

Link to the website: <http://45.55.206.240:3838/finalProject/>

## **Introduction**

This project was created using the R programming language and multiple necessary packages giving the freedom for the creation of an \*interactive\* website. My goal here was to map worldwide earthquakes in an interactive way, giving the possibility for the user to click on each earthquake and get more information about it.

## **The website**

The interface of the website is simple. It consists of two parts: the map, and the menu.

### **The map**

The map consists of proportional symbols for every earthquakes that happened in the last 30 days (since download of the data) within a certain country. The proportional symbols' size depend on the magnitude of the earthquake for that location. The user can click on the proportional symbol to have more information about that particular earthquake – this seems to be having quite some problems running on my virtual server (not showing up when clicking). I do not have this kind of problem when running the website locally.

### **The menus**

The menus are separated into two: country and magnitude. The country menu let's the user choose between different countries to look for earthquakes. Any countries in the world can be selected. The magnitude menu gives the user the freedom to choose the magnitude of the earthquake to be displayed on the map. I limited the search from 0 to 10 as this is the range at which most earthquakes happen.

## **Problems**

This project is far from perfect when running on the server. Since uploading it to my server, I have seen some weird problems. For example, the proportional symbols were not clickable or the database was not reachable. This might be due because of the virtual server and its limitations (I am running on 2GB of RAM and about the same in hard drive space, with only 1 CPU) or even the libraries that I installed. On my computer, I could not replicate the bugs that I have seen from time to time on the online version. Something that is not really a problem but that will be visible is the size of the proportional symbol. I believe this is a bug, because I have gone back countless times to try and fix this but the proportional symbols sizes are terrible for some countries. If you experience some disastrous bug that crashes the website, please contact me and I will restart the virtual server in under 2 minutes.

I understand that R is not a programming language meant to do this kinds of software/web development, however I think this was a nice project for me to learn more about R (why it is good, why it is not so good) and also because I could for the first time connect to a database using a programming language.

I actually started working on a tutorial and how to make a website close to mine in R and PostgreSQL, however my first virtual server crashed (and I still haven't recovered it) and my website went down. I had to actually buy a second virtual server to host this project. I will send you a link of the tutorial once my website is back up.