

Project_04_Comcast_Telecom_Consumer_Complaints

April 6, 2021

0.1 Task 1 : Import data into Python Environment

0.1.1 Step 1 : Import the Libraries

```
[1]: import pandas as pd
import numpy as np
import zipfile
import matplotlib.pyplot as plt
%matplotlib inline
import datetime
```

0.1.2 Step 2 : Import the CSV file

```
[2]: with zipfile.ZipFile('1568699544_comcast_telecom_complaints_data.zip','r') as zip_ref:
    zip_ref.extractall('Project 04 - Comcast Telecom Consumer Complaints')

[3]: comcast = pd.read_csv("Project 04 - Comcast Telecom Consumer Complaints/
    ↳Comcast_telecom_complaints_data.csv",parse_dates=['Date'])
comcast.head()
```

```
[3]: Ticket # Customer Complaint Date \
0 250635 Comcast Cable Internet Speeds 2015-04-22
1 223441 Payment disappear - service got disconnected 2015-04-08
2 242732 Speed and Service 2015-04-18
3 277946 Comcast Imposed a New Usage Cap of 300GB that ... 2015-05-07
4 307175 Comcast not working and no service to boot 2015-05-26

Date_month_year Time Received Via City State \
0 22-Apr-15 3:53:50 PM Customer Care Call Abingdon Maryland
1 04-Aug-15 10:22:56 AM Internet Acworth Georgia
2 18-Apr-15 9:55:47 AM Internet Acworth Georgia
3 05-Jul-15 11:59:35 AM Internet Acworth Georgia
4 26-May-15 1:25:26 PM Internet Acworth Georgia

Zip code Status Filing on Behalf of Someone
0 21009 Closed No
1 30102 Closed No
```

2	30101	Closed	Yes
3	30101	Open	Yes
4	30101	Solved	No

```
[4]: comcast.drop(columns=['Ticket #', 'Date_month_year', 'Zip code'])
```

```
[4]:
```

	Customer Complaint	Date \
0	Comcast Cable Internet Speeds	2015-04-22
1	Payment disappear - service got disconnected	2015-04-08
2	Speed and Service	2015-04-18
3	Comcast Imposed a New Usage Cap of 300GB that ...	2015-05-07
4	Comcast not working and no service to boot	2015-05-26
...
2219	Service Availability	2015-04-02
2220	Comcast Monthly Billing for Returned Modem	2015-06-02
2221	complaint about comcast	2015-06-09
2222	Extremely unsatisfied Comcast customer	2015-06-23
2223	Comcast, Ypsilanti MI Internet Speed	2015-06-24

	Time	Received Via	City	State	Status \
0	3:53:50 PM	Customer Care Call	Abingdon	Maryland	Closed
1	10:22:56 AM	Internet	Acworth	Georgia	Closed
2	9:55:47 AM	Internet	Acworth	Georgia	Closed
3	11:59:35 AM	Internet	Acworth	Georgia	Open
4	1:25:26 PM	Internet	Acworth	Georgia	Solved
...
2219	9:13:18 AM	Customer Care Call	Youngstown	Florida	Closed
2220	1:24:39 PM	Customer Care Call	Ypsilanti	Michigan	Solved
2221	5:28:41 PM	Internet	Ypsilanti	Michigan	Solved
2222	11:13:30 PM	Customer Care Call	Ypsilanti	Michigan	Solved
2223	10:28:33 PM	Customer Care Call	Ypsilanti	Michigan	Open

	Filing on Behalf of Someone
0	No
1	No
2	Yes
3	Yes
4	No
...	...
2219	No
2220	No
2221	No
2222	No
2223	Yes

[2224 rows x 8 columns]

```
[5]: comcast.shape
```

```
[5]: (2224, 11)
```

```
[6]: comcast.isnull().sum()
```

```
[6]: Ticket #                0
     Customer Complaint      0
     Date                    0
     Date_month_year         0
     Time                    0
     Received Via            0
     City                    0
     State                   0
     Zip code                0
     Status                  0
     Filing on Behalf of Someone 0
     dtype: int64
```

```
[7]: comcast.dtypes
```

```
[7]: Ticket #                object
     Customer Complaint      object
     Date                    datetime64[ns]
     Date_month_year         object
     Time                    object
     Received Via            object
     City                    object
     State                   object
     Zip code                int64
     Status                  object
     Filing on Behalf of Someone object
     dtype: object
```

0.2 Task 2 : Provide the trend chart for the number of complaints at monthly and daily granularity levels

0.2.1 plot a bar graph of customer complaints vs date

```
[8]: comcast['Month'] = pd.DatetimeIndex(comcast['Date']).month
     comcast['Month'].head()
```

```
[8]: 0    4
     1    4
     2    4
     3    5
     4    5
     Name: Month, dtype: int64
```

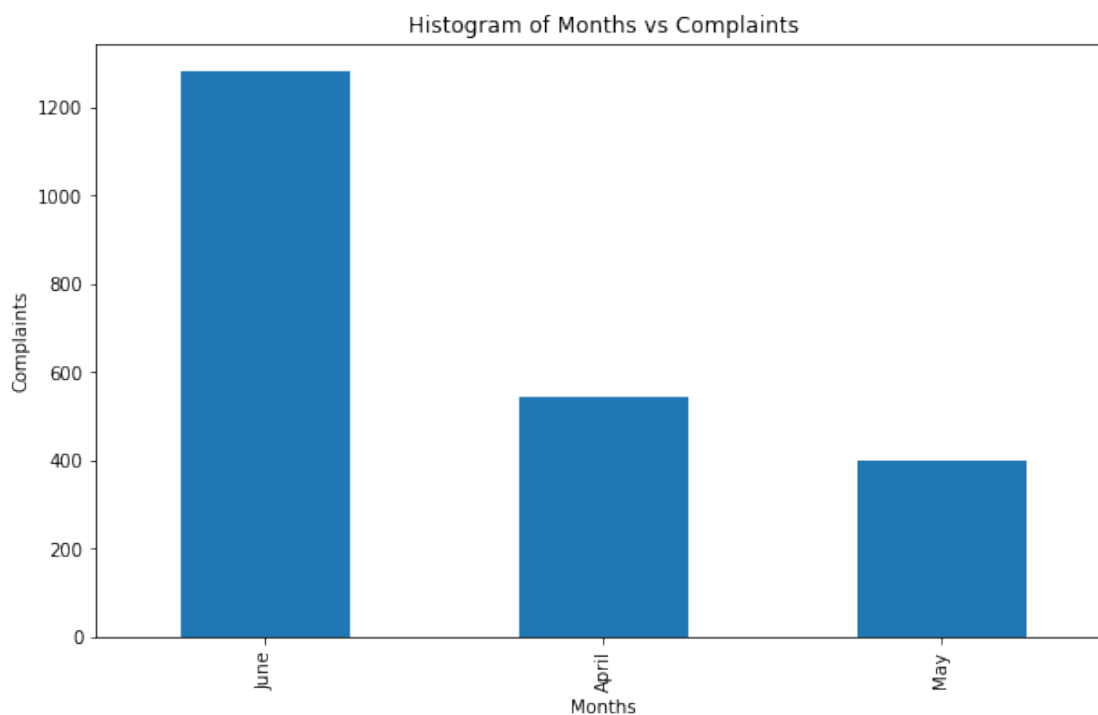
```
[9]: Comcast['Month str'] = Comcast['Date'].dt.strftime('%B')
Comcast['Month str'].head()
```

```
[9]: 0    April
     1    April
     2    April
     3     May
     4     May
     Name: Month str, dtype: object
```

```
[10]: Comcast['Month str'].value_counts()
```

```
[10]: June      1280
     April      545
     May        399
     Name: Month str, dtype: int64
```

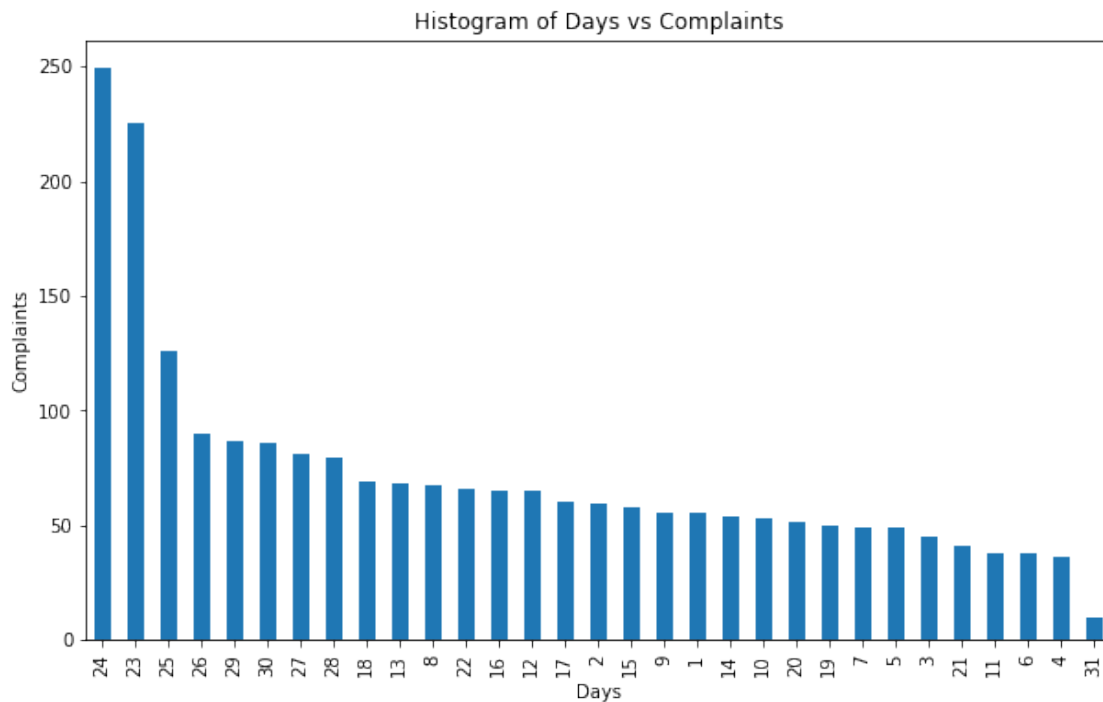
```
[11]: (Comcast['Month str'].value_counts()).plot(kind='bar',figsize=(10,6))
plt.xlabel('Months')
plt.ylabel('Complaints')
plt.title('Histogram of Months vs Complaints')
plt.show()
```



```
[12]: comcast['Day'] = pd.DatetimeIndex(comcast['Date']).day
      comcast['Day'].head()
```

```
[12]: 0    22
      1     8
      2    18
      3     7
      4    26
      Name: Day, dtype: int64
```

```
[13]: (comcast['Day'].value_counts()).plot(kind='bar',figsize=(10,6))
      plt.xlabel('Days')
      plt.ylabel('Complaints')
      plt.title('Histogram of Days vs Complaints')
      plt.show()
```



0.3 Task 3 : Provide a table with the frequency of complaint types

0.3.1 Subtask 1 : Which complaint types are maximum i.e., around internet, network issues, or across any other domains

```
[14]: comcast['Customer Complaint'].value_counts()
```

```

[14]: Comcast 83
      Comcast Internet 18
      Comcast Data Cap 17
      comcast 13
      Comcast Billing 11
      ..
      Xfinity Data Cap 1
      Paying for service for 12 months without recieving the service 1
      Cap on Comcast Data 1
      Data usage with Comcast 1
      Internet issues and Customer Service issues 1
      Name: Customer Complaint, Length: 1841, dtype: int64

[15]: categories_to_combine1 = ['(Comcast is not my complaint!) Cyber Tele-marketing_
    ↳is my complaint!','Comcast Dishonest Marketing Scheme','Comcast fradulent_
    ↳Marketing and billing for internet','Second Complaint "Comcast not honoring_
    ↳Marketing Materials"']
    for tel in categories_to_combine1:
        comcast['Customer Complaint'].replace({tel:'Telemarketing'},inplace = True)

[16]:

