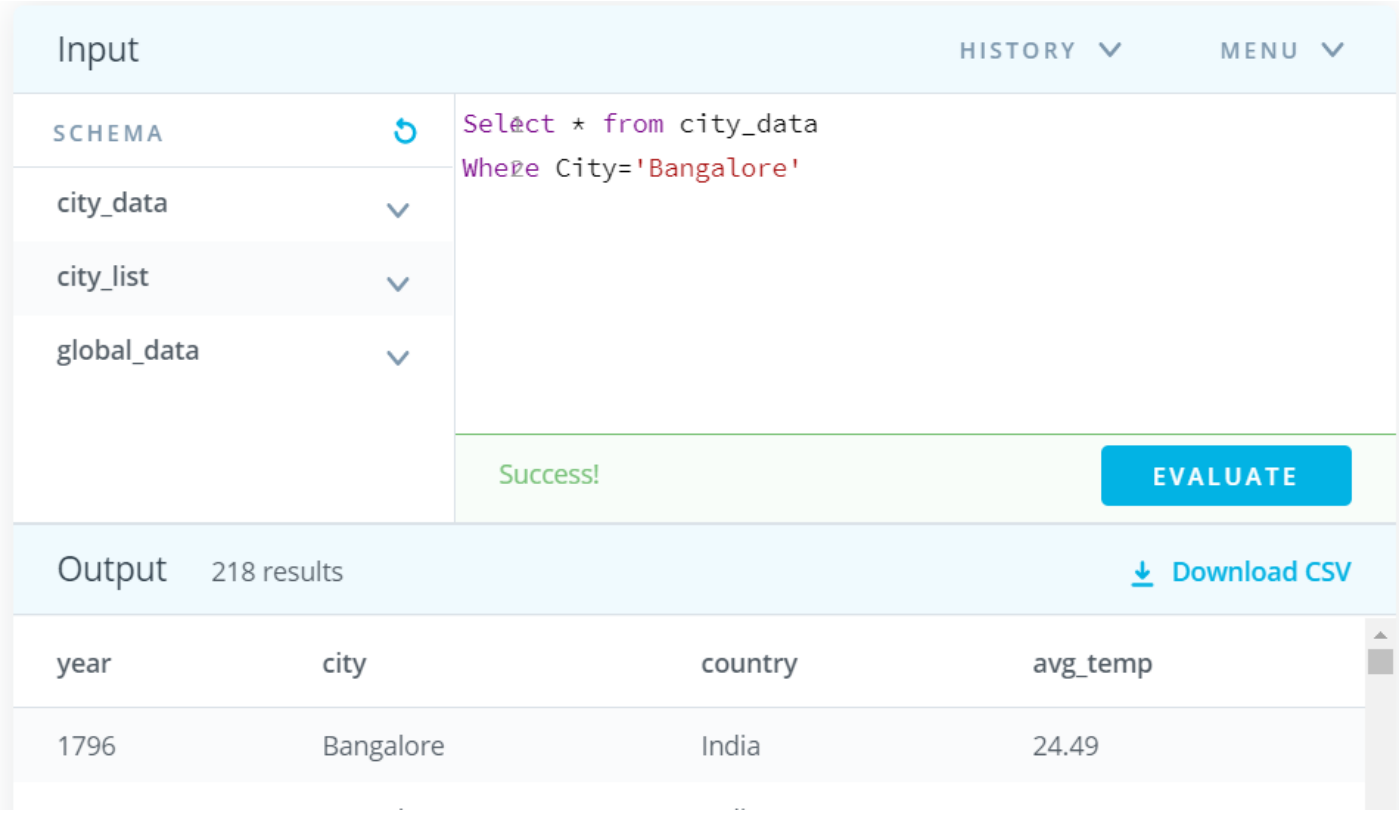
