Project Plan Presentation
Dealership Parts and Telematic Insights

The Capstone Experience

Team Urban Science

Michael Sobieski
Jonathon Moore
Noah O'Bryan
Trenton Lach
Jackson Riggle

Department of Computer Science and Engineering
Michigan State University

Fall 2022

From Students…
…to Professionals

MICHIGAN STATE
UNIVERSITY

Project Sponsor Overview

- Urban Science is a global automotive consulting firm that is based in Detroit, MI
- Urban Science serves automotive Original Equipment Manufacturers (OEM) in over 70 countries
- Helps dealerships and automotive OEMs derive insights using telematic vehicle data

URBAN SCIENCE™

Project Functional Specifications

- Dealerships don't know how to effectively use the new telematics data that cars are generating
- Our project draws insights from this data through analytical processing and visualization
- Visualize data to highlight metrics and expose trends in dealership profitability
- Display key insights to improve speed, access, and consumption of data
- Scalable, with capacity for additional data
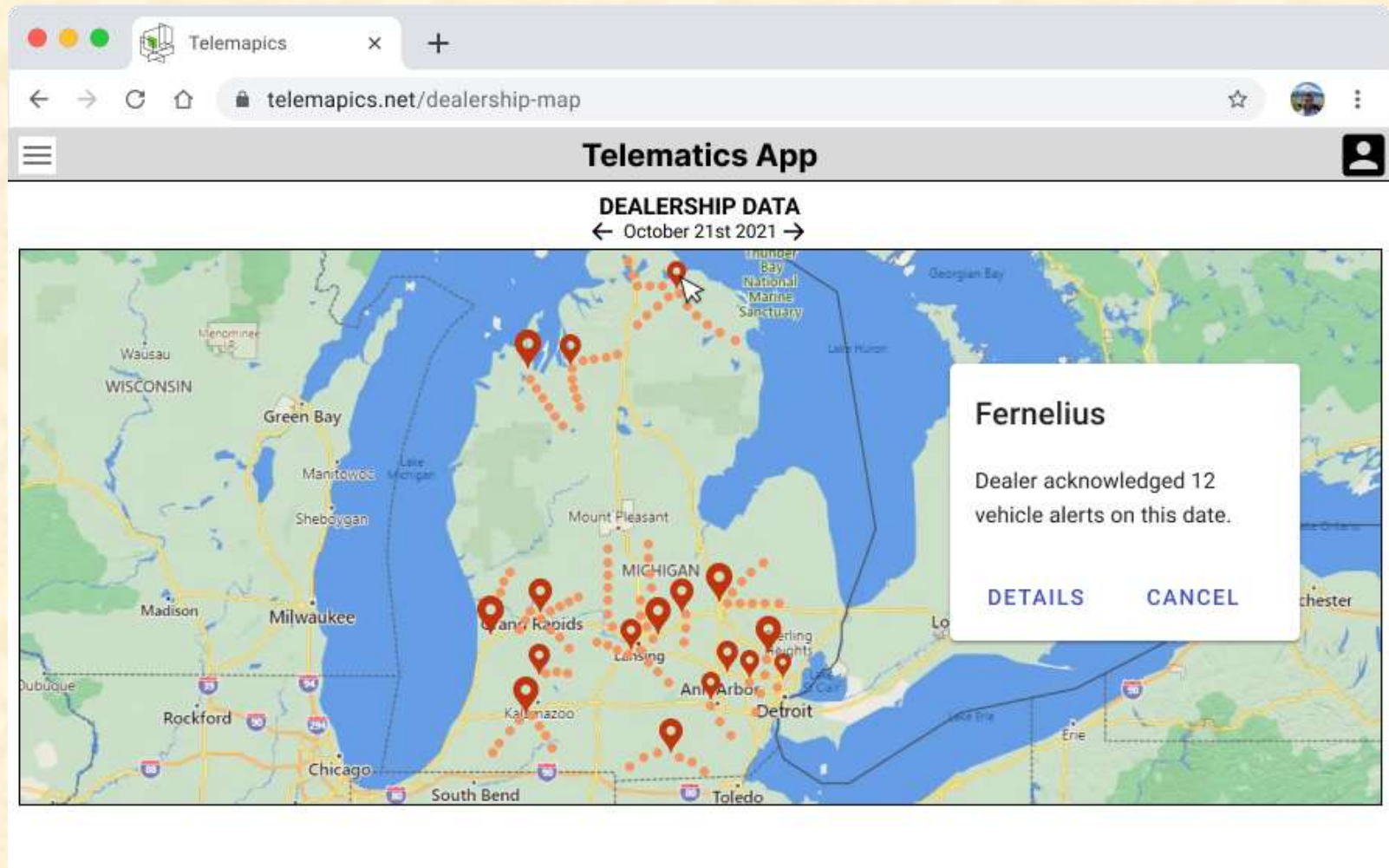- User roles determine data visibility

