📌 Introduction:

This script connects to an SQLite database, inserts sample sales data, runs SQL queries to calculate total quantity and revenue per product, and visualizes the revenue using a bar chart.

📊 Dataset:

Contains 20 rows of sales records with fields:

- Product (e.g., Laptop, Mouse)
- Quantity
- Price

In [24]:
```
import sqlite3
```

Step 1: Connect to SQLite DB

In [6]:
```
conn = sqlite3.connect('sales_data.db')
cursor = conn.cursor()
```

Step 2:Create sales table

In [ ]:
```
cursor.execute('''
CREATE TABLE IF NOT EXISTS sales (
    id INTEGER PRIMARY KEY AUTOINCREMENT,
    product TEXT,
    quantity INTEGER,
    price REAL
)
''')
```

Step 3: Insert some sample data

In [7]:
```
sample_data = [
    ('Laptop', 3, 50000),
    ('Mouse', 10, 500),
    ('Keyboard', 5, 1000),
    ('Monitor', 2, 12000),
    ('Headphones', 7, 1500),
    ('Laptop', 1, 55000),
    ('Mouse', 12, 450),
    ('Keyboard', 4, 1100),
    ('Monitor', 3, 11500),
    ('Headphones', 6, 1400),
    ('Laptop', 2, 53000),
```

```
    ('Mouse', 8, 480),
    ('Keyboard', 6, 950),
    ('Monitor', 1, 13000),
    ('Headphones', 5, 1600),
    ('Laptop', 4, 52000),
    ('Mouse', 15, 470),
    ('Keyboard', 3, 1000),
    ('Monitor', 2, 12500),
    ('Headphones', 4, 1450),
]


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

Step 4: Run SQL query to get total quantity and revenue per product

In [16]:
```
query = '''
SELECT
    product,
    SUM(quantity) AS total_quantity,
    SUM(quantity * price) AS revenue
FROM sales
GROUP BY product
'''

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

In [18]:
```
# Step 5: Print the result
print("Sales Summary:\n")
print(df)
```

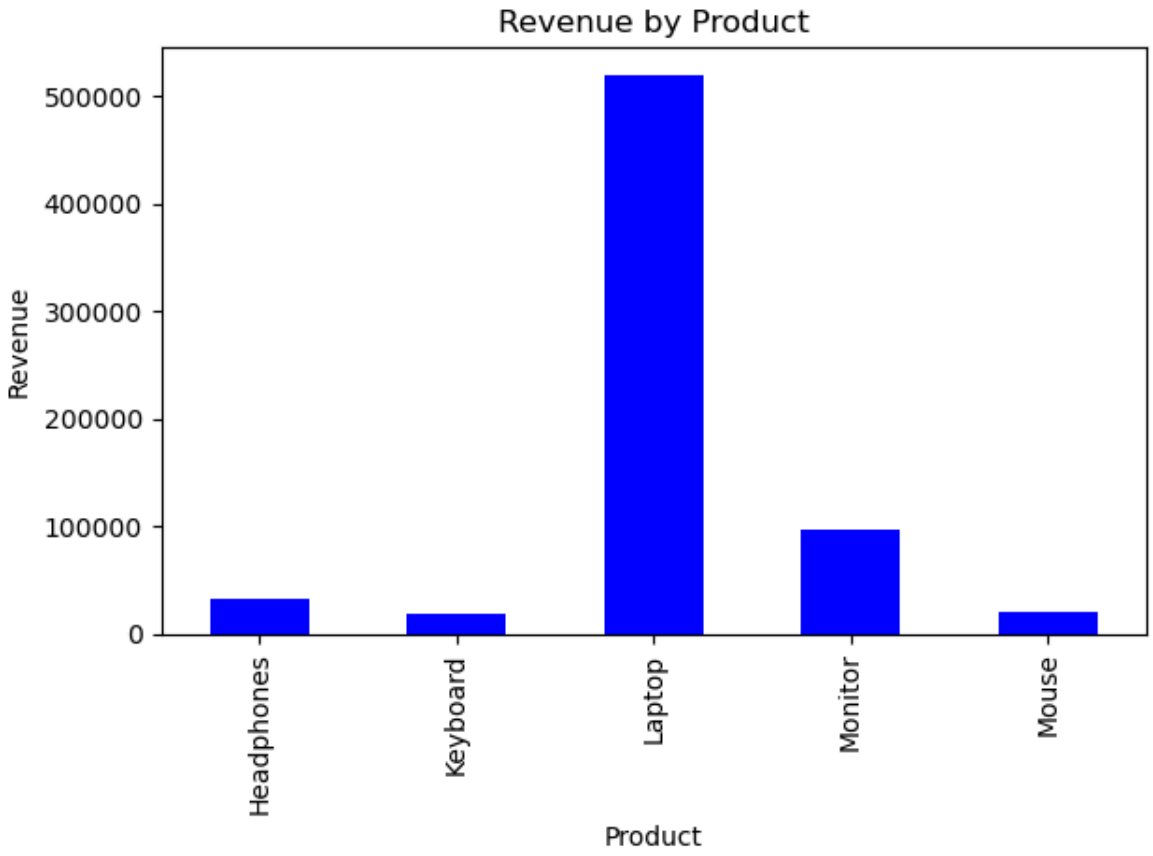
```
Sales Summary:

      product  total_quantity   revenue
0  Headphones              22   32700.0
1    Keyboard              18   18100.0
2      Laptop              10  519000.0
3     Monitor               8   96500.0
4       Mouse              45   21290.0
```

In [20]:
```
import matplotlib.pyplot as plt
```

Step 6: Plot revenue per product

In [23]:
```
df.plot(kind='bar', x='product', y='revenue', color='Blue', legend=False)
plt.title('Revenue by Product')
plt.xlabel('Product')
plt.ylabel('Revenue')
plt.tight_layout()
```

```
plt.savefig('sales_chart.png')
plt.show()
```



✅ Summary

This project connects Python with SQLite to analyze sales data. It calculates total quantity and revenue for each product using SQL, displays results with pandas, and visualizes revenue using a bar chart. It shows how SQL and Python can work together for basic data analysis and visualization.

In [ ]: