MICHIGAN STATE

U N I V E R S I T Y

Project Plan
Training Scheduling and Optimization System III

The Capstone Experience

Team United Airlines Training
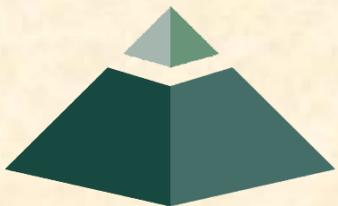
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From Students…
    …to Professionals

Functional Specifications

- Update and Finalize the Learning Scheduling system from the 2 previous capstone teams

- Improve back end to reflect United Airlines standards

- Improve workflow in current application

- Allows the Tech Ops team to update information in the system as they need to

Design Specifications

- Web application for scheduling for United Airlines

- Create optimal schedules based on pre-selected criteria

- This application needs to be integrated into production systems

- Develop a new scheduling workflow

Screen Mockup: Landing Page

Screen Mockup: Calendar

Screen Mockup: Adding Classes

Screen Mockup: Schedule Optimizer

Screen Mockup: Optimizer Cont.

Screen Mockup: Optimizer Cont.

Screen Mockup: Conflict Overview

Screen Mockup: Training Requests

Screen Mockup: Course Catalog

Screen Mockup: Exceptions

Screen Mockup: Instructor Qualifications

Screen Mockup: Attendance

Screen Mockup: Admin

Screen Mockup: Mobile Home

Screen Mockup: Mobile Calendar
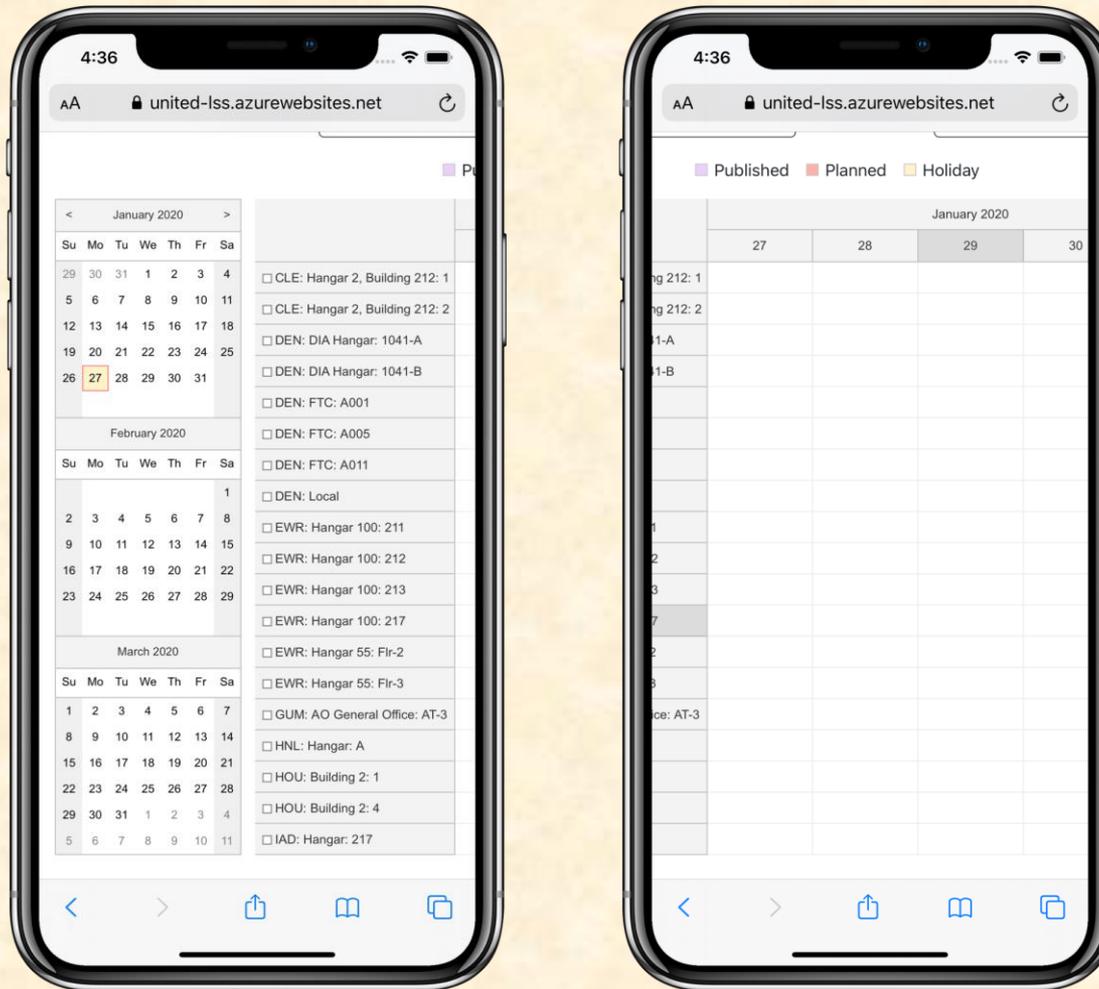
Screen Mockup: Mobile Course Schedule
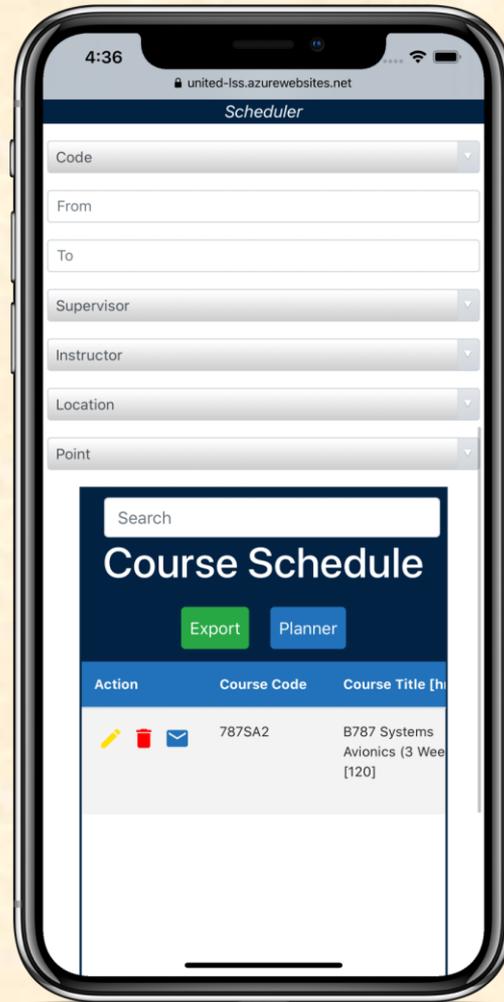
Screen Mockup: Mobile Schedule Planner
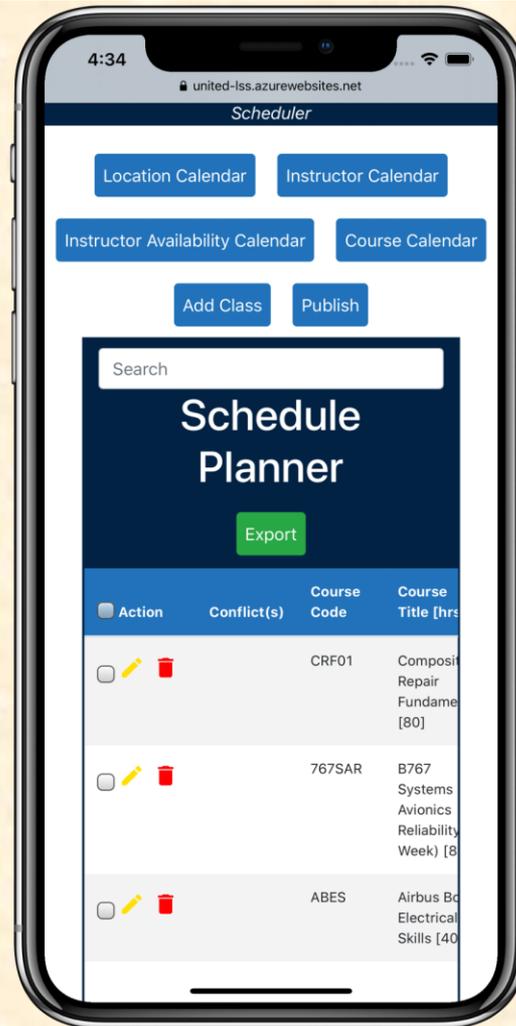
Screen Mockup: Mobile Add Class

