Get Basic Sales Summary from a Tiny SQLite Database using Python

Use SQL inside Python to pull simple sales info (like total quantity sold, total revenue), and display it using basic print statements and a simple bar chart.

Step 1 : Install & Import Required Libraries

[1]:
```
# Install SQLite3 (comes built in with python)
import sqlite3

# InstallPandas for Data Analysis
import pandas as pd

# Install Seaborn & Matplotlib for Visualization
import matplotlib.pyplot as plt
import seaborn as sns

# This method hides any warnings in your Juoyter Notebook.
import warnings
warnings.filterwarnings("ignore")
```

Step 2: Creat a New SQLite Database And Table

[27]:
```
# Connect to SQLite Database (Creates a New file if it doesn't exist)
conn = sqlite3.connect("Customer_data.db")

#Create a Cursor to interact with database
cursor = conn.cursor()

# Drop table if it exists
cursor.execute("DROP TABLE IF EXISTS customers")

#Create a sample table
```

```
cursor.execute("DROP TABLE IF EXISTS customers")

#Create a sample table
cursor.execute("""
CREATE TABLE IF NOT EXISTS customers (
id INTEGER PRIMARY KEY AUTOINCREMENT,
name TEXT,
age INTERGER,
city TEXT,
total_spent REAL
)
""")

# Commit and Close the connection
conn.commit()
```

Step 3: Insert Sample Data Into the SQL Table

[32]:

```
# Sample data to insert
customers= [
    ("Alice Jhonson", 28, "New York", 500.75),
    ("Bob Smith", 35, "Los Angeles", 1200.50),
    ("Charlie Brown", 22, "Chicago", 330.40),
    ("David White", 40, "Houston", 980.90),
    ("Emma Wilson", 31, "San Francisco", 700.60)
]

# Insert data into table
cursor.executemany ("INSERT INTO customers (name, age, city, total_spent) VALUES (?, ?, ?, ?)", customers)

# Commit Changes
conn.commit()
```

```
# Insert data into table
cursor.executemany ("INSERT INTO customers (name, age, city, total_spent) VALUES (?, ?, ?, ?)", customers)

# Commit Changes
conn.commit()
```

Step 4: Run SQL Queries inside jupyter Notbook

[52]:
```
# Run aSQL Query to Retrieve all customer data

query = "SELECT *FROM customers"
df = pd.read_sql(query, conn) # Store query results in a Pandas DataFrame

# Display the data
df.head()
```

[52]:

	id	name	age	city	total_spent
0	1	Alice Jhonson	28	New York	500.75
1	2	Bob Smith	35	Los Angeles	1200.50
2	3	Charlie Brown	22	Chicago	330.40
3	4	David White	40	Houston	980.90
4	5	Emma Wilson	31	San Francisco	700.60

Step 5: Perform Data Analysis Using SQL Queries

Step 5: Perform Data Analysis Using SQL Queries

[53]:
```
query = "SELECT * FROM customers WHERE total_spent > 500"
pd.read_sql(query, conn)
```

[53]:

	id	name	age	city	total_spent
0	1	Alice Jhonson	28	New York	500.75
1	2	Bob Smith	35	Los Angeles	1200.50
2	4	David White	40	Houston	980.90
3	5	Emma Wilson	31	San Francisco	700.60
4	6	Alice Jhonson	28	New York	500.75
5	7	Bob Smith	35	Los Angeles	1200.50
6	9	David White	40	Houston	980.90
7	10	Emma Wilson	31	San Francisco	700.60

[54]:
```
# Find the average customer age

query = "SELECT AVG(age) AS average_age FROM customers"
pd.read_sql(query, conn)
```

[54]:

	average_age
0	31.2

[55]:
```
# Count customers in each city
query = "SELECT city, COUNT(*) AS num_customers FROM customers GROUP BY city"
pd.read_sql(query, conn)
```

[54]:

	average_age
0	31.2

[55]:
```
# Count customers in each city
query = "SELECT city, COUNT(*) AS num_customers FROM customers GROUP BY city"
pd.read_sql(query, conn)
```

[55]:

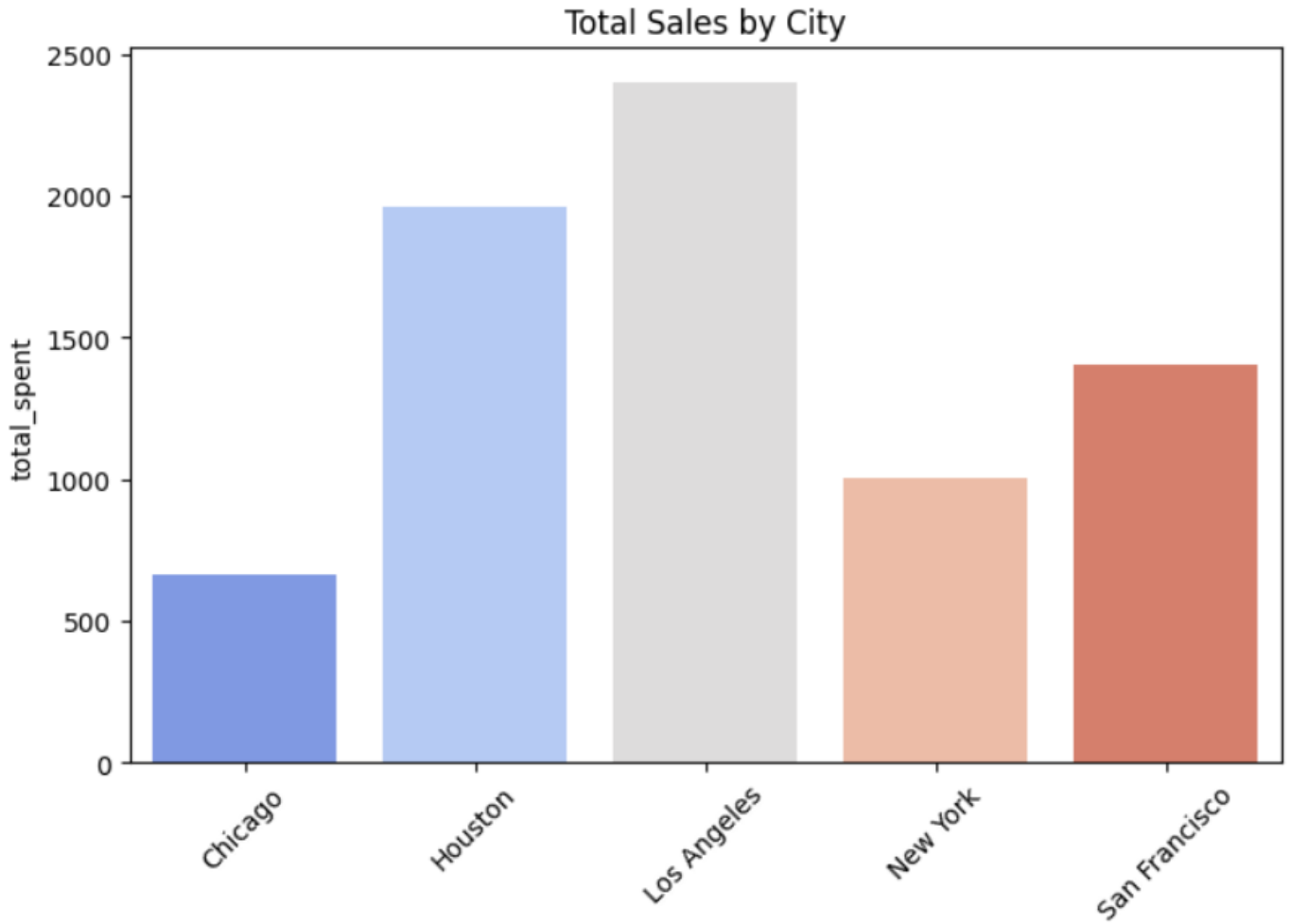
	city	num_customers
0	Chicago	2
1	Houston	2
2	Los Angeles	2
3	New York	2
4	San Francisco	2

