Rape Victim

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

```
Mounted at /content/drive
```

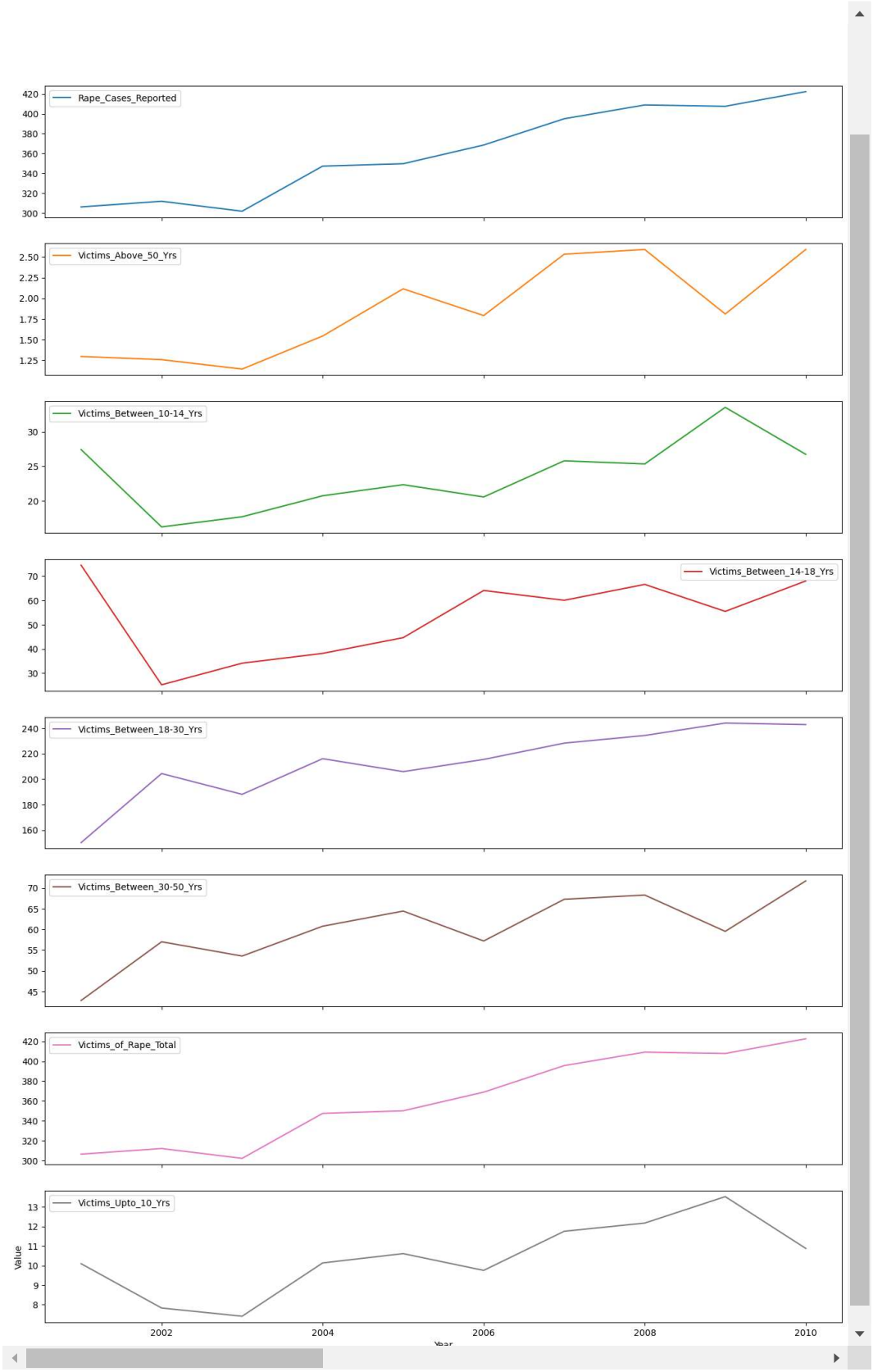
```
import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)
import matplotlib.pyplot as plt
import seaborn as sns
import os
for dirname, _, filenames in os.walk('/content/drive/MyDrive/Data visualozation/Crime'):
    for filename in filenames:
        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/Rape_Victims.csv')
df
```

	Area_Name	Year	Subgroup	Rape_Cases_Reported	Victims_Above_50_Yrs	Victims_Between_10-14_Yrs	Victim
0	Andaman & Nicobar Islands	2001	Total Rape Victims	3	0	0	
	Andaman		Victims of				

```
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()
```




```
y =df['Subgroup'].value_counts()
y
```

```
Total Rape Victims        350
Victims of Incest Rape    350
Victims of Other Rape     350
Name: Subgroup, dtype: int64
```

```
df.dtypes
```

```
Area_Name                   object
Year                         int64
Subgroup                    object
Rape_Cases_Reported          int64
Victims_Above_50_Yrs         int64
Victims_Between_10-14_Yrs    int64
Victims_Between_14-18_Yrs    int64
Victims_Between_18-30_Yrs    int64
Victims_Between_30-50_Yrs    int64
Victims_of_Rape_Total        int64
Victims_Upto_10_Yrs          int64
dtype: object
```

```
a = df[['Area_Name','Year','Victims_of_Rape_Total']]
a
```

