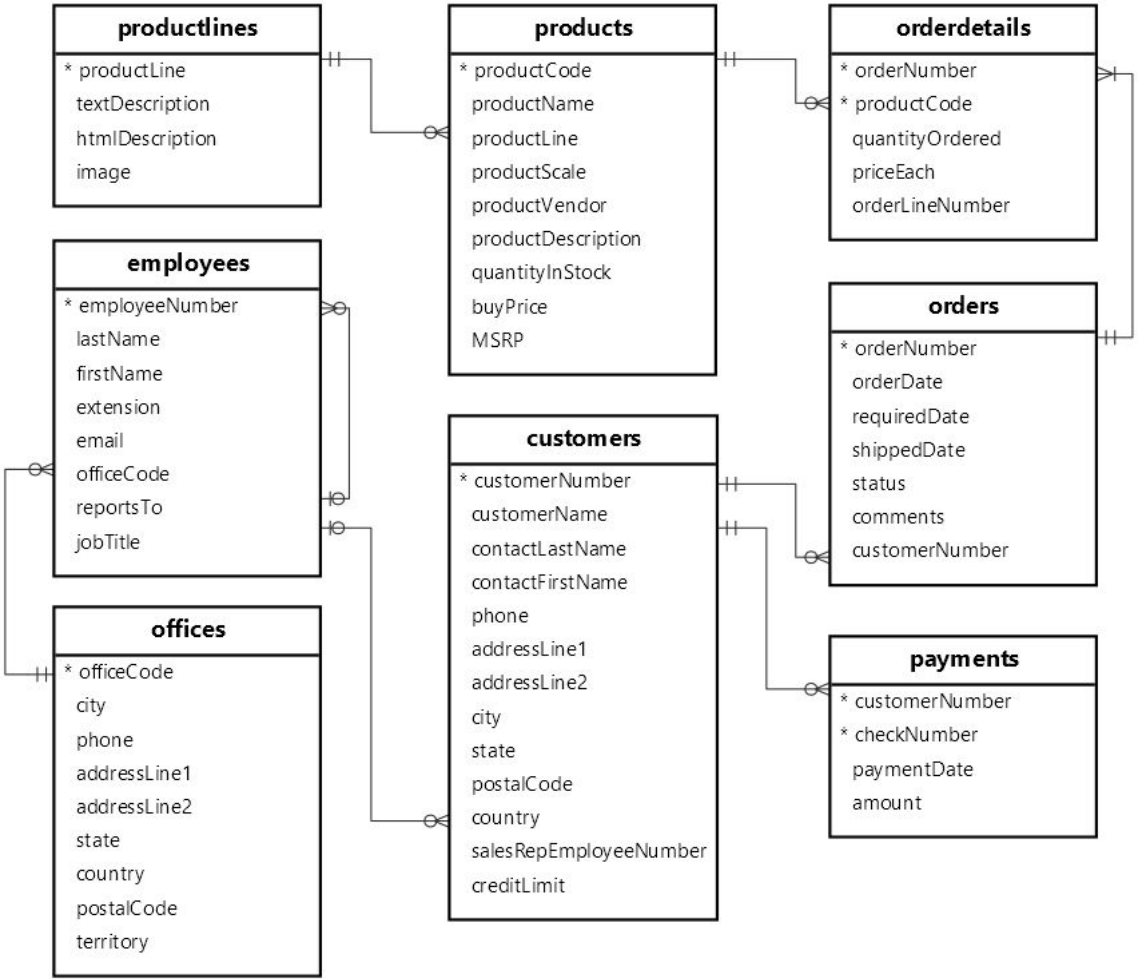
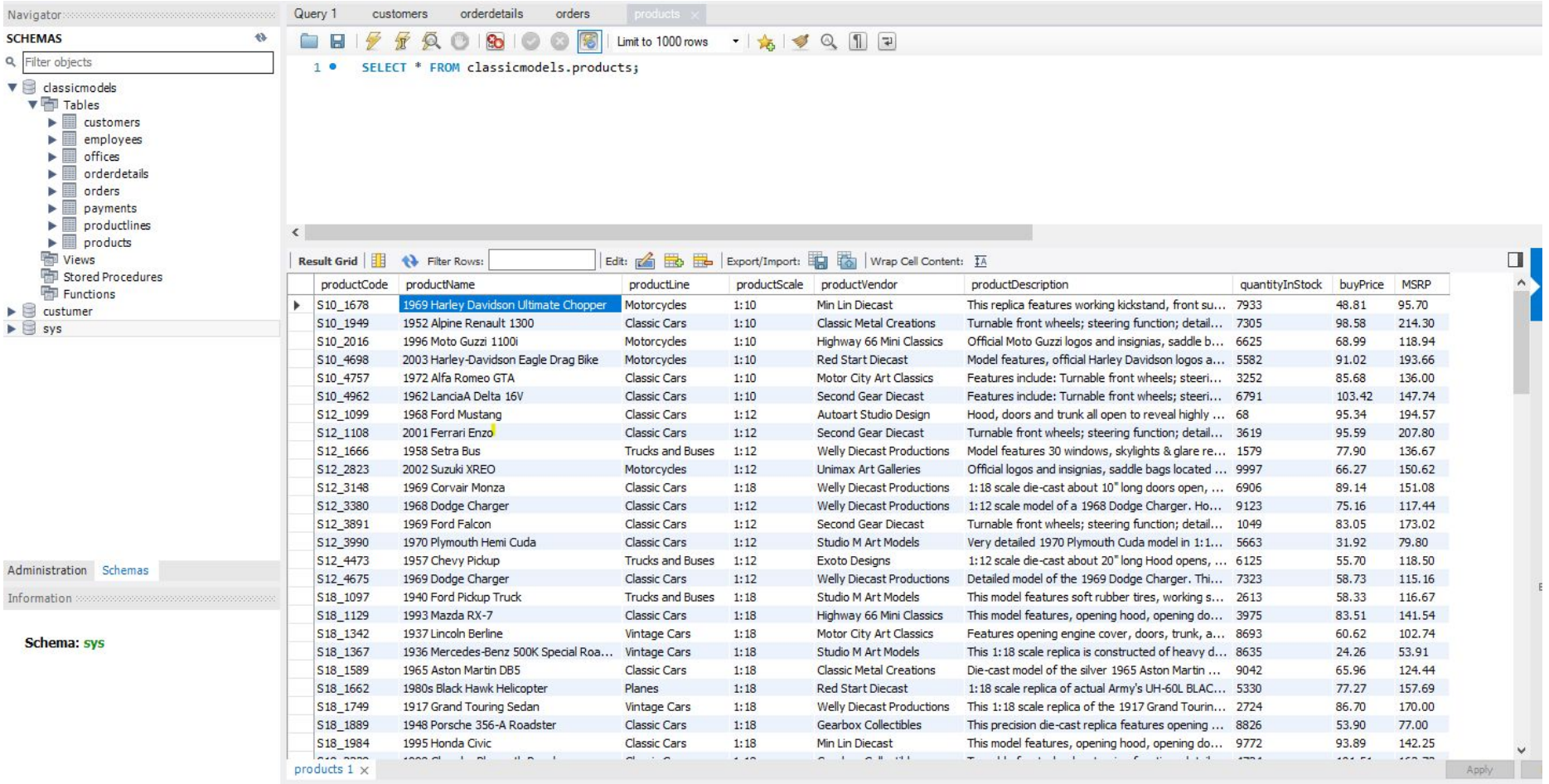
