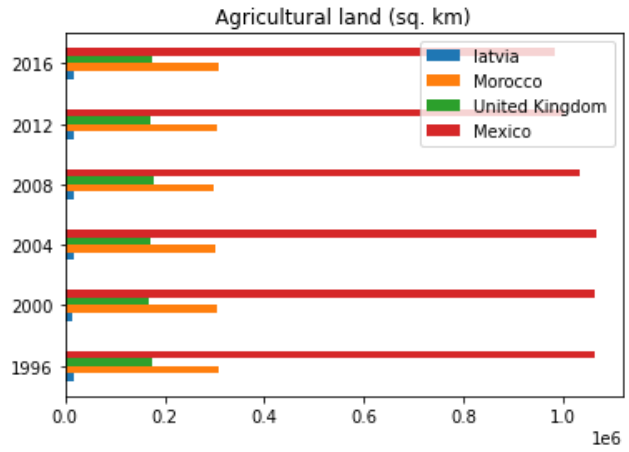
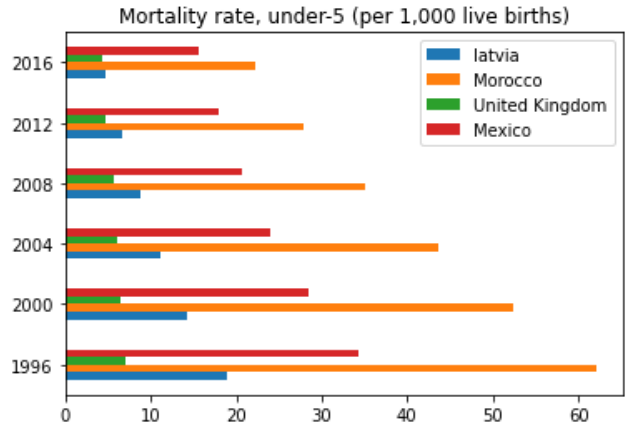
# Climate change data analysis based on World Bank data

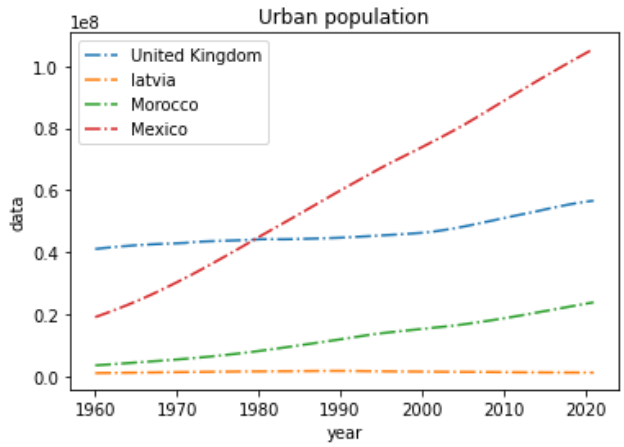
For the analysis 4 countries from 4 different indicators are taken from climate change on world bank data. We have analyzed the countries indicators years from bar plots, line plots and heatmap for correlation. I have used 4 indicators that are Urban Population, Agriculture land (sq. km), Mortality rate, under 5 (per1000 live births) and population total.



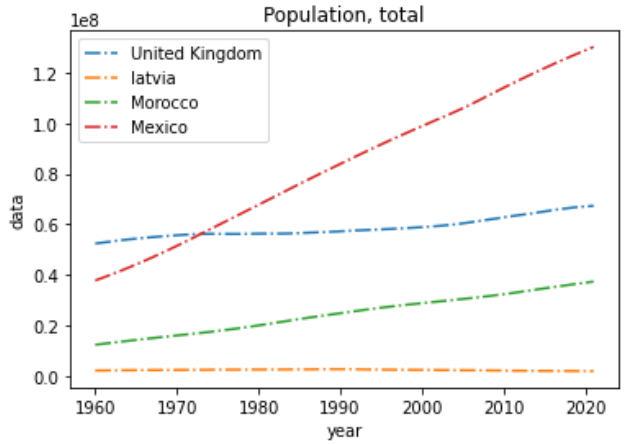

In Agriculture land km, bar graph is constructed from year 1996 to 2016 depends on 4 countries. Mexico agriculture land property km is greater in all the years mostly in 2000 to 2004 year that is shown in graph that is upward trend low trend is Latvia in all the years trend is same. For country Latvia we can analyze that very less interest in land side. UK trend is much better than Latvia in all years. Morocco is second highest trend in 4 countries.



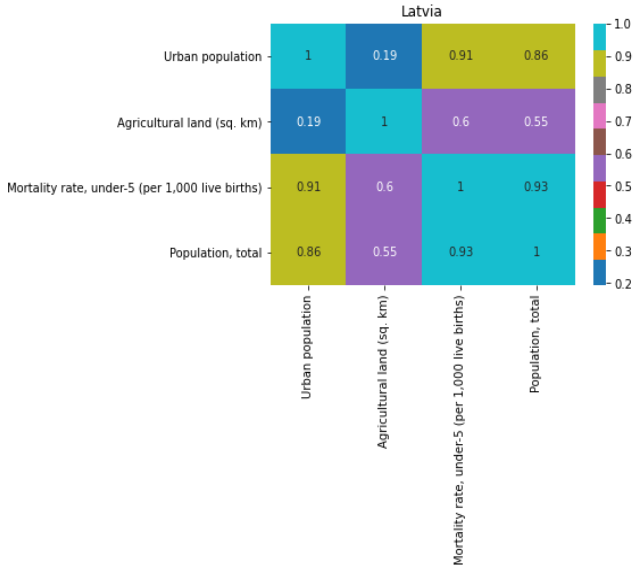

For Mortality rate under 5, trend is vey high in 1996 to 1999 for all 4 countries where live birth is very high in old years. In 2000 trend decreases according to situation. Countries and mortality rate decrease as compared to trend in 1996 to 1999. Mortality rate under 5, Morocco has highest mortality rate then all 3 countries. Lowest trend is United Kingdom.



