In [767…
```
import pandas as pd
```

In [ ]:
```
df = pd.read_csv("denver-1.nov.csv")
```

In [771…
```
dftotalstops = df["arrest_made"]
len(df["arrest_made"])
dftotalstops
```

Out[771…
```
0       False
1       False
2       False
3       False
4       False
        ...
6360    False
6361    False
6362    False
6363    False
6364    False
Name: arrest_made, Length: 6365, dtype: bool
```

In [ ]:
```
```

In [ ]:
```
import seaborn as sb


precinctDF = df.groupby("precinct").agg({"arrest_made":sum}).sort_values([("arre
precinctDF = precinctDF.reset_index() # this indexes the rows
precinctDF.columns = ['Precinct','Stops'] # this renames my columns
precinctDF
```

In [626…
```
import seaborn as sb
```

In [627…
```
newDf = df.groupby(["precinct","outcome"]).size()
```

In [628…
```
#this is the amount of warnings issued per precinct
df1 = pd.DataFrame(newDf)
#df1.columns("precinct","outcomes","number")
df1 = df1.sort_values(by = ["outcome",0], ascending= False)

df1warning = df1.iloc[:36]
df1warning = df1warning.reset_index()
df1warning = df1warning.rename(columns = {"precinct":"Precinct", "outcome":"Outc
df1warning
```

Out[628…

	Precinct	Outcome	Amount
0	223	warning	46
1	311	warning	42
2	421	warning	37
3	111	warning	33
4	411	warning	33
5	113	warning	27

	Precinct	Outcome	Amount
6	412	warning	27
7	423	warning	27
8	122	warning	26
9	222	warning	26
10	121	warning	25
11	221	warning	25
12	312	warning	24
13	None	warning	23
14	123	warning	22
15	521	warning	21
16	213	warning	20
17	323	warning	20
18	211	warning	19
19	212	warning	19
20	321	warning	19
21	322	warning	19
22	611	warning	17
23	314	warning	16
24	511	warning	16
25	621	warning	16
26	422	warning	14
27	512	warning	14
28	522	warning	10
29	623	warning	10
30	112	warning	8
31	313	warning	8
32	612	warning	8
33	523	warning	6
34	622	warning	6
35	324	warning	3

In [629…

```
#this is the amount of citations issued per precinct
dfCitations = df1.iloc[36:73]
dfCitations = dfCitations.reset_index()
dfCitations = dfCitations.rename(columns = {"precinct":"Precinct", "outcome":"Ou
dfCitations
```

Out[629…

	Precinct	Outcome	Amount
0	223	citation	60
1	312	citation	59
2	111	citation	52
3	311	citation	49
4	411	citation	46
5	421	citation	40
6	422	citation	40
7	313	citation	39
8	521	citation	39
9	412	citation	38
10	112	citation	36
11	121	citation	36
12	213	citation	35
13	212	citation	33
14	113	citation	30
15	511	citation	30
16	221	citation	28
17	222	citation	28
18	322	citation	28
19	323	citation	27
20	324	citation	26
21	621	citation	26
22	122	citation	25
23	123	citation	25
24	211	citation	24
25	611	citation	23
26	512	citation	20
27	314	citation	19
28	423	citation	17
29	None	citation	16
30	623	citation	13
31	522	citation	11
32	523	citation	11
33	612	citation	11
34	622	citation	10

	Precinct	Outcome	Amount
35	321	citation	9
36	759	citation	1

In [630…

```
#amount of arrest made by each precinct
dfArrest = df1.iloc[73:]
dfArrest = dfArrest.reset_index()
dfArrest = dfArrest.rename(columns = {"precinct":"Precinct", "outcome":"Outcome"
dfArrest
```

