MICHIGAN STATE
U N I V E R S I T Y

Project Plan
Airport Lounge Management System

The Capstone Experience

Team United Airlines Digital Technology

Evan Lihou
Deven Patel
Jon Spiwak
Katrina Zhu

Department of Computer Science and Engineering
Michigan State University

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Functional Specifications

- Dual Focus
  - Data collection
    - Track amenities use and turnover times
    - Track customer profiles
  - Improving customer and staff experience
    - Staff oriented
      - ❖ Waitlist automation
   - Customer oriented
      - ❖ Allow reservations
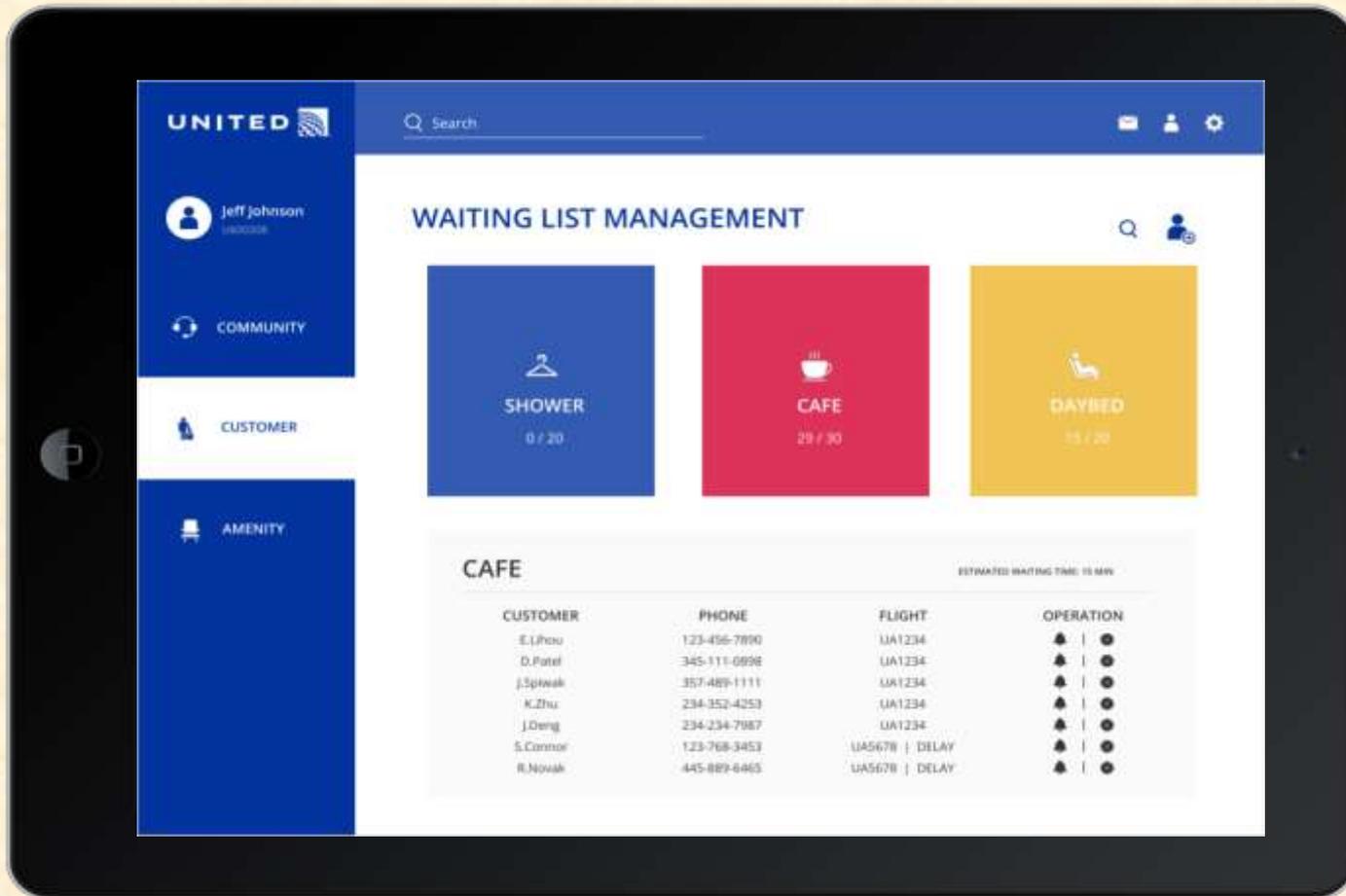
Design Specifications

