Project-1:

The project is to show Dr John Snow’s 1854 London cholera epidemic data in visually interactive way. The intent of the project is to show the location of deaths relative to the pumps location in the map, which can help to conclude on the possible root cause of the epidemic and source of contamination. This is one of the very initial attempt of cognition through visual tool. Adequate graphical representation of death trend along time scale is also provided.

Drawing of the Map:

The first step in this project was to draw the map. After lot of brain storming and thinking, I could conclude that the best way to draw the map will be to use the principle of “Divide and Conquer”. Hence I decide to break the full set of points into subsets based on the value of N. The first step was to plot the coordinate points and then join the points in each subsets. To draw the map I did some modification to the streets datafile as follows:

1. Converted the file to a .csv
2. Eliminated the redundant data A
3. Added N to a column
4. So now I have 3 columns in the streets.csv file, which are L, X and Y denoting number of lines to be drawn between the line joining X and Y.

Loaded the data into an array (dataset) with each element as a set of L,X and Y.--> [[L1, X1, Y1], [L2, X2, Y2], [L3, X3, Y3], [L4, X4, Y4]……………………….]. Now the biggest challenge was how to join the points based on the values of Lis. So what I did was, I loaded Lis in a separate array lineNumbers. Now I iterated through all values of Lis and created an array datasetMap which is having each element as array of points (Xi, Yi) as many as Li.

Define scale and svg. To draw the map I joined points within each subarrays of datasetMap.

Plot the pumps in the map:

Loaded the pumps.csv file into an array (datasetPumps). Plotted the points (scatter plot) on the same svg on which the map is drawn.

Plot the deaths:

Loaded deaths.age.csv into an array (datasetDeaths) and also loaded data into 6 different arrays (datasetDeaths0, datasetDeaths1, datasetDeaths2, datasetDeaths3, datasetDeaths4, datasetDeaths5, datasetmale and datasetfemale) based on age. Created a dropdown list with options as "All", "0-10", "11-20", "21-40", "41-60", "61-80", "> 80", “male”, ”female”.

Now in the onchange() function of the dropdown list I am plotting the deaths in the above map only corresponding to the age selected.

Plot the death days:

Since I am learning D3 and doing the project hence I had to spend substantial time in implementing the way I designed.

Loaded deathdays.csv. Plotted the points as scattered plot. Joined the points. On mouse over of each points showing the date and number of deaths on that day in tooltip.

The next was to get a similar time line graph for male and female deaths by date. I used the datasetmale and datasetfemale arrays which I had created while loading deaths.age.csv.

Challenges:

The biggest challenge I faced is in linking the timeline graph and display of deaths in the map which I finally could not do due to my limitation in D3 coding. I attempted to use bootstrap for cross linking between graphs and death plots in the map, but that resulted in distortion and errors in my existing map and graph.