World Healthcare Data Analysis

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Introduction

In the last 2 years, the whole world was vastly affected due to Coronovirus cases surge and it caused great life and economic loss. This lead to many countries start focusing on the Healthcare of their Nation and start taking steps in that direction. However, in order to make such decision we need proper analysis of healthcare data and find parameters which need improvements. Our World Healthcare Dashboard tries to analyse such data. For this, we are going to use the World Healthcare Datasets consisting of data from the years 2000 to 2019 for all the countries around the world. The dataset is a fusion of datasets collected from OurWorldInData.org, Kaggle, World Bank Open dataset. We have shown various healthcare parameters using the dashboard which can be seen below. This will help us visualize a change in the country's performance in terms of healthcare and facilities over the past 2 decades. Healthcare Expenditure and HDI index are the parameters which we need to focus in order to understand how different countries can improve the Health Index.
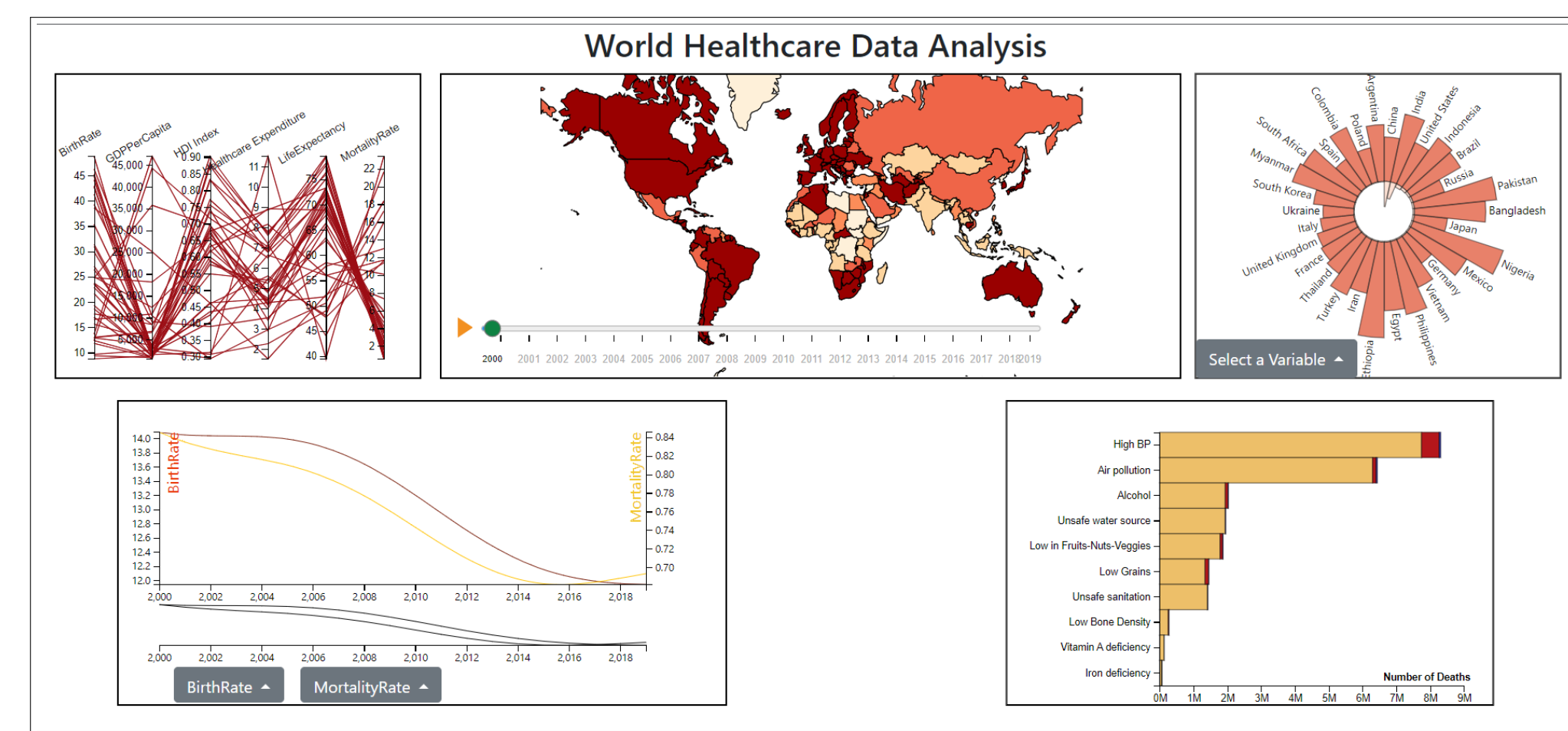