	Area_Name	Year	Victims_of_Rape_Total
0	Andaman & Nicobar Islands	2001	3
1	Andaman & Nicobar Islands	2001	1
2	Andaman & Nicobar Islands	2001	2
3	Andaman & Nicobar Islands	2002	2
4	Andaman & Nicobar Islands	2002	0
...	...	...	...
1045	West Bengal	2009	3
1046	West Bengal	2009	2333
1047	West Bengal	2010	2311
1048	West Bengal	2010	4
1049	West Bengal	2010	2307

1050 rows × 3 columns

```
a[:70]
```

	Area_Name	Year	Victims_of_Rape_Total
0	Andaman & Nicobar Islands	2001	3
1	Andaman & Nicobar Islands	2001	1
2	Andaman & Nicobar Islands	2001	2
3	Andaman & Nicobar Islands	2002	2
4	Andaman & Nicobar Islands	2002	0
...	...	...	...
65	Arunachal Pradesh	2002	38
66	Arunachal Pradesh	2003	31
67	Arunachal Pradesh	2003	0
68	Arunachal Pradesh	2003	31
69	Arunachal Pradesh	2004	42

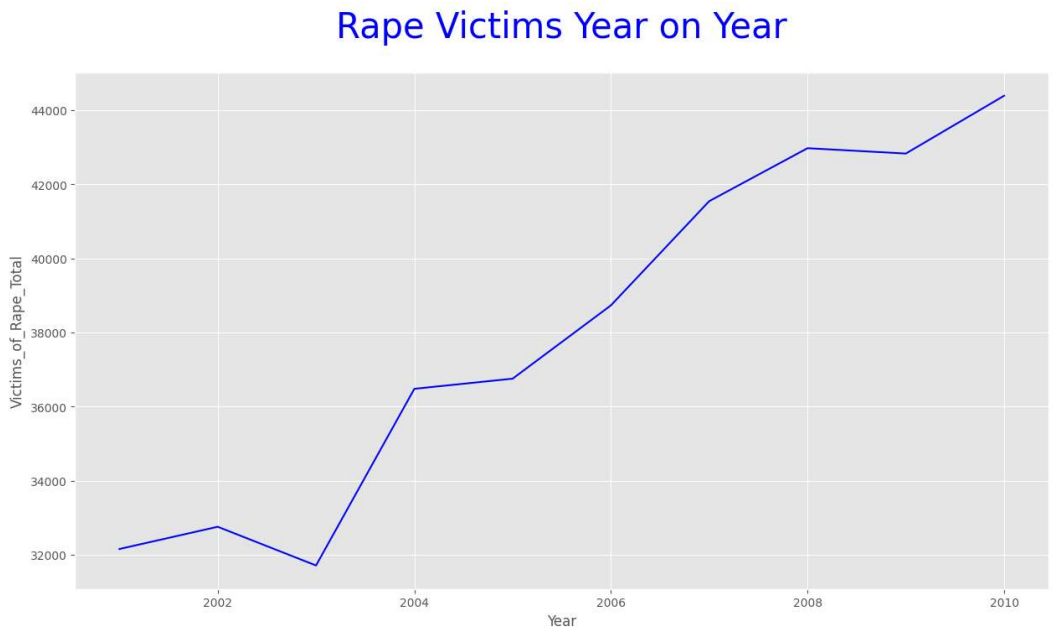
70 rows × 3 columns

```
b=df.groupby(['Area_Name','Year'])['Victims_of_Rape_Total'].sum().reset_index()
b
```

	Area_Name	Year	Victims_of_Rape_Total
0	Andaman & Nicobar Islands	2001	6
1	Andaman & Nicobar Islands	2002	4
2	Andaman & Nicobar Islands	2003	4
3	Andaman & Nicobar Islands	2004	20
4	Andaman & Nicobar Islands	2005	8
...	...	...	...
345	West Bengal	2006	3462
346	West Bengal	2007	4212

```
c = b.groupby(['Area_Name'])['Victims_of_Rape_Total'].sum().reset_index()
c
```

