

```
In [6]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sb
%matplotlib inline
```

```
In [8]: data=pd.read_csv("C:/Users/Sukanya/Pictures/Downloads/election.csv")
```

```
In [9]: data.head(10)
```

Out[9]:

	Location.County	Location.State	Location.State Abbreviation	Vote Data.Ben Carson.Number of Votes	Vote Data.Ben Carson.Party	Vote Data.Ben Carson.Percent of Votes	Vote Data.Bernie Sanders.Number of Votes	Vote Data.Bernie Sanders.Party	Vote Data.Bernie Sanders.Percent of Votes	Vote Data.C Fiorina.Nun of V
0	Abbeville	South Carolina	SC	305	Republican	8.3	312	Democrat	17.0	
1	Abbot	Maine	ME	0	Republican	0.0	1	Democrat	100.0	
2	Abington	Massachusetts	MA	53	Republican	2.5	1352	Democrat	53.4	
3	Acadia	Louisiana	LA	0	Republican	0.0	1087	Democrat	31.4	
4	Accomack	Virginia	VA	411	Republican	9.5	682	Democrat	27.4	
5	Acton	Massachusetts	MA	54	Republican	2.3	2557	Democrat	46.8	
6	Acton	Maine	ME	0	Republican	0.0	3	Democrat	60.0	

9 Adair Iowa IA 61 Republican 15.0 132 Democrat 44.0

10 rows x 51 columns

In [4]: data.tail()

Out[4]:

	Location.County	Location.State	Location.State Abbreviation	Vote Data.Ben Carson.Number of Votes	Vote Data.Ben Carson.Party	Vote Data.Ben Carson.Percent of Votes	Vote Data.Bernie Sanders.Number of Votes	Vote Data.Bernie Sanders.Party	Vote Data.Bernie Sanders.Percent of Votes	Vote Data.Florida.Number of Votes
4211	Yuma	Arizona	AZ	0	Republican	0.0	2156	Democrat	31.5	
4212	Yuma	Colorado	CO	0	Republican	0.0	33	Democrat	39.3	
4213	Zapata	Texas	TX	4	Republican	4.7	685	Democrat	23.6	
4214	Zavala	Texas	TX	0	Republican	0.0	373	Democrat	18.1	
4215	Ziebach	South Dakota	SD	0	Republican	0.0	132	Democrat	58.9	

5 rows x 51 columns

In [ ]:

```
In [5]: data.columns
```

```
Out[5]: Index(['Location.County', 'Location.State', 'Location.State Abbreviation',
              'Vote Data.Ben Carson.Number of Votes', 'Vote Data.Ben Carson.Party',
              'Vote Data.Ben Carson.Percent of Votes',
              'Vote Data.Bernie Sanders.Number of Votes',
              'Vote Data.Bernie Sanders.Party',
              'Vote Data.Bernie Sanders.Percent of Votes',
              'Vote Data.Carly Fiorina.Number of Votes',
              'Vote Data.Carly Fiorina.Party',
              'Vote Data.Carly Fiorina.Percent of Votes',
              'Vote Data.Chris Christie.Number of Votes',
              'Vote Data.Chris Christie.Party',
              'Vote Data.Chris Christie.Percent of Votes',
              'Vote Data.Donald Trump.Number of Votes',
              'Vote Data.Donald Trump.Party',
              'Vote Data.Donald Trump.Percent of Votes',
              'Vote Data.Hillary Clinton.Number of Votes',
              'Vote Data.Hillary Clinton.Party',
              'Vote Data.Hillary Clinton.Percent of Votes',
              'Vote Data.Jeb Bush.Number of Votes', 'Vote Data.Jeb Bush.Party',
              'Vote Data.Jeb Bush.Percent of Votes',
              'Vote Data.John Kasich.Number of Votes', 'Vote Data.John Kasich.Party',
              'Vote Data.John Kasich.Percent of Votes',
              'Vote Data.Marco Rubio.Number of Votes', 'Vote Data.Marco Rubio.Party',
              'Vote Data.Marco Rubio.Percent of Votes',
              'Vote Data.Martin O'Malley.Number of Votes',
              'Vote Data.Martin O'Malley.Party',
              'Vote Data.Martin O'Malley.Percent of Votes',
              'Vote Data.Mike Huckabee.Number of Votes',
```

