What are we analyzing?

We are comparing financial performance of different companies. Financial performance is being measured by following attributes:

1) Earnings
2) Revenue
3) Assets
4) Goodwill & intangibles
5) Book value of equity per share

For good performance values of all these attributes should be on the higher side. Since, we don't care about the precise values and we only care about comparison so, we have scaled/normalized values of all these attributes from 0 – 100.

Design Choices:

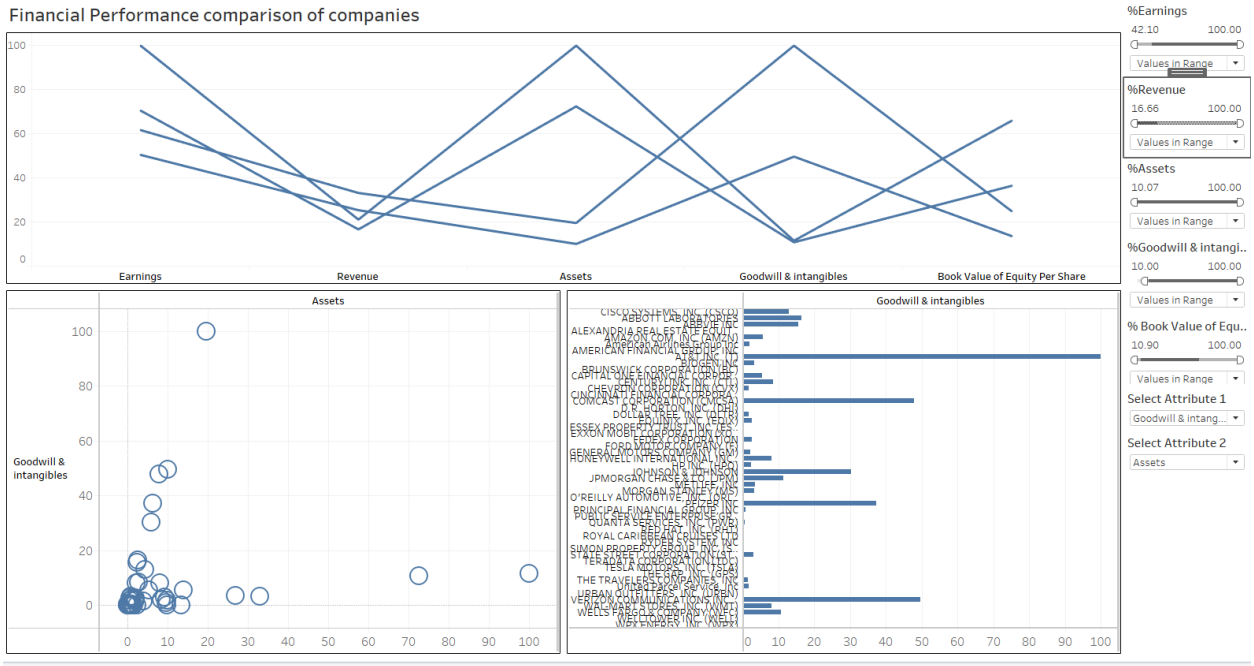
1) **Parallel Coordinates Plot:**

   Since, financial performance is based on multiple attributes so parallel coordinates plots would be a better option to judge the company's performance based on all of these attributes.

