MICHIGAN STATE UNIVERSITY

Beta Presentation

Airport Capacity & Ground Space Management

The Capstone Experience

Team NetJets

Ben Grycza
Kendall Korcek
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From Students…
…to Professionals

Project Overview

- Web app to monitor airport and ground space capacities
- Interactive map with airport icons
- Airport traffic summaries with incoming flights
- Recommendation engine and simulation features to handle over-capacity scenarios

Team Member's Technical Tasks

Technical Tasks Assigned

- Emily Telgenhoff
  - Airport Batch File Upload
  - Manual Maintenance Feature
  - Batch Airplane Simulation Feature
  - Airport Data Gathering/Markers Zoom In/Hover Bars/Airport capacity statuses
  - Flight metadata scraper for constant data updates
- Ryann Seymour
  - Summary Page basic layout with mock data
  - FBO map outline polygons on summary page that change color based on their population status
  - Okta Verification integration API + login page
  - Creation of cartesian grid graph and create algorithm to create data to populate it on summary page
  - UI for Batch Data Upload page
  - Notifications populate with real data
- Ben Grycza
  - Setup of our NodeJS server
  - Priorities of fbos added and allowing the user to change it in the UI
  - Add FBO option so that the user can draw in a box and it will give an estimated capacity and a polygon to display on the summary page
  - Edit FBO to change the shape and capacity of the FBO
- Jay Scott
  - Pair programming to setup NodeJS server
  - Created APIs to handle flight, airport, and FBO data
  - Initial React components for Arriving/Departing tables
  - Recommendation Engine
  - AWS Amplify/Lambda Hosting
- Kendall Korcek
  - Set up google Maps API integration with collapsable windows for searching airports and showing current alerts
  - UI and backend for simulator page displaying all planes current status and filtering between different categories
  - FBO batch upload function
  - Functionality for calculating the next closest airport
  - UI for simulator and recommendations
- Ryan MacDonald
  - AWS hosting of a backend server and a database
  - Data scraper that continuously processes live FAA data
  - Designed database for tracking planes and airports