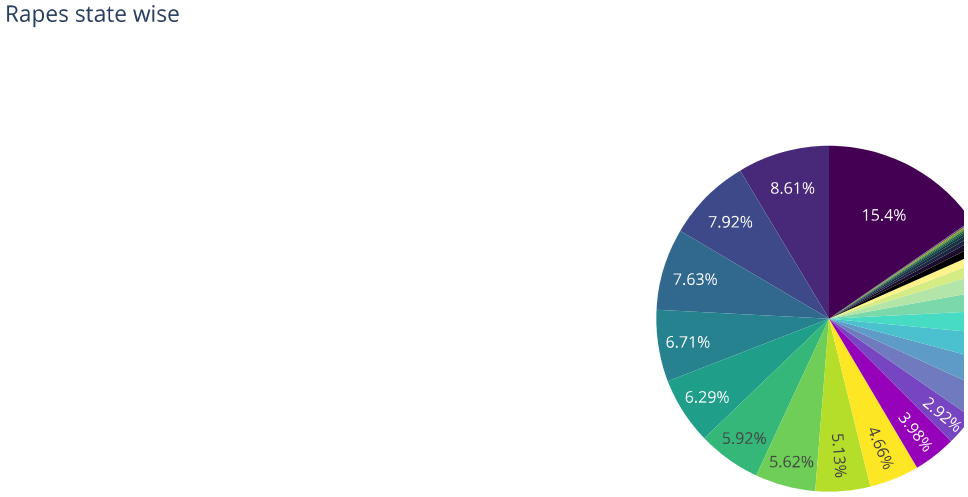
```
import matplotlib.style as style
y_o_y = df.pivot_table(values='Victims_of_Rape_Total',index='Year',aggfunc='sum').reset_index()

style.use('ggplot')
plt.figure(figsize=(15, 8))

_ = sns.lineplot(x = 'Year', y = 'Victims_of_Rape_Total' , data = y_o_y, color = 'blue')
_ = plt.title("Rape Victims Year on Year",fontdict={'fontsize':30},pad = 30,color = 'blue')
```



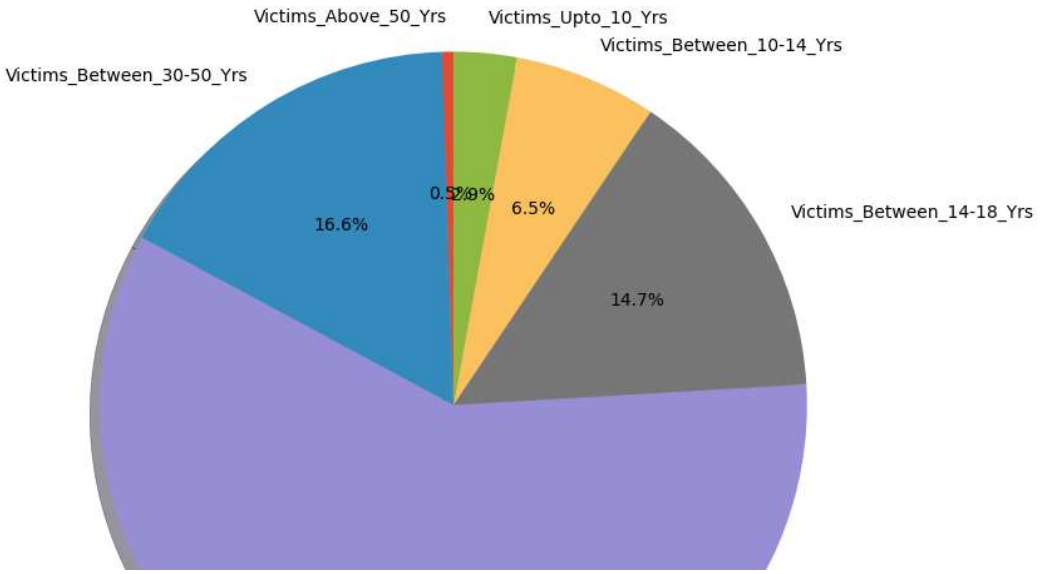

```
import plotly.express as px
fig = px.bar(c, x = 'Area_Name', y = 'Victims_of_Rape_Total')
fig.show()
```

from 2001-2010 Madhya Pradesh has most numbers of Rape Victims

```
fig = px.pie(c, values = 'Victims_of_Rape_Total',
             names = 'Area_Name',
             title = 'Rapes state wise',
             color_discrete_sequence=px.colors.sequential.Viridis
            )
fig.show()
```




```
Victims_above_50 = df['Victims_Above_50_Yrs'].sum()
Victims_30_to_50 = df['Victims_Between_30-50_Yrs'].sum()
Victims_18_to_38 = df['Victims_Between_18-30_Yrs'].sum()
Victims_14_to_18 = df['Victims_Between_14-18_Yrs'].sum()
Victims_10_to_14 = df['Victims_Between_10-14_Yrs'].sum()
Victims_upto_10 = df['Victims_Upto_10_Yrs'].sum()

Age=['Victims_Above_50_Yrs','Victims_Between_30-50_Yrs','Victims_Between_18-30_Yrs','Victims_Between_14-18_Yrs','Victims_Between_10-14_Yrs',
      'Victims_Upto_10_Yrs']
SUM=[Victims_above_50,Victims_30_to_50,Victims_18_to_38,Victims_14_to_18,Victims_10_to_14,Victims_upto_10]

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()
```




```
fig = px.choropleth(c,
                    geojson="https://gist.githubusercontent.com/jbrobst/56c13bbbf9d97d187fea01ca62ea5112/raw/e388c4cae20aa53cb5090210a42ebb9b7
                    locations = 'Area_Name',
                    featureidkey='properties.ST_NM',
                    color_continuous_scale='Viridis',
                    title = 'Rapes from 2001-2010',
                    color = 'Victims_of_Rape_Total'
                     )
fig.update_geos(fitbounds="locations", visible=False)
fig.show()
```

