



## Description of the Diagram

The ERD (Entity-Relationship Diagram) represents the relationships between different types of data collected from vehicles in a smart city context. The **vehicle\_data** table serves as the central entity, connecting to various other tables that store specific types of data related to the vehicle's operation and environment.

- **Central Entity (vehicle\_data):** This table is at the core of the ERD, containing primary information about each vehicle.
- **Relationships:**
  - **One-to-Many Relationships:** The **vehicle\_data** table is connected to **emergency\_data**, **gps\_data**, **traffic\_data**, and **weather\_data** tables through a one-to-many relationship. This indicates that one vehicle can have multiple records in each of these tables.
  - **Foreign Keys:** The **vehicle\_id** attribute in each of the related tables (**emergency\_data**, **gps\_data**, **traffic\_data**, and **weather\_data**) acts as a foreign key referencing the **id** attribute in the **vehicle\_data** table.

## Overall Functionality

This ERD effectively organizes data related to vehicles, emergencies, GPS tracking, traffic conditions, and weather into structured tables with defined relationships. The design facilitates efficient querying and analysis of data, enabling insights into vehicle operations, emergency response, traffic monitoring, and environmental impacts.