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BUILDING AND QUERYING A SALES DATABASE WITH SQL

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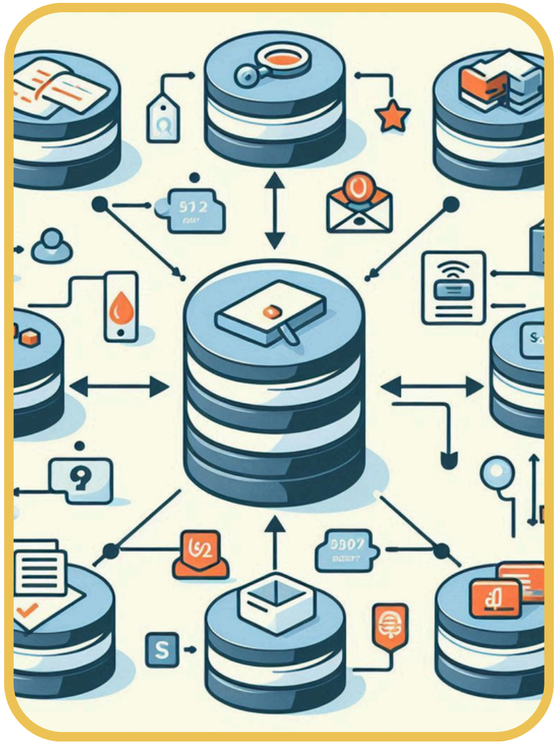
INTRODUCTION

The objective of this task was to create a new database schema and tables based on provided CSV files of sales data. Furthermore, this document presents a series of SQL queries designed to explore and analyze data from the Sales database. The goal is to address specific questions related to customer, product, supplier, and order information.



DATABASE CREATION

Created a new database named ‘SalesManagement’ and schema named ‘sales’ in PostgreSQL.

Also, created and organized tables inside the schema based on the provided CSVs to structure the sales data effectively. Each table is designed to store specific types of data, ensuring optimal organization and retrieval of information. The tables created are:

- categories
- cities
- customers
- item
- orders
- products
- suppliers

‘categories’ Table Creation

```
CREATE TABLE sales.categories (
    category_id VARCHAR(100) PRIMARY KEY,
    name VARCHAR(100),
    status VARCHAR(20),
    description VARCHAR(500)
);
```

DATA IMPORT

After creating the necessary tables, the next step involved importing data from the provided CSV files into the respective tables. This process ensures that our database is populated with accurate and structured data, ready for querying and analysis.

Tables and Corresponding CSV Files:

- categories: categories.csv
- cities: cities.csv
- customers: customers.csv
- items: items.csv
- orders: orders.csv
- products: products.csv
- suppliers: suppliers.csv

Data Import for ‘categories’ Table

```
-- Import data into sales.categories
COPY sales.categories(category_id, name, status, description)
FROM 'C:\path\to\categories.csv'
DELIMITER ','
CSV HEADER;
```

QUERY 1 - CUSTOMER NAMES

Statement: Fetch all customer names and sort them alphabetically.

QUERY

```sql
-- Question 1
SELECT name AS customer_name
FROM sales.customers
ORDER BY customer_name;
```

OUTPUT

	customer_name character varying (100)
1	Aaron Hayes
2	Aaron Jones
3	Aaron Schwartz
4	Abigail Reed
5	Adam David
6	Adam Johns
7	Adam Martinez
8	Alan Massey

QUERY 2 - PRODUCT PRICES

Statement: Fetch all product names and their prices sorted by price from low to high.

QUERY

```sql
-- Question 2
SELECT name AS product_name, price
FROM sales.products
ORDER BY price;
```

OUTPUT

	product_name character varying (50)	price double precision
1	deal	11.1
2	interview	12.37
3	step	12.72
4	especially	12.74
5	game	12.78
6	level	13.59
7	include	13.75
8	their	16.27

QUERY 3 - SUPPLIER NAMES

Statement: Fetch supplier names that start with the letter 'A' and sort them by their names.

QUERY

```sql
-- Question 3
SELECT name AS supplier_name
FROM sales.suppliers
WHERE name LIKE 'A%'
ORDER BY name;
```

OUTPUT

	supplier_name character varying (100)
1	Acosta-Freeman
2	Adams-Roberts
3	Adams-Schwartz
4	Adams, Hull and Wise
5	Adams, Rojas and Morgan
6	Adkins and Sons
7	Aguilar-Carter
8	Aguilar Ltd

QUERY 4 - ITEM STATUS

Statement: Fetch all items and sort them by their status, placing NULL values first.

QUERY

```
-- Question 4
SELECT *
FROM sales.items
ORDER BY status NULLS FIRST;
```

OUTPUT

	item_id [PK] character varying (100)	order_id character varying (100)	product_id character varying (100)	amount double precision	status character varying (20)	item_timestamp timestamp without time zone
1	55d21c57-d8a7-4c8e-96f1-af1c3db13160	6f66a611-407a-4851-b699-4ce8d8d095...	d03892f1-f8f3-44fc-bb86-e431717e4b6f	14.31	Delivered	2024-03-09 06:47:37.275443
2	8a2c9420-43b5-4b51-91aa-1fcae29b7811	7ea54b60-64d2-4583-96df-bf4ef031da...	5a49b5e1-a14d-4a84-b131-4b2de86b63...	32.95	Delivered	2024-04-18 05:24:22.285073
3	72af47e3-9998-420a-86ed-56c01cb9bd81	ddee01dc-20a1-42ff-a286-7124267ad0...	7217ab96-f866-4c74-b9ae-9c3eaf767ab4	86.44	Delivered	2024-03-31 20:51:49.228488
4	4b5a19b1-64be-41d7-ae74-a2543ca734e4	b5e30740-1585-4ea6-9c99-cd6a7877f4...	f8366f6b-ecf1-4e75-935d-ab91137c2933	8.1	Delivered	2024-01-16 03:30:29.394309
5	0bdb0f27-6bf6-4e0c-9b49-9fee26a36b60	411c82eb-100e-48fc-8095-befe7791b6f6	e6d06da3-c252-4117-9a45-6c6511aa71...	56.5	Delivered	2024-04-19 16:04:29.456686
6	e7df11b8-2943-4e28-9168-12e136a1ada0	1170d4f6-9a0f-4de6-b0e5-f671870a49...	9ff2250b-0845-41a1-9ee4-b2bbf5cc50bb	77.22	Delivered	2024-04-11 04:17:19.372846
7	03f57e54-db61-4fbd-b59a-8d5d45baa180	160a6358-7348-4e75-89dc-a37a8caf60...	3bc16381-bd29-4b7f-8366-3ecf707883f8	51.07	Delivered	2024-06-01 14:44:57.709625
8	72f7d19f-5c38-473f-a712-ad354c8a89bc	ce967796-9486-406e-9955-6c53442a8...	dd9a1016-b858-4245-a173-dc99ea0f63...	55.03	Delivered	2024-04-05 13:47:09.495484

QUERY 5 - PRODUCT SORTING

Statement: Fetch all products, sort them first by category and then by price in descending order.

QUERY

```
-- Question 5
SELECT *
FROM sales.products
ORDER BY category, PRICE DESC
```

OUTPUT

	product_id [PK] character varying (100)	name character varying (50)	supplier_id character varying (100)	category character varying (50)	price double precision	stock_available integer	status character varying (50)	product_c timestamp
1	12ea3377-cca5-4965-a41c-9a30998310...	of	3f89d404-d78f-4aca-8c67-ee4e434674d5	a	302.68	979	InActive	2024-01-0
2	494c69e7-db73-42fd-9eef-7880822585a5	offer	01abe709-0567-47dc-ae92-3b077c44b8...	able	385.18	137	Active	2024-05-0
3	b8adc046-eef0-4f58-9c7a-7c6f58a2d628	share	6252ec97-c226-4c94-8b70-7ce1642719...	able	76.71	283	InActive	2024-06-1
4	a63e349b-fb6e-4222-aca0-5079603843bf	wide	16157d6a-f40a-4140-b233-c8e5e8542b...	about	398.27	851	Out of Stock	2024-02-2
5	e61f1dad-1ec7-4114-aaf5-7a449f91c7b4	factor	c9a89c46-4f89-4cc4-a804-be28738fc04b	about	91.72	974	Out of Stock	2024-03-0
6	2d61572a-ad68-4eb9-a327-cbde171ce7...	middle	f292cfe7-c77d-4dd4-8b75-b5eb72f08ece	above	337.62	812	InActive	2024-02-1
7	e37e126c-f0d4-4b67-8efc-5d4226a23a18	door	7b539636-fcdb-4749-9e31-f9e38c83cec8	above	281.2	275	InActive	2024-04-2
8	dad2a61c-41d1-49ea-96b1-6c78daa687...	Congress	c2721d21-27ef-474c-82a6-5def1e3b6fcd	above	93.24	928	Active	2024-05-1

QUERY 6 - CUSTOMER PHONE NUMBERS

Statement: Fetch all customer names and phone numbers but sort them by the last four digits of their phone numbers in ascending order.

QUERY

```sql
-- Question 6
SELECT name AS customer_names, phone
FROM sales.customers
ORDER BY RIGHT(phone,4)
```

OUTPUT

	customer_names character varying (100)	phone character varying (50)
1	Elizabeth Lin	001-965-883-8361x0012
2	Ashley Cobb	001-587-449-0043
3	Erin Ward	+1-640-549-0044
4	Erin Miller	4327710045
5	Samuel Maddox	495-356-2786x0046
6	Sierra Johnson	(767)912-4013x0051
7	Andrew Jones	(209)855-8805x0073
8	Robert Gonzalez	598.888.5382x10083
9	Jordan Miller	209.207.0000

CONCLUSION

This project involved:

- *Creating a sales database schema.*
- *Importing data from CSV files.*
- *Executing SQL queries to derive insights.*

The exercise strengthened my database management and analytical skills through hands-on experience.

REFERENCES

SQL Help:
Molinaro, A. (2005). SQL Cookbook: Query Solutions and Techniques for All SQL Users. O'Reilly Media.

CSV Data:
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THANK YOU

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