

Exploring Weather Trends

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1 Exploring Weather Trends

1.1 Summary

In this project, you will analyze local and global temperature data and compare the temperature trends where you live to overall global temperature trends.

```
[1]: import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
%matplotlib inline
```

1.2 Importing the data

For city data write and evaluate the following SQL code.

The screenshot shows a web-based SQL editor interface. At the top, there's a header with 'Input', 'HISTORY', and 'MENU' dropdowns. Below this, on the left, is a 'SCHEMA' panel with a refresh icon and a list of tables: 'city_data', 'year', 'city', 'country', and 'avg_temp'. The 'city_data' table is selected. In the center, the SQL query is displayed: `1 SELECT year, avg_temp FROM city_data` and `2 WHERE city='Multan';`. Below the query, a green bar indicates 'Success!'. To the right of this bar is a blue 'EVALUATE' button. At the bottom, there's an 'Output' section showing '198 results' and a 'Download CSV' link.

For global data write and evaluate the following SQL code.

Input		HISTORY ▾	MENU ▾
SCHEMA	1	SELECT year, avg_temp FROM global_data	
city_data	^		
year			
city			
country			
avg_temp			
		Success!	EVALUATE
Output	266 results	Download CSV	

1.3 Loading the Data

```
[2]: dfg=pd.read_csv("global.csv")
dfn=pd.read_csv("newyork.csv")
dfm=pd.read_csv("multan.csv")
print(len(dfg))
print(len(dfn))
print(len(dfm))
```

266
271
198

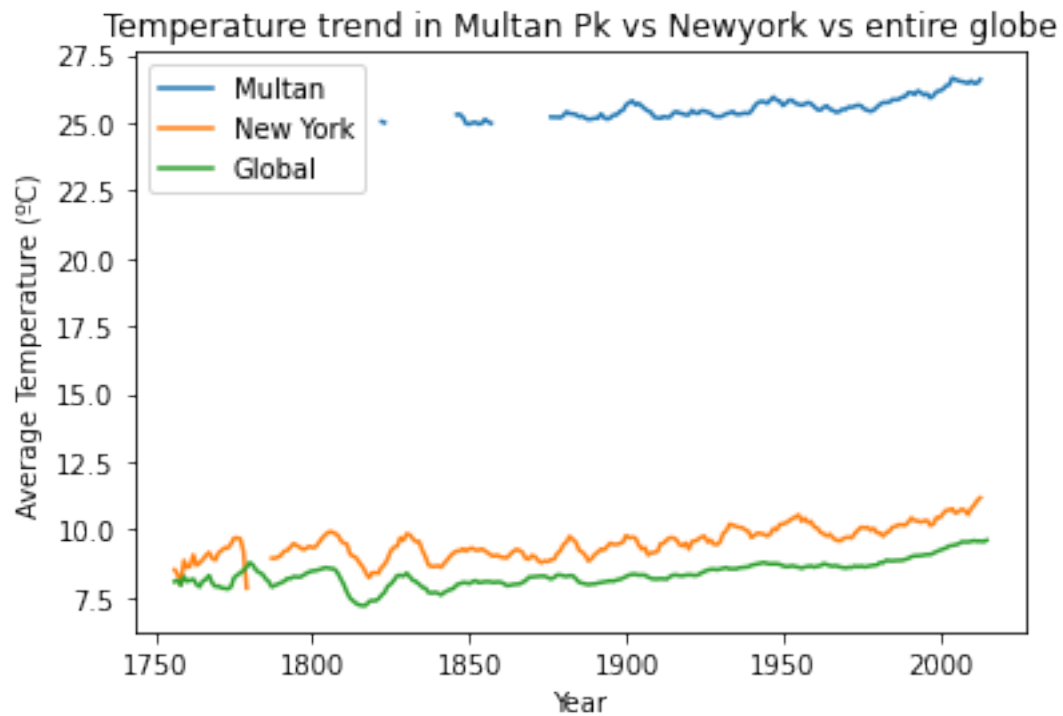
1.4 Preprocessing

```
[3]: dfg["mpa"]=dfg["avg_temp"].rolling(window=7).mean()
dfn["mpa"]=dfn["avg_temp"].rolling(window=7).mean()
dfm["mpa"]=dfm["avg_temp"].rolling(window=7).mean()
```

1.5 Visualization

```
[4]: x2 = dfm["year"]
y2 = dfm["mpa"]
plt.plot(x2, y2, label = "Multan")
x3 = dfn["year"]
y3 = dfn["mpa"]
plt.plot(x3, y3, label = "New York")
plt.xlabel('Year')
x1 = dfg["year"]
y1 = dfg["mpa"]
plt.plot(x1, y1, label = "Global")
plt.ylabel('Average Temperature (°C)')
```

```
plt.title('Temperature trend in Multan Pk vs Newyork vs entire globe')
plt.legend()
plt.show()
```



1.6 Observations

1. Multan is one of the hottest city in the world becasue it is present on the equator.
2. Multan is much much hotter than Newyork and Globe.
3. Moving Point Averde temperature of the Multan is smoother then Newyork.
4. With the increase in global warming, temperature of Mutan is also increasing.