

Narrative Databases:

Background and Purpose:

The artifact that I am using is a new creation, that was started shortly after the start of this term, beginning of November 2020. It is a manipulation of the data from the weather station from categories one and two, by retrieving the data from the MongoDB using HTML/JS to provide a visual means to selecting the data to be displayed and then displaying a graph of that day's weather values. To do this the data needed to be retrieved from the MongoDB Atlas servers stripped of the _id marker and broken back down from the JSON object into the simple list of values, that was used to create the database. Those values were a time string, temperature, and humidity. Those values could then be quickly parsed into a CanvasJS graphing system to display the information in a graph for the selected day.

The inclusion of this artifact brings the use of the MongoDB system full circle, allowing me to showcase my abilities to utilize that database system from recording the data on embedded software to being viewed on a consumer level over a webpage interface. Filling the category for the database was an interesting challenge, as my familiarity with the MongoDB system leads me to want to use that system to better show my capabilities. I would not shy away from SQL database system, but it would come with a few more challenges to catch my comfort level with it up to where I am at with MongoDB. The other reason for selecting this this artifact as it allowed me to explore HTML and JavaScript, which I have not actively done since the mid-90's. I felt that learning these systems and fleshing out what I have already done would be a great milestone for myself, personally and help give me some better insight into these two systems and be more familiar with them moving forward. This artifact is a new artifact from the inception of the idea

to completion. The idea though was inspired by the use of the CanvasJS file from CS350 projects, though, and provided direction on where I wanted my end goal to be.

Results of the Week:

I believe so, as I have used the HTML/JS system to provide a graphical way to retrieve the data and view the results in a manner that most consumers would be capable of doing. At this point there is quite a bit of changes in the final outcome of this project. Initially, I had planned to develop a registration system that would store user's login information and password on a MongoDB and/or validate their credentials if they were returning after previously registering. This would then lead the user to a list of available dates of data collection to select and see the data from that day displayed graphically. Unfortunately, the scope of this project and the amount of time it took to get to a point of being able to start constructing the resources on the frontend quickly overflowed my estimates. As it sits currently, the frontend pages for the logging in and registering are constructed as well as some of the backend functions but establishing the necessary logic to complete these two pieces became fleeting and I needed to shift the focus on to the assets that would be dealing more the database resources that were already established. Initially, I had intentions of solely using HTML/JS for the entire project, but I was woefully naïve on the limitations of the JavaScript system for being able to perform backend functions. This led to a late inclusion of a Python backend system being connected to the system via the Eel plugin. This allowed for information to be passed between the two languages and work together to create the system.

The lessons learned during this last week were numerous, to the point of being overwhelming on where to begin. Learning how to quickly code HTML and JavaScript for would be the best place to start, as I have walked through so many guides and coded along with a

massive amount of tutorial videos, listening to their explanations to figure the systems out, that I cannot honestly recall what I have seen and would not doubt that I did the same guide or video more than once unknowingly. That was one of the parts that I was interested in though. Could I learn these systems in a short enough time to be able to put the pieces together and maybe not to a professional level, but also to a point that I could say that in less than five weeks' time I have the ability to gain understanding of systems and processes that I knew little about. Another challenge was after I got to a point that I was confident enough to start building the frontend pieces and getting them ready, which took the majority of the time, leaving a short time frame where I discovered that I was going to need a backend system to actually do what I need to do, leading to some quick coding and reuse of code from the first two categories to get to functional backend system for the project. Some of the challenges I was not able to overcome, partly due to the limitations of the Eel plugin and JavaScript is the somewhat sluggish nature when passing more than just a command back and forth between the sides occurs. This led to front loading of the system, causing a slower initialization time, as the backend systems initialized, but gave a moderate amount of performance increase overloading the backend functions when they were called leading to some long load times in the process. The Eel plugin though is not intended for high volume traffic, but more for prototyping and building of python GUI systems. Although, there were some steep hurdles to overcome in this category, it also yielded some of the euphoric moments of when something suddenly clicks, and you realize that you can put this piece here and move that there and then everything starts falling into place.