```

```

categories_to_combine2 = ["Comcast Imposed a New Usage Cap of 300GB that
↳punishes streaming.", "Throttling service and unreasonable data
↳caps", "Comcast data caps", "Comcast Internet Data Cap", "Comcast using a Data
↳Cap to take however much money they like", "Comcast Data Cap", "Comcast's
↳Monopolistic Practices and Data Capping", "Comcast data cap
↳""trials""", "Legality of data caps", "Data caps", "Comcast data cap", "Data
↳Caps", "comcast data cap", "Comcast bandwidth data caps in Atlanta,
↳GA", "Comcast download caps", "Data Cap", "Data cap", "Comcast Atlanta Data
↳Caps", "Comcast Atlanta Data Caps", "Comcast Data Cap", "Comcast data
↳caps", "Comcast Data Caps", "Bandwidth Caps becoming excessive", "Comcast data
↳cap", "Data Usage Cap Maine", "Residentail Broadband Data Caps", "Comcast data
↳cap", "Comcast Usage Caps", "Comcast Data Usage Caps", "Data Caps and the
↳Extortion Methods of Comcast", "Data Caps", "comcast data cap", "Comcast
↳Internet Data Cap LIES", "Comcast Internet Usage Cap", "Comcast Corporation
↳Data Caps", "Comcast Data Cap", "Comcast data cap at 300GB", "COMCAST
↳THROTTLING SPEEDS AND DATA CAPS", "Closed Captioning of Online
↳Videos", "Comcast data caps", "Comcast Data Caps", "Monopoly and Deceit: The
↳300GB Data Cap", "Comcast Data Cap in Atlanta, GA", "Cap on data usage", "Data
↳Cap", "Comcast Selectively Enforcing Data Caps", "Comcast Usage Caps", "Comcast
↳/ Xfinity overcharging for internet / internet cap", "Comcast Money Grab
↳using Data Caps", "Comcast Data Cap Compliant", "Comcast Data Cap Limits, Lack
↳of Competition, and Anti-Competition Business and Billing
↳Practices", "Billing/contract issue related to data cap", "Data Caps", "Comcast
↳data cap", "Comcast Refuses to Fix Billing If a Virus Causes Data Usage Over
↳Cap on a system protected by THEIR AV", "300 gb cap", "Comcast Data
↳Caps", "Comcast trial of putting cap (300 GB / month) on internet usage.
↳", "Comcast Data Caps", "Comcast Data Cap & Code Injection", "Data
↳Caps", "Please stop Broadband bandwidth caps", "Data cap", "ISP Data
↳Cap", "Internet cap", "Comcast Data Cap", "Comcast Data Caps", "Comcast data
↳cap", "monthly data caps", "300GB/month Data Cap", "Data Caps", "Data Cap
↳overages", "Data Caps", "Comcast Data Cap", "Comcast Data Usage Cap/
↳Limit", "Comcast data caps", "Comcast Data Usage Cap", "comcast data useage
↳caps and charges", "Comcast Data Caps", "Data Cap", "Comcast's data caps are
↳anti-consumer.", "Xfinity Data Cap", "Data caps & Monthly prices", "Comcast
↳Data Cap", "Comcast Data Cap of 300GB", "Data Cap", "Comcast data cap /
↳interference with free market", "Data Caps by Comcast", "Comcast Data
↳Caps", "Comcast data caps", "Comcast data caps", "Comcast home data usage
↳cap", "Bandwidth Caps.", "Comcast Data Cap", "Comcast Data Caps", "Data soft cap
↳and charges from Comcast", "Comcast Speed and Cap misinformation", "Comcast
↳Data Caps for Home Internet Service", "Comcast monthly data usage
↳cap", "Comcast Data Use Caps", "Data Caps",

```

```

        "Forced data capping", "Comcast Data Cap", "Data_
        ↳cap", "Comcast Data Cap", "Data Caps", "Data caps", "Comcast data cap", "Comcast_
        ↳Data Cap", "Comcast Data cap", "Data Caps Discourage Commerce", "300GB/month_
        ↳data cap 'trial' for several years now", "Comcast data usage cap", "Comcast_
        ↳Data Caps", "Data Cap imposed without notice", "Comcast 300GB data_
        ↳cap", "Comcast 300Gb Data Cap", "Data caps", "Comcast data caps", "Comcast data_
        ↳cap limit", "Comcast data caps", "Stop the data caps of Comcast", "Comcast Data_
        ↳Cap", "Comcast Data Cap", "Data cap", "Data Cap 300gb", "COMCAST DATA CAP IS_
        ↳BULLCRAP", "Comcast Data Cap", "Cap on Comcast Data", "Comcast Data_
        ↳Cap", "Comcast's Data Cap", "Comcast is limiting my access to data by using_
        ↳""Data Caps""", "Comcast data cap", "Comcast data caps in currently_
        ↳uncompetitive Nashville market", "comcast data cap", "Comcast data usage_
        ↳cap", "Comcast - Internet Data Cap", "Data Cap Overages", "Comcast data caps_
        ↳are killing the internet", "Data Cap in Olive Branch MS with Comcast", "Data_
        ↳Cap", "Comcast Internet Data Cap Segregation", "Data Cap Limitations", "Data_
        ↳Cap problems", "Surprise Data Caps from Comcast", "Comcast Data Cap", "Stop The_
        ↳CAP", "expensive service, capped", "Comcast Internet Data Cap", "Comcast DATA_
        ↳Caps", "Comcast Data usage caps", "Data caps and monthly fees", "Comcast data_
        ↳caps are an end-run around Net Neutrality", "Comcast Data Cap", "Data Cap on_
        ↳Internet Downloads?", "Comcast Internet usage caps", "Comcast Xfinity Data Cap_
        ↳in Atlanta, GA", "Comcast Data Caps", "Outrageous billing costs and Data_
        ↳caps", "comcast data cap", "Comcast/Xfinity Internet Data Cap", "Comcast 300GB_
        ↳CAP", "Cap complaints", "Comcast Data Caps", "Comcast data cap", "Data Usage_
        ↳Cap", "Data Caps", "Comcast Data Cap", "Comcast data cap", "comcast data_
        ↳caps", "Data caps for broadband internet", "Data capping and lack of options_
        ↳in Tucson AZ", "Data Caps", "Data Caps", "Comcast data cap/meter", "Data_
        ↳Cap", "Comcast Data Meter/Cap", "Tucson Comcast Data Caps on Internet_
        ↳Service", "Data Cap", "Home Internet Data Caps", "Data usage cap with Comcast_
        ↳Xfinity", "Xfinity Data Caps", "Comcast Data Caps and Throttling", "Data_
        ↳Cap", "Comcast Data Cap Overage Fees", "Data caps for cable ISP;s", "data usage_
        ↳caps", "Comcast Xfintity Internet Data Caps", "comcst data cap", "comcast_
        ↳cap", "Overage on 300GB data plan with Comcast", "Data Usage Overage", "Data_
        ↳Limit", "Data usage", "Data usage limit", "Data limit with Comcast", "Data usage_
        ↳with Comcast", "Data Overages", "Data Usage Meter", "Data Limits", 'Comcast is_
        ↳limiting my access to data by using "Data Caps"', 'Comcast and their "data_
        ↳limit"', 'Comcast "Unlimited" Internet Access recently limited to 300GB per_
        ↳month', 'Internet "Overage" Charges', 'Comcast data cap "trials"']
for dat in categories_to_combine2:
    comcast['Customer Complaint'].replace({dat:'Data Cap'}, inplace = True)

```

[17]:


```
categories_to_combine3 = ["Payment disappear - service got disconnected","Speed,
→and Service","Comcast not working and no service to boot","Comcast refuses
→to help troubleshoot and correct my service.","Billing after service was
→asked to be disconnected","Horrible Internet Service","Failure to provide
→services that I am billed for.","horrible cable service and customer
→service","Comcast Customer Service","No Service","Comcast Billing and
→Service Issues","service issues","Comcast Refuses to Schedule a Future
→Service Stoppage","Comcast - failure to provide service, refusal to void
→contract","Spotty Comcast service","without service despite willingness to
→pay","Speed of service","Comcast services/billing issues","Comcast Added
→Service After I Declined It","Cable service and telephone connect not
→complete","Comcast Won't Cancel My Service","Comcast disconnecting service
→before due date","Denial of Comcast Business (Phone and internet) Service to
→my dental practice","Comcast's Terrible Service - How are they still in
→business?","they are forcing me for my bank account information by
→suspending my services for no reason (I also feel like they are committing
→corporate theft).","Comcast discontinuation of service issue","Comcast
→customer service","Horrible Comcast Customer Service","Bad Customer
→Service","disconnection of service","Comcast refuses service to my
→address","Comcast will not let me discuss my bill or service with a
→representative","no service for 5+ days","COMCAST Poor Customer
→Service","Comcast internet and cable service","double billing after change
→of service","Forced Bundling of Internet Service with CATV","Failure to
→deliver service","Comcast's refusal to recognize written notice of
→termination of service","Services turned off in retaliation for
→complaints","Intermittent Service","Paying for high speed internet with
→Comcast. Consistently getting slow service.","Comcast Monopoly on Packages
→is costing me more money for same service","Billing Dispute & Poor Customer
→Service","Internet service slow and intermittent","Comcast Service and
→customer service representative","Service refusal and lower than advertised
→speeds.","Connecting the service","Comcast billing after discontinuation of
→service","constant disruption of internet service","Incorrect Billing and
→Service from Comcast","Awful Service!","Failure to supply the proper
→Internet service","Bad Service/drop calls/no support","Comcast Outage/poor
→service 6/1","COMCAST BILLING FOR LAST @18 mos for services they are unable
→or unwilling to provide","Comcast slow internet service","lack of service
→from comcast","credit for service outage 6/23/15","2+ Day Degraded
→Services","Over paying for my Comcast Services","Fees not disclosed before
→service was installed","comcast service","Poor customer service","Billed for
→service never received","disrupted internet service","Have to bundle
→services to get advertised proce.","Comcast service that didn't
→work","Internet Service","Issues with Comcast regarding service, billing,
```

"Worst speed, no competition, and billing does not
→match the service.", "Comcast bundled service", "Comcast misrepresented their
→service area, then charged me for attempting to use it.", "Comcast Does Not
→Deliver Service", "Comcast service", "Comcast service billing", "Transfer
→services", "Comcast agent lied about service upgrade", "Customer Service
→Representative Lied About Rates and Promotions", "Comcast service Corvallis,
→OR.", "comcast xfinity home security service", "Comcast Internet Service Bad
→Quality", "Comcast Internet Service Provider", "comcast services", "comcast
→internet service - billing problem", "Comcast refusal to cancel service under
→false contract claims", "Terrible Service and Ripped off by Comcast", "Comcast
→secretly raising my bill for services I never agreed to. Again.", "Comcast
→Service for EXTERIOR Line Replacement Billed to customer", "Billed without
→service", "no internet service, no on demand service", "internet and on demand
→service", "Unfair Charges and substandard service", "Comcast service", "Comcast
→Service", "Slow Service", "Business Class Service", "Comcast Internet Service
→Complaint", "Comcast poor service or throttling", "No broadband service
→provided", "Poor Service from Comcast", "Slow speeds, poor service, .", "Billing
→and Service", "Comcast billing/service", "Terrible Comcast service", "Complaint
→against Comcast for incredibly bad service", "Internet service
→speed", "Comcast Internet Only Service", "Overpriced, low quality
→service", "Bundled Service", "Comcast customer service and billing
→complaint", "lack of service, Service call complaint", "lack of service,
→Service call complaint", "Unreliable service for the past three
→years", "Comcast deceptive selling billing lack of service - SECOND And
→EXPANDED COMPLAINT", "Comcast will not service our home", "Comcast Billing and
→Service Issues", "Poor service", "Recurring Comcast service issues and long
→waits for non-service", "Comcast Service", "Charged for Services not
→provided", "Horrible/Unacceptable Service of Comcast", "Comcast/Xfinity Poor
→Service, Fraudulent Billing and Collection", "Nightly service
→interruption", "comcast wont service my address", "cannot access my email or
→service at all", "Xfinity/comcast Service", "Comcast/Xfinity- Paying for High
→speed service", "Comcast/Xfinity- Paying for High speed service", "Comcast
→Internet Speed/Quality of Service and price", "Comcast/Xfinity
→service", "Issues with Comcast Customer Service due to loss of
→Internet", "Comcast Internet Service", "Comcast Overcharge for Internet
→Service for over One Year", "Not receiving refund of service from Comcast,
→for over 90 days", "Continues services interruptions causing losses to my
→business", "Comcast blocking services", "Billing Issues/Service

