Authors and Publications Application 2023

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Objectives

This research project aims to develop a web application that visualizes the geographic location of research publication authors on a world map. The application will allow data input and feature a map display, search, and filter functions. Author data input will allow users to input author details, including name, email address, country of residence, coordinates (latitude and longitude), university affiliation, and other relevant information:

- The map display will present an interactive world map with pins representing the location of each author
- Clicking on a pin will present author details including name, email address, country of residence, coordinates (latitude and longitude) and university.
- This application will enable users to search and filter for authors by various criteria, such as university, location, and other relevant variables
- It will also feature a table displaying additional relevant information corresponding to the map.

Introduction

We intend to create a web application that shows where the creators of examination distributions are situated on a worldwide guide. A JavaScript scraper will be used to extract additional information from the app, and users will be able to upload a CSV file containing author information. On the world map, pins will indicate the location of each author, and search, filter, edit, and delete options will be available. Our goal is to provide specialists and foundations with a simple tool that will make it easier for them to understand the global logical scene and collaborate across disciplines.

Functional Requirements

The following functional requirements were required to complete the web application:

- User Authentication: Users must be able to register and log in to the application. User authentication will be handled by Node.js and will use encryption to ensure security.
- Author Data Input: Users must be able to input author data into the system. This will include fields such as first and last name, email, country, coordinates, university, and other relevant details.
- Map Display: The application will display a world map with pins on the location of each author. The map will be interactive and allow users to zoom in and out and click on pins to view author details.
- Search: Users will be able to search for authors by name, email, country, university, or other relevant criteria.
- Filters: Users will be able to filter the displayed authors by country, university, or other relevant criteria.
- Edit and Delete: Users will be able to edit and delete author data that they have entered into the system.

Assumptions and Constraints

- Data Input: We assume that users will enter valid data into the system and that the system will validate user input to prevent errors.
- Data Privacy: We assume that users will only enter data that they are authorized to share and that the system will protect user privacy by not displaying sensitive information such as personal addresses or phone numbers.
- Server Requirements: We assume that the server hosting the Node.js backend will have sufficient processing power and memory to handle the expected load.
- Budget: We assume that the development budget is limited and will require efficient use of resources.

Figure 1:Map of publication authors using sample data.

Important Result

Our web application provides a dynamic and interactive world map that visualizes the global distribution of research publication authors. By uploading a CSV file with author data and using our JavaScript scraper, researchers and institutions can easily obtain additional information about authors and locate them on the map. This tool is particularly valuable for identifying potential collaborators in different regions, uncovering new research opportunities, and gaining a better understanding of the geographic patterns of scientific collaboration. With search, filter, edit, and delete functions available, our application offers a user-friendly and efficient way to manage author data. Join us in advancing scientific knowledge on a global scale through our easy-to-use and visually appealing author mapping tool!

Conclusion

This application aims to identify potential collaborators promoting global research collaboration. It can also aid in identifying potential research trends. It will be a valuable resource for researchers, policymakers, funders, and institutions in identifying research experts worldwide, promoting knowledge sharing, and improving research outcomes. The development tools used will ensure a robust and adaptable system for the application's long term development

Additional Information

Yearly, only 30 countries generated 94.6 percent of all publications and 98.1 percent of core clinical journals worldwide. All publication types increased but with a significant increase in meta-analysis publications from China. Collaborative and co-authored papers among the 30 countries also showed an increasing trend.

- The USA leads in all publication citations and specific publication types, except for meta-analysis where China publishes more
- Collaborative publishing among international collaborators is also increasing.

References

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