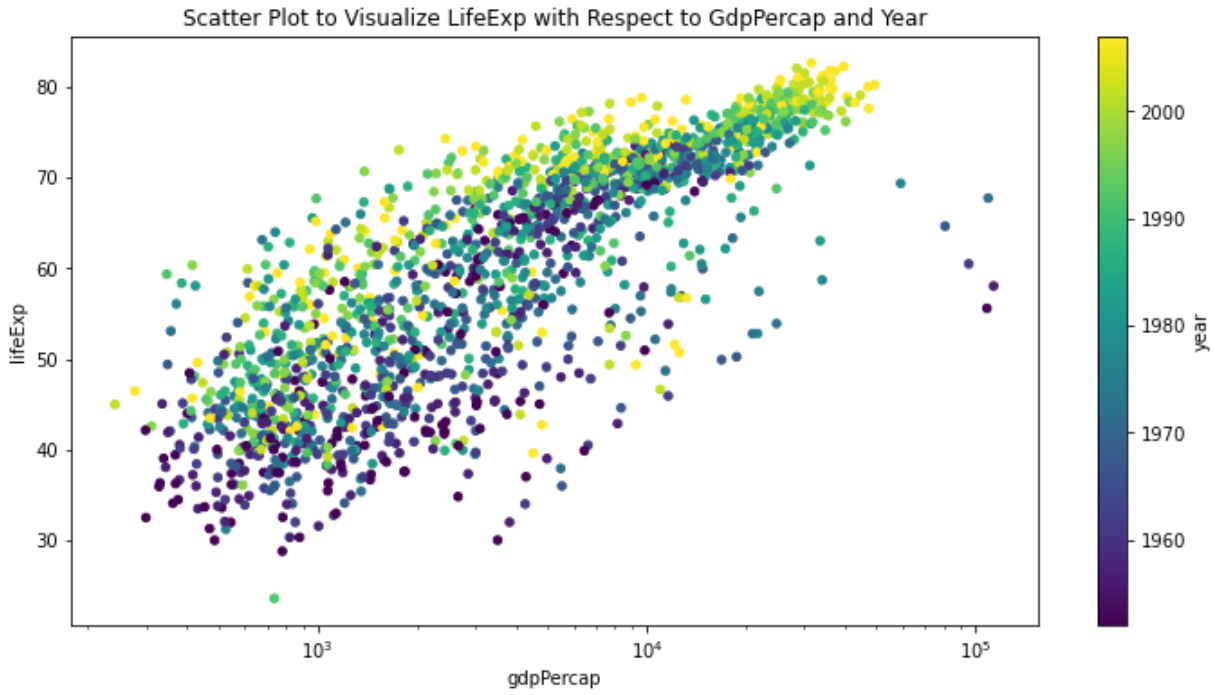
Effects of GDP Per Capita on National life Expectancy over the Years