"Comcast service billing","Customer Service

→Nightmare","Non working service with Comcast","Issue with internet

→service","Comcast Customer Service","Comcast Internet Services and Customer

→Service is Horrible","Lack of Service and Misleading Promises","COMCAST

→SERVICE","Comcast services not working","Comcast internet service","Comcast

→internet claiming 25 mbps internet but i get only 3 mbps and customer

→service representative hung up call repeatedly","Long term billing issue

→with rude customer service caused depression and trauma","Comcast -Exfinity

→customer service errors, lies and wasted time","Comcast -Exfinity customer

→service errors, lies and wasted time","Comcast Very Bad /Rude customer

→service","Comcast Service","Service Complaint","Xfinity not providing

→service in my portion of the neighborhood","Comcast customer service and

→billing service","customer services","service issues","Service down for 25

→days but was never credit it for it","Comcast Home Business Service - FC

→Consulting, LLC","Very Frequent service outages with Comcast

→internet","Ongoing serious and cotinued internet service outages","Internet

→problems, billing and service","false advertisement for paid

→service","InHome Service Visit charged when the problem was outside of my

→apartment","Unable to obtain Residential Service","Refusal to Prorate for

→Services Not Recieved","Service out/no customer service provided","Complaint

→about service provided by Comcast/Xfinity","Service Provided is Not What was

→Promised","Inability to call 911 service during a power outage","Internet/

→Phone Billing Services","Internet Speed/Service","Comcast Poor Customer

→Service and Degraded Service","lack of service and speed","comcast fees and

→internet services","unresponsive calls to customer service regarding wifi

→hotspots","Comcast Bundled Services","customer service","customer service &

→price","Loss of Electronics/Poor Customer Service/Faulty

→Grounding","Overcharged for underperforming services","comcast billing

→shutting off service","Services Interrupted","Poor Customer Service and

→Internet Availability","Comcast Service","internet service and phone

→service","Repeated issues with Comcast billing and customer

→service","Comcast Customer Service","Comcast Business Internet -- Not

→Providing Service to New Location & Will Not Terminate Contract Despite

→Multiple Attempts","Comcast Internet Billing Problems/Disrespectful Customer

→Service Agents","Customer Service and Billing Complaint","Comcast Billing

→and Service Issues","Intermittent poor service","Comcast - Customer Service/

→Technical Service Inferiority","service not disconnected as requested.

→overcharged and overpaid as a result.","comcast service","Comcast - internet

→service complaint","Horrible Service","Forced to pay for Home Security

"billing/service issues", "10 Days No Service - 12

→ Appointments Comcast Hasn't Shown Up - Comcast Has Not Fixed Home Infinity

→ X1 - In 10 Days- Cannot Make 911 Calls", "rude, nasty, customer service

→ behavior, and a three year failure to deliver the business Internet services

→ paid for", "The WORST customer service team and negative outlook on customers!

→ !!", "Spotty service Business class internet", "Sold one service, received

→ another", "Comcast service and billing issue", "Comcast Service and Billing

→ Issues", "Bad Customer Service", "Unable to cancel poor internet

→ service", "microsoft is limiting service", "Poor Quality Service and

→ Unauthorized Charges", "Inconsistent Internet Service", "Internet Service

→ Billing", "Comcast terrible service #2", "bait and switch services for

→ monetary gain", "Abysmal customer service, do not approve merger with Time

→ Warner", "Comcast business internet service down for 6 Days", "Comcast Service

→ Rep Missed appointment. I missed a very important family gathering because I

→ was waiting on the worker to show.", "Deceptive and false contract on

→ Business Comcast for Service Call", "poor service; inaccurate billing", "No

→ Service, no assistance", "Comcast is a terrible service", "Comcast Billing &

→ Customer Service", "Failure to Cancel Service", "inability to add service", "No

→ Internet service", "Comcast Customer Service; Theft; Inconsistency", "Comcast/

→ Xfinity Customer Service", "Cancelled Comcast Internet - Service and Billing

→ was never cancelled", "Terrible Service", "Comcast Wifi Service", "Comcast

→ billing and services", "internet service provider billing increase", "No

→ internet, phone or cable service", "Comcast bundling of internet and tv

→ services and deceptive sales practices", "Comcast service", "comcast is not

→ providing service for bad internet", "billing/service issues", "Charging for

→ service with out fixing the problem", "Terrible customer service from

→ Comcast", "Comcast email service", "Broadband Internet Service", "Outage of

→ Internet service 5/19/2015, and attitude of Cust Svc rep", "No Internet

→ Service", "Internet and Phone Service", "Comcast Billing (primary) Service

→ (secondary)", "internet/cable service", "Comcast theft, lying, horrible

→ service and deception", "Comcast not connecting me to cancel service and

→ raising prices unfairly", "service, billing", "Comcast/Xfinity Customer

→ Service", "Non working service", "Comcast is a downright awful service

→ provider.", "tInternet Service Provider Complaint", "Issues with service and

→ payments", "Comcast Billing dispute - Wireless service", "Comcast Service

"Internet issues and Customer Service

→issues", "Failure of service from Comcast", "Failure of service from
→Comcast", "Internet speeds less than what we are paying for after canceling
→cable tv service", "Billing & Internet Service Issues with Comcast in Seattle
→WA", "Comcast repeatedly failing to install Internet service", "threat of
→shutting off service of phone, internet and TV", "BAD SERVICE/ PLEASE
→HELP", "Comcast will not allow me to cancel my internet service.", "Comcast
→Internet Service", "Comcast service agreement", "Comcast Service", "Cheating in
→Bundle Service Pricing", "Comcast Service and Customer Service", "Comcast
→Internet Service", "Denial of service", "internet service from
→comcast", "xfinity customer service", "Extremely Poor Customer
→Service", "Internnet Service", "Comcast Internet Services", "Comcast Internet,
→being charged full price for partial service", "Poor Quality Service and
→Broken Promises", "billing complaint - Comcast digital phone/internet
→service", "Comcast (Xfinity) Internet Service", "Over Charged for Service
→Never Received", "Excessive early termination fees due immediately after 10+
→years of service", "No email service from Comcast", "Service Quality", "No
→internet service", "no internet service for more than 20 days", "Paying for
→service for 12 months without receiving the service", "Misleading and
→deceptive sale of Internet service", "Comcast Refund and discontinue Service
→billing", "Comcast service and pricing", "Billed for services not ordered or
→received", "Customer service", "Poor service from Xfinity", "60 day delay in
→cancelling service agreement", "Poor service/paying for unusable
→services", "internet services", "Someone at Comcast added services without me
→knowing", "Comcast service complaint", "Poor Internet Service", "Improper
→Billing/Services", "Comcast service and billing", "Comcast falsely claims
→service is provided in neighborhood", "shitty comcast service", "Unfair
→Billing Practice and Services", "Inability to get service transferred", "Poor
→Service or no Service", "access to service", "Comcast internet service", "My
→Comcast Bill for Internet/Cable/Phone service", "Monopolist power of Comcast
→in my service area", "Comcast-Non existent customer service, terrible
→internet connection", "comcast internet service", "Internet service loses
→signal", "Horrible Customer Service, Bad Service", "Comcast (no service, hung

```

        "Comcast owes me $65 and claims I need to return
        ↳equipment I never had","Ad in craigslist was a scam for selling product not
        ↳owned","Comcast no show tech","Comcast/Xfinity Data Allowance","Comcast
        ↳Failed to Switch our Systems to New Location and Shut Down the Current
        ↳Location","Lack of reasonable infrastructure close to town","Netflix is
        ↳slow","Comcast is ignoring me now. They are making NO attempt to correct
        ↳problems","Comcast Rrefund Owing to Us since 3/12/2015","LIED TO!!! Now I'm
        ↳suffering?!?! And at a loss!!!","Continued slowness for more than 2
        ↳weeks","Continued slowness for almost 3 weeks","Continued slowness for
        ↳almost 3 weeks","300 GB monthly allowance","Comcast slowing down","data
        ↳allowance","Low wifi","Years of packet loss and downtime","slow routing,
        ↳dropped packets","Comcast No Show's","Comcast slowing down Netflix","Failure
        ↳to show for an appointment and lying","Comcast Failing to Show up to
        ↳scheduled appointment","Comcast not refunding my credit","Comcast credit
        ↳after cancellation has not been received after more than a year","2 months
        ↳and Comcast has not fixed problem","Another Fraudulent collection claim
        ↳from Comcast","Comcast Will Not Provide Online Content Without Cable
        ↳Box","Comcast has not applied credit of close to $400","Comcast not honoring
        ↳agreement","Repeatedly have been promised installations without anyone
        ↳arriving or notifying","Comcast will not help us please help","broadband
        ↳interruption","Frequent interruptions","internet essential","Intermittent
        ↳Expensive Connection","Comcast asking for interstructure fee","bait and
        ↳switch","Bait and switch, unfulfilled incentives","Comcast bait and
        ↳switch","Comcast Bundle Promotion Bait and Switch","False advertising / Bait
        ↳& Switch","bait and switch","bait & switch","Comcast committing ""Bait and
        ↳Switch Fraud""","Bait and Switch again","Comcast bait and switch","Comcast
        ↳bait and switch","False Advertising/Bait and switch","Hidden Product
        ↳Installation Fee","Installation","Installation Request - New Subdivision -
        ↳Jesup, GA","Comcast installation date of June 22, 2015","Install Gone
        ↳Bad","installation fee","Lied to about install costs","paying for an upgrade
        ↳that never took place","Being lied to, and mislead by Comcast /
        ↳Xfinity","COMCAST CUSTOMER CARE ( RACISM)","COMCAST CUSTOMER CARE (
        ↳RACISM)","ads for website","Unable to Return Equipment","Unable to Return
        ↳Equipment","Unable to get Comcast to provide me with broadband","Cable
        ↳Splitter without Consent from customer( Comcast)","failure to provide
        ↳imstallation .... Rockville Maryland 20852","Comcast sold me a 'package'
        ↳knowing it wouldn't work for me, and proceeded to charge me more and attempt
        ↳to tack on fees for their mistake",'Comcast committing "Bait and Switch
        ↳Fraud",'RACIST CUSTOMER SERVICE FROM MANAGER SONIA AND EMPLOYEE ADRIANA
        ↳COMCAST LOCATION "999 Edgewater Blvd, Foster City, CA 94404"']
for ser in categories_to_combine3:
    comcast['Customer Complaint'].replace({ser:'Service Issues'},inplace = True)