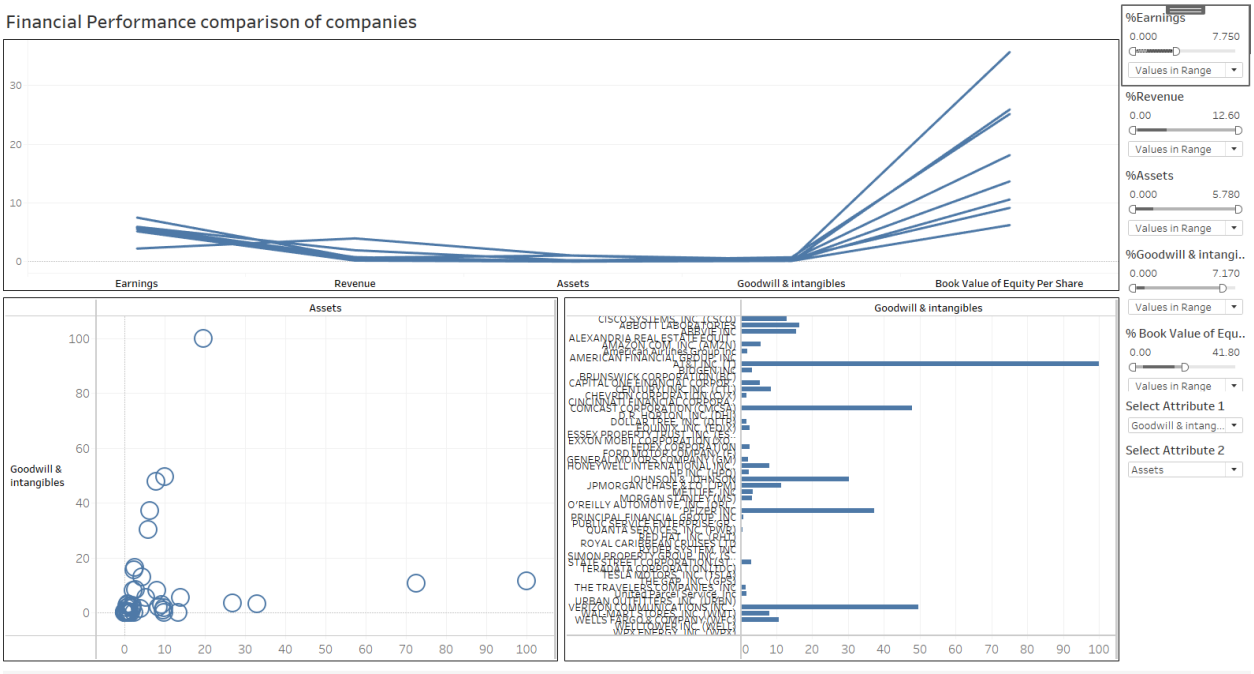
   Company with highest number of values of these attributes that are on the top is performing well. After selecting brush ranges on the axis we can clearly see that JPMORGAN CHASE & CO is performing better than everyone else.

   There is one interesting observation that JPMORGAN CHASE & CO spends much of its earnings in increasing number of assets which in turn increases Book value of equity per share. Same is the trend shown by few other top performing companies. But, there some abnormalities, like Earnings and Assets of TESLA MOTORS are on the lower side but still Book value of equity per share is on the high side. Which shows that TESLA MOTORS has very low amount of liabilities. Similar trend is being shown by other low performing companies like BRUNSWICK CORPORATION. We can conclude that Book value of equity per share is not solely dependent on number of Assets there are other factors which might be contributing positively towards its value.

Parallel coordinate plots for high performing companies:



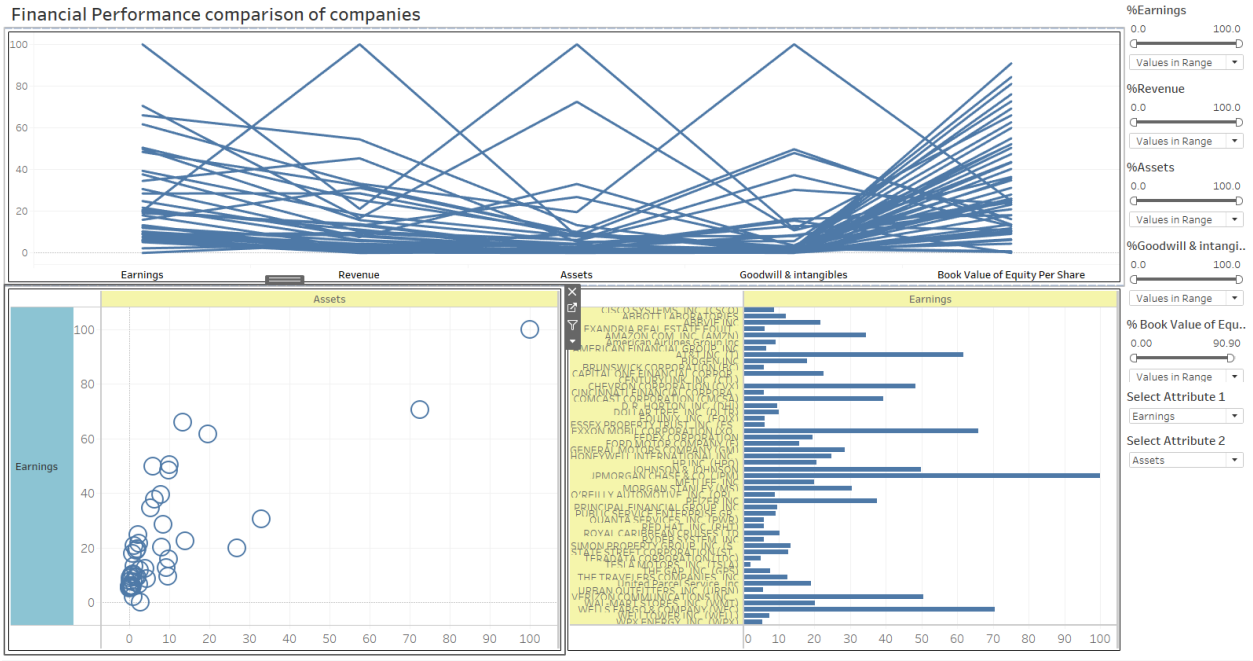
Parallel coordinate plots for low performing companies:



