Project Title

Development of a Full-Stack Data Visualization Web Application for Interactive Exploration of Datasets: Analysis and Visualization of Sustainable Energy Trends (Project1)

Team Members:

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OverView

 In the preceding project1, we provided recommendations for future research, including:
1. Conducting a comprehensive analysis of the diverse factors influencing the adoption of low-carbon and renewable energy sources, encompassing geographical, socioeconomic, and demographic aspects.

2. Evaluating the overall environmental impact of specific countries or regions.

3. Projecting future trends in the development of low-carbon electricity and its correlation with environmental factors.

4. Predicting the future energy demands in relation to potential climate variations.

5. Setting benchmarks for the adoption of low-carbon electricity and monitoring progress.

In this phase, our focus remains on the in-depth analysis of the gathered data, aiming to address the following research inquiries:

Research Questions

1. How does geographical location influence the production and consumption of low-carbon or renewable energy? Khadija

2. What is the impact of land mass on the production and consumption of low-carbon or renewable energy? Yoseiph

3. How does climate change affect specific countries or regions in terms of their energy practices and policies? Danik

Datasets to be used

weatherstack - Real-Time World Weather REST API

https://www.kaggle.com/datasets/anshtanwar/global-data-on-sustainable-energy,

https://www.kaggle.com/datasets/nelgiriyewithana/countries-of-the-world-2023

Global Country Information Dataset 2023 (kaggle.com)

Web application Design

After updating our Dataset and clain it we should Build an interactive dashboard witch explore the energy dataset in different countries ,

Our Dashboard should contain **:**

* Three drop-down menus for selecting Country, Years, and Cities

* Zoom functionality, enabling a closer look at the energy in major cities within each country

* Leaflet chart generated from data extracted through web scraping

* Various visualizations, including bar charts showcasing energy per country, bubble charts for a comprehensive view of each sample, and gauge charts or other relevant charts for effective data representation.

Tools and Library

> ***database (SQL, MongoDB, SQLite, etc.)**
>
> ***Python Flask API**
>
> *** HTML/CSS, JavaScript**
>
> *** JavaScript library " "**

Rough Breakdown of Tasks:

- Data fetching claining ,new Js Library used (Khadija)
- Build an interactive dashboard - visualizations of data (Everyone)
- GitHub repository ,create&link project , README file (Khadija)
- Creating data analysis report (Danik)
- Creating the presentation (Yosieph)