Requirement Analysis and Specification Document

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1 Introduction

PowerEnJoy is a car-sharing service that exclusively employs electric cars.

Users must have an account on the online platform to be able to access the service. It is possible via the mobile app or directly via a web browser to look for available cars within a certain distance from user current location (possibly tracked by GPS) or from a specified address. Once selected a car the user can book it for up to one hour before the picking up. Rates are calculated based on time spent driving and cars must be parked in pre-defined safe areas, some of which are prepared with power grids.

The management system encourages eco sustainability and best practices with a *bonus-malus* method. For examples there are discounts for car pooling and extra charges for users that park far from power grid stations or leave the battery very low.

1.1 Purpose

List of goals for project PowerEnJoy:

G1 Allow visitors to sign up

G2 Show updated information on available cars

G3 Allow Users to unlock a car

G4 Allow Users to reserve a car

G5 Reward well-behaved users

G6 Allow System Administrator(s) to update informations

1.2 Scope

1.3 Abbreviations, Definitions and Acronyms

1.3.1 Abbreviations:

- Gn: the n-th Goal

- An: the n-th assumption

- Rn: the n-th Requirement

1.3.2 Acronyms

- CC: Credit Card

- DL: Driving Licence

1.3.3 Definitions

- Visitor: anyone visiting the website without being logged in

- User: anyone who registered on the website

- Active User: a User whose informations (CC, DL) have been verified

1.4 Reference documents

1.5 Overview

2 Overall Description

2.1 Product perspective

2.2 Product funcions

2.3 User characteristics

2.4 Constraints

2.5 Assumptions and Dependencies

A1 There is a System Administrator that manages the website and the app

A2 The Sysadmin can add cars to the system and manage them

A3 There are operators that can recover cars

A4 Only Active Users can use the service

A5 Every car has a unique code (different from the licence number) that is visible from the outside. This number is used to ensure that a User is near a Car if he tries to unlock it and no GPS data is available.

A6 The Licence Office (Motorizzazione Civile) allows for automated check of Licence Numbers, also providing checks for Name and Surname (at least).

A7 Foreign Licences are not allowed OR Are allowed <– TO BE CHECKED

2.6 Idea of the implementation

A server will provide business logic and databases, sending dynamic web pages to the web app and anwering the queries coming from the mobile app.
In particular the server and the web app will be implemented in JEE with a SQL relational database. The mobile app will be compatible with both Android and iOS. However other mobile platforms will be able to access services through web browser via the web app, that will have a mobile theme.

3 Specific Requirements

3.1 Functional Requirements

3.1.1 G1: Allow visitors to sign up

R1 A valid email is required during the registration

R2 Invalid emails are all addresses that are either already in use or not well formed

R3 A valid DL is required

R4 The DL is valid if all the fields match the user's informations and the Licence Office confirms that the Licence Number, the Name and the Surname are correct.

R5 Foreign DL must be verified by an Operator (OR they are not allowed???? See A7)

R6 If some of the provided information is incorrect, the registration is rejected and the user is prompted to fix the issue(s)

R7