

Lucid Motors Management System



Database Purpose:

The purpose of this database is to manage and to keep track of sales, revenue and inventory details of Lucid Motors EV manufacturer. Administrative, sales and marketing team will be using this database.

Business Problems Addressed:

- Lucid Motors Management System allows administration teams to keep track of vehicle models and their availability in the inventory.
- Assist teams to build customer relations by recording customer information, feedback, and purchase history to provide better customer service and support.
- Tracking loan provider details, along with their interest rate and eligibility criteria would streamline the financing process and make it more efficient.
- Keeping track of sales details, along with sales during the offer period would assist to make data-driven decisions for growing business.
- Monitoring the showroom details and test drive activities, and analyzing employee performance to improve efficiency.

Business Rules:

- Customers can only provide feedback on a vehicle model that they have purchased, having a unique FeedbackID for each model purchased.
- For each vehicle model purchased there would be a separate orderID.
- For each showroom there should be one and only one dealer.
- Each order may have zero or one offer.
- Each employee would be mapped to one and only one showroom.
- Each model can include zero or more accessories.

Design Decisions:

Sr.No	Entity Name	Why Entity Included	How Entity is related to other Entities
1	Vehicle Model	One of the primary purpose of the database is to collect the information about electric vehicles related to Lucid motors. This entity includes the basic details of each model manufactured by Lucid Motors, using which the Sales representatives can assist customers to get the best model on the basis of his/her requirements if there are any.	The Vehicle Model entity serves as the central component of the database, with its primary key ModelID, establishing connections to various related entities such as:- 1] Customer details entity through an associative entity due to many to many relations, as similar models can be purchased by zero or many customers. 2] TestDrive details the entity through an associative entity as there are many to many relations, since one Model can be tested by zero or many customers. 3] Offer details entity through an associative entity as there are many to many relations between them, as one vehicle model can have zero or many offers. 4] Sales/Purchase details entities have zero to many relations as one model can have zero sales or many sales. 5] Customer feedback entities have zero to many relations as each model can have zero or many customer feedbacks. 6] ModelPerformance entity, have one to one relation as each model will have only one associated model performance data.
2	Model Performance	The Model Performance entity is used to maintain the performance details for each model of Lucid Motors. It covers details like Acceleration, top speed, range, horsepower and drive time. This data can be used for comparing various vehicle models on their performance basis, using which customers can decide the best	The Model Performance entity is related to the Vehicle Model entity, there is a one to one relation between them as performance data will be mapped to a single model in the Vehicle model entity.

		model which suits their requirements.	
3	Test Drive Details	The test drive details entity can be used to manage and optimize the test drive experience for customers. By tracking which vehicles customers are test driving and which features they are interested in, manufacturers can gain valuable insights into customer preferences and make informed decisions about future product development.	<p>1] The test drive details entity is related to the vehicle model entity through an associative entity as there are many to many relations between them, as test drives can be taken for zero or many models.</p> <p>2] It is also connected to employee details through one to one relation as one test drive can be accompanied by a single employee only.</p> <p>3] This entity is also connected to showroom details through one and only one relation, as one particular test drive would be taken at one showroom.</p>
4	Customer Details	The Customer Details entity stores data of each customer who has purchased any Model from the company along with the ModelID to track the sales. These details can be used in future to track and manage customer interactions, including quotes, and sales.	<p>1] The Customer Details entity is directly related to the Vehicle model entity through an associative entity due to many to many relationships. Many customers can purchase many models and similar models can be purchased by many customers.</p> <p>2] This entity is also related to the Customer Feedback entity as a customer can provide zero i.e. no feedback or one feedback for the model he/she purchased, having unique FeedbackID.</p> <p>3] Lastly it is related to the Loan Provider entity as customers can have zero or one Loan Provider.</p>
5	Loan Provider Details	Loan Provider Details entity is used to track information about which customer opt for which Loan Provider, which further tracks approval status, interest rate and eligibility details. This information can help companies to provide future customers with a range of financing options, which can make it easier for customers to purchase an EV.	The Loan Provider entity is related to Customer Details entity by zero or many relationships, as one Loan Provider can be linked to zero or many Customers.