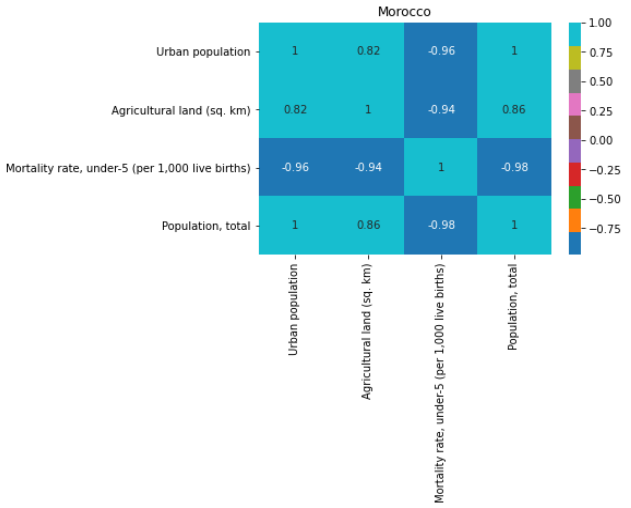

From urban line plot, Mexico in year 1960 urban population is less but not so much less from Latvia and Morocco. It means urban population increases which depends on next 10 years and so on. United Kingdom trends for all countries and all years are almost stable and year 2012 to 2020 trends for urban population increases but not more. Latvia and Morocco trend in 1960 to next years same but Morocco urban population get high from 1980 to 2020 almost 20 percent.



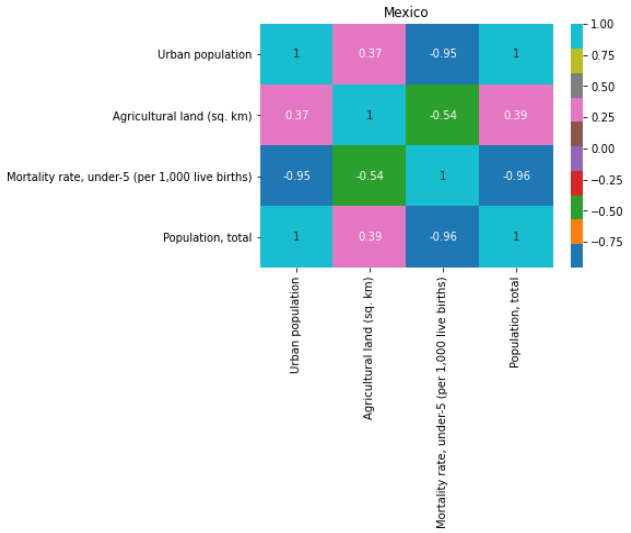

In this plot you can see Latvia trend year 1960 to 2010 trend same and 2020 it become lowest population as compared to all others. Mexico population is greater and now in latest year from 2016 to 2020 its population increases. Morocco has more population as compared to Latvia. UK is second highest in population and its population is stable.



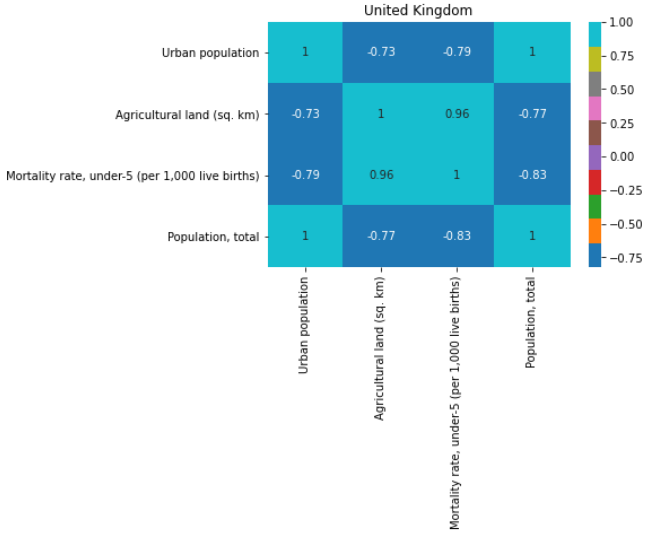

Heatmap for Latvia as shown above we can analyze that correlation of urban population and mortality rate are increases. If we compare urban population and agriculture land it has low relation between both which mean lower urban population and agriculture land.




Heatmap for Morocco correlates agriculture land and urban population increases. However, if we correlate with agriculture land (sq .km) with population total it is strong relation. There is negative relation between mortality rate under and urban population.




Heatmap for Mexico we can analyze that correlation of mortality rate and population total are negative. Population total and urban population are directly proportional to each other if urban population increase then total population also increases. All other correlations are negative.




Heatmap for United Kingdom correlation is very strong with mortality rate under 5 (per 1000 live births) with agricultural land. Population total and mortality rate under 5 has negative correlation. Very strong correlation between population total and urban population and directly to each other

**GitHub link**

https://github.com/sohail910/Assignment2