**RUTGERS** ,,,,,

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Apr-2023 **Home** 

**Announcements Modules** 

<u>Syllabus</u> <u>Grades</u>

**Zoom** <u>Attendance</u> **Student Support Career Services Billing** 

Module 15 Challenge

**Due** Aug 3 by 11:59pm Points 100 **Submitting** a text entry box or a website url

### **Background** The United States Geological Survey, or USGS for short, is

responsible for providing scientific data about natural hazards, the health of our ecosystems and environment, and the impacts of climate and land-use change. Their scientists develop new methods and tools to supply timely, relevant, and useful information about the Earth and its processes. The USGS is interested in building a new set of tools that will allow

Start Assignment

them to visualize their earthquake data. They collect a massive amount of data from all over the world each day, but they lack a meaningful way of displaying it. In this challenge, you have been tasked with developing a way to visualize USGS data that will allow them to better educate the public and other government organizations (and hopefully secure more funding) on issues facing our planet. **Before You Begin** 

## not add this Challenge to an existing repository.

2. Clone the new repository to your computer.

1. Create a new repository for this project called <a href="leaflet-challenge">leaflet-challenge</a>. **Do** 

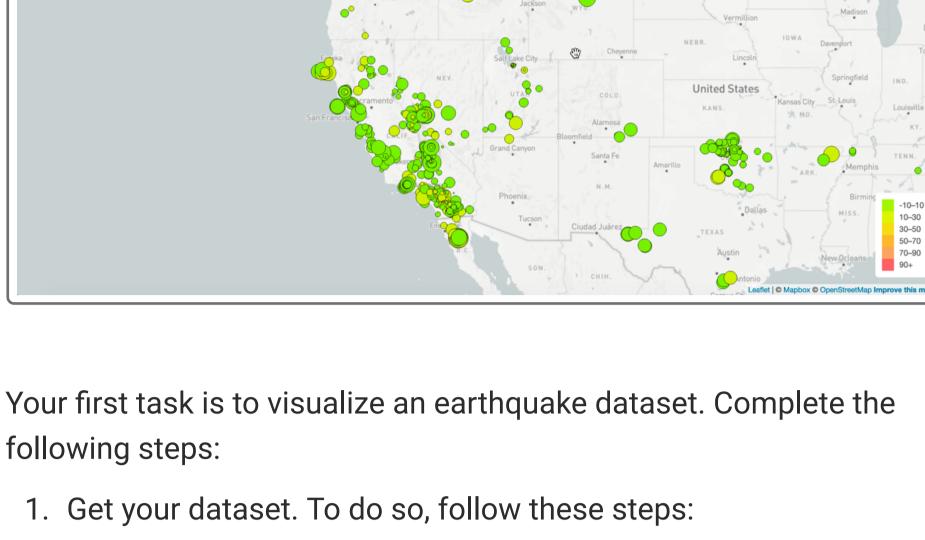
- 3. Inside your local git repository, create a directory for the Leaflet challenge. Use the folder names to correspond to the
- challenges: Leaflet-Part-1 and Leaflet-Part-2. 4. This Challenge uses both HTML and JavaScript, so be sure to add all the necessary files. These will be the main files to run for analysis.
- 5. Push the above changes to GitHub. **Files**
- Download the following files to help you get started:

# **Instructions**

 Part 1: Create the Earthquake Visualization • Part 2: Gather and Plot More Data (Optional with no extra points

The instructions for this activity are broken into two parts:

- earning)
- Part 1: Create the Earthquake Visualization



<u>Feed</u> ⇒ page and choose a dataset to visualize. The following image is an example screenshot of what appears

when you visit this link:

Usage

Real-time Notifications

"type": "FeatureCollection",

"cdi": null, "mmi": null,

no extra points earning)

tectonic plates can be found at

Perform the following tasks:

<u>https://github.com/fraxen/tectonicplates</u> ⇒.

to challenge yourself and boost your new skills.