Figure 1:Dashboard Components

Major Attribute

Following are some of the important parameters we are gonna focus on and which helps us to analyse the Healthcare condition of countries:

❶ HealthCare Expenditure Percent of GDP
❷ Human Developemnt Index (HDI)
❸ GDP per capita
❹ Mortality Index
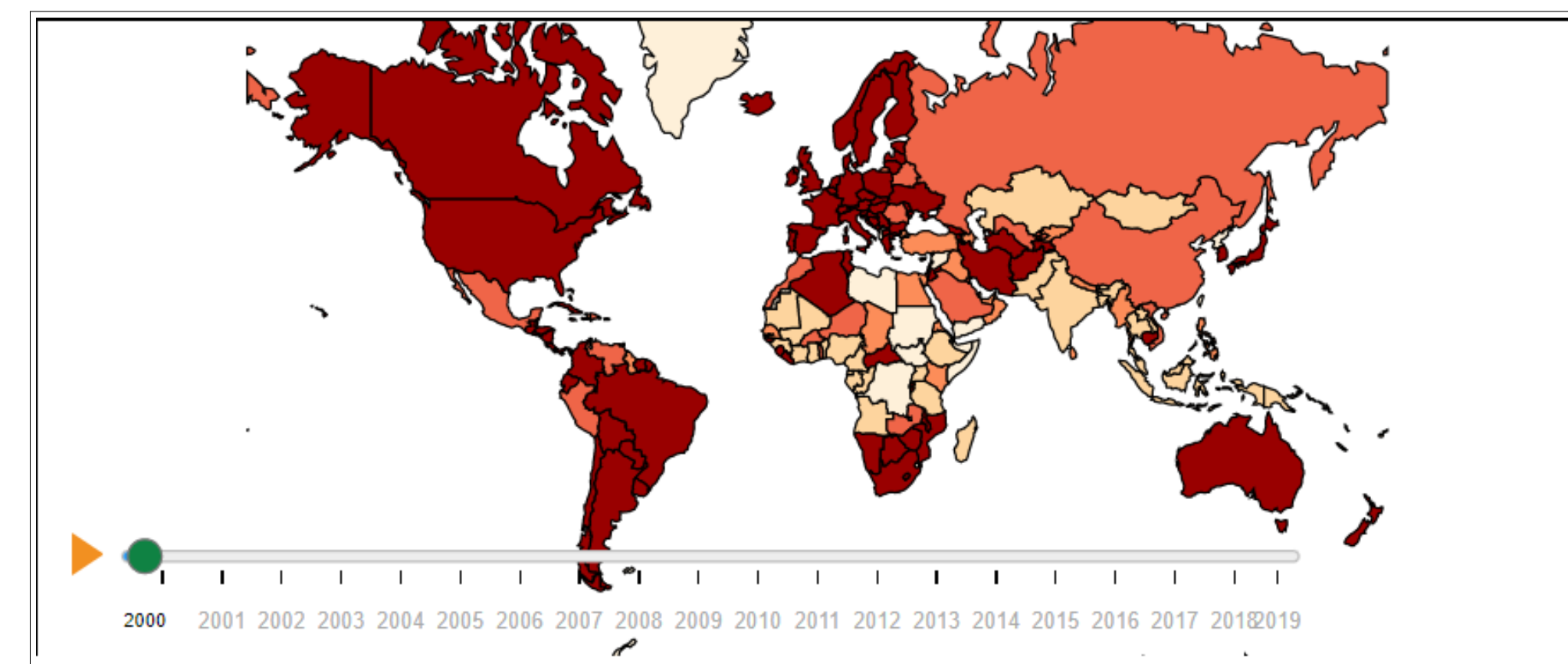❺ Death due to different parameters

