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Introduction

The term "data visualisation" refers to the graphic presentation of information and data. It efficiently helps audiences comprehend trends and patterns in the data by using a variety of charts to visualise the data. This project's objective is to visualise the dataset that has been provided. The dataset consists of a total of 8 sheets, with tables 1 through 6 containing data on the migrant stock, an annex sheet classifying nations and regions according to key areas, and notes sheet containing a footnote table explaining some of the data in tables 1 through 6. The migrant stock dataset is visualised in this assignment using rules like sort, compare, group, small multiples, subset, and chart junk to produce figures that are simple to read and comprehend.

Method

Table 1 Visualization Method:
I used line graphs to visualise the changes in the major area's international migrant stock at mid-year using the small multiple and subset principles. I started by creating a subset for the major regions. Next, I used the plotly line graph function to construct a small multiple line figure for the international migrant stock float in various regions at mid-year

Table 2 Visualization Method:
To compare the trends in the global population of men and women, I used the bar plot and compare principle. The first step is choosing all the global statistics and then using the bar function to display population changes for each gender during 1990 - 2015.

Table 3 Visualization Method:
By displaying the quartiles (or percentiles) and averages of the migrant rate, I was able to visually depict the distribution of the international migration rate during 1990 - 2015 as well as its skewness. The method is to use the boxplot function to illustrate the rate of international migration across all nations at mid-year, with different colours of the box plot denoting different sexes.

Table 4 Visualization Method:
I used line graphs to visualise the changes in the major area's female international migrant stock at mid-year using the small multiple and subset concepts. In order to build a modest multiple line

figure for the female international migrant stock float in various locations during 1990 - 2015, I created a subset for significant areas and used the plotly line graph tool to do the visualization.

Table 5 Visualization Method:
To visualise the float of the major area's annual international migration rate changes at the mid-year, I used line graphs and the small multiple and subset concepts. The first thing I did was construct a subset for the major places. After that, I used the plotly line graph function to make a small multiple line figure for the annual rate of change float in the several significant areas between 1990 and 2015.

Table 6 Visualization Method:
Since table 6 contains a variety of value kinds, I used three distinct visualisation tools on it. First, I make six horizontal bar charts to show how the top 10 nations with the highest projected refugee stocks fluctuate over time. To further show the variations in the global refugee fraction at the mid-year, I created a line graph. Finally, a bar chart is created to display the annual rate of change for refugees in relation to regions with various levels of development across time.

Results

Figure 1. Table 1 visualization of changes of international migrant in different major area

Figure 1 above demonstrates that between 1990 and 2015, the international migrant stocks of Asia, Europe, and Northern America significantly increased, whereas those of Africa, Latin America & the Caribbean, and Oceania very slightly increased.

