Politecnico di Milano

Scuola di Ingegneria Industriale e dell'Informazione

M.Sc. in Computer Science and Engineering

myTaxiService

Software Design Document

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November 21, 2015

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1 Overview

myTaxiService is a taxi service that will operate in a big city; the main purpose is to simplify the access of passengers to the service and to guarantee a fair management of the taxi queues.

The main stakeholders of the system are the *Users*, the *Taxi Drivers* and the *Operators* as highlighted in *section 1.3* of the *RASD*.

The system is composed of four main core applications :

- Mobile Application (User)
- Web Application
- Mobile Application (Taxi Driver)
- Back-End Application

as stated in *section 1.2.* of the *RASD*

2 High Level Components

The system could be divide in three main high level components that not necessarily correspond only to one real application:

Server
The Server component is the kernel of the service we want to provide, it incorporates most of the *business logic*, it stores most of the *data* and it provides programmatic interfaces to the clients.

User Client
The User Client components is an high level representation of the real clients available to the users of our service. It's modeled as a *thin client* and it relies on the *Server* to fulfill its tasks.

Taxi Driver Client
The Taxi Driver Client component is an high level representation of the real clients available to the taxi drivers registered to the service. It's modeled as a *thin client* and it relies on the *Server* to fulfill its tasks.

2.0.1 Components Interaction

From a high level prospective the system is design following the well known *client-server* paradigm.
The interaction between the components is handled by Server that provides a programmatic interfaces that is able to receive remote call from the clients. The clients never communicates directly one with the other.

3 Component View

This section highlights the main features and roles of every component of the system.

3.1 Server

The Server is composed by :

Back-End Application
As stated in *section 1.2.2* of the *RASD*, the *Back-End Application* is the system component that handles most of the business logic.
The application is written in *Java EE* and to fulfill its tasks (see *section 3.5.3* of the *RASD*) it needs to interface with the Internet network using the *HTTPS protocol* and the *JAVA API for RESTful Web Service*[1], with a *MySQL database* and with external Google Maps API.

MySQL Database
The MySQL database fulfill the task off storing and granting access to all the data generated and used by the service.
A *database dump* is performed daily during the period of minor activity of the service [2].
The connection between the *Java EE* application and the databased is supported by the *JDBC connector*[3]

[1] See `https://jax-rs-spec.java.net/`
[2] At first, when no activity data is available, the dump will be performed at 04:00 A.M
[3] See `http://dev.mysql.com/downloads/connector/j/`

3.2 User Client

Different real clients are available to the end users of the system.
As stated in *section 1.2.2* of the *RASD* a native mobile application is developed for Android, iOS, Blackberry and WP.
Moreover a Web Application is also available.