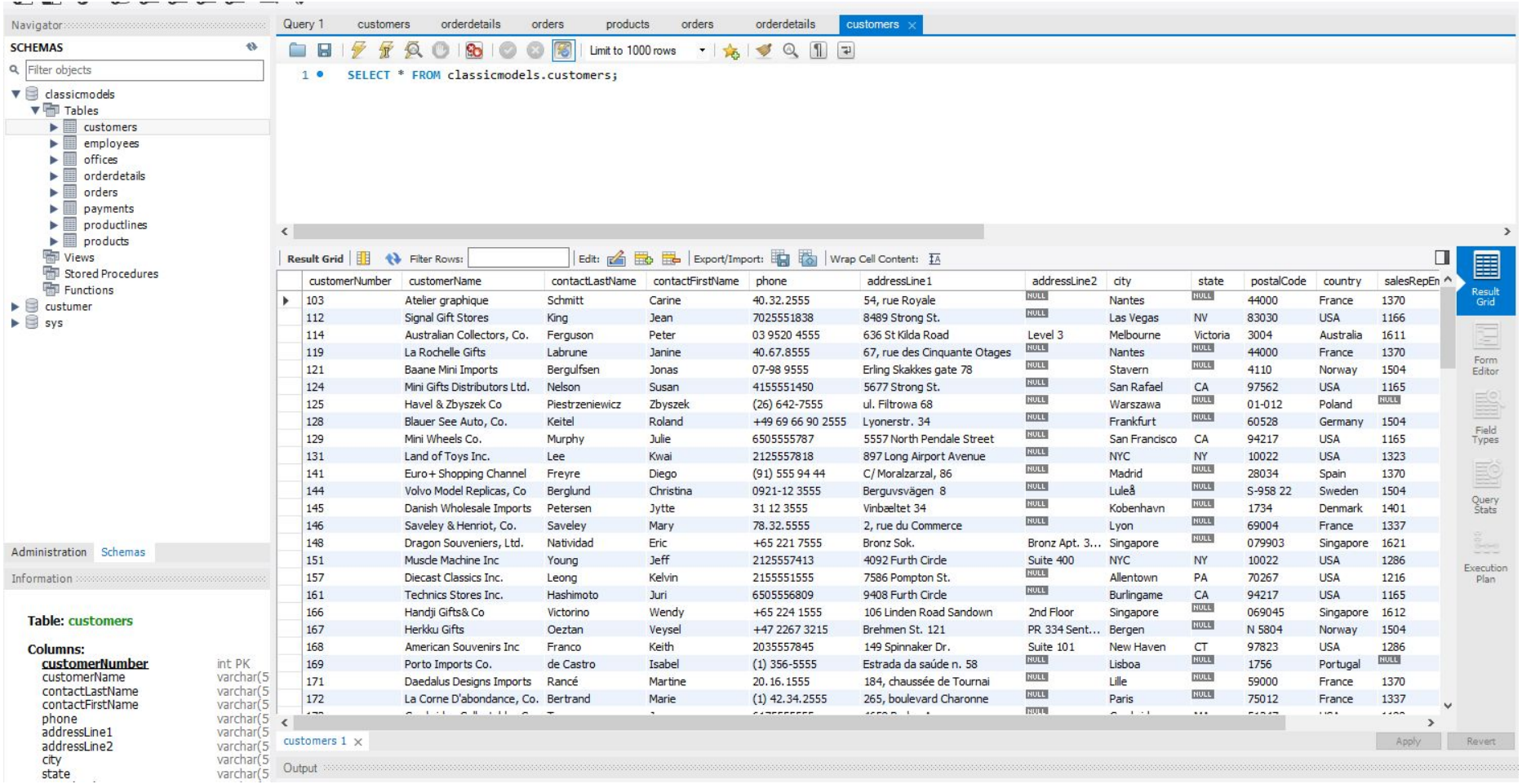
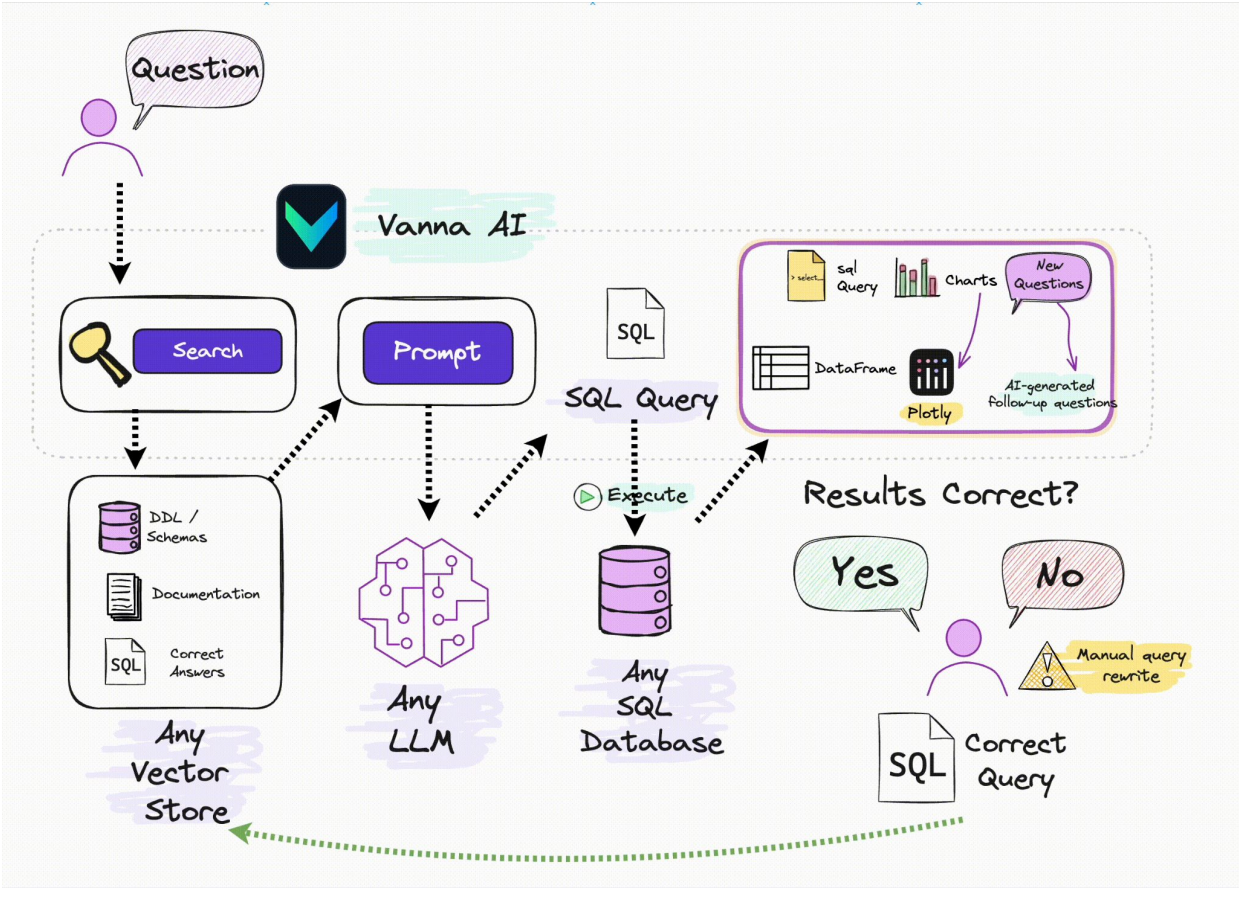

