Engineering on Display v3

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Abstract

This project is to create an interactive application that aims to take advantage of the automation within the Engineering and Industry Building (EIB) at UAA. Our primary effort is to take the previous EoD projects' functionality and create an application web application that provides interactive graphs, administrative control, and is both stable and scalable.

Setback and Challenges

One of the biggest challenges we had was that we had half a semester to finish this project. It also meant that it affected our requirements and how well we were able to fulfill them.

Defining our Requirements

Meeting with our advisor/faculty mentor Dr. Mock has allowed us to define and see which requirements are necessary and what are the ways to complete them. The requirements are:

1) Parse the .CSV file acquired from Siemens

2) Display the data into graphs

3) Display non data content (i.e., announcements, events, etc.)

4) Allow only authorized users to modify the slideshow

5) Have touch screen interactivity
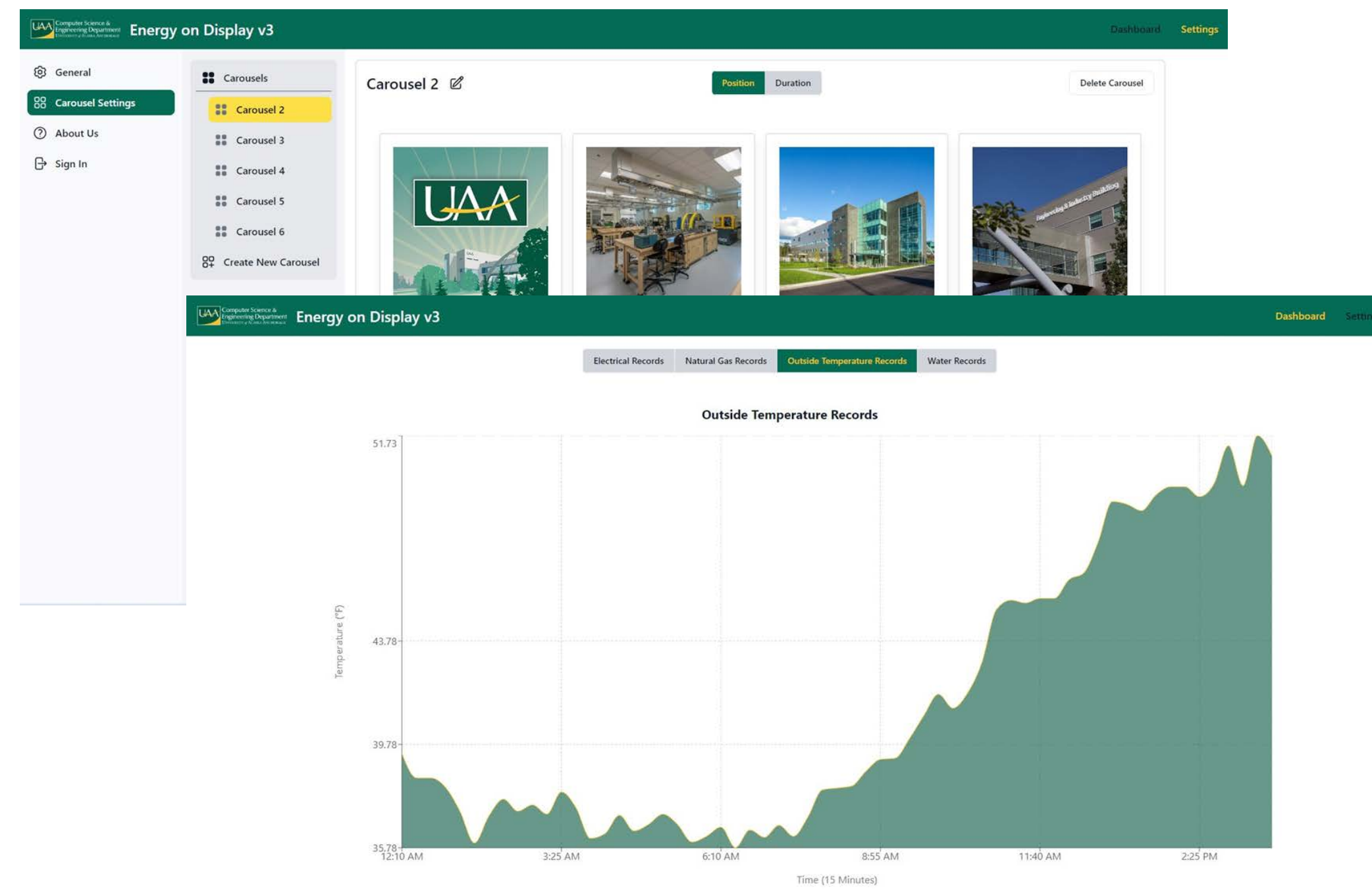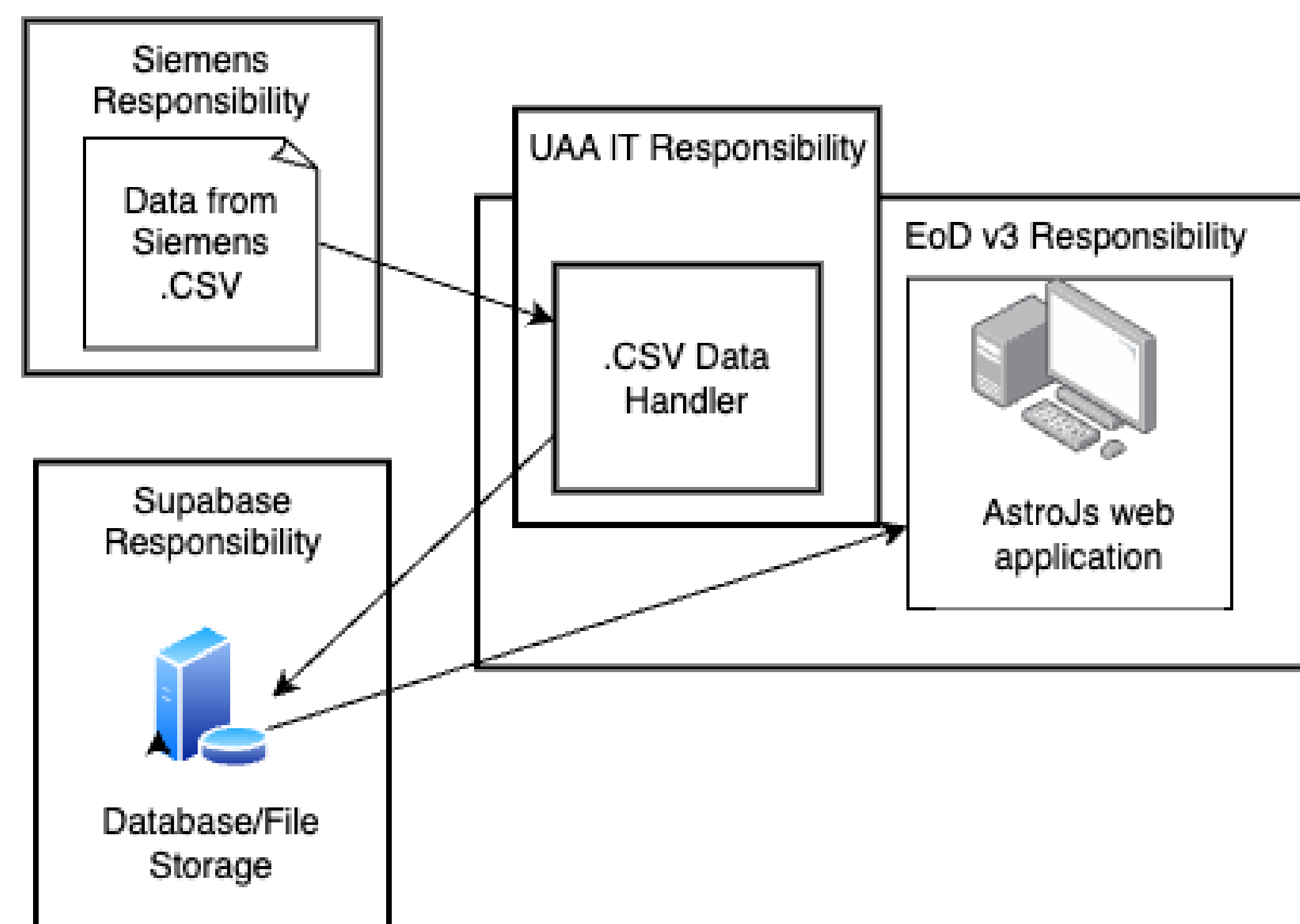
Figure 1. Screenshots of our application

Figure 2. Architecture of getting the building data into our application

System Design

Based on our requirements, these are the ways we decided to approach building are application:

1) AstroJs as our main frontend framework (slowly migrated towards ReactJs later in the project timeline)

2) Supabase as our main database, which allows us to not have an extensive backend

3) Javascript used to set up a cron job that parses the .CSV files

Results

The application that we were able to create was only able to fulfill parts of our requirements. For example, it can provide the user with the graphs containing the data provided by Siemens, however this data is not automated, and we are getting it from an older file from the previous EoD project. The other requirements, such as being able to display non-data was close to finished but the tight deadline, but the application can acquire image file files from the user. On top of all this, due to the time crunch, testing has been limited and only a minor heuristic evaluation has been done.

Future Direction

Due to our setback this semester, we had limited time to fully define and fulfill our requirements. Therefore, this project still has requirements needed to be done and improvements to the current can be made. A couple features that we wanted to integrate are important but was not finished on time, include requirements 3 and 4.