Data Visualization assignment:

Test Data :

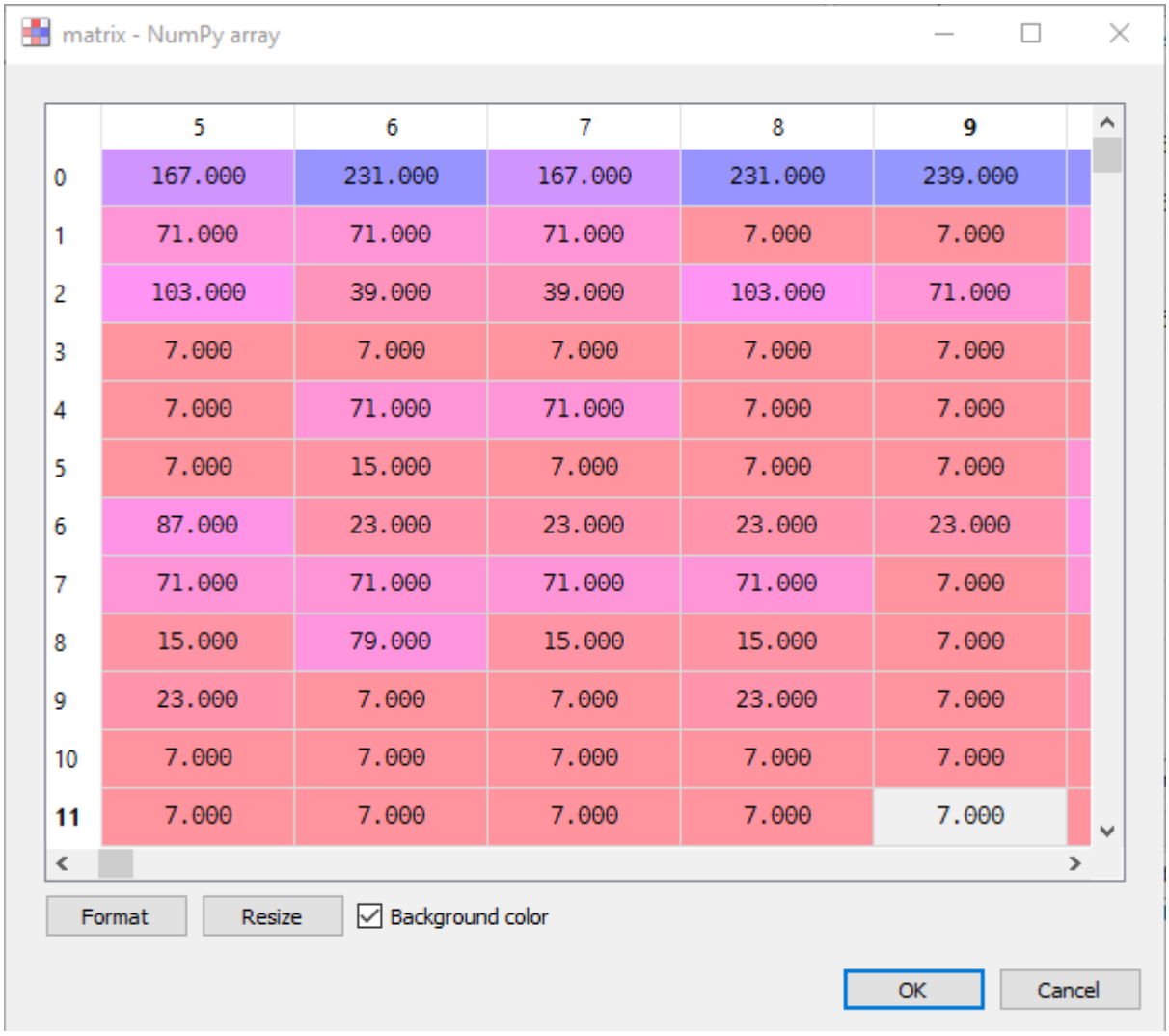
ftp://ftp.fec.gov/FEC/Presidential_Map/2008/P00000001/P00000001-ALL.zip

Pseudo Code :

```
1. matrix[256][256] initalize
2. for (i=0;i<256;i++) {
3.       for (j=0;j<256;j++)  {
4.              eightbitno=0;
                /*-------------------------------------------------------------------------------------
                name-Ist bit, receipt_amt-'IInd' bit, receipt_dt-'IIIrd' bit, occupation-'IVth' bit,
                employer-'Vth' bit, form_tp='VIth', city='VIIth' , state='VIIIth'
                -------------------------------------------------------------------------------------*/
5.              x_vector=retrieved eight selected values of row[i]
6.              y_vector=retrieved eight selected values of row[j]
7.              if(x_vector[name]==y_vector[name])
                        eightbitno[0]=1
8.              else eightbitno[0]=0
9.              if(x_vector[receipt_amt]>y_vector[receipt_amt])
                        eightbitno[1]=1
10.             else eightbitno[1]=0
                //normalisation of date so that both can be compared
11.             if(x_vector[receipt_dt]>y_vector[receipt_dt])
                        eightbitno[2]=1
12.             else eightbitno[2]=0
….              // Similary for rest attributes
13.             matrix[i][j]=eightbitno;
        }
}
14. print matrix as image
```

Observations :

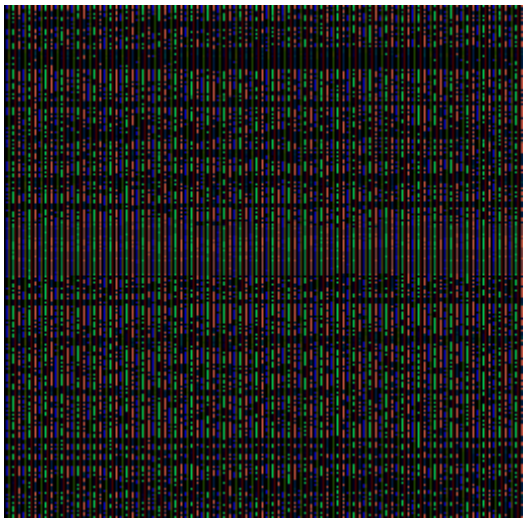
1. 256 **X** 256 matrix :



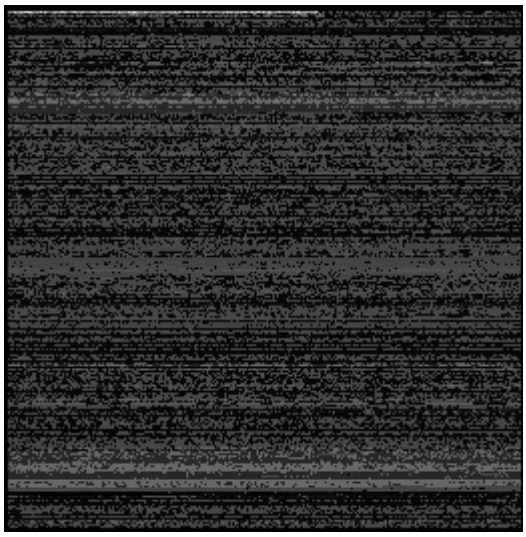
	5	6	7	8	9
0	167.000	231.000	167.000	231.000	239.000
1	71.000	71.000	71.000	7.000	7.000
2	103.000	39.000	39.000	103.000	71.000
3	7.000	7.000	7.000	7.000	7.000
4	7.000	71.000	71.000	7.000	7.000
5	7.000	15.000	7.000	7.000	7.000
6	87.000	23.000	23.000	23.000	23.000
7	71.000	71.000	71.000	71.000	7.000
8	15.000	79.000	15.000	15.000	7.000
9	23.000	7.000	7.000	23.000	7.000
10	7.000	7.000	7.000	7.000	7.000
11	7.000	7.000	7.000	7.000	7.000

2. visualizing above matrix in image :