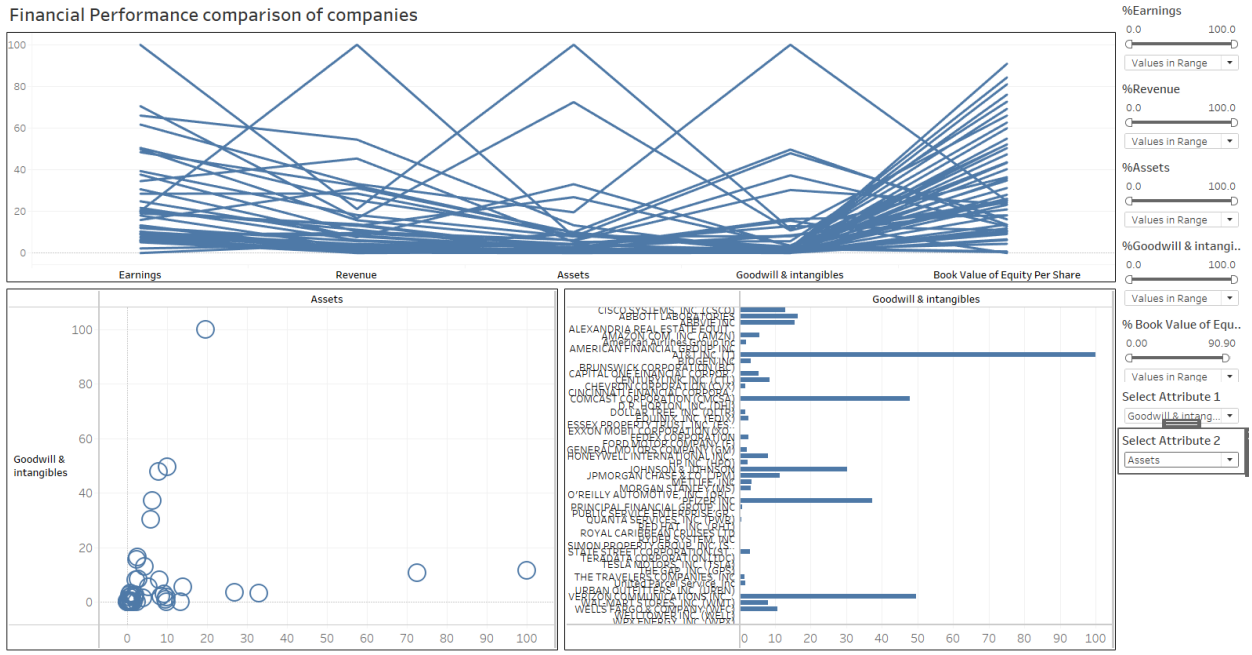
2) Scatter plot:

It is very crucial for investors to know about the spending's of the company. Like where the company spends most of its earnings and if the Assets increases then companies Book value of equity per share increases or not? This correlation between any two attributes is the perfect use case for scatter plots.

We can observe that companies with high Earnings have high number of Assets, which shows that Assets contribute heavily towards the Earnings of the company. Especially, in the case of JPMORGAN CHASE & CO and WELLS FARGO their assets goes along with the earnings.



This scatter plot also clears one confusion, often people compare Assets with Goodwill & intangibles but, we can see that in case of most companies there is inverse relation between these two attributes in this graph. Which tells us that high Assets does not mean high Goodwill & intangibles.

