

<https://www.maine.gov/sos/cec/elec/results/index.html> (<https://www.maine.gov/sos/cec/elec/results/index.html>)

```
In [1]: import glob
import pandas
import json
import time
print('pandas',pandas.__version__)
import matplotlib.pyplot as plt
import numpy
print('numpy',numpy.__version__)
```

```
pandas 0.23.4
numpy 1.13.3
```

```
In [3]: # https://stackoverflow.com/questions/17977540/pandas-looking-up-the-list-of-sheets-in-an-excel-file
xl = pandas.ExcelFile("voting_data/Maine/Maine/June 2018/Maine Democratic Primary for Governor CVR.xlsx")
```

```
In [4]: xl.sheet_names # see all sheet names
```

```
Out[4]: ['Sheet4', 'Governor Dem', 'Municipality']
```

```
In [5]: df = pandas.read_excel("voting_data/Maine/Maine/June 2018/Maine Democratic Primary for Governor CVR.xlsx",
                                sheet_name=xl.sheet_names[0])
```

In [6]: df

Out[6] :

	Row Labels
0	1111
1	8111
2	18111
3	56111
4	74111
5	91111
6	96114
7	98112
8	100111
9	106111
10	111111
11	126111
12	127111
13	128111
14	146111
15	149111
16	151111
17	152111
18	153111
19	160111
20	167111
21	172111
22	173111
23	174111
24	176111
25	193111
26	201111
27	205111
28	206111
29	211111
...	...
639	Westbrook W3

	Row Labels
640	Westbrook W4
641	Westbrook W5
642	Westfield
643	Westmanland
644	Weston
645	Westport Island
646	Whitefield
647	Whiting
648	Whitneyville
649	Willimantic
650	Wilton
651	Windham W1
652	Windsor
653	Winn
654	Winslow
655	Winter Harbor
656	Winterport
657	Winterville Plt
658	Winthrop
659	Wiscasset
660	Woodland
661	Woodstock
662	Woodville
663	Woolwich
664	Wyman Twp
665	Yarmouth
666	York
667	York W1
668	Grand Total

669 rows × 1 columns

```
In [7]: df = pandas.read_excel("voting_data/Maine/Maine/June 2018/Maine Democrat  
ic Primary for Governor CVR.xlsx",  
                                sheet_name=xl.sheet_names[1])
```

In [8]: df

Out[8] :

	Cast Vote Record	Precinct	Ballot Style	DEM Governor 1st Choice	DEM Governor 2nd Choice	DEM Governor 3rd Choice	DEM Governor 4th Choice	DEM Governor 5th Choice
0	391598.0	Windham W1	DEM Ballot Style 263	Dion, Mark N.	undervote	undervote	undervote	undervote
1	391608.0	Windham W1	DEM Ballot Style 263	Mills, Janet T.	Cote, Adam Roland	Eves, Mark W.	Dion, Mark N.	Sweet, Elizabeth A.
2	391611.0	Windham W1	DEM Ballot Style 264	Mills, Janet T.	Sweet, Elizabeth A.	Cote, Adam Roland	undervote	undervote
3	391612.0	Windham W1	DEM Ballot Style 264	Mills, Janet T.	Cote, Adam Roland	Eves, Mark W.	undervote	undervote
4	391621.0	Windham W1	DEM Ballot Style 264	Dion, Mark N.	Cote, Adam Roland	Dion, Donna J.	Eves, Mark W.	Russell, Diane Marie
5	391625.0	Windham W1	DEM Ballot Style 263	Mills, Janet T.	Sweet, Elizabeth A.	Eves, Mark W.	Russell, Diane Marie	Cote, Adam Roland
6	391626.0	Windham W1	DEM Ballot Style 263	Cote, Adam Roland	Mills, Janet T.	Eves, Mark W.	Dion, Donna J.	Dion, Mark N.
7	391630.0	Windham W1	DEM Ballot Style 263	Sweet, Elizabeth A.	Russell, Diane Marie	Dion, Donna J.	Eves, Mark W.	Dion, Mark N.
8	391638.0	Windham W1	DEM Ballot Style 263	Mills, Janet T.	Cote, Adam Roland	Sweet, Elizabeth A.	Eves, Mark W.	Dion, Mark N.