```

[18]:


```

categories_to_combine4 = ["Unable to reach a Comcast agent for internet and
↳billing issues.", "INTERNET , BILLING AND SERVIE ISSUES", "Deceptive sales-
↳change in billing amount etc.", "Comcast Billing
↳Dispute", "Overbilling", "Comcast billing problem", "Incorrect Bill", "Comcast
↳billing frauds", "Comcast - Billing", "Comcast bill", "Unfair Billing
↳Practices", "Comcast (Xfinity) Monopolistic Billing Practices", "I AM BEING
↳CHARGE DOUBLE FOR MY CABLE BILL.", "REPEATED Comcast billing issues", "Comcast
↳does not disclose the Internet speed I'm paying for anywhere on my bill or
↳online", "Internet speeds disclosure on bill", "Comcast billing
↳practices", "Double-billing", "Comcast billing error", "Comcast
↳Billing", "Wrongful Billing", "Billing problem", "Comcast keeps changing bill
↳and every time gives new reasons!!", "increased bill", "Comcast Unfair Billing
↳Practices", "Over Billing", "Billing", "Billing for equipment that was not
↳provided to me", "Comcast Billing pratice", "Comcast overbilled me and added
↳numerous hidden charges", "Unfair billing practices of Comcast", "Incorrect
↳Billing", "Comcast Bandwidth Billing Issue", "Unauthorized billing", "Billing
↳overcharges", "Double billing from Comcast", "Billing Over Charges", "Internet
↳Bill too high", "Comcast Billing / Speed Issues", "Unfair Billing
↳Practices", "Cocmast billing issues", "comcast billing
↳practices-unfair", "Comcast - constantly low speeds, 'miscommunication' about
↳billing errors. Not responding to complaints.", "Internet/TV
↳Billing", "Comcast is ""forcing"" bundles on me while silently raising my
↳bill", "Billing & Data Usage", "Comcast wrongfully autodrafted a final bill
↳that was not yet adjusted", "Billing Dispute", "Unfair Billing
↳Practices", "Comcast started charging a lease fee for equipment I own after
↳enabling automatic bill payment", "Unfair Billing Practices", "Comcast is
↳double billing me and not processing my credit back to me", "Comcast over
↳billing", "Comcast Billing", "Comcast billing practices", "Comcast unfair
↳billing", "Comcast overbilling and overcharging", "Charge to my bill
↳unknowingly", "billing", "Nonsensical Raise in my Internet Bill", "Unexplained
↳Billing", "Comcast bill problems", "Unfair billing practices", "comcast phone &
↳internet billing issue", "Horrific billing", "Billings Charges &
↳Credits", "Deceptive Billing Practices", "Billing Complaint", "Comcast Unfair
↳Billing Practices", "Robber Barron Billing Practices", "Inaccurate
↳billing", "Comcast Data Billing", "Improper billing from Comcast", "Unfair
↳Billing Practices regarding Comcast", "Unfair Comcast Bill", "Comcast speed
↳and billing", "I am being unfairly billed", "Billed for modem rental for
↳several years, Comcast refuses to refund under ""caveat emptor""", "Comcast
↳Billing Practices", "Comcast unfair billing", "Billing Issues", "Comcast
↳Internet Billing", "Billing issues with Comcast", "Misrepresentation of
↳billing", "Comcast broke 36 month contract by increasing bill...", "unfair
↳billing practices", "Fraudulent billing by Comcast.", "BILLING ISSUE", "Comcast
↳Unfair Billing Practices", "Comcast Billing Issues", "internet
↳billing", "Multiple billing an dcompetative issues.", "Comcast fraudualent
↳billing", "billing issues", "Comcast knowingly over billed", "Comcast
↳billing", "Unfair Comcast Billing", "Comcast Billing Complaint", "Improper
↳Billing and non resolution of issues", "Lost emails/billing", "Bill issues,
↳Internet and disability comcast prices",

```

"Comcast Billing", "Comcast bundle billing", "Unfair_

 ↳billing practices", "Wrongful billing - repeated since December 2013", "Raised_

 ↳my bill and told me to lower it back to what it was i would have to make a_

 ↳24 month agreement", "Comcast billing complaint", "Comcast_

 ↳Overbilling", "Comcast Billing", "Fraudulent Billing by ComCast", "Comcast Bill_

 ↳Internet Usage", "Over Billing Issues", "Comcast Billing Practices", "billing_

 ↳and internet connection", "Hang-ups, Lies, Bill more than 2x higher &_

 ↳more", "MONTHLY BILL", "Billing Error", "Billing and threats", "Incomplete_

 ↳billing cycle", "Faulty Bill for More Profit", "Billing and New Account_

 ↳Issues", "Comcast Billing", "Comcast wont honor discount, bill higher than_

 ↳what was agreed", "Billing and false advertising", "Ongoing issue with bill,_

 ↳Supervisors, Issue Not Fixed", "Comcast billing", "Comcast billing", "recurring_

 ↳billing discrepancy regarding modem", "Overcharged/excessive bill", "Cannot_

 ↳Access OnlineBilling Account to pay bill. Account info changed without_

 ↳Authorization", "Comcast incorrect and confusing billing", "Billing_

 ↳Dispute", "Comcast Billing", "Comcast billing has caused issues", "Internet_

 ↳bill goes up with no cable ""bundle""", "Unfair Billing Practices", "Comcast's_

 ↳Constant Manipulation of Bills", "Unauthorized charge on comcast_

 ↳bill", "Unfair Billing Practices", "Billing fraud by_

 ↳Comcast", "billing", "Comcast Internet Billing", "Comcast-Billing", "Fraudulent_

 ↳billing practice", "Inappropriate billing", "Unfair Billing_

 ↳Practices", "Billing discrepancies and misrepresentation of package_

 ↳prices", "COMCAST BILLING", "Monopolistic Billing Practices", "Comcast Unfair_

 ↳Billing Practices", "Fraudulent Billing practices by Comcast", "Comcast_

 ↳Billing", "Internet Speeds and Billing Errors", "Comcast Billing_

 ↳Issue", "Internet Throttling & Unfair Billing Practices", "Internet Throttling_

 ↳& Unfair Billing Practices", "Ridiculous and inconsistent billing", "Comcast_

 ↳Billing Fraud", "Comcast - Incorrect Billing Issues - Has Happened on_

 ↳Multiple Occasions with my Account", "Bill Flucuation", "Overcharged Internet_

 ↳Billing", "Comcast - Billing Practices", "billing issues", "Unfair billing_

 ↳practices", "Comcast still billing, after account is closed and_

 ↳paid", "exaggerated bill and Lack of responsibilities in keep appointments!_

 ↳Disrespect for Consumers", "exaggerated bill and Lack of responsibilities in_

 ↳keep appointments! Disrespect for Consumers", "Comcast internet_

 ↳billing", "Comcast New SignUp billing bait-and-switch", "Billing", "Internet_

 ↳and Cable Billing", "Comcast billing issues", "Comcast has raised my bill_

 ↳twice without warning", "CHARGED ERRONEOUS FEE ON BILL", "Comcast Billing for_

 ↳Late Payment/Disconnect due to their error", "Receiving bill for account that_

 ↳was supposed to be cancelled", "Billing Issues", "Unfair Comcast billing_

 ↳practices", "Comcast billing", "Dishonest Billing Practices", "Dishonest_

 ↳Billing Practices and Lying", "Over Billing, No reason code for excess_

 ↳billing, fraud - IMO", "no bill", "Comcast Billing Issues", "Improper_

 ↳billing", "bill to damn high", "Comcast billing and speed.", "Comcast -_

 ↳Fraudulent Billing Practices, Unwilling to resolve situation", "Billing and_

 ↳slowing of internet", "Forcing Customer to Pay an Incorrect Bill to get it_

 ↳Fixed", "Comcast Billing/Pricing Practices", "outrageous internet bill_

 ↳adjustments from Comcast", "Billing Complaint", "Billing", "Internet_

 ↳Billing", "Comcast Billing", "Comcast billing", "Unfair Billing", "Erroneous_

 ↳charges on Comcast bill", "Comcast keeps hiking my bill for no reason !!

 ↳", "Comcast (Xfinity); Larger withdrawal on automatic payment than_

"Unfair Billing at Comcast","Comcast quoted one price,
 →then billed another","COMCAST FRAUDULENT BILLING & CHARGES","Comcast's
 →Unfair Billing and Pricing Practices","bill payment","comcast billing
 →increase","Comcast deceptive billing practices","Comcast - Unfair billing
 →policies","Comcast billing","Comcast's Deceptive Billing","Billing
 →Issue","Comcast Deceptive Business Class Billing","Billing","Comcast Billing
 →Complaint","excessive billing","internet bill increase","Comcast Internet
 →Billing","Shady Internet Billing Practices from Comcast","Billing
 →issues","Billing Dispute","Predatory billing by Comcast","cramming charges
 →on my phone/internet bill","Comcast billing problem","Manipulative billing
 →issue","Over billing Comcast","Billing Dispute","Monopolistic
 →Billing","Ecobill discount","Comcast refuses to lower my bill to previous
 →agreement","Billing and deceitful practices by Comcast","Unfair Billing
 →Practices engaged by Comcast/XFINITY","Comcast billing practices","False
 →billing","Comcast Billing","Comcast Billing Complaint","Double
 →billing","Concern about Comcast Internet Modem Billing Practices","Comcast
 →changes bill prices without my consent","Comcast bill way too high for such
 →slow speeds","Complaint regarding billing practices","Comcast continues to
 →bill me though I canceled months ago","Comcast's egregious billing
 →techniques","Comcast's unfair billing practices","Fraudulent
 →Billing","Comcast Cable Billing Fraud","Comcast billing past disconnection
 →time","Comcast Billing","Billing","Comcast billing and account
 →issues","Comcast Billing Complaint","billing issues","Fraudulent billing,
 →erroneous billing, overbilling","Slow internet / Over Charged
 →Billing","Comcast Billing Support and Practices","Unfair billing practices
 →by Comcast Xfinity","Unfair Billing Practices","Incorrect Billing of
 →NON-RENTED Equipment","Billing Issues","Comcast Xfinity Deceptive Billing
 →Practices","Comcast / Xfinity Billing Issue","Billing Overcharging Issues By
 →Comcast","Billing practices","billing","Billing - Comcast","bills/
 →identity","Comcast Practices/ billing","Comcast Billing","Unfair Billing
 →Practices","Back to back bill","Comcast bill doubled without
 →notice","Comcast had said I had a credit but then issued a regular
 →bill","comcast is changing my paper bill to ecobill without my
 →consent","Incorrect billing","Re: Unfair Billing Practices Complaints
 →against Comcast","Unresolved Comcast fraudulent billing","Comcast
 →Bill","Comcast: Billing issue","Billing Complaint","Billing","Unfair and
 →Monopolistic Billing Practices","Billing issues","overbilled","Comcast sales
 →people not reflect what they said in the bill.","monopolistic billing
 →practices","Unreasonable billing","Issues with Comcast billing and
 →equipment","High Internet & Cable Bill","Comcast Monthly Billing for
 →Returned Modem",

"ISP Charging for arbitrary data limits with overage fees", "Comcast won't quit charging me for modem rental", "Comcast Data Usage Charges", "Comcast deceptive advertising, overage charges", "Repeated Erroneous Modem Rental Charge", "MISC. CHARGES", "Comcast Charges", "Monthly Charges Increased without any notice", "COMCAST Unfair Charge", "Over Charge by lying", "Comcast charging a fee without disclosing", "Incorrect charges, and would not fix", "Keep getting charged rental fees for modem I already own", "Comcast data usage charges", "Continuing overcharges", "Comcast Xfinity 300G over charge", "Comcast wont refund me for over charge", "Comcast promised \$60 a month no fees, charged \$70 + \$8 in fees", "Unethical Charges", "Comcast overcharging", "Removed discount after I complained about an unauthorized charge", "Comcast did not remove charge for over a year", "Comcast Xfinity Overage Charges, No Assistance", "Charges not authorized", "Charged for equipment that I didn't have", "Comcast Xfinity charging rental fee for personally owned modem", "Fraudulent charges by Comcast", "Installation Charges", "Comcast Over Charging Bundle PKG", "Comcast overcharge", "Overcharged \$30 per month for 10 months straight", "Comcast charging me unrelated charges", "Ridiculous Charges", "Comcast Data Charges", "Overage Charges", "Comcast has charged me invalid fee's and wont re-imburse me for them.", "Comcast surprise increase in charges", "Still Overcharged", "Comcast slamming/overcharge/", "Charges", "Data overage charges", "Fake charges", "Comcast Charging Fee without warning", "Comcast Fraudulent Charges", "Comcast cable unauthorized charges", "Comcast cable unauthorized charges", "Overcharge/ promo end", "Comcast-Overcharges", "Comcast - Overcharging/Unnecessary Charges", "Charged for activation kit that was never sent, needed or used", "keep getting charged for modem rental and I bought my own 7 months ago!", "False advertising and overcharging", "Comcast charging ridiculous prices", "fraudulent charges", "Being charged for modem that was returned over 1 year ago", "Fradulant Charges against Credit Report", "Comcast data limits and overage charges", "Xfinity: Bogus modem charges", "Comcast is giving me the ring around and charged me \$130", "comcast over charges", "Comcast Continuous Modem Rental Charges", "Comcast charging over \$600 for data", "Comcast Charges", "Charged for Cable Modem Rental that I have owned for 8 years", "Monthly charge for a Modem", "Comcast charging me for items I do not want/asked for", "Unwilling to provide a refund for charging rent on a modem", "Comcast charges me for 25m connection, Get 5 down/11up", "Comcast charging me monthly fees for equipment rental when I own the equipment", "Comcast refuses to credit erroneous overcharges due to deceptive

```

        "Comcast Raising Prices and Not Being Available To
        ↳Ask Why","Cable prices rising","Xfinity pricing","Incorrect prices for new
        ↳customers","Comcast Pricing","bait and switch pricing","Pricing is not
        ↳competitive","Comcast price","Price and performance manipulation by Comcast
        ↳for ISP","Comcast pricing scam","price inflation due to monopoly of
        ↳Comcast","Xfinity Price and not 16Mbps when paying for 50Mbps","no warning
        ↳before price increase","Consumer Fraud - Sell at One Price, Then Advise
        ↳Price is Higher","Comcast xfinity price gouging seniors","pricing","Pricing
        ↳Concerns","Comcast Price Gouging","Comcast fluctuating prices","Arbitrary
        ↳Price Increase","Comcast Bundle price","comcast fraudulent pricing and
        ↳practices","Comcast Predatory Pricing forcing purchase of cable.","Pricing
        ↳Problems Even After Promises","Comcast's pricing and bundling model is a
        ↳monopolized extortion in my area","online advertised price was not honored
        ↳over phone","Unfair pricing","Unfair pricing practices","Comcast
        ↳Overpricing","Comcast refuse to honor agreed upon price / promotion","Unfair
        ↳pricing","Discriminatory tiered pricing and traffic limitations by Comcast.
        ↳","No package/pricing information from Comcast for San Francisco","Comcast
        ↳Lied About Pricing And Installation","Comcast- Unfair Pricing
        ↳Tactics","Price increase while on a fixed price plan","Unfair
        ↳pricing","Comcast price inflation","Comcast price increase not in line with
        ↳advertisement","Price Increase","Comcast pricing practices","Pricing and
        ↳lies","Price manipulation","Comcast's unfair pricing","Price Plans","Pricing
        ↳discrimination/ monopolistic behavior in an oligopolistic market","Comcast-
        ↳Unfair Pricing","Predatory Monopolistic Pricing","Price fixing and
        ↳monopolistic behavior","Terrible pricing for only one viable
        ↳option","Comcast is giving out wrong information, accusing people and
        ↳increasing equipment prices, when contract says price will stay the same for
        ↳2 years","Unfair Pricing","Comcast unfair pricing","Bank Fee Refund
        ↳Reques","Comcast Refuse to Refund Rental Fee made in error","Denial of
        ↳Refund for Overpayment","Comcast Refuses to Refund Deposit According to
        ↳Initial Terms","COMCAST REFUSES TO SERVE MY ADDRESS","Comcast refuses to
        ↳honor a plan that one of their sales reps offered","Comcast refusing to run
        ↳lines","Comcast refund","Comcast refuses to recognize our same sex
        ↳marriage","refusal to rectify","Refund issues","Comcast refusing to fix
        ↳connectivity issues","Comcast won't pay me my refund","Additional Usage @$10/
        ↳50GB","Fees","assessing unjustified late fees","Fraudulent use of credit
        ↳card and credit card information","Tallahassee Comcast rates high without
        ↳competition","Pay 2500 for cable line","Billed for modem rental for several
        ↳years, Comcast refuses to refund under "caveat emptor",'Internet bill goes
        ↳up with no cable "bundle",'Comcast refuses to credit erroneous overcharges
        ↳due to deceptive "promotional" rates']
    for bill in categories_to_combine4:
        comcast['Customer Complaint'].replace({bill:'Billing Issues'},inplace = True)

```

[19]:

```

categories_to_combine5 = ["Comcast Cable Internet Speeds","Internet_
↳speed","Internet Availability and Speed","Speed","Slow Internet Speed","isp_
↳dishonest about speeds","Speed issues","Comcast speed_
↳integrity","speed","Internet connection both upload and download_
↳speeds","Comcast ""50 mb/s"" speed and throttling","Internet speed not_
↳disclosed","Consistently Slow and Throttled Internet Speeds","COMCAST HIGH_
↳SPEED INTERNET MONOPOLY","Week long issues with speed and no help from_
↳comcast","download speeds slower than dial-up but paying for 25_
↳Mbps","Comcast reduced my internet speed","Comcast Speed Issues","Slow_
↳Internet Speeds","Extremely low speeds, and no help","Comcast throttling_
↳download speed.","low internet speed","Comcast Internet speeds","Slow Speed_
↳with the entire connection","internet speed","Comcast Internet_
↳Speed","Internet speeds are throttled","Comcast Internet prices &_
↳speeds","Internet Speeds Not as Advertised","comcast internet connection and_
↳speed","internet speeds slow","Comcast internet speeds","Comcast Throttling_
↳Internet Speed","internet speed","Slow internet speeds on_
↳Comcast","Throttled speed","Comcast Internet Speed and_
↳Reliability","Internet speed","Internet speed and price of bundle","Possible_
↳Internet Speed Throttling by my Comcast Internet Provider","Slow_
↳speed","Comcast internet speeds extremely slow","Extremely slow internet_
↳speeds; Horrible support","Internet Speed Drops & Signal on_
↳Borderline","Comcast throttling my speeds for streaming video","Consistently_
↳slow internet speeds","Internet Speeds nowhere close to what I pay_
↳for","Slow connection speed for wifi","Comcast Speeds Low, and Often_
↳Disconnections","comcast internet in emeryville throttles speed","Comcast_
↳complaint about internet speed","Internet Connection and Speed_
↳Issues","Comcast Throttling Speeds","Internet speed issues with Comcast and_
↳picture freezing issues when watching TV","Routine Outages / Speeds never as_
↳promised","Internet speed deterioration","Internet Speed on Wireless_
↳Connection","Not receiving advertised speed","Xfinity Internet_
↳Speed","Consistent speed/connectivity with internet","Speeds being throttled.
↳","Charged for speeds they can not provide","COMCAST - Slow Down Imternet_
↳Speed","Speeds received are not as advertised","Comcast throttling_
↳speeds","Throttle of my Internet access speeds by Comcast","Speed_
↳Throttling","Charged double/Speeds throttled","Internet speed","Horrible_
↳Internet Speed not what I pay for","Comcast high prices and throttling_
↳speeds","speed/pricing","Low internet speed complaint against Comcast_
↳Xfinity Houston, Texas","Throttled Speed During Peak Hours","Comcast Speed_
↳Issue after Evening","Monopoly & Fraudulent Broadband Speedtest_
↳results","Not receiving the speeds promised and the charges are too high.
↳","Comcast forcing me to pay same rate for lower speed","Speeds lower than_
↳advertised","COMCAST High speed internet","Internet speed not as_
↳advertised","Not receiving network speed as advertised","Comcast not_
↳delivering advertised speed","Speeds slower than advertised","Internet_
↳speed","Comcast Internet Speeds","Lack of internet speed","Paying for high_
↳speed internet and receiving low speeds","Comcast slow speeds and lying_
↳about prices","comcast lowering internet speeds on constant basis","Speed_
↳for internet nowhere close to claims","Comcast Speeds Not as_

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        "speed","Internet connectivity and speed","Bad
↳Internet Speeds","Was liked to about the speed and the price that was
↳offered to me.","Comcast Throttling Connection Speeds","Slowed Internet
↳Speeds","Slow internet speeds","Comcast - I've been paying for unnecessary
↳speeds when they knew and I did not","Comcast Speed","Slower internet speeds
↳than what i was promised for my pay.","Internet connectivity loss, over
↳1000ms latency, under 1Mbps speeds","Comcast speed not matching, blocked
↳phone number","High Speed internet","Internet Speed","Poor Speed and
↳Reliability","Possible Speed Throttling: Comcast Xfinity Richmond,
↳VA","Comcast Speed Throttling and more","Comcast speed","interne
↳speed","Comcast Xfinity barely ever works and speed sucks","Throttled
↳Internet Speeds","Comcast Advertised Wifi Internet speed not provided False
↳Advertisement","Comcast speed throttling internet","Difficulty with internet
↳speeds","Unclear Quoted Speeds and Prices","Internet speed","Throttling/
↳drastic reduction of speeds","Slow Internet speed","false claims of internet
↳speed tier","Poor Interent Connection-equipment failure, slow
↳speed","Comcast Misrepresenting Speeds in Santa Cruz, CA","Comcast wrong
↳advertised speeds","Misrepresented Internet Speed","Being charged for
↳internet speeds that equipment can not deliver","Speed
↳Misrepresentation","Slow Internet Speed","Internet Speed","very low wireless
↳speed not working well","Speed","Comcast throttling my high-speed
↳internet","paying for hi speed internet 105 mbps","Internet
↳Speeds","Internet speeds not as advertised. Bandwith not available as
↳advertised","Internet Speed Cut in Half with no Notification","Bad interner
↳speeds and access","high speed internet access","Internet Speed","Comcast
↳slowing internet speeds intentionally","Speed consistently 1/25 of speed
↳paid for","Slow download and upload speeds","Internet Speeds are
↳Wacko","Internet speed","Comcast speeds as low as 12 MB/s, paying for 105 MB/
↳s and they wont figure it out.","Slow Internet speeds","Internet
↳Speed","Misrepresentation of Internet Speed","CRAMMING, False Internet
↳Promotion, SPEED complaint","Promised Speeds","Internet speed","Speed
↳throttling, speeds not at promised output","Comcast, Ypsilanti MI Internet
↳Speed","Paying for 50 Mbps from Comcast, only receiving 0.37 Mbps","I pay
↳for 50 mbps, get 10 at best","Paying for 50MB/s and getting 26MB/s",'Comcast
↳"50 mb/s" speed and throttling']
for speed in categories_to_combine5:
    comcast['Customer Complaint'].replace({speed:'Speed Issues'},inplace = True)

```

[20]:

```

categories_to_combine6 = ["Comcast Violating Open Internet Rules by Blocking_
↳HBO Go Access on Sony Consoles","Internet Disconnects Every Night","Internet_
↳complaint","Internet out all the time but they have a monopoly","Wifi_
↳internet not working as well","Comcast Data Internet Usage","not getting_
↳what I am paying for with internet","internet connectivity","Cable Modem_
↳rent for Internet access","Comcast TV/Internet hookup","Comcast_
↳Internet","Comcast Refusing to Honor Internet Rate","Not Acceptable Internet_
↳Additional Charge.","Internet Availability","Internet Throttling","Comcast_
↳is throttling my internet","Internet Pricing","Comcast throttles_
↳internet","Comcast Internet","Comcast internet/cable","hidden fees, dropped_
↳internet connection","No internet, no cable","Internet needed!","Comcast_
↳Internet Technical Support","Comcast internet for low income_
↳families","Comcast internet for low income families","Poor internet_
↳connection/dropped connection since installation of new modem","Comcast_
↳Internet","Comcast Slow Internet","Comcast Slow Internet","Comcast internet_
↳freezes up","internet/phone","Comcast Throttling My Internet","Internet_
↳Only","Internet Throttling","Slow Internet","Comcast Possibly Throttling my_
↳Internet","Internet Slowdown","Comcast internet","Comcast_
↳internet","Internet Availability","comcast internet debacle","Comcast_
↳refuses to uphold contract for 2 years phone/internet","Comcast business_
↳internet is much more expensive than home internet.","Comcast_
↳Internet","constant internet issues","COMCAST INTERNET CONNECTION_
↳CHEAT","Comcast Internet","Comcast internet","Comcast Cable &_
↳Internet","Comcast violating Open Internet rules","Comcast Internet, cable,_
↳and phone outages","Internet connection outage","Cocmast_
↳(internet)","ComCast Internet Outage","Internet and phone pricing","Comcast/_
↳Xfinity Internet","Comcast Internet is unbelievably slow","Issues with Cable_
↳and Internet Packaging Unfair Prices","cable internet","RE: Comcast Internet_
↳Illegal charges","Comcast Internet Pricing","Prolonged internet outage,_
↳tardy response","comcast internet","Internet Too Slow","Internet Prices in U.
↳S.A","Slow Internet","Comcast Internet","Internet Issue","Comcast Internet_
↳problems","Comcast Internet","95 Palmer Road, Enfield NH Internet_
↳Pricing","Comcast has doubled my internet fee without warning","No Internet_
↳for last 6 days and Comcast is not doing anything","Re: Internet Too_
↳Expensive","Comcast internet","Comcast Throttling My Internet","Comcast_
↳internet and lack of communication and response","No internet","Internet_
↳Provider Data Thresholds","internet","intermittent internet","Inability to_
↳get access to internet through Comcast or AT&T","Comcast Internet and cable_
↳deals","Internet bundled with TV","INTERNET VIRUS POP UP SCAM CLAIMING TO BE_
↳WITH COMCAST","Intermittent internet connection","Comcast_
↳Internet","internet essentials for low income families","Internet_
↳Problems","no internet last 4 days even after more than 10 calls and_
↳spending 10 hours with comcast on phone","Comcast Internet/Cable contacted_
↳them over the phone and chat","comcast keeps charging for me for over the_
↳limit internet - when says we have unlimited","No Internet","Internet Cable_
↳Alarm","Phone Internet Cable Alarm","Comcast internet price high","Internet_
↳System Reliability","Comcast Internet Slow","Internet connection not_
↳available","Comcast refused to install internet",

```


"Comcast/Xfinity Internet Gouging","internet being
 ↳throttled by comcast","xfinity Internet","Internet Fraud","COMCAST INTERNET
 ↳PROVIDER-JACKSONVILLE, FLORIDA","Internet Only Deal","Loss of Internet
 ↳connection","Comcast Internet Complaint","Comcast internet
 ↳performance","Wireless Internet","Comcast internet","Comcast Internet and TV
 ↳false information and false price","Comcast Internet/Cable TV
 ↳package","Comcast internet overage charges","internet","internet
 ↳availability for students","Comcast internet","Comcast Internet","Slow
 ↳comcast internet","comcast internet offer","Xfinity Cable & Internet
 ↳repackage scam","Xfinity Slow Internet","Comcast Internet","Internet
 ↳down","Ongoing Comcast internet outages.","unfair Internet prices","Comcast
 ↳internet Dropping out","Internet contract issue","Increase in Price of
 ↳internet","Comcast internet","Slowness of Internet","Comcast Internet Is
 ↳Atrocious","internet availability","Comcast internet-Price keeps
 ↳changing","Comcast Throttling Internet","Comcast Business
 ↳Internet","Inconsistent and poor internet performance","Internet performance
 ↳(latency/bandwidth) substantially below what I'm paying for for
 ↳weeks","Internet connection deliberately slowed down","Comcast-
 ↳Internet","internet","Not receiving internet and harrassing phone
 ↳calls","Comcast Internet being slow","new fcc internet rules slowing down
 ↳system","Internet throttling","Internet connectivity issues","Low internet
 ↳quality","Slow Internet / Monopoly Area","Failure to resolve Internet
 ↳outages","comcast internet","Internet Freezing","Comcast Internet down since
 ↳4/25 with no resolve","Comcast Internet Complaint","Over charging for
 ↳Internet","Internet","Comcast internet","Comcast Internet","Comcast
 ↳Internet","Comcast Internet Complaint","internet problems","Comcast Business
 ↳internet","Comcast Business Phone/Internet Contract Disagreement","Internet
 ↳Down","Comcast Throttling my Internet Connection","Internet
 ↳Outages","Internet problems","Internet being slowed.","Bundled cable and
 ↳internet","Ask Comcast to fix internet connection of my home","internet and
 ↳tv problems.","day 3 of Internet going down and disconnect support
 ↳calls","Comcast XFINITY Internet Performance","Comcast cable/phone/internet
 ↳complaint","Comcast Data Usage - Additional Fee for Internet Usage but not
 ↳TV","Throttle internet","Comcast Phone, Internet and TV","Comcast Internet
 ↳Bait and Switch","Questionable internet slowdown","Advertised Internet price
 ↳not honored","Comcast internet overage charges","internet price went up,
 ↳offered lower price deal with cable tv...","terrible internet quality","Poor
 ↳internet quality","I DO NOT HAVE INTERNET AND WORK FROM HOME","internet not
 ↳working","Unwarranted Charges by Comcast for Internet","Comcast
 ↳Internet","Comcast has a monopoly on our internet","Comcast/Xfinity Blast
 ↳Internet","loss connection internet many time in a day.","Comcast Shut-off
 ↳Notice -Internet/TV","Comcast overcharges for internet charges","Comcast
 ↳Internet Disconnection","internet pricing /competition","Comcast
 ↳Internet","Comcast Taking almost 9 Days to solve My Internet
 ↳issue","Internet slow","Internet Availability","Internet Outages","Comcast's
 ↳Internet is Slower Than What I Pay For","Comcast Internet Online Streaming",

```

        "Internet offer rescinded","Internet_
↳Throttling","intermittant phone and internet","Internet","Comcast_
↳Internet","I pay for 25Mbps internet but get less than 3Mbps","Internet_
↳Issues With Comcast","Awful Internet","Comcast not refunding deposit for_
↳cancelled Internet","Extremely slow internet and no aid from Comcast","Cable_
↳internet unavailable","Internet unreliable","Comcast inflated internet_
↳pricing","Comcast Internet and TV","Poor internet reception","EXTREMELY slow_
↳Comcast Internet Connection...Have tried to have fixed but no one_
↳comes","Slow Internet","Internet Connectivity","Comcast Internet_
↳Complaint","Internet Essentials","Internet much slower than_
↳advertised","Internet Help @ , South Lyon, MI 48178","Internet help @ ,_
↳South Lyon, MI 48178","Poor internet","Internet price","No internet_
↳available since a comcast techinitian did an intervention to change_
↳plans","Comcast Cable and Internet","Cant cancel internet on Sundays?
↳","Comcast Forcing me to purchase cable tv, only want internet","internet_
↳access","Internet being throttled","Internet Outage","Continuous Internet_
↳problems.","COMCAST INTERNET","Intermittent internet","Comcast Internet_
↳Issue","loss of signal SEVERAL times a day, VERY slow connectivity very_
↳often, Several issues with television also not just internet","Internet_
↳""Overage"" Charges","Comcast ""Unlimited"" Internet Access recently limited_
↳to 300GB per month","Comcast Throttling Internet","Slow Internet","No_
↳Internet","Comcast Internet","Comcast Internet","Broadband internet_
↳malfeasance by Comcast","Internet Uasge/Overage","Comcast Business_
↳Internet","internet provider","slow internet","Throttling_
↳Internet","Inconsistent and Intermittent Internet Connectivity","Comcast_
↳Internet","Wireless Signal issues/frequent connection drop","Frequent_
↳disconnects","Significant Quality Loss","comcast connection issues",'XFINITY_
↳"Comcast" CLOSED SCHEDULED APPT AND SAID IT WAS OPEN']
for internet in categories_to_combine6:
    comcast['Customer Complaint'].replace({internet:'Internet Issues'},inplace =_
↳True)

```

[21]:


```

categories_to_combine7 = ["Comcast Account","Comcast disconnected my account,
↳without reason or notice","Comcast changed my account plan after i said no
↳about 2-3 times","Fraudulent account","60 days to close my account","Request
↳to transfer e-mail account from Comcast.","Email account removed","Constant
↳loss of account","Comcast has turned my business account to third-party
↳collections when I legitimately canceled my contract per the terms","COMCAST
↳WILL NOT CANCEL MY ACCOUNT","Required $100 deposit to open an
↳account","Comcast took my account info","recent hacking of email
↳account","closed account","Xfiniti account","Apartment Management's
↳Exclusivity Contract with Comcast","Comcast change contract","False contract
↳representation","Extorted into signing up for multi-year contract","Contract
↳Cancellation Fees and Unauthorized Changes","Comcast-flat fee
↳contract-misrepresentation","Comcast fradulently gets contract signed by my
↳wife","One Sided Contracts","comcast contract problem","Renewed contract
↳without my permission or consent","Comcast Business not honoring signed
↳contract","Misleading information regarding contract leads to $200
↳unresolved early term fee","Comcast ending promotion and contract early.
↳Directing customer to resolve disputes in person at their office.
↳","Unauthorized 2-Year Contract With Comcast","Comcast forced me into a
↳contract","Contract","Xfinity/Comcast throttles bandwidth way below contract
↳level","Increased monthly fee on 3 year contract","Xfinity corporate
↳bullying, breach of contract","Unable to cancel xfinity home
↳security","unauthorized comcast username setup","Unable to renew IP
↳address","Un able to access my email address after relocae to a new
↳address","Comcast e-mail issues","Email transfer/ problems","Access issues
↳have returned","comcast email acess","Comcast "property access" or "right of
↳entry"']

for account in categories_to_combine7:
    comcast['Customer Complaint'].replace({account:'Account Issues'},inplace =
↳True)

```

[22]:

```

categories_to_combine8 = ["Customer Complaint","Comcast extended_
↳outages","YAHOO FAILURE TO RESTORE EMAIL SEARCH FEATURE","COMCAST!","XFINITY_
↳Movers Edge program","Comcast","Comcast","pmts","Comcast bandwidth every_
↳evening drops to 10% of what is promised to our business","Comcast","HBO GO_
↳on Playstation 4","Email issues","Monopoly","Complaint against Xfinity/_
↳Comcast","Comcast False Promises","Issues with Comcast","Comcast","Issues_
↳with Xfinity/Comcast","Comcast/Xfinity","AT&T","Fraudulent claims reported_
↳to collections agency","Comcast Needs Competition","Comcast Misled With_
↳Overage Policy","Comcast","Unbelievable Treatment","Comcast","Comcast:_
↳Xfinity Slamming","Comcast Support Unable to Provide Accurate_
↳Information","Comcast Data Usage Limits","Comcast monopoly","Complaint_
↳against Comcast","Comcast","Comcast data limits","Comcast trying to setup_
↳stuff we didn't order","Terrible waiting times","throttling","Comcast HBO Go_
↳PS4 app","Rates","Termination Fee","monopoly","ComCast cable In_
↳Maryland","Comcast throttle","Xfinity WiFi access","Comcast cable","Comcast_
↳Complaint","CABLE","Comcast","Comcast fraud","Comcast","Comcast","COMCAST -_
↳MAJOR COMPLAINT 1ST TIME CUSTOMER - AGGRAVATED HEALTH ISSUES","COMPLAINT_
↳AGAINST COMCAST","Comcast Issues","Suspected Throttling","Dealing with_
↳Comcast/Xfinity","Technical Support","Modem rental fees","Comcast - issues_
↳galore","Monopolistic behavior","hbo go comcast","Comcast_
↳Agreement","Comcast - Diversified Consultants","Comcast","Comcast","Home_
↳Security Forgery/Fraud","Comcast","Comcast policies","Comcast","Xfinity_
↳False Advertisement","Comcast HBO-Go Application and Sony Products","Never_
↳resolved problem with Comcast","Comcast sucks","Comcast Incompetence/Lies/_
↳Robbery","FCC Complaint against comcast/xfinity on providing false_
↳information.","Complaint against Comcast","Comcast complaint","comcast_
↳unwilling to resolve data usage issue","comcast unwilling to resolve data_
↳usage issue","Comcast Data usage meter","Comcast Cable connection from_
↳street is underwater and structure is too high","Reimbursement I've never_
↳recieved","Xfinity","Xfinity/Comcast","Comcast Hard Inquiries","comcast_
↳jamming signal","Comcast lied to me","Comcast & HBO GO on PS4","Run_
↳around","Comcast Disconnect","Comcast problems","complaint regarding_
↳Comcast","Comcast is ripping me off, and I can't be quiet_
↳anymore","complaint about Comcast","Comcast","Comcast & Sony Playstation_
↳Devices","Comcast Wifi Issues","comcast","Comcast_
↳Outages","Comcast","Tricked into upgrade","Xfinity Order Status",