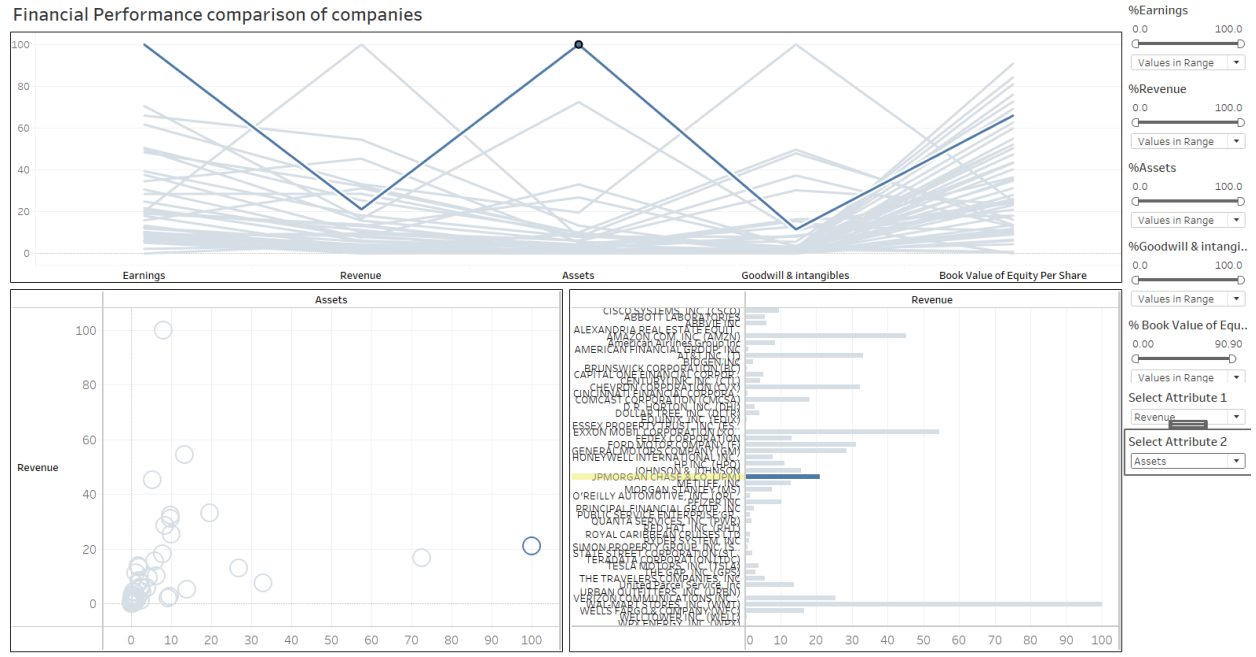


3) Bar graph:

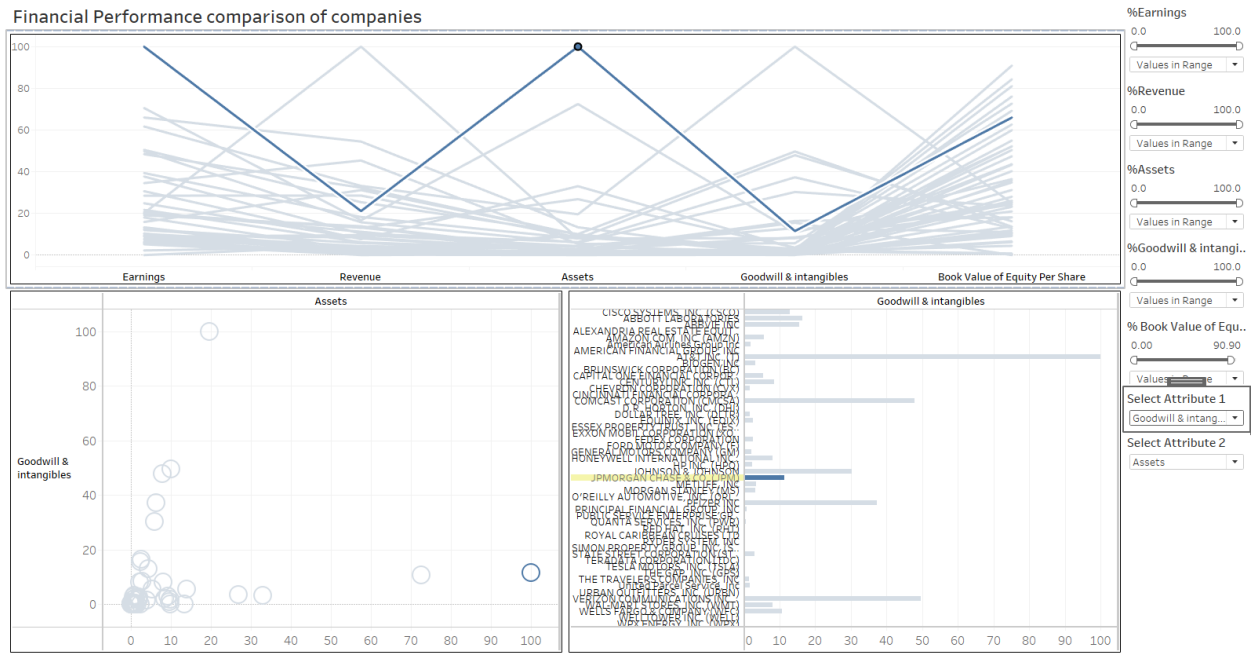
Importance of attributes for each type of investor is different. Like some would prefer high Goodwill & intangibles over Assets some would not. For judging the performance of each company based on any one given attribute becomes very important. Investor can use this graph after doing analysis on Parallel Coordinate Plots to make the final decision about the company in which he/she wants to invest in.

