1. **How did you connect Python to a database?**

Ans: I used Python’s built-in sqlite3 module

import sqlite3

conn = sqlite3.connect('sales\_data.db')

1. **What SQL query did you run?**

Ans: I ran this SQL query to get total quantity and revenue grouped by product.

SELECT

product,

SUM (quantity) AS total\_qty,

SUM (quantity \* price) AS revenue

FROM sales

GROUP BY product;

1. **What does GROUP BY do?**

Ans: The GROUP BY clause groups rows that have the same value in a column, here the product so that aggregate functions like SUM () can be applied to each group individually.

For example:

All sales of Product A are grouped together to calculate total quantity and revenue.

1. **How did you calculate revenue?**

Ans: Revenue was calculated inside the SQL query using:

SUM (quantity \* price) AS revenue

1. **How did you visualize the result?**

Ans: I used matplotlib to create a simple bar chart from the DataFrame

df.plot(kind='bar', x='product', y='revenue')

plt.show()

This plotted each product on the x-axis and its revenue on the y-axis.

1. **What does pandas do in your code?**

Ans: Pandas was used to

* Load the SQL query result into a DataFrame
* import pandas as pd

df = pd.read\_sql\_query(query, conn)

* + Inspect and print the data easily
  + Pass the data to matplotlib for visualization
  + Pandas makes handling and analyzing tabular data very convenient.

1. **What’s the benefit of using SQL inside Python?**

Ans: Using SQL inside Python allows you to

* + Automate data analysis tasks
  + Combine data querying (SQL) with data manipulation and visualization (Python)
  + Build complete data workflows in one place (from database to dashboard)
  + Save time on manual queries and repetitive tasks

1. **Could you run the same SQL query directly in DB Browser for SQLite?**

Yes, absolutely.

You can open sales\_data.db in DB Browser for SQLite and run this query directly in the Execute SQL tab

SELECT

product,

SUM(quantity) AS total\_qty,

SUM(quantity \* price) AS revenue

FROM sales

GROUP BY product;