```

"Comcast lies and deception","comcast/
 ↳xfinity","Comcast/Xfinity","XFINITY/COMCAST TETHERING CONNECTION","Xfinity_
 ↳""Comcast"" CLOSED SCHEDULED APPT AND SAID IT WAS OPEN","Comcast","Comcast_
 ↳and CenturyLink failing Wissler Ranch Colorado Community","Xfinity_
 ↳Throttling Apple TV bitrate","Comcast Termination Fee","Unresolved_
 ↳Issues","Comcast Xfinity","Comcast Runaround","Lack of_
 ↳availability","COMCAST","Ping spikes and packet loss","Comcast_
 ↳complaint","Comcast ""property access"" or ""right of entry""","Fradualent_
 ↳claims","Xfinity Comcast hbogo on ps4","comcast failure to respond to user_
 ↳communication","xfinity tv and exfinity_
 ↳alarm","Comcast","Comcast","Comcast","Deceptive sales_
 ↳tactics","Misrepresentation of terms","Misleading communication.","Comcast_
 ↳Chat Agent Help","Comcast cable company Florida","Misleading_
 ↳Advertising","Comcast","Promissed a package and then denied","HBO GO on_
 ↳Playstation 3","Lied about \$70 technician fee","Comcast_
 ↳Complaint","Misleading information given","Comcast Automatic_
 ↳Payments","Fraudolent pratice","Comcast","Comcast_
 ↳Mistreatment","Comcast","Comcast","DNS Web hosting","comcast of_
 ↳indiana","Comcast xfinity triple play","Comcast outage - Bay Area","Comcast_
 ↳of East Windsor NJ Complaint","Constant non response, or passing to other_
 ↳operator. Supervisers inability to resolve of help. Numerous lies told.
 ↳","Comcast chronic lies","Comcast slamming issue","Comcast_
 ↳Throttling","Comcast (Chicago IL)","Comcast","COMCAST","Comcast_
 ↳Issues","Comcast/xfinity","Comcast","comcast","Systemic failures with_
 ↳Comcast","Comcast/Xfinity","Deceptive Trade","Comcast Demanding payment_
 ↳after cancellation","Xfinity promise to pay me \$300 to join","Comcast_
 ↳issues","Comcast Cable","Comcast","Comcast business keeps moving my same-day_
 ↳trouble appointment to the next day","Comcast cable company","Lack of HBO Go_
 ↳Availability on Sony Devices with Xfinity Subscription","Raising my_
 ↳Rate","complaint against Comcast","Deceptive trade","Unclear policies","n/a_
 ↳(b) (6)","Comcast Bundled","somewhat threatening phone_
 ↳calls","Comcast","Comcast","Hearsts Magazine contest_
 ↳scam","Comcast","Comcast","Comcast Bundles","Comcast Fraud?","Comcast_
 ↳deception","Throttling by Comcast/Xfinity","Comcast Throttling","high_
 ↳payment","Comcast Support","Comcast Usage Data Plan","Cable","Comcast and_
 ↳competition","Comcast/earthlink","Comcast Rate Hike","COMCAST_
 ↳XFINITY","Comcast","Lies and deception","COMCAST","Throttling by_
 ↳Comcast","Throttling","Comcast","Text on Facebook",

"Comcast (customer.xfinity.com)", "Comcast", "HBOGO on_
 ↳PS4", "Comcast", "Comcast", "Comcast in Indianapolis scam", "HBO shouldn't have_
 ↳a load time", "Throttling", "Continued Calls from Comcast", "Comcast/_
 ↳Xfinity", "Comcast Data Usage robbing us", "Continued issue", "Comcast_
 ↳Complaint", "Commercial property damage", "Comcast cable tv", "Complaints about_
 ↳comcast", "Comcast", "Comcast becoming a hassle", "Comcast", "Fraud", "Comcast_
 ↳Grievance", "Comcast Cable", "cyber bullying", "Comcast Business", "Comcast_
 ↳slamming with fees", "monopoly", "Xfinity throttling my connection", "Comcast_
 ↳Online Access", "availabilty", "No access to HBO Go on Playstation 4 through_
 ↳Comcast", "nd intrenal miscommunication", "local monopoly", "comcast data_
 ↳plan", "Comcast ISP OIO Violation", "comcast intrnet", "Comcast Excessive_
 ↳Overages", "Comcast", "Comcast Data Usage", "Comcast Costs", "complaint against_
 ↳comcast/infinity", "Problems with Comcast", "Comcast", "Comcast monopoly_
 ↳hurting my business", "Underhanded sales techniques", "Falsified unreturned_
 ↳equipment fees", "Comcast Support", "Several issues", "Comcast Las Cruces New_
 ↳Mexico", "Comcast Stockholder Response", "Comcast Cancellation", "Comcast Data_
 ↳Limit", "Comcast in violation of merger terms", "Comcast inflated and_
 ↳""undetermined""", "ever-increasing rates", "Locals", "Comcast promised credits_
 ↳by supervisor", "cheating customer", "Xfinity unable to correct issue of_
 ↳losing connection", "Comcast", "Comcast Data Threshold", "Comcast Problems", "I_
 ↳am being throttled by Comcast", "comcastcomcas", "comcast cable", "n/a (b)_
 ↳(6)", "Comcast", "Xfinity", "Comcast False Advertising", "Comcast", "Video_
 ↳Throttling", "Comcast/xfinity", "Comcast over inflating Data Meter_
 ↳Usage", "Comcast", "Comcast cancellation issue", "Comcast and their ""data_
 ↳limit""", "Comcast", "Comcast/Xfinity", "Comcast endless problems", "Comcast_
 ↳cable outage", "INFINITY / COMCAST", "NO Comcast-- Uverse", "Wasted Time and_
 ↳money!", "Comcast", "invalid sercice", "invalid sercice", "Comcast_
 ↳Rates", "comcast deceiving upgrade without request", "comcast_
 ↳complaint", "Comcast is terrible", "COMCAST", "Comcast", "Comcast", "COMCAST_
 ↳NIGHTMARE", "i need help pleas", "Comcast thieves", "False_
 ↳Advertisement", "Comcast Usage Limit", "spam", "Comcast is awful, lies, and is_
 ↳corrupt", "Comcast", "comcast", "Commercials burning data",

"Commercials burning data","Comcast","Comcast Data_
 ↳Policy and Lies","Throttling bandwidth.","Comcast","Comcast lies to the_
 ↳customer just to get them off the phone","Comcast caught in 3 lies","Comcast_
 ↳Bundle Availability Complaint","availabilty","Comcast attempting to_
 ↳circumvent net Neutrality policies","Comcast is stealing from me","Comcast_
 ↳false advertising","Comcast is a monopoly","Comcast is cheating me","Comcast_
 ↳Issues","comcast failing still","Comcast","Comcast/
 ↳Xfinity","comcast","Comcast scam","Comcast","Unethical Behavior: Comcast_
 ↳Requesting Credit Check or Deposit","Unfair bundles","comcast","Comcast run_
 ↳around","Comcast Cablevision Florida","comcast","Comcast/Xfinity_
 ↳cancellation fee","Lied to by Comcast","comcast","Problems with_
 ↳Comcast","COMCAST","My Comcast Nightmare","comcast","comcast","Comcast Metro_
 ↳Fiber","Comcast","Terrible Experience with Comcast","promotion ended in one_
 ↳month","Metered bandwidth with no data meter","comcast","Terrible Comcast_
 ↳experience - No end in sight","Bundle","Comcast","Comcast_
 ↳complaint","COMCAST","Comcast Terrible Experience with no_
 ↳resolution","Comcast Terrible Experience with no_
 ↳resolution","Comcast","Comcast -- Throttling_
 ↳Connection","Comcast","Comcast","Communication problem","Bundle Bull S...
 ↳","Comcast mislead me and cost my business","Comcast","COMCAST MISSES 4_
 ↳APPOINTMENTS","Comcast","Comcast Bandwidth Availability","No way to see when_
 ↳promotions end","Comcast","comcast","E-mail","Comcast_
 ↳complaint","Comcast","Comcast Monopoly in Calvert County, Maryland","Comcast_
 ↳Corporation","comcast","Comcast Throttling","Comcast Complaints","Comcast_
 ↳screwed me","Comcast","Comcast Set Up","about comcast","About Comcast","HBO_
 ↳Go on PS3","Comcast","Comcast.net","Comcast","Cable_
 ↳availability","Misinformed Over and Over Again","Comcast/Xfinity","Possible_
 ↳throttle","throttling and disconnections","Comcast","comcast are_
 ↳crooks","availabilty","Unwanted Email with no opt out options","Comcast_
 ↳move","Comcast","Comcast","Comcast changed my package and wants me to pay_
 ↳more","Postal Mail Ticket - #0057","Reporting Comcast's Various_
 ↳Problems","Postal Mail Ticket #2334","Comcast Unfair Product_
 ↳Bundling","Comcast FRAUD","Comcast forces rep visit then goes back on their_
 ↳promise","Unfair fees?","Comcast throttles Santa Cruz CA to 30Mbits, claims_
 ↳we get 50Mbits","Huge number of lies from Comcast","Comcast Issues",

```

        "Throttled connection at peak_
    ↪time", "Comcast", "Comcast", "Comcast harassment", "needed tech_
    ↪support", "Fraudulent advertising", "Comcast Trespassing", "Complaints against_
    ↪Comcat", "Comcast", "Comcast.", "Comcast Re-Escalation of Case # ESL01877347 -_
    ↪ORR", "Comcast Data Usage Meter", "Comcast Data usage plan limit", "Improper_
    ↪modems", "Comcast run around", "Multiple Unauthorized and Unwarranted Credit_
    ↪Checks", "DSL", "email sdervice", "Complaint against Comcast", "continue to be_
    ↪scared by comcast", "Complaint against Comcast_
    ↪Corporation", "comcast", "Comcast Monopoly and Abuse", "Comcast Rate", "FCC.gov_
    ↪website for complaints", "Comcast", "Comcast Xfinity Monopoly_
    ↪Abuses", "Comcast", "Comcast", "Comcast", "Comcast_
    ↪accourt", "availabilty", "Monthly Rate Confusion & Poor Customer_
    ↪Support", "Comcast - HBO - PS3", "Comcast", "Comcast Complaint", "Xfinity_
    ↪security system", "Complaint#67455", "Fraud", "COMPLAINT ABOUT COMCAST/_
    ↪Xfinity", "Comcast Data Usage Limit in Atlanta", "Recent fines to AT&T and_
    ↪possibly...", "Comcast cable", "Complaint regarding Comcast", "unreliable_
    ↪connection", "unreliable connection", "Comcast is awful", "Xfinity_
    ↪Issues", "Scam concerning Ham License register book.", "Comcast_
    ↪Complaint", "Comcast bars HBOGo from streaming to purchased device of my_
    ↪choosing, PS4", "Comcast", "why am I paying for this ?", "Complaint about_
    ↪Comcast", "Comcast complaint", "Comcast is inaccurately measuring bandwidth_
    ↪consumption.", "Deceptive Advertising", "Comcast monopoly", "Comcast Data Usage_
    ↪Plan Trial", "Comcast issues don't get resolved", "shitty comcast", "comcast_
    ↪xfinity", "Comcast/Xfinity Communication", "Inexplicable Disconnection &_
    ↪Subsequent Mishandling", "False sales offers", "Incorrect Disclosure", "Comcast_
    ↪misleading HSI customers", "Comcast/Xfinity", "Lack of ISP choice", "Complaint_
    ↪#2. No resolution. Please help. Thank you.", "Comcast Home Security_
    ↪System", "I HAVE BEEN ASKING TO SPEAK WITH A SUPERVISOR EVERY DAY FOR THE_
    ↪LAST FIVE WEEKS", "Egregious Fees", "Comcast committing_
    ↪extortion", "Comcast", "Comcast", "Comcast", "Youtube being throttled?", "Comcast_
    ↪Xfinity", "Comcast", "Comcast cramming", "over payment", "Xfinity/Comcast_
    ↪Cable", "Comcast", "Comcast Outage", "I am so fed up with Comcast", "Comcast", "i_
    ↪had sent out a check payment comcast", "complaint about comcast", "Extremely_
    ↪unsatisfied Comcast customer", 'Comcast inflated and "undetermined",_
    ↪ever-increasing rates', 'Deceptive business practice with "Service Protection_
    ↪Plan"', 'Comcast is "forcing" bundles on me while silently raising my bill']
for others in categories_to_combine8:
    comcast['Customer Complaint'].replace({others: 'Others'}, inplace = True)