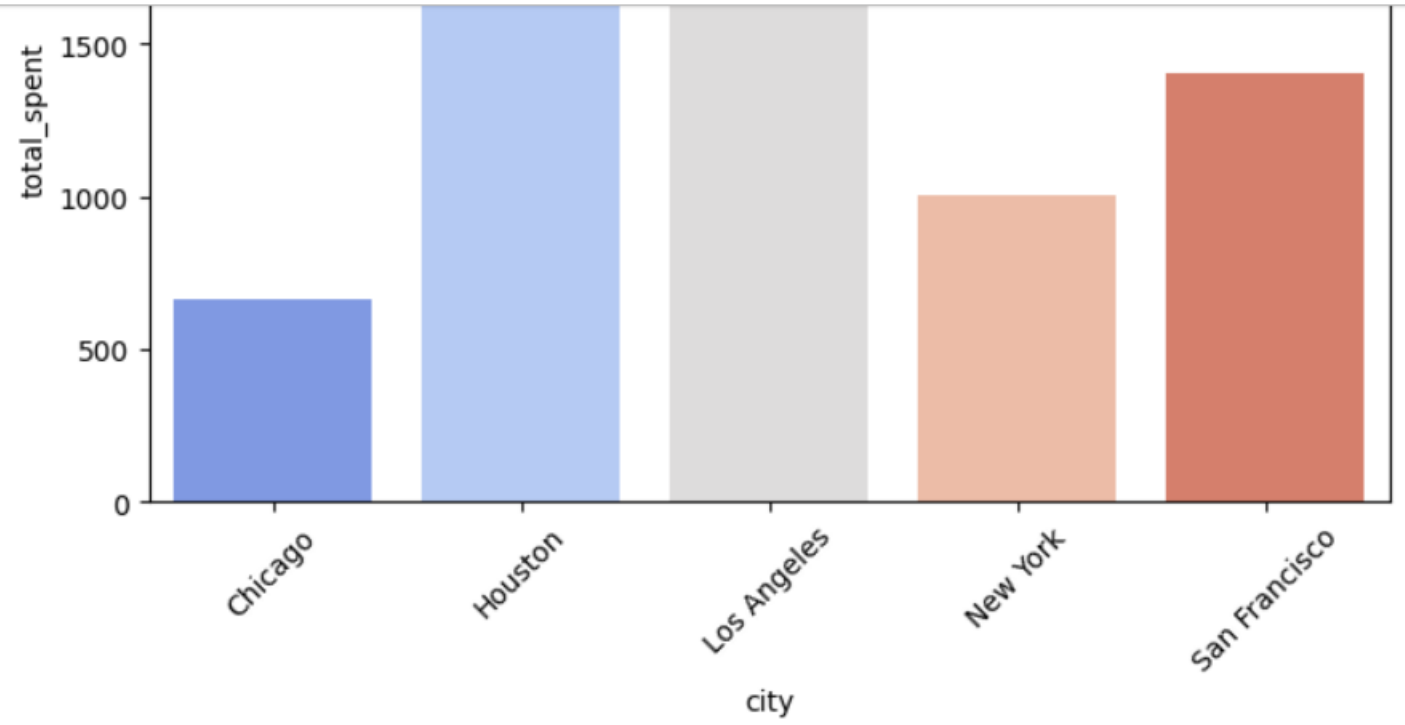
Step 6: Visualization SQL Query Results Using Python

[56]:
```
# Run SQL query and store results in DataFrame
query = "SELECT city, SUM(total_spent) AS total_spent FROM customers GROUP BY city"
df_sales = pd.read_sql(query, conn)

# Plot hte Data
plt.figure(figsize=(8,5))
sns.barplot(x="city", y="total_spent", data=df_sales, palette="coolwarm")
plt. xticks(rotation=45)
plt.title("Total Sales by City")
plt.show()
```

```
# Plot hte Data
plt.figure(figsize=(8,5))
sns.barplot(x="city", y="total_spent", data=df_sales, palette="coolwarm")
plt. xticks(rotation=45)
plt.title("Total Sales by City")
plt.show()
```





Step 7: Close the SQL Connection

[45]:
```
conn.close()
```

THANK YOU

[ ]: