Submission Form

Team #: 1

Team Name: meteo.io

Theme

Choose **only one** theme below and delete the others

New Audiences

Submission Details

Submission Name: opengrib2

Submission Headline *(5-8 words)*: Read and plot grib2 data in your browser

Submission Description:

There are about 1 million grib2 datasets currently available on the MSC Datamart*. A typical workflow to visualise a grib2 dataset consists of: (1) downloading the data, (2) decoding it using the wgrib2 utility into a NetCDF or a CSV file and (3) then using a high-level programming language like Python, R or MATLAB for plotting purposes. As installing wgrib2 and geospatial plotting libraries on one's computer can be challenging, many of the potential audiences for MSC's grib2 datasets will never be able to use them. Our Meteohack project called opengrid2 aims to write grib2 decoding and plotting tools in JavaScript, which can run in the browser with no installation process required. Our all-in-brower JavaScript grib2 tools will help lower the barrier for new grib2 data audiences and could also help the MSC improve their GeoMet services and add grib2 visualisation to their documentation pages.

*: see our script and result over at:
https://github.com/archmoj/opengrib2/blob/master/scraper/README.md

Video Link

Please make your video public or include a password. Videos should demonstrate your solution can be a maximum of 2 minutes
Link: https://www.youtube.com/watch?v=K1vVnTqb87Q

Datasets

Please List all the datasets you used in your solution

Our tools should work with all grib2 files that contain fields that are functions of longitude and latitude. For example,

1. https://dd.weather.gc.ca/model_gem_global/25km/grib2/lat_lon/00/003/CMC_glb_TMP_ISBL_1000_latlon.24x.24_2019071000_P003.grib2
2. https://dd.weather.gc.ca/model_wave/ocean/global/grib2/00/CMC_gdwps_global_HTSGW_SFC_0_latlon0.25x0.25_2019071000_P000.grib2
3. https://dd.weather.gc.ca/ensemble/geps/grib2/raw/00/060/CMC_geps-raw_TMP_TGL_2m_latlon0p5x0p5_2019070900_P060_allmbrs.grib2

Technology used

Please describe the technology used to build your solution.

- jpx.js to convert jpeg2000 to jpeg
- Mojtaba's own grib2 reader written in JavaScript
- plotly.js to plot the data
- Node.js/Redis/CouchDB to scrape the Datamart indices
- Node.js to spin-up proxy server

Prizing

In addition to the Theme Champions and Grand Champion there are two additional categories. Please choose if they apply to your team/solution.

Student Champion

The submission that receives the highest score and a minimum of half the team members are currently a student.

Does this apply to your team? *(Yes or No)*: **NO**

Open Source Champion

The submission that receives the highest score and where all its code, files, and dependencies are released under a FOSS license like MIT, GPL, Apache.

Does this apply to your solution? *(Yes or No)*: **YES.** See
- JavaScript license_list.txt
- license for jpx.js
- license for CouchDB

Next Steps

When you have completed this form, please pdf it and upload it as part of your submission. In addition to this form you will also be required to share your code repository. This is for judging and auditing purposes only – you own the IP. If you have additional materials you can add them to this pdf or add in links to this document. e.g. to a Google drive or Dropbox folder. Please note that the judges will have a limited amount of time to review your submission, so only include materials that are essential to pitching your solution.