Out[630…

	Precinct	Outcome	Amount
0	223	arrest	78
1	211	arrest	65
2	411	arrest	54
3	621	arrest	50
4	311	arrest	49
5	412	arrest	46
6	612	arrest	43
7	111	arrest	41
8	611	arrest	41
9	112	arrest	40
10	122	arrest	40
11	121	arrest	39
12	212	arrest	39
13	221	arrest	33
14	623	arrest	28
15	123	arrest	26
16	421	arrest	26
17	521	arrest	26
18	622	arrest	24
19	213	arrest	23
20	None	arrest	23
21	312	arrest	19
22	222	arrest	16
23	422	arrest	15
24	113	arrest	14
25	512	arrest	14
26	511	arrest	12

	Precinct	Outcome	Amount
27	313	arrest	11
28	323	arrest	10
29	314	arrest	8
30	322	arrest	8
31	423	arrest	8
32	321	arrest	6
33	522	arrest	4
34	523	arrest	4
35	324	arrest	2

In [631…
```
df1.pivot_table(index = "outcome", columns = ["precinct"]).sort_values(by="outco
```

Out[631…

precinct	111	112	113	121	122	123	211	212	213	221	...	521	522	523	611	6
outcome																
warning	33.0	8.0	27.0	25.0	26.0	22.0	19.0	19.0	20.0	25.0	...	21.0	10.0	6.0	17.0	8
citation	52.0	36.0	30.0	36.0	25.0	25.0	24.0	33.0	35.0	28.0	...	39.0	11.0	11.0	23.0	1
arrest	41.0	40.0	14.0	39.0	40.0	26.0	65.0	39.0	23.0	33.0	...	26.0	4.0	4.0	41.0	43

3 rows × 37 columns

In [632…
```
#The is the the percent of arrest made
AverageArrest = sum(dfArrest["Amount"])/len(dfArrest)
AverageArrest
```

Out[632… 27.36111111111111

In [633…
```
#This is the percent of citations given
AverageCitation = sum(dfCitations["Amount"])/len(dfCitations)
AverageCitation
```

Out[633… 28.64864864864865

In [634…
```
#This is the percent of warnings issued
AverageWarning = sum(df1warning['Amount'])/len(df1warning)
AverageWarning
```

Out[634… 20.333333333333332

In [773…
```
AverageCitation+AverageWarning
```

Out[773… 48.98198198198198

In [649…
```
districtDf = df.groupby(["district","outcome"]).size()
districtDf = pd.DataFrame(districtDf)
```

```
districtDf = districtDf.reset_index()
#districtDf = districtDf.sort_values(by =["district","outcome"] , ascending= Fal
districtDf
```

Out[649…

	district	outcome	0
0	1	arrest	200
1	1	citation	204
2	1	warning	141
3	2	arrest	254
4	2	citation	208
5	2	warning	155
6	3	arrest	113
7	3	citation	256
8	3	warning	151
9	4	arrest	149
10	4	citation	181
11	4	warning	138
12	5	arrest	60
13	5	citation	111
14	5	warning	67
15	6	arrest	186
16	6	citation	83
17	6	warning	57
18	7	citation	1
19	None	arrest	23
20	None	citation	16
21	None	warning	23

In [ ]:

In [764…
```
pivot = districtDf.pivot_table(index = "outcome", columns = ["district"]).sort_v
```

In [765…
```
pivot = pivot.rename(columns = {0:"Amount of Issues"})
```

In [766…
```
#This is a pivot table for each amount of each issue given based on district
import matplotlib
pivot = pivot.reset_index()
pivot = pivot.fillna(0)
pivot
```

Out[766…

outcome	Amount of Issues							
district	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**None**

	outcome	Amount of Issues							
district		1	2	3	4	5	6	7	None
0	warning	141.0	155.0	151.0	138.0	67.0	57.0	0.0	23.0
1	citation	204.0	208.0	256.0	181.0	111.0	83.0	1.0	16.0
2	arrest	200.0	254.0	113.0	149.0	60.0	186.0	0.0	23.0

In [762…
```
pivot = pivot.to_json(orient = "index")
f = open("data.json","w")
f.write(pivot)
```

Out[762…
```
915
```

In [ ]:

In [ ]:

In [ ]: