```
import pandas as pd
import matplotlib.pyplot as plt
from pandasql import sqldf
sales_data = pd.read_csv(r"C:\Users\dell\Downloads\
sales_data_sample.csv", encoding='latin1')
def run_query(q):
    return sqldf(q, globals())

# Query 1: Top 5 countries by sales
q1 = """
SELECT
    COUNTRY,
    SUM(SALES) AS TotalSales
FROM
    sales_data
GROUP BY
    COUNTRY
ORDER BY
    TotalSales DESC
LIMIT 5;
"""
print("Top 5 Countries by Total Sales:")
display(run_query(q1))  # Use display() instead of print()
```

```
Top 5 Countries by Total Sales:
```

	COUNTRY	TotalSales
0	USA	3627982.83
1	Spain	1215686.92
2	France	1110916.52
3	Australia	630623.10
4	UK	478880.46

```
# Query 2: Number of orders by status
q2 = """
SELECT
    STATUS,
    COUNT(ORDERNUMBER) AS NumberOfOrders
FROM
    sales_data
GROUP BY
    STATUS;
"""
print("\nNumber of Orders by Status:")
display(run_query(q2)) # Use display() instead of print()
```

```
Number of Orders by Status:
```

```
       STATUS  NumberOfOrders
0   Cancelled              60
1    Disputed              14
2  In Process              41
3     On Hold              44
4    Resolved              47
5     Shipped            2617
```

```
# Query 3: Average sales per product line
q3 = """
SELECT
    PRODUCTLINE,
    AVG(SALES) AS AverageSales
FROM
    sales_data
GROUP BY
    PRODUCTLINE
ORDER BY
    AverageSales DESC;
"""
print("\nAverage Sales per Product Line:")
display(run_query(q3)) # Use display() instead of print()
```

```
Average Sales per Product Line:
```

```
        PRODUCTLINE  AverageSales
0      Classic Cars   4053.377104
1  Trucks and Buses   3746.810100
2       Motorcycles   3523.831843
3            Planes   3186.286176
4      Vintage Cars   3135.339110
5             Ships   3053.150128
6            Trains   2938.226883
```

```
# Query 4: Customers with 'Small' deal size in the USA
q4 = """
SELECT
    CUSTOMERNAME,
    CITY,
    SALES
FROM
    sales_data
WHERE
    COUNTRY = 'USA' AND DEALSIZE = 'Small'
ORDER BY
    SALES DESC;
"""
print("\n'Small' Deal Size Customers in the USA (Top 5):")
```

```
display(run_query(q4).head(5)) # Use display() and .head(5) to show
only the first few rows
```

```
'Small' Deal Size Customers in the USA (Top 5):
```

	CUSTOMERNAME	CITY	SALES
0	Mini Gifts Distributors Ltd.	San Rafael	2986.50
1	FunGiftIdeas.com	New Bedford	2984.88
2	Diecast Collectables	Boston	2980.60
3	Mini Classics	White Plains	2971.34
4	The Sharp Gifts Warehouse	San Jose	2956.80

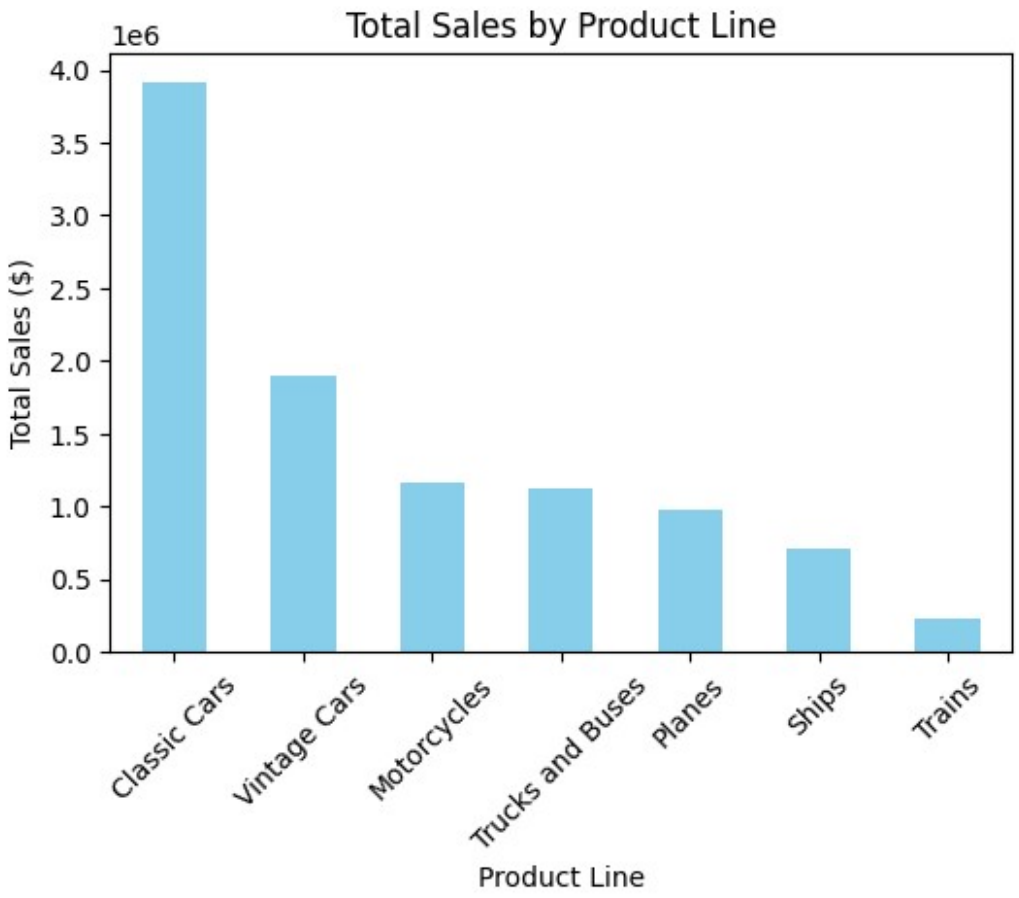
```
# Bar Chart Total Sales by Product Line
sales_by_productline = sales_data.groupby('PRODUCTLINE')
['SALES'].sum().sort_values(ascending=False)

print("Data for Total Sales by Product Line:")
display(sales_by_productline)

plt.figure(figsize=(6, 4))
sales_by_productline.plot(kind='bar', color='skyblue')
plt.title('Total Sales by Product Line')
plt.xlabel('Product Line')
plt.ylabel('Total Sales ($)')
plt.xticks(rotation=45)
plt.show()
```

```
Data for Total Sales by Product Line:

PRODUCTLINE
Classic Cars        3919615.66
Vintage Cars        1903150.84
Motorcycles         1166388.34
Trucks and Buses    1127789.84
Planes               975003.57
Ships                714437.13
Trains               226243.47
Name: SALES, dtype: float64
```


Total Sales by Product Line
1e6
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Total Sales ($)
Classic Cars
Vintage Cars
Motorcycles
Trucks and Buses
Planes
Ships
Trains
Product Line