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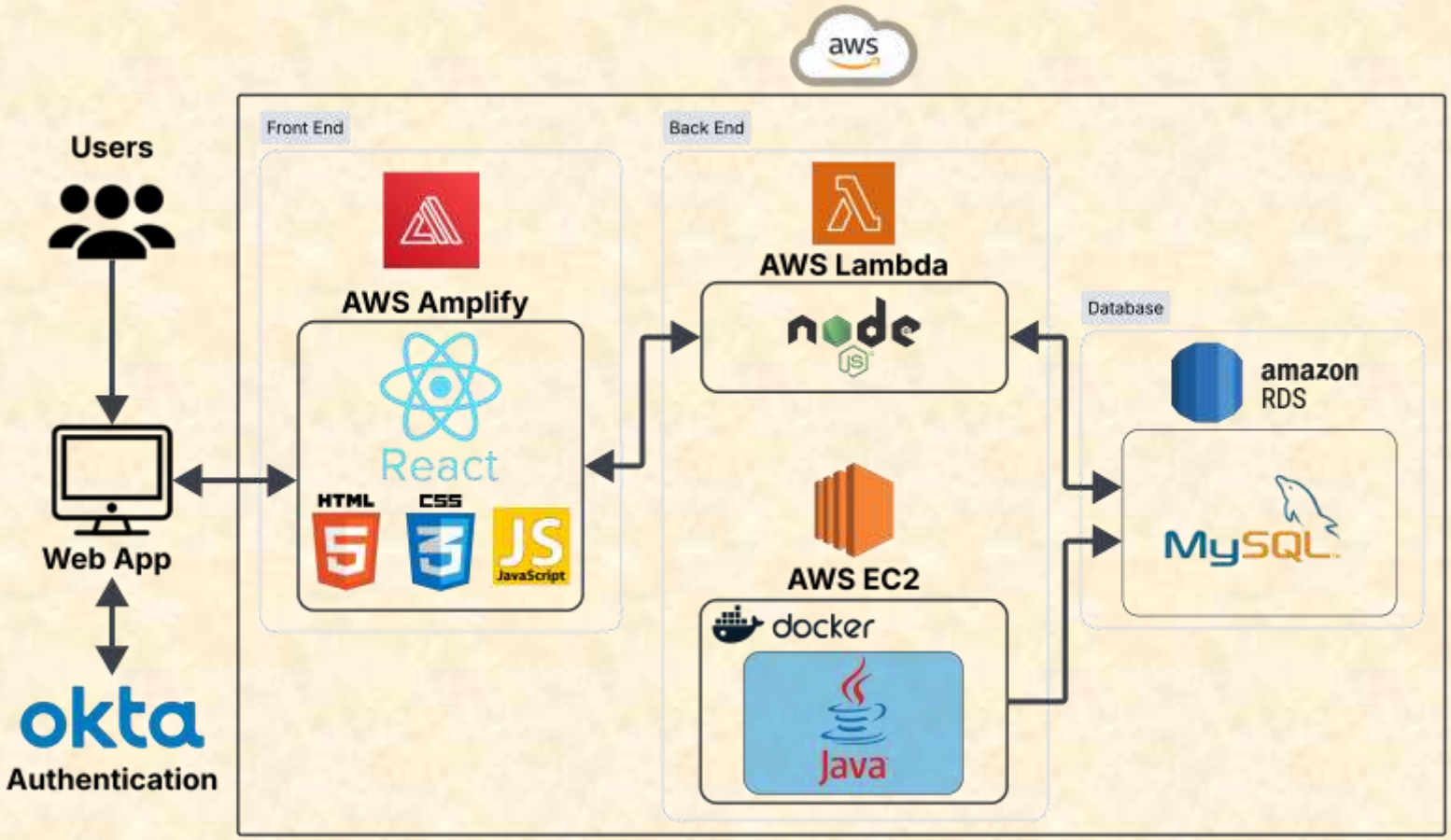
