



Seismic Locator

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APPLICATION URL : <https://jimil555.github.io/Group-Project-1/>
GITHUB REPO : <https://jimil555.github.io/Group-Project-1/>



This event has live translations.

Elevator pitch

We are a group of GWU students who created an innovative project aimed at tracking seismic activities. We developed a tool that identifies the top 10 most recent earthquakes, providing essential details like time, date, magnitude, and precise coordinates using the GeoNames API.

Our system features a 'Find Earthquake' button, which presents a dropdown list of these events. For each earthquake, users can click 'More Info' to reveal the exact location, enhancing their understanding of where these seismic activities occur.

Additionally, we included a 'Recent Searches' section, allowing users to easily access and review their last three earthquake selections. This functionality aids in tracking and comparing seismic events efficiently.

This project not only highlights our technical skills but also demonstrates our ability to work collaboratively and develop practical solutions for real-world challenges."



CONCEPT

User Story:

As someone interested in tracking earthquakes, I want an easy-to-use tool that shows the latest earthquakes with all the key details—like time, date, magnitude, and exact location—so I can stay informed and understand where these events are happening.

Motivation for Development:

Our motivation came from wanting to help people stay informed about earthquakes. We noticed that existing tools often had lots of data but were hard to use. We wanted to create something that provided clear, accessible information about recent earthquakes.

By using the GeoNames API, we ensured our data was accurate and up-to-date. Our goal was to make a tool that's easy for anyone to use, whether they're just curious or need the information for research. Plus, working on this project gave us a chance to improve our technical skills and work together as a team to solve a real-world problem.

Process



Technologies Used: We used the GeoNames API to fetch real-time earthquake data, which provided us with details like time, date, magnitude, and coordinates. For the user interface, we utilized HTML, CSS, and JavaScript to create a responsive and user-friendly experience. We also implemented a database to store recent searches, using SQLite for simplicity and efficiency.

Breakdown of Tasks and Roles:

- Front-End Development: One team member focused on designing and coding the user interface, ensuring it was intuitive and visually appealing.
- Back-End Development: Another member handled the integration of the GeoNames API, retrieving and processing the earthquake data.
- Database Management: A third member set up and managed the SQLite database for storing recent searches.
- Project Coordination and Testing: The fourth member coordinated the project, making sure all parts came together smoothly, and conducted thorough testing to ensure functionality and usability.

Challenges: We faced several challenges during development:

- API Integration: Ensuring accurate and timely data retrieval from the GeoNames API was tricky, requiring us to handle potential errors and data inconsistencies.
- User Interface Design: Creating a user-friendly interface that displayed complex data clearly and effectively took several iterations.
- Data Storage: Implementing the recent searches feature required careful planning to efficiently store and retrieve data without affecting performance.
- Collaboration: Coordinating tasks and integrating different parts of the project required effective communication and teamwork, especially when debugging issues that spanned multiple components.

Successes: Despite the challenges, we had several key successes:

- Functional and Intuitive Tool: We successfully created a tool that provides users with up-to-date earthquake information in a clear and accessible format.
- Seamless API Integration: Our integration with the GeoNames API worked smoothly, ensuring accurate and timely data.
- User-Friendly Interface: The final user interface was intuitive and visually appealing, making it easy for users to find and understand the information they needed.
- Effective Teamwork: We worked well as a team, leveraging each member's strengths and collaborating effectively to solve problems and complete the project on time.

Demo

1. Finding Earthquakes:

Users start by clicking the 'Find Earthquake' button. This action triggers our tool to fetch the top 10 most recent earthquakes using the GeoNames API.

A drop down list then appears, showing each earthquake's time, date, and magnitude.

2. Viewing Detailed Information:

From the dropdown list, users can select an earthquake and click the 'More Info' button.

This provides additional details, including the exact location of the earthquake, which helps users understand the geographical context of the seismic activity.

Recent Searches:

Below the main section, there's a 'Recent Searches' area that displays the last three earthquakes the user has viewed.

This feature allows users to quickly access and compare recent earthquakes without having to search for them again.

User Interface:

Our interface is designed to be user-friendly, with a clean layout and intuitive navigation. Users can easily find the information they need and understand the details provided.

The design ensures that even those who are not tech-savvy can navigate the tool effectively.

Backend and Data Handling:

Behind the scenes, our tool efficiently handles data retrieval and storage. When a user searches for earthquakes, our system processes the API response and updates the user interface in real-time.

The 'Recent Searches' are stored using an SQLite database, allowing for quick access and smooth performance.

This demo showcases how our tool provides comprehensive and up-to-date information on recent earthquakes, making it a valuable resource for anyone interested in tracking seismic activity.

Directions for Future Development

Enhanced Data Visualization:

- Integrate interactive maps and charts to visually display earthquake data and trends.

Advanced Filtering and Alerts:

- Implement filters for search criteria and allow users to set up custom earthquake alerts.

Mobile Application:

- Develop a mobile app for real-time access and push notifications on smartphones and tablets.

User Accounts and Personalization:

- Create a user account system for saving preferences and personalizing the interface.

Links

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- GITHUB REPO : <https://github.com/JimiL555/Group-Project-1.git>