Sprint 1 Retrospective
TEAM 5
WPEAR

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1. What Went Well

In this sprint we were able to get most user stories finished and created a working prototype. We were able to create many prototypes for pieces that we were not sure were even possible. Although we were unable to get interpolation working correctly we were able to get the comparison and visualization working.

a. User Story 1 is completed. It enables the program to list and download files from the forecast and observation file repositories using the provided HTTP links.
b. User Story 2 is partially completed. We were able to extract the required variable, remove undesirable data points for regions outside our focus region and save it into a local file that could be used for further analysis and visualization.
c. User Story 4 is completed. We are able to generate the static visualizations with forecast and observation data in form of heat map over Indiana.
d. User Story 5 is completed. We are now able to get two grib files as input from the Controller and do a basic difference (subtraction) of the values in the two files. The comparator returns a GRIB object back to the Controller.
e. User Story 6 is completed. The generated static visualization of the comparison displays the data difference well.

f. User Story 7 is completed. The three visualizations generated from the forecast, observed and the difference files are updated and can be viewed through an html page. This is automatically updated every time the controller is run (hourly basis, to be implemented in the future).
g. User Story 8 is completed. All of the different components were orchestrated together to download, convert, compare and visualize with a website.

2. What Did Not Go Well

We managed to complete most of the task assigned for Sprint 1. However, we spent a significant amount of time finding our way around GRIB (*GRIdded Binary*) files, which is the format of storage for both forecast and observation files. This meant that we were unable to complete all our user stories. However, we were able to get a complete demo running with everyone's individual modules. Though one key piece of functionality was missing we were able to show all of the other work we completed:

a. User Story 3: We had to convert the data from forecast files into grids of 1 square kilometer from their original grid size.
    i. This was not completed because a lot of time was spent in manipulating GRIB objects using pygrib and then later, gribapi. It was later realized that using these libraries would be difficult for completing this task and we would be better off using an interpolar module instead. We found a suitable module that we think could be used to accomplish this.
b. User Story 3: We had

3. How we can improve

In Sprint 2, we hope to be more productive individually and as a team by focusing more on communicating and helping each other as well as by spending lesser time experimenting with GRIB files. Furthermore, we hope to be able to test the logic of our code.

a. We would be spending lesser time in understanding GRIB files since we have gained a lot of knowledge and experience using and manipulating them in this sprint. This extra time could be spent on programming and completing more tasks.

b. We would be starting early in the sprint with accomplishing the required tasks as it would give us more time later in the sprint to offset unexpected issues we face.

c. We would like to write test cases to test the logic for analysis as that would ensure any future changes do not break the implemented logic.

d. We will look to have a clearer set of requirements and goals for each class and method so that there is a better understanding of what is being provided and what is the expected result (both in terms of format as well as content).

e. We will be communicating more and using Trello Board to keep track of our own as well as one another's goals and to-do tasks for every meeting. This could help highlight potential difficulties individual members might be having and fuel others to support or help in completing that task.

f. We will be finishing up the user stories from the last sprint and adding new stories that are yet to be completed from the product backlog. Additionally, as we gain more knowledge about this system, we would like to keep the sprint documents updated when we make changes to our sprint goals.