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In [109]:
'''
Udacity 'Explore Weather Trends Project'

City chosen: Vienna

Data sourced from Udacity course

Query steps:

select city from city_list
to verify if vienna is in list and how it is written (capital V)
select city, year, avg_temp from city_data
where city like 'Vienna'
to extract the average temperatures related to Vienna only
select year, avg_temp from global_data
to extract global average temperatures
'''

#importing Pandas and Matplotlib
import pandas as pd
import matplotlib.pyplot as plt


#reading csv as saving into dataframes for City and Global
Citydf = pd.read_csv('city_data.csv')
Globaldf = pd.read_csv('global_data.csv')
```
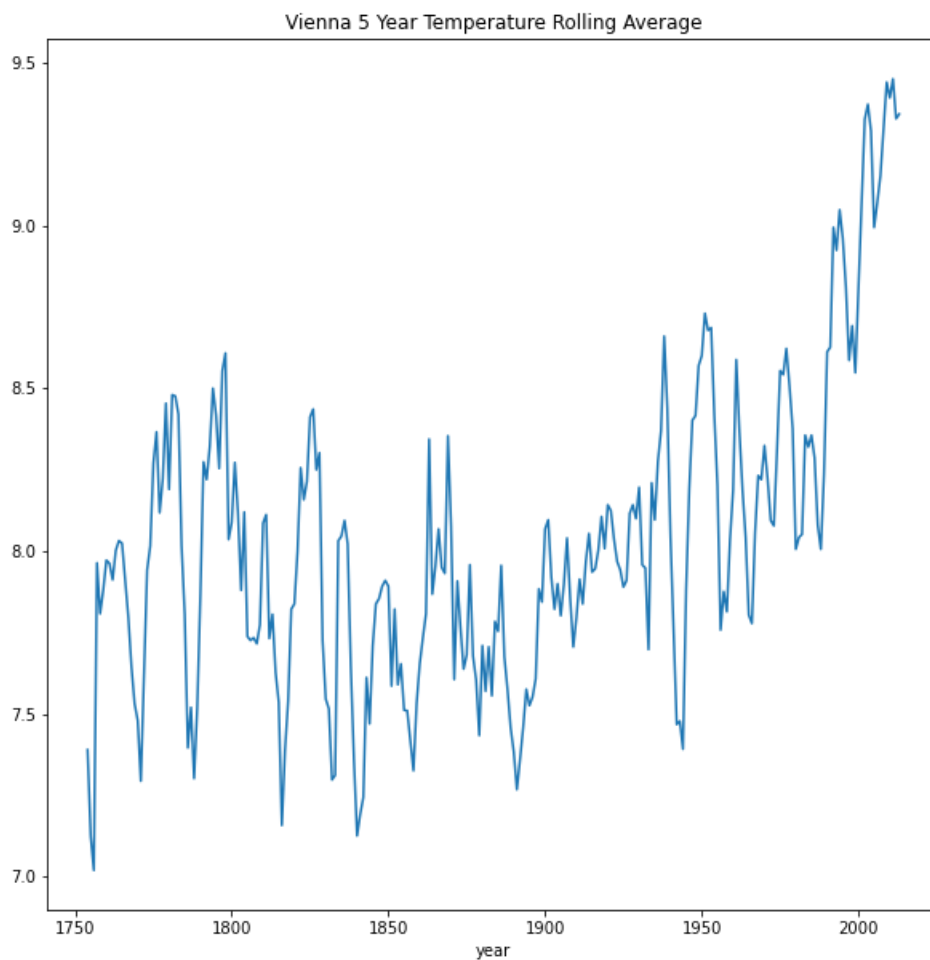
```
In [106]: #City
          #crating new column and inputing 5 year rolling average, then dropping NaN
          #functions used = rolling() and mean()
          Citydf['5YMA'] = Citydf['avg_temp'].rolling(5).mean()

          #dropping unnecessary columns and Nan's
          Citydf = Citydf.drop(['city', 'avg_temp'], axis=1)
          #Citydf.dropna(inplace=True)

