SQL for Basic Sales Summary Using SQLite

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Objective: Use SQL inside Python to extract basic sales information (such as total quantity sold and total revenue) from a small SQLite database, and display the output using print statements and a simple bar chart.

Tools:
SQLite (built-in with Python)
Python with `sqlite3`, `pandas`, and `matplotlib`

Deliverables:
Python script: `sales_summary.py`
Task summary with explanation
Output screenshot (printed query results)
Bar chart image: `sales_chart.png`

Dataset: We created a custom SQLite database from scratch using Python.

- **Database File:** `sales_data.db`
- **Table Name:** `sales`
- **Columns:**
  - `id` (INTEGER, primary key)
  - `product` (TEXT)
  - `quantity` (INTEGER)
  - `"Price(Rs.)"` (REAL)

Data Volume: 28 records were inserted with realistic fruit product names, quantities, and price values

Task Summary:
In this task, we did not use any external SQL software. Instead, we created an SQLite database directly from Python using the `sqlite3` module. A `sales` table was created and populated with about 28 sample records.

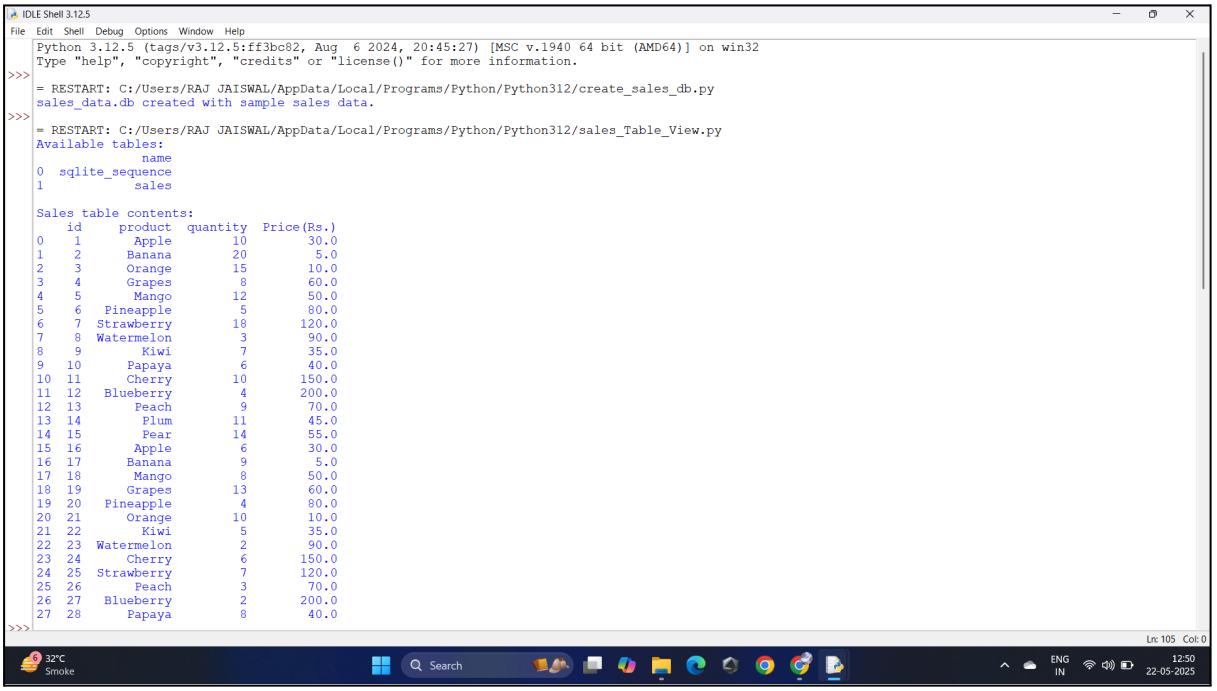
Then, using SQL inside Python:

- We wrote queries to calculate **total quantity sold and total revenue per product**.
- We also fetched the **overall total quantity and revenue** across all products.
- An additional query was used to display the **top 5 products by revenue**.
- The result of the first query was visualized using a **bar chart** made with `matplotlib`.

All query results were printed to the console, and the chart was displayed during script execution.