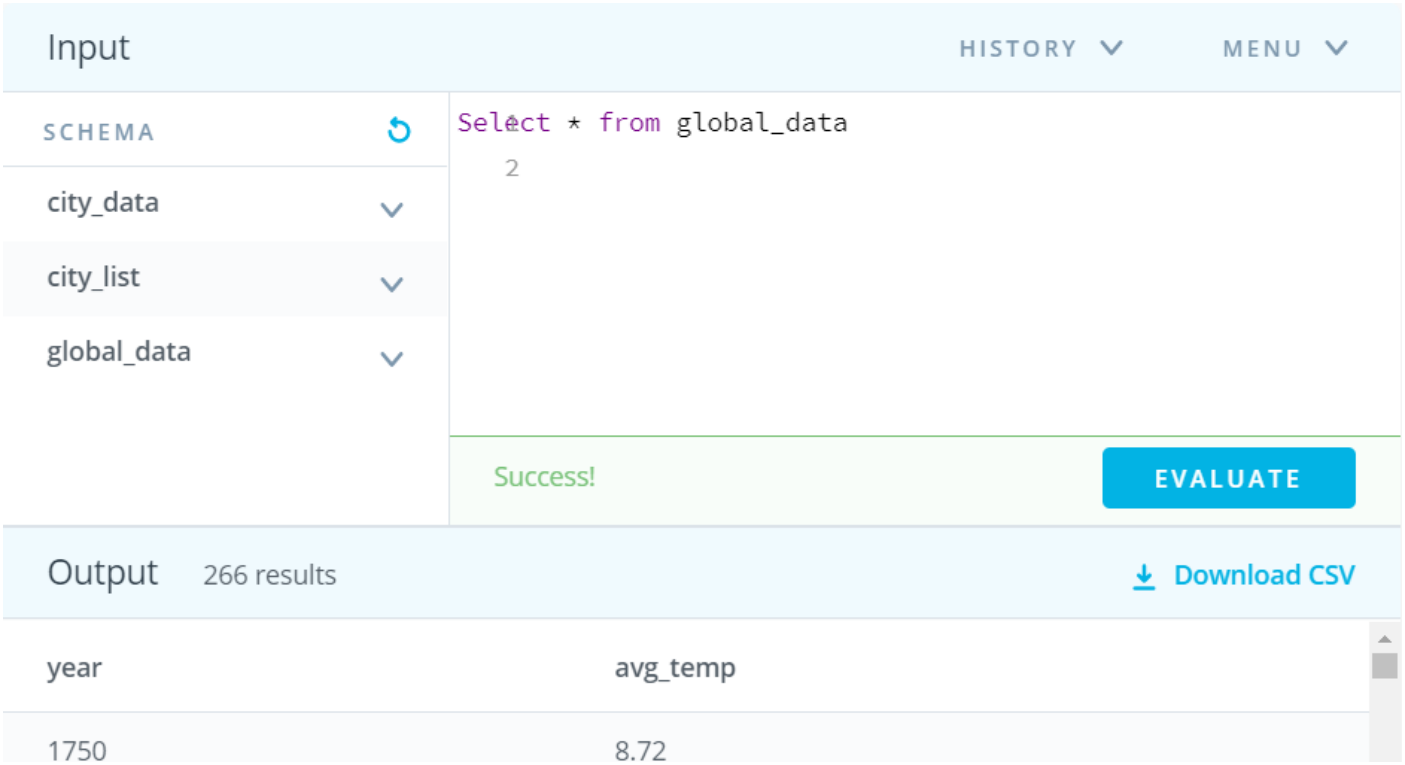
# P1: Weather Trends

