

```
In [2]: import pandas as pd
import plotly as px
import numpy as np
import plotly.express as pxe

pd.options.plotting.backend = "plotly"

arrest= pd.read_csv(r'C:\Users\Master\Desktop\Jupyter\IA UDEM\USArrests.csv')
arrest.describe()
```

Out[2]:

	Murder	Assault	UrbanPop	Rape
count	50.00000	50.00000	50.00000	50.00000
mean	7.78800	170.76000	65.54000	21.23200
std	4.35551	83.337661	14.474763	9.366385
min	0.80000	45.00000	32.00000	7.30000
25%	4.07500	109.00000	54.50000	15.07500
50%	7.25000	159.00000	66.00000	20.10000
75%	11.25000	249.00000	77.75000	26.17500
max	17.40000	337.00000	91.00000	46.00000

```
In [4]: arrest
```

Out[4]:

	Unnamed: 0	Murder	Assault	UrbanPop	Rape
0	Alabama	13.2	236	58	21.2
1	Alaska	10.0	263	48	44.5
2	Arizona	8.1	294	80	31.0
3	Arkansas	8.8	190	50	19.5
4	California	9.0	276	91	40.6
5	Colorado	7.9	204	78	38.7
6	Connecticut	3.3	110	77	11.1
7	Delaware	5.9	238	72	15.8
8	Florida	15.4	335	80	31.9
9	Georgia	17.4	211	60	25.8
10	Hawaii	5.3	46	83	20.2
11	Idaho	2.6	120	54	14.2
12	Illinois	10.4	249	83	24.0
13	Indiana	7.2	113	65	21.0
14	Iowa	2.2	56	57	11.3
15	Kansas	6.0	115	66	18.0
16	Kentucky	9.7	109	52	16.3
17	Louisiana	15.4	249	66	22.2
18	Maine	2.1	83	51	7.8
19	Maryland	11.3	300	67	27.8
20	Massachusetts	4.4	149	85	16.3
21	Michigan	12.1	255	74	35.1
22	Minnesota	2.7	72	66	14.9
23	Mississippi	16.1	259	44	17.1
24	Missouri	9.0	178	70	28.2
25	Montana	6.0	109	53	16.4
26	Nebraska	4.3	102	62	16.5
27	Nevada	12.2	252	81	46.0
28	New Hampshire	2.1	57	56	9.5
29	New Jersey	7.4	159	89	18.8
30	New Mexico	11.4	285	70	32.1
31	New York	11.1	254	86	26.1
32	North Carolina	13.0	337	45	16.1
33	North Dakota	0.8	45	44	7.3
34	Ohio	7.3	120	75	21.4
35	Oklahoma	6.6	151	68	20.0
36	Oregon	4.9	159	67	29.3
37	Pennsylvania	6.3	106	72	14.9
38	Rhode Island	3.4	174	87	8.3
39	South Carolina	14.4	279	48	22.5
40	South Dakota	3.8	86	45	12.8
41	Tennessee	13.2	188	59	26.9
42	Texas	12.7	201	80	25.5
43	Utah	3.2	120	80	22.9
44	Vermont	2.2	48	32	11.2
45	Virginia	8.5	156	63	20.7
46	Washington	4.0	145	73	26.2
47	West Virginia	5.7	81	39	9.3
48	Wisconsin	2.6	53	66	10.8
49	Wyoming	6.8	161	60	15.6

```
In [3]: MaxRape = arrest.loc[arrest['Rape']==46.0]
MaxRape
```

```
Out[3]:
```

	Unnamed: 0	Murder	Assault	UrbanPop	Rape
27	Nevada	12.2	252	81	46.0

```
In [4]: arrest1 = arrest.rename(columns={'Unnamed: 0':'State'})
arrest1
#numeric Percent urban population
```

Out[4]:

	State	Murder	Assault	UrbanPop	Rape
0	Alabama	13.2	236	58	21.2
1	Alaska	10.0	263	48	44.5
2	Arizona	8.1	294	80	31.0
3	Arkansas	8.8	190	50	19.5
4	California	9.0	276	91	40.6
5	Colorado	7.9	204	78	38.7
6	Connecticut	3.3	110	77	11.1
7	Delaware	5.9	238	72	15.8
8	Florida	15.4	335	80	31.9
9	Georgia	17.4	211	60	25.8
10	Hawaii	5.3	46	83	20.2
11	Idaho	2.6	120	54	14.2
12	Illinois	10.4	249	83	24.0
13	Indiana	7.2	113	65	21.0
14	Iowa	2.2	56	57	11.3
15	Kansas	6.0	115	66	18.0
16	Kentucky	9.7	109	52	16.3
17	Louisiana	15.4	249	66	22.2
18	Maine	2.1	83	51	7.8
19	Maryland	11.3	300	67	27.8
20	Massachusetts	4.4	149	85	16.3
21	Michigan	12.1	255	74	35.1
22	Minnesota	2.7	72	66	14.9
23	Mississippi	16.1	259	44	17.1
24	Missouri	9.0	178	70	28.2
25	Montana	6.0	109	53	16.4
26	Nebraska	4.3	102	62	16.5
27	Nevada	12.2	252	81	46.0
28	New Hampshire	2.1	57	56	9.5
29	New Jersey	7.4	159	89	18.8
30	New Mexico	11.4	285	70	32.1
31	New York	11.1	254	86	26.1
32	North Carolina	13.0	337	45	16.1
33	North Dakota	0.8	45	44	7.3
34	Ohio	7.3	120	75	21.4
35	Oklahoma	6.6	151	68	20.0
36	Oregon	4.9	159	67	29.3
37	Pennsylvania	6.3	106	72	14.9
38	Rhode Island	3.4	174	87	8.3
39	South Carolina	14.4	279	48	22.5
40	South Dakota	3.8	86	45	12.8
41	Tennessee	13.2	188	59	26.9
42	Texas	12.7	201	80	25.5
43	Utah	3.2	120	80	22.9
44	Vermont	2.2	48	32	11.2
45	Virginia	8.5	156	63	20.7
46	Washington	4.0	145	73	26.2
47	West Virginia	5.7	81	39	9.3
48	Wisconsin	2.6	53	66	10.8
49	Wyoming	6.8	161	60	15.6

```
In [5]: arrest.isnull().count()

Out[5]:
Unnamed: 0    50
Murder        50
Assault       50
UrbanPop      50
Rape          50
dtype: int64
```

```
In [6]: EstadoMaiorMurder = arrest1['Murder'].max()
EstadoMaiorMurder
```

Out[6]:

17.4

```
In [11]: EstadoMenorMaiorNome = arrest1[arrest1['Murder']==17.4]
EstadoMenorMaiorNome
```

Out[11]:

	State	Murder	Assault	UrbanPop	Rape
9	Georgia	17.4	211	60	25.8

```
In [12]: EstadoMaiorAssalt= arrest1['Assault'].max()
EstadoMaiorAssalt
```

Out[12]:

337

```
In [13]: EstadoMaiorAssaltNome = arrest1[arrest1['Assault']==337]
EstadoMaiorAssaltNome
```

Out[13]:

	State	Murder	Assault	UrbanPop	Rape
32	North Carolina	13.0	337	45	16.1

```
In [14]: EstadoMaiorRape = arrest1['Rape'].max()
EstadoMaiorRape
```

Out[14]:

46.0

```
In [15]: EstadoMaiorRapeNome = arrest1[arrest1['Rape']==46.0]
EstadoMaiorRapeNome
```

Out[15]:

	State	Murder	Assault	UrbanPop	Rape
27	Nevada	12.2	252	81	46.0

```
In [16]: MaiorEstadoUrban = arrest1['UrbanPop'].max()
MaiorEstadoUrban
```

Out[16]:

91

```
In [17]: MaiorEstadoUrbanNome = arrest1[arrest1['UrbanPop']==91]
MaiorEstadoUrbanNome
```

Out[17]:

	State	Murder	Assault	UrbanPop	Rape
4	California	9.0	276	91	40.6

```
In [18]: MenorUrban = arrest1['UrbanPop'].min()
MenorUrban
```

Out[18]:

32

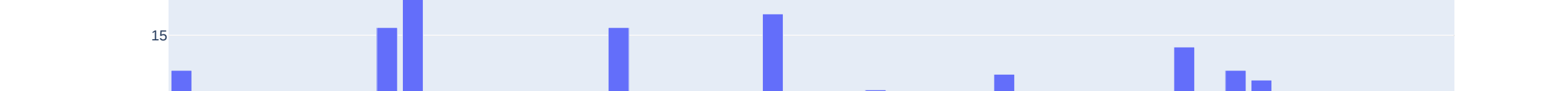
```
In [19]: MenorUrbanNome = arrest1[arrest1['UrbanPop']==32]
MenorUrbanNome
```

Out[19]:

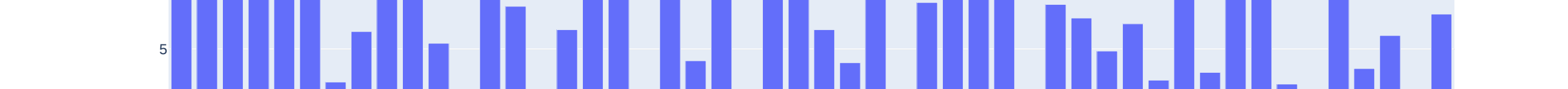
	State	Murder	Assault	UrbanPop	Rape
44	Vermont	2.2	48	32	11.2

```
arrest.plot(kind='line')

In [20]: arrest1.plot(title='Assasinos por Estados', x='State', y='Murder', kind='bar')
```



```
In [21]: arrest1.plot(title='Estupros por Estado', x='State',y='Rape', kind='bar')
```



```
In [83]: arrest1.plot(title='Assalto por Estado', x='State',y='Assault', kind='bar')
```



```
In [84]: arrest1.plot(title='Urbaniza  o por Estado', x='State', y='UrbanPop', kind='bar')
```



```
In [ ]:
```