productlines
* productLine
textDescription
htmlDescription
image
products
* productCode
productName
productLine
productScale
productVendor
productDescription
quantityInStock
buyPrice
MSRP
orderdetails
* orderNumber
* productCode
quantityOrdered
priceEach
orderLineNumber
employees
* employeeNumber
lastName
firstName
extension
email
officeCode
reportsTo
jobTitle
orders
* orderNumber
orderDate
requiredDate
shippedDate
status
comments
customerNumber
customers
* customerNumber
customerName
contactLastName
contactFirstName
phone
addressLine1
addressLine2
city
state
postalCode
country
salesRepEmployeeNumber
creditLimit
offices
* officeCode
city
phone
addressLine1
addressLine2
state
country
postalCode
territory
payments
* customerNumber
* checkNumber
paymentDate
amount

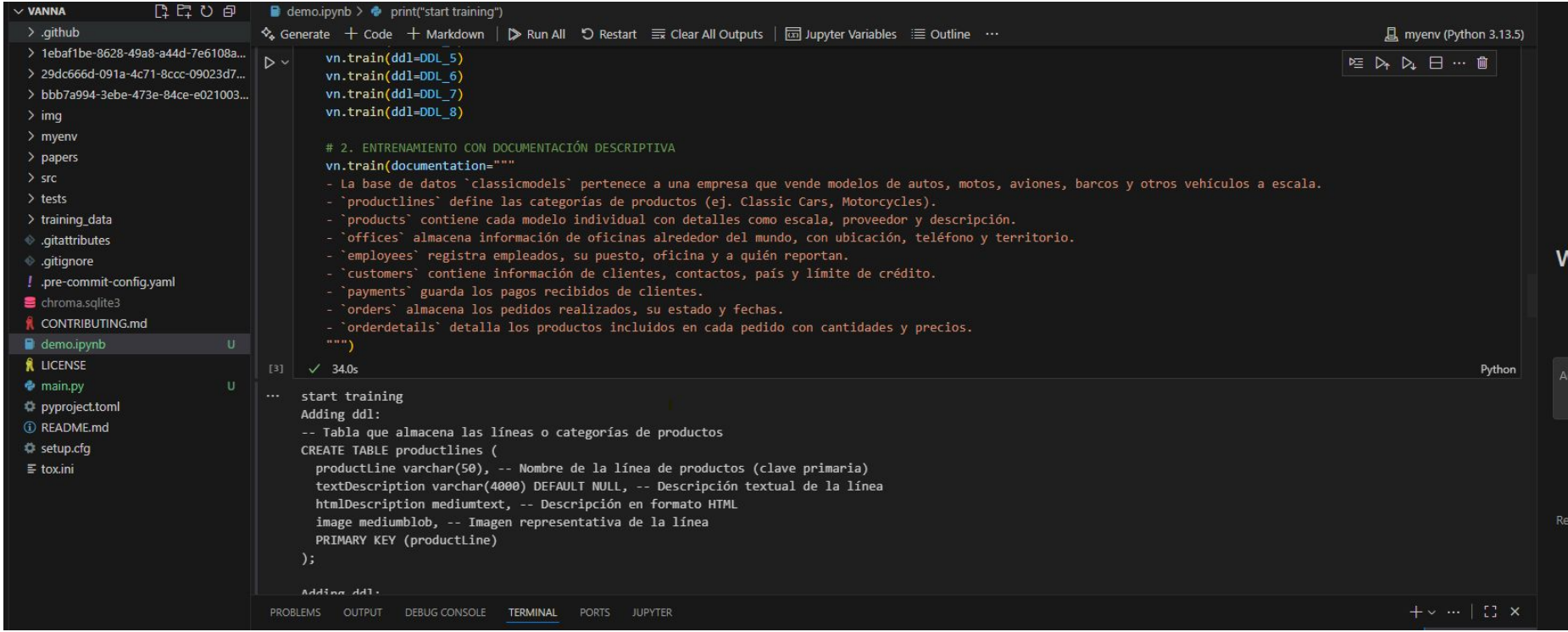

Navigator
SCHEMAS
Filter objects
classicmodels
Tables
customers
employees
offices
orderdetails
orders
payments
productlines
products
Views
Stored Procedures
Functions
custumer
sys
Administration
Schemas
Information
Schema: sys
Query 1
customers
orderdetails
orders
products
Limit to 1000 rows
1 • SELECT * FROM classicmodels.products;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
productCode | productName | productLine | productScale | productVendor | productDescription | quantityInStock | buyPrice | MSRP
S10_1678 | 1969 Harley Davidson Ultimate Chopper | Motorcycles | 1:10 | Min Lin Diecast | This replica features working kickstand, front su... | 7933 | 48.81 | 95.70
S10_1949 | 1952 Alpine Renault 1300 | Classic Cars | 1:10 | Classic Metal Creations | Turnable front wheels; steering function; detail... | 7305 | 98.58 | 214.30
S10_2016 | 1996 Moto Guzzi 1100i | Motorcycles | 1:10 | Highway 66 Mini Classics | Official Moto Guzzi logos and insignias, saddle b... | 6625 | 68.99 | 118.94
S10_4698 | 2003 Harley-Davidson Eagle Drag Bike | Motorcycles | 1:10 | Red Start Diecast | Model features, official Harley Davidson logos a... | 5582 | 91.02 | 193.66
S10_4757 | 1972 Alfa Romeo GTA | Classic Cars | 1:10 | Motor City Art Classics | Features include: Turnable front wheels; steeri... | 3252 | 85.68 | 136.00
S10_4962 | 1962 LanciaA Delta 16V | Classic Cars | 1:10 | Second Gear Diecast | Features include: Turnable front wheels; steeri... | 6791 | 103.42 | 147.74
S12_1099 | 1968 Ford Mustang | Classic Cars | 1:12 | Autoart Studio Design | Hood, doors and trunk all open to reveal highly ... | 68 | 95.34 | 194.57
S12_1108 | 2001 Ferrari Enzo | Classic Cars | 1:12 | Second Gear Diecast | Turnable front wheels; steering function; detail... | 3619 | 95.59 | 207.80
S12_1666 | 1958 Setra Bus | Trucks and Buses | 1:12 | Welly Diecast Productions | Model features 30 windows, skylights & glare re... | 1579 | 77.90 | 136.67
S12_2823 | 2002 Suzuki XREO | Motorcycles | 1:12 | Unimax Art Galleries | Official logos and insignias, saddle bags located ... | 9997 | 66.27 | 150.62
S12_3148 | 1969 Corvair Monza | Classic Cars | 1:18 | Welly Diecast Productions | 1:18 scale die-cast about 10" long doors open, ... | 6906 | 89.14 | 151.08
S12_3380 | 1968 Dodge Charger | Classic Cars | 1:12 | Welly Diecast Productions | 1:12 scale model of a 1968 Dodge Charger. Ho... | 9123 | 75.16 | 117.44
S12_3891 | 1969 Ford Falcon | Classic Cars | 1:12 | Second Gear Diecast | Turnable front wheels; steering function; detail... | 1049 | 83.05 | 173.02
S12_3990 | 1970 Plymouth Hemi Cuda | Classic Cars | 1:12 | Studio M Art Models | Very detailed 1970 Plymouth Cuda model in 1:1... | 5663 | 31.92 | 79.80
S12_4473 | 1957 Chevy Pickup | Trucks and Buses | 1:12 | Exoto Designs | 1:12 scale die-cast about 20" long Hood opens, ... | 6125 | 55.70 | 118.50
S12_4675 | 1969 Dodge Charger | Classic Cars | 1:12 | Welly Diecast Productions | Detailed model of the 1969 Dodge Charger. Thi... | 7323 | 58.73 | 115.16
S18_1097 | 1940 Ford Pickup Truck | Trucks and Buses | 1:18 | Studio M Art Models | This model features soft rubber tires, working s... | 2613 | 58.33 | 116.67
S18_1129 | 1993 Mazda RX-7 | Classic Cars | 1:18 | Highway 66 Mini Classics | This model features, opening hood, opening do... | 3975 | 83.51 | 141.54
S18_1342 | 1937 Lincoln Berline | Vintage Cars | 1:18 | Motor City Art Classics | Features opening engine cover, doors, trunk, a... | 8693 | 60.62 | 102.74
S18_1367 | 1936 Mercedes-Benz 500K Special Roa... | Vintage Cars | 1:18 | Studio M Art Models | This 1:18 scale replica is constructed of heavy d... | 8635 | 24.26 | 53.91
S18_1589 | 1965 Aston Martin DB5 | Classic Cars | 1:18 | Classic Metal Creations | Die-cast model of the silver 1965 Aston Martin ... | 9042 | 65.96 | 124.44
S18_1662 | 1980s Black Hawk Helicopter | Planes | 1:18 | Red Start Diecast | 1:18 scale replica of actual Army's UH-60L BLAC... | 5330 | 77.27 | 157.69
S18_1749 | 1917 Grand Touring Sedan | Vintage Cars | 1:18 | Welly Diecast Productions | This 1:18 scale replica of the 1917 Grand Tourin... | 2724 | 86.70 | 170.00
S18_1889 | 1948 Porsche 356-A Roadster | Classic Cars | 1:18 | Gearbox Collectibles | This precision die-cast replica features opening ... | 8826 | 53.90 | 77.00
S18_1984 | 1995 Honda Civic | Classic Cars | 1:18 | Min Lin Diecast | This model features, opening hood, opening do... | 9772 | 93.89 | 142.25
products 1
Apply


Navigator
SCHEMAS
Filter objects
classicmodels
Tables
customers
employees
offices
orderdetails
orders
payments
productlines
products
Views
Stored Procedures
Functions
custumer
sys
Administration
Schemas
Information
Table: customers
Columns:
customerNumber int PK
customerName varchar(5
contactLastName varchar(5
contactFirstName varchar(5
phone varchar(5
addressLine1 varchar(5
addressLine2 varchar(5
city varchar(5
state varchar(5
Query 1
customers
orderdetails
orders
products
orders
orderdetails
customers
Limit to 1000 rows
1 SELECT * FROM classicmodels.customers;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
customerNumber customerName contactLastName contactFirstName phone addressLine1 addressLine2 city state postalCode country salesRepEn
103 Atelier graphique Schmitt Carine 40.32.2555 54, rue Royale NULL Nantes NULL 44000 France 1370
112 Signal Gift Stores King Jean 7025551838 8489 Strong St. NULL Las Vegas NV 83030 USA 1166
114 Australian Collectors, Co. Ferguson Peter 03 9520 4555 636 St Kilda Road Level 3 Melbourne Victoria 3004 Australia 1611
119 La Rochelle Gifts Labrune Janine 40.67.8555 67, rue des Cinquante Otages NULL Nantes NULL 44000 France 1370
121 Baane Mini Imports Bergulfsen Jonas 07-98 9555 Erling Skakkes gate 78 NULL Stavern NULL 4110 Norway 1504
124 Mini Gifts Distributors Ltd. Nelson Susan 4155551450 5677 Strong St. NULL San Rafael CA 97562 USA 1165
125 Havel & Zbyszek Co Piestrzeniewicz Zbyszek (26) 642-7555 ul. Filtrowa 68 NULL Warszawa NULL 01-012 Poland NULL
128 Blauer See Auto, Co. Keitel Roland +49 69 66 90 2555 Lyonerstr. 34 NULL Frankfurt NULL 60528 Germany 1504
129 Mini Wheels Co. Murphy Julie 6505555787 5557 North Pendale Street NULL San Francisco CA 94217 USA 1165
131 Land of Toys Inc. Lee Kwai 2125557818 897 Long Airport Avenue NULL NYC NY 10022 USA 1323
141 Euro+ Shopping Channel Freyre Diego (91) 555 94 44 C/ Moralzarzal, 86 NULL Madrid NULL 28034 Spain 1370
144 Volvo Model Replicas, Co Berglund Christina 0921-12 3555 Berguvsvägen 8 NULL Luleå NULL S-958 22 Sweden 1504
145 Danish Wholesale Imports Petersen Jytte 31 12 3555 Vinbæltet 34 NULL Kobenhavn NULL 1734 Denmark 1401
146 Saveley & Henriot, Co. Saveley Mary 78.32.5555 2, rue du Commerce NULL Lyon NULL 69004 France 1337
148 Dragon Souveniers, Ltd. Natividad Eric +65 221 7555 Bronz Sok. Bronz Apt. 3... Singapore NULL 079903 Singapore 1621
151 Muscle Machine Inc Young Jeff 2125557413 4092 Furth Circle Suite 400 NYC NY 10022 USA 1286
157 Diecast Classics Inc. Leong Kelvin 2155551555 7586 Pompton St. NULL Allentown PA 70267 USA 1216
161 Technics Stores Inc. Hashimoto Juri 6505556809 9408 Furth Circle NULL Burlingame CA 94217 USA 1165
166 Handji Gifts& Co Victorino Wendy +65 224 1555 106 Linden Road Sandown 2nd Floor Singapore NULL 069045 Singapore 1612
167 Herkku Gifts Oeztan Veysel +47 2267 3215 Brehmen St. 121 PR 334 Sent... Bergen NULL N 5804 Norway 1504
168 American Souvenirs Inc Franco Keith 2035557845 149 Spinnaker Dr. Suite 101 New Haven CT 97823 USA 1286
169 Porto Imports Co. de Castro Isabel (1) 356-5555 Estrada da saúde n. 58 NULL Lisboa NULL 1756 Portugal NULL
171 Daedalus Designs Imports Rancé Martine 20.16.1555 184, chaussée de Tournai NULL Lille NULL 59000 France 1370
172 La Corne D'abondance, Co. Bertrand Marie (1) 42.34.2555 265, boulevard Charonne NULL Paris NULL 75012 France 1337
Result Grid
Form Editor
Field Types
Query Stats
Execution Plan
customers 1
Apply
Revert
Output

