TASK -7

📓 Jupyter Notebook Code (Python + Pandas + SQL)

Dataset chart

product	total_qty	revenue	avg_price
Headphones	45	82600	1766.7
Keyboard	27	30600	1100
Laptop	12	826000	69000
Monitor	16	322000	20000
Phone	25	742000	30000
Smartwatch	19	259000	13666.7
Tablet	22	472000	21666.7

Code :

```
# Sales Summary from SQLite Database
# Using Python, Pandas, SQL inside Jupyte

import sqlite3
import pandas as pd
import matplotlib.pyplot as plt


conn = sqlite3.connect("sales_data.db")
cursor = conn.cursor()


cursor.execute("DROP TABLE IF EXISTS sales")
cursor.execute("""
CREATE TABLE sales (
```

```
    id INTEGER PRIMARY KEY AUTOINCREMENT,
    product TEXT,
    quantity INTEGER,
    price REAL
)
")


sales_data = [
    (Laptop", 4, 65000),
    ("Laptop", 2, 70000),
    ("Laptop", 6, 72000),
    ("Phone", 8, 28000),
    ("Phone", 12, 30000),
    ("Phone", 5, 32000),
    ("Tablet", 7, 18000),
    ("Tablet", 9, 22000),
    ("Tablet", 6, 25000),
    ("Headphones", 15, 1500),
    ("Headphones", 10, 2000),
    ("Headphones", 20, 1800),
    ("Smartwatch", 5, 12000),
    ("Smartwatch", 8, 15000),
    ("Smartwatch", 6, 14000),
    ("Monitor", 4, 18000),
    ("Monitor", 7, 20000),
    ("Monitor", 5, 22000),
    ("Keyboard", 12, 1200),
    ("Keyboard", 15, 1000)
]

cursor.executemany("INSERT INTO sales (product, quantity, price) VALUES (?, ?, ?)", sales_data)
conn.commit()


query = """
SELECT
    product,
    SUM(quantity) AS total_qty,
    SUM(quantity * price) AS revenue
FROM sales
GROUP BY product
```

```
"
df = pd.read_sql_query(query, conn)

print(📊 Sales Summary:\n")
print(df)
df.plot(kind="bar", x="product", y="revenue", color="skyblue", legend=False)
plt.title("Revenue by Product")
plt.ylabel("Revenue (₹)")
plt.xlabel("Product")
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
conn.close()
```

📊 Sales Summary Output

Product	Total Qty	Revenue
Headphones	45	82,600
Keyboard	27	30,600
Laptop	12	826,000
Monitor	16	322,000
Phone	25	742,000
Smartwatch	19	259,000
Tablet	22	472,000

📈 Chart (Revenue by Product)

A **bar chart** with products on the **X-axis** and revenue (₹) on the **Y-axis**.
Laptop has the **highest revenue (₹826,000)**.
Keyboard has the **lowest revenue (₹30,600)**.

Short Explanation of Code

1. **sqlite3** → Creates a sales table and inserts dataset.
2. **SQL query** → Groups by product, calculates total quantity and revenue.
3. **Pandas (pd.read_sql_query)** → Reads SQL result into DataFrame.
4. **Matplotlib** → Plots revenue by product as a bar chart.

Conclusion

The sales table was successfully created and populated in SQLite. Using Python and Pandas, the data can be analyzed to determine sales trends. Laptops and Phones generate the highest revenue, while items like Headphones and Keyboards sell in larger quantities but contribute less to revenue. This database setup enables easy tracking of product performance and supports better sales and inventory decisions.