Team 17 Project Backlog

Northrop Grumman Xetron Seismic Activity Map

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**Problem Statement**

Currently, seismic events occur all over the United States every day. Seismic sensors are developed to capture these seismic events. Teams that are dedicated to developing these seismic sensors would like to know where to test them to know that they are accurately picking up seismic activity. Currently, there is no easy-to-use map that shows areas of little seismic activity where it would be ideal to test these sensors. Our team will implement a system to fix this.

**Background Information**

* Jon Chambers from Northrop Grumman is part of a team develops and tests sensors that are used in the United States.
* He would like to have an internal system so that he can see the best areas to test his sensors.
* He wants to start off by testing in quiet seismic locations, then slowly move up, so he’ll need a way to set a threshold for what area is ‘quiet’.
* There are a few limitations to this project:
  + Sensors with open APIs may be hard to find online.
  + We will have to focus a good portion of our time on research.
  + Sensors might have different APIs or methods to get its data.
  + Field testing will be difficult to see how accurate our maps are.

**Requirements**

**Functional**

1. As a user, I want to be able to view a list of previous seismic events.
2. As a user, I want to be able to see the epicenter of an event.
3. As a user, I want to see the radius of an event on the map.
4. As a developer, I want to implement a system that categorizes seismic events based on data it produces so that users can see what kind of event is probably occurring.
5. As a developer, I want to read seismic data from public sensors so that I can add it to the map automatically.
6. As a user, I want to be able to see what areas on the map are least active seismically and which areas are most active seismically so that I can determine the best areas to test new sensors.
7. As a user, I want to be able to filter the seismic activity threshold to visualize the activity in different colors.
8. As a user, I want to be able to access this system from any web browser on any device.
9. As a user, I want to be able to switch between seismic activity map view and previous seismic events map view.
10. As a user, I want to be able to select and deselect certain seismic sensors so that I can view certain regions of seismic activity.
11. As a user, I want to have the option to see on the map where the seismic sensors are located.
12. As a user, I want to have an easy-to-use interface for viewing database records of seismic events.

**Non-Functional**

1. As a developer, I want to calculate the epicenter of the seismic data.
2. As a developer, I want to calculate the predicted radius that the seismic event will affect.
3. As a developer, I want to implement a database of previous seismic events so that users can view previous events.
4. *As a developer, I want to implement security features for our seismic database so that we can prevent unauthorized access (If Time Permitting)*
5. *As a developer, I want to standardize the information for the user about each seismic event in a uniform manner (If Time Permitting)*