Screen Mockup: Mobile Optimizer
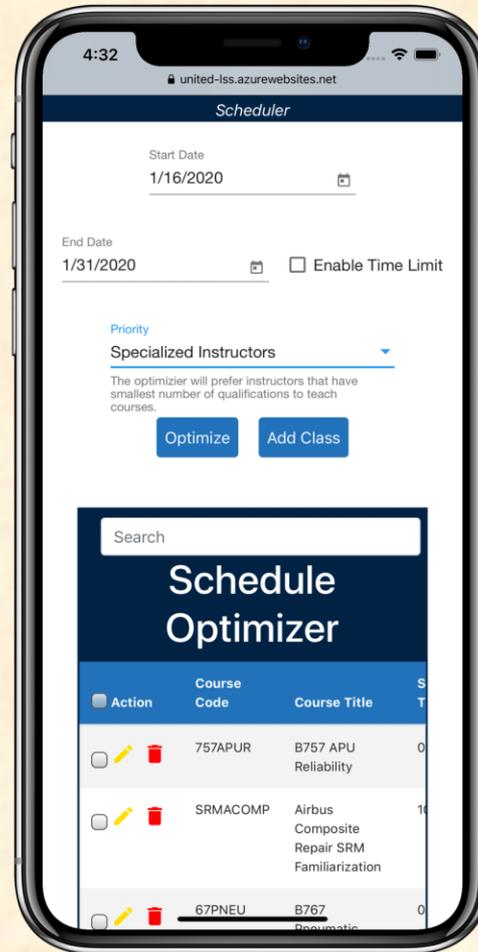
Screen Mockup: Mobile Training Requests
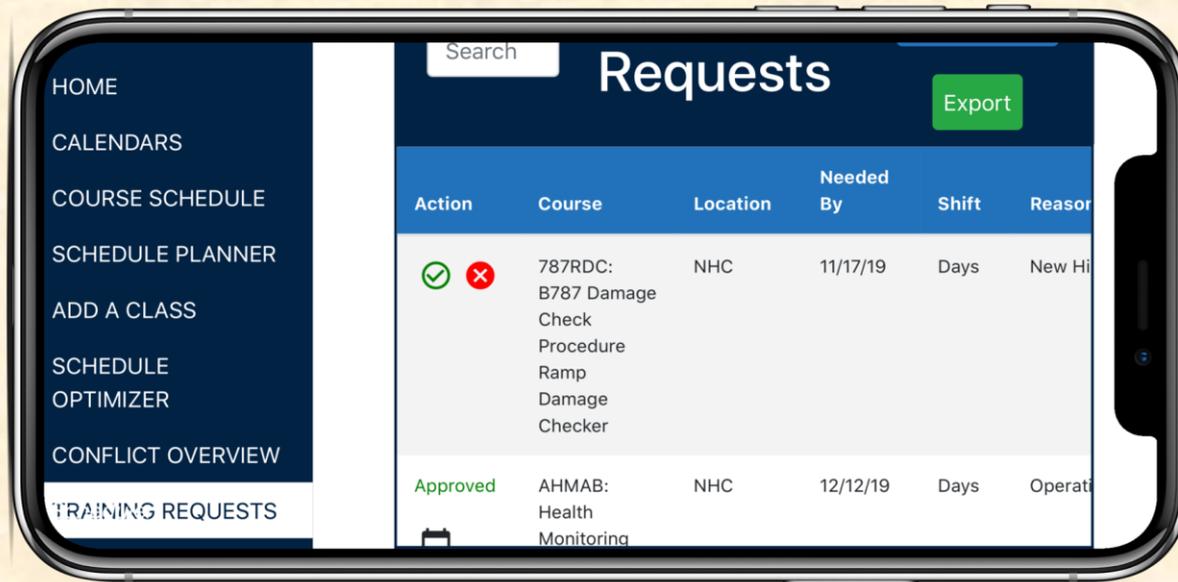
