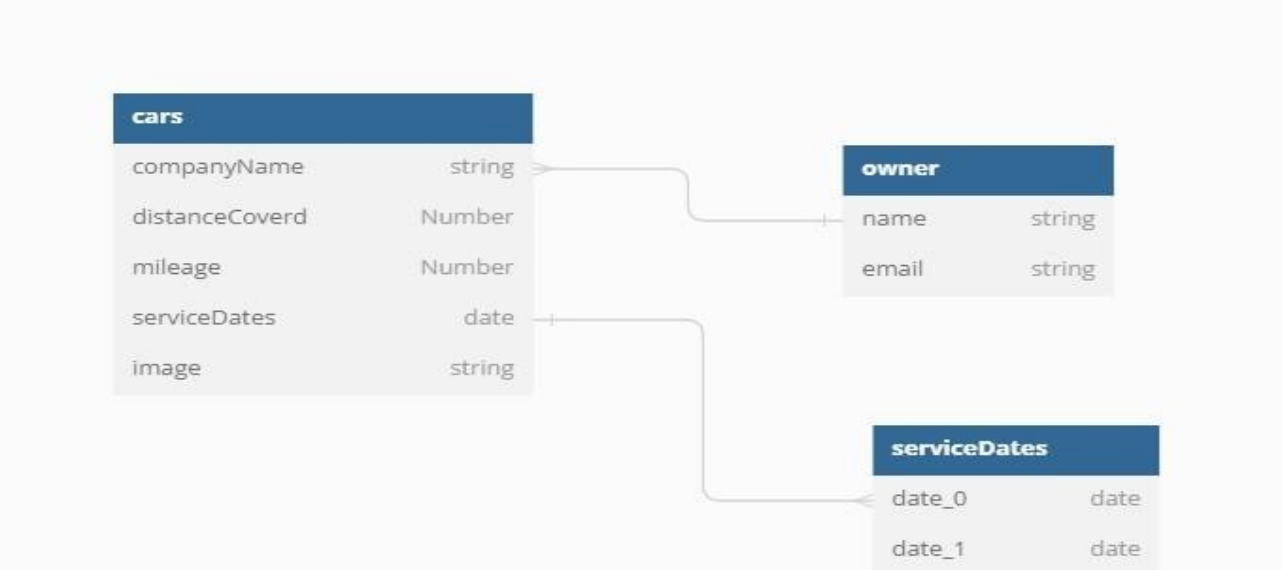
ER Diagram



Overview

The ER diagram represents a simplified model of the Car Vault App's database schema. This diagram outlines the key entities, their attributes, and the relationships between them, enabling effective management and tracking of cars, their owners, and service records.

Entities and Attributes

1. **cars**
   - **companyName (string):** The name of the car's manufacturer or brand (e.g., Toyota, Ford).
   - **distanceCovered (Number):** The total distance the car has traveled, typically measured in kilometers or miles.
   - **mileage (Number):** The car's fuel efficiency, expressed in terms of distance traveled per unit of fuel (e.g., miles per gallon).
   - **serviceDates (date):** A collection of dates on which the car has been serviced. This field may link to multiple service records.
   - **image (string):** A reference to the image of the car, stored as a file path or URL.
2. **owner**
   - **name (string):** The name of the individual who owns the car.
   - **email (string):** The email address of the car owner, used for identification and communication.
3. **serviceDates**
   - **date_0 (date):** The first date when the car was serviced.
   - **date_1 (date):** A subsequent date when the car was serviced.

Relationships

- **cars to owner:**
  - **Relationship Type:** One-to-One.
  - **Description:** Each car is associated with exactly one owner. This relationship ensures that the cars entity references a single owner entity, linking each car to its respective owner.
- **cars to serviceDates:**
  - **Relationship Type:** One-to-Many (Implied).
  - **Description:** The cars entity is linked to multiple serviceDates, suggesting that a single car can have multiple service records over time. Each service date entry provides a historical record of when the car underwent maintenance.

Detailed Explanation

The Car Vault App's database schema is designed to effectively manage information about cars, their owners, and their service histories. The cars entity is central to this schema, encapsulating key details about each vehicle, such as its make, mileage, and service history. The owner entity captures information about the individuals who own these vehicles, ensuring that each car is linked to its rightful owner.

The serviceDates entity plays a crucial role in maintaining a record of when the car was serviced. This allows users of the Car Vault App to track the maintenance history of their vehicles, helping to ensure timely servicing and better overall vehicle management.

Use Case

This ER diagram is particularly useful for applications that require tracking vehicle details, ownership, and maintenance records. The simplified structure in this diagram can be expanded upon as needed, adding additional fields or relationships to accommodate more complex scenarios, such as multiple owners or more detailed service records.