Functional Requirements

**Goal 1**

Allow a user to register and authenticate to the service

**Functional Requirements**

* The user must not be already registered
* The username chosen by the user in the registration phase must be unique
* The password must contain at least a capital letter, a number and a symbol and can’t be shorter than 8 characters (non functional)
* The user must confirm his email address in order to become a registered user
* The personal data inserted in the registration phase must be correct and valid
* The authentication data inserted must be correct in order to authenticate
* If the user is not authenticated, he can only see the authentication/registration page

**Goal 2**

Allow the user to request a taxi. Inform the taxi driver of the request and the position of the passenger

**Functional Requirements**

* The user must be authenticated
* The address inserted in the request must be correct and valid
* The taxi driver must accept the forwarded request using his mobile app
* The system must calculate the estimated time for the arrival of the taxi and inform the user
* The user must get in the taxi by 10 minutes from its arrival (non functional)
* The system must forward the request to an available taxi
* The taxi must go to the requesting user as soon as he accepts the request

**Goal 3**

Manage the taxis in order to fulfil all the requests

**Functional Requirements**

* The system puts the taxis at the bottom of the queue of the area where they finish the rides
* If an area has a full queue, the system must send the taxi in the area with the least available taxies
* When a user makes a request, the system must send the nearest taxi available
* If there isn’t any available taxi when a user makes a request, the system must warn the user
* If a taxi doesn’t accept a request in a maximum of 5 minutes, the system forwards the request to another taxi and puts the first one at the bottom of the queue (non functional plus functional to be divided)

**Goal 4**

Allow the user to reserve a ride at a specific date and time

**Functional Requirements**

* The user must be authenticated
* The data inserted by the user must be valid and correct
* The system must dispatch a taxi for the reservation 10 minutes before the requested time
* The user must get in the taxi by 10 minutes from the arrival of the taxi
* If something happens to the taxi while driving towards the user, the system must warn the user (and send another taxi???)
* The taxi must be at the user’s position at the requested time

**Goal 5**

Allow some users to share a ride on the same route and the related cost

**Functional Requirements**

* The users must be authenticated
* The data inserted by the users must be valid and correct
* In order to share a ride, the different users must be on the same route (in a range of 500 meters, non functional)
* The system must calculate the fee for every user, dividing the total fee and weighting it on the amount of kilometres done by each of them
* There can’t be more than 4 passengers in a taxi at the same time
* The total number of passengers for a shared ride can be greater than 4 if the constraint above is respected
* If a shared ride is made for a single user, the system calculates the fee as it does for a simple request