Project Design Specifications

- Web application that visualizes telematic data
- Different user roles are presented different data depending on authorization
- Interactive dealership icons that redirect user to a separate webpage with further insights on the dealership(s)
- Insights are pulled from geographical data such as automotive alerts by zip code and dealership traffic
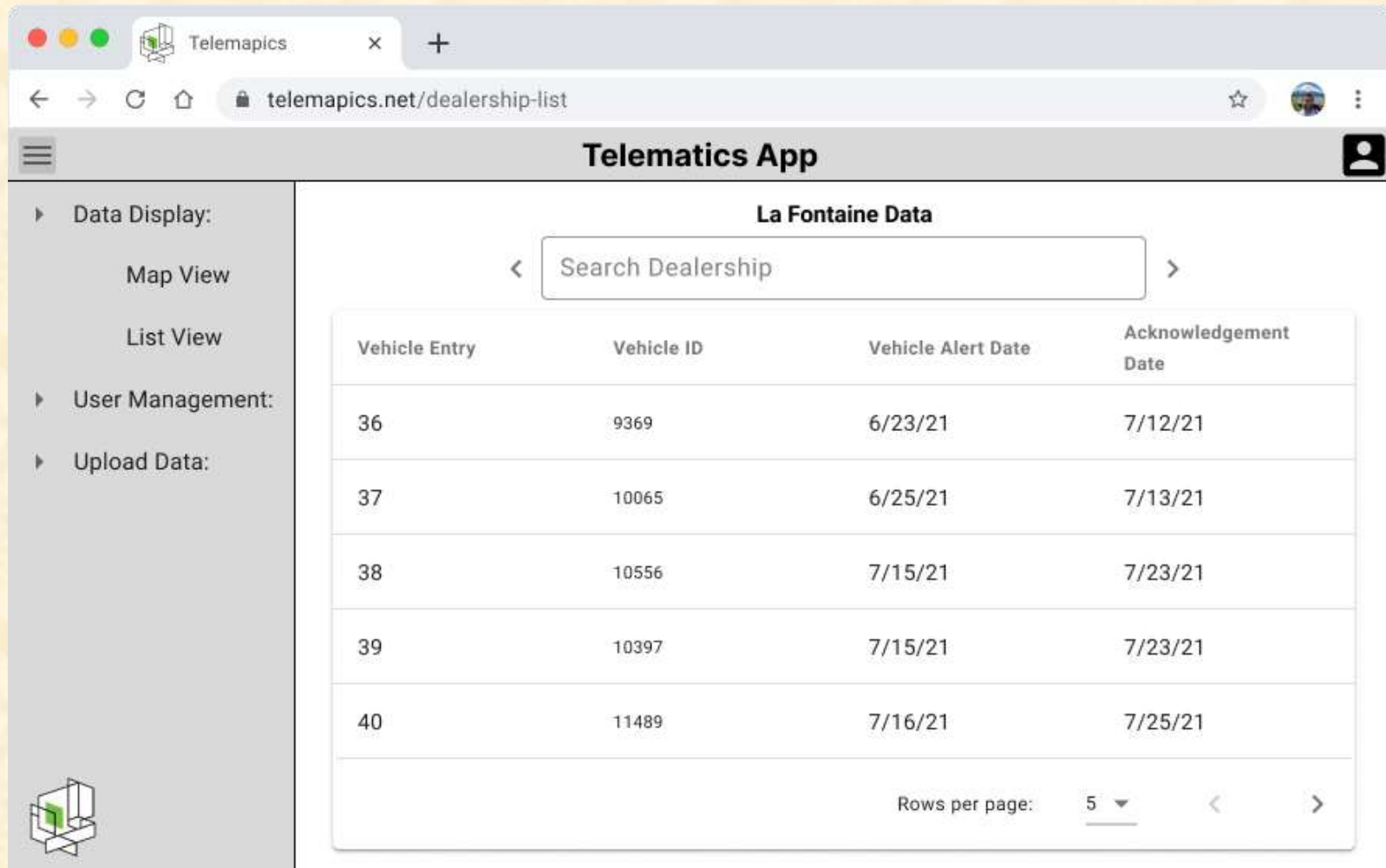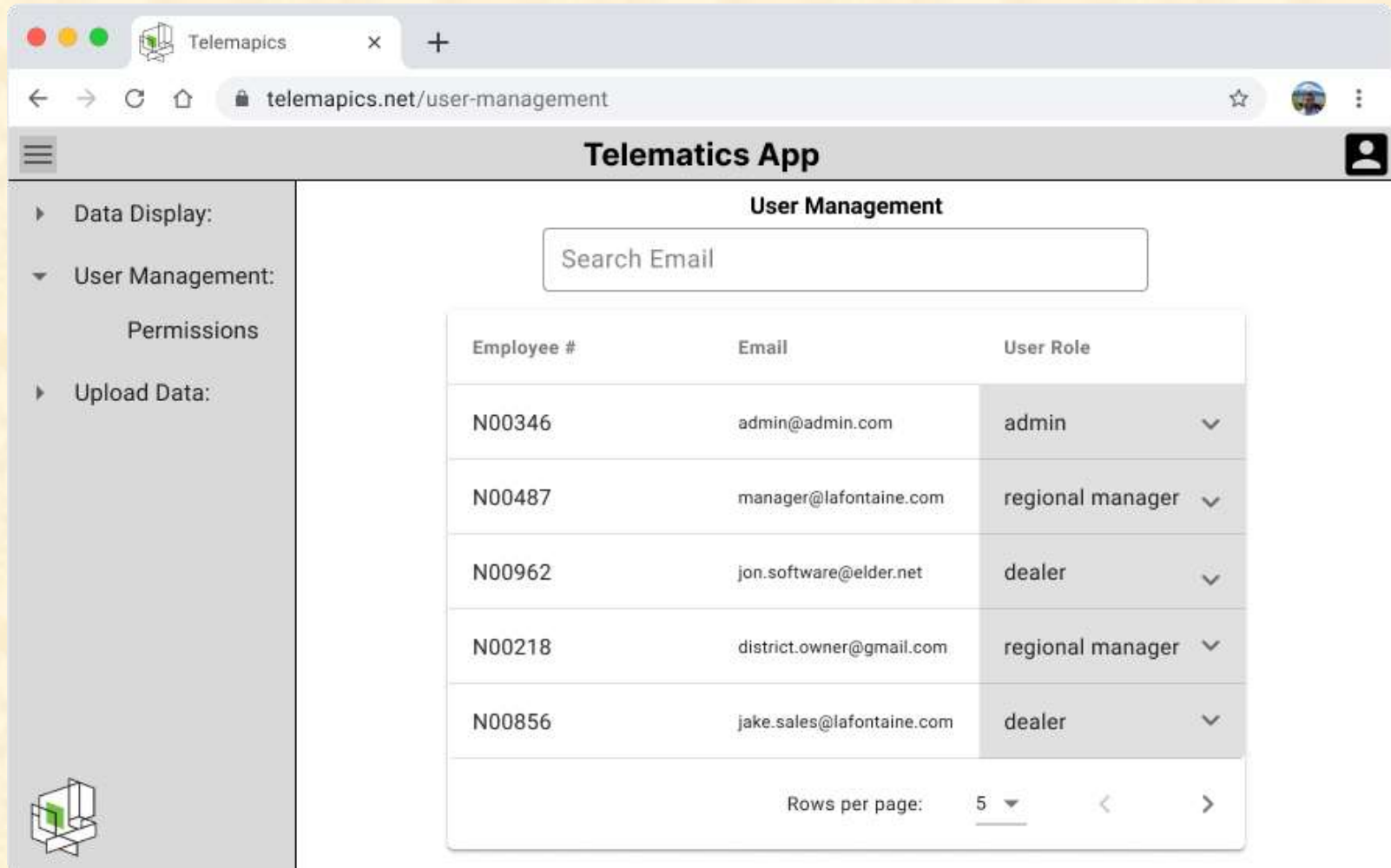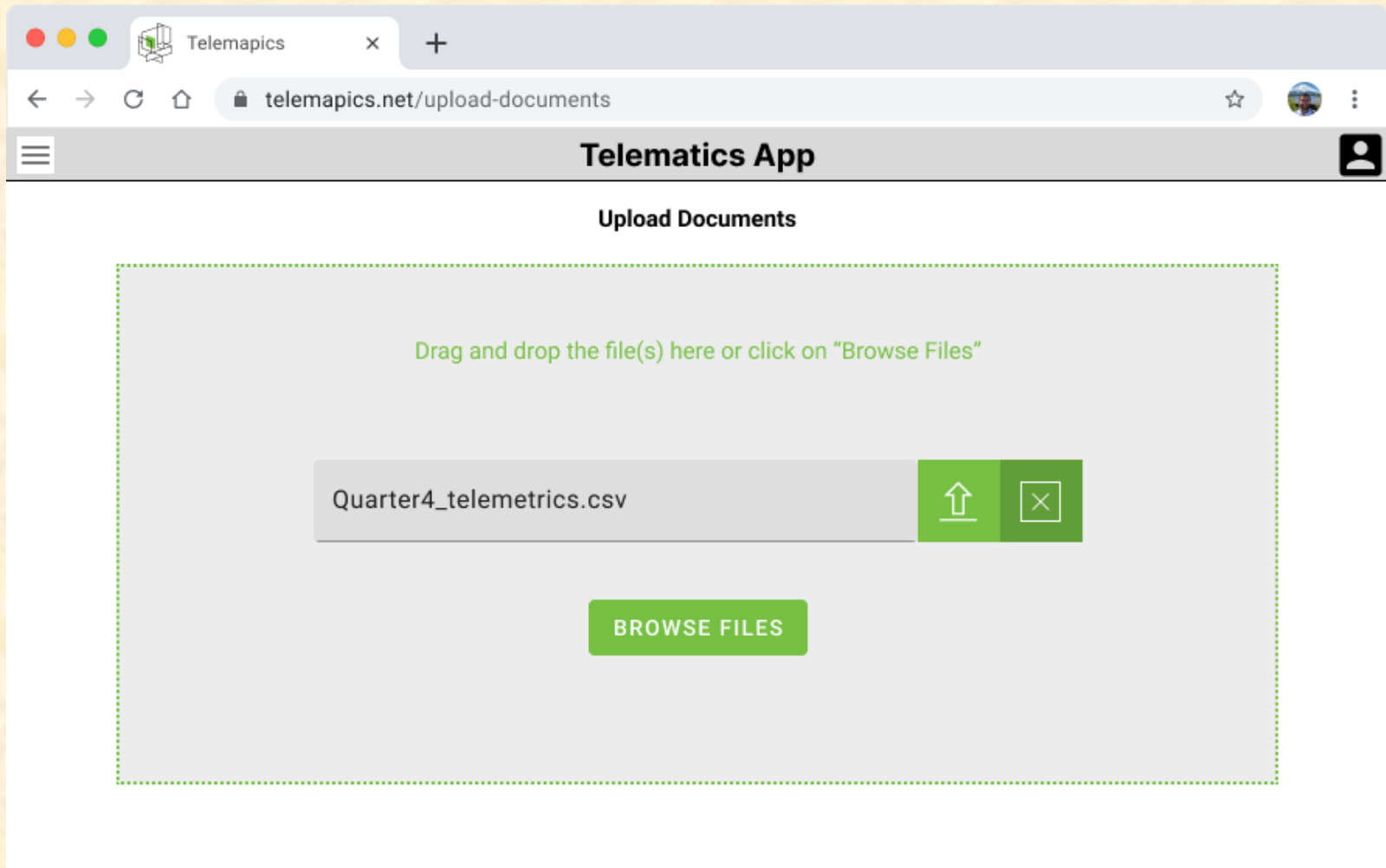
Screen Mockup: Dealership Map

Screen Mockup: Dealership List

Screen Mockup: User Management
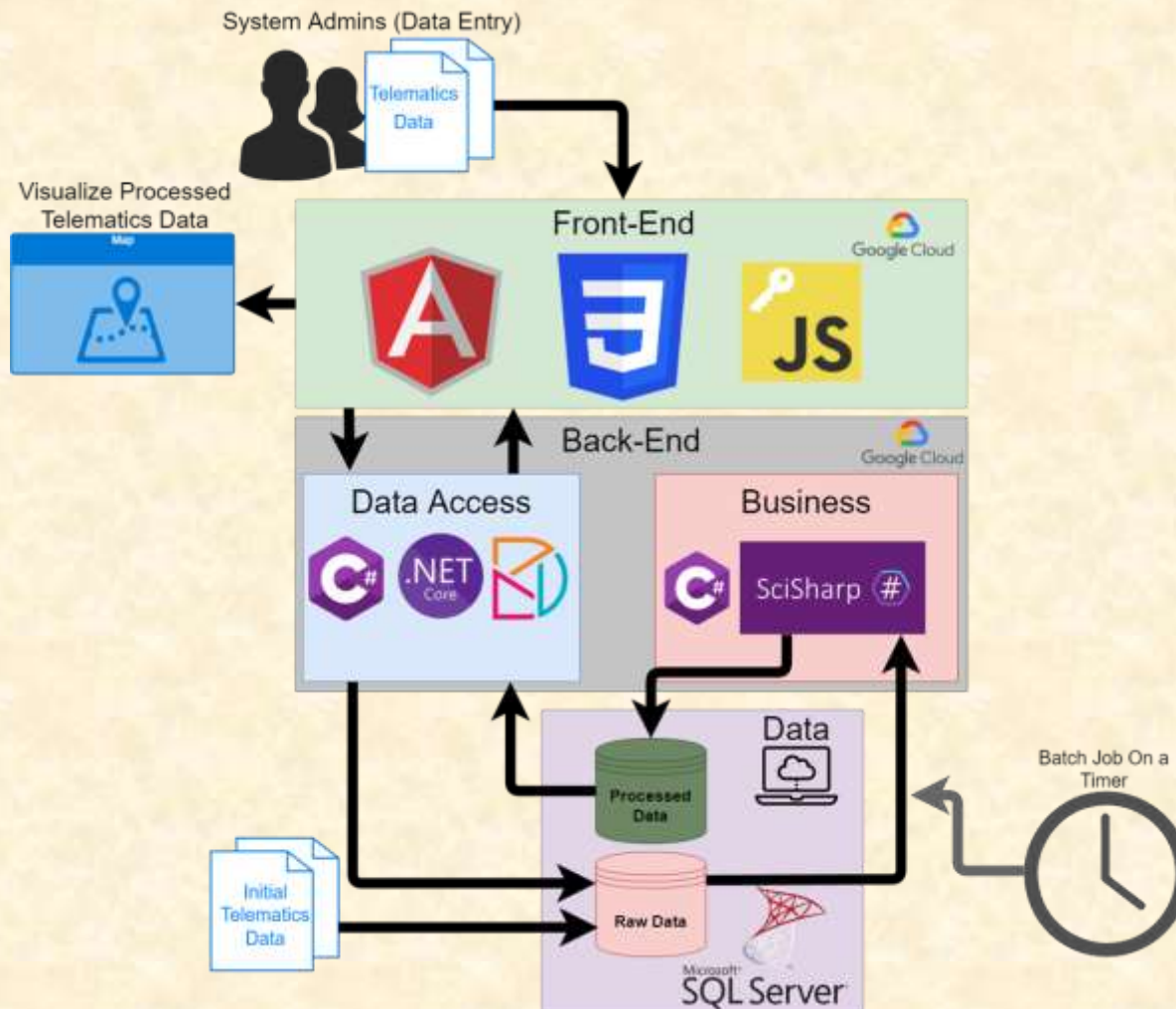
Screen Mockup: Document Upload

Project Technical Specifications

- Backend
  - C# .NET
  - SQL Server
- Frontend
  - Angular - JavaScript Framework
  - HTML
  - CSS
  - TypeScript
- Other
  - Git
  - Visual Studio
  - Visual Studio Code

Project System Architecture

Project System Components

- Hardware Platforms
  - Google Cloud
  - Local Dedicated Server
- Software Platforms / Technologies
  - SQL Server
  - Git
  - Infragistics Angular UI Development Tools for Visualization

Project Risks

- Selection of Data and Methods for Visualization
  - Determine what data is important and how to display it
  - Mitigation: Rank each data type and confirm important data with client
- Business Layer Data Processing Methods
  - Team is inexperienced with creating business layers on web applications
  - Mitigation: Discuss possible architecture designs for business layer with client
- Properly Exposing Business Layer Backend APIs
  - Deploy backend APIs so that telematic data can be displayed on the front end
  - Mitigation: Performance test backend. Emphasize unit tests and integration tests
- SQL Server Setup
  - Keep the local server running reliably with SQL Server
  - Mitigation: Stress test the local server and have a backup server for emergencies

Questions?

? ? ? ?

? ?

? ?

?