Vaana AI


Question
Vanna AI
Search
Prompt
SQL
SQL Query
sql Query
Charts
New Questions
DataFrame
Plotly
AI-generated follow-up questions
Execute
Results Correct?
DDL / Schemas
Documentation
SQL
Correct Answers
Any Vector Store
Any LLM
Any SQL Database
Yes
No
Manual query rewrite
SQL
Correct Query

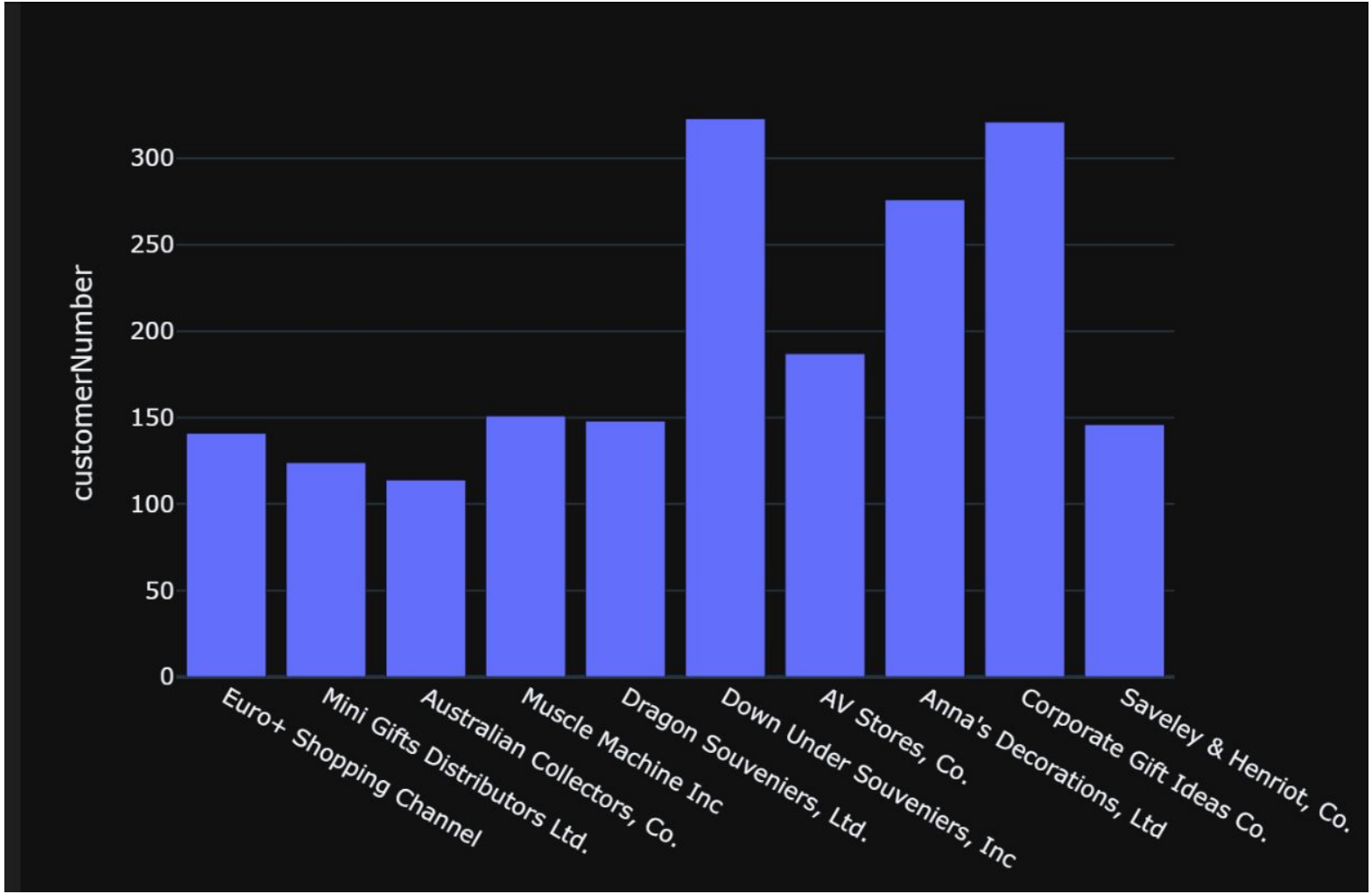
Vaana AI


VANNA
.github
1ebaf1be-8628-49a8-a44d-7e6108a...
29dc666d-091a-4c71-8ccc-09023d7...
bbb7a994-3ebe-473e-84ce-e021003...
img
myenv
papers
src
tests
training_data
.gitattributes
.gitignore
.pre-commit-config.yaml
chroma.sqlite3
CONTRIBUTING.md
demo.ipynb U
LICENSE
main.py U
pyproject.toml
README.md
setup.cfg
tox.ini
demo.ipynb > print("start training")
Generate
Code
Markdown
Run All
Restart
Clear All Outputs
Jupyter Variables
Outline
myenv (Python 3.13.5)
vn.train(ddl=DDL_5)
vn.train(ddl=DDL_6)
vn.train(ddl=DDL_7)
vn.train(ddl=DDL_8)
# 2. ENTRENAMIENTO CON DOCUMENTACIÓN DESCRIPTIVA
vn.train(documentation="""
- La base de datos `classicmodels` pertenece a una empresa que vende modelos de autos, motos, aviones, barcos y otros vehículos a escala.
- `productlines` define las categorías de productos (ej. Classic Cars, Motorcycles).
- `products` contiene cada modelo individual con detalles como escala, proveedor y descripción.
- `offices` almacena información de oficinas alrededor del mundo, con ubicación, teléfono y territorio.
- `employees` registra empleados, su puesto, oficina y a quién reportan.
- `customers` contiene información de clientes, contactos, país y límite de crédito.
- `payments` guarda los pagos recibidos de clientes.
- `orders` almacena los pedidos realizados, su estado y fechas.
- `orderdetails` detalla los productos incluidos en cada pedido con cantidades y precios.
""")
[3]
34.0s
Python
start training
Adding ddl:
-- Tabla que almacena las líneas o categorías de productos
CREATE TABLE productlines (
productLine varchar(50), -- Nombre de la línea de productos (clave primaria)
textDescription varchar(4000) DEFAULT NULL, -- Descripción textual de la línea
htmlDescription mediumtext, -- Descripción en formato HTML
image mediumblob, -- Imagen representativa de la línea
PRIMARY KEY (productLine)
);
Adding ddl:
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
JUPYTER

```
respuesta = vn.ask(question="¿Dime el nombre de los 10 clientes que ha comprado más en total")
print(respuesta)
```