- Access to the web app by using United's iOS devices
- Ability to manage available amenities
  - Waiting list management
    - Contain the amenity occupancy
    - Contain customer information (name, phone, flight information)
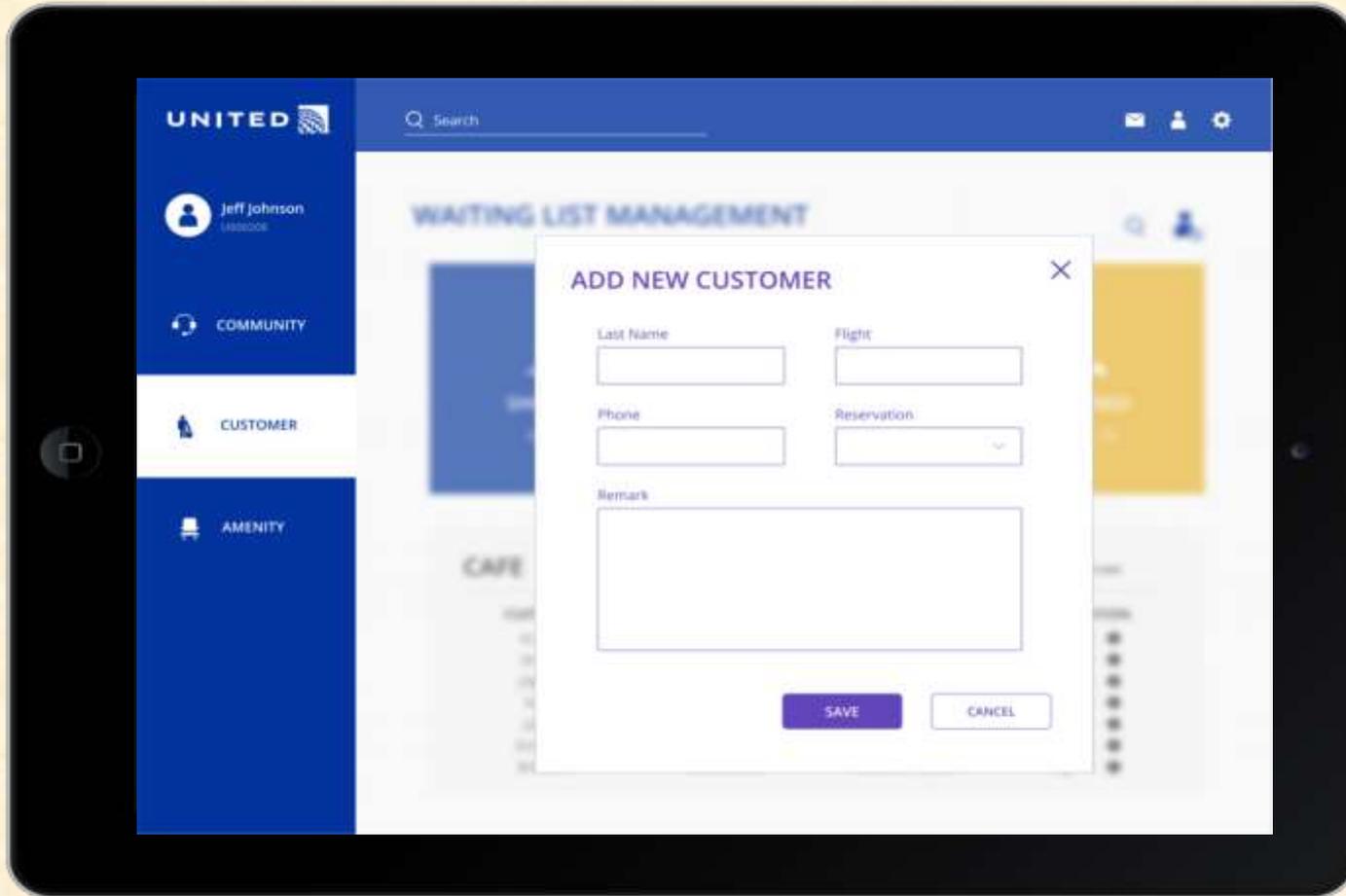 - Amenity management
    - Track usage time and availability
