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In [ ]:
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from IPython.core.display import display, HTML
```

## Exploring Weather Trends

In this notebook, I will analyze a weather data set comparing the trend in temperature where I live against the world temperature for this I am going to use python taking advantage of pandas. for visualizing data I'll use a line chart because we have a time series.

### SQL

I used these two queries to retrieve the data from The database

1. SELECT \* FROM city\_data WHERE city = 'Rabat';
2. SELECT \* FROM global\_data;

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In [17]:
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```
#import the necessary libraries
import pandas as pd
import matplotlib.pyplot as plt
%matplotlib inline
```

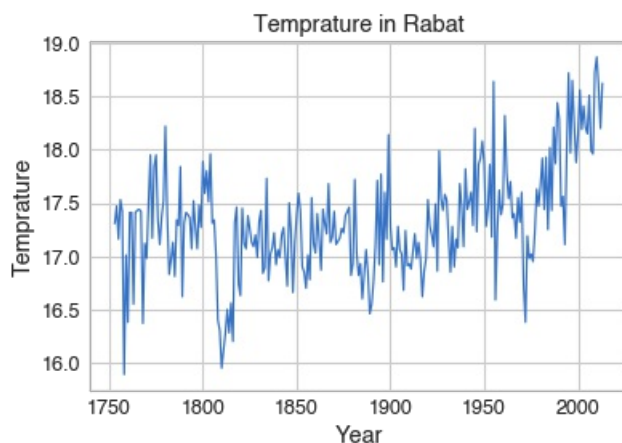
```
In [35]:
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```
#Reading Rabat data and taking the first glance s
rabat_data = pd.read_csv('Rabat_data.csv')
rabat_data = rabat_data[['year', 'avg_temp']]
rabat_data

plt.plot(rabat_data['year'], rabat_data['avg_temp'])
plt.xlabel('Year')
plt.ylabel('temperature')
plt.title('temperature in Rabat')
```

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Out[35]:
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```
Text(0.5, 1.0, 'Temprature in Rabat')
```



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In [34]:
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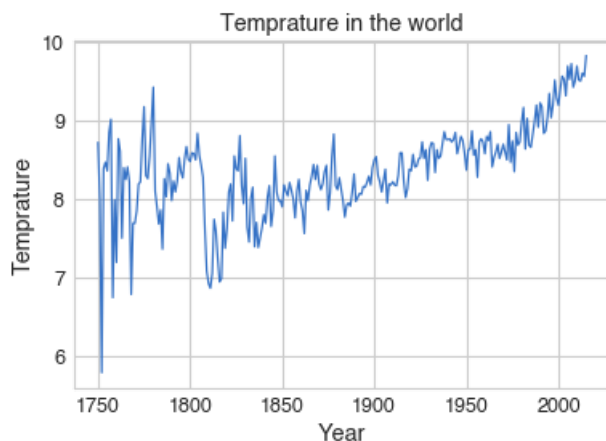
```
#Reading Global data and taking the first glance
global_data = pd.read_csv('Golbal-data.csv')
global_data

plt.plot(global_data['year'], global_data['avg_temp'])
plt.xlabel('Year')
plt.ylabel('temperature')
```

```
plt.title('temperature in the world')
plt.show()
```

Out[34]:

Text(0.5, 1.0, 'Temperature in the world')



In [33]:

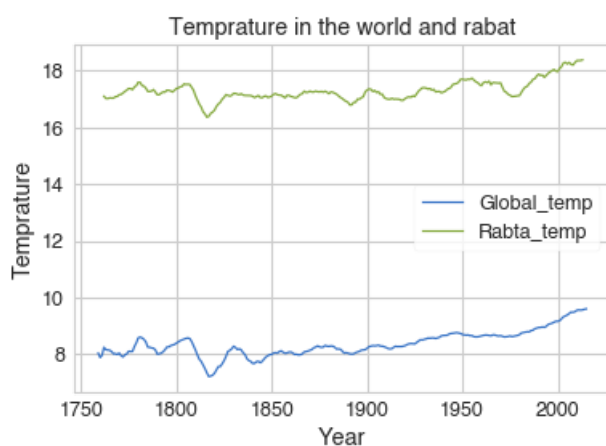
```
#Calculating the moving average and plotting the results in a line chart.
rabat_data['MA'] = rabat_data['avg_temp'].rolling(window=10).mean()

global_data['MA'] = global_data['avg_temp'].rolling(window=10).mean()

plt.plot(global_data['year'],global_data['MA'], label='Global_temp')
plt.plot(rabat_data['year'],rabat_data['MA'], label='Rabta_temp')
plt.xlabel('Year')
plt.ylabel('temperature')
plt.title('temperature in the world and rabat')
plt.legend()
```

Out[33]:

<matplotlib.legend.Legend at 0x1a1acd8ba8>



## Observations

1. First, we can see that my city is a hooter compared to the global. The average temperature in Rabat is around 15°C compared to 8°C in the world
2. We can also see that the temperature in my city is following the same trend as the world generally. but we can see that around 1975 my city has a bigger dip in temperature compared to the global dip
3. In the last century, we can see clearly that the temperature is rasing in the world.
4. Generally, we see that temperature is rasing in the world from 1750 to 2015 there are two exceptions to that, the first is around 1830 where we see a dip in temperature, the second is around the third quarter of the last century where we see a small dip in temperature.