Screen Mockup: Mobile Course Catalog
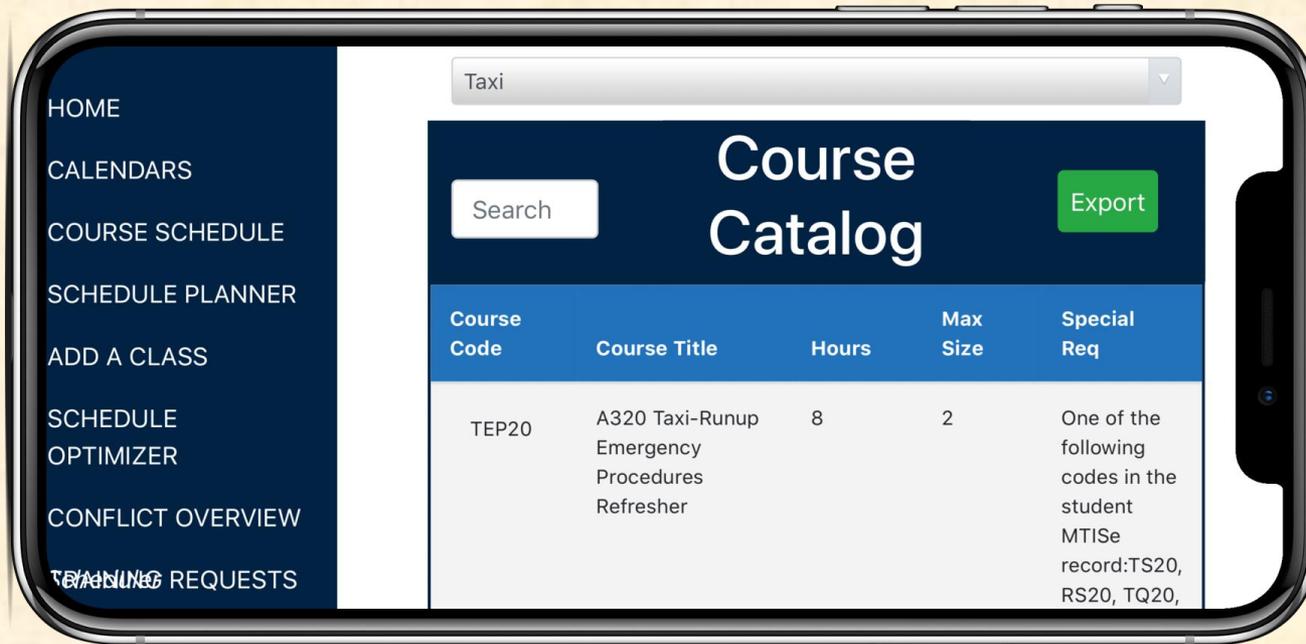
Screen Mockup: Mobile Exceptions
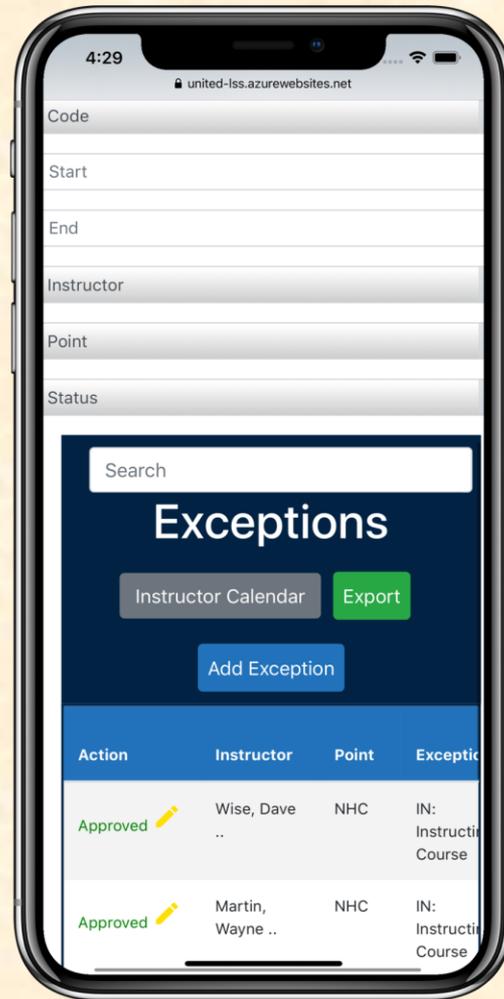