Dashboard

Choropleth Map

Figure 2:Choropleth Map

Above we can see the Choropleth Map which shows the data of Health expenditure percent of GDP for each country from year 2000 to 2020 using the shading of color. If the shade is darker it means that the country have high Healthcare expenditure contribution in GDP. We have added a slider which can be used to change the yearly data. Also we have a play button through which it will automatically show the data. This data helps us to visualize how different countries have given priority to Healthcare in the last 2 decades. We have included interaction with the year change and when we select a country which changes other charts too.
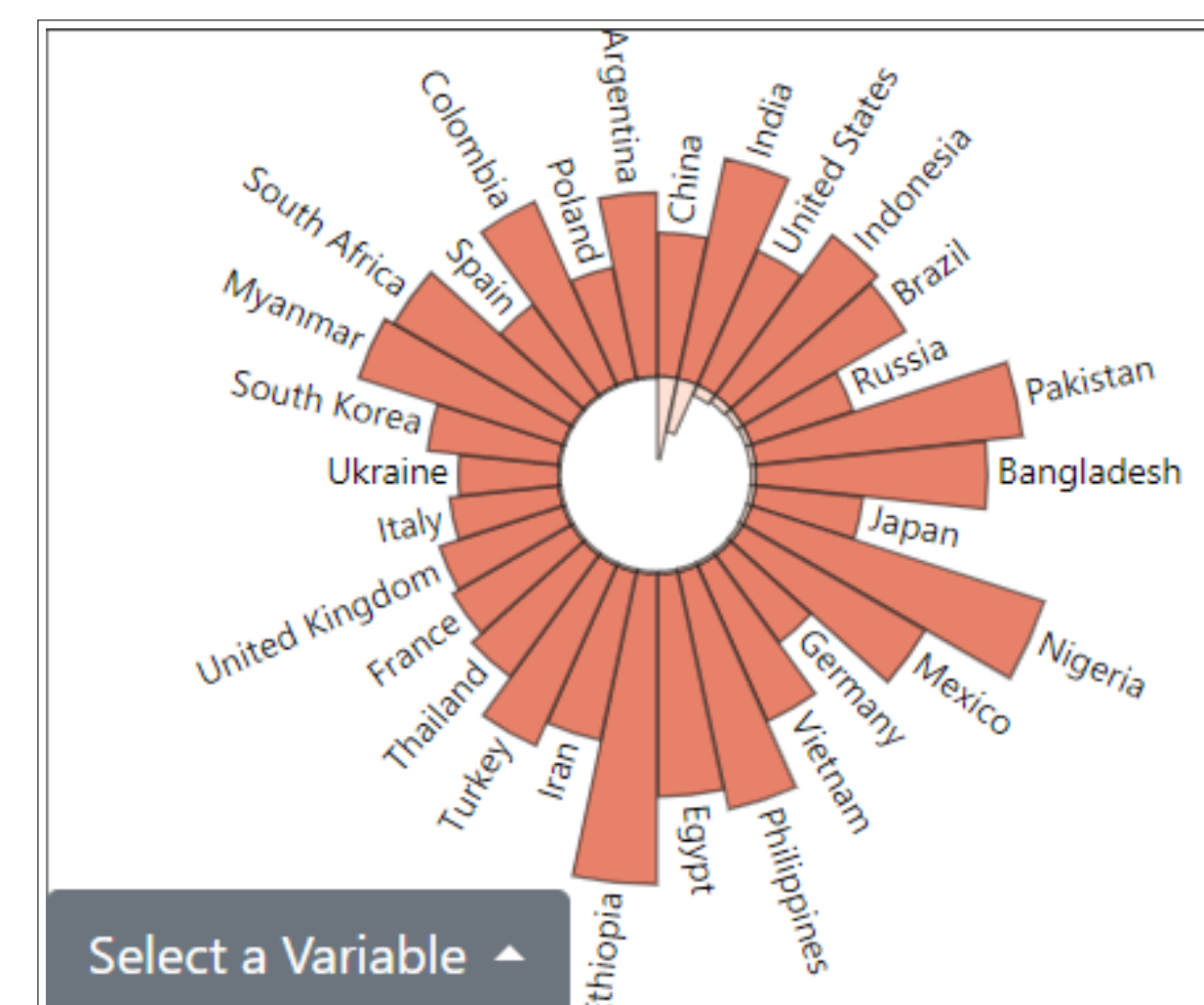
Circular BarPlot

Figure 3:Circular Barchart

This Circular BarPlot shows the top 30 most populated countries for the attributes which can be selected by users. Also this circular BarPlot can be updated using the year slider. This Plot helps us to analyse the countries which need most attention for some parameters such as Mortality rate, BirthRate and how they have fared in the last 2 decades.
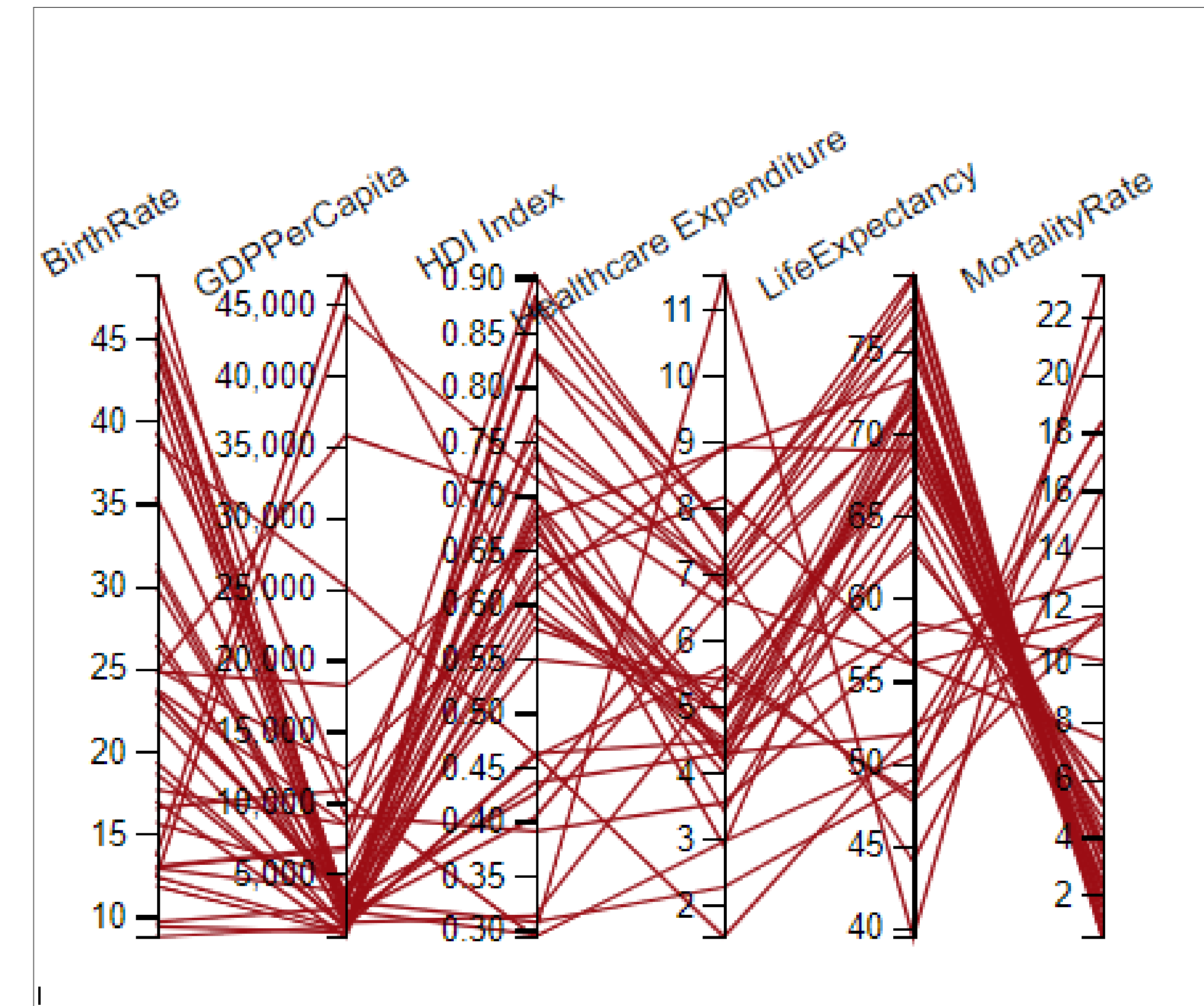
PCP Plot

Figure 4:PCP Plot

The PCP plot shows all the countries data point at a time. We can even select some specific data point and highlight it. This will help us to understand how countries which have high HDI have what kind of other parameters so we can analyse which parameters can affect it positively and negatively. Also the PCP plot will be updated by year by year data when the slider will be updated. PCP plots helps us to understand the correlation btw different attributes.
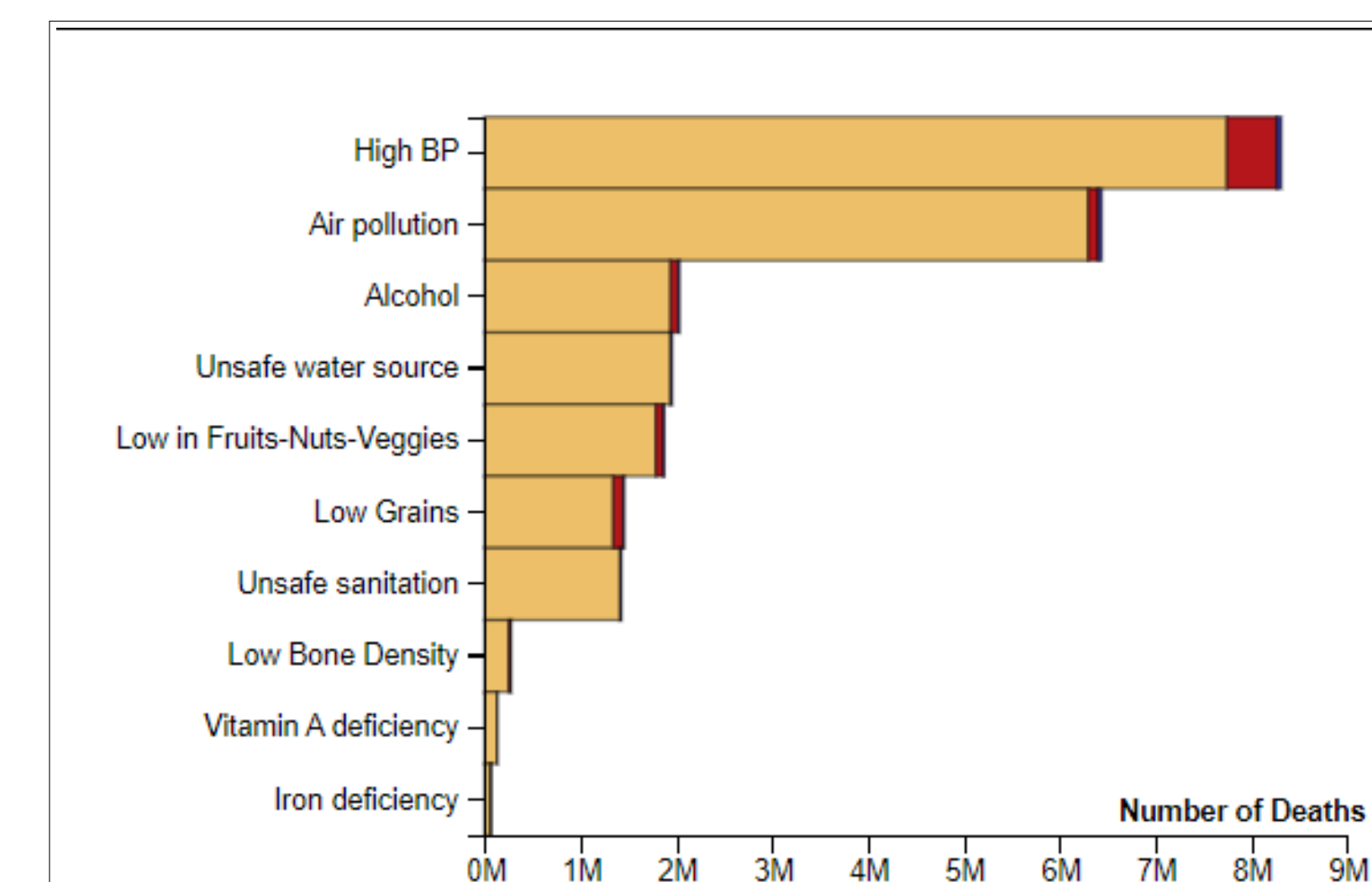
Stacked Bar Chart

Figure 5:Stacked Bar Chart

The Stacked BarChart shows how the different reasons for the Loss of life for the world and when we click on a country it shows how much that country contributed to total loss of life for that factor. The x-axis shows count of loss of life.

Multi-Line Chart

Figure 6:MultiLine Chart

At a time we can select 2 variables and this multiline chart can show the trend of that attributes in the last 2 decades. This helps us to see how the different parameters for the world and countries have behaved in the last 2 decades.

Resources

● Python Flask, D3.js
● jQuery,Pandas
● Data Source: World Data Bank, ourworldindata.org

Conculsion

● Countries with higher GDP per capita, Health expenditure % have positive correlation in Human Development Index(HDI) parameters.
● Countries which tried to increase the HealthCare Expenditure percent of GDP have shown the increase in the HDI performance.
● High BP and Air pollution are one of the major reason for loss of life in humans for all over the world.
● Countries such as India have high contribution to death due to air pollution so they need to focus on it to improve Healthcare data.