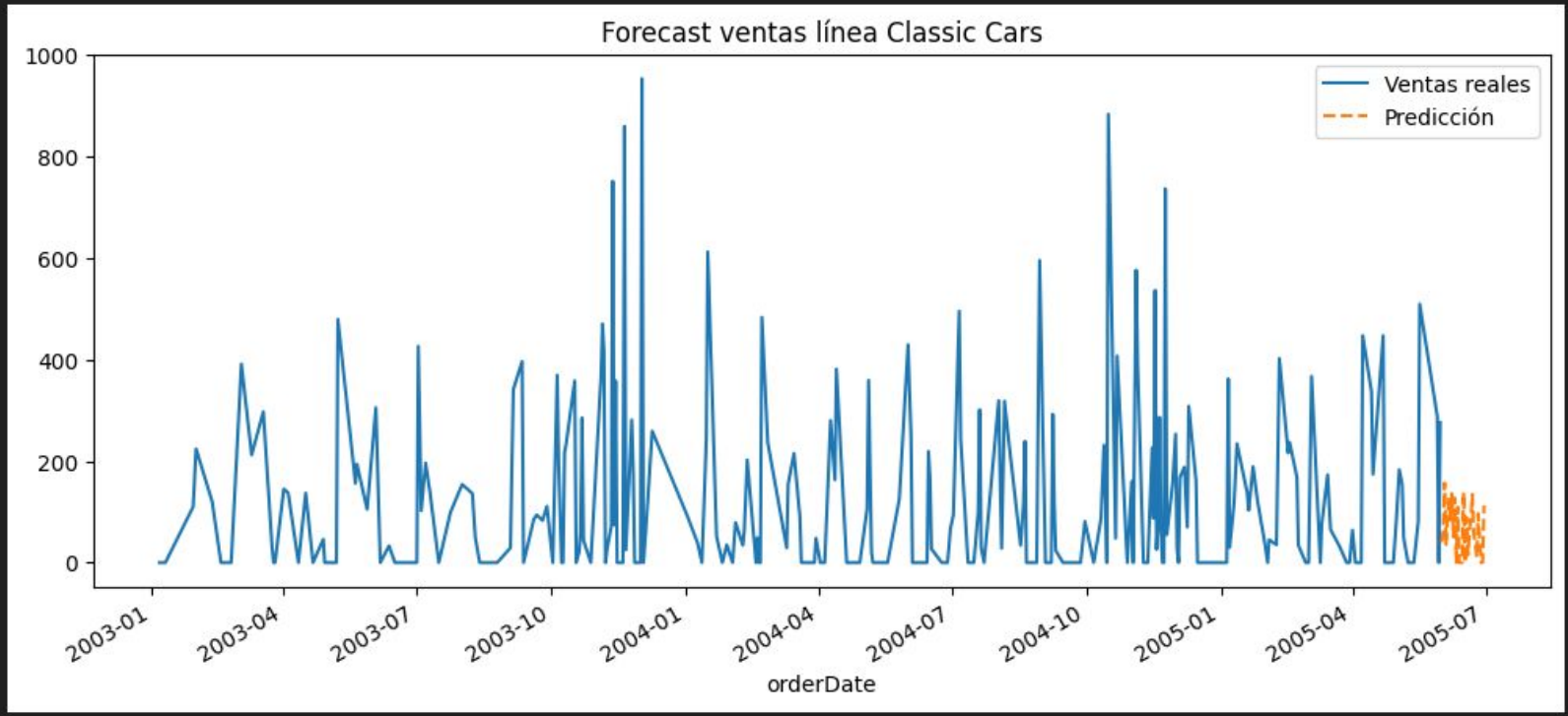
[9] ✓ 44.0s Python

```
SQL Prompt: [{'role': 'system', 'content': "You are a SQL expert. Please help to generate a SQL query to answer the question. Your response should ONLY be based on the
Info: Ollama parameters:
model=deepseek-r1:7b,
options={},
keep_alive=None
Info: Prompt Content:
[{"role": "system", "content": "You are a SQL expert. Please help to generate a SQL query to answer the question. Your response should ONLY be based on the given conte
Info: Ollama Response:
model='deepseek-r1:7b' created_at='2025-10-04T07:55:27.0702906Z' done=True done_reason='stop' total_duration=19810684300 load_duration=37866900 prompt_eval_count=1888
LLM Response: <think>
Okay, let me try to figure out how to answer the user's question. The user is asking for the names of the top 10 customers who have spent the most in total and their r

First, I'll look at the tables provided. There's a 'customers' table with customerNumber, customerName, contactLastName, etc., including country. Then there's a 'payme

To get the total spending per customer, I can use SQL to sum up all amounts for each customerNumber in the payments table. But since customers might not have any payme

I'll join the 'payments' table with the 'customers' table using customerNumber as the key. Then, group by customerNumber and sum up the amounts. This will give me each

Next, I need to add the country information from the customers table. So after calculating the total spent per customer, I'll join it again with the 'customers' table

To find the top 10 customers who have spent the most, I'll order the results by the total amount in descending order and limit it to 10 rows.

I should also make sure that the SQL query is correct, using the appropriate JOIN clauses and functions. Testing might be needed to ensure there are no errors and the
</think>
```