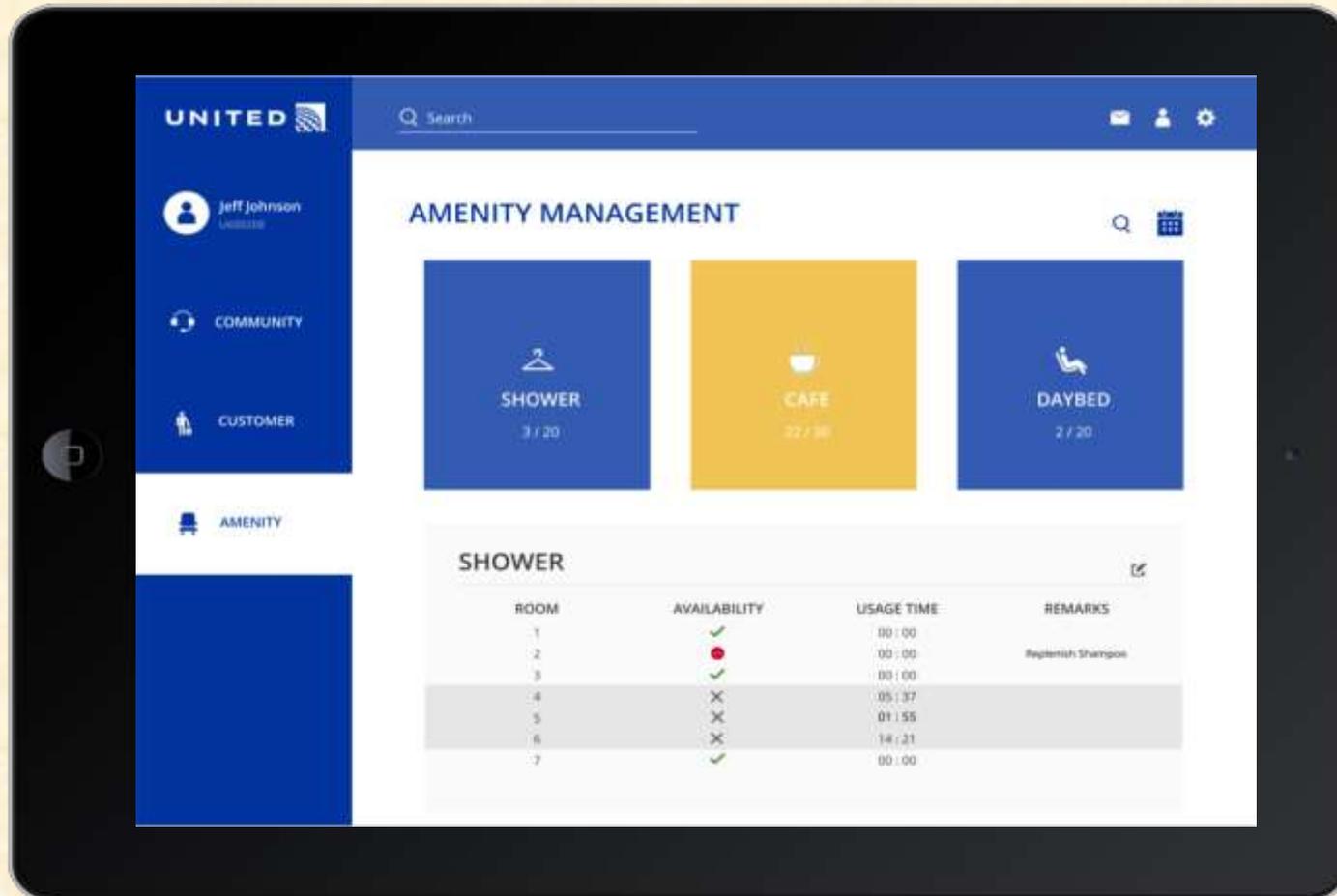
Screen Mockup: Dashboard Interface
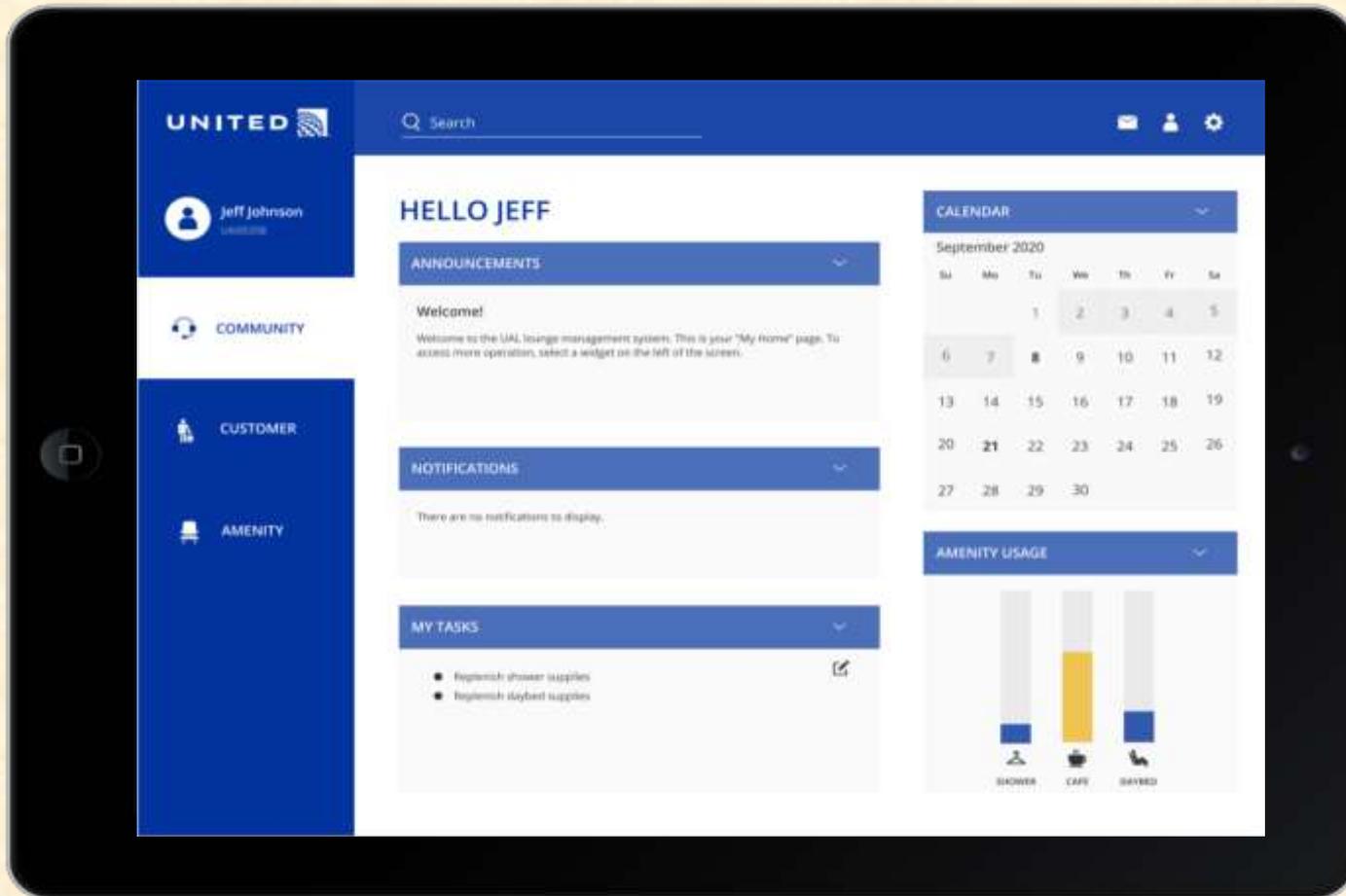
Screen Mockup:
Waiting List Management Interface

