

myTaxiService
Requirements Analysis and Specification
Document

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Chapter 1

Introduction

1.1 Purpose

This document represent the Requirement Analysis and Specication Document (RASD). The main goal of this document is to completely describe the system in terms of functional and non-functional requirements, analyse the real need of the customer to modelling the system, show the constraints and the limit of the software and simulate the typical use cases that will occur after the development. This document is intended to all developer and programmer who have to implement the requirements, to system analyst who want to integrate other system with this one, and could be used as a contractual basis between the customer and the developer.

1.2 Scope

The system described in this document is a taxi service for large cities. The main goals of the system are: 1) simplify the access of passangers to the service 2) guarantee a fair management of taxi queues. The system is composed by a web application, a mobile application and a web server.

There are three types of actors that can use the system: visitors, taxi drivers and passengers. Visitors have only two operations allowed: log in or sign in. Passengers can use both the web application and the mobile application to request a taxi. Taxi drivers use only the mobile application to modify their status and to confirm to the system that they are going to take care of a certain request from a certain passenger.

The system, when a passenger request a taxi, informs an available taxi driver (FIFO mode) about the current position of that passenger. At this time the taxi driver has two options:

- accept : the system sends a notification to the passenger with the estimated waiting time

- reject : the system searches for another available taxi driver

The system allows also a passenger to:

- reserve a taxi by specifying the origin and the destination of the ride
- share a taxi with others (if possible) by specifying all the rides that he/she wants to share. In this case the system defines the cost of the ride for each passenger

Besides the specific user interfaces for passengers and taxi drivers, the system offers also APIs to enable the development of additional services on top of the basic one.

1.3 Definitions, Acronyms, Abbreviations

1.3.1 Definitions

- User: person that uses the service applications.
- Visitor: user that has not registered nor logged in.
- Registered user: user that has registered to the service.
- Passenger: passenger registered to the service.
- Taxi driver: taxi driver registered to the service.
- System: the union of software and hardware to be developed and implemented.

1.3.2 Acronyms

1.3.3 Abbreviations

1.4 Actors

1.5 Identifying stakeholders

The main stakeholder of the project is the government of a large city. The government, with the help of the transport council, decided to improve the actual taxi service with MyTaxiService. With MyTaxiService the stakeholders want to:

- simplify the access of passengers to the service
- guarantee a fair management of taxi queues
- give the possibility to the passengers to reserve a taxi
- give the possibility to a passenger to share a taxi with other passengers

1.6 Reference documents

- Software Engineering 2 Project AA 2015/2016: Project Description And Rules
- Software Engineering 2 Project AA 2015/2016: Assignments 1 and 2 (RASD and DD)
- Software Engineering 2 Project AA 2015/2016: RASD-meteocal-example1
- Software Engineering 2 Project AA 2015/2016: RASD-meteocal-example2

1.7 Overview

This document is essentially structured in three parts:

- Section 1: Introduction: it gives a description of the document and some basic information about the system. It also identifies the stakeholders and the actors involved.
- Section 2: Overall Description: it gives general information about the software and hardware product, constraints and assumptions.
- Section 3: Specific Requirements: this is the core of the document. It describes the functional and non-functional requirements combined with some scenarios. There is also a class diagram that gives an overall representation of the system.

Chapter 2

Overall Description

2.1 Product perspective

2.2 Product functions

2.3 User characteristics

2.4 Constraints

2.5 Assumptions and Dependencies

2.6 Future implementation

Chapter 3

Specific Requirements

3.1 External Interface Requirements

3.1.1 User interfaces

The interface of MyTaxiService can be for web application and mobile application. Here will be presented some of the most important pages and screens of MyTaxiService.

Log in: In the figure below is shown the MyTaxiService's homepage



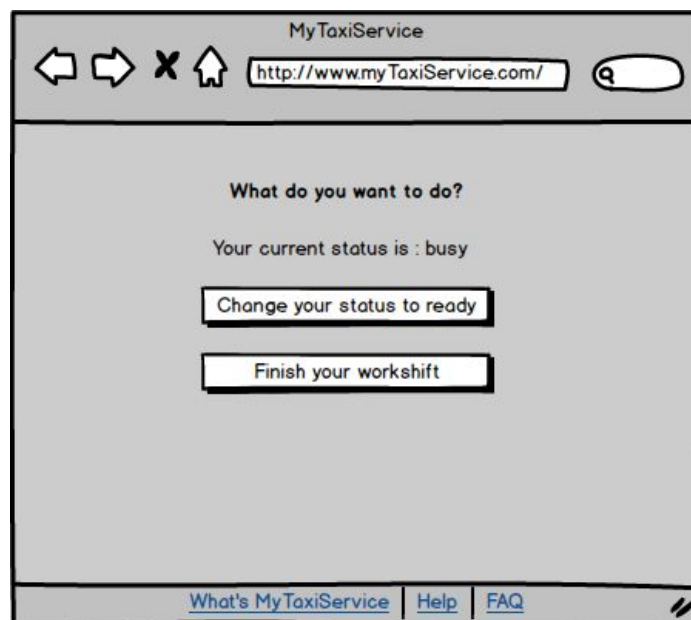
Registration: Here the visitor can sig up to the application

The image shows two versions of the registration form for 'MyTaxiService'. On the left is a desktop browser view with a title bar, address bar (http://www.myTaxiService.com/), and navigation buttons. The form includes input fields for First Name, Surname, Username, Password, Repeat Password, and E-mail. Below these is a 'Confirm' button and a checkbox for 'I accept the terms & conditions'. On the right is a mobile app view with a status bar (ABC 03:15 PM) and the same form fields, but with a 'see Terms & conditions' link and a 'Confirm' button.

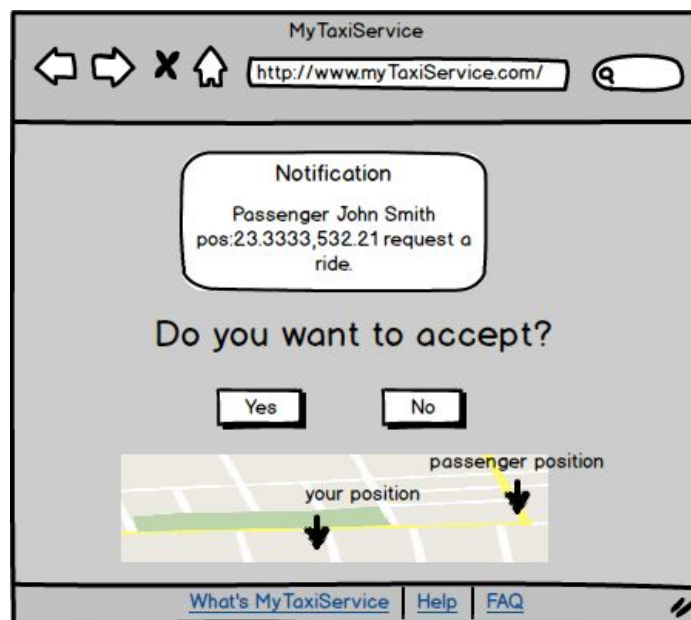
Passenger view: This is the view of the passenger

The image shows two versions of the passenger view for 'MyTaxiService'. On the left is a desktop browser view with a title bar, address bar (http://www.myTaxiService.com/), and navigation buttons. The main content area has the heading 'What do you want to do?' followed by three buttons: 'Request a taxi', 'Reserve a taxi', and 'Share a taxi'. Below these is a map with a green area and a yellow line, with an arrow pointing to it and the text 'You are here'. On the right is a mobile app view with a status bar (ABC 04:50 PM) and the same content, but with a 'You are here' label above the map.

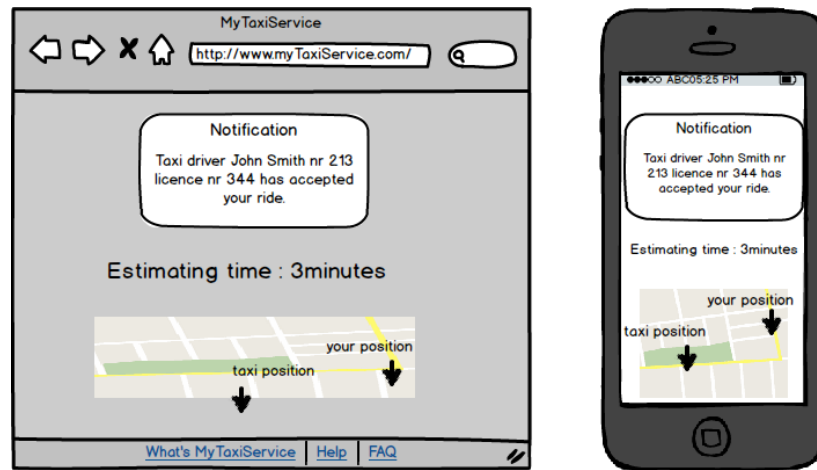
Taxi driver view: This is the view of the taxi driver



Taxi driver notification: This is the notification that the taxi driver, chosen by the system, see when a passenger request a ride.



Passenger notification : This is the notification that the passenger see when a taxi accept the ride



3.1.2 API interfaces

3.1.3 Hardware interfaces

MyTaxiService doesn't support any hardware interfaces.

3.1.4 Software interfaces

3.1.5 Communication interfaces

3.2 Functional Requirements

3.3 The world and the machine

3.4 Scenarios

3.5 UML Models

3.6 Non Functional Requirements