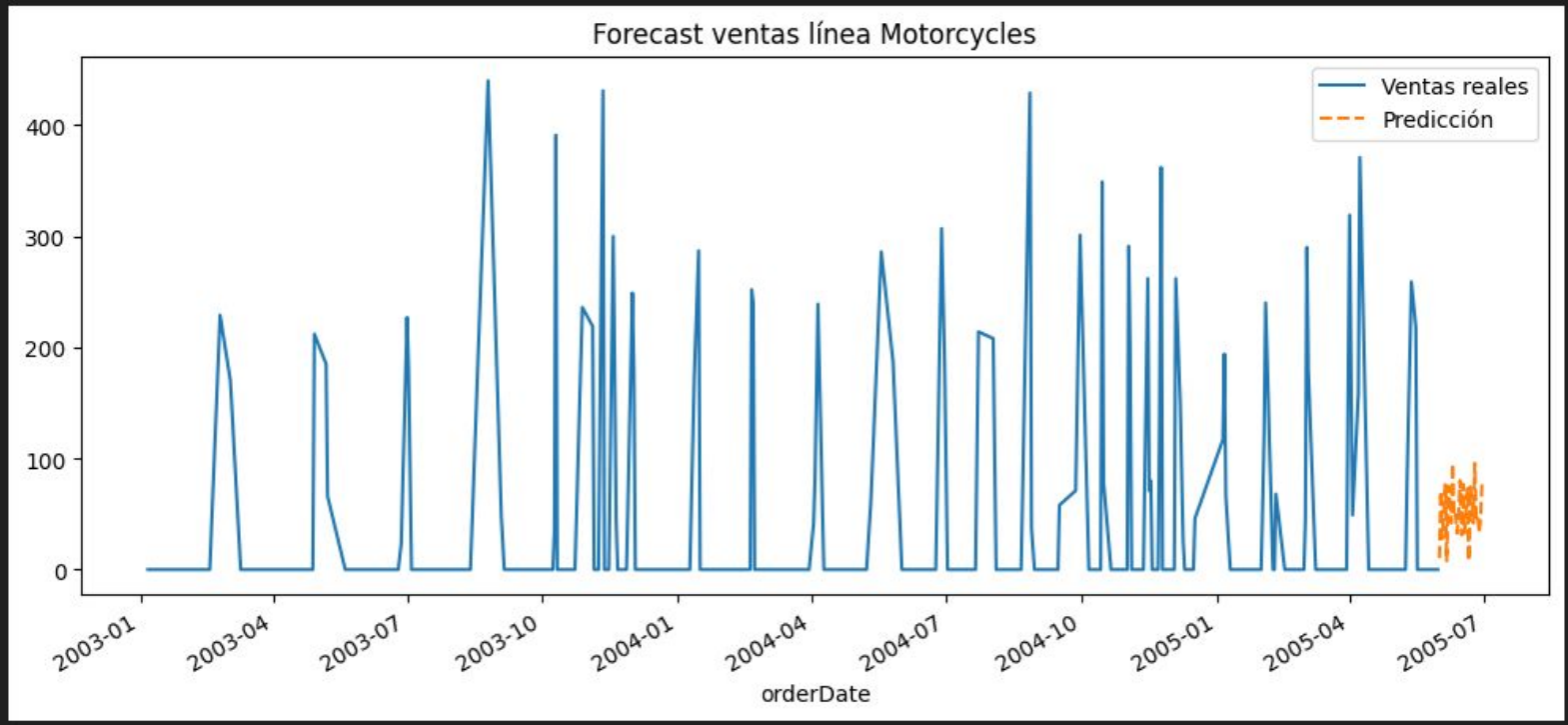

customerNumber
300
250
200
150
100
50
0
Euro+ Shopping Channel
Mini Gifts Distributors Ltd.
Australian Collectors, Co.
Muscle Machine Inc
Dragon Souveniers, Ltd.
Down Under Souveniers, Inc
AV Stores, Co.
Anna's Decorations, Ltd
Corporate Gift Ideas Co.
Saveley & Henriot, Co.

Skforecast：是 Python 库，用于**时间序列预测**，可以结合机器学习模型（如 LightGBM、Random Forest 等）预测未来数据。

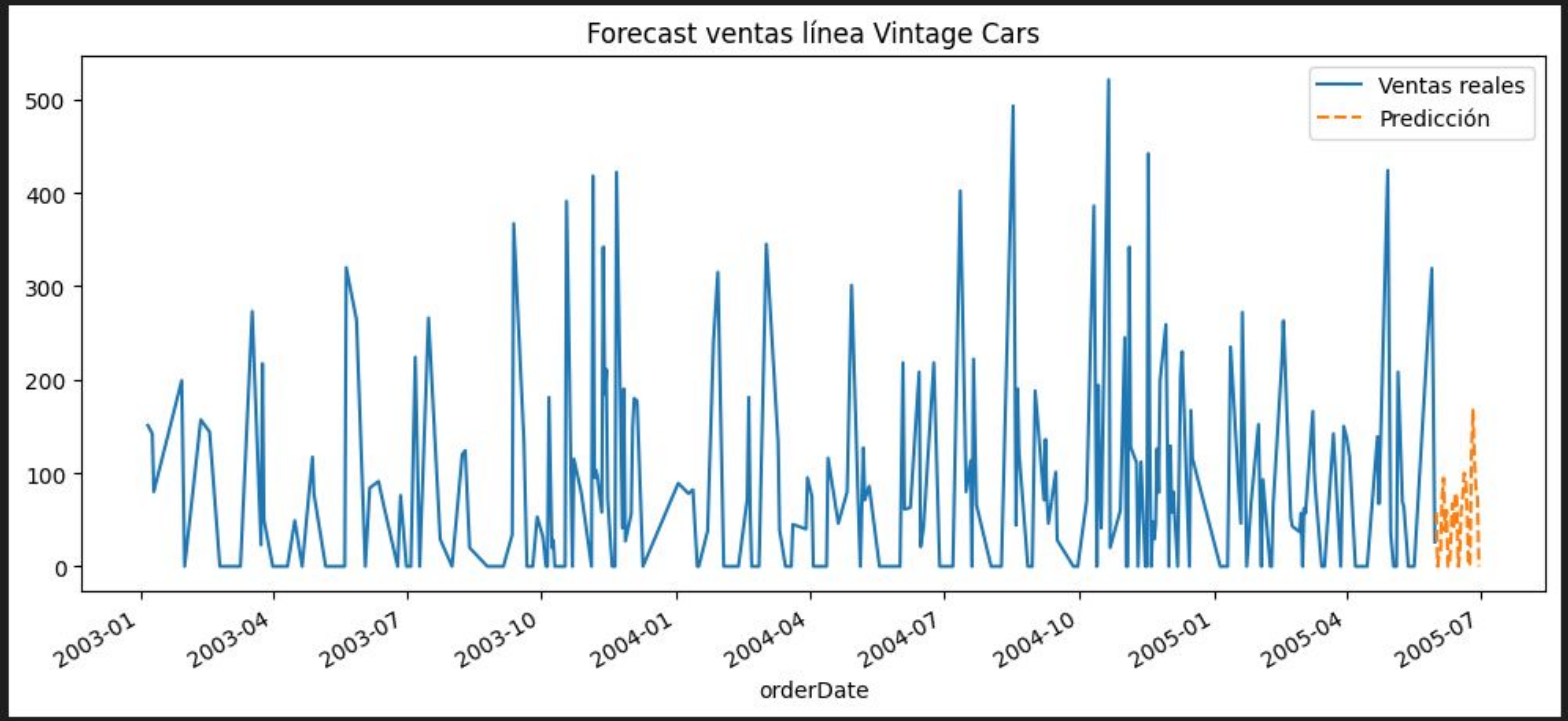
```
plt.plot(
```



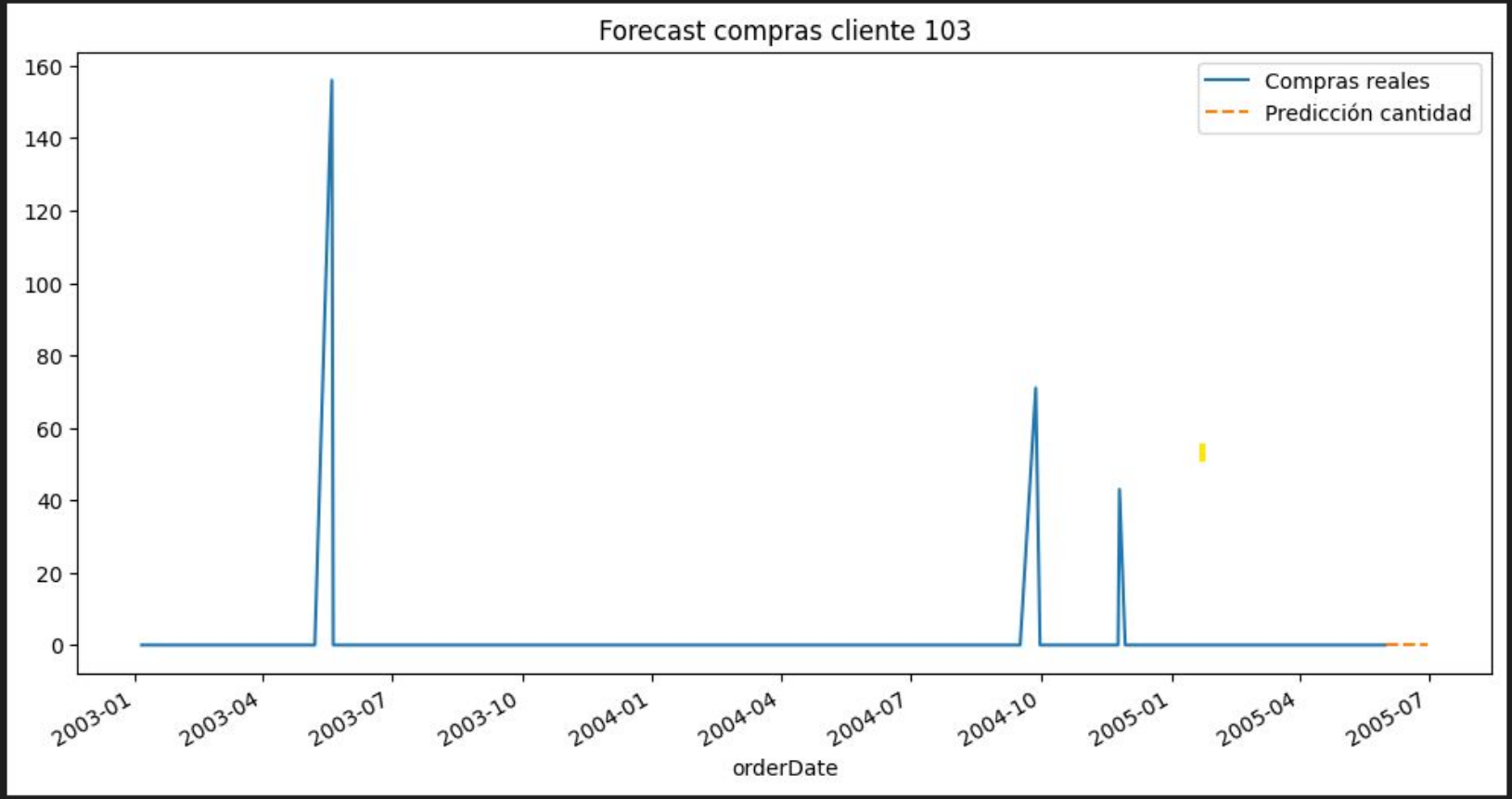
```
plt.plot(
```


Forecast ventas línea Motorcycles
Ventas reales
Predicción
400
300
200
100
0
2003-01
2003-04
2003-07
2003-10
2004-01
2004-04
2004-07
2004-10
2005-01
2005-04
2005-07
orderDate

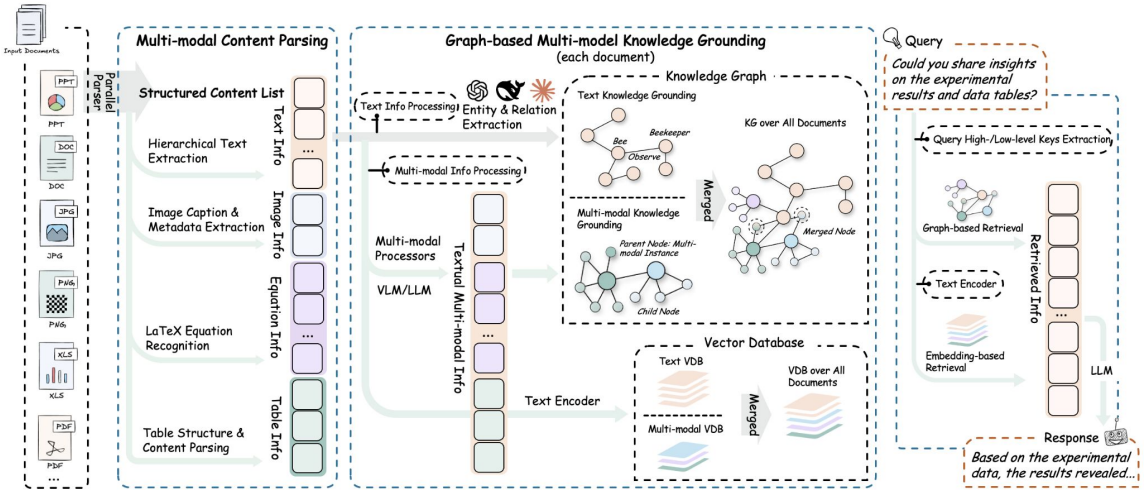
```
C:\Users\fdsam\AppData\Local\Temp\ipykernel_20648\3756302947.py:55: UserWarning: This axis already has a converter set and is updating to a potentially
  plt.plot(
```



```
plt.plot(
```


Forecast compras cliente 103
Compras reales
Predicción cantidad
160
140
120
100
80
60
40
20
0
2003-01
2003-04
2003-07
2003-10
2004-01
2004-04
2004-07
2004-10
2005-01
2005-04
2005-07
orderDate

RAG-Anything



RAG-Anything 是一个工具/框架，用来把 **检索增强生成（RAG, Retrieval-Augmented Generation）**技术应用到各种数据源上。

它的目标是：

1. 让你可以把 **任何格式的数据**（文档、Excel 表格、数据库、PDF 等）放进知识库。
2. 用 **embedding（向量化 语义表示）**和 **大语言模型（LLM，比如 GPT-4、GPT-5）**结合，实现 **问答 / 搜索 / 总结**。
3. 避免 LLM 上下文窗口太小的 问题——不是直接把所有数据 丢给模型，而是先检索，再生成回答。

可以把 **RAG-Anything** 想象成一个 **超级智能图书管理员**：

- 你把各种 书（Excel、PDF、网页）交给他，他会帮你拆分、分 类、记忆（embedding）。
- 当你问问题时，他不会傻傻地把所有 书给你看，而是先找出最相关的几 页，再用他的智慧（LLM）帮你总结成答案。

```python
    # ----------------------------
    result = await rag.aquery(
        "List the product names with their stock quantities and buy prices",
        mode="hybrid"   # usa embeddings + LLM
    )
    print("Query result:", result)

# ----------------------------
# 5 Ejecutar en Jupyter con await
# ----------------------------
await insert_excel_to_rag()
```

14m 54.4s

```
Query result: I'm unable to provide stock quantities and buy prices because that information is not present in the provided context.

What is available from the context
- Product names (product lines): Classic Cars, Motorcycles, Planes, Ships, Trains, Trucks and Buses, Vintage Cars.
- Some related details exist for these product lines (e.g., materials, scale ranges, certificate of authenticity, and display-ready status), but no stock

Note on pricing that is available
- For Vintage Cars, there is a price range mentioned: $30.00 to $180.00. This is the only explicit price data tied to a product line in the provided conte

If you can share a dataset or specify a table that includes stock quantities and buy prices, I can compile the list accordingly.

### References
```

列出产品名称及其库存数量和购买价格

- 产品名称(产品线):经典汽车、摩托车、飞机、轮船、火车、卡车和公共汽车、古董车。
- 这些产品线有一些相关详细信息(例如,材质、比例范围、真品证书和可展示状态),但数据中未列出库存数量或购买价格。

关于可用价格的说明
- 古董车的价格范围为:30.00 美元至 180.00 美元。这是提供的内容中唯一与产品线相关的明确价格数据,并且未指定 单个产品的购买价格或库存数量。

如果您可以分享数据集或指定包含 库存数量和购买价格的表格,我可以相 应地编制清单。