	Cast Vote Record	Precinct	Ballot Style	DEM Governor 1st Choice	DEM Governor 2nd Choice	DEM Governor 3rd Choice	DEM Governor 4th Choice	DE Governor 5 Choice
9	391650.0	Windham W1	DEM Ballot Style 263	Mills, Janet T.	Dion, Mark N.	Sweet, Elizabeth A.	Eves, Mark W.	Cote, Adam Roland
10	391657.0	Windham W1	DEM Ballot Style 263	Eves, Mark W.	Mills, Janet T.	Cote, Adam Roland	Dion, Mark N.	undervo
11	391662.0	Windham W1	DEM Ballot Style 264	Mills, Janet T.	Sweet, Elizabeth A.	undervote	undervote	undervo
12	391665.0	Windham W1	DEM Ballot Style 264	Mills, Janet T.	Eves, Mark W.	Dion, Mark N.	Dion, Donna J.	undervo
13	391666.0	Windham W1	DEM Ballot Style 264	Mills, Janet T.	Sweet, Elizabeth A.	Dion, Mark N.	undervote	undervo
14	391667.0	Windham W1	DEM Ballot Style 263	Cote, Adam Roland	Mills, Janet T.	Eves, Mark W.	Dion, Mark N.	Sweet, Elizabeth A.
15	391678.0	Windham W1	DEM Ballot Style 264	Cote, Adam Roland	undervote	undervote	undervote	undervo
16	391683.0	Windham W1	DEM Ballot Style 263	Mills, Janet T.	undervote	undervote	undervote	undervo
17	391685.0	Windham W1	DEM Ballot Style 264	Mills, Janet T.	Dion, Mark N.	Cote, Adam Roland	undervote	undervo
18	391686.0	Windham W1	DEM Ballot Style 264	Eves, Mark W.	Cote, Adam Roland	undervote	Dion, Donna J.	Dion, Mark N.

	Cast Vote Record	Precinct	Ballot Style	DEM Governor 1st Choice	DEM Governor 2nd Choice	DEM Governor 3rd Choice	DEM Governor 4th Choice	DE Governor 5 Choice
19	391693.0	Windham W1	DEM Ballot Style 264	Mills, Janet T.	undervote	undervote	undervote	undervo
20	391697.0	Windham W1	DEM Ballot Style 263	Eves, Mark W.	undervote	undervote	undervote	undervo
21	391698.0	Windham W1	DEM Ballot Style 263	undervote	undervote	undervote	undervote	undervo
22	391700.0	Windham W1	DEM Ballot Style 263	Dion, Mark N.	Cote, Adam Roland	Sweet, Elizabeth A.	Dion, Donna J.	Mills, Janet T.
23	391706.0	Windham W1	DEM Ballot Style 264	Mills, Janet T.	Sweet, Elizabeth A.	Cote, Adam Roland	undervote	undervo
24	391708.0	Windham W1	DEM Ballot Style 263	Sweet, Elizabeth A.	Russell, Diane Marie	Mills, Janet T.	Cote, Adam Roland	undervo
25	391710.0	Windham W1	DEM Ballot Style 263	undervote	undervote	undervote	undervote	undervo
26	391715.0	Windham W1	DEM Ballot Style 264	Cote, Adam Roland	Dion, Mark N.	Eves, Mark W.	Russell, Diane Marie	Sweet, Elizabeth A.
27	391719.0	Windham W1	DEM Ballot Style 263	Eves, Mark W.	Mills, Janet T.	Dion, Donna J.	undervote	undervo
28	391721.0	Windham W1	DEM Ballot Style 264	Cote, Adam Roland	Eves, Mark W.	Mills, Janet T.	undervote	undervo

	Cast Vote Record	Precinct	Ballot Style	DEM Governor 1st Choice	DEM Governor 2nd Choice	DEM Governor 3rd Choice	DEM Governor 4th Choice	DE Governor 5 Choice
29	391737.0	Yarmouth	DEM Ballot Style 88	Mills, Janet T.	Eves, Mark W.	Sweet, Elizabeth A.	Cote, Adam Roland	undervo
...
132225	373.0	479111	UOCAVA	Eves, Mark W.	Sweet, Elizabeth A.	Mills, Janet T.	Cote, Adam Roland	Dion, Mark N.
132226	379.0	127111	UOCAVA	Russell, Diane Marie	Mills, Janet T.	Eves, Mark W.	Sweet, Elizabeth A.	Dion, Donna J
132227	385.0	514131	UOCAVA	Mills, Janet T.	Russell, Diane Marie	Cote, Adam Roland	undervote	undervo
132228	388.0	496211	UOCAVA	Eves, Mark W.	Sweet, Elizabeth A.	Russell, Diane Marie	Cote, Adam Roland	Dion, Donna J
132229	396.0	74111	UOCAVA	Mills, Janet T.	Sweet, Elizabeth A.	Eves, Mark W.	Dion, Donna J.	Dion, Mark N.
132230	399.0	485111	UOCAVA	Cote, Adam Roland	Eves, Mark W.	Mills, Janet T.	undervote	undervo
132231	404.0	496123	UOCAVA	Russell, Diane Marie	Dion, Mark N.	Sweet, Elizabeth A.	Eves, Mark W.	Mills, Janet T.
132232	405.0	487112	UOCAVA	Sweet, Elizabeth A.	Eves, Mark W.	Cote, Adam Roland	undervote	undervo
132233	416.0	230111	UOCAVA	Mills, Janet T.	Eves, Mark W.	Cote, Adam Roland	Sweet, Elizabeth A.	undervo
132234	421.0	516111	UOCAVA	Cote, Adam Roland	Eves, Mark W.	Mills, Janet T.	undervote	undervo
132235	424.0	512111	UOCAVA	Mills, Janet T.	Cote, Adam Roland	Sweet, Elizabeth A.	Dion, Mark N.	Russell, Diane Marie

