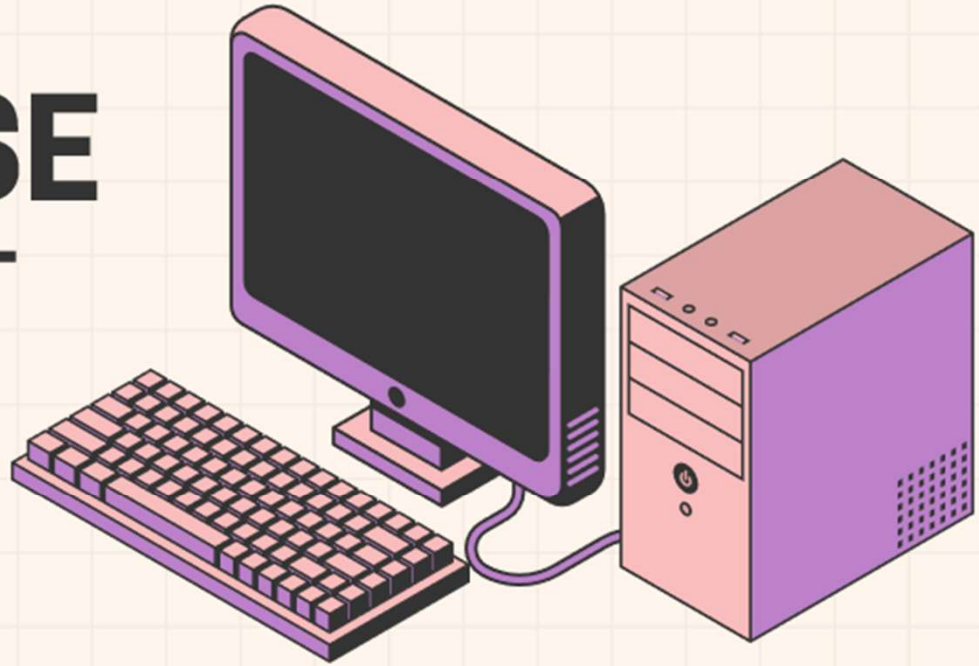
RETAIL DATABASE MANAGEMENT



This retail management project organizes store, employee, product, and order data in a relational database. It helps managers track sales, inventory, customers, and store performance easily for better, faster decisions.

Team :