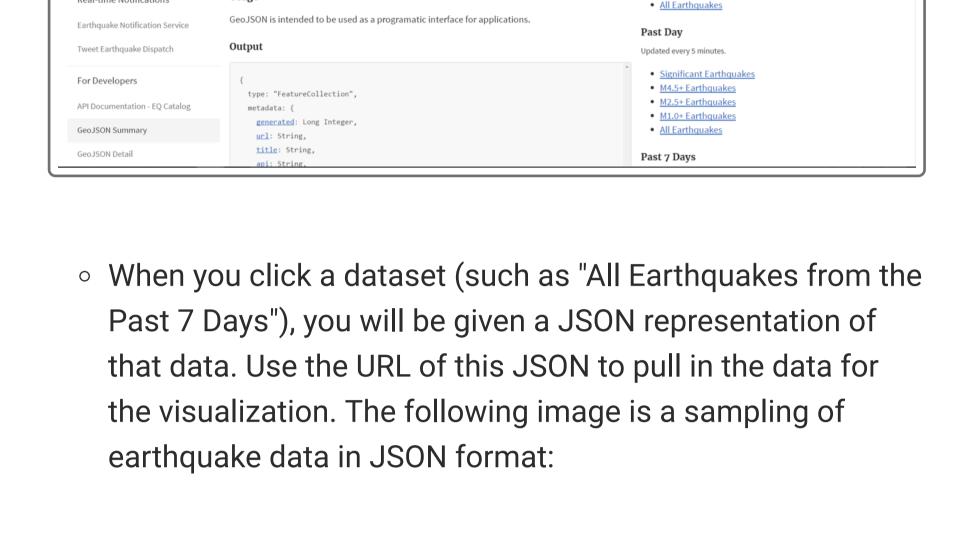
▼ "metadata": {

**≥USGS GeoJSON Summary Format** Description GeoJSON is a format for encoding a variety of geographic data structures. A GeoJSON object may **Past Hour** represent a geometry, a feature, or a collection of features. GeoJSON uses the <u>JSON standard</u>. The GeoJSONP feed uses the same JSON response, but the GeoJSONP response is wrapped inside the function call, eqfeed\_callback. See the <u>GeoJSON site</u> for more information. Significant Earthquake M4.5+ Earthquakes This feed adheres to the USGS Earthquakes Feed Life Cycle Policy.

M1.0+ Earthquakes

• The USGS provides earthquake data in a number of different

formats, updated every 5 minutes. Visit the <u>USGS GeoJSON</u>



"generated": 1475036500000 "url": "http://earthquake.usgs.gov/earthquakes/feed/v1.0/summary/all\_day.geojson", "title": "USGS All Earthquakes, Past Day", "status": 200, "api": "1.5.2", "count": 358 ▼ "features": [ "type": "Feature", ▼ "properties": { "mag": 1.29, "place": "13km ENE of Borrego Springs, CA", "time": 1475035516570, "updated": 1475035737999, "url": "http://earthquake.usgs.gov/earthquakes/eventpage/ci37703760", "detail": "http://earthquake.usgs.gov/earthquakes/feed/v1.0/detail/ci37703760.geojson", "felt": null,

```
"alert": null
2. Import and visualize the data by doing the following:

    Using Leaflet, create a map that plots all the earthquakes

       from your dataset based on their longitude and latitude.

    Your data markers should reflect the magnitude of the

            earthquake by their size and the depth of the
            earthquake by color. Earthquakes with higher
```

- magnitudes should appear larger, and earthquakes with greater depth should appear darker in color. • **Hint:** The depth of the earth can be found as the third
  - coordinate for each earthquake.
  - Include popups that provide additional information about the earthquake when its associated marker is clicked. Create a legend that will provide context for your map data. Your visualization should look something like the preceding map.