	Cast Vote Record	Precinct	Ballot Style	DEM Governor 1st Choice	DEM Governor 2nd Choice	DEM Governor 3rd Choice	DEM Governor 4th Choice	DE Governor 5 Choice
132236	427.0	173111	UOCAVA	Sweet, Elizabeth A.	Dion, Donna J.	Eves, Mark W.	Russell, Diane Marie	Dion, Mark N.
132237	430.0	176111	UOCAVA	Dion, Donna J.	Cote, Adam Roland	Mills, Janet T.	Russell, Diane Marie	Eves, Mark W.
132238	437.0	206111	UOCAVA	Sweet, Elizabeth A.	Mills, Janet T.	Eves, Mark W.	Cote, Adam Roland	Dion, Mark N.
132239	440.0	193111	UOCAVA	Cote, Adam Roland	Mills, Janet T.	undervote	undervote	undervo
132240	443.0	345111	UOCAVA	Mills, Janet T.	Cote, Adam Roland	undervote	undervote	undervo
132241	446.0	510114	UOCAVA	Mills, Janet T.	Eves, Mark W.	Cote, Adam Roland	undervote	undervo
132242	449.0	500111	UOCAVA	Mills, Janet T.	Sweet, Elizabeth A.	Dion, Mark N.	undervote	undervo
132243	452.0	56111	UOCAVA	Mills, Janet T.	Eves, Mark W.	Sweet, Elizabeth A.	Russell, Diane Marie	Dion, Mark N.
132244	455.0	345111	UOCAVA	Mills, Janet T.	Cote, Adam Roland	undervote	undervote	undervo
132245	458.0	366112	UOCAVA	Sweet, Elizabeth A.	Eves, Mark W.	Mills, Janet T.	Cote, Adam Roland	Russell, Diane Marie
132246	461.0	160111	UOCAVA	Eves, Mark W.	Cote, Adam Roland	Dion, Mark N.	Mills, Janet T.	undervo
132247	473.0	498112	UOCAVA	Eves, Mark W.	Russell, Diane Marie	Sweet, Elizabeth A.	undervote	undervo
132248	476.0	480111	UOCAVA	Mills, Janet T.	Eves, Mark W.	undervote	undervote	undervo

	Cast Vote Record	Precinct	Ballot Style	DEM Governor 1st Choice	DEM Governor 2nd Choice	DEM Governor 3rd Choice	DEM Governor 4th Choice	DE Governor 5 Choice
132249	479.0	8111	UOCAVA	Mills, Janet T.	Sweet, Elizabeth A.	Cote, Adam Roland	Eves, Mark W.	undervo
132250	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
132251	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
132252	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
132253	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
132254	NaN	NaN	112	NaN	NaN	NaN	NaN	NaN

132255 rows × 25 columns

```
In [9]: df = pandas.read_excel("voting_data/Maine/Maine/June 2018/Maine Democrat
ic Primary for Governor CVR.xlsx",
                               sheet_name=xl.sheet_names[2])
```

In [10]: df

Out[10]:

	Municipality Name	Total Votes	Average Number of Rankings	Undervotes	First Round Overvotes	Exhausted by Overvote	Total Overvotes	Final Round Missing Votes
0	Abbot	34	3.617647	2.0	NaN	NaN	NaN	NaN
1	Acton	218	3.995413	9.0	NaN	NaN	NaN	NaN
2	Addison	89	3.393258	3.0	NaN	NaN	NaN	NaN
3	Albany Twp	48	3.875000	1.0	NaN	NaN	NaN	NaN
4	Albion	118	3.940678	11.0	NaN	NaN	NaN	NaN
5	Alexander	27	3.185185	5.0	NaN	NaN	NaN	NaN
6	Alfred	330	3.857576	28.0	NaN	NaN	NaN	NaN
7	Allagash	24	3.500000	4.0	NaN	NaN	NaN	NaN
8	Alna	144	4.173611	10.0	NaN	NaN	NaN	NaN
9	Alton	42	3.357143	2.0	NaN	NaN	NaN	NaN
10	Amherst	27	4.222222	0.0	NaN	NaN	NaN	NaN
11	Amity	8	5.750000	1.0	NaN	NaN	NaN	NaN
12	Andover	62	3.209677	7.0	NaN	NaN	NaN	NaN
13	Anson	109	4.201835	3.0	NaN	NaN	NaN	NaN
14	Appleton	188	4.037234	8.0	NaN	NaN	NaN	NaN
15	Argyle Twp	14	4.142857	1.0	NaN	NaN	NaN	NaN
16	Arrowsic	145	4.406897	7.0	NaN	NaN	NaN	NaN
17	Arundel	373	4.243968	18.0	NaN	NaN	NaN	NaN
18	Ashland	57	3.736842	8.0	NaN	NaN	NaN	NaN
19	Athens	50	2.800000	3.0	NaN	NaN	NaN	NaN
20	Atkinson	30	3.133333	5.0	NaN	NaN	NaN	NaN
21	Auburn All	292	3.448630	20.0	NaN	NaN	NaN	NaN
22	Auburn W1	288	4.229167	12.0	NaN	NaN	NaN	NaN
23	Auburn W2	435	3.949425	20.0	NaN	NaN	NaN	NaN
24	Auburn W3	314	3.891720	10.0	NaN	NaN	NaN	NaN
25	Auburn W4	188	4.367021	6.0	NaN	NaN	NaN	NaN
26	Auburn W5	270	4.040741	11.0	NaN	NaN	NaN	NaN
27	Augusta All	269	4.245353	14.0	NaN	NaN	NaN	NaN
28	Augusta W1	344	4.627907	5.0	NaN	NaN	NaN	NaN
29	Augusta W2	345	4.104348	10.0	NaN	NaN	NaN	NaN

	Municipality Name	Total Votes	Average Number of Rankings	Undervotes	First Round Overvotes	Exhausted by Overvote	Total Overvotes	Fin Roun Mi Vot
...
639	488112	1	3.000000	0.0	NaN	NaN	NaN	NaN
640	490111	1	7.000000	0.0	NaN	NaN	NaN	NaN
641	491113	2	5.000000	0.0	NaN	NaN	NaN	NaN
642	492111	1	3.000000	0.0	NaN	NaN	NaN	NaN
643	493112	2	7.000000	0.0	NaN	NaN	NaN	NaN
644	496123	1	7.000000	0.0	NaN	NaN	NaN	NaN
645	496211	2	7.000000	0.0	NaN	NaN	NaN	NaN
646	496321	2	4.000000	0.0	NaN	NaN	NaN	NaN
647	496521	2	7.000000	0.0	NaN	NaN	NaN	NaN
648	496522	1	4.000000	0.0	NaN	NaN	NaN	NaN
649	497111	2	6.000000	0.0	NaN	NaN	NaN	NaN
650	498112	1	3.000000	0.0	NaN	NaN	NaN	NaN
651	499111	1	7.000000	0.0	NaN	NaN	NaN	NaN
652	499112	1	7.000000	0.0	NaN	NaN	NaN	NaN
653	500111	1	3.000000	0.0	NaN	NaN	NaN	NaN
654	502111	1	5.000000	0.0	NaN	NaN	NaN	NaN
655	504112	1	7.000000	0.0	NaN	NaN	NaN	NaN
656	504412	1	1.000000	0.0	NaN	NaN	NaN	NaN
657	505111	1	7.000000	0.0	NaN	NaN	NaN	NaN
658	508111	2	5.500000	0.0	NaN	NaN	NaN	NaN
659	510112	1	7.000000	0.0	NaN	NaN	NaN	NaN
660	510114	4	5.000000	0.0	NaN	NaN	NaN	NaN
661	512111	2	6.000000	0.0	NaN	NaN	NaN	NaN
662	514131	1	3.000000	0.0	NaN	NaN	NaN	NaN
663	515111	4	3.750000	0.0	NaN	NaN	NaN	NaN
664	516111	1	3.000000	0.0	NaN	NaN	NaN	NaN
665	517211	1	3.000000	0.0	NaN	NaN	NaN	NaN
666	519112	1	1.000000	0.0	NaN	NaN	NaN	NaN
667	599111	1	7.000000	0.0	NaN	NaN	NaN	NaN

	Municipality Name	Total Votes	Average Number of Rankings	Undervotes	First Round Overvotes	Exhausted by Overvote	Total Overvotes	Fin Roun Mi Vot
668	NaN	132250	NaN	NaN	NaN	NaN	NaN	NaN

669 rows × 13 columns