Complaint Against Polics

```
from google.colab import drive
drive.mount('/content/drive')
```

```
Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mount("/content/drive", force_remount=True).
```

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
%matplotlib inline
import matplotlib
from matplotlib import cm
import seaborn as sns
from plotly.offline import download_plotlyjs, init_notebook_mode, plot, iplot
init_notebook_mode(connected=True)
import plotly.graph_objects as go

from IPython.display import HTML,display
import warnings
warnings.filterwarnings("ignore")
```

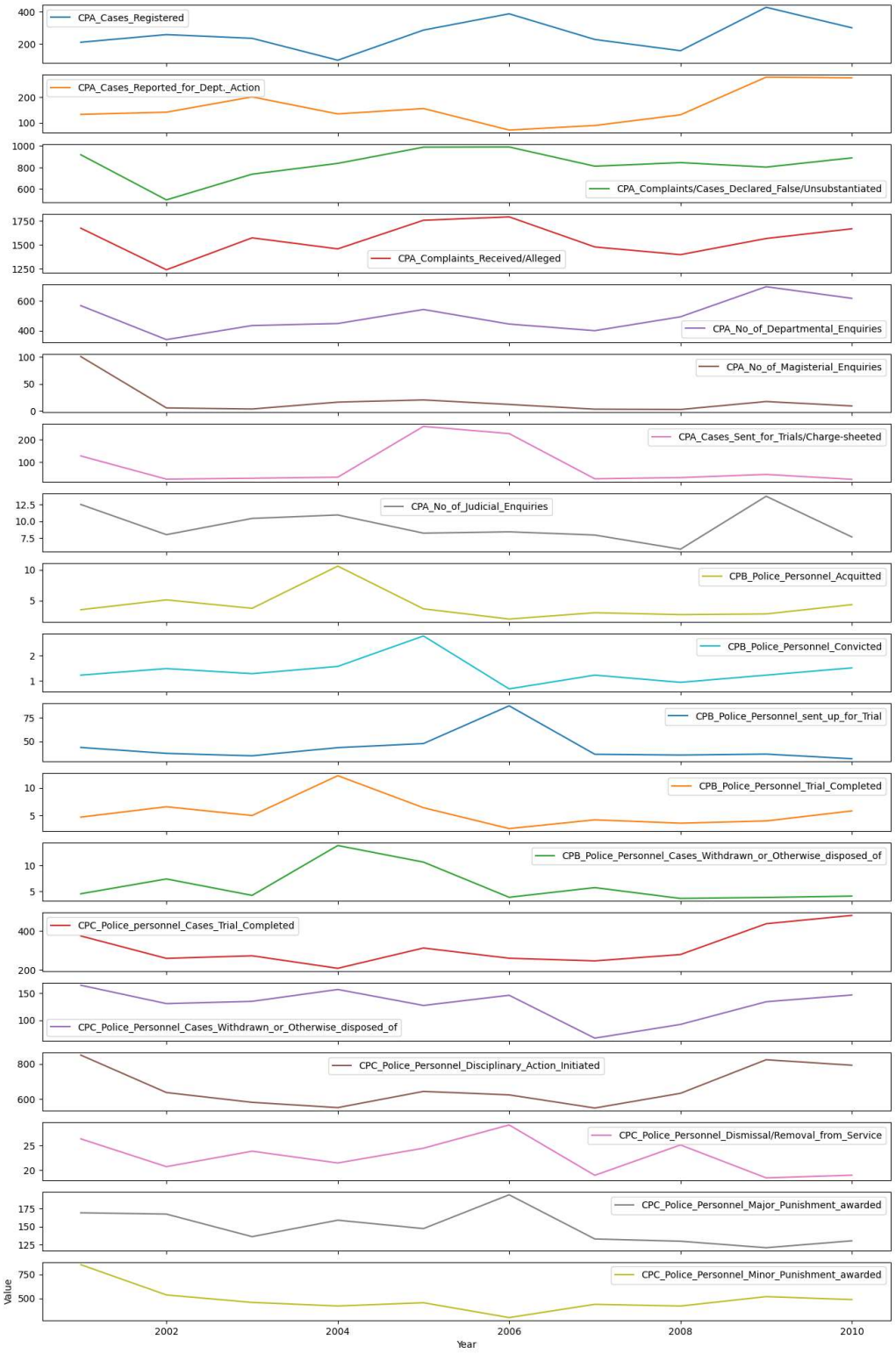
```
import os
for dirname, _, filenames in os.walk('/content/drive/MyDrive/Data visualozation/Crime'):
    for filename in filenames:
        print(os.path.join(dirname, filename))
```

```
/content/drive/MyDrive/Data visualozation/Crime/Auto_theft.csv
/content/drive/MyDrive/Data visualozation/Crime/Complaints_against_police.csv
/content/drive/MyDrive/Data visualozation/Crime/Property_stolen_and_recovered.csv
/content/drive/MyDrive/Data visualozation/Crime/Rape_Victims.csv
/content/drive/MyDrive/Data visualozation/Crime/Murders.csv
/content/drive/MyDrive/Data visualozation/Crime/Murged_data/output1.csv
/content/drive/MyDrive/Data visualozation/Crime/Murged_data/output2.csv
/content/drive/MyDrive/Data visualozation/Crime/Indian map/India States/Indian_states.prj
/content/drive/MyDrive/Data visualozation/Crime/Indian map/India States/Indian_states.shp
/content/drive/MyDrive/Data visualozation/Crime/Indian map/India States/Indian_states.dbf
/content/drive/MyDrive/Data visualozation/Crime/Indian map/India States/Indian_states.shx
/content/drive/MyDrive/Data visualozation/Crime/Indian map/India Boundary/India_boundary.shx
/content/drive/MyDrive/Data visualozation/Crime/Indian map/India Boundary/India_boundary.prj
/content/drive/MyDrive/Data visualozation/Crime/Indian map/India Boundary/India_boundary.shp
/content/drive/MyDrive/Data visualozation/Crime/Indian map/India Boundary/India_boundary.dbf
```

```
df = pd.read_csv(r'/content/drive/MyDrive/Data visualozation/Crime/Complaints_against_police.csv')
df
```

	Area_Name	Year	Sub_group	CPA_Cases_Registered	CPA_Cases_Reported_for_Dept._Action	CPA_Compla
0	Andaman & Nicobar Islands	2001	Complaints Against Police Personnel	10	4	
1	Andhra Pradesh	2001	Complaints Against Police Personnel	3078	72	
2	Arunachal Pradesh	2001	Complaints Against Police Personnel	24	39	
3	Assam	2001	Complaints Against Police Personnel	17	3	
4	Bihar	2001	Complaints Against Police Personnel	1	1	
...	...	...	...	...	...	
			Complaints			

```
import pandas as pd
import matplotlib.pyplot as plt
# Group the data by year and calculate the mean of each numerical column
grouped = df.groupby('Year').mean()

# Plot each numerical column in the same plot
grouped.plot(kind='line', subplots=True, figsize=(16, 25))

# Set the plot title and labels
plt.suptitle('Numerical data by year')
plt.xlabel('Year')
plt.ylabel('Value')

# Show the plot
plt.show()
```

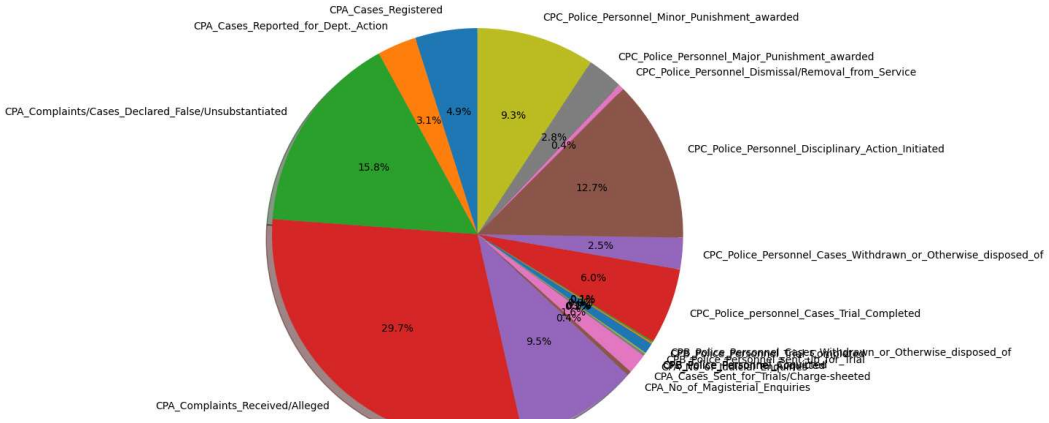

CPA_Cases_Registered
CPA_Cases_Reported_for_Dept._Action
CPA_Complaints/Cases_Declared_False/Unsubstantiated
CPA_Complaints_Received/Alleged
CPA_No_of_Departmental_Enquiries
CPA_No_of_Magisterial_Enquiries
CPA_Cases_Sent_for_Trials/Charge-sheeted
CPA_No_of_Judicial_Enquiries
CPB_Police_Personnel_Acquitted
CPB_Police_Personnel_Convicted
CPB_Police_Personnel_sent_up_for_Trial
CPB_Police_Personnel_Trial_Completed
CPB_Police_Personnel_Cases_Withdrawn_or_Otherwise_disposed_of
CPC_Police_personnel_Cases_Trial_Completed
CPC_Police_Personnel_Cases_Withdrawn_or_Otherwise_disposed_of
CPC_Police_Personnel_Disciplinary_Action_Initiated
CPC_Police_Personnel_Dismissal/Removal_from_Service
CPC_Police_Personnel_Major_Punishment_awarded
CPC_Police_Personnel_Minor_Punishment_awarded
Value
Year
2002
2004
2006
2008
2010

