

Electronic Vehicle Population Tracker (Washington state)

DESCRIPTION: -

Database of all Electric vehicles registered in the state of Washington, USA over the period 1997 to 2023 with focus on utilities and car makes to track registration details and to potentially help forecast future energy needs. It allows utilities, manufacturers, and policy planners to understand the movement of markets, how adoption rates vary by regions and utility areas and how they change over time. Before this the data is collated in different sources, with different data definitions making analysis difficult. Our objective is to remedy this – along with reduce discrepancies, to perform strict privacy measures to protect user information, and limit errors in data handling.

By collecting and analyzing this data, on EV ownership, we aim to contribute towards a more sustainable and environmentally friendly transportation future. The database can be leveraged to communities and regions can use the data to attract investments related to electric vehicle manufacturing, charging infrastructure, and other related industries.

ENTITIES: -

1. Manufacturers List <ul style="list-style-type: none">Manufacturer ID (PK)Manufacturer Name	2. Model and Make List <ul style="list-style-type: none">Vehicle ID (PK)Vehicle MakeManufacturer ID (FK)Electric RangeType ID (FK)
3. EV Type <ul style="list-style-type: none">Type ID (PK)Type	4. Registration Details <ul style="list-style-type: none">DOL Vehicle ID (PK)Vehicle ID (FK)City ID (FK)Utility ID (FK)VIN ID
5. Locations <ul style="list-style-type: none">City ID (PK)City NameCounty NamePostal Code	6. Utility Companies List <ul style="list-style-type: none">Utility ID (PK)Company Name

RELATIONSHIPS: -

1. A Manufacturer can make one to many vehicles [One-to-Many]
2. An EV Type can have one to many vehicles.
3. One Location can have multiple vehicle registrations.
4. One Utility can have multiple vehicle registrations registered under its area.
5. One City can have multiple vehicles registrations registered under its area.
6. One Model and Make of an EV car can have multiple registrations.

CONCEPTUAL MODEL: -

1. Manufacturers List <ul style="list-style-type: none"> a. Manufacturer ID b. Manufacturer Name 	2. Model and Make List <ul style="list-style-type: none"> a. Vehicle ID b. Vehicle Make c. Manufacturer ID d. Electric Range e. Type ID
3. EV Type <ul style="list-style-type: none"> a. Type ID b. Type 	4. Registration Details <ul style="list-style-type: none"> a. DOL Vehicle ID b. Vehicle ID c. City ID d. Utility IT e. VIN ID
5. Locations <ul style="list-style-type: none"> a. City ID b. City Name c. County Name d. Postal Code 	6. Utility Companies List <ul style="list-style-type: none"> a. Utility ID b. Company Name

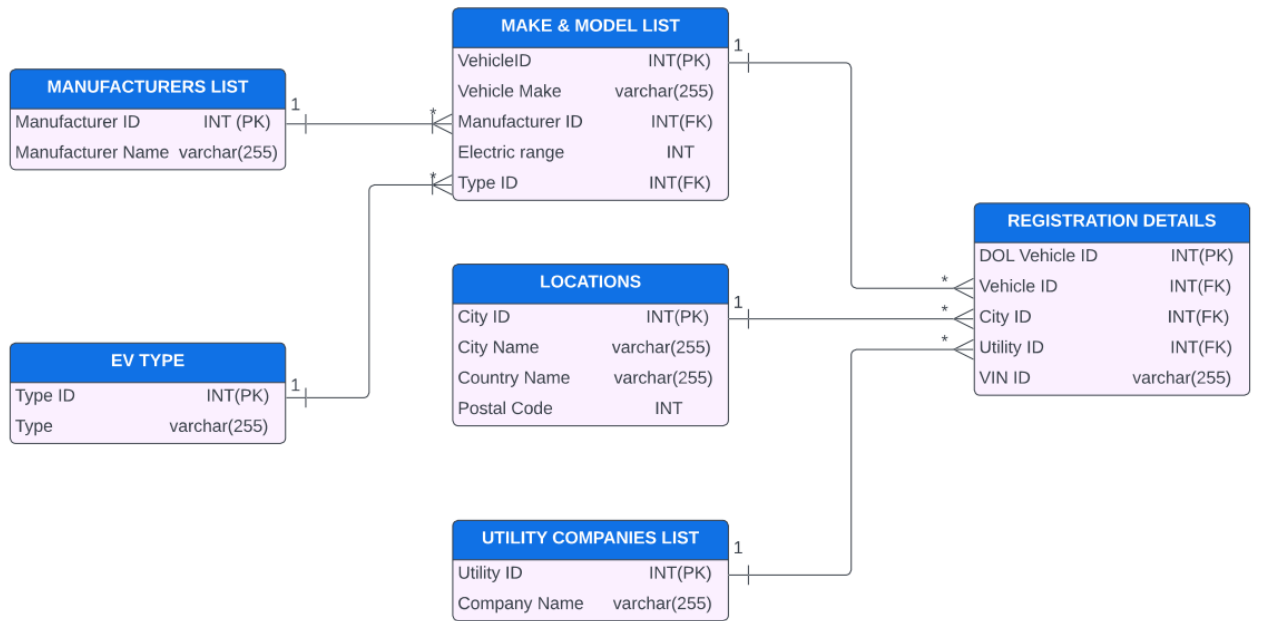
LOGICAL MODEL: -

1. Manufacturers List <ul style="list-style-type: none"> a. Manufacturer ID (Primary Key) b. Manufacturer Name 	2. Model and Make List <ul style="list-style-type: none"> a. Vehicle ID (Primary Key) b. Vehicle Make c. Manufacturer ID (Foreign Key) d. Electric Range e. Type ID (Foreign Key)
3. EV Type <ul style="list-style-type: none"> a. Type ID (Primary Key) b. Type 5. Locations <ul style="list-style-type: none"> a. City ID (Primary Key) b. City Name c. County Name d. Postal Code 	4. Registration Details <ul style="list-style-type: none"> a. DOL Vehicle ID (Primary Key) b. Vehicle ID (Foreign Key) c. City ID (Foreign Key) d. Utility IT (Foreign Key) e. VIN ID 1. Utility Companies List <ul style="list-style-type: none"> a. Utility ID (Primary Key) b. Company Name

PHYSICAL MODEL: -

1. Manufacturers List b. Manufacturer ID (PK, INT) : NOT NULL c. Manufacturer Name (VARCHAR(255)) : NOT NULL	2. Model and Make List a. Vehicle ID (PK, INT) : NOT NULL b. Vehicle Make (VARCHAR(255)) : NOT NULL c. Manufacturer ID (FK, INT) : NOT NULL d. Electric Range (INT) : NOT NULL e. Type ID (FK, INT) : NOT NULL
3. EV Type a. Type ID (PK, INT) : NOT NULL b. Type (VARCHAR(255)) : NOT NULL	4. Registration Details a. DOL Vehicle ID (PK, INT) : NOT NULL b. Vehicle ID (FK, INT) : NOT NULL c. City ID (FK, INT) : NOT NULL d. Utility ID (FK, INT) : NOT NULL e. VIN ID (VARCHAR(255)) : NOT NULL
5. Locations a. City ID (PK, INT) : NOT NULL b. City Name (VARCHAR(255)) : NOT NULL c. County Name (VARCHAR(255)) : NOT NULL d. Postal Code (INT) : NOT NULL	6. Utility Companies List a. Utility ID (PK, INT) : NOT NULL b. Company Name (VARCHAR(255)) : NOT NULL

ER DIAGRAM: -



Thank You.