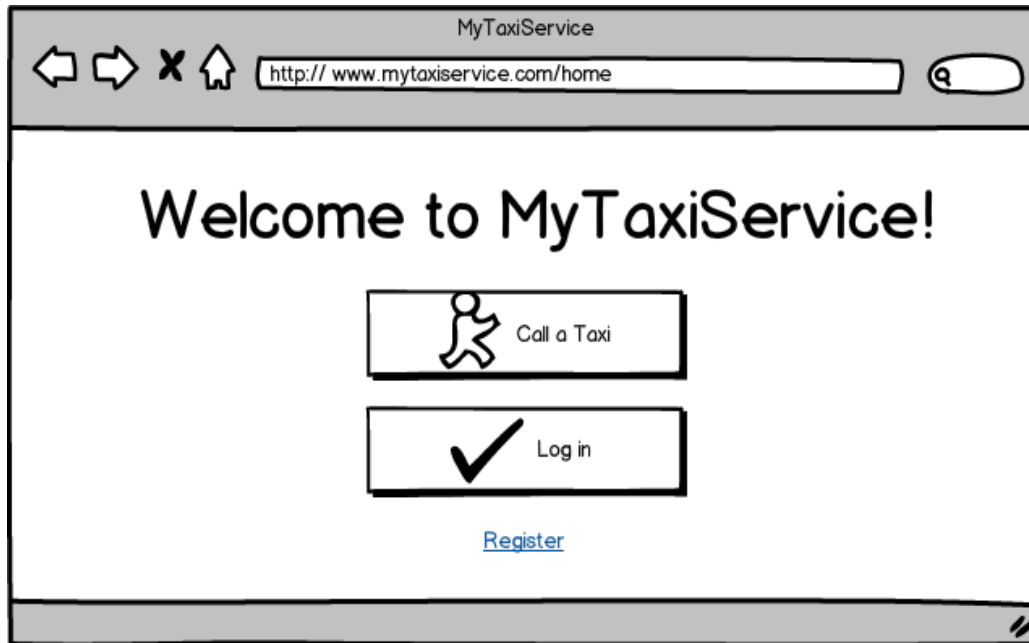
- Passengers
- Taxi drivers
- City council
- Taxi drivers' union
- Mobile phone producers
- Wireless carriers
- Third party developers

ACTORS

- Guest passenger
- Guest taxi driver
- Logged in passenger
- Logged in taxi driver
- Administrative personnel
- Mapping service
- Remote services

UI Mockup (I)


HOMEPAGE




MyTaxiService

http:// www.mytaxiservice.com/home

Welcome to MyTaxiService!

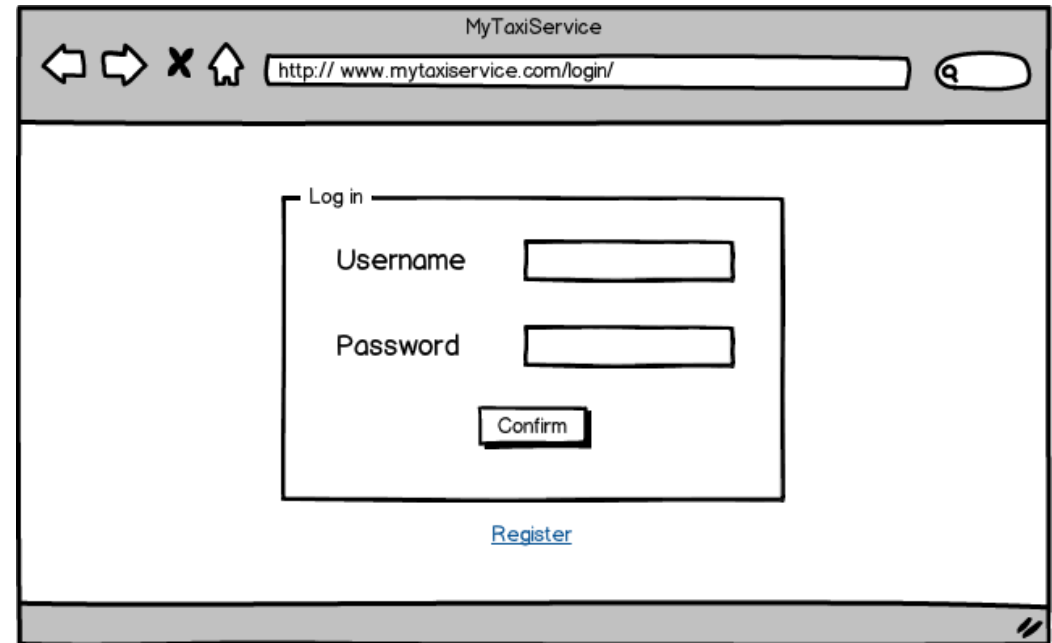
 Call a Taxi

 Log in

[Register](#)