```
a = df.groupby(['Area_Name'])['CPA_Cases_Registered'].sum().reset_index()
a
```

	Area_Name	CPA_Cases_Registered
0	Andaman & Nicobar Islands	154
1	Andhra Pradesh	16327
2	Arunachal Pradesh	119
3	Assam	150
4	Bihar	310
5	Chandigarh	21
6	Chhattisgarh	797
7	Dadra & Nagar Haveli	2
8	Daman & Diu	0
9	Delhi	1013
10	Goa	50
11	Gujarat	2749
12	Haryana	457
13	Himachal Pradesh	2544
14	Jammu & Kashmir	682
15	Jharkhand	11294
16	Karnataka	809
17	Kerala	1055
18	Lakshadweep	2
19	Madhya Pradesh	10747
20	Maharashtra	4001
21	Manipur	9
22	Meghalaya	59
23	Mizoram	41
24	Nagaland	126
25	Odisha	3135
26	Puducherry	32
27	Punjab	1523
28	Rajasthan	1216
29	Sikkim	138
30	Tamil Nadu	1328
31	Tripura	134
32	Uttar Pradesh	28622
33	Uttarakhand	168
34	West Bengal	299

```
import plotly.express as px
fig = px.bar(a, x = 'Area_Name', y = 'CPA_Cases_Registered')
fig.show()
```

```
Reported= df['CPA_Cases_Registered'].sum()
DeptAction = df['CPA_Cases_Reported_for_Dept._Action'].sum()
Declar3ed_false = df['CPA_Complaints/Cases_Declared_False/Unsubstantiated'].sum()
Alleged = df['CPA_Complaints_Received/Alleged'].sum()
Departmental_Enquiries = df['CPA_No_of_Departmental_Enquiries'].sum()
Magisterial_Enquiries = df['CPA_No_of_Magisterial_Enquiries'].sum()

Charge_sheeted = df['CPA_Cases_Sent_for_Trials/Charge-sheeted'].sum()
Judicial_enquiries = df['CPA_No_of_Judicial_Enquiries'].sum()
Personnel_Acquitted = df['CPB_Police_Personnel_Acquitted'].sum()
Personnel_Convicted = df['CPB_Police_Personnel_Convicted'].sum()
sent_up_for_Trial = df['CPB_Police_Personnel_sent_up_for_Trial'].sum()
Trial_Completed = df['CPB_Police_Personnel_Trial_Completed'].sum()

Cases_Withdrawn = df['CPB_Police_Personnel_Cases_Withdrawn_or_Otherwise_disposed_of'].sum()
personnel_Cases_Trial_Completed = df['CPC_Police_personnel_Cases_Trial_Completed'].sum()
Personnel_Cases_Withdrawn = df['CPC_Police_Personnel_Cases_Withdrawn_or_Otherwise_disposed_of'].sum()
Disciplinary_Action_Initiated = df['CPC_Police_Personnel_Disciplinary_Action_Initiated'].sum()
Removal_from_Service = df['CPC_Police_Personnel_Dismissal/Removal_from_Service'].sum()
Major_Punishment_awarded = df['CPC_Police_Personnel_Major_Punishment_awarded'].sum()

