**Introduction**

**Description of the given problem:**

*We will project and develope myTaxiService, which allow users to request a taxi.*

*The front-end part of this system consist of web application and mobile app.*

*Both of them require an username and password. During the compilation of the registration-model is necessary to request an email address because with it the system can give a confirmation for the registration.*

*The user interface provide some cool services like taxi sharing and a service allow him to reserve a taxi by specifying the origin and the destination of the ride.*

*On the other side the taxi driver needs a device that allows him to interact with the system. In the back-end part the system will be able to guarantee a fair management of taxi queues : the city is divided in taxi zones (approximately 2 km2 each). The system automatically computes the distribution of taxis in the various zones based on the GPS information it receives from each taxi.*

**Goals:**

* *The user must be able to register and authenticate with the mobile app, and the web page.* *Through these two interfaces must be avaiable all the services provided by the system;*
* *The costumer must be able to use the service consist on the reservation of the ride;*
* *The costumer must be able to use the service of taxi sharing: may be used when a reservation is made. The choice up to the user (through suitable interfaces).* *Also in this case the service must be accessible from the web app and mobile app;*
* *For each customer asking for a reservation (at least 2 hours before meeting-time) is granteed the punctuality;*
* *Guarantee a fair management of taxi queues: dividing the city in taxi zones;*
* *The taxi driver must be able to answers at the calls generated by users. In order to reply at the user the driver must be located in the same zone of him.*
* *The administrator must be able to: send notification to the taxi driver, fix the price of the ride, deactivate some services and knows the position of the taxi (only the taxi on service);*
* *Allow user to login using Facebook account;*
* *Allow user to receive an sms as confermation for a request/reservation ;*
* *Allow the admin to manage driver;*

**Domain Properties :**

*In order to develop our system we suppose that the following properties hold in the analysed domain :*

* *Accurate taxis locations are known by GPS;*
* *Taxis work only in the municipality of the large city;*
* *From the moment the driver accepts the request and the moment in which he takes the user have to pass less than 10 min;*
* *All taxis can serve up to 4 people simultaneously;*
* *A driver serve only user;*
* *The connection between the system and the embedded taxi device is made by UMTS technology: all the LargeCity jurisdiction is covered by UMTS signal so it guarantee a very fast connection;*

**Glossary:**

*We want to make unequivocal some words that will be often used in our documentation of the project, so we are giving a precise definition of what will be the meaning of these words in the contest of this project.*

* ***GUEST****: a guest is a person who hasn’t signed up yet. Guests have less power in the system than users, they don’t have the users’ skills, and the only function they can use is to sign up;*
* ***USER:*** *is a person already registered in the system. Is the customer of the service. A user has a profile that include all these information:*

*->Name;*

*->Surname;*

*->Telephone number;*

*->Email;*

*->Username;*

*->Password.*

* ***DRIVER:****is the taxi driver;*
* ***PROGRAMMATIC INTERFACE:*** *is a kind of interface that implements all the administrator’s functions;*
* ***ADMINISTRATOR:*** *is the only person enabled to use the programmatic interface;*
* ***SHARING:*** *is the service consist on sharing the ride with others if possible, thus sharing the cost of the ride. This option is enable from the user before sending the request;*
* ***RESERVATION:*** *is the service consist on reserving the ride at a specific time. The user can access at this service , even if the administrator can block it;*
* ***REQUEST:****with this term we identify only the immediate request generated by user;*
* ***CALL:*** *it occurs after the system processed a request from an user. The call shows up to the driver. If his answer is “yes” it means that he takes care of the request, otherwise remains “free”;*
* ***ZONE****: is one of the areas belongs to the city;*
* ***STATUS:*** *for status we mean the status of a taxi;*
* ***ADDITIONAL SERVICES:*** *for additional service we identify all the services that allow the admin to change some settings;*

**Acronyms**

* 1. *GPS:Global Positioning System;*
  2. *DB: DataBase;*
  3. *MTS: My Taxy Service;*
  4. *J2EE: Java 2 Enterprise Edition.*

**Assumptions:**

 *There are few points that aren’t really clear in the specification document, so we had to assume some facts. We assume that:*

* *Each zone is reachable in less than 10 minutes by at least one taxi*
* *In the previous system users had only one kind of service: the request. This was made by telephone call;*
* *When a taxi respond to a call, it will reach the meeting location in the shortest possible time;*
* *Mobile devices of users don’t guarantee a precise geolocation service;*

**Proposed system:**

*We will implement an enterprise application based on the web using the platform J2EE. It will be composed of a server, which runs the business logic, generates dynamic web pages and access to* *a DB in which all system’s information will be stored.  . Moreover the server side technology , there will be several clients that interact with the server using a web browser and mobile application. The mobile applications dedicated to users will be coded using Swift (for iphone device) and Java (for android etc.). Also the mobile application used by driver will be coded in Java.*

**Identifying Stakeholders:**

*Our “financial” stakeholder is the government of a large city who gave us the delivery of the project and expects us to be able to finish the project within 6 months. They asked us to meet two important points;* *simplify the access of passengers to the service and guarantee a fair management of taxi queues. This points involve another two indirect stakeholder. The first one is the client that has new services and new features. The other ones are the taxi drivers.*

**Constraints**

** ***Regulatory policies***

*When an user submit a request can’t demand more than two taxi. So the number of the maximum people must be less than 9.*

*Hardware limitations*

*The mobile app of the drivers have to meet the constraints of the display device installed in their cars.*

*****Interfaces to other applications***

*MTS doesn’t have to meet any interfaces to other applications.*

*****Parallel operation***

*MTS must support parallel operations from different users when working with database and with all operation done by the user after connection.*

*****Documents related***

*• Requirements and Analysis Specification Document (RASD).*

*• Design Document (DD).*

*• User’s Manual.*

*• Testing report.*

**API interfaces :**

*For the navigation system the MTS application use the Google Maps APIs (standard version). As well described on the website this API give access to any location (cover 80% of the Earth). Moreover the APIs calculate the best route based on the traffic condition that is frequently updated.*

*For the login system the MTS application use Facebook Graph API. It is a secure authentication system that reduces the burden of login for our users, by enabling them to sign in with their Facebook account.*

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