MICHIGAN STATE UNIVERSITY

Project Plan Presentation

Microsoft Excel Data Extractor/Modeler

The Capstone Experience

Team Delta Dental Knowledge Science

Ethan Bransdorfer
Morgan Mundell
Peter Ro
Xochitl Weiss

Department of Computer Science and Engineering
Michigan State University

Fall 2021

From Students…
…to Professionals

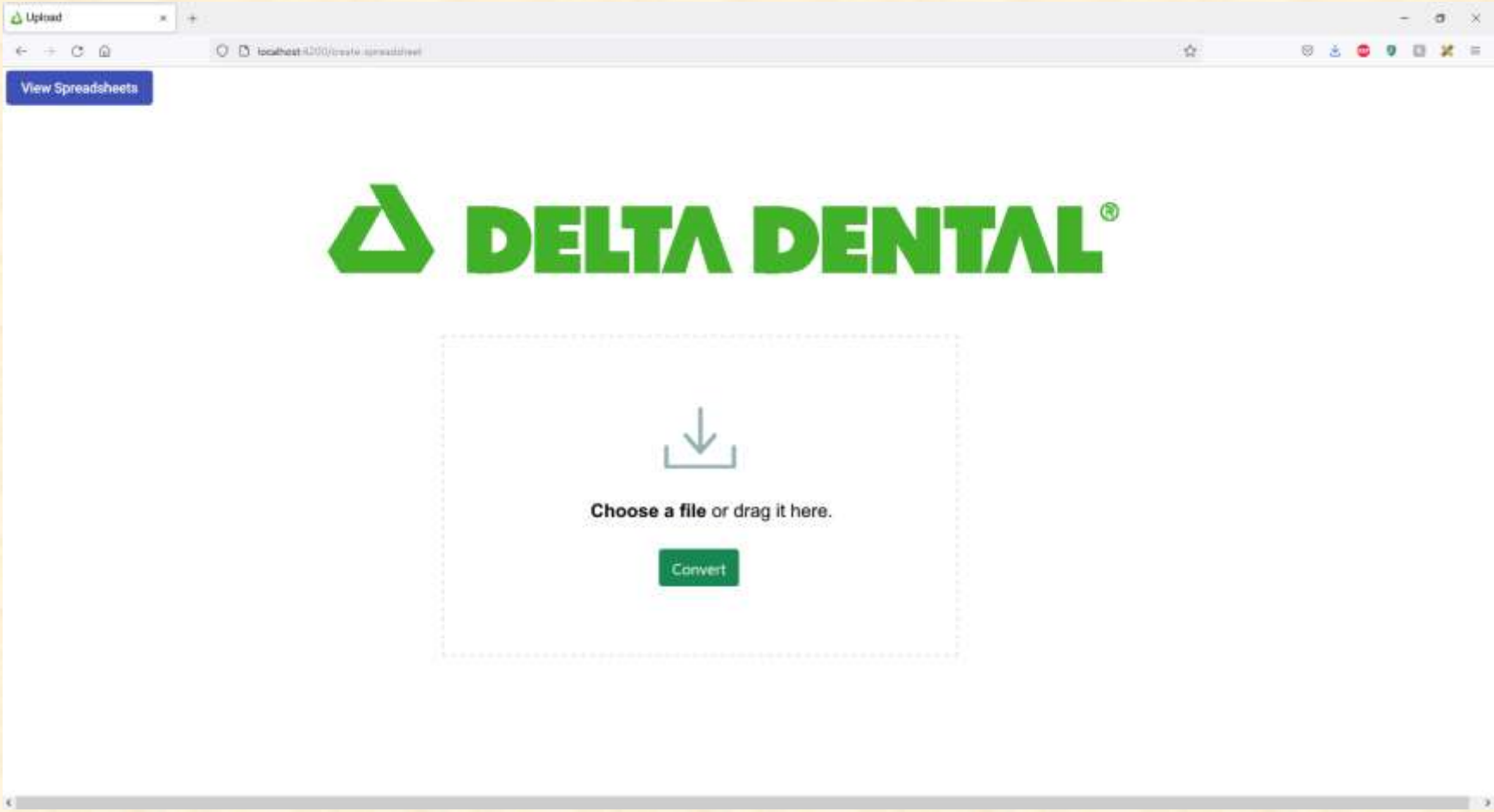
Functional Specifications

- Make Excel sheets easy to understand
- Adds implied context to data
- Data tethered to labels not just location
- Ability to retrieve data at a different time without Excel
- Improve Efficiency of Delta Dental Employees
- Dynamic, functional for all data models
- Remove Reliance on code developers

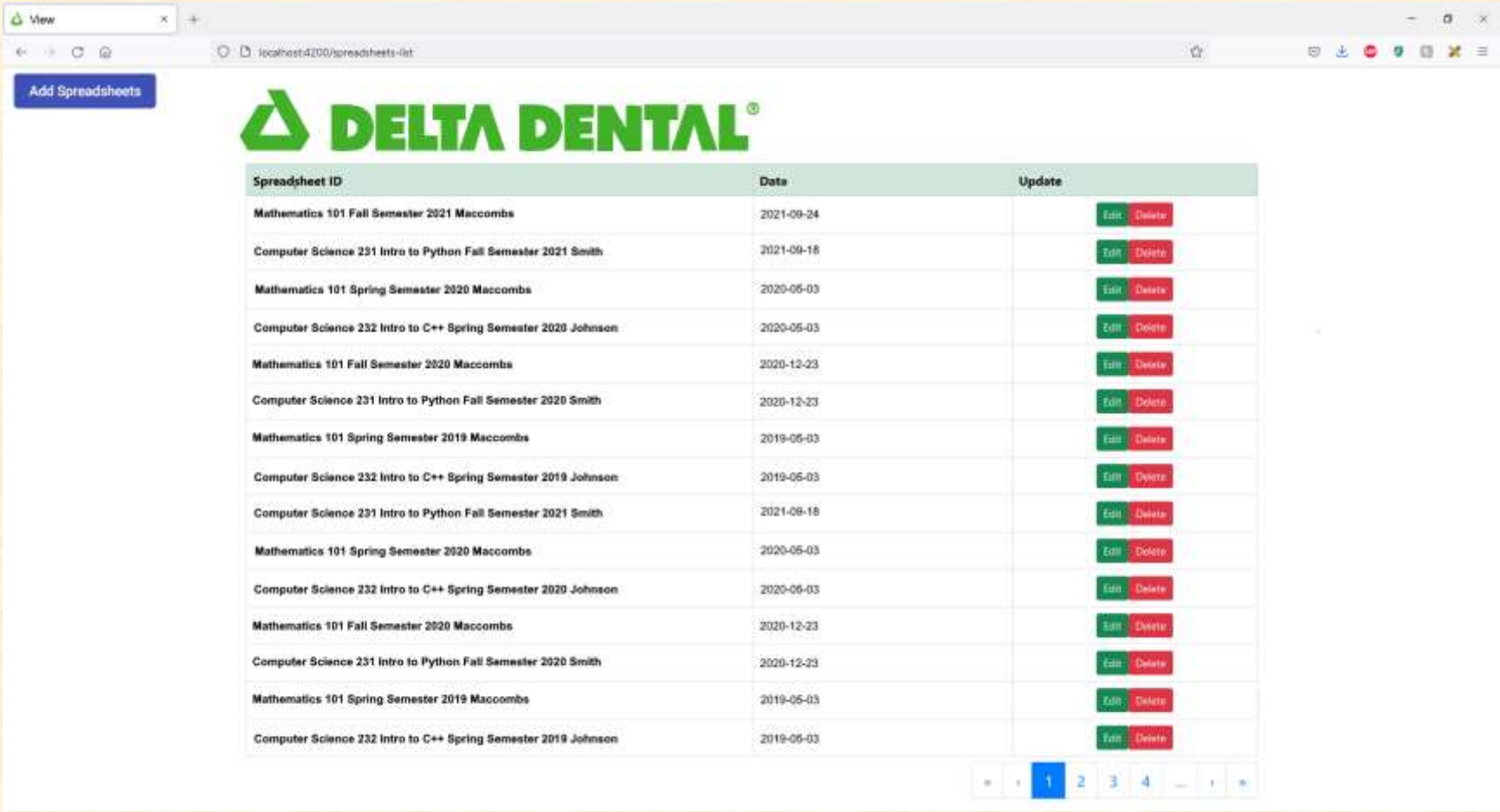
Design Specifications

- Intuitive web application
- Drag & Drop upload
- Previously uploaded spreadsheet viewer
- Browser based spreadsheet with labeling functionality
- Simple display to sort through labeled data

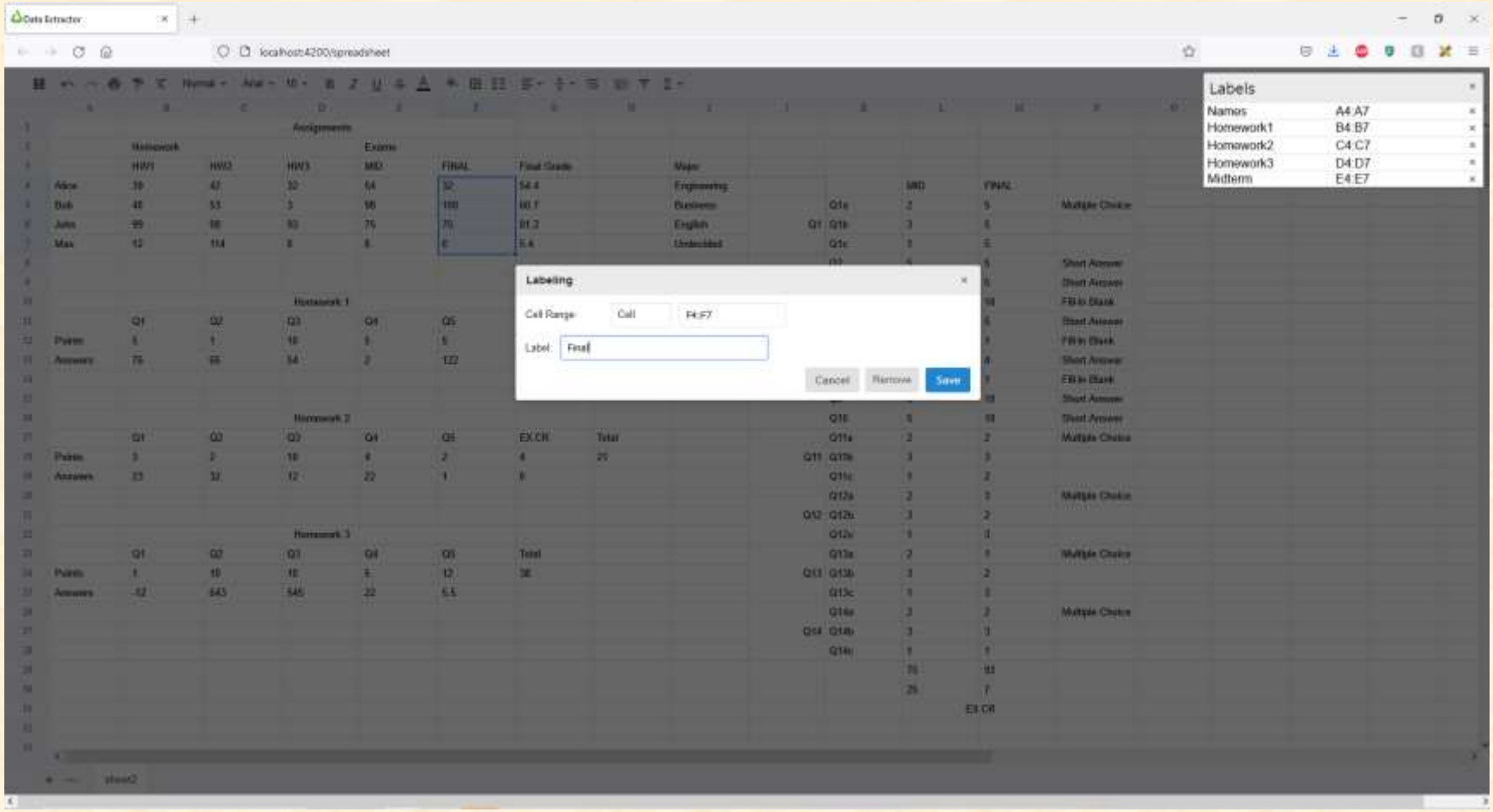
Screen Mockup: Upload



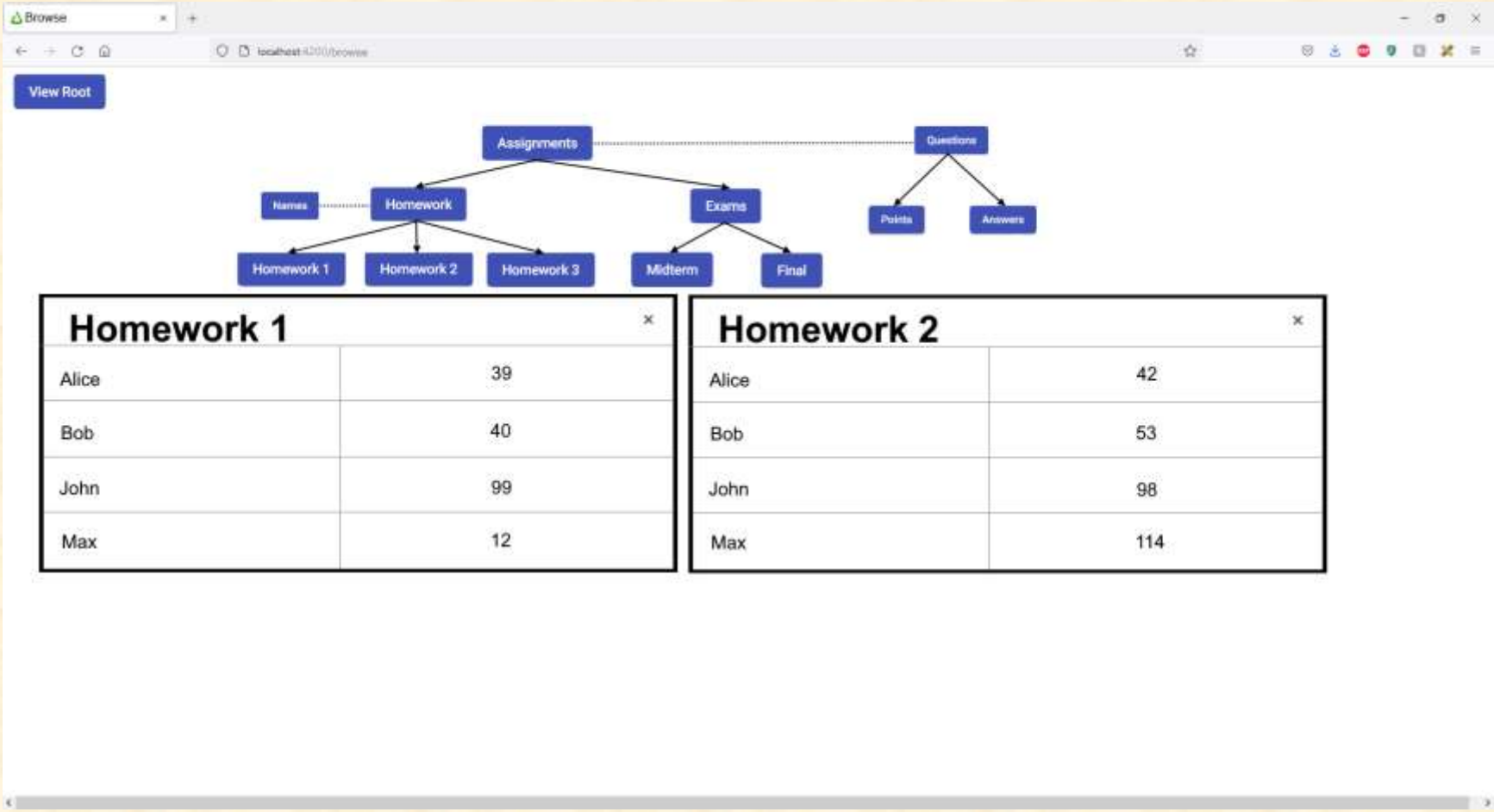
Screen Mockup: View



Screen Mockup: Label



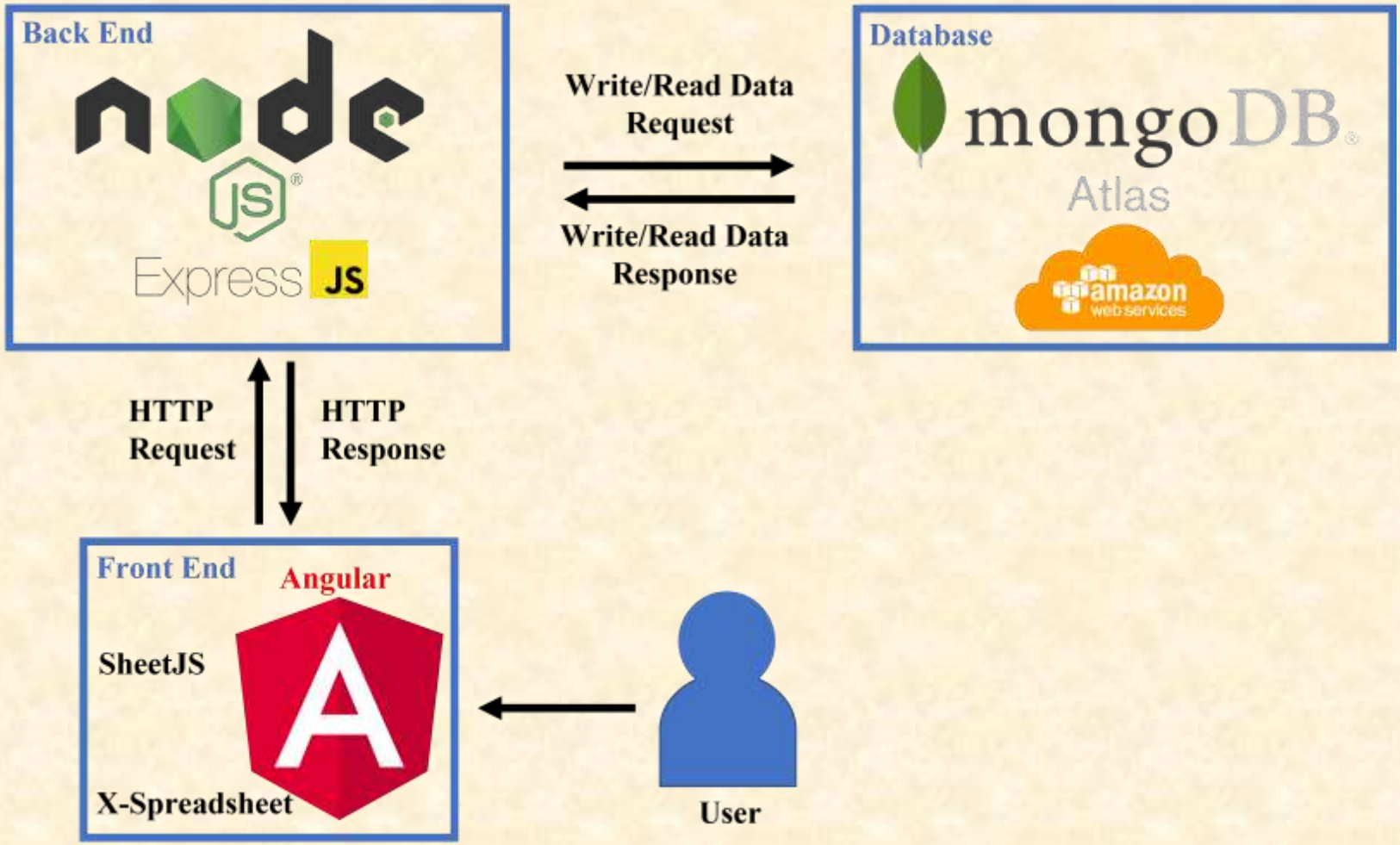
Screen Mockup: Browse



Technical Specifications

- JavaScript/TypeScript
- Microsoft Excel
- HTML/CSS
- NoSQL

System Architecture



System Components

- Software Platforms / Technologies
  - MongoDB
  - Express/Node.js
  - Angular
  - SheetJS
  - X-Spreadsheet

Risks

- UI Rendering Constraints - High
  - Rendering large datasets dire to frontend performance.
  - Virtual scrolling or progressive rendering.
- X-Spreadsheet Integration - Medium
  - Difficult integrating front-end package x-spreadsheet.
  - Investing production cycles to decide: resolve or pivot. Fallback to refactor.
- Loading Data
  - A key feature is the reproducibility of the input excel file from our backend.
  - Could save the excel spreadsheet in an open source json-based object for little additional cost.
- Multidimension Data Saved into JSON Form
  - No way to support turning an excel file into JSON unless it only has the first row as data labels and the rest as data. Need to support multi-dimensional and unique files.
  - Detailed labels and indications of dimension from user input will allow us to create a function to achieve this. We can look into SheetJS source code to aid in making this function.

Questions?