In [6]: data.describe()

Out[6]:

	Vote Data.Ben Carson.Number of Votes	Vote Data.Ben Carson.Percent of Votes	Vote Data.Bernie Sanders.Number of Votes	Vote Data.Bernie Sanders.Percent of Votes	Vote Data.Carly Fiorina.Number of Votes	Vote Data.Carly Fiorina.Percent of Votes	Vote Data.Chris Christie.Number of Votes	Vote Data.Chris Christie.Percent of Votes	Vote Data.Donald Trump.Number of Votes
count	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000
mean	133.907258	2.333327	2836.599146	49.202891	3.603178	0.057129	5.776328	0.045949	3155.251660
std	530.193482	3.513634	12247.645297	21.179584	78.560814	0.445396	150.938448	0.403750	8404.462008
min	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	0.000000	0.000000	98.750000	37.500000	0.000000	0.000000	0.000000	0.000000	123.000000
50%	0.000000	0.000000	448.000000	50.000000	0.000000	0.000000	0.000000	0.000000	795.000000
75%	49.250000	4.600000	1544.500000	59.600000	0.000000	0.000000	0.000000	0.000000	2538.250000
max	9945.000000	41.500000	434656.000000	100.000000	3612.000000	11.700000	7144.000000	8.719532	179130.000000

8 rows x 34 columns

In [ ]:



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jupyter

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FileEditViewInsertCellKernelHelp

TrustedPython 3

In [7]: data.dtypes

Out[7]:

Location.County	object
Location.State	object
Location.State Abbreviation	object
Vote Data.Ben Carson.Number of Votes	int64
Vote Data.Ben Carson.Party	object
Vote Data.Ben Carson.Percent of Votes	float64
Vote Data.Bernie Sanders.Number of Votes	int64
Vote Data.Bernie Sanders.Party	object
Vote Data.Bernie Sanders.Percent of Votes	float64
Vote Data.Carly Fiorina.Number of Votes	int64
Vote Data.Carly Fiorina.Party	object
Vote Data.Carly Fiorina.Percent of Votes	float64
Vote Data.Chris Christie.Number of Votes	int64
Vote Data.Chris Christie.Party	object
Vote Data.Chris Christie.Percent of Votes	float64
Vote Data.Donald Trump.Number of Votes	int64
Vote Data.Donald Trump.Party	object
Vote Data.Donald Trump.Percent of Votes	float64
Vote Data.Hillary Clinton.Number of Votes	int64
Vote Data.Hillary Clinton.Party	object
Vote Data.Hillary Clinton.Percent of Votes	float64
Vote Data.Jeb Bush.Number of Votes	int64
Vote Data.Jeb Bush.Party	object
Vote Data.Jeb Bush.Percent of Votes	float64
Vote Data.John Kasich.Number of Votes	int64
Vote Data.John Kasich.Party	object
Vote Data.John Kasich.Percent of Votes	float64
Vote Data.Marco Rubio.Number of Votes	int64
Vote Data.Marco Rubio.Party	object
Vote Data.Marco Rubio.Percent of Votes	float64

Windows Taskbar

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Taskbar Icons

System Tray

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TrustedPython 3

Vote Data.Uncommitted.Percent of Votes

float64

dtype: object

In [8]:

```
print(data.isnull().sum())
```

Location.County

0

Location.State

0

Location.State Abbreviation

0

Vote Data.Ben Carson.Number of Votes

0

Vote Data.Ben Carson.Party

0

Vote Data.Ben Carson.Percent of Votes

0

Vote Data.Bernie Sanders.Number of Votes

0

Vote Data.Bernie Sanders.Party

0

Vote Data.Bernie Sanders.Percent of Votes

0

Vote Data.Carly Fiorina.Number of Votes

0

Vote Data.Carly Fiorina.Party

0

Vote Data.Carly Fiorina.Percent of Votes

0

Vote Data.Chris Christie.Number of Votes

0

Vote Data.Chris Christie.Party

0

Vote Data.Chris Christie.Percent of Votes

0

Vote Data.Donald Trump.Number of Votes

0

Vote Data.Donald Trump.Party

0

Vote Data.Donald Trump.Percent of Votes

0

Vote Data.Hillary Clinton.Number of Votes

0

Vote Data.Hillary Clinton.Party

0

Vote Data.Hillary Clinton.Percent of Votes

0

Vote Data.Jeb Bush.Number of Votes

0

Vote Data.Jeb Bush.Party

0

Vote Data.Jeb Bush.Percent of Votes

0

Vote Data.John Kasich.Number of Votes

0

Vote Data.John Kasich.Party

0

Vote Data.John Kasich.Percent of Votes

0

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File Explorer

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ENG

07:54 AM

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12

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TrustedPython 3

dtype: int64

In [9]: data.info()

<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 4216 entries, 0 to 4215  
Data columns (total 51 columns):  
# ColumnNon-Null CountDtype  
---  
0 Location.County4216 non-nullobject  
1 Location.State4216 non-nullobject  
2 Location.State Abbreviation4216 non-nullobject  
3 Vote Data.Ben Carson.Number of Votes4216 non-nullint64  
4 Vote Data.Ben Carson.Party4216 non-nullobject  
5 Vote Data.Ben Carson.Percent of Votes4216 non-nullfloat64  
6 Vote Data.Bernie Sanders.Number of Votes4216 non-nullint64  
7 Vote Data.Bernie Sanders.Party4216 non-nullobject  
8 Vote Data.Bernie Sanders.Percent of Votes4216 non-nullfloat64  
9 Vote Data.Carly Fiorina.Number of Votes4216 non-nullint64  
10 Vote Data.Carly Fiorina.Party4216 non-nullobject  
11 Vote Data.Carly Fiorina.Percent of Votes4216 non-nullfloat64  
12 Vote Data.Chris Christie.Number of Votes4216 non-nullint64  
13 Vote Data.Chris Christie.Party4216 non-nullobject  
14 Vote Data.Chris Christie.Percent of Votes4216 non-nullfloat64  
15 Vote Data.Donald Trump.Number of Votes4216 non-nullint64  
16 Vote Data.Donald Trump.Party4216 non-nullobject  
17 Vote Data.Donald Trump.Percent of Votes4216 non-nullfloat64  
18 Vote Data.Hillary Clinton.Number of Votes4216 non-nullint64  
19 Vote Data.Hillary Clinton.Party4216 non-nullobject  
20 Vote Data.Hillary Clinton.Percent of Votes4216 non-nullfloat64  
21 Vote Data.Jeb Bush.Number of Votes4216 non-nullint64  
22 Vote Data.Jeb Bush.Party4216 non-nullobject

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Taskbar Icons

System Tray

```
Out[13]:
```

Maine	497
Massachusetts	351
Texas	254
Vermont	246
Connecticut	169
Georgia	159
Virginia	133
Kentucky	120
Missouri	115
Illinois	103
North Carolina	102



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Code

In [14]:


data['Location.State Abbreviation'].value\_counts()

Out[14]:

ME	497
MA	351
TX	254
VT	246
CT	169
GA	159
VA	133
KY	120
MO	115
IL	103
NC	100
IA	99
TN	95
NE	93
IN	92
OH	88
MI	83
MS	82
OK	77
AR	75
WI	72
PA	67
FL	67
AL	67
SD	66
LA	64
CO	64
NY	62
CA	58

Windows taskbar

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08:00 AM

13-01-2021

ENG

12

```
In [17]: data.groupby('Vote Data.Ben Carson.Number of Votes').agg(['min'])
```

Out[17]:

	Location.County	Location.State	Location.State Abbreviation	Vote Data.Ben Carson.Party	Vote Data.Ben Carson.Percent of Votes	Vote Data.Bernie Sanders.Number of Votes	Vote Data.Bernie Sanders.Party	Vote Data.Bernie Sanders.Percent of Votes	Vote Data.Carly Fiorina.Number of Votes
	min	min	min	min	min	min	min	min	min
Vote Data.Ben Carson.Number of Votes									
0	Abbot	Arizona	AR	Republican	0.0	0	Democrat	0.0	C
1	Bloomfield	Alaska	AK	Republican	0.1	5	Democrat	18.8	C
2	Alford	Massachusetts	MA	Republican	1.0	25	Democrat	27.9	C
3	Athens	Massachusetts	MA	Republican	0.4	55	Democrat	35.3	C
4	Albany	Massachusetts	MA	Republican	1.6	23	Democrat	16.8	C
...	...	...	...	...	...	...	...	...	...
6293	Madison	Alabama	AL	Republican	9.6	8786	Democrat	30.1	C
8036	Greenville	South Carolina	SC	Republican	8.6	10965	Democrat	35.5	C
8368	Jefferson	Alabama	AL	Republican	8.9	14319	Democrat	17.4	C
9111	Harris	Texas	TX	Republican	2.8	63246	Democrat	28.5	C
9945	Tarrant	Texas	TX	Republican	4.7	35507	Democrat	34.2	C

594 rows x 50 columns

```
In [19]: data.groupby('Vote Data.Bernie Sanders.Number of Votes').agg(['min'])
```

Out[19]:

	Location.County	Location.State	Location.State Abbreviation	Vote Data.Ben Carson.Number of Votes	Vote Data.Ben Carson.Party	Vote Data.Ben Carson.Percent of Votes	Vote Data.Bernie Sanders.Party	Vote Data.Bernie Sanders.Percent of Votes	Vote Data.Carly Fiorina.Number of Votes
	min	min	min	min	min	min	min	min	min
Vote Data.Bernie Sanders.Number of Votes									
0	Albany-Natrona	Arkansas	AR	0	Republican	0.0	Democrat	0.0	0
1	Abbot	Maine	ME	0	Republican	0.0	Democrat	6.7	0
2	Albion	Colorado	CO	0	Republican	0.0	Democrat	18.2	0
3	Acton	Maine	ME	0	Republican	0.0	Democrat	33.3	0
4	Armstrong	Colorado	CO	0	Republican	0.0	Democrat	25.0	0
...	...	...	...	...	...	...	...	...	...
116327	Brooklyn	New York	NY	0	Republican	0.0	Democrat	40.0	0
125688	Philadelphia	Pennsylvania	PA	0	Republican	0.0	Democrat	37.0	0
212428	Cook Suburbs	Illinois	IL	0	Republican	0.0	Democrat	45.7	0
311225	Chicago	Illinois	IL	0	Republican	0.0	Democrat	45.4	0
434656	Los Angeles	California	CA	0	Republican	0.0	Democrat	42.0	0

2055 rows x 10 columns

```
In [20]: data.groupby('Vote Data.Bernie Sanders.Number of Votes').agg(['max'])
```

Out[20]:

	Location.County	Location.State	Location.State Abbreviation	Vote Data.Ben Carson.Number of Votes	Vote Data.Ben Carson.Party	Vote Data.Ben Carson.Percent of Votes	Vote Data.Bernie Sanders.Party	Vote Data.Bernie Sanders.Percent of Votes	Vote Data.Carly Fiorina.Number of Votes
	max	max	max	max	max	max	max	max	max
Vote Data.Bernie Sanders.Number of Votes									
0	Woodville	Wyoming	WY	0	Republican	0.0	Democrat	0.0	0
1	Winter Harbor	Wyoming	WY	17	Republican	14.8	Democrat	100.0	0
2	Woodstock	Wyoming	WY	14	Republican	3.6	Democrat	100.0	0
3	Wilton	Wyoming	WY	39	Republican	5.2	Democrat	100.0	0
4	Windsor	Texas	TX	60	Republican	8.4	Democrat	100.0	0
...	...	...	...	...	...	...	...	...	...
116327	Brooklyn	New York	NY	0	Republican	0.0	Democrat	40.0	0
125688	Philadelphia	Pennsylvania	PA	0	Republican	0.0	Democrat	37.0	0
212428	Cook Suburbs	Illinois	IL	0	Republican	0.0	Democrat	45.7	0
311225	Chicago	Illinois	IL	0	Republican	0.0	Democrat	45.4	0
434656	Los Angeles	California	CA	0	Republican	0.0	Democrat	42.0	0

2055 rows x 50 columns



dtype='object')

In [6]: data.describe()

Out[6]:

	Vote Data.Ben Carson.Number of Votes	Vote Data.Ben Carson.Percent of Votes	Vote Data.Bernie Sanders.Number of Votes	Vote Data.Bernie Sanders.Percent of Votes	Vote Data.Carly Fiorina.Number of Votes	Vote Data.Carly Fiorina.Percent of Votes	Vote Data.Christie.Number of Votes	Vote Data.Christie.Percent of Votes	Vote Data.Donald Trump.Number of Votes	T
count	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000	4216.000000	
mean	133.907258	2.333327	2836.599146	49.202891	3.603178	0.057129	5.776328	0.045949	3155.251660	
std	530.193482	3.513634	12247.645297	21.179584	78.560814	0.445396	150.938448	0.403750	8404.462008	
min	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
25%	0.000000	0.000000	98.750000	37.500000	0.000000	0.000000	0.000000	0.000000	123.000000	
50%	0.000000	0.000000	448.000000	50.000000	0.000000	0.000000	0.000000	0.000000	795.000000	
75%	49.250000	4.600000	1544.500000	59.600000	0.000000	0.000000	0.000000	0.000000	2538.250000	
max	9945.000000	41.500000	434656.000000	100.000000	3612.000000	11.700000	7144.000000	8.719532	179130.000000	

8 rows x 34 columns

In [7]: data.dtypes

Out[7]: Location.County object  
 Location.State object  
 Location.State Abbreviation object  
 Vote Data.Ben Carson.Number of Votes int64  
 Vote Data.Ben Carson.Party object

434656 Los Angeles California CA 0 Republican 0.0 Democrat 42.0

2055 rows x 50 columns

In [21]: data.groupby('Vote Data.Ben Carson.Percent of Votes').agg(['median'])

Out[21]:

	Vote Data.Ben Carson.Number of Votes	Vote Data.Bernie Sanders.Number of Votes	Vote Data.Bernie Sanders.Percent of Votes	Vote Data.Carly Fiorina.Number of Votes	Vote Data.Carly Fiorina.Percent of Votes	Vote Data.Chris Christie.Number of Votes	Vote Data.Chris Christie.Percent of Votes	Vote Data.Donald Trump.Number of Votes	Vote Data.Don Trump.Pe of Votes
	median	median	median	median	median	median	median	median	median
Vote Data.Ben Carson.Percent of Votes									
0.0	0.0	501.0	51.4	0.0	0.0	0.0	0.0	887.0	
0.1	1.0	1757.0	49.7	0.0	0.0	0.0	0.0	1167.0	
0.4	3.0	650.0	43.7	0.0	0.0	0.0	0.0	243.0	
0.7	24.0	1957.0	39.3	0.0	0.0	0.0	0.0	1274.0	
0.8	1.0	313.0	76.2	0.0	0.0	0.0	0.0	71.0	
...	...	...	...	...	...	...	...	...	...
18.0	157.0	141.0	50.6	8.0	0.8	4.0	0.5	232.0	
18.6	206.0	113.0	56.8	10.0	0.9	3.0	0.3	173.0	
18.7	70.0	31.0	50.0	0.0	0.0	0.0	0.0	161.0	
21.7	221.0	273.0	54.7	24.0	2.4	17.0	1.7	315.0	

434656 Los Angeles California CA 0 Republican 0.0 Democrat 42.0

2055 rows x 50 columns

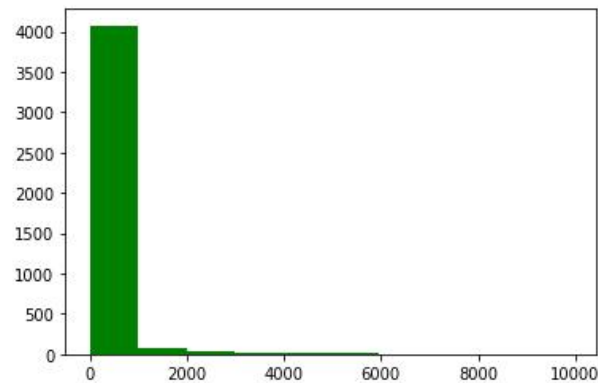
```
In [21]: data.groupby('Vote Data.Ben Carson.Percent of Votes').agg(['median'])
```

Out[21]:

	Vote Data.Ben Carson.Number of Votes	Vote Data.Bernie Sanders.Number of Votes	Vote Data.Bernie Sanders.Percent of Votes	Vote Data.Carly Fiorina.Number of Votes	Vote Data.Carly Fiorina.Percent of Votes	Vote Data.Chris Christie.Number of Votes	Vote Data.Chris Christie.Percent of Votes	Vote Data.Donald Trump.Number of Votes	Vote Data.Don Trump.Pe of Votes
Vote Data.Ben Carson.Percent of Votes	median	median	median	median	median	median	median	median	median
0.0	0.0	501.0	51.4	0.0	0.0	0.0	0.0	887.0	
0.1	1.0	1757.0	49.7	0.0	0.0	0.0	0.0	1167.0	
0.4	3.0	650.0	43.7	0.0	0.0	0.0	0.0	243.0	
0.7	24.0	1957.0	39.3	0.0	0.0	0.0	0.0	1274.0	
0.8	1.0	313.0	76.2	0.0	0.0	0.0	0.0	71.0	
...	...	...	...	...	...	...	...	...	...
18.0	157.0	141.0	50.6	8.0	0.8	4.0	0.5	232.0	
18.6	206.0	113.0	56.8	10.0	0.9	3.0	0.3	173.0	
18.7	70.0	31.0	50.0	0.0	0.0	0.0	0.0	161.0	
21.7	221.0	273.0	54.7	24.0	2.4	17.0	1.7	315.0	

164 rows x 33 columns

```
In [26]: #histogram
plt.hist(data["Vote Data.Ben Carson.Number of Votes"],color='green')
plt.show()
```

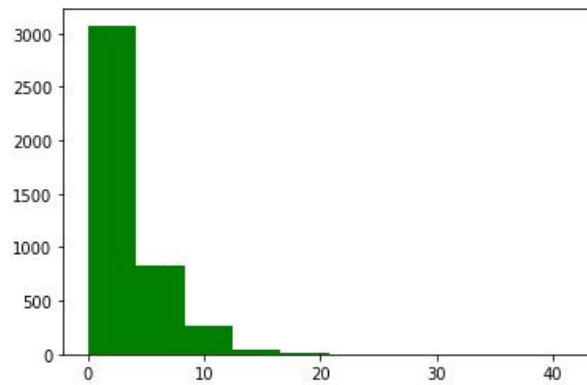


In [ ]:

In [ ]:



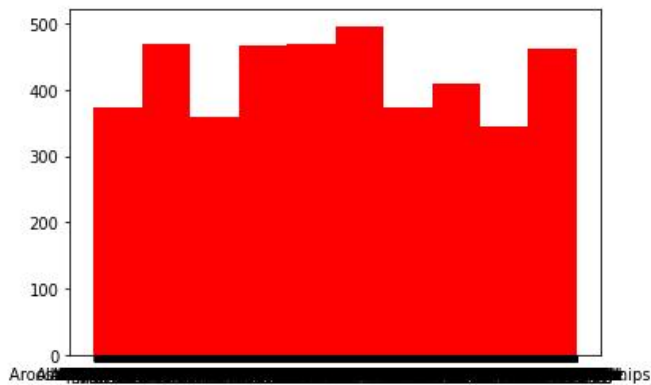
```
In [27]: plt.hist(data["Vote Data.Ben Carson.Percent of Votes"],color='green')
plt.show()
```



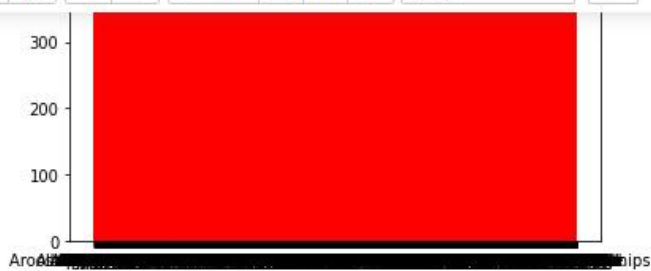
In [ ]:



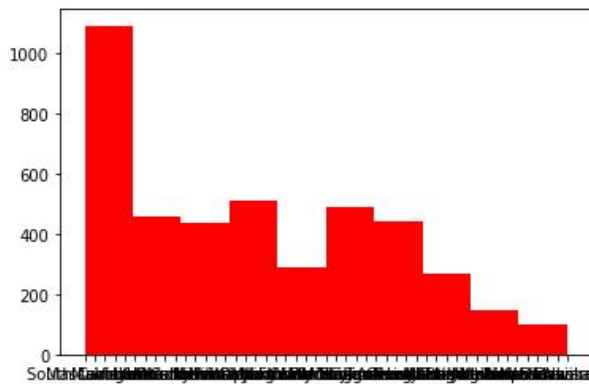
```
In [28]: plt.hist(data["Location.County"],color='red')
plt.show()
```



```
In [ ]:
```

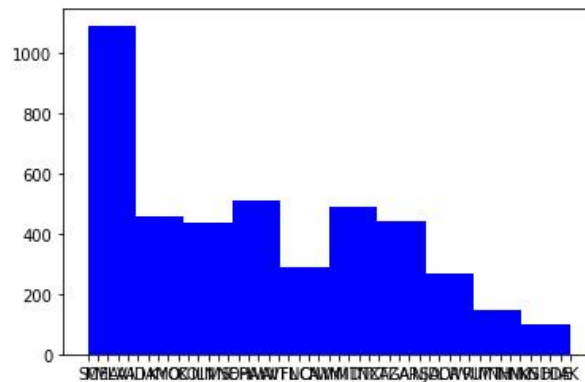


```
In [29]: plt.hist(data["Location.State"],color='red')
plt.show()
```



```
In [ ]: |
```

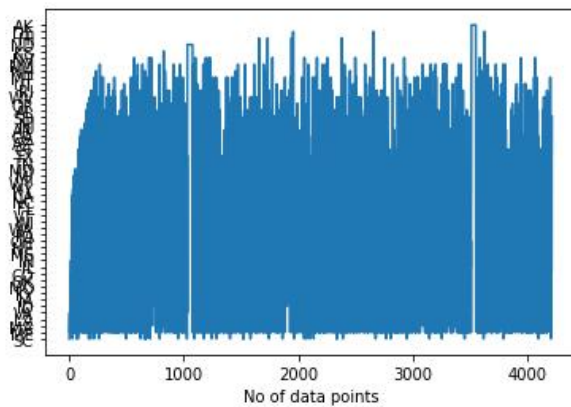
```
In [30]: plt.hist(data["Location.State Abbreviation"],color='blue')
plt.show()
```



```
In [ ]: |
```



```
In [32]: plt.plot(data["Location.State Abbreviation"])
plt.xlabel("No of data points")
plt.show()
```



In [ ]:

