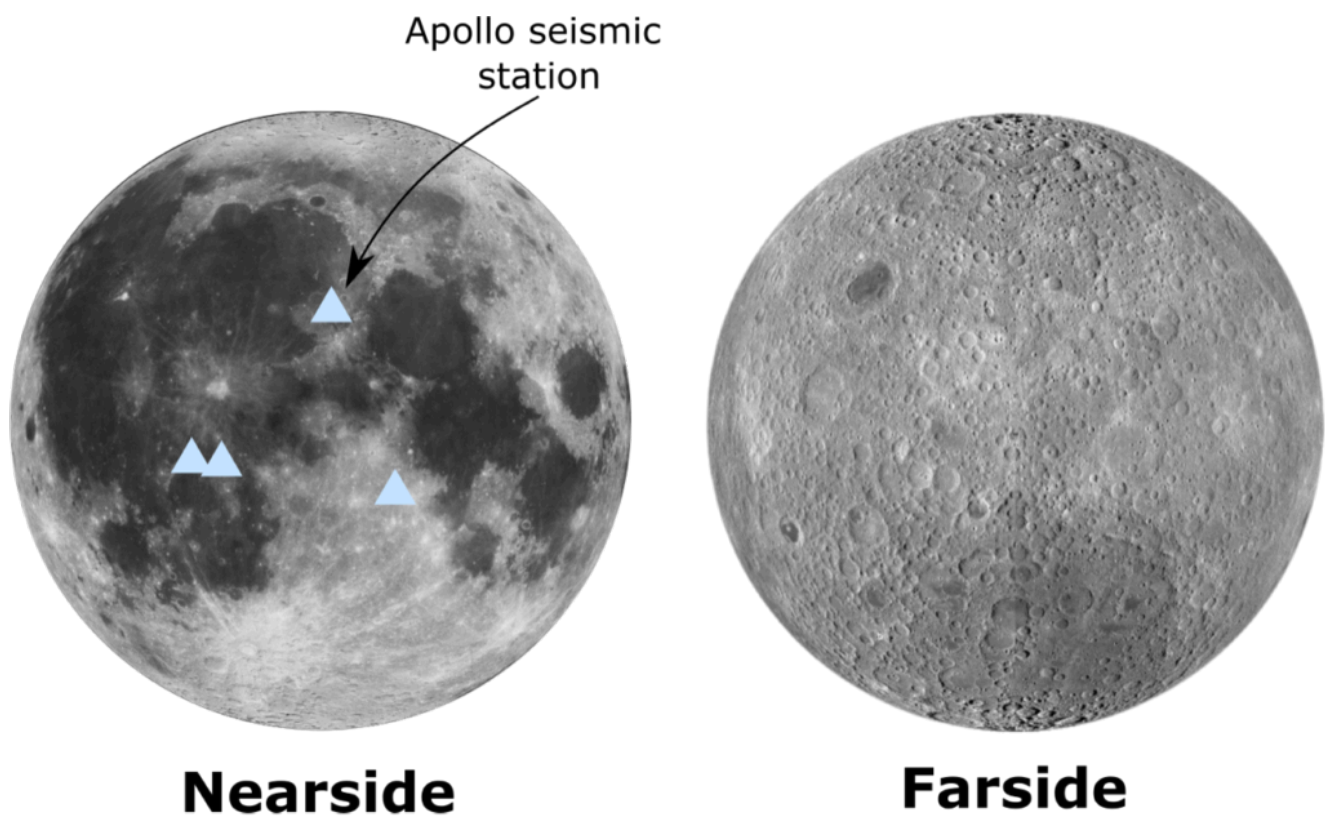


MOONQUAKE MAP

SPACE ROCKERS



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Subject

When they explored the Moon, NASA's Apollo astronauts left behind several instruments to collect geophysical data near each Apollo landing site.

Your challenge is to develop an app for the public that plots the seismic data these instruments transmitted back to Earth on an interactive 3-D digital moon globe.

Scope

Develop a functional 3D model that shows geological activity performed using NASA's moon missions raw data with an interactive interface that allows the user to interact with features.

Features:

- 3D interactive model
- Moonquake heat map
- Timeline
- Side menu
- Interactive layer model

Challenges

Make a 3D model:

Acquire the necessary tools in order to make the model run fluidly with enough quality due to it will be the main object in the app.

Filtering raw data tool:

Develop a small function code that acquires, filters and transforms the raw data and transforms it into a stream that our API could handle fluidly.

Data API:

Develop the small program that request the data needed and transform it into a json file in order to feed the model with necessary entries.

Develop a web and UI handle:

Build from zero, a site that shows and connects all the small parts, and accomplish with project requirements.

Representing the processed data:

Develop an small script that fits with a library tool (matlibplot) that make heat map becomes easier to represent.

Simulate the quake over the 3D model:

Develop the event function that starts the simulation from the selected point over the map.

Merge parts and working tests:

Once the teamwork has finished and all the pieces were properly merged

Host and publish the project in a site:

Merge and compile all the parts and standardise all the items generated.

Document the process:

Gather the information generated during the learning process and document the use, the development and the implementation of the ideas and tools.

Story telling and presentation:

Deep understanding of the implications for society the relevance of the data analysis represented inside our app.

Awareness of the additive value of communicating the importance of the future dependences of geological data related.

Team members:

Marco:

Data analyst, math student, 42 school student

Fernando:

Product graphic designer, 42 school student

Jaume:

Full stack developer, 42 school student

Cris:

Software developer, 42 school student

Xavi:

Software and backend developer, future 42 school student

Luis:

Cybersecurity technician, 42 school student

Management:

The whole assignation of tasks was optimised in order to fit with members knowledge. That issue becomes into a fast progress development. Some problems appear in data handling because of the acquisition in a useful format for our model.

That issue was solved ignoring some invalid data and transforming it into a processed dataset. Our resources and our working capacity was optimised by assigning someone with a low working load or almost finish the assigned task.

Final results

All the challenges assumed has been accomplished and the whole team has developed a perfect performance in order to reach the deadlines stablished.

Webgraphy and references:

Story telling:

https://es.wikipedia.org/wiki/Acuerdos_de_Artemisa

https://es.wikipedia.org/wiki/Tratado_de_la_Luna

https://en.wikipedia.org/wiki/Outer_Space_Treaty

<https://ntrs.nasa.gov/api/citations/19890005471/downloads/19890005471.pdf>

About us;

<https://docs.google.com/forms/>

Front:

<https://apod.nasa.gov/apod/archivepixFull.html>

<https://fonts.google.com/>

<https://stock.adobe.com/es>

<https://codepen.io/>

<https://thenounproject.com/>

Back (API + data filter):

<https://www.geeksforgeeks.org/python-datetime-module/>

<https://pandas.pydata.org/>

<https://stackoverflow.com/>

Data:

<https://nssdc.gsfc.nasa.gov/misc/documents/b53211.pdf>

<https://iopscience.iop.org/article/10.3847/PSJ/ac87af>

https://pds-geosciences.wustl.edu/missions/apollo/apollo_pse.htm