CS 422 Project 2 Meeting Notes

Thu Feb 15, 2024

Week 0: Rough draft
Week 1: Prototype website
Week 2: Integration (Simon, Freddy, Isabella)
Week 3: Final Documentation and testing
Week 4: Final presentation

Libraries:

- MAST API
- Calendar

Tools:

- Javascript
- React
- Python

Mon Feb 19, 2024

- Web scrape mission
  - display current image of that day
  - in gallery section for that day, query the photos
- Photo of the day
- Mission data, to all photos of the last 24 hrs to display
- Observation schedule.
- Query into MAST database using MAST API: fetch images from a specific day based on observation
  - Convert `.fits` file to `png` using `astropy` Python library.
- Check mechanism to ensure processed images are skipped.

Tue Feb 20, 2024

How my module works:

- get web scraped info, check if file has been pulled from dir, then call mastAPI , takes the photo converts it and puts it into the directory.
- When web scrape info changes, check clear observations from the dir.
- Find a way to match observation data with complete photo from NASA.

Wed Feb 21, 2024

- Conduct research on:

- How to handle FITS files.
- How to process FITS files.
- How to scale FITS files.

Sun Feb 25, 2024

- Putting web scraped data into SQLite3 format for easier filtering and data aggregation.
- Finding a way to match specific data from the NASA photo release with the observation schedule
- Additional features for all telescopes
- Focus on filtering down the info:
- 2nd page time line of observation schedule

Mon Feb 26, 2024

Once all files are downloaded

- All links observations from site and any new ones. within each observation, each column, with one processed photo
- Directory: Check to see if photos has been pulled from that observation. If photo hasn't been pulled, then we process to pull one.
- PNG format:
  - Date
  - Zulu time
  - Target name
- When pulling observation, check if file exist, then skip, otherwise don't save.
- Take JSON for the metadata that can be displayed

Tue Feb 27, 2024

- Figured out a way to reduce space, once FITS image is processed and converted to PNG, the FITS file can be deleted.
- Downloading large images. Where should they be stored?
  - Find a way to avoid using large files.

Wed Feb 28, 2024

- Specific metadata to include for each observation.
  - target_name
  - target_classification
  - instrument_name
    - filters
  - obs_title
  - description
  - Date
  - Calibration level

    - Fits url
    - Size
- For new observations, append at the top of json file.
- Check if json file and image folder to see if the observations have been processed to avoid reprocessing.
- For json format:
    - The key will be the PNG name (target_instrument_date).
    - The values are the observations metadata.
- How to set up PNG name
    - Fetch .fits files from MAST database based on observations and dates.
- For each PNG photo, store metadata in the next line within same text file.

Thu Mar 7, 2024

- Getting dummy metadata in json format and images for Freddy.

Sun Mar 10, 2024

- Finalize SDS/SRS documentation.
- Make updates to static and dynamic diagrams.
- Finalize my sections on the presentation slides.
- Aquire the rest of the observations by running the data fetch and processing script for cycle 1 (observations from 2022-2023).