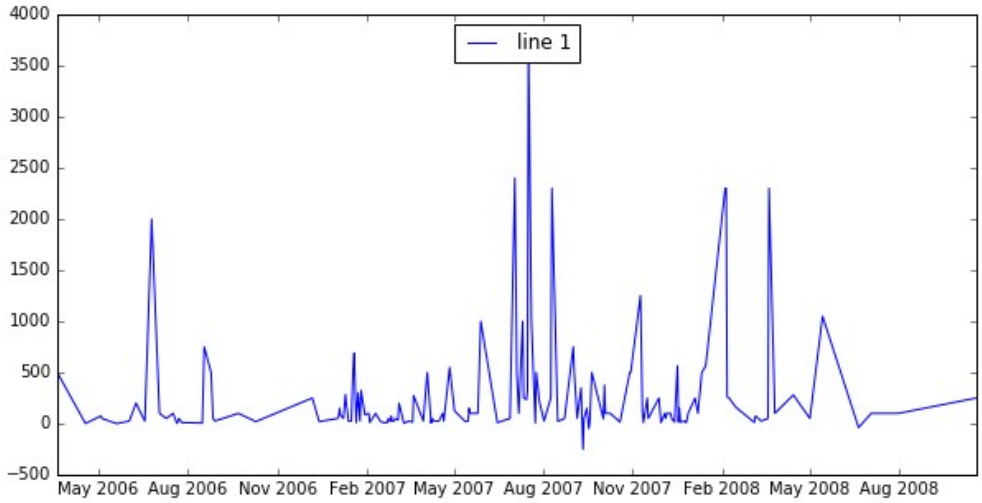
   a) Colored image



   b) Black and white image



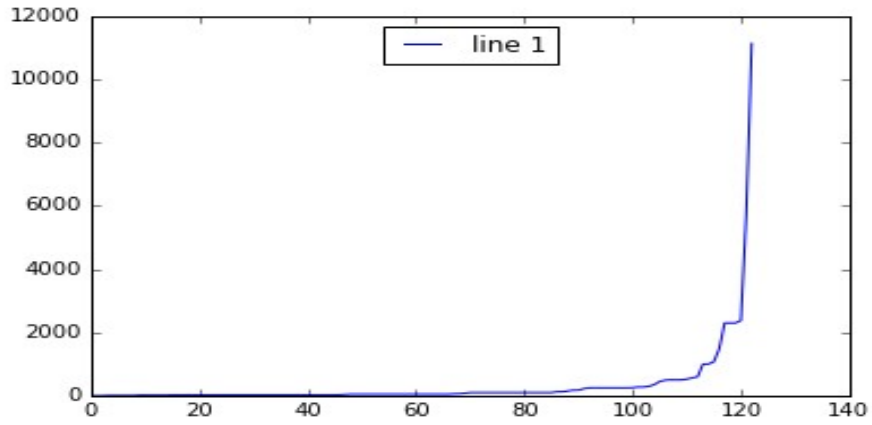
c) **receipt_dt** vs **receipt_amt** (receipt_dt in sorted order for first 256 records)



d) **occupation** vs **receipt_amt** (receipt_amt in sorted order)

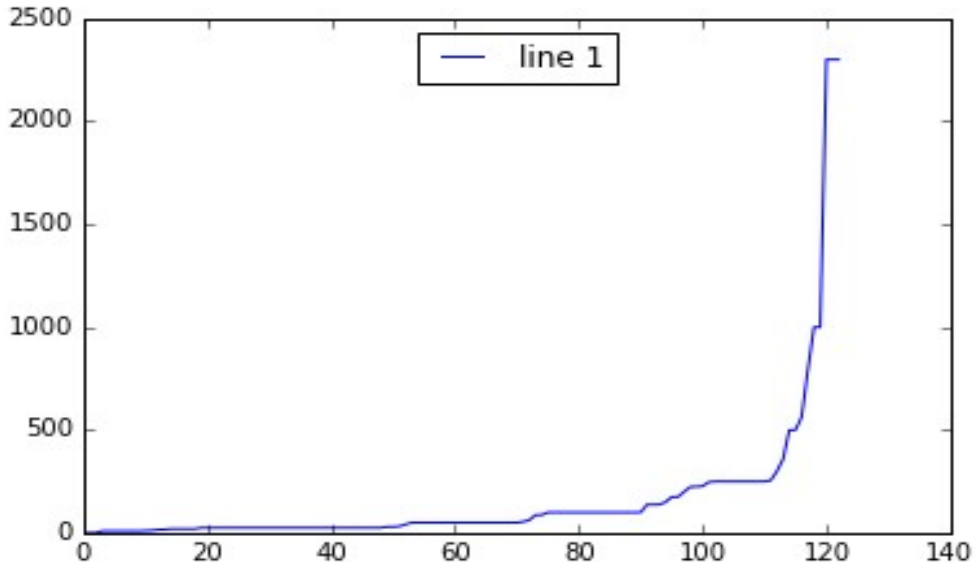
Drawn graph depicts that professions like

