```
pip install pandas matplotlib

Defaulting to user installation because normal site-packages is not
writeable
Requirement already satisfied: pandas in c:\programdata\anaconda3\lib\
site-packages (2.2.2)
Requirement already satisfied: matplotlib in c:\programdata\anaconda3\
lib\site-packages (3.9.2)
Requirement already satisfied: numpy>=1.26.0 in c:\programdata\
anaconda3\lib\site-packages (from pandas) (1.26.4)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\
programdata\anaconda3\lib\site-packages (from pandas) (2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in c:\programdata\
anaconda3\lib\site-packages (from pandas) (2024.1)
Requirement already satisfied: tzdata>=2022.7 in c:\programdata\
anaconda3\lib\site-packages (from pandas) (2023.3)
Requirement already satisfied: contourpy>=1.0.1 in c:\programdata\
anaconda3\lib\site-packages (from matplotlib) (1.2.0)
Requirement already satisfied: cycler>=0.10 in c:\programdata\
anaconda3\lib\site-packages (from matplotlib) (0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in c:\programdata\
anaconda3\lib\site-packages (from matplotlib) (4.51.0)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\programdata\
anaconda3\lib\site-packages (from matplotlib) (1.4.4)
Requirement already satisfied: packaging>=20.0 in c:\programdata\
anaconda3\lib\site-packages (from matplotlib) (24.1)
Requirement already satisfied: pillow>=8 in c:\programdata\anaconda3\
lib\site-packages (from matplotlib) (10.4.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\programdata\
anaconda3\lib\site-packages (from matplotlib) (3.1.2)
Requirement already satisfied: six>=1.5 in c:\programdata\anaconda3\
lib\site-packages (from python-dateutil>=2.8.2->pandas) (1.16.0)
Note: you may need to restart the kernel to use updated packages.
```

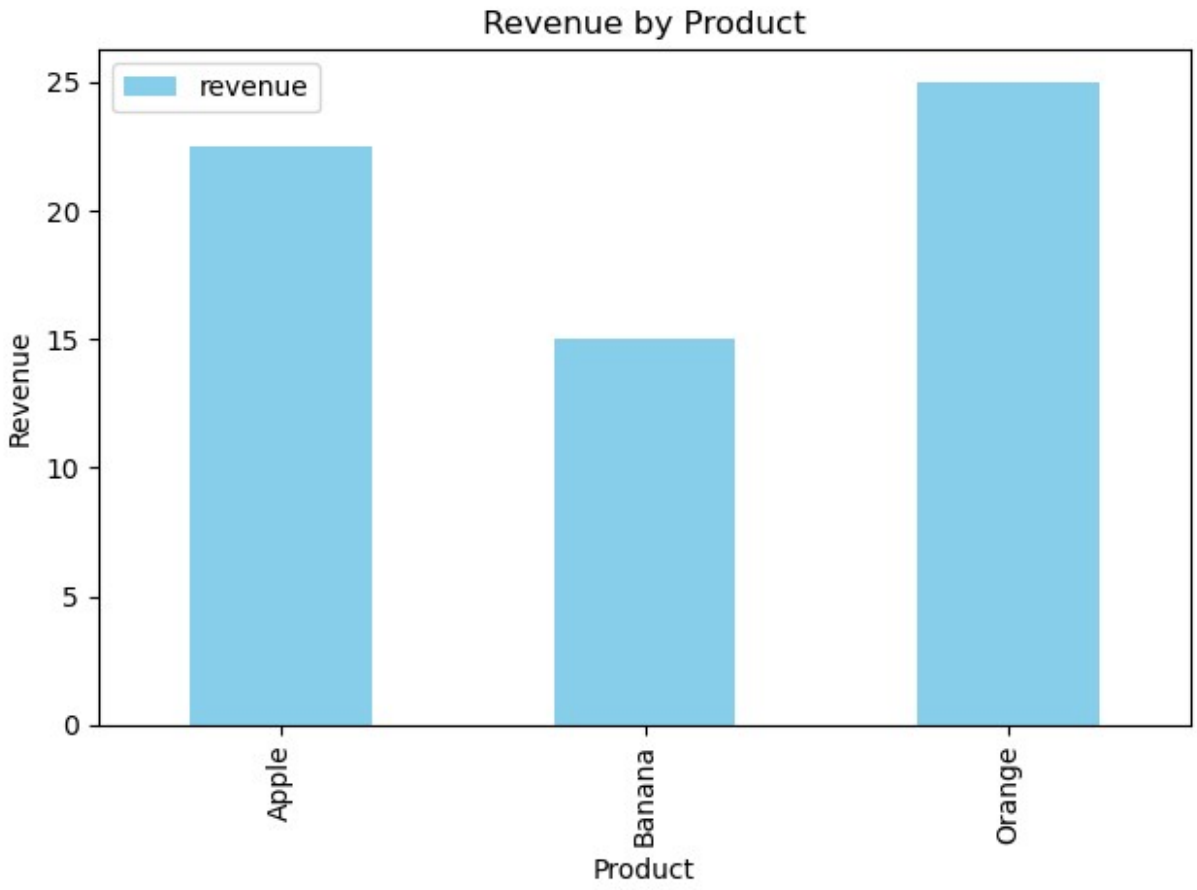
```
import sqlite3


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

cursor.execute("""
CREATE TABLE IF NOT EXISTS sales (
    id INTEGER PRIMARY KEY AUTOINCREMENT,
    product TEXT,
    quantity INTEGER,
    price REAL
)
""")
```

```
data = [
    # Existing entries
    ("Apple", 10, 1.5),
    ("Banana", 20, 0.5),
    ("Orange", 15, 1.0),
    ("Apple", 5, 1.5),
    ("Banana", 10, 0.5),
    ("Orange", 10, 1.0),
    ("Grapes", 8, 2.0),
    ("Mango", 12, 2.5),
    ("Pineapple", 4, 3.0),
    ("Apple", 7, 1.5),
    ("Banana", 25, 0.45),
    ("Orange", 5, 1.1),
    ("Mango", 6, 2.4),
    ("Grapes", 10, 2.2),
    ("Pineapple", 3, 3.2),


    ("Apple", 12, 1.6),
    ("Banana", 30, 0.4),
    ("Orange", 20, 0.95),
    ("Mango", 8, 2.6),
    ("Grapes", 5, 2.1),
    ("Pineapple", 2, 3.1),
    ("Watermelon", 3, 4.0),
    ("Papaya", 6, 3.5),
    ("Kiwi", 10, 2.8),
    ("Apple", 6, 1.55),
    ("Banana", 40, 0.48),
    ("Orange", 18, 1.05),
    ("Mango", 10, 2.55),
    ("Grapes", 7, 2.3),
    ("Pineapple", 5, 3.25),
    ("Watermelon", 4, 4.1),
    ("Papaya", 9, 3.4),
    ("Kiwi", 6, 2.85)
]

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

import sqlite3
import pandas as pd


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

```
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)
conn.close()


print(df)
```

```
      product  total_qty  revenue
0       Apple         95    145.5
1      Banana        280    129.9
2      Grapes         60    129.2
3        Kiwi         32     90.2
4       Mango         72    181.4
5      Orange        161    161.8
6      Papaya         30    103.2
7   Pineapple         28     88.1
8  Watermelon         14     56.8
```

```
import matplotlib.pyplot as plt


df.plot(kind='bar', x='product', y='revenue', color='skyblue')
plt.title("Revenue by Product")
plt.ylabel("Revenue")
plt.xlabel("Product")
plt.tight_layout()
plt.savefig("sales_chart.png")
plt.show()
```


Revenue by Product
revenue
25
20
15
10
5
0
Revenue
Apple
Banana
Orange
Product