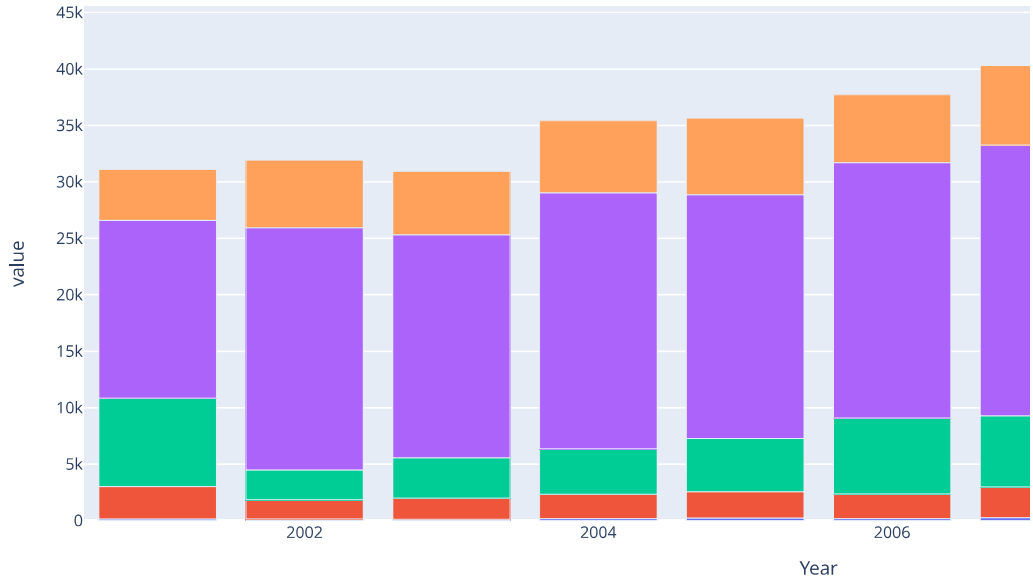


```
yearw =df.groupby(['Year'])['Victims_Above_50_Yrs','Victims_Between_10-14_Yrs','Victims_Between_14-18_Yrs','Victims_Between_18-30_Yrs','Victi
yearw
```

```
<ipython-input-16-76343bcd9b5b>:1: FutureWarning:

Indexing with multiple keys (implicitly converted to a tuple of keys) will be deprecated, use a list ir
```

	Year	Victims_Above_50_Yrs	Victims_Between_10-14_Yrs	Victims_Between_14-18_Yrs	Victims_Between_18-30_Yrs	Victims_E
0	2001	136	2880	7822	15762	
1	2002	132	1708	2650	21460	
2	2003	120	1862	3584	19746	
3	2004	162	2180	4008	22686	

```
fig = px.bar(yearw, x = 'Year', y = ['Victims_Above_50_Yrs','Victims_Between_10-14_Yrs','Victims_Between_14-18_Yrs',
                                     'Victims_Between_18-30_Yrs','Victims_Between_30-50_Yrs'])
fig.show()
```

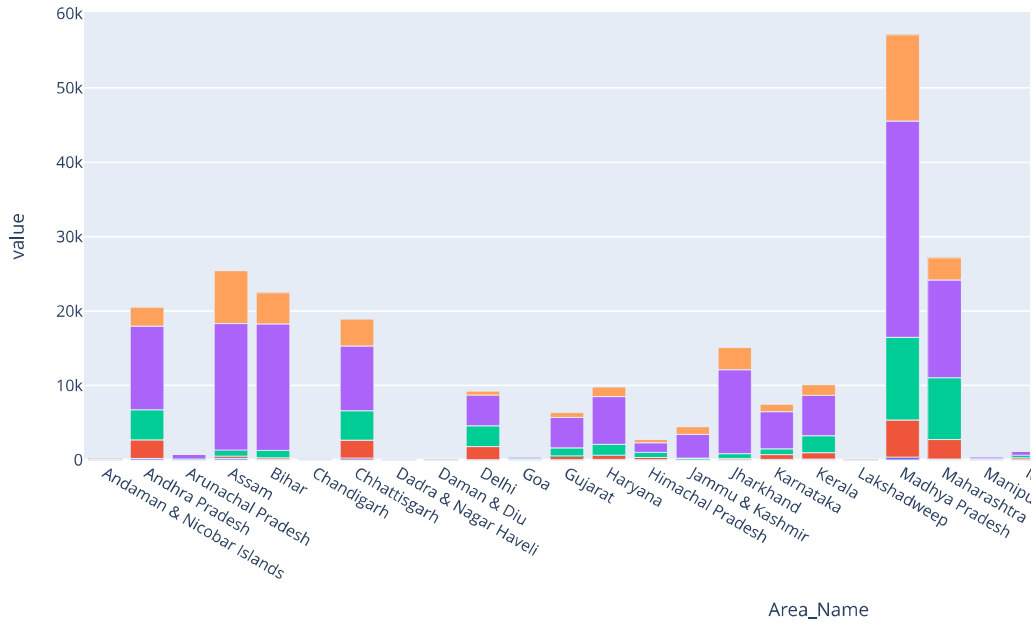



```
yeary =df.groupby(['Area_Name'])['Victims_Above_50_Yrs','Victims_Between_10-14_Yrs','Victims_Between_14-18_Yrs','Victims_Between_18-30_Yrs','
yeary
```

```
<ipython-input-18-65a096d8a37e>:1: FutureWarning:

Indexing with multiple keys (implicitly converted to a tuple of keys) will be deprecated, use a list ir
```