          #plotting line for Just Vienna, i dont like legen so i removed it
          Citydf.plot.line(y='5YMA',x='year',title='Vienna 5 Year Temperature Rolling Average',figsize=(10,10),legend=False)
```
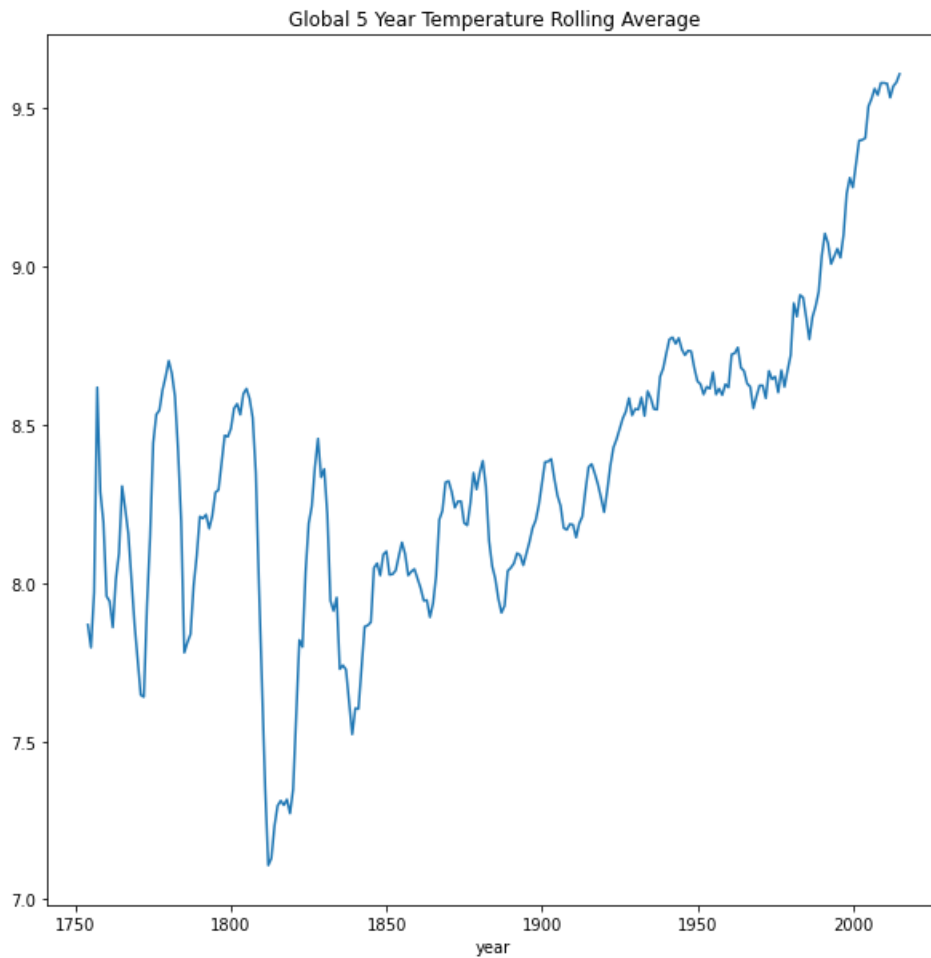

Vienna 5 Year Temperature Rolling Average

```
Out[106]: <AxesSubplot:title={'center':'Vienna 5 Year Temperature Rolling Average'}, xlabel='year'>
```

```python
#Global
#crating new column and inputing 5 year rolling average, then dropping NaN
#functions used = rolling() and mean()
Globaldf['5YMA'] = Globaldf['avg_temp'].rolling(5).mean()

#dropping unnecessary columns and Nan's
Globaldf = Globaldf.drop(['avg_temp'],axis=1)
#Globaldf.dropna(inplace=True)