The homepage mockup features a browser window with the title 'MyTaxiService' and the URL 'http:// www.mytaxiservice.com/home'. The main content area displays a large 'Welcome to MyTaxiService!' message. Below this, there are two prominent buttons: 'Call a Taxi' with a taxi icon and 'Log in' with a checkmark icon. At the bottom, there is a blue 'Register' link. The browser window includes standard navigation icons (back, forward, stop, home) and a search bar.

USER LOGIN



MyTaxiService

http:// www.mytaxiservice.com/login/

Log in

Username

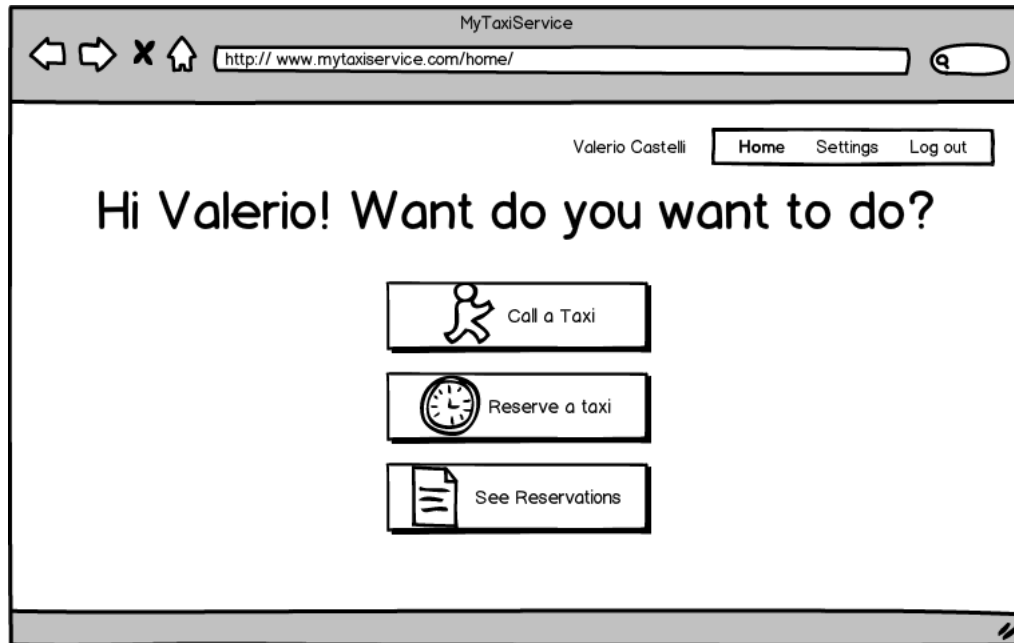
Password

[Register](#)

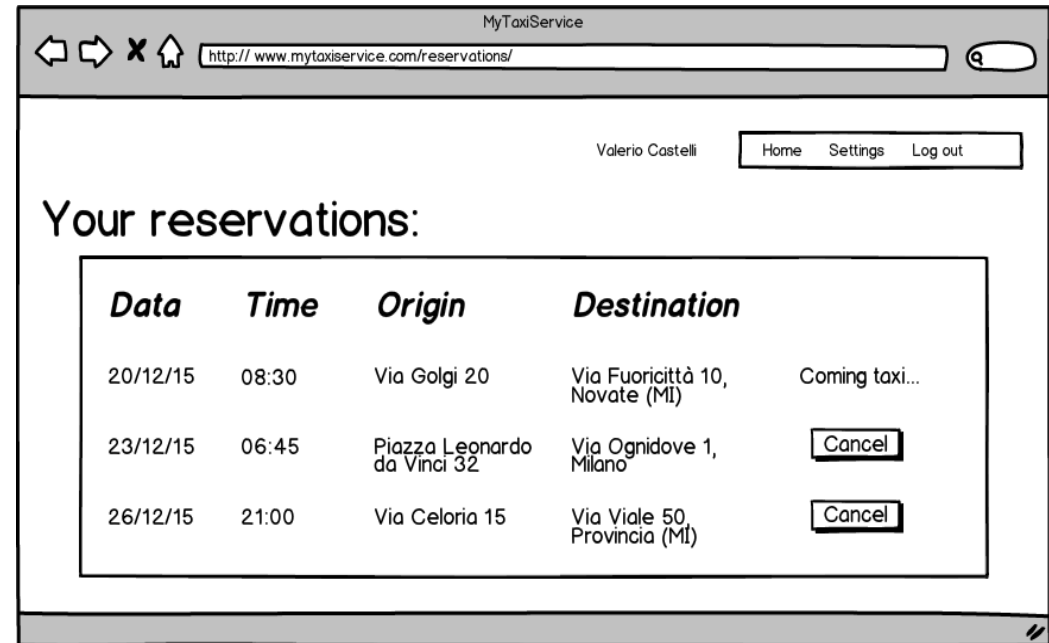
The login page mockup features a browser window with the title 'MyTaxiService' and the URL 'http:// www.mytaxiservice.com/login/'. The main content area contains a 'Log in' section with two input fields for 'Username' and 'Password', and a 'Confirm' button. Below the login section, there is a blue 'Register' link. The browser window includes standard navigation icons (back, forward, stop, home) and a search bar.

UI Mockup (II)

PASSENGER HOMEPAGE

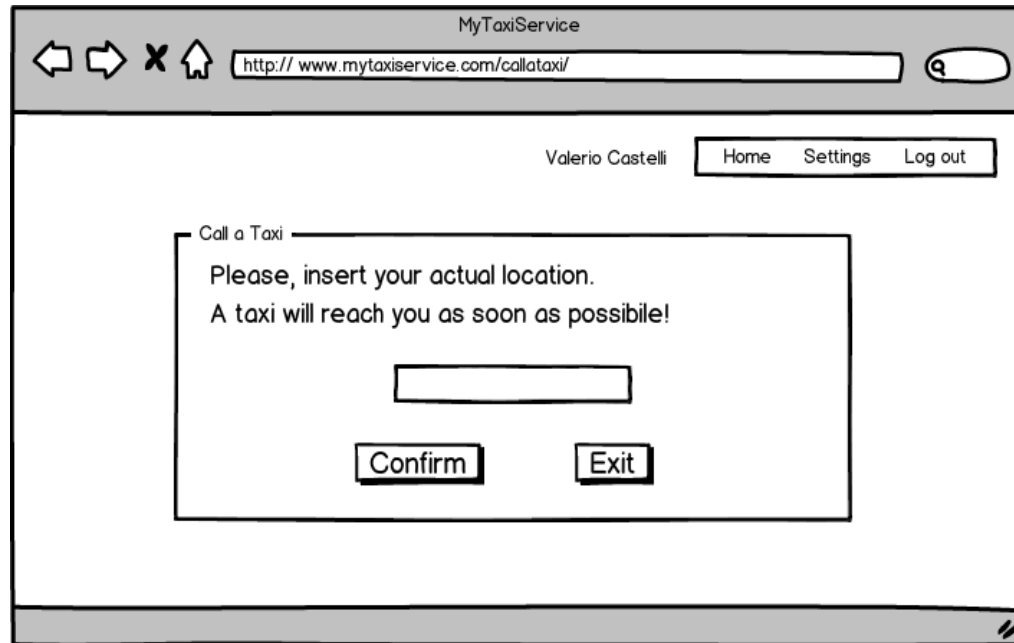


PASSENGER RESERVATIONS



UI Mockup (III)

PASSENGER HOMEPAGE



MyTaxiService

http:// www.mytaxiservice.com/callataxi/

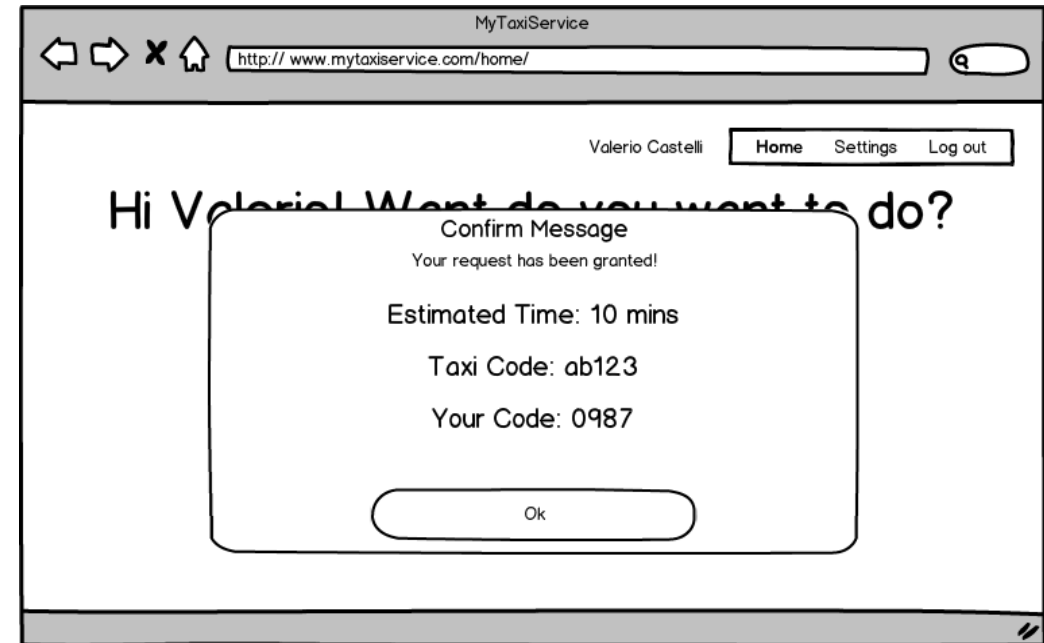
Valerio Castelli Home Settings Log out

Call a Taxi

Please, insert your actual location.
A taxi will reach you as soon as possible!

Confirm Exit

PASSENGER RESERVATIONS



MyTaxiService

http:// www.mytaxiservice.com/home/

Valerio Castelli Home Settings Log out

Hi Valerio! What do you want to do?

Confirm Message

Your request has been granted!

Estimated Time: 10 mins

Taxi Code: ab123

Your Code: 0987

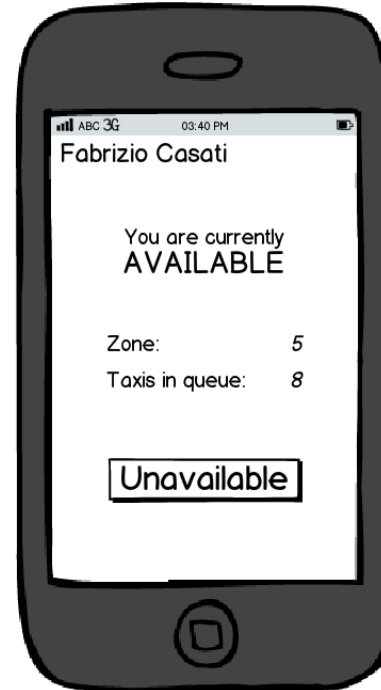
Ok

UI Mockup (IV)

MOBILE LOGIN



TAXI AVAILABLE

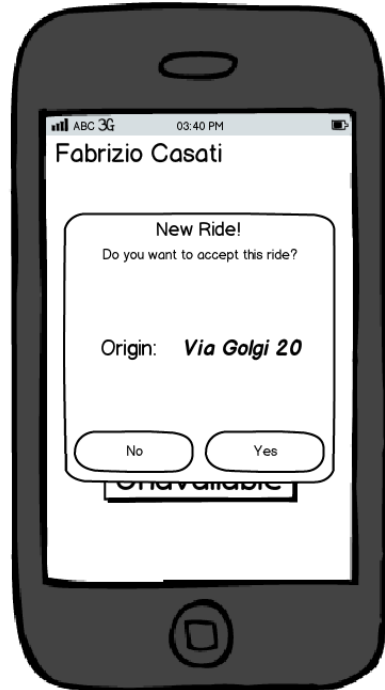


TAXI UNAVAILABLE

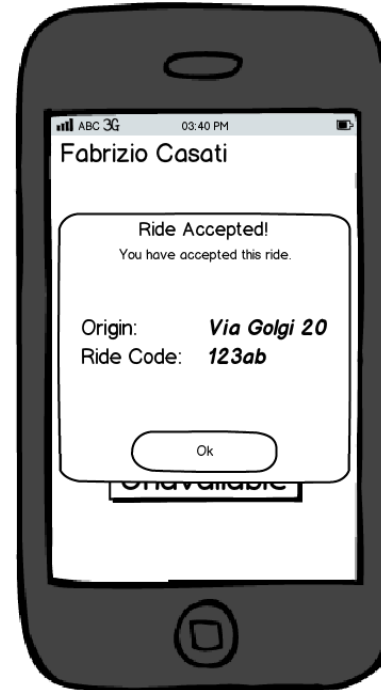


UI Mockup (V)

RIDE REQUEST



ACCEPTED RIDE



CURRENTLY RIDING