As mentioned before JPMORGAN CHASE & CO appears to be performing well in Parallel Coordinates Plot. But when we look at the bar graph it does not have the best values for the Revenue and Goodwill & intangibles. This information is very difficult to assess using parallel coordinate plots due to cluttering. So, some people might not want to invest in JPMORGAN CHASE & CO for this reason.

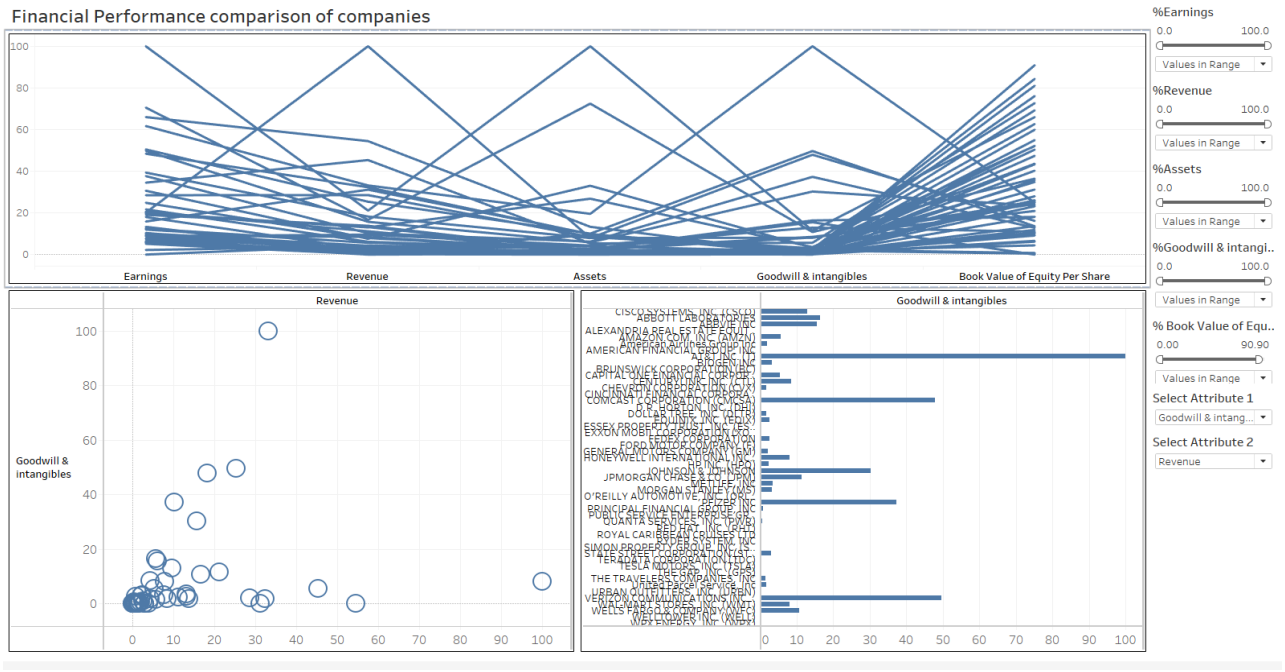
Revenue:



Goodwill & intangibles:



4) Dashboard:



Kept the parallel coordinates plot on the top. Because, for this use case viewer would like to compare companies based on all of the attributes. After filtering out the companies he/she might want to compare companies based on one or two attributes, for this purpose scatter plots and bar graphs are kept in the bottom. All the filters for brushing parallel coordinate's plots are kept on its right side and for selection of Variables/ attributes dropdowns are placed on the right side of scatter plots and bar graph. On selecting plots for subset of companies highlights values for these companies in all of the graphs in the dashboard, this makes analysis and comparison easier.