

Description:

You are given 150 power lines around California and are asked to build a web application where users can determine the failure probability of the lines using a map.

Each line has **weather data**, **vegetation data**, and **wear**. The combination of these factors will determine the **failure rate**.

Create an application that will show the lines on map as either green or red.

Requirements:

- Login Authentication and Authorization
 - Users should not be able to see the map if they are not logged in
 - Users should be able to log out
- Design a Django Rest framework backend that will store the line data.
 - Retrieving multiple lines at once will be needed for the front end
 - Endpoints for deleting, updating, and creating is not necessary, but it is bonus.
 - Calculate **risk of failure** by multiplying **weather data**, **vegetation data**, and **wear** together and send this information to the frontend
Example) A line with wear of 1.00, weather of 0.730345, and vegetation of 0.696342 will have a total risk value of 0.5086 = (1 x 0.730345 x 0.696342)
 - Starting Point References
 - <https://www.django-rest-framework.org/>
 - <https://docs.djangoproject.com/en/4.0/ref/contrib/gis/>
- Render Lines on Frontend and color red or green based on threshold, default at 0.5
 - Lines will be **red** if they are greater than or equal to **risk of failure**, otherwise they will be **green**.
 - User should be able to update the threshold on the frontend and the lines should change colors when it is done.
 - **Create a button called 'Update Threshold'** that will open a pop-up where the value can be updated.
 - The threshold value itself does not need to be persisted, this will be bonus. This means that if you refresh, it's ok if the threshold value is at 0.5 again.
 - Users should not be able to add values below 0 or above 1
 - Starting Point References
 - <https://react-leaflet.js.org/>
 - <https://leafletjs.com/>

Bonus:

- Create endpoint to add new lines, delete lines, and update
- The updated threshold value should be persisted
- Ability to paginate lines 50 at a time
- Create a pop when a line is clicked that shows the failure rate and name of the line
- App Deployed

Please be sure that functionality in the requirements are met before attempting any bonus work

The general look of the app may look something like this, but you have creative freedom to build it how you like.

Update Threshold

Current Threshold: 0.5

