Midterm Part-2

Q1. The American Middle Class Is No Longer the World's Richest (1st Graph)

**1.**


1. Tasks/Arguments
    a. The visualization tries to analyze the LIS income data for the USA and other advanced economies like Canada and European countries like Germany etc.
    b. The main point made is that the median per capita income in the USA no longer dominates the median per capita income in the rest of the world.
    c. Middle-class income in the USA has been stagnated since 2000 with only nominal growth of 0.3%
2. The LIS data is quantitative data (per capita income) with a temporal dimension (year). The visualization maps this using a trend plot where x-axis captures the temporal aspect (years) of data and y-axis represents the income values. For each country (except the USA) a juxtaposition of this trend line is plotted to compare it with the USA.
3. The juxtaposition of trend lines for each country pair is an effective way to visualize this data. Since the aim of visualization is to show the audience (users) how USA's median per capita income compares to the rest of the advanced economies, this pair-wise comparison achieves that goal. Highlighting the counter-part country (with red) makes this more effective and reversing the choice of color would make it sub-optimal. One downside of this choice is that it shifts the focus of data to the comparison of USA's median per capita income to that of other countries. Other things like percentage growth of a country (per year or decade) could have been analyzed to gain more insight.
4. One bad design choice is the scale on the x-axis. Though one of the conclusions made is that growth stagnated after 2000, but the scale does not show 2000 (it only shows 1980 and 2010). It can be seen that the per capita income in the USA has dropped during recent years, but this could be due to some other reasons. This does

not mean that the USA's income will not rise up after this point. USA and Canada have progressed with almost the same rate (since 1980) and its only due to a recent plunge in USA's graph that Canada has come close to USA's median per capita income. Moreover, there is no explanation why the growth is considered only for the period 2000-2010. This could be improved by marking 2000 on the axis.

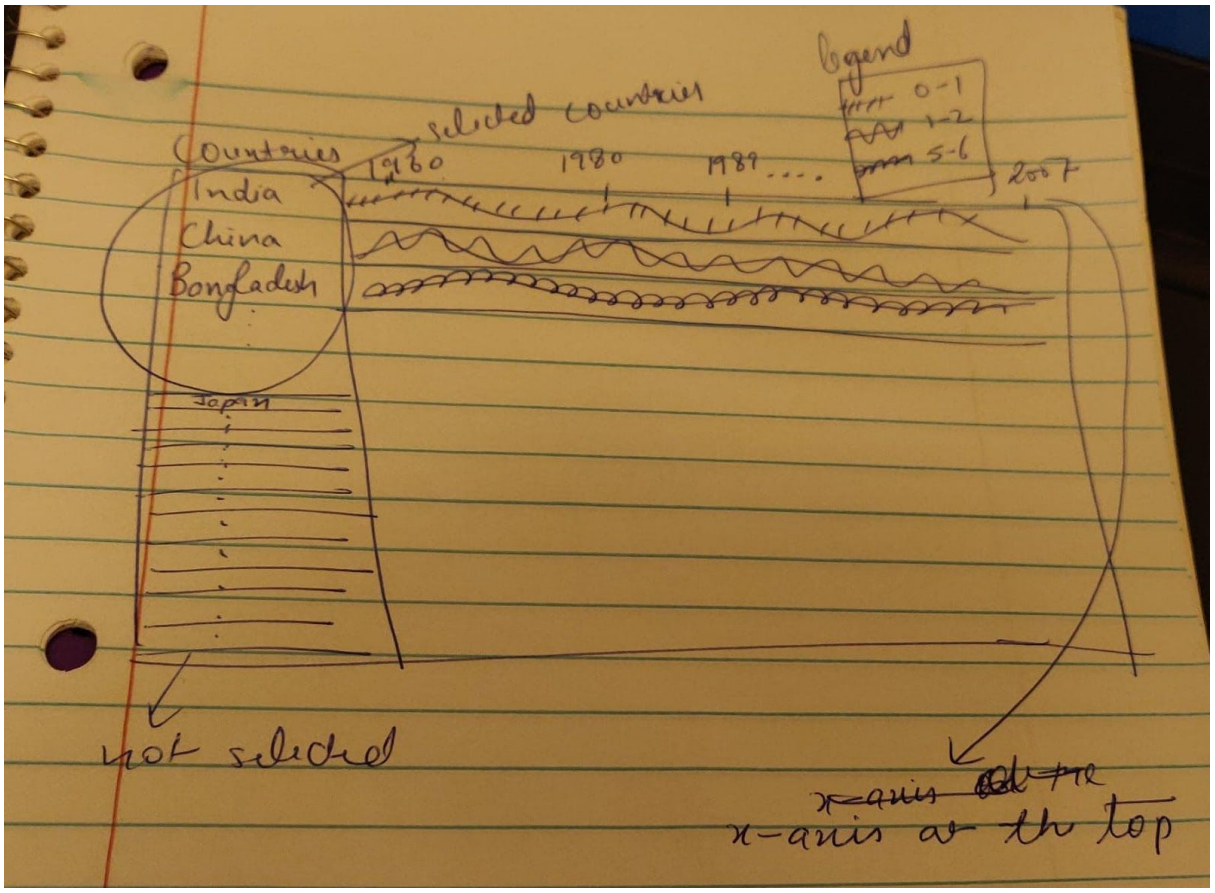
**2.** WHAT 'TECH WORLD' DID YOU GROW UP IN? (Internet Speed Graph)

1. Tasks
    a. The visualization tries to capture the change in internet speed and how it affected the type of media consumption in the USA.
    b. The conclusion from this visualization is that there has been an increase in internet users over the past decades and this has resulted in more digital media consumption than the traditional means like DVDs etc.
2. The visualization is a superposition of three trend lines (no internet, slow internet, and home broadband).
3. Using similar visualization technique in different graphs (eg. tape-DVD-digital graph and internet-speed graph) helps in observing that the tape and no internet, DVD and slow internet, and digital and broadband have similar trend line shapes.
4. Unlike the tape-DVD-digital graph, internet graph is not that dramatic. The slow internet still covers 18% and no internet 16%. This could be misleading as users might conclude these values had the same fate as that of tape in the first graph.

Q2.

The dataset contains information about the ODA received per capita (in USD) by different countries. This is a quantitative attribute. There is also a temporal dimension where the ODA values are given for different years that range from 1960 to 2007.

Since the number of countries is very large, creating a single visualization that captures all the data at once will be chaotic and comparing different countries will be difficult. The visualization below uses a table lens type approach for visualizing this data. But unlike the table lens, this visualization is static and not interactive. The user selects the countries that they need to analyze and then graphs are plotted for only those countries. This gives flexibility to the user. If the user has a big screen they can increase the number of countries. The selection also gives a cohort ability to the visualization. A user might be interested in analyzing only Asian or European countries and they can select only those countries.




Since the values vary a lot (for eg. near 0 for China and in 100s for Cape Verde). The graph does not directly plot these values, but rather a normalization is applied so that graphs can be compared easily. Another solution could be to capture the percentage change in the ODA values in consecutive years instead of absolute values. But since we might need the ODA range values (normalization loses that information), we use different colors for different graph lines. We first divide ODA range into 7-8 bins (eg. 0-1, 5-10, 100-200 etc.) and use a different color for each bin. Since I could not depict color in the rough design I am using a texture for different bins in legend.

This visualization can see the trend for ODA receipts for each country. For countries in similar demographics, the user can compare them side by side and see how the values have changed for such countries. Countries which have similar percentage change over the last years or decades might have other similarities as well. Another question is ‘Which countries have significantly reduced/increased their ODA?’. This can be easily analyzed through the graph.