### The following image is an example screenshot of what you should produce:

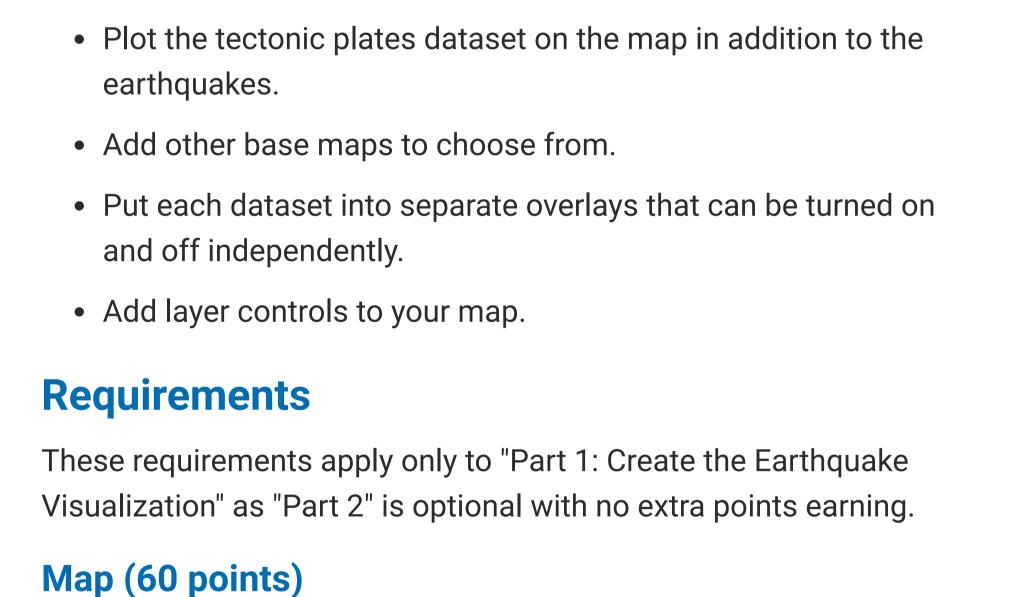
This part is completely optional; you can complete this part as a way

Part 2: Gather and Plot More Data (Optional with

between tectonic plates and seismic activity. You will need to pull in

Plot a second dataset on your map to illustrate the relationship

this dataset and visualize it alongside your original data. Data on



points) **Data Points (40 points)** Data points scale with magnitude level (10 points)

Data points colors change with depth level (10 points)

All data points load in the correct locations (10 points)

Each point has a tooltip with the Magnitude, the location and

Connects to geojson API using D3 without error (20 points)

• Markers with size corresponding to earthquake magnitude (10

• A legend showing the depth and their corresponding color (10

This assignment will be evaluated against the requirements and assigned a grade according to the following table:

**Grade** 

TileLayer loads without error (20 points)

points)

depth (10 points)

**Grading** 

D (+/-)

F (+/-)

**Submission** 

A (+/-)B (+/-) 80-89 C (+/-)70-79

90+

60 - 69

< 60

**Points** 

### To submit your Challenge assignment, click Submit, and then provide the URL of your GitHub repository for grading. NOTE You are allowed to miss up to two Challenge assignments and still earn your certificate. If you complete all Challenge assignments, your lowest two grades will be dropped. If you wish to skip this assignment, click Next, and move on to the next Module. Comments are disabled for graded submissions in BootCamp Spot. If you have questions about your feedback, please notify your

Resubmit Assignment button to upload new links. You may resubmit up to three times for a total of four submissions. **IMPORTANT** It is your responsibility to include a note in the README section of your repo specifying code source and its location within your repo. This applies if you have worked with a peer on an

assignment, used code in which you did not author or create

sourced from a forum such as Stack Overflow, or you received

code outside curriculum content from support staff such as an

Instructor, TA, Tutor, or Learning Assistant. This will provide

instructional staff or your Student Success Manager. If you would like

to resubmit your work for an additional review, you can use the

visibility to grading staff of your circumstance in order to avoid flagging your work as plagiarized. If you are struggling with a Challenge or any aspect of the curriculum, please remember that there are student support

- services available for you: 1. Office hours facilitated by your TA(s)
  - 2. Tutor sessions (sign up ⇒) 3. Ask the class Slack channel/get peer support
- 4. AskBCS Learning Assistants

# References

Dataset created by the United States Geological Survey (=>).

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Next ▶