```

```
[23]: comcast['Customer Complaint'].value_counts()
```

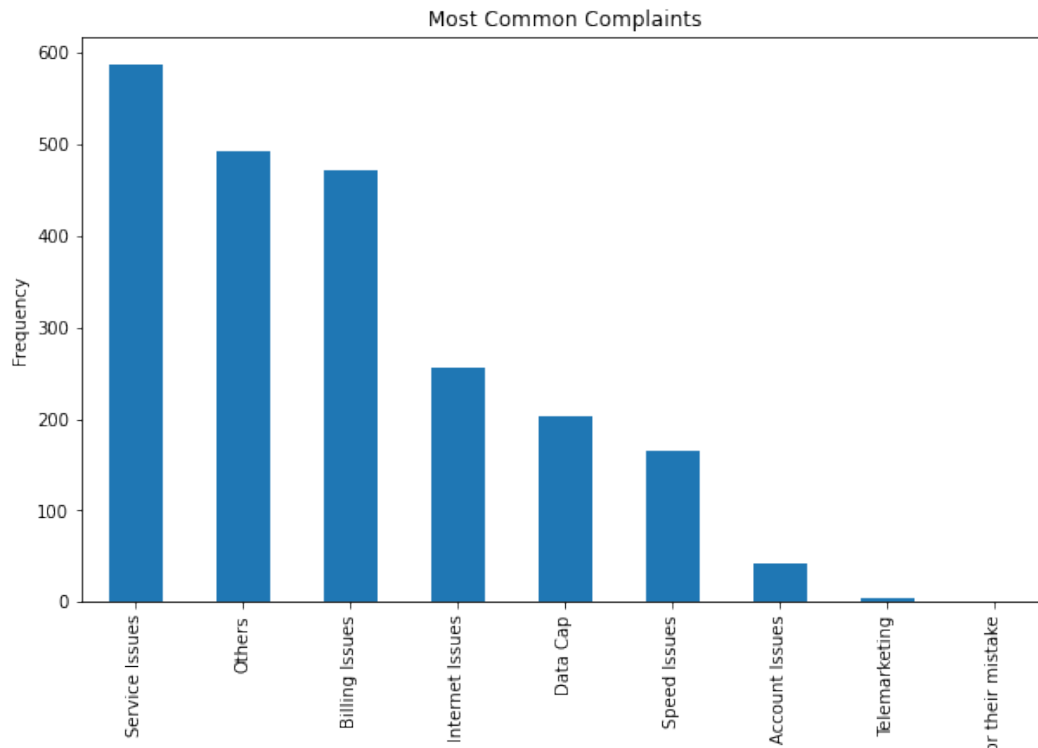
```

[23]: Service Issues
      588
      Others
      492
      Billing Issues
      471

```

```
Internet Issues
257
Data Cap
203
Speed Issues
165
Account Issues
43
Telemarketing
4
Comcast sold me a "package" knowing it wouldn't work for me, and proceeded to
charge me more and attempt to tack on fees for their mistake      1
Name: Customer Complaint, dtype: int64
```

```
[24]: (comcast['Customer Complaint'].value_counts()).
      ↪plot(kind='bar',figsize=(10,6),title = 'Most Common Complaints')
plt.xlabel('Complaints')
plt.ylabel('Frequency')
plt.show()
```



0.3.2 Service Issues seem to be the most

0.4 Task 4 : 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.

```
[25]: comcast['Status'].value_counts()
```

```
[25]: Solved      973
      Closed      734
      Open       363
      Pending     154
      Name: Status, dtype: int64
```

```
[26]: comcast['Status'] = ['Open' if Status=='Open' or Status=='Pending' else
      ↪ 'Closed' for Status in comcast['Status']]
      comcast['Status'].value_counts()
```

```
[26]: Closed      1707
      Open        517
      Name: Status, dtype: int64
```

0.5 Task 5 : Provide state wise status of complaints in a stacked bar chart. Use the categorized variable from Q3.

```
[27]: comcast['State'].value_counts().count()
```

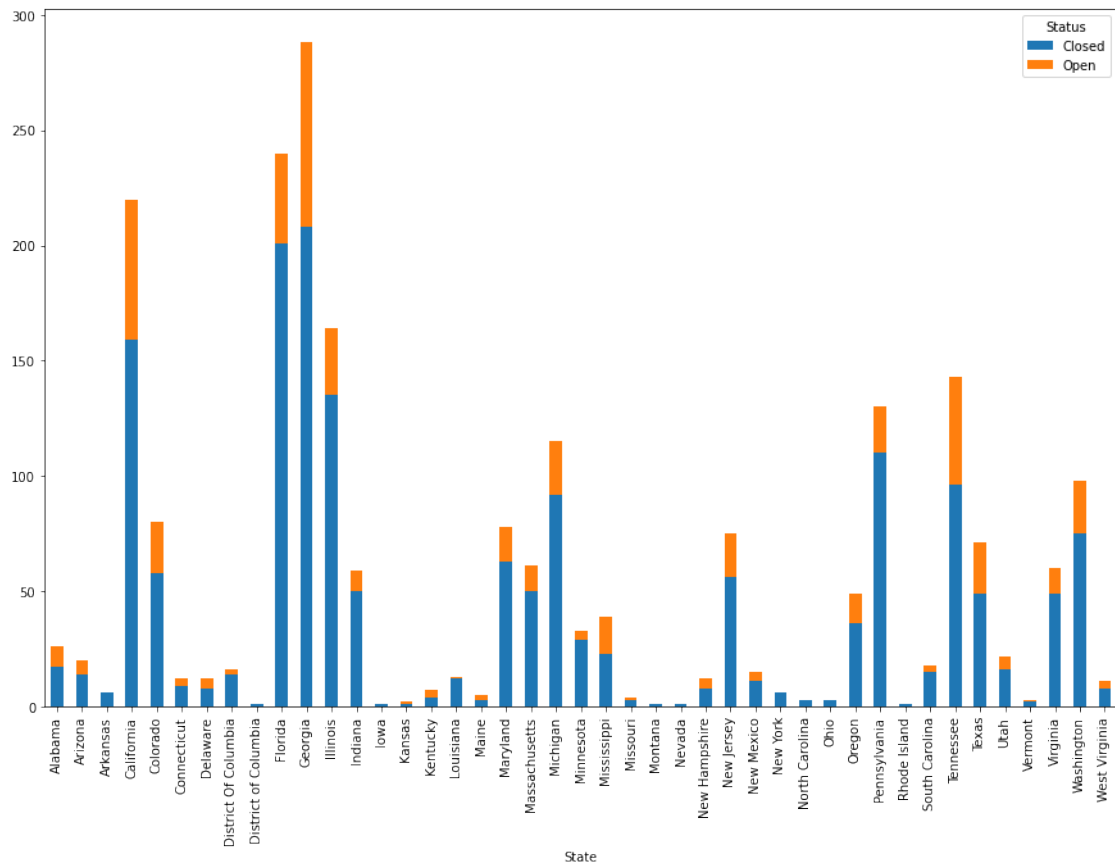
```
[27]: 43
```

```
[28]: state_complaints = comcast.groupby(["State", "Status"]).size().unstack().
      ↪ fillna(0)
      state_complaints
```

```
[28]: Status          Closed  Open
      State
      Alabama          17.0   9.0
      Arizona          14.0   6.0
      Arkansas           6.0   0.0
      California       159.0  61.0
      Colorado          58.0  22.0
      Connecticut        9.0   3.0
      Delaware           8.0   4.0
      District Of Columbia 14.0   2.0
      District of Columbia  1.0   0.0
      Florida          201.0  39.0
```

Georgia	208.0	80.0
Illinois	135.0	29.0
Indiana	50.0	9.0
Iowa	1.0	0.0
Kansas	1.0	1.0
Kentucky	4.0	3.0
Louisiana	12.0	1.0
Maine	3.0	2.0
Maryland	63.0	15.0
Massachusetts	50.0	11.0
Michigan	92.0	23.0
Minnesota	29.0	4.0
Mississippi	23.0	16.0
Missouri	3.0	1.0
Montana	1.0	0.0
Nevada	1.0	0.0
New Hampshire	8.0	4.0
New Jersey	56.0	19.0
New Mexico	11.0	4.0
New York	6.0	0.0
North Carolina	3.0	0.0
Ohio	3.0	0.0
Oregon	36.0	13.0
Pennsylvania	110.0	20.0
Rhode Island	1.0	0.0
South Carolina	15.0	3.0
Tennessee	96.0	47.0
Texas	49.0	22.0
Utah	16.0	6.0
Vermont	2.0	1.0
Virginia	49.0	11.0
Washington	75.0	23.0
West Virginia	8.0	3.0

```
[29]: state_complaints.plot(kind="bar",figsize=(15,10),stacked=True)
plt.show()
```



0.5.1 Subtask 1 : Which state has the maximum complaints

```
[30]: comcast.groupby(["State"]).size().sort_values(ascending=False).to_frame().
      ↪reset_index().rename({0: "Count"}, axis=1).max()
```

```
[30]: State      West Virginia
      Count          288
      dtype: object
```

```
[31]: comcast.groupby(["State"]).size().sort_values(ascending=False).head()
```

```
[31]: State
      Georgia      288
      Florida      240
      California    220
      Illinois      164
      Tennessee     143
      dtype: int64
```

1 According to the chart above, the state of Georgia seems to have the maximum complaints

1.0.1 Subtask 2 : Which state has the highest percentage of unresolved complaints

```
[32]: comcast.groupby(["State", "Status"]).size().unstack().fillna(0).max()
```

```
[32]: Status
      Closed    208.0
      Open      80.0
      dtype: float64
```

2 According to the chart above, the state of Georgia seems to have the highest percentage of unresolved complaints

2.1 Task 6 : Provide the percentage of complaints resolved till date, which were received through the Internet and customer care calls.

```
[33]: comcast_resolved = comcast[comcast['Status']=='Closed']
      comcast_resolved.shape
```

```
[33]: (1707, 14)
```

```
[34]: comcast_resolved['Received Via'].value_counts()
```

```
[34]: Customer Care Call    864
      Internet            843
      Name: Received Via, dtype: int64
```

```
[35]: comcast_resolved['Received Via'].value_counts()*100/comcast_resolved['Received_
      ↪Via'].count()
```

```
[35]: Customer Care Call    50.615114
      Internet            49.384886
      Name: Received Via, dtype: float64
```

3 50.61% of the complaints resolved till date were received through customer care calls and 49.38% of the complaints were received through the internet

4 —X—