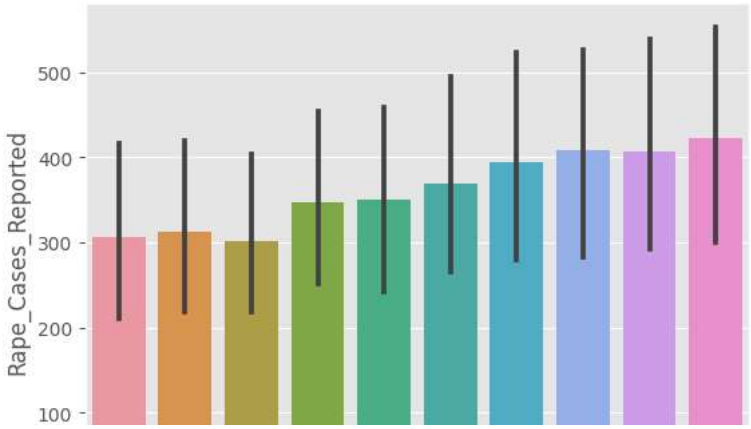
	Area_Name	Victims_Above_50_Yrs	Victims_Between_10-14_Yrs	Victims_Between_14-18_Yrs	Victims_Between_18-30_Yrs	V
0	Andaman & Nicobar Islands	0	16	88	42	
1	Andhra Pradesh	198	2510	4022	11262	
2	Arunachal Pradesh	0	96	20	632	
3	Assam	190	306	818	17014	
4	Bihar	78	204	1000	16988	
5	Chandigarh	0	92	104	150	
6	Chhattisgarh	226	2414	3986	8678	
7	Dadra & Nagar Haveli	0	16	26	44	
8	Daman & Diu	0	2	8	6	
9	Delhi	26	1764	2812	4118	
10	Goa	10	120	172	138	
11	Gujarat	16	506	1100	4070	
12	Haryana	62	544	1476	6438	
13	Himachal Pradesh	36	276	702	1272	
	Jammu &					

```
fig = px.bar(yeary, x = 'Area_Name', y = ['Victims_Above_50_Yrs','Victims_Between_10-14_Yrs','Victims_Between_14-18_Yrs','Victims_Between_18-
fig.show()
```

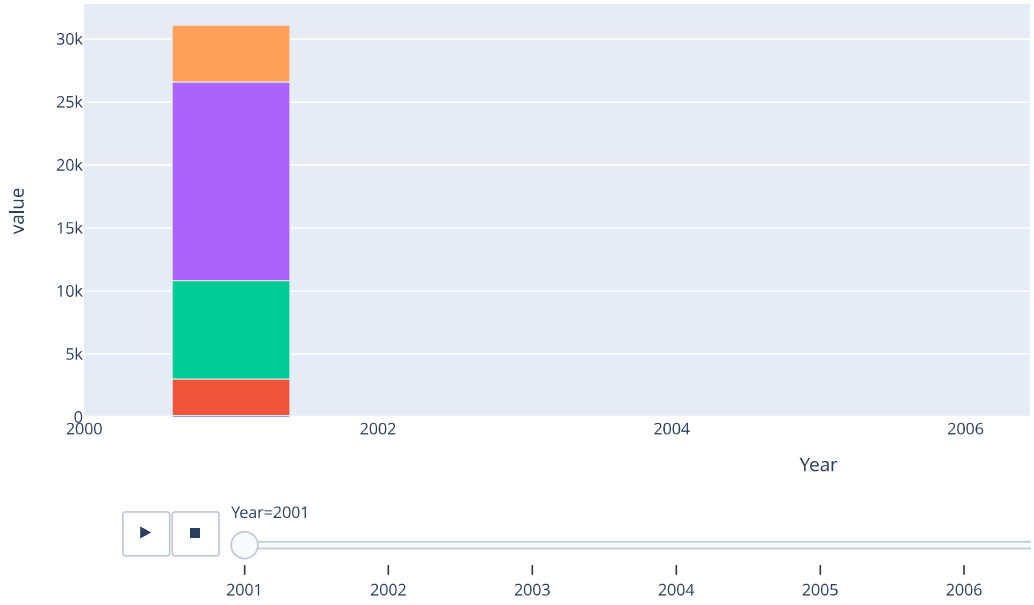



```
sns.barplot(x="Year", y="Rape_Cases_Reported", data=df)
```

