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In [1]: import sqlite3

# Connect to or create the database
conn = sqlite3.connect("sales_data.db")
cursor = conn.cursor()

# Drop old table if it exists (to avoid duplicates)
cursor.execute("DROP TABLE IF EXISTS sales")

# Create new sales table
cursor.execute("""
CREATE TABLE sales (
    id INTEGER PRIMARY KEY AUTOINCREMENT,
    product TEXT,
    quantity INTEGER,
    price REAL
)
""")

# Richer sample data
sample_data = [
    ("Laptop", 3, 800),
    ("Mouse", 15, 25),
    ("Keyboard", 10, 50),
    ("Monitor", 3, 200),
    ("Headphones", 8, 120),
    ("Webcam", 4, 75),
    ("Chair", 2, 150),
    ("Desk", 1, 300)
]

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

print("✅ Rich sales data inserted into database.")

```

✅ Rich sales data inserted into database.

```

In [2]: import pandas as pd

# Reconnect to database
conn = sqlite3.connect("sales_data.db")

# SQL query
query = """
SELECT
    product,
    SUM(quantity) AS total_quantity,
    ROUND(SUM(quantity * price), 2) AS revenue
FROM sales
GROUP BY product
"""

# Load into DataFrame
df = pd.read_sql_query(query, conn)
conn.close()

```

```
# Display the result
print("📊 SALES SUMMARY:")
df
```

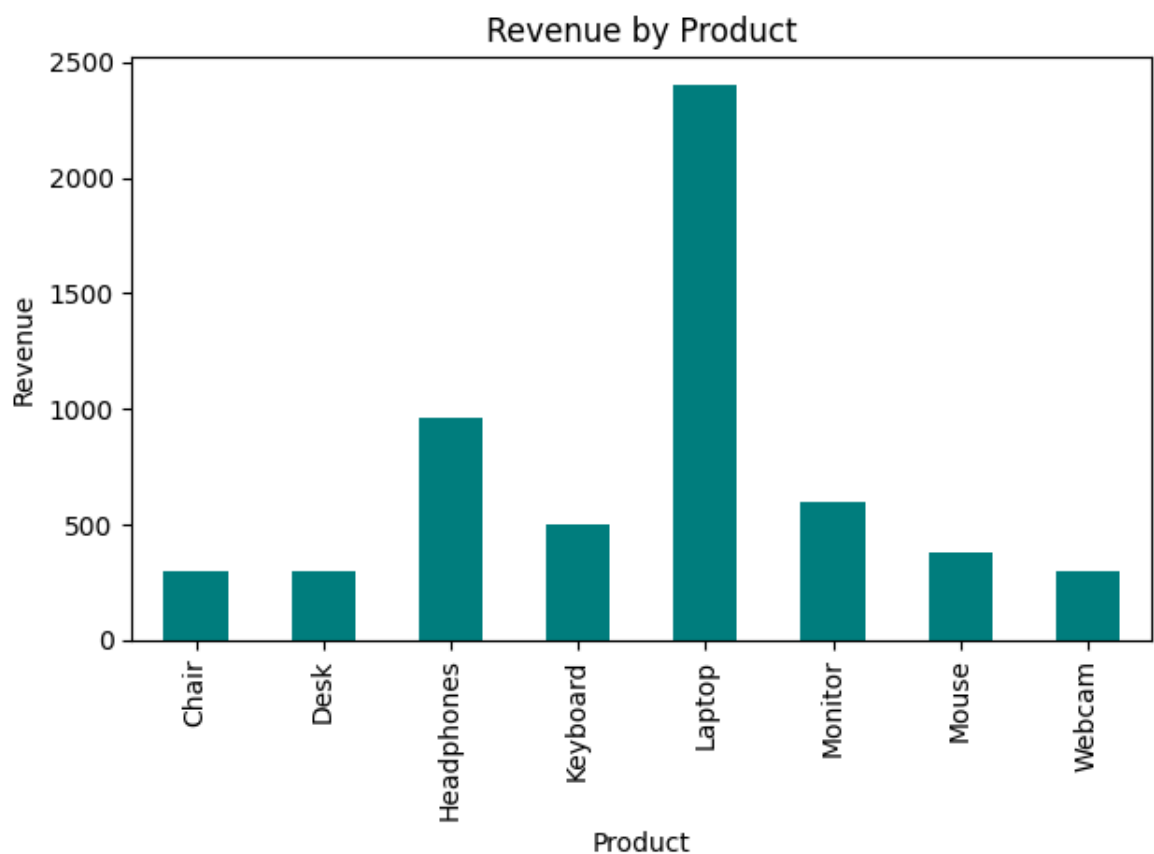
📊 SALES SUMMARY:

```
Out[2]:
```

	product	total_quantity	revenue
0	Chair	2	300.0
1	Desk	1	300.0
2	Headphones	8	960.0
3	Keyboard	10	500.0
4	Laptop	3	2400.0
5	Monitor	3	600.0
6	Mouse	15	375.0
7	Webcam	4	300.0

```
In [3]: import matplotlib.pyplot as plt

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



```
In [4]: import sqlite3
import pandas as pd

conn = sqlite3.connect("sales_data.db")
df = pd.read_sql_query("SELECT * FROM sales", conn)
conn.close()

print(df)
```

	id	product	quantity	price
0	1	Laptop	3	800.0
1	2	Mouse	15	25.0
2	3	Keyboard	10	50.0
3	4	Monitor	3	200.0
4	5	Headphones	8	120.0
5	6	Webcam	4	75.0
6	7	Chair	2	150.0
7	8	Desk	1	300.0

```
In [5]: import sqlite3
import pandas as pd

# Connect to DB
conn = sqlite3.connect("sales_data.db")

# Correct SQL: SUM of quantity * price = revenue
query = """
SELECT
    product,
    SUM(quantity) AS total_quantity,
    ROUND(SUM(quantity * price), 2) AS revenue
FROM sales
GROUP BY product
"""

# Run query
df = pd.read_sql_query(query, conn)
conn.close()

# Confirm the structure
print(df.columns)
df.head()
```

Index(['product', 'total\_quantity', 'revenue'], dtype='object')

```
Out[5]:
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	product	total_quantity	revenue
0	Chair	2	300.0
1	Desk	1	300.0
2	Headphones	8	960.0
3	Keyboard	10	500.0
4	Laptop	3	2400.0

```
In [6]: plt.figure(figsize=(6, 6))
plt.pie(df['revenue'], labels=df['product'], autopct='%1.1f%%', startangle=140)
plt.title('Revenue Share by Product')
```

```
plt.axis('equal')  
plt.show()
```

