# **Project Title**: UsedCarsCentral

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# **Conceptual Diagram from the Database:**



# **The Entity Relationship Diagram:**

Diagram

Description automatically generated

# **The Entities and Relationships:**

* UsedCarsStagingData: This table contains the raw data of used cars listings scraped from various websites. It has columns for various attributes of a car such as price, year, make, model, condition, fuel type, odometer reading, and so on.
* UsedCarsMasterData: This table contains the cleaned and transformed data from the UsedCarsStagingData table. It has columns for the same attributes as the previous table, along with additional columns for latitude, longitude, and posted date. The primary key of this table is the MasterID column, which is an auto-incremented integer.
* CarsMasterData: This table contains information about individual cars, such as their make, model, year, transmission type, and so on. The primary key of this table is the CarID column, which is an auto-incremented integer. The MasterID column is a foreign key that references the UsedCarsMasterData table.
* CarDetails: This table contains additional details about each car, such as its condition, odometer reading, status, image URL, and description. The primary key of this table is the CarDetailsID column, which is an auto-incremented integer. The CarID column is a foreign key that references the CarsMasterData table.
* Locations: This table contains information about the locations of the cars listed for sale, such as the city, state code, latitude, and longitude. The primary key of this table is the LocationID column, which is an auto-incremented integer. The MasterID column is a foreign key that references the UsedCarsMasterData table.
* CarListings: This table contains information about each car listing, such as its price, posted date, and listing URL. The primary key of this table is the ListingID column, which is an auto-incremented integer. The CarID and LocationID columns are foreign keys that reference the CarsMasterData and Locations tables, respectively. The MasterID column is a foreign key that references the UsedCarsMasterData table.

**Table 1: UsedCarsMasterData**

* MasterID: Primary key for the table.
* ListingURL: URL of the listing or posting.
* City: City in which the used car is available.
* CraigsCityURL: URL with city attractions and details.
* Price: Cost of the used car.
* ModelYear: The year the car was manufactured.
* Manufacturer: The manufacturer of the car.
* CarModel: The model of the car.
* CarCondition: The condition of the car.
* CylinderCount: The number of cylinders in the engine.
* FuelType: The fuel type of the car.
* OdometerReading: The total distance the car has been driven.
* CarStatus: The status of the car.
* TransmissionType: The type of transmission in the car.
* VehicleIdentificationNum: The unique identification number of the car.
* DriveType: The type of driving system in the car.
* CarSize: The size of the car.
* CarBodyType: The type of body of the car.
* CarColor: The color of the car.
* ImageURL: URL of the image of the car.
* CarDescription: Description of the car.
* StateCode: The code for the state in which the car is located.
* Latitude: The latitude coordinates of the car's location.
* Longitude: The longitude coordinates of the car's location.
* PostedDate: Date when the listing was posted.

**Table 2: CarsMasterData**

* CarID: Primary key for the table.
* MasterID: Foreign key from the UsedCarsMasterData table.
* Manufacturer: The manufacturer of the car.
* ModelYear: The year the car was manufactured.
* CylinderCount: The number of cylinders in the engine.
* FuelType: The fuel type of the car.
* TransmissionType: The type of transmission in the car.
* CarModel: The model of the car.
* CarSize: The size of the car.
* CarBodyType: The type of body of the car.
* CarColor: The color of the car.
* VehicleIdentificationNum: The unique identification number of the car.
* DriveType: The type of driving system in the car.

**Table 3: CarDetails**

* CarDetailsID: Primary key for the table.
* CarID: Foreign key from the CarsMasterData table.
* OdometerReading: The total distance the car has been driven.
* CarStatus: The status of the car.
* CarCondition: The condition of the car.
* ImageURL: URL of the image of the car.
* CarDescription: Description of the car.

**Table 4: Locations**

* LocationID: Primary key for the table.
* MasterID: Foreign key from the UsedCarsMasterData table.
* City: City in which the used car is available.
* CraigsCityURL: URL with city attractions and details.
* StateCode: The code for the state in which the car is located.
* Latitude: The latitude coordinates of the car's location.
* Longitude: The longitude coordinates of the car's location.

**Table 5: CarListings**

* MasterID: Foreign key from the UsedCarsMasterData table.
* ListingID: Primary key for the table.
* CarID: Foreign key from the CarsMasterData table.
* LocationID: Foreign key from the Locations table.
* Price: Cost of the used car.
* PostedDate: Date when the listing was posted.
* ListingURL: URL of the listing or posting.

**Relationships:**

The relationship between the tables can be described as follows:

* The UsedCarsMasterData table has a one-to-many relationship with the CarsMasterData table, as one used car can have multiple car models.
* The CarsMasterData table has a one-to-many relationship with the CarDetails table, as one car can have multiple details such as odometer reading and car condition.
* The UsedCarsMasterData table has a one-to-many relationship with the Locations table, as one used car can be available in multiple locations.
* The UsedCarsMasterData table has a one-to-many relationship with the CarListings table, as one used car can have multiple listings or posts.

Diagram, schematic

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