

Design Document

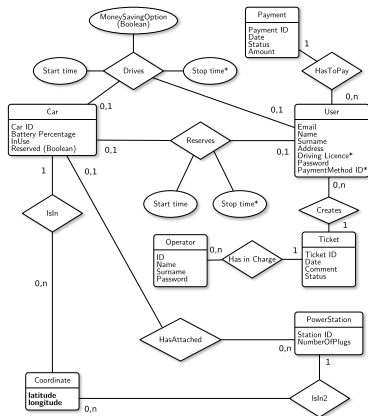
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Data management

- We opted for a **centralized approach** since our **data model** is very small and interconnected and we do not need different types of data models (eg. SQL and noSQL).
- We chose a **SQL approach** because it offers an easy and **standardized language** for queries, and grants **ACID** properties.



- All **algorithms** needed in the project are trivial but the one dealing with uniform repartition of cars in the city.
- This problem has been studied a lot and there are in literature various algorithms that solve it.
- They are mainly based on **mixed integer linear programming** techniques and in particular [1] presented a complete **model**. In [2] is presented a **greedy algorithm** that achieves almost the same result.

Figure 5 Flowchart of the Relocation Algorithm

Requirements traceability

- 1 Allow visitors to sign up.
- 2 Allow visitors to log in.
- 3 Allow Users and Active Users to update or modify their profile's information.
- 4 Show updated information on available cars.
- 5 Allow Active Users to reserve a car.
- 6 Allow Active Users to unlock the car reserved
- 7 Compute the fare.
- 8 Allow System Administrator(s) to update system's information.
- 9 Ensure that the fare is paid.
- 10 Allow the driver to choose the money saving option and get near their destination.
- 11 Allow the user to park the rented car in safe zone.