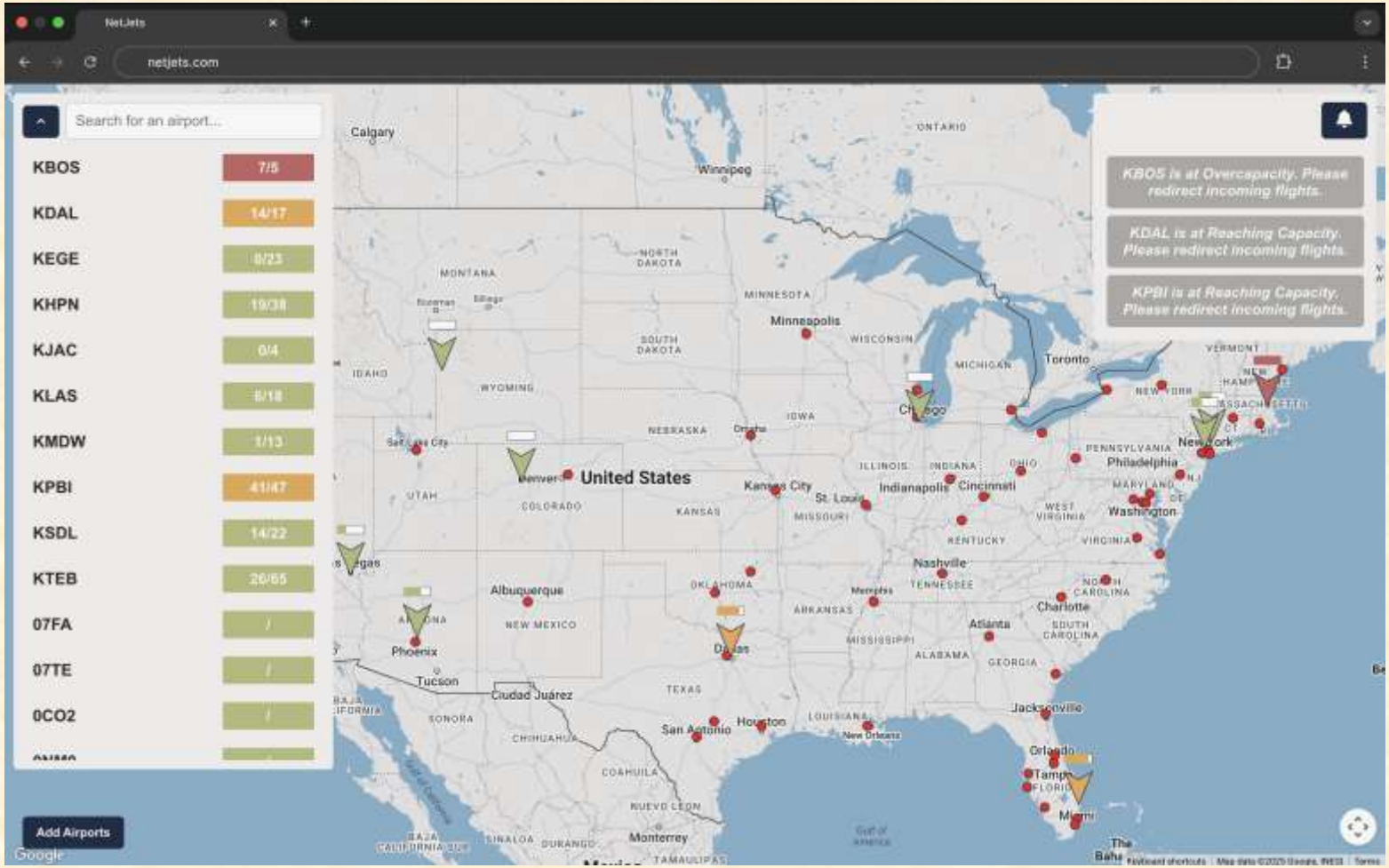
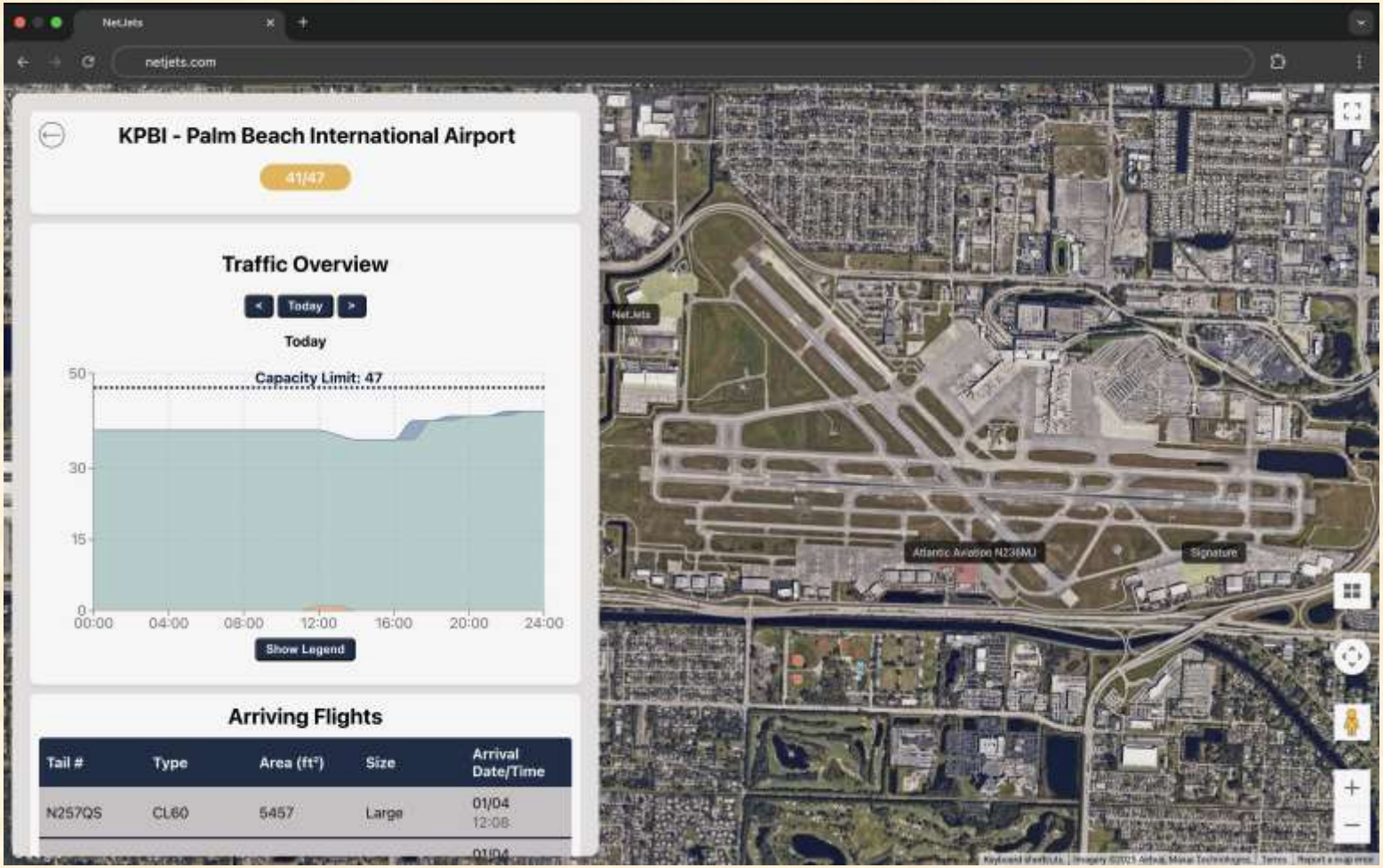
System Architecture