Minor_Punishment_awarded = df['CPC_Police_Personnel_Minor_Punishment_awarded'].sum()



Age=['CPA_Cases_Registered','CPA_Cases_Reported_for_Dept._Action','CPA_Complaints/Cases_Declared_False/Unsubstantiated','CPA_Complaints_Recei
      'CPA_No_of_Magisterial_Enquiries','CPA_Cases_Sent_for_Trials/Charge-sheeted','CPA_No_of_Judicial_Enquiries','CPB_Police_Personnel_Acqui
    'CPC_Police_personnel_Cases_Trial_Completed','CPC_Police_Personnel_Cases_Withdrawn_or_Otherwise_disposed_of','CPC_Police_Personnel_Discip

SUM=[Reported,DeptAction,Declar3ed_false,Alleged,Departmental_Enquiries,Magisterial_Enquiries,Charge_sheeted,Judicial_enquiries,Personnel_Acq
]

fig1, ax1 = plt.subplots(figsize=(8,8))
ax1.pie(SUM, labels=Age, autopct='%1.1f%%',
        shadow=True, startangle=90)
ax1.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle.

plt.show()
```




```
yearw =df.groupby(['Year'])['CPA_Cases_Registered','CPA_Cases_Reported_for_Dept._Action','CPA_Complaints/Cases_Declared_False/Unsubstantiated
      'CPA_No_of_Magisterial_Enquiries','CPA_Cases_Sent_for_Trials/Charge-sheeted','CPA_No_of_Judicial_Enquiries','CPB_Police_Personnel_Acqui
    'CPC_Police_personnel_Cases_Trial_Completed','CPC_Police_Personnel_Cases_Withdrawn_or_Otherwise_disposed_of','CPC_Police_Personnel_Discip
yearw
```

	Year	CPA_Cases_Registered	CPA_Cases_Reported_for_Dept._Action	CPA_Complaints/Case
0	2001	7297	4652	
1	2002	8978	4952	
2	2003	8167	7049	
3	2004	3362	4715	
4	2005	9965	5459	
5	2006	13546	2503	
6	2007	7908	3129	
7	2008	5445	4596	
8	2009	14975	9759	
9	2010	10470	9665	

```
fig = px.bar(yearw, x = 'Year', y = ['CPA_Cases_Registered','CPA_Cases_Reported_for_Dept._Action','CPA_Complaints/Cases_Declared_False/Unsubs
      'CPA_No_of_Magisterial_Enquiries','CPA_Cases_Sent_for_Trials/Charge-sheeted','CPA_No_of_Judicial_Enquiries','CPB_Police_Personnel_Acqui
    'CPC_Police_personnel_Cases_Trial_Completed','CPC_Police_Personnel_Cases_Withdrawn_or_Otherwise_disposed_of','CPC_Police_Personnel_Discip
fig.show()
```

```
yeary =df.groupby(['Area_Name'])['CPA_Cases_Registered','CPA_Cases_Reported_for_Dept._Action','CPA_Complaints/Cases_Declared_False/Unsubstant
      'CPA_No_of_Magisterial_Enquiries','CPA_Cases_Sent_for_Trials/Charge-sheeted','CPA_No_of_Judicial_Enquiries','CPB_Police_Personnel_Acqui
    'CPC_Police_personnel_Cases_Trial_Completed','CPC_Police_Personnel_Cases_Withdrawn_or_Otherwise_disposed_of','CPC_Police_Personnel_Discip
yeary
```

1	Andhra Pradesh	16327	3279

```
fig = px.bar(yeary, x = 'Area_Name', y = ['CPA_Cases_Registered','CPA_Cases_Reported_for_Dept._Action','CPA_Complaints/Cases_Declared_False/U
      'CPA_No_of_Magisterial_Enquiries','CPA_Cases_Sent_for_Trials/Charge-sheeted','CPA_No_of_Judicial_Enquiries','CPB_Police_Personnel_Acqui
    'CPC_Police_personnel_Cases_Trial_Completed','CPC_Police_Personnel_Cases_Withdrawn_or_Otherwise_disposed_of','CPC_Police_Personnel_Discip
fig.show()
```

21	Manipur	3	10
23	Mizoram	41	11
26	Puducherry	32	8
28	Rajasthan	1010	745
31	Tripura	134	158
34	West Bengal	299	230