Fleet Management System for Car-Rental business

I. Main functionalities

F01: Manage and control information about the fleet of the company

F01.1:   Add new cars in the database
F01.2:   Delete cars from database
F01.3:   Book cars for clients
F01.4:   Schedule cars for service.
F01.5:   Check rental status of car.
F01.6:

F02: Database with vehicles of the company – the fleet

F02.1: the database shall collect, store and retrieve all the information mentioned in F03.1, F03.2 and F04;

- to check transaction processing;

F03: User interface to get info about vehicles from db and update the info in the db (web interface or desktop application interface) ;

F03.1: a potential client should see in the user interface:
         - a catalog of cars for rental ;
         - cars should be categorized by types (Vans, SUVs, compact class, business class etc.);
         - relevant info about car for customer:
                  - fuel economy;
                  - number of seats / passengers capacity;
                  - trunk volume;
                  - manual/automatic gearbox;
                  - fuel type (petrol, diesel, LPG, hybrid, electrical etc.)
                  - color;
                  - horse power;
                  - maximum speed;
                  - comfort (navigation, A/C, electrical windows/mirrors, radio/cd player etc.)
                  - safety systems (ABS, ESP, airbags, etc)

F03.2: a company employee should be able to do the following in the UI:
         - all the info visible for the customer;
         - last technical inspection date of the car and the next scheduled one;
         - current mileage;

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      - rental history (by whom, when, where, for how long);
      - future bookings;
      - damage and repair history;
      - VIN;
      - schedule for service;

F04: Live data about each vehicles is provided by telematic boxes installed in each vehicle:

F04.1: (to define) live data: mileage, DTCs
F04.2: to find how to emulate a telematic box;
F04.3: synchronization strategy between database and TBs;

II.   Objects Identification

Car

Properties

Property name	Type	Values	
Brand	String		
Model	String		
Year	Integer		

Fuel	String enum	1. Petrol
		2. Diesel
		3. Hybrid
		      3.1 Petrol + LPG
		      3.2 Petrol + electric
		      3.3 Petrol + LPG + el
		      3.4 Diesel + electric
		4. Electric	

NoOfSeats	String enum	1. 1 + 1 2. 1 + 3 3. 1 + 4 4. 1 + 7	
HP	Integer		
MaxSpeed	Integer		
FuelConsumption	String enum	1. urban 2. mixed 3. extraurban	
TrunkVolume	Integer		
VIN	String		

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Table II.1: Properties of Car Class

Employee

Client