

Study of world population and growth rate using echarts

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Overview

“Absolute figures in this connected world don’t give you the whole picture. We need the relative figures that are connected to other data so that we can see a fuller picture.” As is said by David McCandless in ted talk, if we only focus the absolute aspect, we’ll miss the truth. This may always happen when we consider the world population. If we only consider the number of population in a specific region, there is no doubt that China is always the leading one. However, that does not mean China has made much contributions to the world population in recent years since it has a large base at first. Actually, the increasing rate of Chinese population has slowed down from 1985.

Period	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Growth rate	1.853	1.201	0.682	0.581	0.622

Table 1 China Population Growth Rate

Therefore, except for the absolute number of population, we should also consider the growth rate. Using the combination of these two datasets, we can find relatively true information about the trend of world population and where should we take measures to control its population growth rate.

Another goal of this study is data visualization. Learn how to use echarts to present world map and merging charts to make the result much easier and clearer.

Data munging

Data I used here is from the department of economic and social affairs of UN. It is well-formatted csv file. Since echarts packages are written in javascript, I have to convert the data into json file.

For example, one of my world maps needs the country’s name and its growth rate. Its csv format likes the following:

calculate the sum. For instance, for the pie chart, we can drag one sector onto another sector to calculate their sum.

Conclusion

Firstly, let's look at the world maps. As expected, if we only focus on the absolute population number, China and India are respectively the first and second one in the world, followed by USA, Iraq and Brazil. However, let's look at the growth rate. It's interesting to find that Qatar turns out to be the first one and the main part of Africa has a relatively high growth rate. On the contrary, China and India have fallen to about median.

Next, let's turn to another plot. We can conclude that the total world population has been keeping increasing and Asia takes the main part of the world's population. Meanwhile, all six continents have relatively stable low growth rate, which means their number of population do not have a very large jump. From the pie chart, we can conclude that Southern Asia, Eastern Asia and South-Central Asia take the three main parts of Asia's, even the world's population. Other regions left have almost the same contribution.

Improvement and room for progress

Compared to the blog I posted last time, I finally realized the world map, which really made me excited. However, I still have some problem in scraping data from website so far and I will keep working on this problem

Besides, not related to this theme, just for learning ECharts in a further step, I used another group of data set about the top 15 busiest air routes in the world from the Economist to realize the rendering map just as the follows.



Learning Experience

It's a really fantastic process for this course and this project. I got to know so many new tools from data scraping to data visualization. For this project, the most difficult part I think is to decide the topic. It cost me a very long time to decide one topic and I changed to another one in the halfway. Fortunately, I

made it finally. Sometimes it was annoyed when I kept making mistakes but couldn't find the reason leading to the error. However, when I finally solved the problem, my heart bounded with joy. Even the course ends, I think I will keep learning data visualization.