Figure 2. Table 2 population changes for each gender during 1990 - 2015

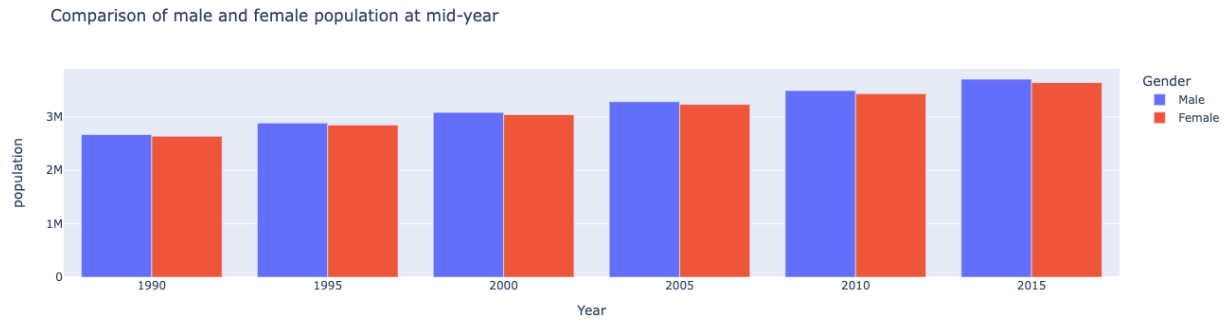
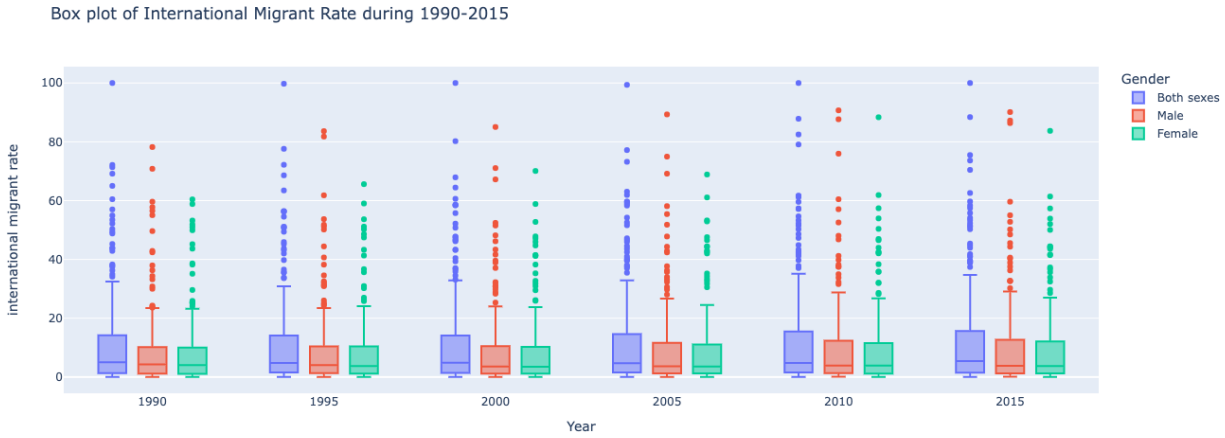


Figure 2 above demonstrates that while the population as a whole is growing through time and that men have historically outnumbered women, the gap is not very large.

Figure 3. Table 3 visualization of international migration rate across all nations at mid-year



All box plots are relatively tall, as seen in figure 3 above, indicating that there are major differences in the mid-year migrant rates between various countries. Additionally, we can see that the median of the male and female migration rates is nearly identical.

Figure 4. Table 4 visualization of changes of female international migrant in different major area

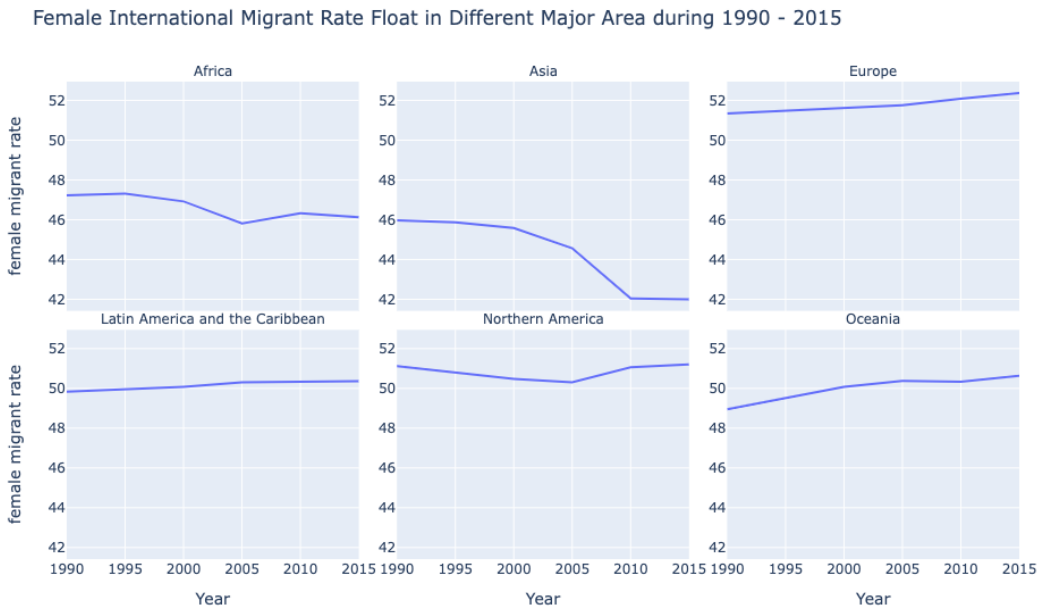
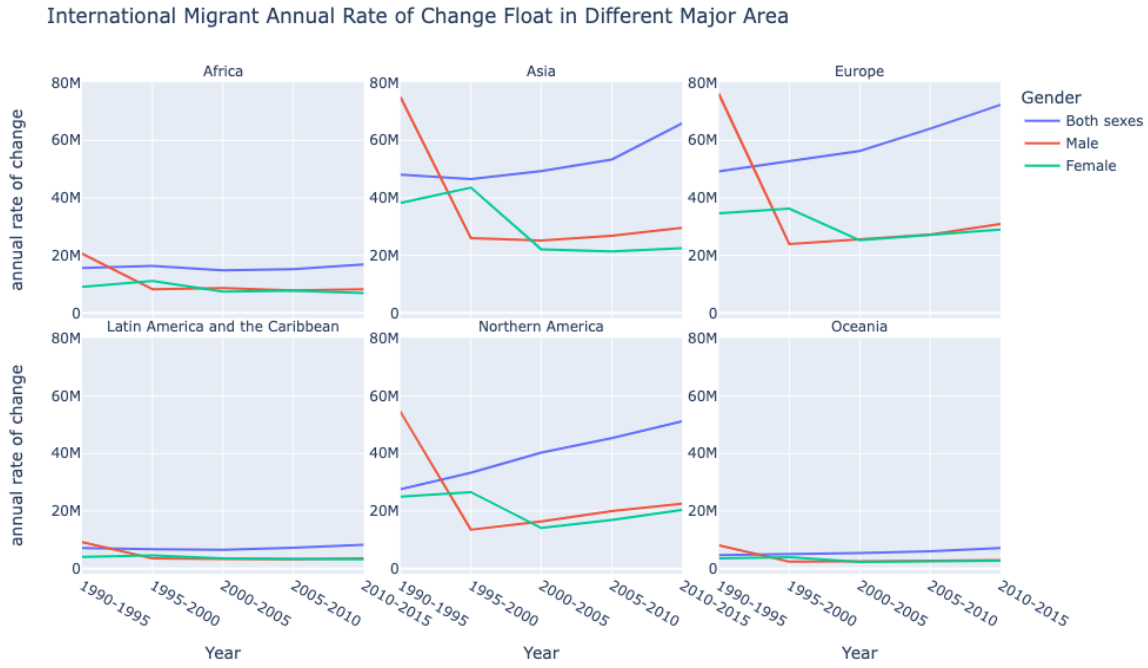


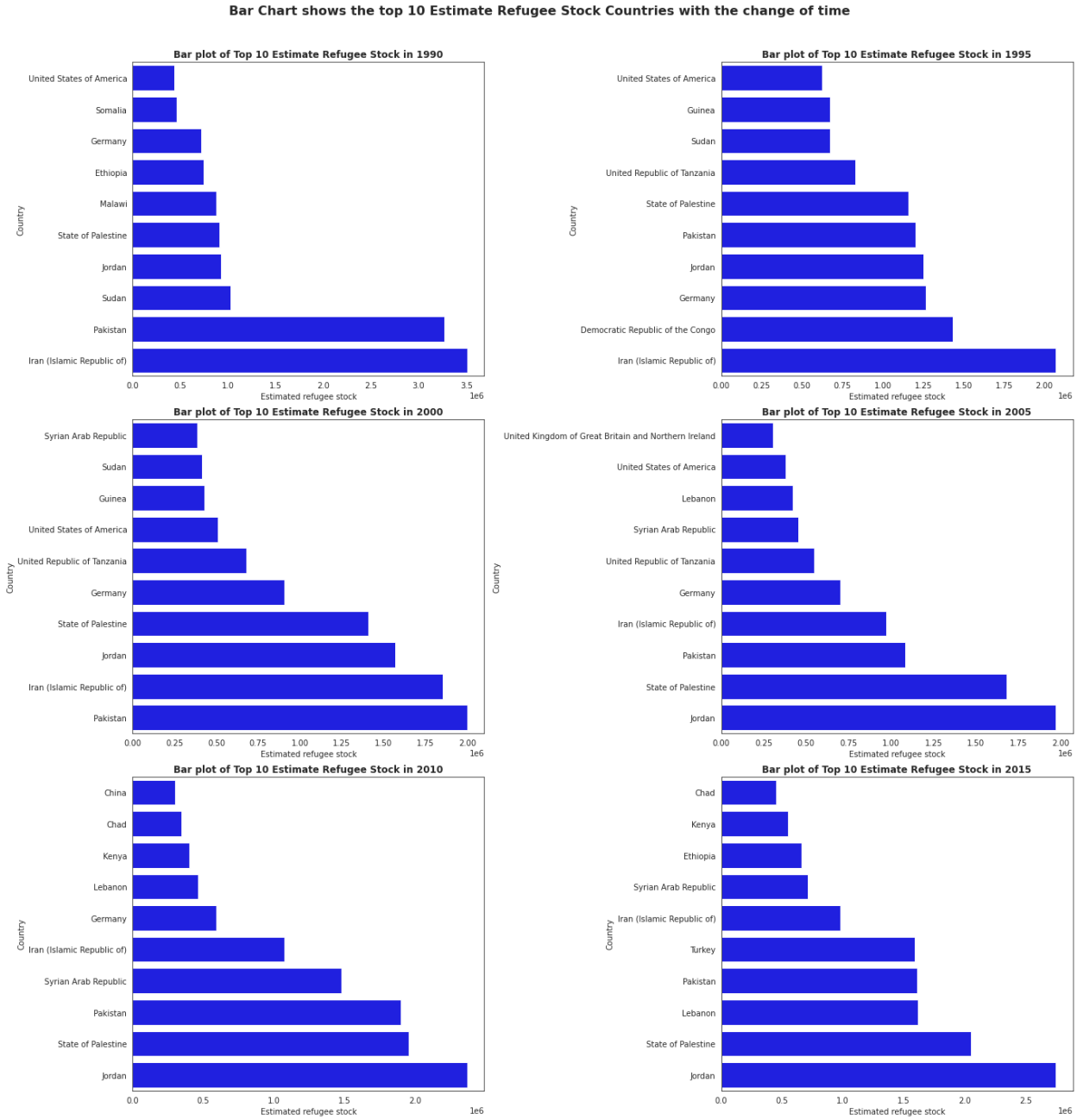
Figure 4 above demonstrates that between 1990 and 2015, the number of international female migrants from Africa and Asia fell, whereas they climbed over that same period from Europe, Latin America & the Caribbean, and Oceania. Between 1990 and 2005, the percentage of women from Northern America who migrated internationally fell, and then it began to rise.

Figure 5. Table 5 visualization of annual rate of change float in different major area



The annual rate of changes for international migrants in all key areas is increasing, as seen in figure 5 above. Between 1990 and 2000, the male international migrant yearly rate of change of certain regions first declined, and then started to rise. The annual rate of change for female international migrants from Africa, Asia, Europe, and North America rose between 1990 and 2000, then dropped between 2000 and 2005 before rising once more between 2005 and 2015.

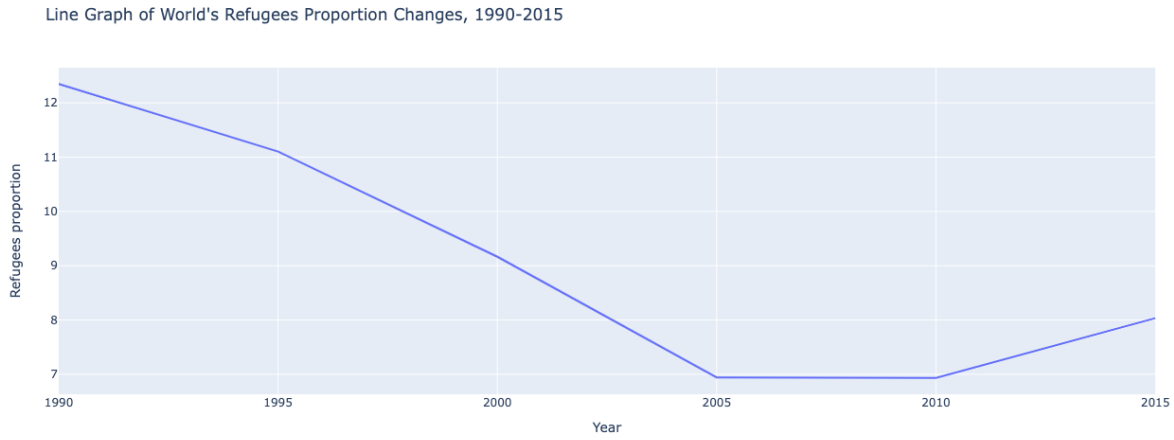
Figure 6.1 Table 6 visualization of top 10 highest refugee stocks countries fluctuate over time



As the above figure 6.2 shows, the changes of top 10 highest refugee stocks countries fluctuate over time is not significat.

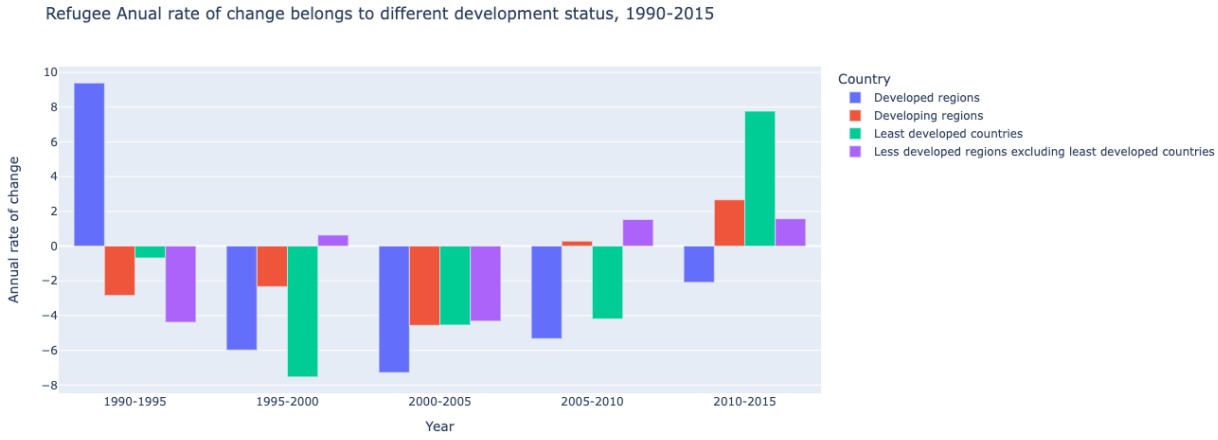
As the above figure 6.1 shows,

Figure 6.2 Table 6 visualization of global refugee fraction changes at the mid-year



As the above figure 6.2 shows, the global refugee fraction decreased between 1990 and 2005, stayed constant between 2005 and 2010, then increased from 2010 to 2015.

Figure 6.3 Table 6 visualization of annual rate of change for refugees with different development situation



The developed region experienced a high positive yearly rate of change for refugees between 1990 and 1995, which then abruptly changed to a negative rate between 1995 and 2000, as shown in figure 6.3 above. The annual rate of change for refugees in developing and less developed nations was negative prior to 2010, but turned positive between 2010 and 2015.

Discussion

The migrant stock dataset was visualised to show how the migrant and refugee populations changed between 1990 and 2015. Overall, as time passes, both the stock of migrants and the stock of refugees is growing. People are looking for a better and more pleasant area to live in addition to having a decent economic condition, which is why the number of foreign migrants is rising. War, which directly causes a huge number of people to be displaced and emigrate, is the primary and direct source of refugee flows. In this decade, the Middle East has seen the majority of violence. Because of this, the top 10 nations with the biggest refugee populations are primarily from the Middle East.