Requirements Analysis and Specifications Document



Version 1.0

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**Introduction**

***Description of the given problem***

We have to build a system for a car sharing service that permits a client to rent a car paying the service per minute.

The client can register to the system and get the access to it to use the services. After the access the client can visualize the available car and reserve a car for at most one hour. Once the user arrives to the car, that he reserved before, he can unlock and use it. When the client finishes to use the car, he parks it in a safe park and exit the car. The car will lock automatically and the system will stop charge the client.

The system also provides a set of discount and fee to improve the behavior of the clients.

Domain assumption:

* GPS always indicates the right position
* The GPS of all the vehicles is always working
* Vehicles are always working, especially during all the ride
* The battery of a vehicle is always sufficiently charged to complete the ride of the user
* A user is always able to pay what he must pay
* The user who reserved the vehicle is the same who will use it
* When the user unlocks the reserved vehicle, he is near the vehicle
* Once the user reserves a vehicle, he cannot cancel the reservation of that vehicle

Goals:

G1. A person who has the right requirements must be able to register himself to the system

G2. A registered person must be able to authenticate himself to the system

G3. A user must be able to localize the position of the available vehicles

G4. A user must be able to reserve, for a limited interval of time, an available vehicle

G5. A user who has reserved a vehicle, must be able to use it

G6. The system must properly charge customers the cost of used services

G7. The system must properly manage the availability of vehicles

G8. The system must be able to show to the user the current charges

Glossary:

Actors identify:

* Guest
* User
* System administrator

Requirements:

G1. A person who has the right requirements must be able to register himself to the system:

* The system must be able to verify the completeness and correctness of the user requirements
* The system must provide a sign up functionality that gives a password to the user to access the system

G2. A registered person must be able to authenticate himself to the system:

* The system must check the correctness of the user’s password
* The system permits the access to the user only if the password is correct

G3. A user must be able to localize the position of the available vehicles:

* The system must know the position of the vehicles
* The system must provide a functionality that shows the available vehicles to the user
* The system must know the state of the vehicles
* The system must know the position of the user

G4. A user must be able to reserve, for a limited interval of time, an available vehicle:

* The system must provide a functionality that permits to the user to reserve a vehicle
* Only the vehicles shown to the user can be reserved
* The system must know if the user has a vehicle’s reservation
* The system permits to reserve a vehicle only if the user hasn’t already reserved another vehicle

G5. A user who has reserved a vehicle, must be able to use it:

* The system must provide a functionality to unlock or lock the vehicle’s doors

G6. The system must properly charge customers the cost of used services:

* The system must know the number of passengers
* The system must know the level of charge of the vehicles
* The system must know if the car is ignited or not
* The system must know if the vehicle is in charge or not

G7. The system must properly manage the availability of vehicles:

* The system must be able to change the state of the vehicles

G8. The system must be able to show to the user the current charges: