CGI homework documentation

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Preparation

- Refreshed my memory about Vue a little bit by looking at some examples and the documentation.
- Created a fresh Vue project

Phase 1

- Time spent ~5 hours
- Took a bit of time to get used to Vue, since I had not used it in a while
- Sunrise and set calculations seemed a bit intimidating at first, but after a bit of googling, I found the perfect library called SunCalc, which made the process significantly easier.
- The rest was quite simple

Phase 2

- Time spent ~6 hours
- I was first taken aback, by the fact that leaflet for example didn't have too many good examples for use with Vue, but then I found out that there is a library for that called Vue2-leaflet. I got the initial instructions and base code from here: https://vue2-leaflet.netlify.app/quickstart/
- I encountered a problem where my global style would also overwrite the style of the leaflet map. I probably spent a good hour on this issue, because there is nothing about it online. I finally figured out a way to ignore the leaflet map and all its children in global styling, by using the css :not selector. While this was a rather painful process, I gained some more general knowledge about css.
- Another smaller problem was the marker's icon. It didn't load in properly, but as I found out that seems to be a common issue, which I found a fix for here: https://github.com/vue-leaflet/Vue2Leaflet/issues/96
- I decided to use Vuex for communication between my Vue components, because they don't all have a parent-child relationship, which may have been a slight overkill since this web app isn't that big or complicated. I initially had some issues with getting them to communicate properly, but I managed to overcome the problem fairly quickly. This resource was very useful: https://dev.to/viniciuskneves/watch-for-vuex-state-changes-2mgj

Phase 3

- Time spent ~4 hours
- I first googled for graphing libraries and tools. I first tried to use a library called chart.js, which has a Vue version as well, called vue-chartjs. I then followed the directions on this page to set it up: https://vue-chartjs.org/guide. However, I encountered some odd problems, which I couldn't find a fix for. My code worked in an online code sandbox, but not in my project, even though I double-checked my dependencies, etc. I then found the library vue-google-charts, which didn't have the same issues, so I settled on it.
- When calculating data for the graph, I first tried using a while loop and checking whether the day is the same yet or not. However, I found out that this is a pretty heavy process and I was

only able to display like a 6 month period this way. Instead of that I now use a for loop and let it work until all the days have been accounted for by looking at the number of days between the 2 dates.

Phase 4

- Time spent ~1 hour
- Added a custom favicon (https://en.wikipedia.org/wiki/Favicon)
- Exchanged the default logo for a GIF
- Added coordinate validation
- Added date validation
- Added time period validation
- Added alert for Polar night/day
- Added hover effect for inputs and buttons

Additional notes

To run and test the application follow the directions in the README file.