The theme of the website:

The data visualization website is intended to show the unemployment rate worldwide for 15 to 24-year-olds, called the youth unemployment rate. The youth unemployment rate is usually defined as the percentage of the youth population aged 15-24 years old who are not employed as a percentage of the total youth labor force. High unemployment can lead to social problems, such as increased poverty and crime. From a future perspective, young people will be an important part of the labor market. Youth unemployment is closely linked to each country's economic development and innovation capacity in the long term.

Visualizing changes in unemployment rate since the 21st century and using models to predict the state of unemployment in future years can help to inform a variety of research areas. At the same time, dramatic changes in unemployment rates over time, in certain countries or globally, can also reflect the occurrence of certain major events, such as the rapid rise in unemployment in Yemen in 2014-15 in relation to the Yemeni civil war.

Data Sources:

(1) Unemployment rate from ILOSTAT

ILOSTAT is hosted by the ILO Department of Statistics, the focal point of the UN for labor statistics. It compiles and produces labor statistics with the goal of disseminating internationally comparable datasets through a variety of data tools. The dataset was published in 2023, so the data from 2000 to 2022 are real values, even though some data in some countries or regions are estimated to be due to

complicated conditions. This website also estimates the data for 2023-2025.

(2) Shapefile from Natural Earth

Shapefile of the global world was downloaded from Natural Earth, a public domain map dataset. Natural Earth was built through a collaboration of many volunteers and is supported by NACIS (North American Cartographic Information Society) and is free for use in any type of project.

Skills and Tools:

In this project, I used some tools to assist in completing the project.

Firstly, I use Python, combining the ILOSTAT dataset and shapefile of the global country border, unified countries' names of two files, and output merged shapefile and zip it.

Then, I used Mapbox as the tool, uploaded the merged zip files into Mapbox, and set the map style as the based map of my website. And add the layer on this based map to visualize the unemployment rate data from 2000-2025 into the interactive choropleth map.

Next, I output a new dataset based on the former dataset to generate the line charts through countries or regions, which invoke the D3 as the external JavaScript library. Line charts can display the unemployment rate directly over the years.

Ultimately, I combine these whole layers into one web page. Also, I added some buttons to improve the interactive experience and modified other CSS and JavaScript styles to optimize website performance.

Additionally, in technical skills, I use the example file in the practical courses and use Mapbox Docs, D3 introduction and visualization parts, and ChatGPT as assistants.

Weblink:

https://ethanli1922.github.io/CASA0003_Data_Viz/Data_Visualization_Yicong_Li_23219797