Screen Mockup: Mobile Qualifications
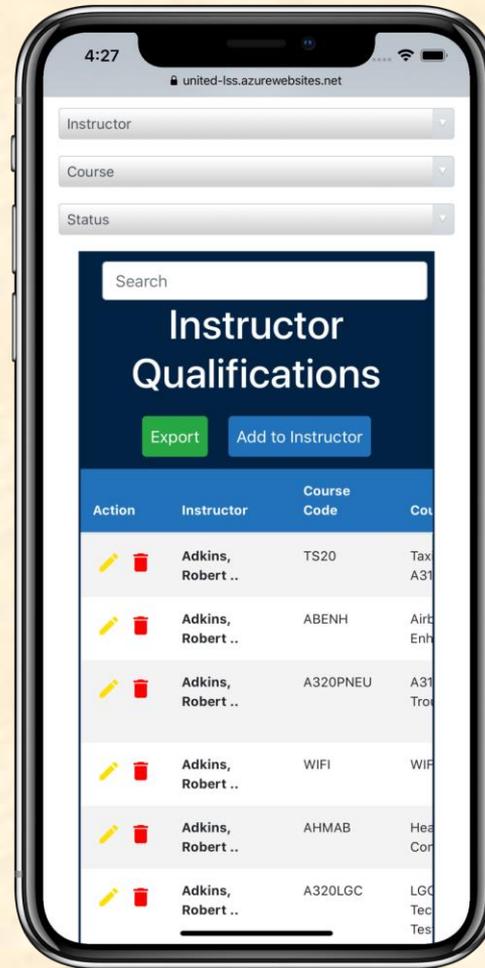
Screen Mockup: Mobile Admin
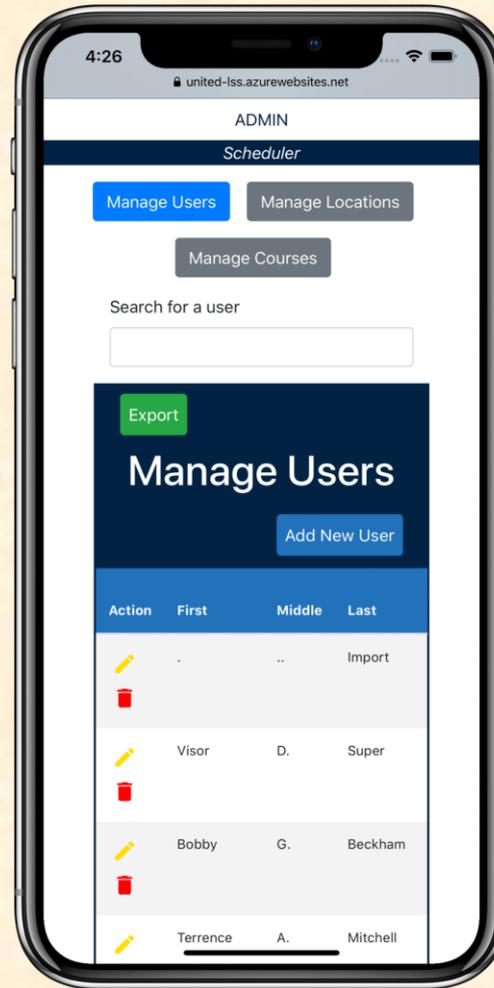
Technical Specifications