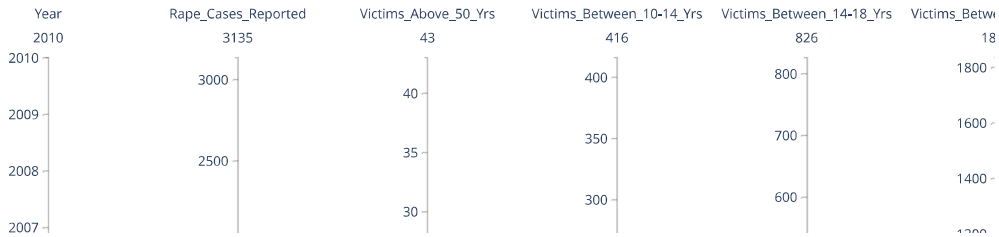
```
<Axes: xlabel='Year', ylabel='Rape_Cases_Reported'>
```




```
px.bar(yearw,x='Year',
          y =['Victims_Above_50_Yrs','Victims_Between_10-14_Yrs','Victims_Between_14-18_Yrs',
                                'Victims_Between_18-30_Yrs','Victims_Between_30-50_Yrs'],
        animation_frame = 'Year',range_x=[2000,2010])
```




```
fig1 = px.parallel_coordinates(df, color = 'Victims_of_Rape_Total',color_continuous_scale=px.colors.diverging.Tealrose)
fig.layout.template = 'plotly_dark'
fig1.show()
```




```
b=df.groupby(['Area_Name','Year'])['Victims_of_Rape_Total'].sum().reset_index()
b[:50]
```

	Area_Name	Year	Victims_of_Rape_Total
0	Andaman & Nicobar Islands	2001	6
1	Andaman & Nicobar Islands	2002	4
2	Andaman & Nicobar Islands	2003	4
3	Andaman & Nicobar Islands	2004	20
4	Andaman & Nicobar Islands	2005	8
5	Andaman & Nicobar Islands	2006	12
6	Andaman & Nicobar Islands	2007	6
7	Andaman & Nicobar Islands	2008	24
8	Andaman & Nicobar Islands	2009	36
9	Andaman & Nicobar Islands	2010	48
10	Andhra Pradesh	2001	1742
11	Andhra Pradesh	2002	2004

```
top5 = b[190:200].copy()
top5
```

	Area_Name	Year	Victims_of_Rape_Total
190	Madhya Pradesh	2001	5702
191	Madhya Pradesh	2002	5782
192	Madhya Pradesh	2003	5476
193	Madhya Pradesh	2004	5750
194	Madhya Pradesh	2005	5842
195	Madhya Pradesh	2006	5800
196	Madhya Pradesh	2007	6020
197	Madhya Pradesh	2008	5874
198	Madhya Pradesh	2009	5996
199	Madhya Pradesh	2010	6272

```
top10=b[340:351].copy()
top10
```

	Area_Name	Year	Victims_of_Rape_Total
340	West Bengal	2001	1418
341	West Bengal	2002	1518
342	West Bengal	2003	2004
343	West Bengal	2004	2950
344	West Bengal	2005	3372
345	West Bengal	2006	3462
346	West Bengal	2007	4212
347	West Bengal	2008	4526
348	West Bengal	2009	4672
349	West Bengal	2010	4622

```
top15= b[320:330]
top15
```

	Area_Name	Year	Victims_of_Rape_Total
320	Uttar Pradesh	2001	3916
321	Uttar Pradesh	2002	2830
322	Uttar Pradesh	2003	1822
323	Uttar Pradesh	2004	2794
324	Uttar Pradesh	2005	2434
325	Uttar Pradesh	2006	2628
326	Uttar Pradesh	2007	3296

```
top20 = b[200:210]
top20
```

	Area_Name	Year	Victims_of_Rape_Total
200	Maharashtra	2001	2604
201	Maharashtra	2002	2704
202	Maharashtra	2003	2552
203	Maharashtra	2004	2784
204	Maharashtra	2005	3098
205	Maharashtra	2006	3012
206	Maharashtra	2007	2914
207	Maharashtra	2008	3134
208	Maharashtra	2009	2986
209	Maharashtra	2010	3222

```
top25=b[30:40]
```

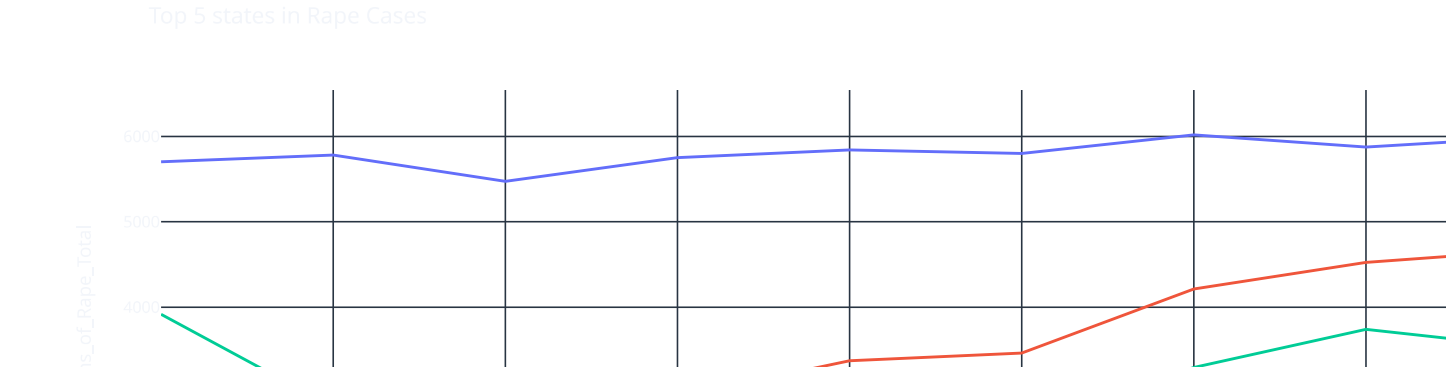
```
ntop = pd.concat([top5,top10,top15,top20,top25],axis=0)
ntop
```

	Area_Name	Year	Victims_of_Rape_Total
190	Madhya Pradesh	2001	5702
191	Madhya Pradesh	2002	5782
192	Madhya Pradesh	2003	5476
193	Madhya Pradesh	2004	5750
194	Madhya Pradesh	2005	5842
195	Madhya Pradesh	2006	5800
196	Madhya Pradesh	2007	6020
197	Madhya Pradesh	2008	5874
198	Madhya Pradesh	2009	5996
199	Madhya Pradesh	2010	6272
340	West Bengal	2001	1418
341	West Bengal	2002	1518
342	West Bengal	2003	2004
343	West Bengal	2004	2950
344	West Bengal	2005	3372
345	West Bengal	2006	3462
346	West Bengal	2007	4212
347	West Bengal	2008	4526
348	West Bengal	2009	4672
349	West Bengal	2010	4622
320	Uttar Pradesh	2001	3916
321	Uttar Pradesh	2002	2830
322	Uttar Pradesh	2003	1822
323	Uttar Pradesh	2004	2794
324	Uttar Pradesh	2005	2434
325	Uttar Pradesh	2006	2628
326	Uttar Pradesh	2007	3296
327	Uttar Pradesh	2008	3742
328	Uttar Pradesh	2009	3518