#plotting line for Global, i dont like legend so i removed it
Globaldf.plot.line(y='5YMA',x='year',title='Global 5 Year Temperature Rolling Average',\
                   figsize=(10,10),legend=False)
```
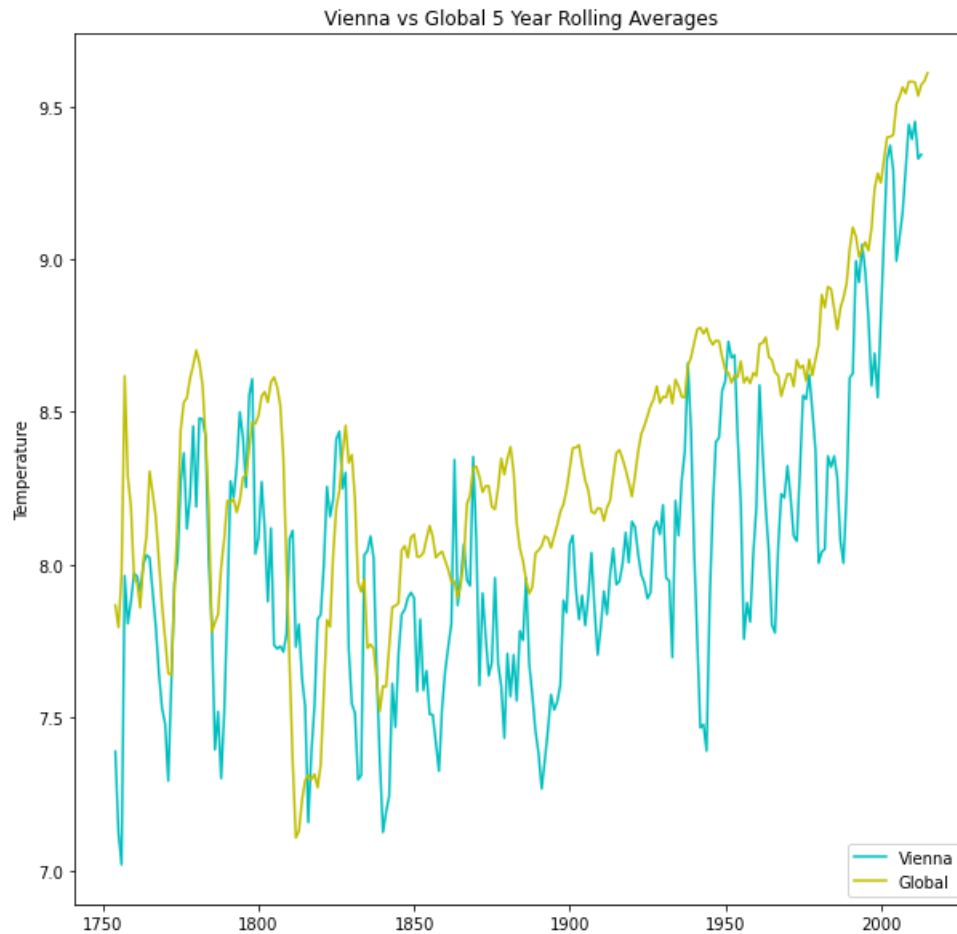
Out[108]: <AxesSubplot:title={'center':'Global 5 Year Temperature Rolling Average'}, xlabel='year'>

```
In [102]: #Using Matplotlib to plot Vienna x Global

          Years = Citydf['year']
          CityAvg = Citydf['5YMA']
          GlobalAvg = Globaldf['5YMA']


          #Plotting
          plt.figure(figsize=(10, 10))
          plt.plot(Years, CityAvg, label = "Vienna",color='c',)
          plt.plot(Years, GlobalAvg, label = "Global",color='y')
          plt.title("Vienna vs Global 5 Year Rolling Averages")
          plt.ylabel('Temperature')
          plt.legend(loc='lower right')
          plt.show()
```



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In [ ]: """
        Observations:
        As observed from the figures, the overall global temperature trend is positive, climbing at alarming rates.
        From Vienna vs Global we can see a direct correlation, Vienna is warming up just as fast as the rest of the world.
        Although the overall upward trend, we can see some points of lowered temperatures.
        Global warming is real and will catch up to us fast, if we don't do much about it!
        """
```

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In [ ]:
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