Retail Management System

Database Purpose:

This Database Management System caters to a variety of shopping choices, including in-store, online, and pickup options. It encompasses data from vendors, stores, customers, products, orders, and deliveries, allowing us to effectively track business requirements, meet customer demands, and enhance vendor supply chain efficiency. It serves as a robust foundation for efficient operations and strategic decision-making through analytics and reporting.

Business Problems Solved:

- Thorough scrutiny of vendor-specific products based on factors like demand, quality, and customer feedback empowers the business to make informed decisions about future product offerings, resulting in cost savings on inventory space.
- The organisation can thoroughly analyse and predict the ebb and flow of product demands throughout the year, aiding the organization in fine-tuning inventory stocking and efficiently allocating inventory space to seamlessly meet customer requirements with an up-to-date record of sales history.
- The marketing and sales teams can leverage this data to implement tailored marketing campaigns, such as those focused on specific regions or customer segments defined by age, with the aim of boosting their sales.
- The organisation network, events teams can use the database to analyse demand on platforms to improvise the infrastructure and security beforehand.

Business Rules:

- Each product belongs to a single category, while each category contains at least one product.
- Each customer can have one phone number.
- Every order is fulfilled using a single payment method among cash, credit card, debit card, or UPI.
- Each order can have only one of the 3 shipping mode: pick-up, in-store, online.
- A vendor must be associated with at least one retail store, and similarly, a customer must be linked to at least one retail store.

Design Decisions:

Entity Name	Why Entity Included?	How is the entity related to other entities?
RetailStore	This entity helps organization manage all the stores which are established throughout region, country, or world. This table include details like the store id, store contact number, store location i.e., address, city, state, and zip code.	This relationship can be used to analyse customer on stores and manage respective retail Vendors. One Retail store can be associated with one or more retail Vendors. One retail store can be associated with one or more Retail Customers.

RetailStoreVendors	To disassociate many-to-many relationship between RetailStore and Vendor.	It is an associate entity table represents many-to-many relationship between RetailStore and Vendor with RetaiStoreID and VendorID.
RetailStoreCustomers	To disassociate many-to-many relationship between RetailStore and Customer.	It is an associate entity table represents many-to-many relationship between RetailStore and Customer with RetailStoreID and CustomerID.
Customer	This entity helps the organization maintain and manage the customer details of all the stores like the customer's name, contact details and demographic information.	Customer can order products from the retail store and make payments through various payment modes. Customers have associated customer address and login user information. Customer can provide feedback to the products. One customer can be associated with zero or more customer address, customer feedback and orders. A customer can have zero or one login user information.
Customer Feedback	This entity helps organisation analyse the customer satisfaction of the product and review of different factors of the product through attributes like customer rating and customer feedback.	Customer provides feedback on the products after delivery. A customer Feedback can be associated with only one Customer and only one product.
Product Category	This entity allows organisation to easily analyse the targeted segments by categorizing the product into details of category name and category description.	Product category can have one or more products.
Product	This entity enables organisation to maintain and manage all the details of products sold by it, at different stores and locations with the attribute's product name, description, price details and category details.	A product belonging to a product category, can be manufactured by different vendor. A product can be ordered by the customer. A product may or may not have feedback by the customer. A product can be associated with only one Product category. A product can be associated with zero or more orders and one or more ProductVendors.

Vendor	The entity helps organisation organize and manage all the vendor partner details in a single entity with the details like vendor name, address, contact information, website info, contact person details and title.	A vendor can supply one or more products to the one or more VendorRetailStores.
ProductVendors	To disassociate many-to-many relationship between Product and Vendor.	It is an associate entity table represents many-to-many relationship between Product and Vendor with ProductID and VendorID.
Customer Address	This entity stores all the address details of customers like address, city, state, zip code.	A customer address can be associated with only one customer.
Order	This table maintains all the order details of the customers through the attributes like product quantity, order date, order bill etc.	A customer orders a product to a customer address. The order will complete on making payment and will have its own shipping details. An order can be associated with only one customer and one payment detail. An order can have one or more ProductOrder and zero or more Shipping details.
ProductOrders	To disassociate many-to-many relationship between Product and Orders.	It is an associate entity table represents many-to-many relationship between Product and Orders with ProductID and OrderID.
Shipping	This entity contains the shipping information of the orders such as shipping mode, shipping address, shipping date	A shipping can be associated with only one order.
Payment	This entity contains all the payment details of every order placed by customer such payment amount, payment mode and payment date.	Payment is made by the customer for the order placed. Payment can be associated with only one customer and order information.
LogInUser	Contains login information of the customer having online presence of shopping.	A loginUser information can be associated with one customer.