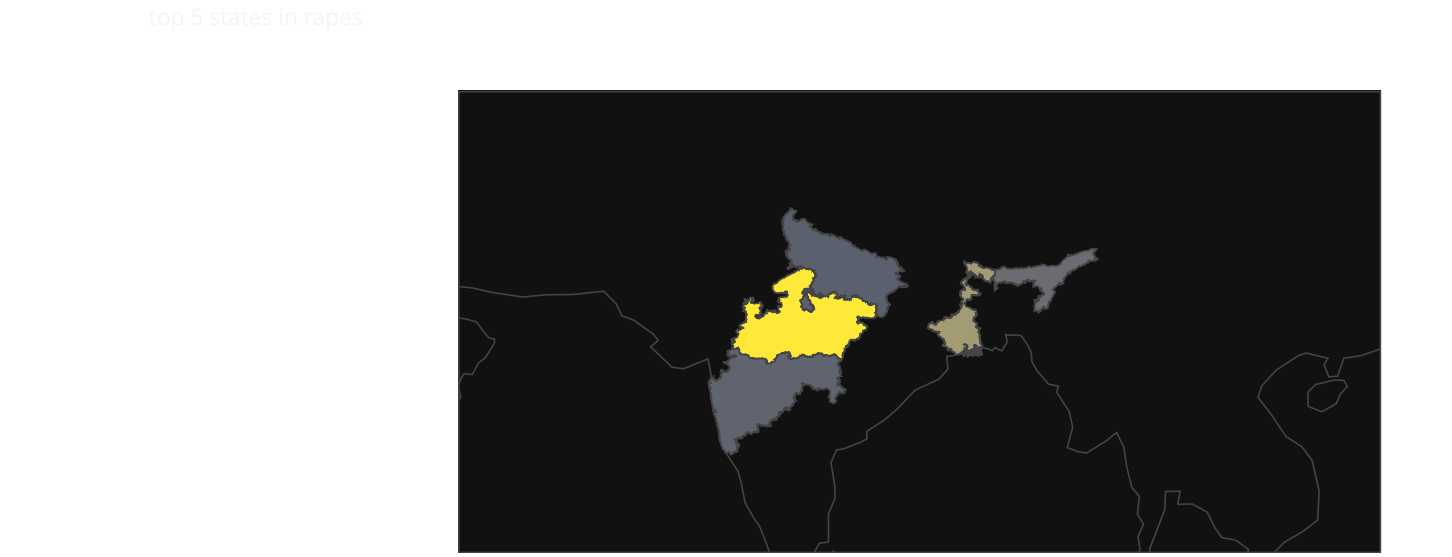
ntop

	Area_Name	Year	Victims_of_Rape_Total
190	Madhya Pradesh	2001	5702
191	Madhya Pradesh	2002	5782
192	Madhya Pradesh	2003	5476
193	Madhya Pradesh	2004	5750
194	Madhya Pradesh	2005	5842
195	Madhya Pradesh	2006	5800
196	Madhya Pradesh	2007	6020
197	Madhya Pradesh	2008	5874
198	Madhya Pradesh	2009	5996
199	Madhya Pradesh	2010	6272
340	West Bengal	2001	1418
341	West Bengal	2002	1518
342	West Bengal	2003	2004
343	West Bengal	2004	2950
344	West Bengal	2005	3372
345	West Bengal	2006	3462
346	West Bengal	2007	4212
347	West Bengal	2008	4526
348	West Bengal	2009	4672
349	West Bengal	2010	4622
320	Uttar Pradesh	2001	3916
321	Uttar Pradesh	2002	2830
322	Uttar Pradesh	2003	1822
323	Uttar Pradesh	2004	2794
324	Uttar Pradesh	2005	2434
325	Uttar Pradesh	2006	2628
326	Uttar Pradesh	2007	3296
327	Uttar Pradesh	2008	3742
328	Uttar Pradesh	2009	3518
329	Uttar Pradesh	2010	3126
200	Maharashtra	2001	2604
201	Maharashtra	2002	2704
202	Maharashtra	2003	2552
203	Maharashtra	2004	2784
204	Maharashtra	2005	3098
205	Maharashtra	2006	3012

```
fig = px.line(ntop, x = 'Year', y = 'Victims_of_Rape_Total', color = 'Area_Name',title = 'Top 5 states in Rape Cases')
fig.layout.template = 'plotly_dark'
fig.show()
```



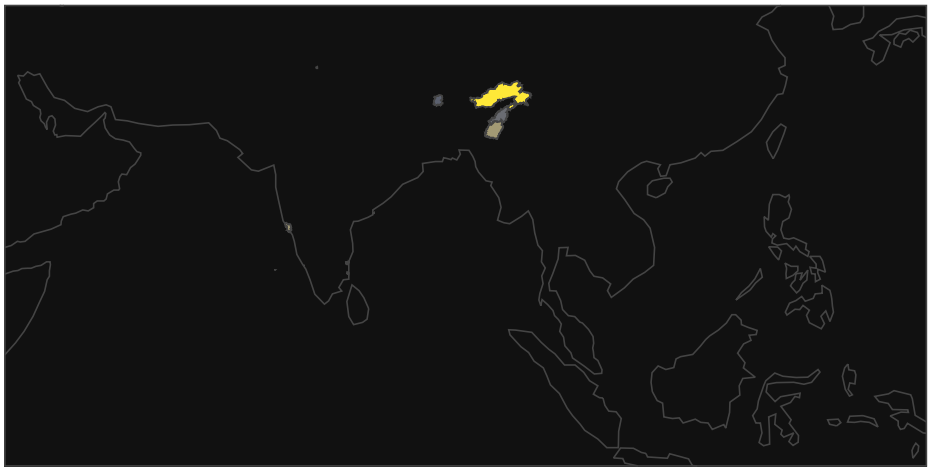

```
fig = px.choropleth(ntop,
                    geojson="https://gist.githubusercontent.com/jbrobst/56c13bbbf9d97d187fea01ca62ea5112/raw/e388c4cae20aa53cb5090210a42ebb9b7
                    locations = 'Area_Name',
                    featureidkey='properties.ST_NM',
                    color_continuous_scale='cividis',
                    color = 'Victims_of_Rape_Total',
                    title = 'top 5 states in rapes'
                    )
fig.update_geos(fitbounds="locations", visible=True)
fig.layout.template = 'plotly_dark'
fig.show()
```




```
c.sort_values(by='Victims_of_Rape_Total',axis=0, ascending=True)
u = c.sort_values(by='Victims_of_Rape_Total')
x = u[:11]
x
```

	Area_Name	Victims_of_Rape_Total
18	Lakshadweep	14
8	Daman & Diu	28
7	Dadra & Nagar Haveli	98
26	Puducherry	114

```
fig = px.choropleth(x,
                    geojson="https://gist.githubusercontent.com/jbrobst/56c13bbbf9d97d187fea01ca62ea5112/raw/e388c4cae20aa53cb5090210a42ebb9b7
                    locations = 'Area_Name',
                    featureidkey='properties.ST_NM',
                    color_continuous_scale='cividis',
                    color = 'Victims_of_Rape_Total',
                    title = 'top 5 safest states/UT'
                    )
fig.update_geos(fitbounds="locations", visible=True)
fig.layout.template = 'plotly_dark'
fig.show()
```



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