6	Customer Feedback	This entity is used to gather customer feedback, both positive and negative, which can help the company to improve its products, services, and overall customer experience. This information can help the company to prioritize sales opportunities, improve the sales process, and increase customer satisfaction.	<p>1] The Customer Feedback entity is related to Customer details by one and only one relation, as one Feedback i.e. FeedbackID belongs to one and only one customer.</p> <p>2] It is also related to Vehicle model entities by zero or one relationship, as one customer can provide feedback for zero or one Model, having unique feedbackID. Here ModelID is nullable, so it's optional to mention ModelID while providing feedback.</p>
7	Showroom Details	Showrooms are the first point of contact for the customer. This entity helps to maintain the showroom-related details such as location, contact, and hours of operation. They also serve as servicing stations that provide regular maintenance and repair facilities for the customers of Lucid Motor Vehicles.	<p>1] The showroom entity is related to the Inventory details entity through an associative entity due to the many-to-many relationship between the two, as multiple showrooms can have zero or many models in stock.</p> <p>2] It is also connected to the test drive entity by zero or many relations, as one showroom can have zero or many test drives.</p> <p>3] Another relation is with the employee details entity which is one-to-many, as one showroom can have one or many employees.</p> <p>4] It is connected to the Dealer details entity as one and only one, such that one showroom can have one and only one dealer.</p> <p>5] Lastly it is connected to the Sales/Purchase entity, as the showroom can generate zero or many sales.</p>
8	Dealer Details	Dealers are the owners of each showroom who hold entire information about the particular vehicle manufacturing vendor association. Each dealer can have one or more showrooms handled under their ownership and this entity is mapped to a showroom details entity in order to keep track of its activities.	Dealer Details entity is related to the showroom details entity by one or more relation, as one dealer can have one or more Showrooms under him/her.
9	Inventory Details	Inventories accountancy is the key feature for long run business, it holds the details of models,	<p>1] Inventory entities are related to Vehicle models by one and only one relationship.</p> <p>2] It is also related to the Showroom Details</p>

		accessories stocks and to which showrooms want the requirement of specific models that went out of stock or in demand.	entity by an associative entity, as many showrooms can have many Models in stock and vice versa.
10	Accessories Details	The accessory details entity can capture information about the accessories and optional features that are available for each vehicle model, their pricing, and their availability for the sale. This adds to the extra features to the car models to make it more customized and look slightly different from the others of the same type.	The accessory details entity is related with the Sales/Purchase entity through the associate entity, as there can be zero or many sales for various accessories.
11	Sales/Purchase Details	The purpose of the sales/purchase details entity in a database for an EV manufacturer is to capture information about the sales and purchase transactions that occur between the manufacturer, dealers, and customers. The entity can contain information such as the date and location of the transaction, the vehicle model and configuration sold, the price paid, the payment method used, and other relevant details.	The sales/purchase details entity captures information about customers who purchase the EV. Primary key of this entity is orderId and it is related to several entities such as: 1] This entity is related to AccessoryDetails entity through an associative entity, by zero to many relationship, as a particular sale can include many accessories. 2] This entity is related to the CustomerDetails entity as one and only one relation, as one order would belong to particular customers. 3] This entity is also related with offer details as zero to one relation, as one sale can have zero or many offers linked with it. 4] Lastly, it is related to vehicle model entities as one and only one relationship.
12	Offer Details	The purpose of the offer details entity in a database is to capture information about the promotional offers, offers validity, and offer types that are available to customers. These offers may include discounts, rebates, and other incentives designed to encourage customers to purchase an EV	1] This entity is related to the VehicleModel entity through an associate entity, as one offer can be for one or many Models. 2] Also it is related to Sales/Purchase entity by zero or many relation, as one offer can have zero or many sales.