- Microsoft SQL Server Database

- Azure Data Studio

- Node JS, Angular, Entity Framework, ASP .Net Core, C#

- Azure Cloud Server

Front-End Design Specifications

- Angular

- HTML

- CSS

- Bootstrap

System Architecture
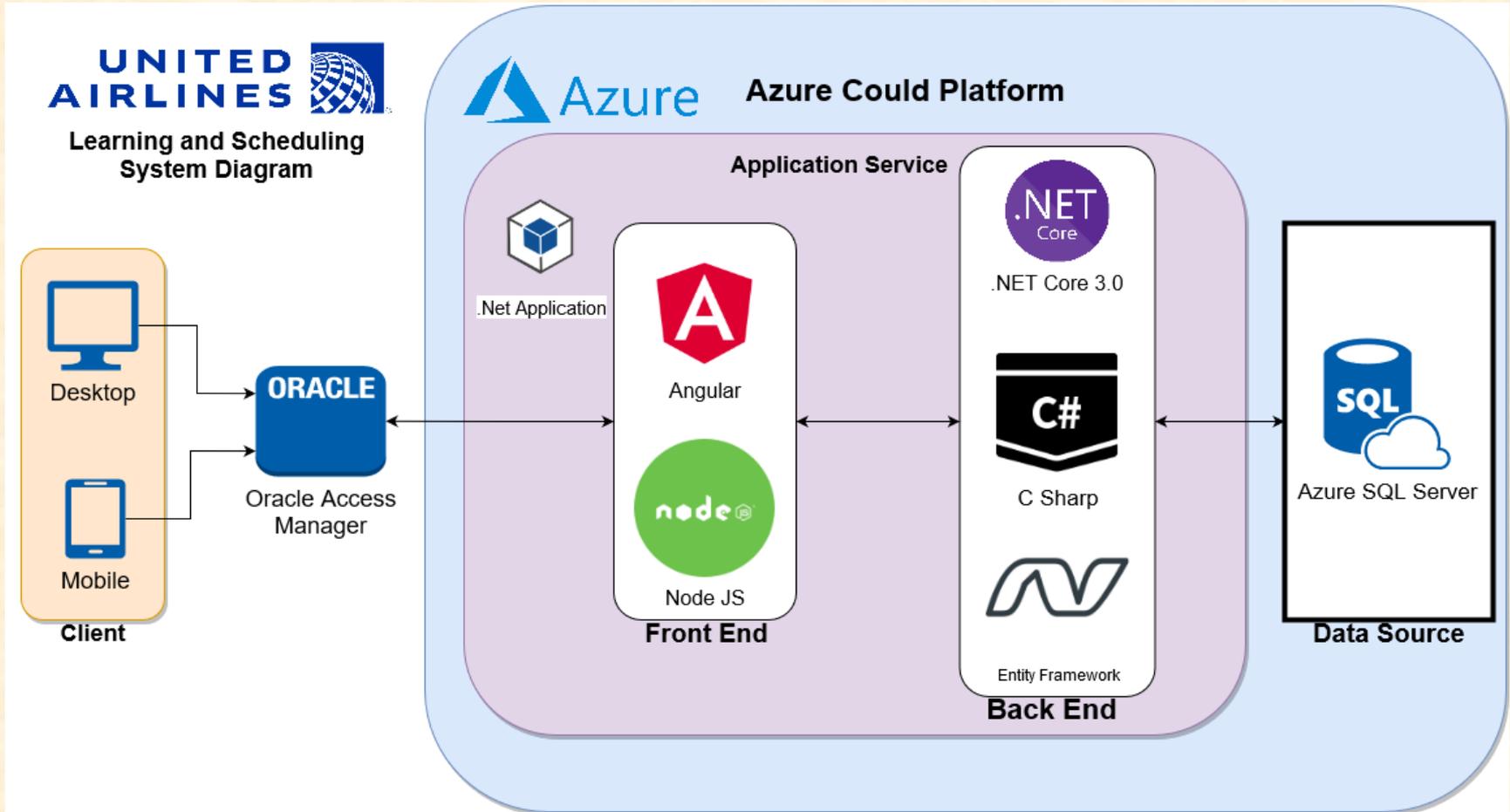
System Components

Hardware Platforms

- Azure Server
- Personal laptops
- Virtual Machine and SQL database running on Azure

Software Platforms / Technologies

- Visual Studio
- Azure Git
- Azure Data Studio
- Oracle Access Manager (OAM)

Risks

- Updating from ASP .NET 2.2 to 3.1
  - There are several documented code breaks upon upgrade
  - Mitigate by researching/testing upgrade immediately
- Dealing with Historical Data
  - Unfamiliar with scope/format and how to clean the data
  - Mitigate by researching how to put data in a template
- Running Oracle Access
  - Previous team couldn't integrate OAM
 - Mitigate by researching OAM use in Azure App Service
- Optimizer Functionality
  - The optimizer is inefficient
  - Mitigate by studying the algorithm and improvements

Questions?