Comcast Telecom Consumer Complaints

DESCRIPTION

Comcast is an American global telecommunication company. The firm has been providing terrible customer service. They continue to fall short despite repeated promises to improve. Only last month (October 2016) the authority fined them a $2.3 million, after receiving over 1000 consumer complaints. The existing database will serve as a repository of public customer complaints filed against Comcast. It will help to pin down what is wrong with Comcast's customer service.

Data Dictionary

- Ticket #: Ticket number assigned to each complaint
- Customer Complaint: Description of complaint
- Date: Date of complaint
- Time: Time of complaint
- Received Via: Mode of communication of the complaint
- City: Customer city
- State: Customer state
- Zipcode: Customer zip
- Status: Status of complaint
- Filing on behalf of someone

Analysis Task

1. Import Libraries:

In [1]:
```
# import required libraries
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
import seaborn as sns
import os
os.listdir()
```

Out[1]:
```
['.ipynb_checkpoints',
 'Comcast_telecom_complaints_data.csv',
 'Comcast_telecom_complaints_data.ipynb']
```

2. Read csv file:

```
In [2]: # read data set
        df_comcast = pd.read_csv('Comcast_telecom_complaints_data.csv')

In [3]: df_comcast.head()
```

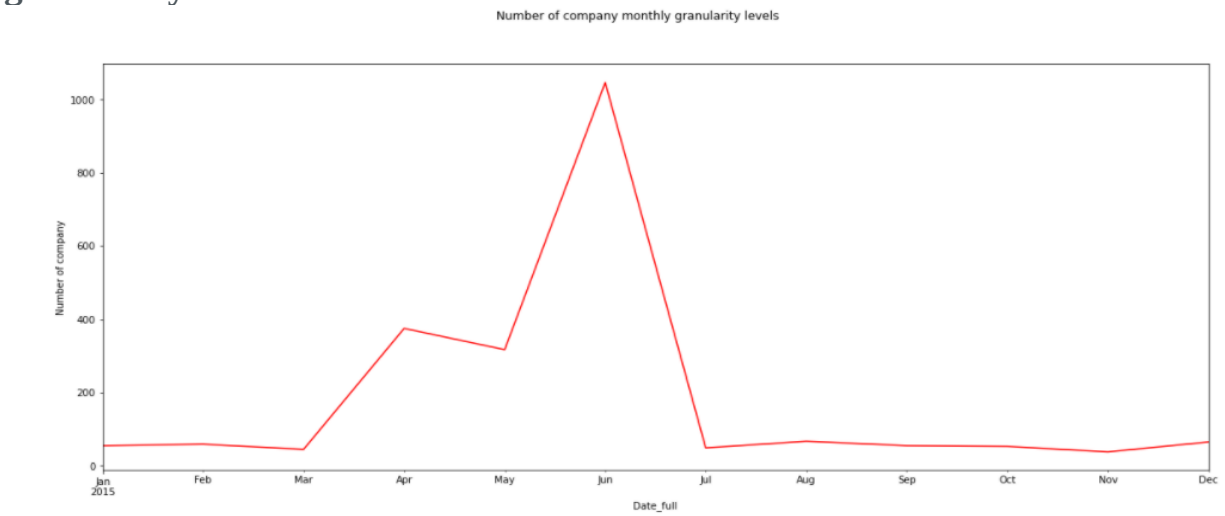
Out[3]:

	Ticket #	Customer Complaint	Date	Date_month_year	Time	Received Via	City	State	Zip code	Status	Filing on Behalf of Someone
0	250635	Comcast Cable Internet Speeds	22-04-15	22-Apr-15	3:53:50 PM	Customer Care Call	Abingdon	Maryland	21009	Closed	No
1	223441	Payment disappear - service got disconnected	04-08-15	04-Aug-15	10:22:56 AM	Internet	Acworth	Georgia	30102	Closed	No
2	242732	Speed and Service	18-04-15	18-Apr-15	9:55:47 AM	Internet	Acworth	Georgia	30101	Closed	Yes
3	277946	Comcast Imposed a New Usage Cap of 300GB that ...	05-07-15	05-Jul-15	11:59:35 AM	Internet	Acworth	Georgia	30101	Open	Yes
4	307175	Comcast not working and no service to boot	26-05-15	26-May-15	1:25:26 PM	Internet	Acworth	Georgia	30101	Solved	No

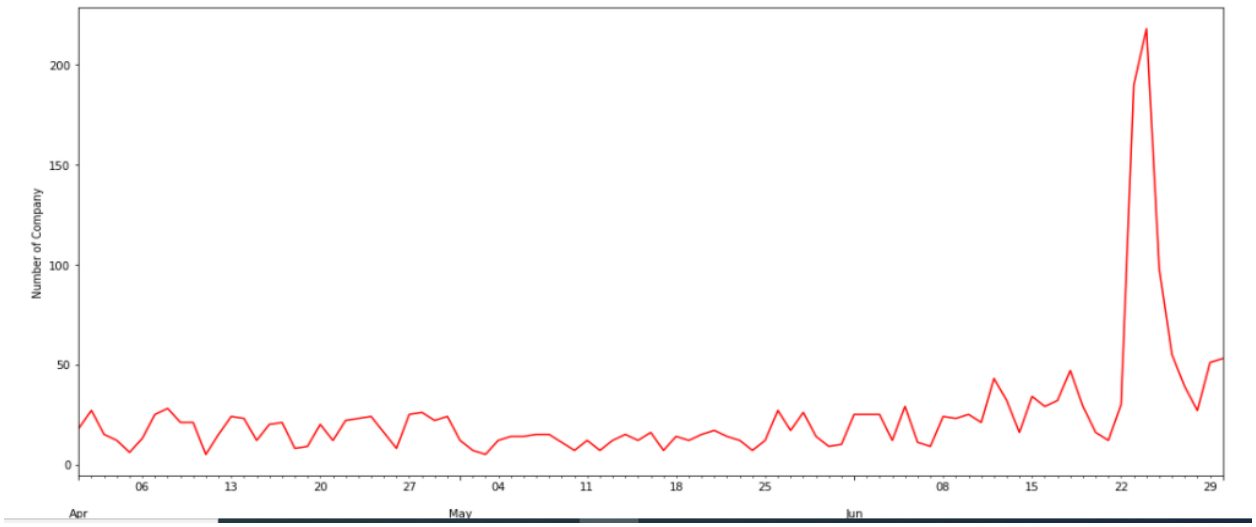
```
In [4]: df_comcast.shape
```

Out[4]: (2224, 11)

3. Provide the trend chart for the number of complaints at monthly and daily granularity levels:



Number of Company daily granularity levels



5.Provide a table with the frequency of complaint types

```
n [15]: # Better to convert all data into uper case or sentence case so duplicate value will shorted
        df_comcast_complain_type_upper = df_comcast['Customer Complaint'].str.upper().value_counts()
        df_comcast_complain_type_upper.head(25)
```

```
ut[15]: COMCAST                              102
        COMCAST DATA CAP                      30
        COMCAST INTERNET                      29
        COMCAST DATA CAPS                     21
        COMCAST BILLING                       18
        COMCAST SERVICE                       15
        INTERNET SPEED                        15
        UNFAIR BILLING PRACTICES              13
        DATA CAPS                             13
        DATA CAP                              12
        COMCAST COMPLAINT                     11
        COMCAST/XFINITY                       11
        COMCAST INTERNET SERVICE              10
        BILLING                                9
        BILLING ISSUES                         8
        COMCAST CABLE                          5
        INTERNET                               5
        COMCAST BILLING COMPLAINT              5
        COMCAST ISSUES                         5
        COMCAST BILLING PRACTICES              5
        SERVICE ISSUES                         5
        SLOW INTERNET                          5
        INTERNET SERVICE                       5
        COMPLAINT AGAINST COMCAST              5
        COMCAST UNFAIR BILLING PRACTICES       4
```

6. Create a new categorical variable with value as Open and Closed. Open & Pending is to be categorized as Open and Closed & Solved is to be categorized as Closed.

```
]: # Convert as per Instruction (Task 4) into New Column without changing the main data so that we can use the main data
   # in Future
   df_comcast['New Status'] = ["Open" if Status =='Open' or Status == 'Pending' else "Closed" for Status in df_comcast['Status']]
```

```
]: df_comcast['New Status'].unique()
```

```
]: array(['Closed', 'Open'], dtype=object)
```

```
]: df_comcast_state_by_status = pd.crosstab(df_comcast.State,df_comcast['New Status'])
```

```
]: df_comcast_state_by_status
```

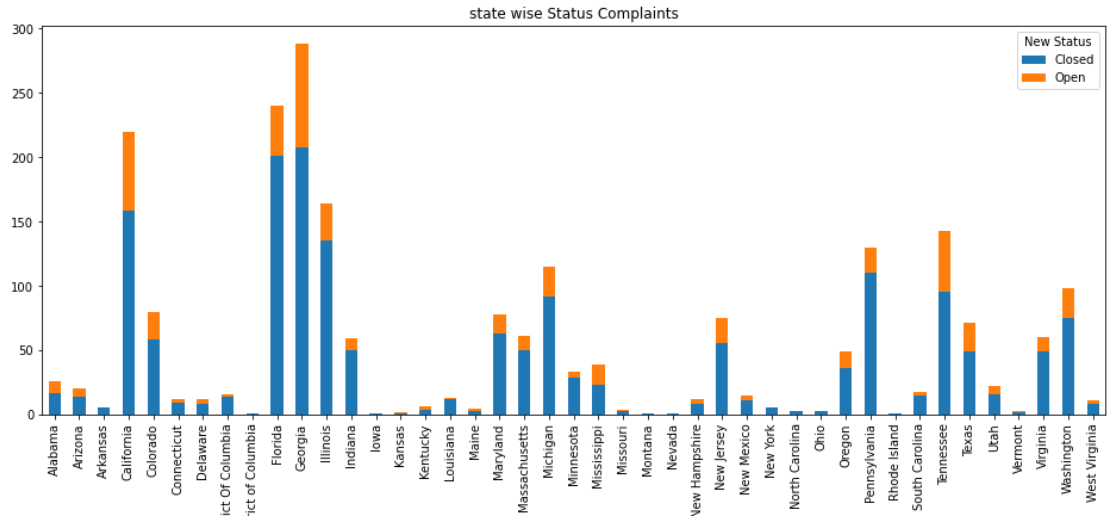
```
]:
```

New Status	Closed	Open
State		
Alabama	17	9
Arizona	14	6
Arkansas	6	0
California	159	61
Colorado	58	22
Connecticut	9	3
Delaware	8	4

7. Provide state wise status of complaints in a stacked bar chart

```
[21]: df_comcast_state_by_status.plot(kind = 'bar',figsize=(16,6),stacked=True,title="state wise Status Complaints")
```

```
t[21]: <AxesSubplot:title={'center':'state wise Status Complaints'}, xlabel='State'>
```



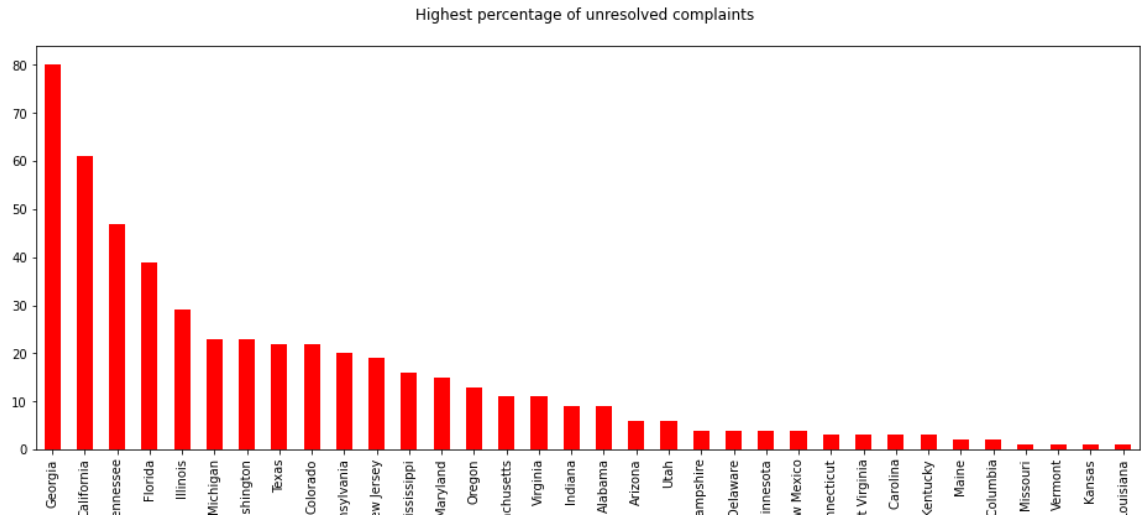
8.Which state has the maximum complaints.

ANS: Georgia

9.Which state has the highest percentage of unresolved complaints

```
: df_comcast_unsloved_complaint_value_count.plot(kind='bar',figsize=(16,6),color='red')
  plt.title("Highest percentage of unresolved complaints \n")
```

```
: Text(0.5, 1.0, 'Highest percentage of unresolved complaints \n')
```



10. Provide the percentage of complaints resolved till date, which were received through the Internet and customer care calls.

```
]: lode = [0.1, 0]
   itle('Complaints Status through the Internet & Customer Care Calls\n')
   ncast['New Status'][df_comcast['Received Via']=='Internet'].value_counts().plot(kind='pie',explode = myexplode,autopct='%1.1f%%',
                      figsize = (14,6))
```

```
]: <AxesSubplot:title={'center':'Complaints Status through the Internet & Customer Care Calls\n'}, ylabel='New Status'>
```