Saksham Sahu

Navya Purohit

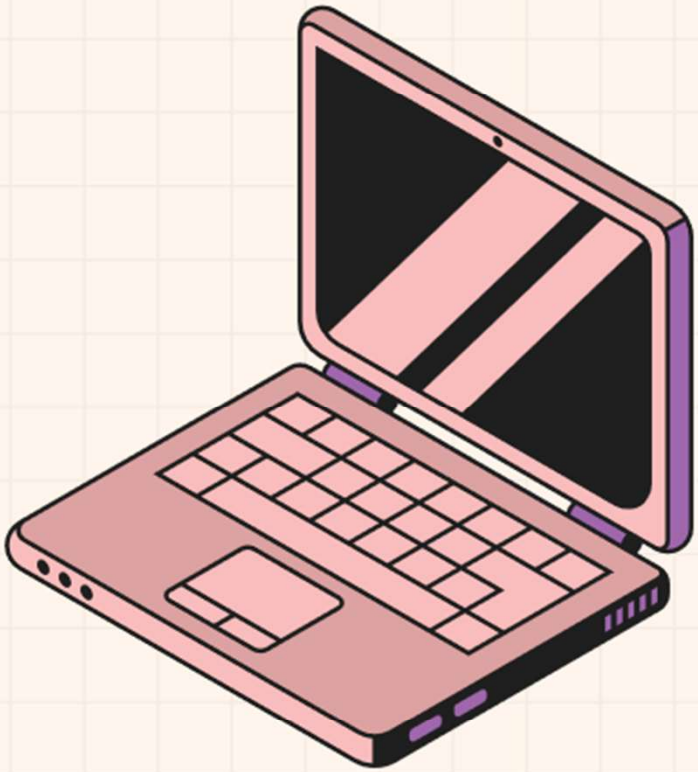
Mohd Kayes

Suryansh Singh

Nibha

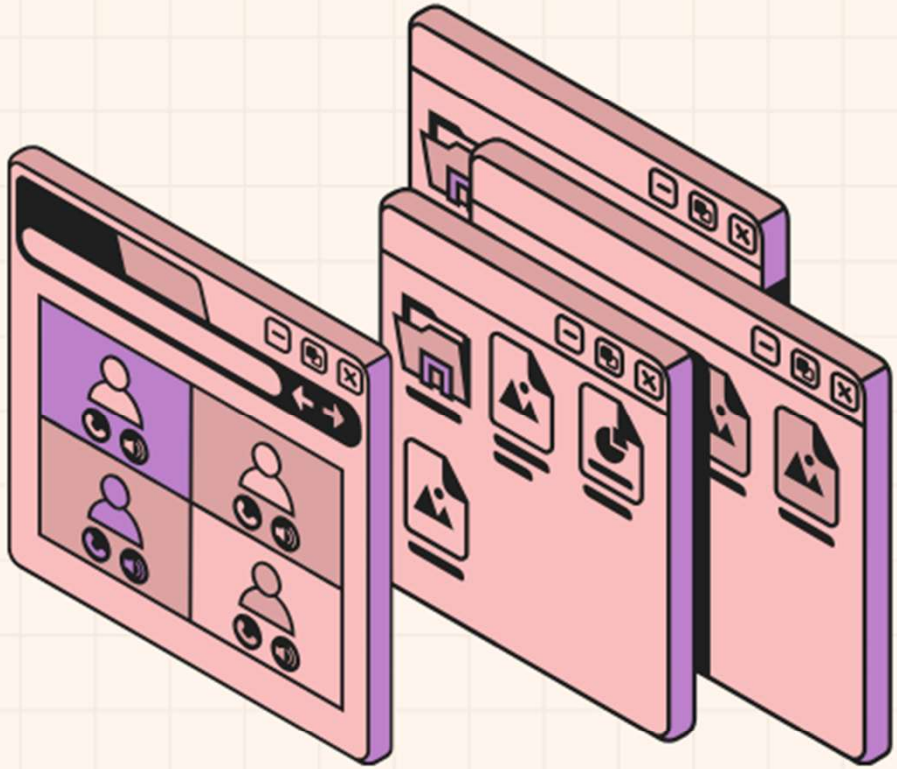
OBJECTIVE

- Use SQL to organize and retrieve store, employee, product, and order data efficiently.
- Simplify tracking of sales, payments, and inventory.
- Improve decision-making with SQL views, filters, and updates for clear, actionable insights.



PURPOSE

- Centralize all retail data (stores, employees, products, orders) in one relational database for easy access.
- Enable managers to quickly retrieve meaningful insights using SQL queries and views.
- Maintain accurate, up-to-date records with SQL updates and data-cleaning operations.
- Support better business decisions by analyzing sales, customers, and inventory efficiently.



Understanding Our E-commerce Dataset

Our dataset models an e-commerce platform. It captures users, stores, products, orders, and interactions. Each table plays a crucial role in managing our operational data efficiently.

Users Table

Key: user_idStores customer and seller details, including roles and contact info.

Stores Table

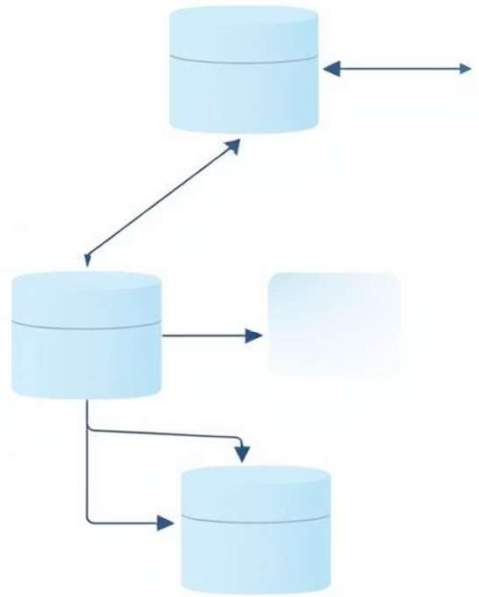
Key: store_idDetails of each store, linked to sellers, and their location and establishment year.