- 'MANAGER',
- 'POLITICAL CONSULTANT',
-'DIRECTOR - WEB & TECHNOLOGY SERVICES'
-'PRESIDENT/OWNER' etc., total donated amount is least.

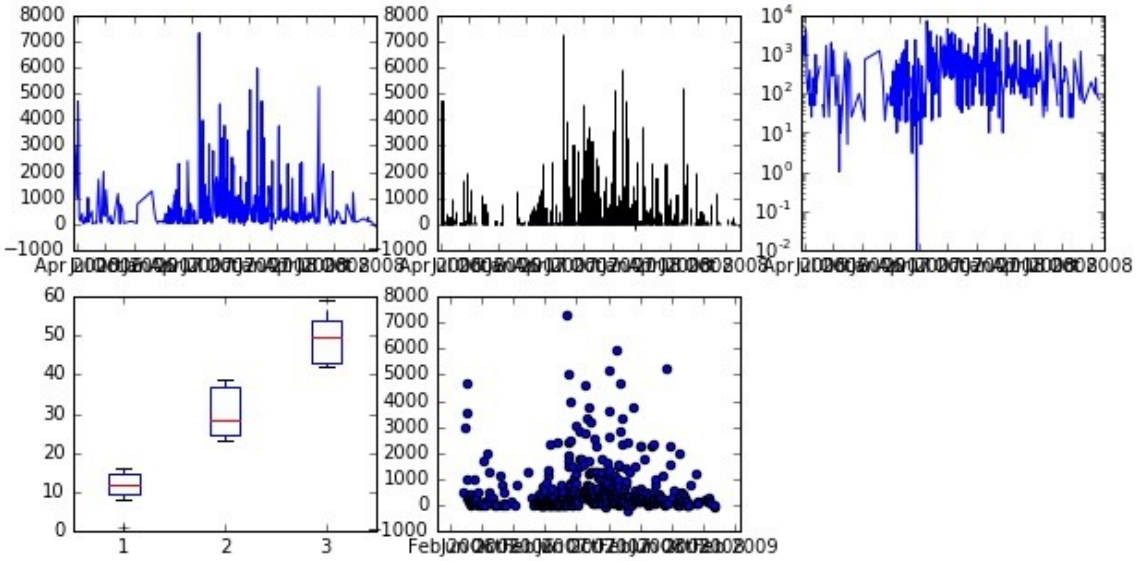


e) **occupation** vs **receipt_amt per person** (receipt_amt in sorted order)

it showed that professiosn like STUDENT, CONTRACTOR, GURADUATE STUDENT although total amount donated was more but per preson donated amount was less.



f) Similarly we can visualize data by various other types of graphical representation like bar charts, line charts, box plots, scatter plots, and choropleths (map plots).



CONCLUSION:

In the end to conclude Visualizations are used to succinctly and visually describe different parts or different interpretations of your data.

Visualizations for two purposes:

1. Exploring: Quickly viewing the dataset to spot outliers and trends and form hypotheses.

2. Storytelling: Illustrating a piece of data that is cleaned, and processed in order to make a point.