Data Modelling and Databases I. Assignment 1.

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Requirements using shall-statements

1. A system shall allow the users to register by entering their full name, username, e-mail, phone number and location of residence.
2. A system shall allow users to log in with their unique username.
3. A system shall allow users to find the nearest car.
4. A system shall allow users to find a car with required characteristics.
5. A system shall provide an ability for users to rent a self-driving vehicle.
6. A system shall allow user to choose start and destination points.
7. A system shall provide an ability for users to find the nearest free charging station according to GPS location, which shape and size of plug is suitable for the car.
8. A system shall provide an ability for Cars to find the closest workshop which has neccessary car parts.
9. A system shall allow managers to regularly check amount of parts in Workshops.
10. A system shall allow managers to order car parts from provider of them to one or more workshops.
11. A system shall charge a fee from user's credit card after the end of the ride according to the car's price and the time of a ride.
12. A system shall allow managers to place a service order.
13. System shall store information that every Customer is identified by unique username, and has a name, surname, e-mail, location of residence (Country, City, Zip code), a phone number and a GPS location.
14. System shall store information that every charging station is identified by unique ID and has a location and set of plugs.
15. System shall store information that every plug has its number on charging station, time for charge (from 0% to 100%) and price of charging and Type.
16. System shall store information that every plug Type is identified by unique ID and has shape and size.
17. System shall store information that every Service order has unique ID, price and has information of car to repair, car parts needed and place in Workshop's Timetable.

18. System shall store information that every workshop is identified by unique ID and has a location, car parts available according to the car type and Timetable (availability of timing).
19. System shall store information that every Timetable depends on Workshop and has start time and end time for every Service order which is planned to be performed in the corresponding workshop.
20. System shall store information that every Car Part is identified by unique Catalog ID and has type, and set of cars for which this part is suitable.
21. System shall store information that every Provider of car parts is identified by unique company ID and has a name, address, phone number and car parts which the provider provides.
22. System shall store information that every car is identified by Registration ID and has a location, brand, model, type, price per minute, color, charge level, availability and mileage.
23. System shall store information that every Location has latitude and longitude and is connected with one of the following: Car, Customer, Car Order (Start), Car Order (End), Workshop, Charging station.