# 1.Extract Data From Database:

### Extract For Bangalore:




### Extract Global_Data




## 2. Data Selection and Manipulation:

### 2.1. Data selection:

I have extracted the Bangalore and Global datasets through SQL Queries. Average Global temprature data is available for 1750 to 2015 and Bangalore data are for 1796 to 2013. Data is already available in time series.

### 2.2. Data manipulation:

**Missing Value**

In [18]:
```
import pandas as pd
g =pd.read_csv('Global.csv')
b =pd.read_csv('Bangalore.csv')
import matplotlib.pyplot as plt
```

In [12]:
```
g.isnull().sum()
```

Out[12]:
```
year        0
avg_temp    0
dtype: int64
```

In [13]:
```
b.isnull().sum()
```

Out[13]:
```
year        0
city        0
country     0
avg_temp    7
dtype: int64
```

In [14]:
```
b.fillna(b.mean(),inplace=True)
```

In [7]:
```
b.isnull().sum()
```

Out[7]:
```
year        0
city        0
country     0
avg_temp    0
dtype: int64
```

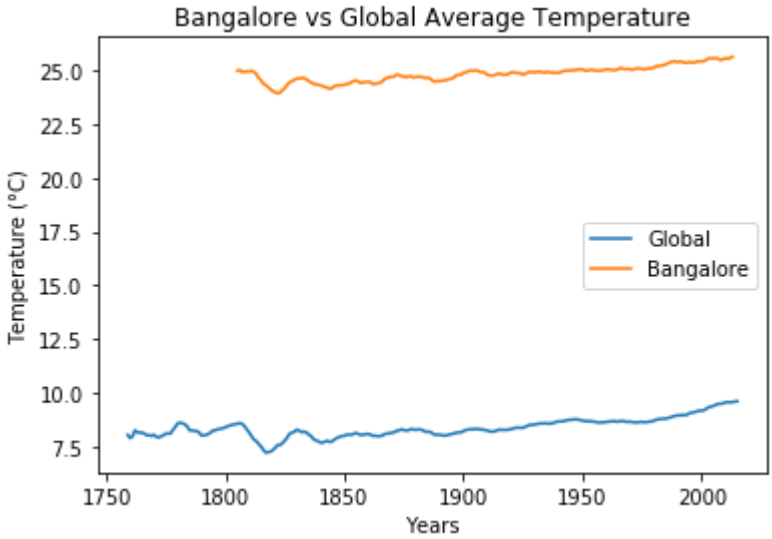
### Moving average

In [15]:
```
g1=g['avg_temp'].rolling(10).mean()
```

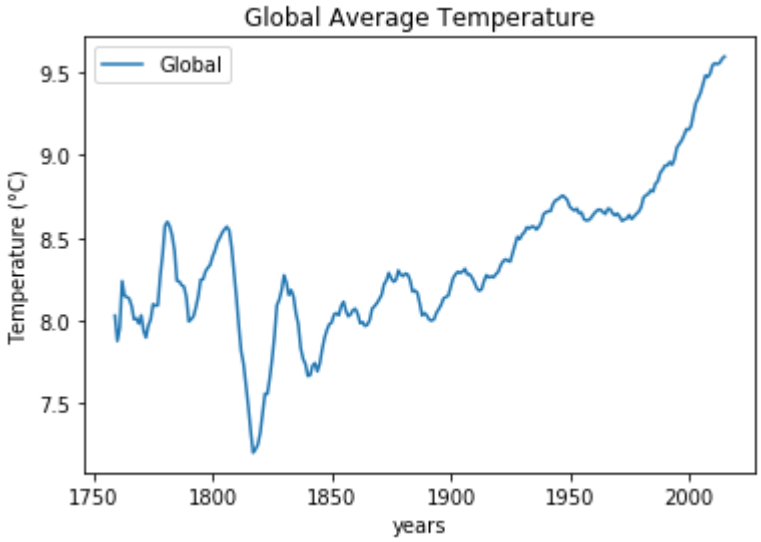
In [16]:
```
b1=b['avg_temp'].rolling(10).mean()
```

## Data Visualization

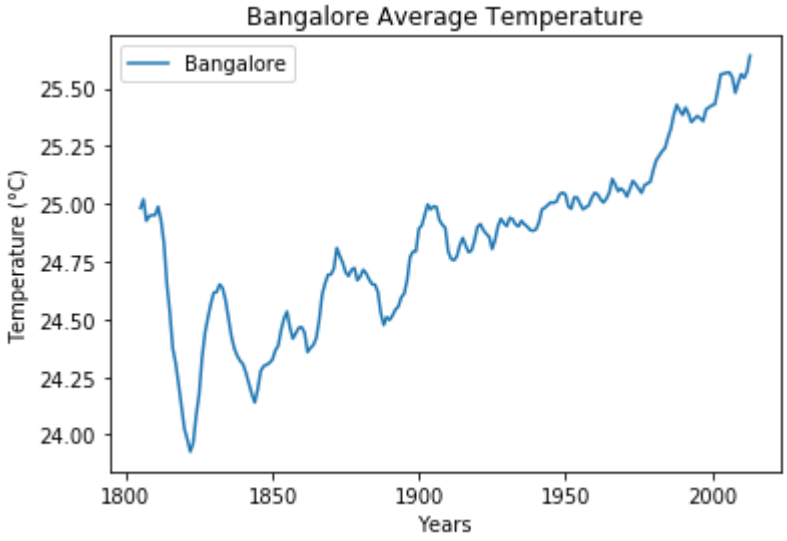
In [20]:
```
plt.plot(g['year'],g1,label='Global')
plt.plot(b['year'],b1,label='Bangalore')
plt.legend()
plt.xlabel("Years")
plt.ylabel("Temperature (°C)")
plt.title("Bangalore vs Global Average Temperature")
plt.show()
```




In [21]:
```
plt.plot(g['year'],g1,label='Global')
plt.legend()
plt.xlabel("years")
plt.ylabel("Temperature (°C)")
plt.title("Global Average Temperature")
plt.show()
```



In [22]:
```
plt.plot(b['year'],b1,label='Bangalore')
plt.legend()
plt.xlabel("Years")
plt.ylabel("Temperature (°C)")
plt.title("Bangalore Average Temperature")
plt.show()
```




## Observations:

***1: I observe that when compare Global average temperature with Bangalore average temperature there was a difference in the average. From 1800 to 2000 the average global temperature is between 7.5 to 10 degree Celsius and Bangalore average temperature is nearly 25 degree Celsius in 200 years.***

***2: The relation between Global and Bangalore average temperature was increasing significantly. When Global average temperature was increasing Bangalore average temperature was also increasing.***

***3: In Global average temperature between 1800 and 1850 was lowest and after 1850 the average temperature is increasing years by years. In 1750 to 1800 the Global temperature was nearly 8.0 to 8.5 degree Celsius.***

***4: Banalore average temperature mid between 1800 and 1850 was the lowest average temperature and after that average temperature is increasing gradually years by years. In 1800 the temperature is nearly 25.25 degree Celsius. From 1800 to 2000 the temperature is increased up to 26.0 degree Celsius.***