**DESCRIPTION OF PROBLEM:**

A vehicle dealer needs to effectively manage his business branches,particularly considering the growing popularity of electric cars. It’s crucial to stay informed about the specifications of these vehicles and maintain a detailed inventory. As the customer base expands over time, keeping track of customer details becomes increasingly important. Additionally, the dealer needs to monitor rentals and sales closely while studying market trends to ensure business success.

**REQUIREMENT COLLECTION:**

The business owner operates several branches, each uniquely identified by an ID, spread across various cities within the country. Each branch is associated with a specific location, a landline phone number, and an email address. The owner needs to be aware of these details for effective management and coordination.

In the realm of business, there are several key components that contribute to its operation and success.

Firstly, we have the customers, each identifiable by a unique National ID. Their names are composed of a first name, middle name, and last name. Contact with these customers is maintained through up to three different phone numbers. Their locations are known through their home and work addresses, which include details such as building number and name, street number and name, postal code, city, and state.

Secondly, the business is supported by various company suppliers. These suppliers are identified by a unique company code and are recognized by their company name. Communication with these suppliers is facilitated through their provided email addresses or directly via the phone number of the supply chain manager. The physical location of these suppliers is known through their addresses.

The business’s main operations revolve around the sale and rent of cars. The normal cars in the inventory are identified by their Vehicle Identification Number (VIN) and are characterized by their brand, model, year, engine type, color, horsepower, torque, fuel efficiency, transmission, and drivetrain. The status of these cars, whether they are sold or in stock, the price of sale, and the time of sale or the start of the warranty period are all recorded meticulously.

In addition to normal cars, the business also deals in electric cars. These cars are identified by their VIN and are distinguished by their brand, model, battery capacity (measured in KWh), range, efficiency (measured in wh/km), power (horse/kilowatts), acceleration, top speed, drivetrain, and fast charge speed (in km/hr). The state of these cars, their price, and the time of sale are all tracked carefully.

The business also collaborates with transportation companies, each identifiable by a unique transcompany code. The number of available trucks, landline number, and email are recorded for each company.

The business operations are managed by a team of salesmen and a manager. Each individual in this team has a unique National ID and is known by their first, middle, and last names. Their salaries and commissions (for salesmen) are recorded. They can be contacted through their phone numbers, and their home addresses are known.

Finally, the business employs workers, each with a unique National ID and known by their first, middle, and last names. Their salaries are recorded, and they can be contacted through their phone numbers. Their home addresses are also known.

Every transaction is recorded in a receipt, with a unique reference number, date, method of payment, and payment rate. This meticulous record-keeping ensures the smooth operation and success of the business.

**RULES:**

**1.**each branch can rent or sell several cars for one customer.

**2.**multiple suppliers can deal with the branch.

**3.**salesman can sell for several customers several vehicles or make rental contracts for them.

**4.**rentals must be finite and not more than 20 days for each contract and for one customer at a time.

**5.**the branch gives a warranty on sold products {5 years for electric cars, 3 years for normal ones}

**6.**dealership must deal with at least one transportation company and 3 at most.

**7.**each sale must have a distinct receipt.

**8**.each employee must work in 1 branch only.

**9.**no person works two jobs at the same time

**10**.we want to keep track of each salesman sales monthly.

**11**.all electric cars are new and for sale only.

**12**.the warranty starts from the date of purchase with noting that the car details are deleted upon ending of the warranty.