Screen Mockup:
Add New Customer Interface

Screen Mockup:
# Amenity Management Interface

Technical Specifications

- Connect to the lounge management system via a progressive web application (PWA) which is written in React

- Use a version of Bootstrap 4 customized for United employee-facing systems

- Communicate with the backend by using a Windows server hosted on AWS

- Use IIS to serve the files for the frontend and forward requests to the backend

- The backend will be a .NET Core 3.1 Web API project

- Data storage will be in a Microsoft SQL Server and be accessed by using Entity Framework Core.

System Architecture
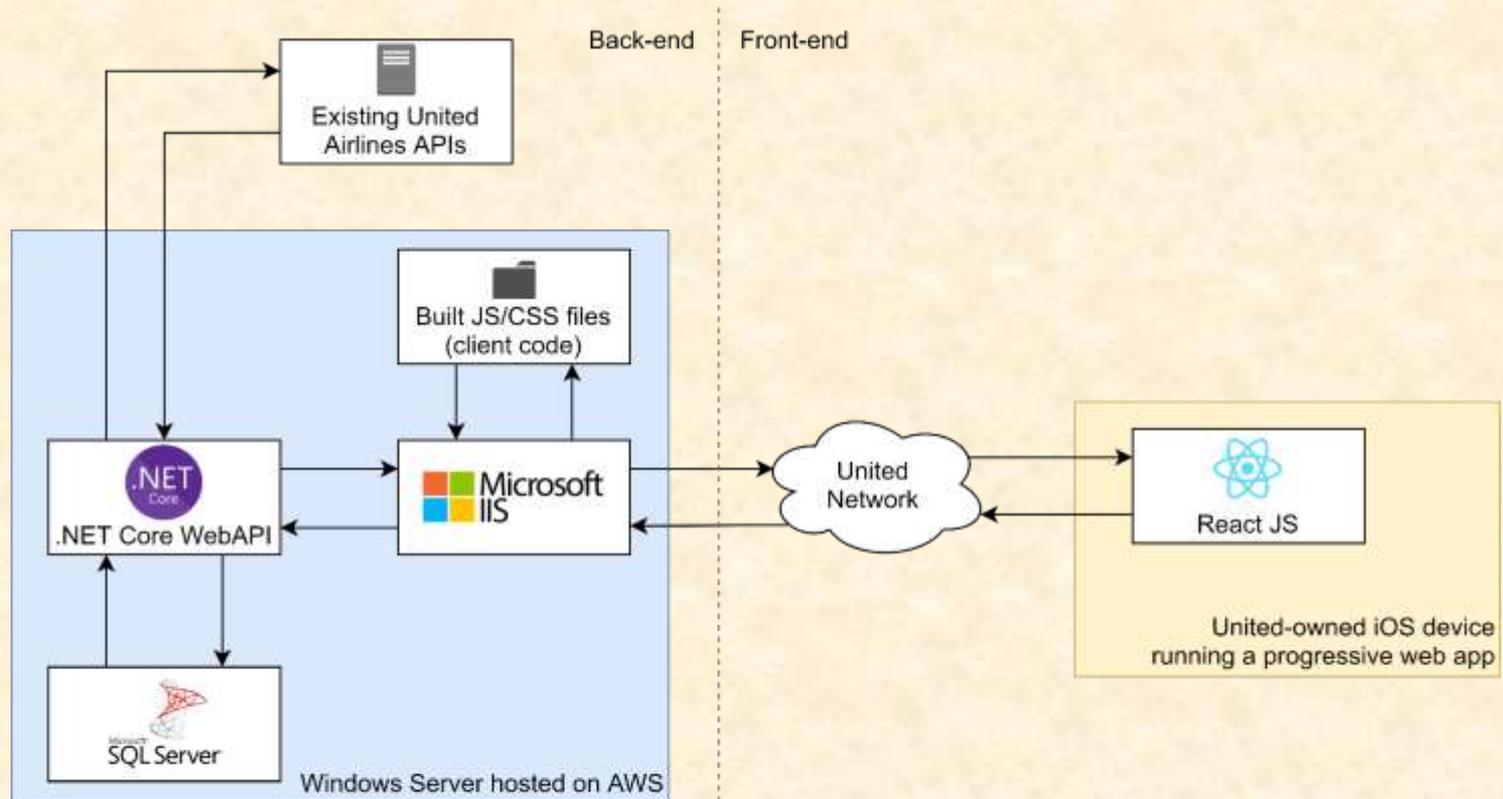
System Components

- Hardware Platforms
  - Windows Server
  - AWS
  - United-owned iOS devices running a PWA
- Software Platforms / Technologies
  - .NET Core
  - Microsoft SQL Server
  - React

Risks

- Creating a flexible system while needs of the business shift
  - With shifting requirements as the nature of the industry changes, we need to make a system that can adapt to a changing industry
  - Build a modular system that allows United to adapt as needed in the future
- Track guests from other airlines with accuracy
  - Different formats of other airlines tickets make scanning tickets for data difficult
  - Pull as much data from the tickets at possible and then prompt other airlines customers to manually enter and check for accuracy
- Automating waitlists while accounting for delays
  - An automated waitlist allows customers to make reservations ahead of time, however flight delays may affect efficiency of this.
  - We will create algorithm that will automatically shuffle the queue to account for delays

Questions?