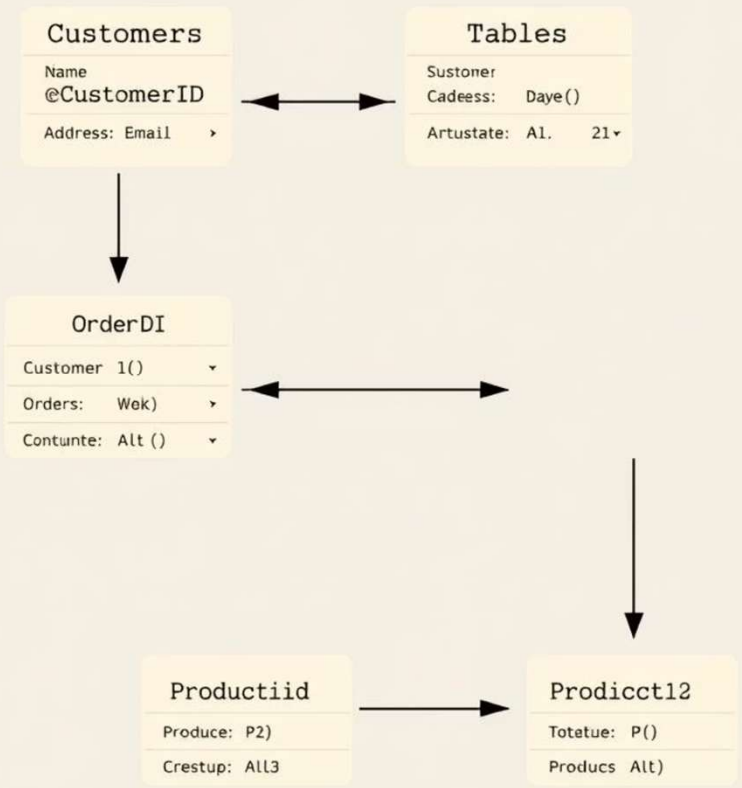
Products Table

Key: product_idProduct information, including price, and which store sells it.

Orders Table

Key: order_idRecords all customer orders, including total amount and payment status.





Exploring Core Data Relationships

The strength of our database lies in its relationships. Foreign keys connect tables, ensuring data integrity and enabling complex queries for valuable insights.

Order Items Table

Key: order_item_idLinks products to specific orders, tracking quantity for each item.

Payments Table

Key: payment_idRecords transaction details for each order, including card used.

Card Details Table

Key: card_idSecurely stores customer card information for payment processing.

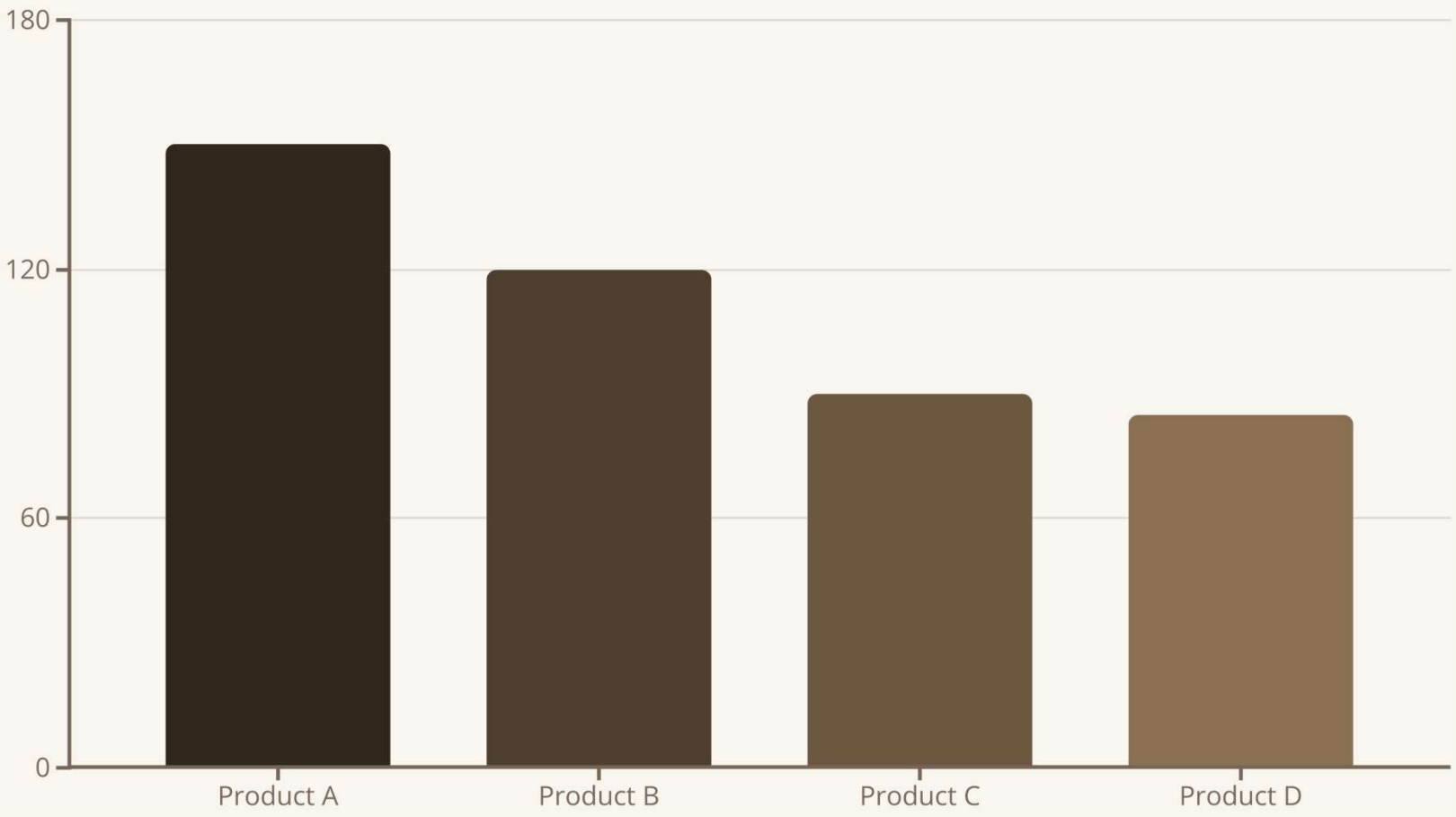
Product Comments Table

Key: comment_idCaptures buyer feedback on products, enhancing user engagement.

Top-Selling Product Analysis

Identifying our most ordered product helps us understand customer demand. This query reveals key insights for inventory management and marketing strategies.

Query 1: Find the product that has been ordered the most times.



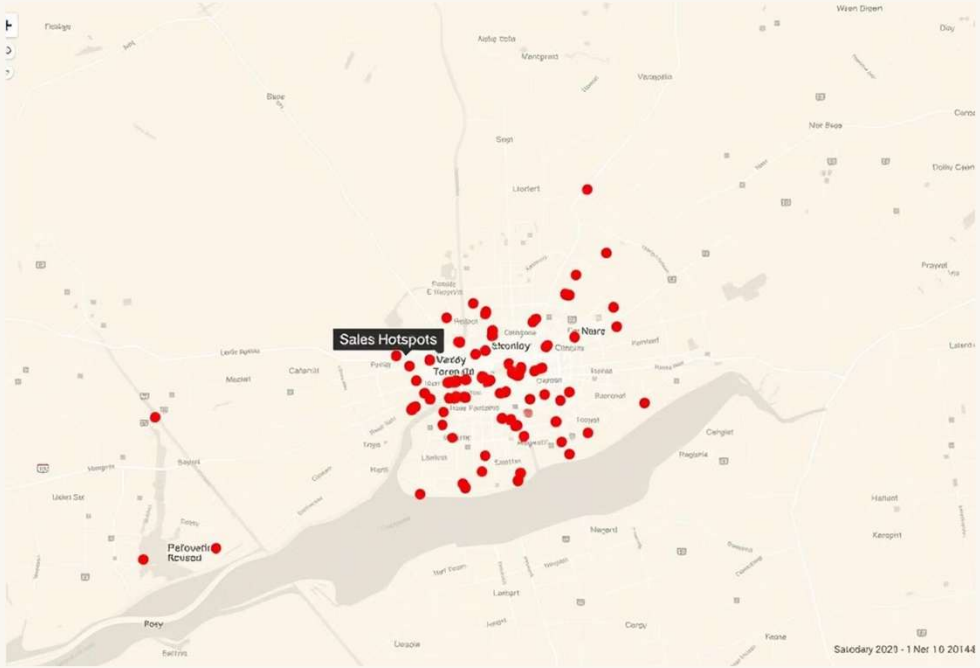
Geographic Sales Performance

We can filter orders based on store location. This allows us to analyse sales performance in specific cities like Toronto, aiding regional business strategies.

Query 2: Orders for Products Sold by Stores in Toronto.

Key Data Points

- Targeted sales analysis.
- Geographic market insights.
- Optimising local inventory.
- Identifying regional trends.



Customer Demographics: Phone Numbers

Segmenting buyers by phone number prefixes helps in targeted marketing campaigns. For instance, filtering users with phone numbers starting with '91'.

Query 3: Buyers with Phone Number Starting with 91.

Targeted Outreach

Focusing marketing efforts on specific customer segments.

Geographic Insights

Understanding regional distribution of our customer base.

Data Cleaning

Identifying and standardising phone number formats.

Store Operations and Customer Proximity

This complex query matches store operational hours with customer locations. It helps identify stores accessible to a specific user, enhancing user experience.

Query 4: Store Address, Start & End Time in Same City as User 5.

Query 13: Total Quantity of Products from Store 8 (Subquery).

Location Matching

Aligning customer and store geographic data.

Operating Hours

Verifying store accessibility for customers.

Product Availability

Calculating inventory from specific stores.

DATASET

user_id	name	phone	email	city	province	role
1	Alex	91876543210	alex12@mail.com	Toronto	Ontario	buyer
2	Olivia	91654321098	olivia@mail.com	Montreal	Quebec	buyer
3	Ethan	92678901234	ethan21@mail.com	Toronto	Ontario	seller
4	Sophia	93678901234	sophia@mail.com	Vancouver	BC	buyer
5	Noah	94678901234	Noah@mail.com	Montreal	Quebec	seller
6	Ava	95678901234	ava@mail.com	Ottawa	Ontario	buyer
7	Liam	96678901234	liamm@mail.com	Toronto	Ontario	buyer
8	Isabella	97678901234	isabella@mail.com	Quebec	Quebec	seller
9	Jackson	98678901234	jacckk@mail.com	Toronto	Ontario	buyer
10	Mia	99678901234	mia@mail.com	Quebec	Quebec	seller

Users.csv

card_id	buyer_id	card_number	card_type	expiry_date
1	1	1111-2222-3333-4444	Visa	2025-12-31
2	4	5555-6666-7777-8888	MasterCard	2026-10-31
3	7	9999-0000-1111-2222	Amex	2024-08-31

Card_details.csv

comment_id	buyer_id	product_id	comment_text	comment_date
1	1	2	Great laptop!	2018-01-12
2	2	4	Microwave works fine.	2020-03-17
3	7	5	Love the smartphone!	2023-06-01

Product_comments.csv

order_item_id	order_id	product_id	quantity
1	1	2	1
2	2	4	1
3	3	1	1
4	3	3	2
5	4	4	1
6	5	5	1
7	1	4	2

Order_items.csv

product_id	store_id	product_name	price
1	1	TV	500
2	1	Laptop	1200
3	2	Camera	350
4	2	Microwave	150
5	3	Smartphone	800

Products.csv

store_id	store_name	seller_id	city	province	opening_year
1	Store1	18	Quebec	BC	2021
3	Store3	9	Ottawa	Ontario	2019
4	Store4	18	Vancouver	Ontario	2020
5	Store5	3	Montreal	BC	2021
7	Store7	10	Quebec	BC	2022
8	Store8	6	Montreal	Quebec	2020
9	Store9	10	Ottawa	BC	2020
10	Store10	10	Vancouver	BC	2021

stores.csv

order_id	buyer_id	order_date	total_amount	payment_state
1	1	2018-01-10	1200	paid
2	2	2020-03-15	150	unpaid
3	4	2022-07-20	500	paid
4	6	2019-12-25	75	unpaid
5	7	2023-05-30	800	paid

orders.csv

payment_id	order_id	card_id	amount	payment_date
1	1	1	1200	2018-01-11
2	3	2	500	2022-07-21
3	5	3	800	2023-05-31

payments.csv

THANK YOU