```python
import sqlite3

# Create database
conn = sqlite3.connect("sales_data.db")
cursor = conn.cursor()

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

# Insert sample data
sales_data = [
    ("Laptop", 2, 50000),
    ("Laptop", 1, 50000),
    ("Mobile", 3, 20000),
    ("Mobile", 2, 20000),
    ("Headphones", 5, 2000),
    ("Headphones", 3, 2000)
]

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

print("Database created successfully!")
```

```
Database created successfully!
```

```python
import sqlite3
import pandas as pd

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

query1 = """
SELECT product,
       SUM(quantity) AS total_qty
FROM sales
GROUP BY product;
"""

df1 = pd.read_sql_query(query1, conn)
print(df1)

conn.close()
```

```
       product  total_qty
0   Headphones          8
1       Laptop          3
```

```
2       Mobile          5
```

Insight:

Headphones have the highest quantity sold, while Laptops have the lowest.

```python
import sqlite3
import pandas as pd

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

query2 = """
SELECT product,
       SUM(quantity * price) AS revenue
FROM sales
GROUP BY product;
"""

df2 = pd.read_sql_query(query2, conn)
print(df2)

conn.close()
```
```
      product    revenue
0  Headphones    16000.0
1      Laptop   150000.0
2      Mobile   100000.0
```

Insight:

Laptops generated the highest revenue, whereas Headphones generated the least.

```python
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)
```
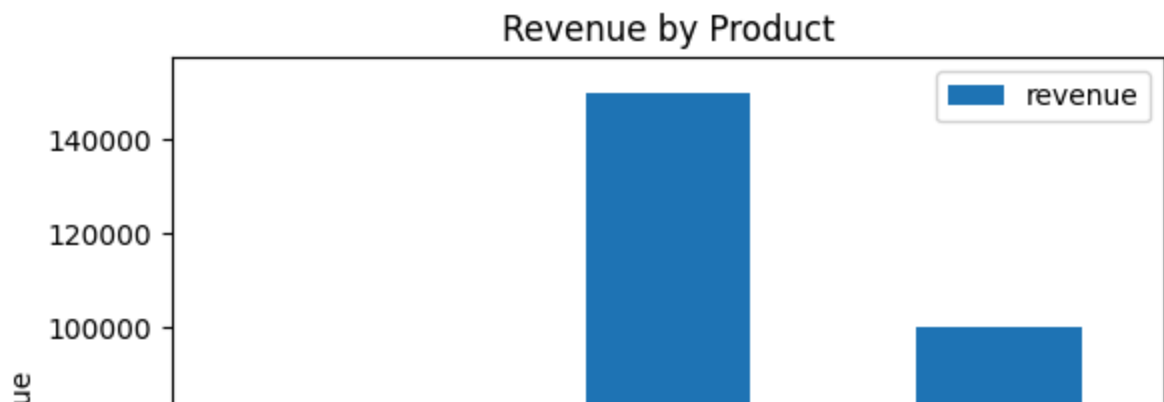```
      product total_qty   revenue
0 Headphones   8   16000.0
1   Laptop   3   150000.0
2   Mobile   5   100000.0
```

Headphone sold the highest quantity, while Laptops sold the least.

Laptops generated the highest revenue, and Headphones generated the lowest.

```python
import matplotlib.pyplot as plt

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


Revenue by Product

Insight:

The bar chart shows that Laptops produced the highest revenue, followed by Mobiles, while Headphones earned the lowest.

```python
plt.savefig("sales_chart.png")
```

```
<Figure size 640x480 with 0 Axes>
```