In [1]:

```
from pytrends.request import TrendReq
import numpy as np
import pandas as pd
import matplotlib.pylab as plt
```

Data Collection Section

In [2]:

```
'''
This Part includes the Class and
functions that used for collecting
Data "Trends" with different approaches

'''

class Trends_Collection:

    #Class constructor for creating objectsand calling them
    def __init__(self,keywords=[''],category='0',lang='en-US'):
        self.keys=keywords
        self.cat=category
        self.lang=lang
        self.trends=TrendReq(hl=lang, tz=360)


    #this function is used for Searching for Trends using specific words
    def trends_scraping(self,time="today 3-m",geo='',kw=None,cat=None):

        #Specifying keywords
        k_list=kw

        #Specifying category
        ct=cat

        #Specifying the time to extract data
        tf=time

        #Specifying location
        g=geo

        if kw is None:
            k_list=self.keys
        if cat is None:
            ct=self.cat

        #build_payload function for searching by words
        self.trends.build_payload(kw_list=k_list,cat=ct,timeframe=tf,geo=g)

        #Interest Over Time DataFrame
        time_df = self.trends.interest_over_time()
        del  time_df["isPartial"]

        #Interest by Region DataFrame
        region_df=self.trends.interest_by_region()

        #Related queries Dictionary
        related_dic = self.trends.related_queries()

        return (time_df,region_df,related_dic)


    def get_top_trends(self):
        top=self.trends.trending_searches()
        return top
```

Data Collection Examples

In [3]:

```
#Calling an Object and searching for a word
t=Trends_Collection()
df,df2,dic3=t.trends_scraping(kw=["Tesla"])
```

In [4]:

```
#DataFrame describes number of search for "Tesla" over time "last 3 months"
df.head()
```

Out[4]:

	Tesla
date	
2021-12-12	60
2021-12-13	74
2021-12-14	87

2021-12-15	84
2021-12-16	79

In [5]:

```
#DataFrame shows number of searches for "Tesla" by different regions
df2[df2["Tesla"]>50]
```

Out[5]:

	Tesla
geoName	
Austria	53
Canada	76
Denmark	74
Germany	56
Norway	100
Serbia	60
Singapore	84
Sweden	69
Switzerland	67
United States	66

In [6]:

```
#DataFrame for showing the related quieries for the word "Tesla"
df3=dic3["Tesla"]["top"]
df3.head()
```

Out[6]:

	query	value
0	tesla stock	100
1	tesla model	82
2	tesla price	58
3	model 3 tesla	39
4	model 3	39

In [7]:

```
#Getting Top Trends
top=t.get_top_trends()
top.head()
```

Out[7]:

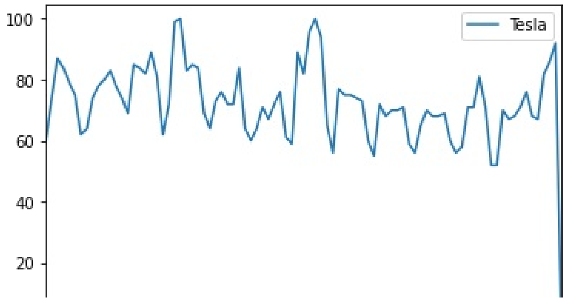
	0
0	Tornado Watch
1	Gregg Popovich
2	Winter storm warning
3	Turning Red
4	The Adam Project

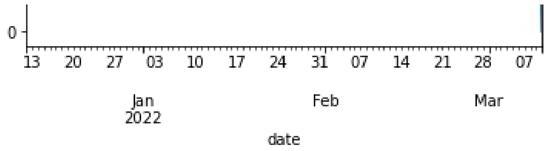
Plots & charts Examples

In [8]:

```
'''
This Chart Describes the number of searches
for "Tesla" in the last 3 Months

'''
df.plot();
```

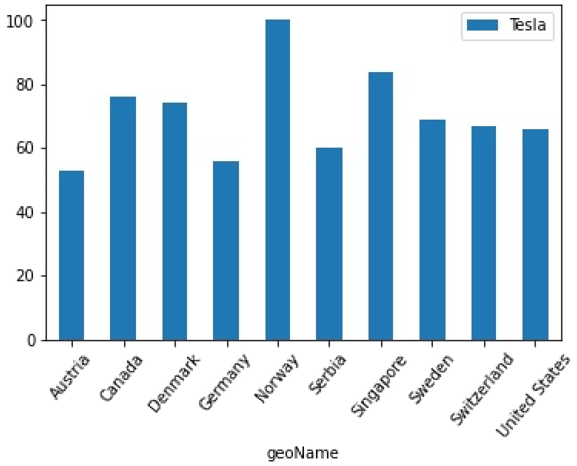




In [9]:

```
'''
This Bar Chart Describes the number of Searches for
"Tesla" in different Regions in the last 3 months

'''
#Condition for getting only countries with high numbers of searches
df2[df2["Tesla"]>50].plot(kind="bar");
plt.xticks(rotation=50);
```



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