---------- Perform Task and Screenshots ----------

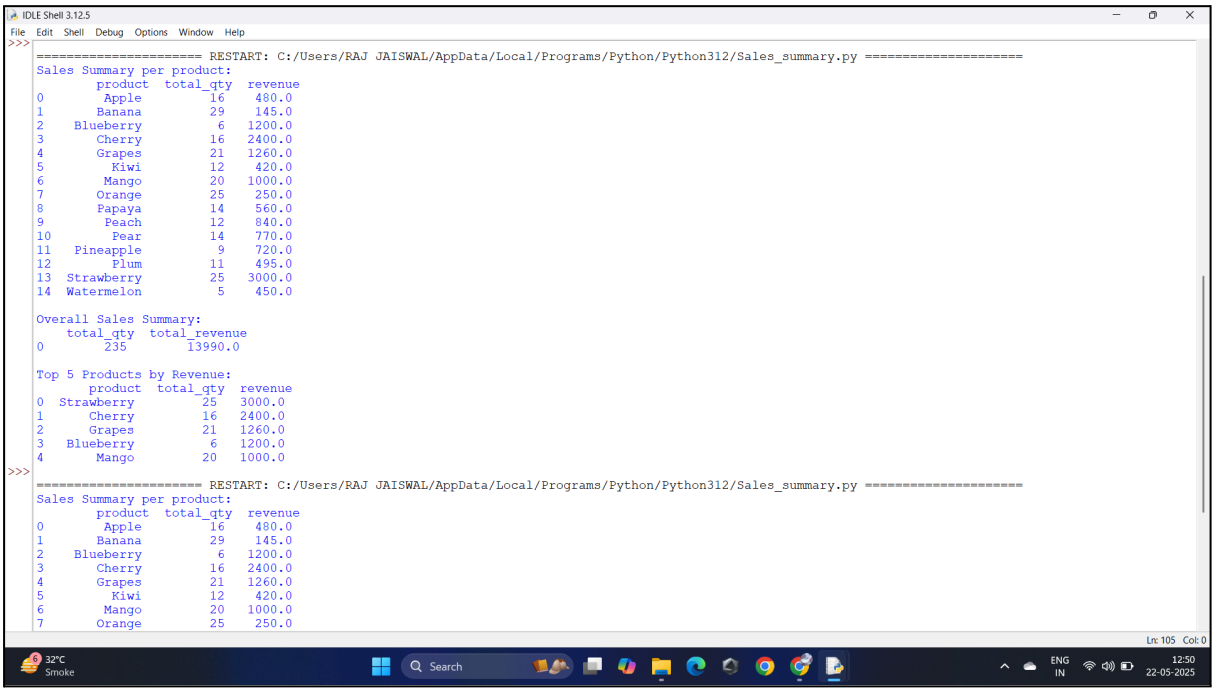
1. Creating the Database and Table Output:



```
IDLE Shell 3.12.5
File  Edit  Shell  Debug  Options  Window  Help
Python 3.12.5 (tags/v3.12.5:ff3bc82, Aug  6 2024, 20:45:27) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/RAJ JAISWAL/AppData/Local/Programs/Python/Python312/create_sales_db.py
sales_data.db created with sample sales data.
>>>
= RESTART: C:/Users/RAJ JAISWAL/AppData/Local/Programs/Python/Python312/sales_Table_View.py
Available tables:
            name
0  sqlite_sequence
1            sales

Sales table contents:
    id     product  quantity  Price(Rs.)
0    1       Apple        10        30.0
1    2      Banana        20         5.0
2    3      Orange        15        10.0
3    4      Grapes         8        60.0
4    5       Mango        12        50.0
5    6   Pineapple         5        80.0
6    7  Strawberry        18       120.0
7    8  Watermelon         3        90.0
8    9        Kiwi         7        35.0
9   10      Papaya         6        40.0
10  11      Cherry        10       150.0
11  12   Blueberry         4       200.0
12  13       Peach         9        70.0
13  14        Plum        11        45.0
14  15        Pear        14        55.0
15  16       Apple         6        30.0
16  17      Banana         9         5.0
17  18       Mango         8        50.0
18  19      Grapes        13        60.0
19  20   Pineapple         4        80.0
20  21      Orange        10        10.0
21  22        Kiwi         5        35.0
22  23  Watermelon         2        90.0
23  24      Cherry         6       150.0
24  25  Strawberry         7       120.0
25  26       Peach         3        70.0
26  27   Blueberry         2       200.0
27  28      Papaya         8        40.0
>>>
                                                                    Ln: 105  Col: 0
```

2. Sales Summary Queries Output:



```
IDLE Shell 3.12.5
File  Edit  Shell  Debug  Options  Window  Help
>>>
====================== RESTART: C:/Users/RAJ JAISWAL/AppData/Local/Programs/Python/Python312/Sales_summary.py ======================
Sales Summary per product:
       product  total_qty  revenue
0        Apple         16    480.0
1       Banana         29    145.0
2    Blueberry          6   1200.0
3       Cherry         16   2400.0
4       Grapes         21   1260.0
5         Kiwi         12    420.0
6        Mango         20   1000.0
7       Orange         25    250.0
8       Papaya         14    560.0
9        Peach         12    840.0
10        Pear         14    770.0
11   Pineapple          9    720.0
12        Plum         11    495.0
13  Strawberry         25   3000.0
14  Watermelon          5    450.0

Overall Sales Summary:
    total_qty  total_revenue
0         235        13990.0

Top 5 Products by Revenue:
       product  total_qty  revenue
0  Strawberry         25   3000.0
1      Cherry         16   2400.0
2      Grapes         21   1260.0
3   Blueberry          6   1200.0
4       Mango         20   1000.0
>>>
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5         Kiwi         12    420.0
6        Mango         20   1000.0
7       Orange         25    250.0
                                                                    Ln: 105  Col: 0
```