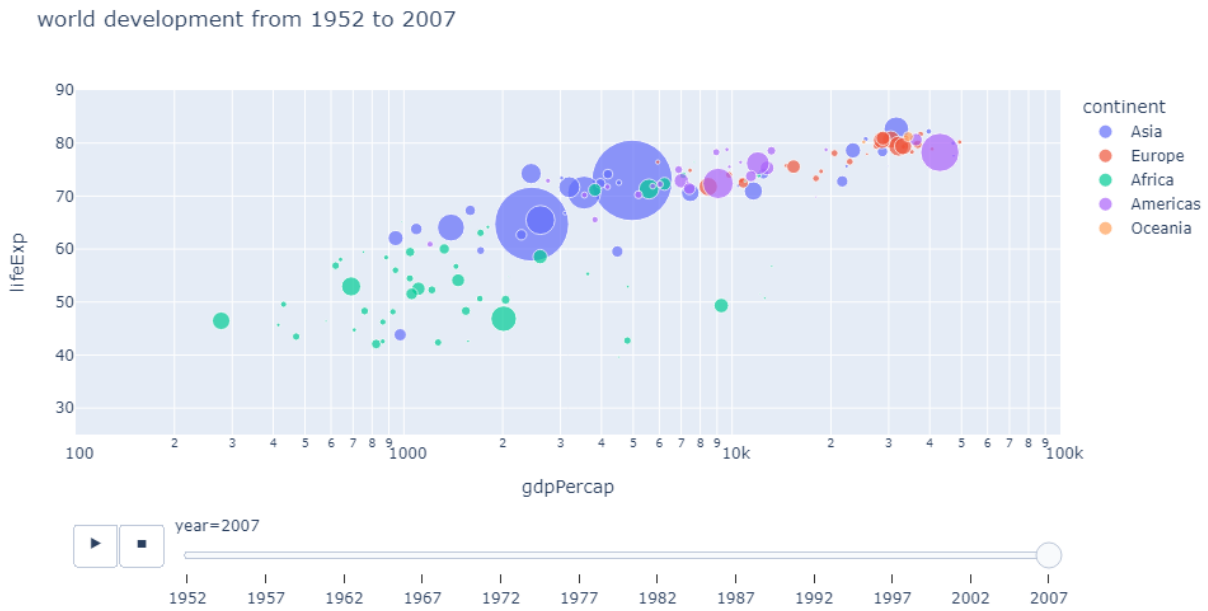
Legend: The viridis color scale shows the most recent years in bright yellow color and the earliest years as dark blue. The dots represent the relationship between the lifeExp and gdpPercap. X-axis is the gdpPercap, Y_axis is the lifeExp, cbar represent the years.

Findings:

- The plot shown above reveals lifeExp tends to increase as gdpPercap increases.
- Also, the color showed that the lifeExp in earlier years is lower than the lifeExp in recent years.

GitHubwebsite:

https://github.com/GraceAW/FinalProject.git



Legend:

This graph further shows the relationship of world wealth and health. If you push the button, you can see the change over the years. Using this animation we can now visualize change in life expectancy and income per person over the past 50 years. Each bubble represents a country. The size of the bubble represents the population of each country. The color of the country shows the continent it belongs to. The y-axis is the lifespan expectancy in years. The x-axis shows the income from $100 all the way up to $100,0000 per person and year(gdpPercap). If you move your mouse to the dots, it will show you the country name. The two countries with the greatest population here are China and India.

Findings:

- From this graph we can see that income and health go hand in hand. People in low-income countries live shorter and people in richer countries live longer. There is no short life expectancy in high income countries, and no long-life expectancy in low income countries.
- There are no countries on the left corner, with low income there is no life expectancy over 65. Also, there are no countries on the right corner too, with high income, there are

no life expectancy below 75. On the same income level, a huge difference in life expectancy among the countries, from 50 all the way up to 75 years.

- Life Expectancy is different across continents. Oceania and Europe both have high life expectancies, followed by the Americas and Asia, which are high but more evenly distributed. Africa, unfortunately, has a mean life expectancy around 50 years.

The data and method used in this process:

DataSource:

https://raw.githubusercontent.com/chendaniely/pandas_for_everyone/master/data/gapminder.tsv

Income data: World Bank's GDP per capita, PPP (constant 2011 international $), Jan 14 2015.

Life expectancy: IHME 2014. Available from http://vizhub.healthdata.org/le/. Jan 14 2015.

Population: UN World Population Prospects: The 2012 Revision.

Methods:

Methods used for visualization are: NumPy, pandas, matplotlib, seaborn and plotly.express.

The importance of the topic:

Gapminder has collected data from different fields including Economy, Education, Energy, Environment, Health and so on. Gapminder tools was employed to help people to visualize the reality behind the data. And help us to identify important global trends such as Child mortality, Life expectancy, Income, and Population. Here I am only focus on the lifeExp and the GDP. The importance of the chart and animation of GDP and Lifespan can help us to visualize and realize how a country's income and life expectancy are closely related with each other and how the life expectancy has changed with the change of the GDP Per cap over the years. And this information can help the United Nations and some organization to plan their investment and provide help to the countries that are underdeveloped.