Task1: SPLOM

<https://public.tableau.com/profile/myeonghan.ryu#!/vizhome/Assignment5_15722392161490/Task1SPLOM>

Task2: Bubble Chart

<https://public.tableau.com/profile/myeonghan.ryu#!/vizhome/Assignment5_15722392161490/Task2BubbleChart>

Task3: Graph

<https://public.tableau.com/profile/myeonghan.ryu#!/vizhome/Assignment5_15722392161490/Task3Graph>

Task4: Discussion

Considering the learning curve of Tableau and D3.js, that of D3.js is extremely steeper than that of Tableau. Though it took tens of hours to do several tasks using D3.js, spending a few hours was enough using Tableau to do three tasks. To learn to implement visualizations using D3.js, in addition to the knowledge about information visualization, one needs to have quite a good understanding about D3.js library which is famous for its steep learning curve, as well as about Javascript language, including asynchronicity, eventloop, the factors needed to render specific type of svg elements, difference of using “this” keyword with “function” keyword and arrow function, array methods, etc. Also, even with understanding of D3.js library and Javascript language, debugging takes lots of time. However, Tableau only requires good knowledge about information visualization, and simple practices of using the tool with dragging interaction makes one can make visualization easily. It’s very easy to draw multiple visualizations with essential features such as tooltip. Also, user can use custom options about marks, though the default options quite worked well for this assignment.

However, comparing the quality of the visualizations, I think D3.js gives more customizability, especially implementing interactivity. For example, in the task3, the visualization implemented using D3.js supported filtering by minimum value of the weight of edges using a slider. Users could easily set minimum value by manipulating slider. Though Tableau also supports filtering, the interactivity of it is quite limited. When applying multiple filters, users can manipulate a filter after opening a detail window of a filter, whereas multiple filters can be implemented in more accessible way using D3.js. When some task engages using multiple filters interactively, this point can make difference in efficiency. Also, some default marks were not very effective, such as the colors assigned to countries in the task1 and the size of circles in task2. The default color mapping of countries was blue for Europe, orange for Japan, and red for the US. Because orange and red are relatively closer than blue with each, the difference of distribution of the circles corresponding to Japan and US was less clear. Also, the size of the circles corresponding to each country in the task 2 was too small regardless of the size of window. But Tableau has a flexibility to change the color mapping for task1 and the size of circles in the task 2. Using this flexibility, I changed the color mapped to Japan from orange to green and increased the size of circles when I use the full screen.