

```
In [75]: 1 # Frequency of complain types
        2 comcast_df['Customer Complaint'].value_counts()
```

```
Out[75]: Comcast      83
        Comcast Internet  18
        Comcast Data Cap  17
        comcast      13
        Comcast Billing  11
        ..
        Improper Billing and non resolution of issues  1
        Deceptive trade  1
        intermittent internet  1
        Internet Speed on Wireless Connection  1
        Comcast, Ypsilanti MI Internet Speed  1
        Name: Customer Complaint, Length: 1841, dtype: int64
```

```
In [2]: 1 #import required libraries
        2 import pandas as pd
        3 from pandas import Series, DataFrame
        4 import numpy as np
        5 import matplotlib.pyplot as plt
        6 import seaborn as sns
        7 from datetime import datetime
```

```
In [10]: 1 #import Comcast dataset csv file in Dataframe
        2 comcast_df = pd.read_csv('C:/Users/hleka/Google Drive/Data Science/Simplilearn/Python/Graded_Project/Comcast/Comcast_telecom
        <----->
```

```
In [12]: 1 # checking column data types
        2 print(comcast_df.info())

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2224 entries, 0 to 2223
Data columns (total 11 columns):
#   Column              Non-Null Count  Dtype
---  -
0   Ticket #            2224 non-null   object
1   Customer Complaint  2224 non-null   object
2   Date                2224 non-null   datetime64[ns]
3   Date_month_year     2224 non-null   object
4   Time                2224 non-null   object
5   Received Via        2224 non-null   object
6   City                2224 non-null   object
7   State               2224 non-null   object
8   Zip code            2224 non-null   int64
9   Status              2224 non-null   object
10  Filing on Behalf of Someone  2224 non-null   object
dtypes: datetime64[ns](1), int64(1), object(9)
memory usage: 191.2+ KB
None
```

Out[84]: 'Comcast'

```
In [86]: 1 comcast_df[comcast_df['Customer Complaint'] == 'Comcast']
```

Out[86]:

	Ticket #	Customer Complaint	Date	Date_month_year	Time	Received Via	City	State	Zip code	Status	Filing on Behalf of Someone	year	month	day	
	35	354116	Comcast	2015-06-20	20-Jun-15	5:03:09 PM	Internet	Alpharetta	Georgia	30022	Solved	No	2015	6	20
	37	373874	Comcast	2015-06-30	30-Jun-15	12:24:57 AM	Customer Care Call	Alvin	Texas	77511	Solved	No	2015	6	30
	47	309379	Comcast	2015-05-27	27-May-15	1:50:37 PM	Internet	Ann Arbor	Michigan	48105	Solved	No	2015	5	27
	61	352100	Comcast	2015-06-19	19-Jun-15	2:36:57 PM	Internet	Arlington	Virginia	22206	Open	No	2015	6	19
	91	307799	Comcast	2015-05-26	26-May-15	4:29:57 PM	Customer Care Call	Atlanta	Georgia	30318	Solved	No	2015	5	26
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	2168	284195	Comcast	2015-05-11	05-Nov-15	5:25:20 PM	Internet	Westfield	Massachusetts	1085	Open	No	2015	5	11
	2170	359831	Comcast	2015-06-23	23-Jun-15	7:09:28 PM	Customer Care Call	Westminster	Maryland	21158	Open	No	2015	6	23
	2180	247649	Comcast	2015-04-21	21-Apr-15	2:04:59 PM	Internet	Wilmington	Delaware	19805	Closed	Yes	2015	4	21
	2189	360139	Comcast	2015-06-23	23-Jun-15	8:48:09 PM	Customer Care Call	Windsor	Colorado	80550	Solved	No	2015	6	23
	2211	221763	Comcast	2015-04-07	04-Jul-15	1:49:52 PM	Internet	Wyoming	Michigan	49509	Closed	No	2015	4	7

83 rows × 14 columns

```
In [88]: 1 # Complaints with the lowest frequency  
2 comcast_df['Customer Complaint'].value_counts().index[-1]
```

Out[88]: 'Comcast, Ypsilanti MI Internet Speed'

```
In [89]: 1 comcast_df[comcast_df['Customer Complaint'] == 'Comcast, Ypsilanti MI Internet Speed']
```

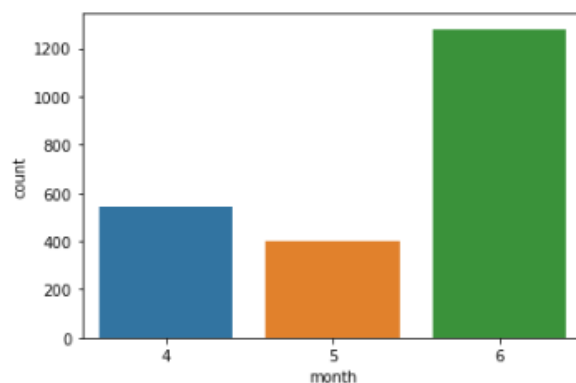
Out[89]:

	Ticket #	Customer Complaint	Date	Date_month_year	Time	Received Via	City	State	Zip code	Status	Filing on Behalf of Someone	year	month	day	
	2223	363614	Comcast, Ypsilanti MI Internet Speed	2015-06-24	24-Jun-15	10:28:33 PM	Customer Care Call	Ypsilanti	Michigan	48198	Open	Yes	2015	6	24

Out[89]: array([2015], dtype=int64)

```
In [26]: 1 # Monthly trends of number of complaints  
2 sns.countplot(x=comcast_df['month'])
```

Out[26]: <AxesSubplot:xlabel='month', ylabel='count'>



Out[275]: Closed 76.753597  
Open 23.246403  
Name: status\_summary, dtype: float64