Project 2: Statistic portal

Yinuo Zhao, 22/10/2023

This project involves the development of an interactive data visualization web application that enables users to explore and analyze population (by category) and employment rate data for different cities in Finland. The focus of this project is to create a user-friendly interface for visualizing data on maps and charts.

The tools used for this project are **Frappe Charts** and **Leaflet**. Frappe Charts are used to create interactive and visually appealing charts to represent data effectively. Leaflet is used to render interactive maps on web applications. It provides map functionality and allows users to explore geographically distributed data.

I hosted the relevant files and code on the GitHub platform, making it easier to access projects and applications. Link: https://github.com/sakuraccess/IoWP-Final-Project

A. User Guide/Explanation for pages involving.

Specific Population Data, Chart View(index.html) – Main page

1. Open the `index.html` page to access the main page, or via link: https://sakuraccess.github.io/IoWP-Final-Project/

2. On the main page, follow the instructions to select the desired demographic data category. Click the "Fetch selected data" button to get "Population by region, main activity type, gender, age and year" data for the whole of Finland or for a specific municipality. Data span 1987 to 2021. The acquired data will be displayed in the "Obtained data list". Click the "Clear List" button to clear the list.

3. Drag one of the obtained data in the list to "Apply chart view" or "Apply map view" to display chart view and map view (go to map.html). respectively. In chart view, you can also click the "Download Image" button to save the map as an SVG image file.

4. You can further explore the "Go to National Employment Rate Distribution Map" button and switch to the National Employment Rate Distribution Map.

Specific Population Data Page, National Map View(map.html)

1. First, set the desired year as per the instructions.

2. On the map, you can click and drag to view information about a specific municipality. The relevant details will be displayed in a popup window.

3. If you already know the name of a specific municipality, you can enter it in the search box. The map will automatically locate and display information about the specified municipality.

4. Whether you use the map's drag-and-click feature or the search function, clicking the "Go back to the main page" button will take you back to the main page to fetch other data for that municipality. The municipality's name will be automatically filled in the search box on the main page, making it convenient to find additional data.

Usage of **the National Employment Rate Distribution Map(emp.html)** is like the Specific Population Data Page, National Map View. You can explore information by dragging on the map or using the search function.

B. Points generated from the course project.

Features	Points
The quality of the PDF report is excellent	2
The application is compatible with Firefox, Safari, Edge, and Chrome browsers	2
Users can access the application via the website link hosted on GitHub	3

The application is responsive on both desktop and mobile devices	4
Application has data source and map statement	1
The color scheme of the page has been carefully chosen	2
Diverse data can be obtained by modifying request control parameters	2
There are more than two available datasets, meaning two or more API calls are made	4
Users can select specific data types and year ranges for display	3
Years beyond the specified range and non-existent municipalities are not accepted	2
Data is visualized in map and chart formats	4
Charts and maps are adorned with beautiful colors (calculated using the sine function defined manually)	2
Users can drag and drop data to specified locations to display charts and maps	4
Data will persist after requests unless users actively clear it	4
Users can easily download chart visualizations as SVG images	2
Maps support switching between different years	3
Maps support locating by searching for municipality names	3
Original employment figures are automatically converted into employment rates	3
Users can seamlessly navigate between different data pages on the map without re-entering the city name	3