

Requirements Analysis and Specification Document

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1 Overall Description

1.1 Product Prespective

The system requirements mainly depends on the web technology necessary to communicate between actors (taxi, customer, guest) and the GPS due to locate the taxi customer in the specific sector and also to create the taxi queue. The central node system need a server (connected on the web) to elaborate the requests and store the users and taxis information. The end-user system relies on the guest operating system (usually a mobile OS like Android, iOS, Windows Phone, blackberry OS, ...) on the internal GPS system and Internet connection. Of course, all the overall system should only work inside the city.

1.1.1 System Interfaces

- Google Maps API for taxi route

1.1.2 User Interface

1.1.3 Hardware Interface

- Ethernet connection
- GPS system
- High fault tolerance of the central node
- Firewall: *server store sensitive data*
- Router

1.1.4 Software Interface

- Apache Server for CGI
- DBMS

1.1.5 Connection Interface

- EDGE, HSDPA, 3G, 4G
- HTML, SOAP/REST protocols

1.1.6 Memory Constrains

- Server: 128GB vRAM requiered, 512GB recommended
- 2TB storage capacity + 64GB flash (32GB x2 mirroring) for applications system and server OS

1.1.7 Operations

- Taxi Operations: login, signup, availability notifications, request reply, report
- User Operations: login, signup, requests operations, user profile operations (show, edit)
- System Operations: notifications (to user and taxi driver), queue management
- Backup operations (scheduled at 4AM every day)
- Restore operations from secondary storage

1.1.8 Site adaptation requirements

- UPS system
- 250V/110V Electrical system
- Ethernet connection
- Anti-thief system, safety room (safety grid on each door and eventually windows) and alarm
- Anti-fire system and alarm
- Anti-flooding system
- Air conditioning

1.2 Product Function

1.2.1 Taxi Function

- Taxi Login: the taxi driver logs into the system;
- Taxi Signup: the taxi driver provides his personal information, Username and Password, taxi and driving license to the Operator;
- Notification of Availability: with this operation the taxi driver notifies his presence in a specific zone of the town;
- Notification of Unavailability: the taxi driver notifies the end of his service;
- Taking charge: the taxi driver positively replies to a customer request;
- Reject request: the taxi driver negatively replies to a customer request;
- Report user: the taxi driver reports a problem with customer;

1.2.2 User Function

- User Login: the user get logged into the system providing his account information;
- User Signup: the user (previously Guest) request a signup to the system providing his personal information;
- Request Taxi: the user request a taxi to his location;
- Book Taxi: the user reserve a taxi to a specific location at the specific time;
- Cancel request: the user cancel the previous request or reservation;
- Report taxi: the user report a problem with the taxi driver or the service;
- Show Profile: the system provides the user information;
- Modify Profile: the user edit his information;

1.2.3 System Function

- Notification to User
 1. Incoming taxi: a taxi take charge of the request;
 2. No taxi available;
- Notification to Taxi driver
 1. Taxi request: a user need a taxi;
 2. First of the queue: the taxi is the first of the queue of the current zone;
 3. Queue change: notification to the taxi of the new position of the queue;
- Queues management: change the queues after a request reply or new taxi driver in zone;

1.3 User Characteristic

1.3.1 User:

- Low knowledge of mobile app use;
- Age: over 18;

1.3.2 Taxi Driver:

- Owner of taxi license and driver license;
- Low knowledge of mobile app use;
- Good knowledge of the local language;

1.4 Constrains

- GPS Coverage;
- Privacy policy;
- Devices Constrains (presence of GPS and Internet connection);

1.5 Assumption and Dependecies

1.6 Apportioning of requirements