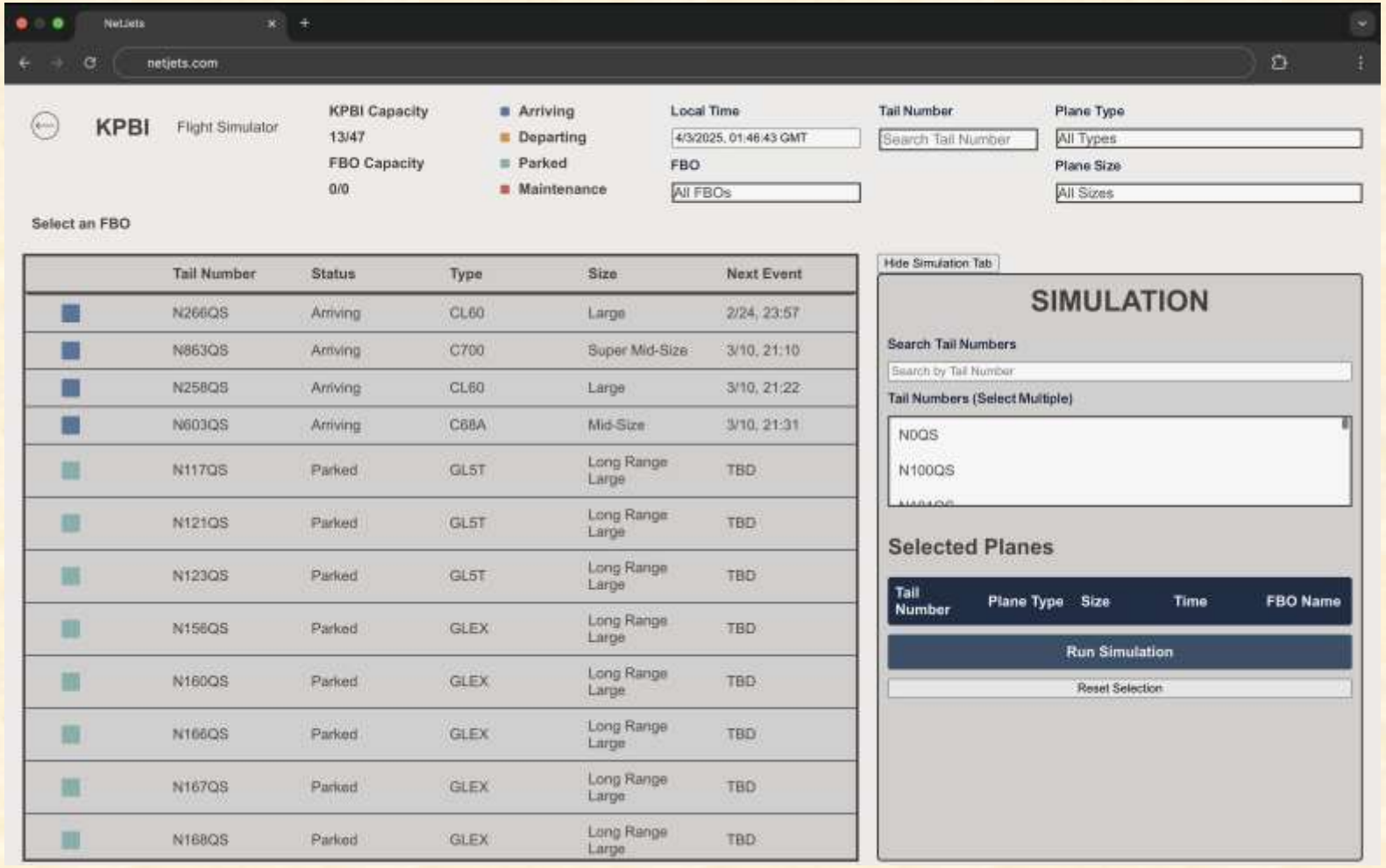
Main Homepage



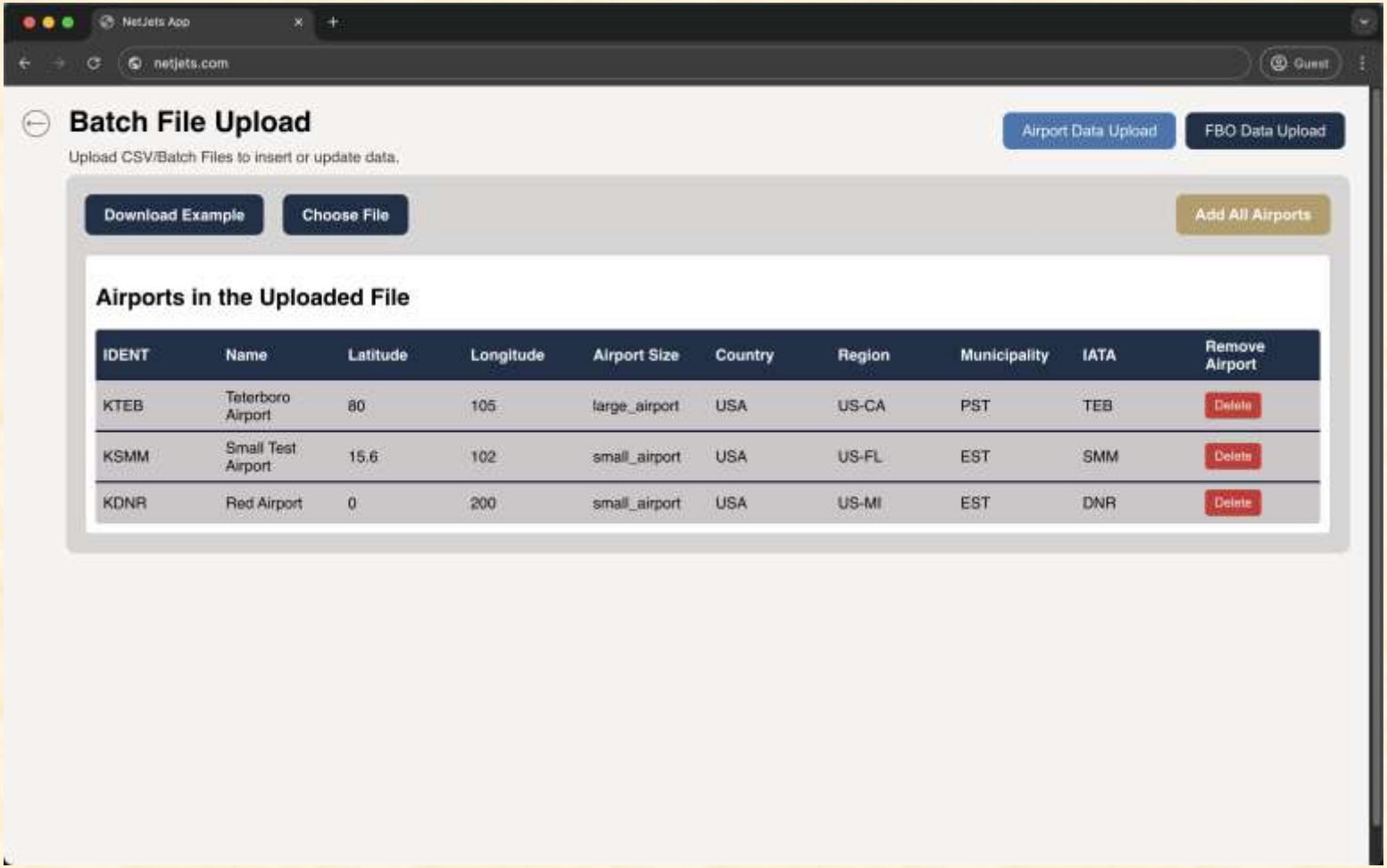
Airport Summary Page



Simulation Page



Batch File Upload Page



What's left to do?

- Features
- Stretch Goals
- Other Tasks
  - Data-related bug fixes
  - UI improvements
  - Finishing Code Documentation

Questions?