MICHIGAN STATE UNIVERSITY

Alpha Presentation

Audit Management System

The Capstone Experience

Team United Airlines Quality Assurance

Tyler Higashi
Jay Ho
Sam Hus
Robert Morton
Michael Schester

Department of Computer Science and Engineering
Michigan State University

Fall 2022

From Students…
…to Professionals

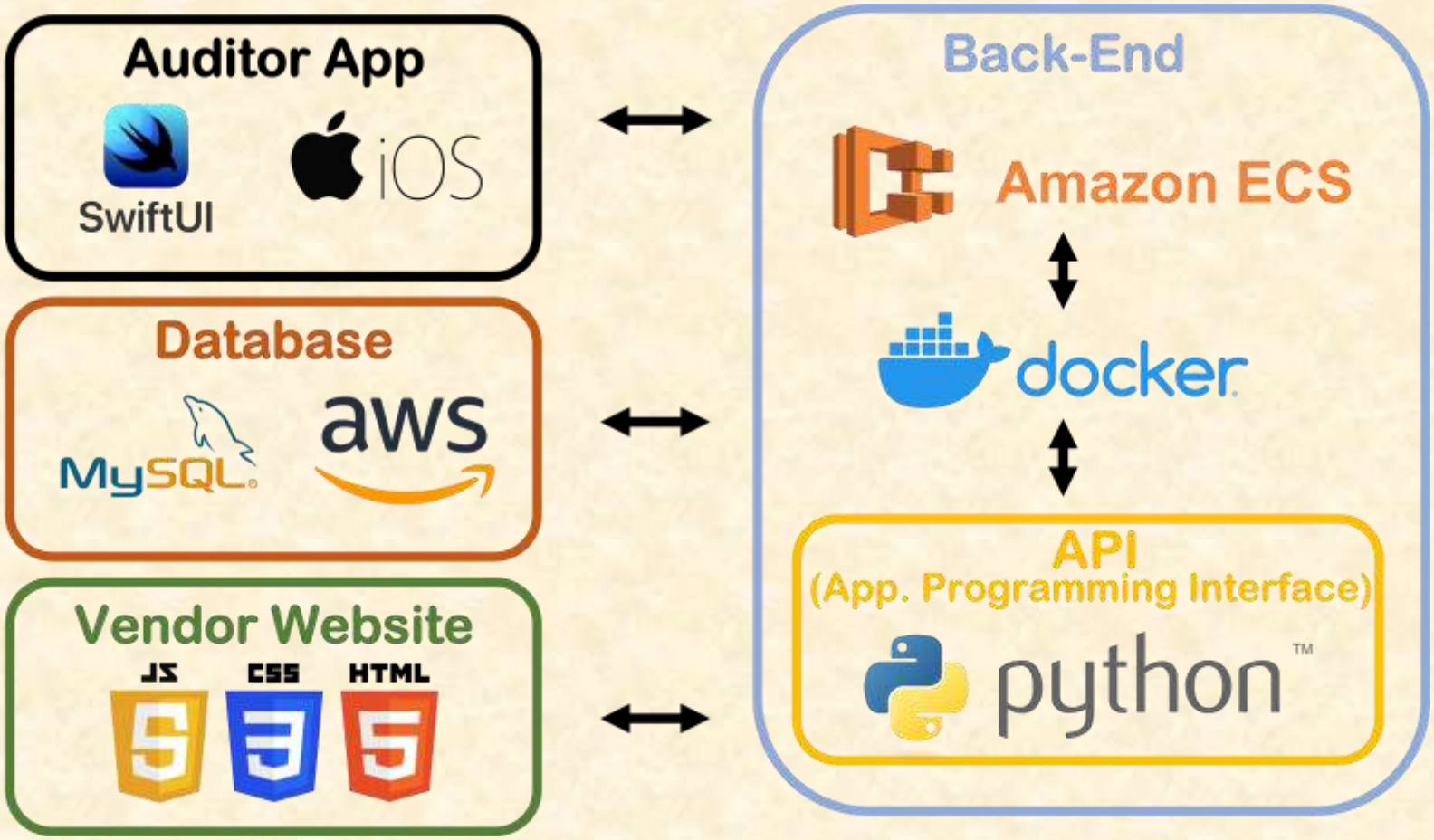
Project Overview

- Assist United Airlines to audit the companies that maintain and repair its airplanes more efficiently

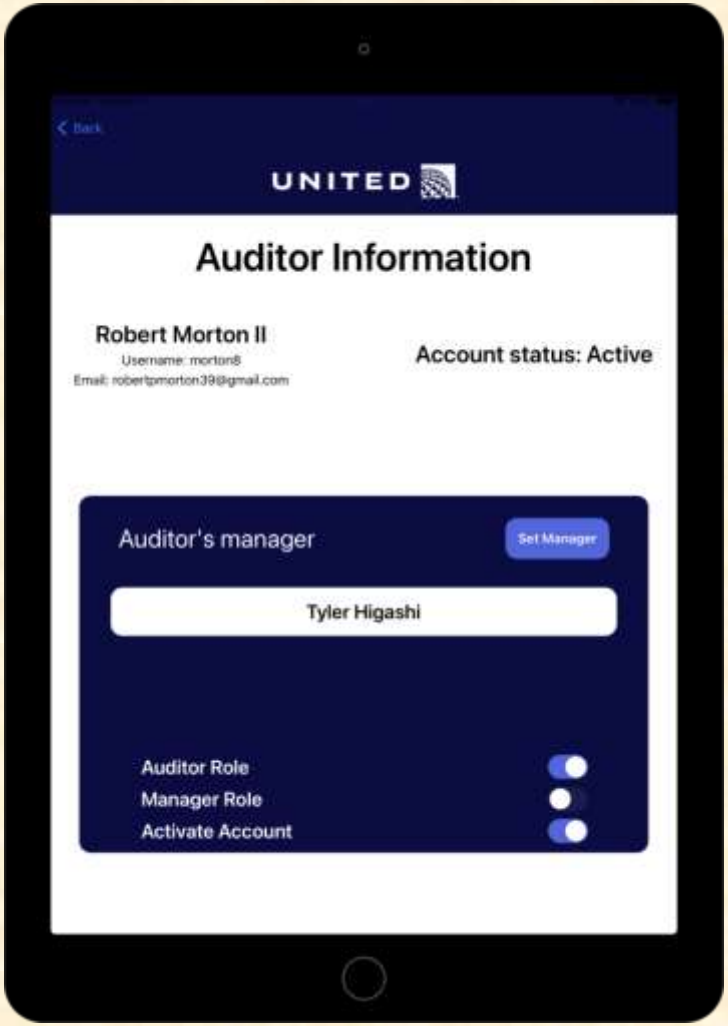
- iOS App
  - Improvements on last semester's iOS app capabilities
  - Created new roles

- Website
  - Vendors of United Airlines can respond to audits
  - United Airlines admins can monitor / review audits

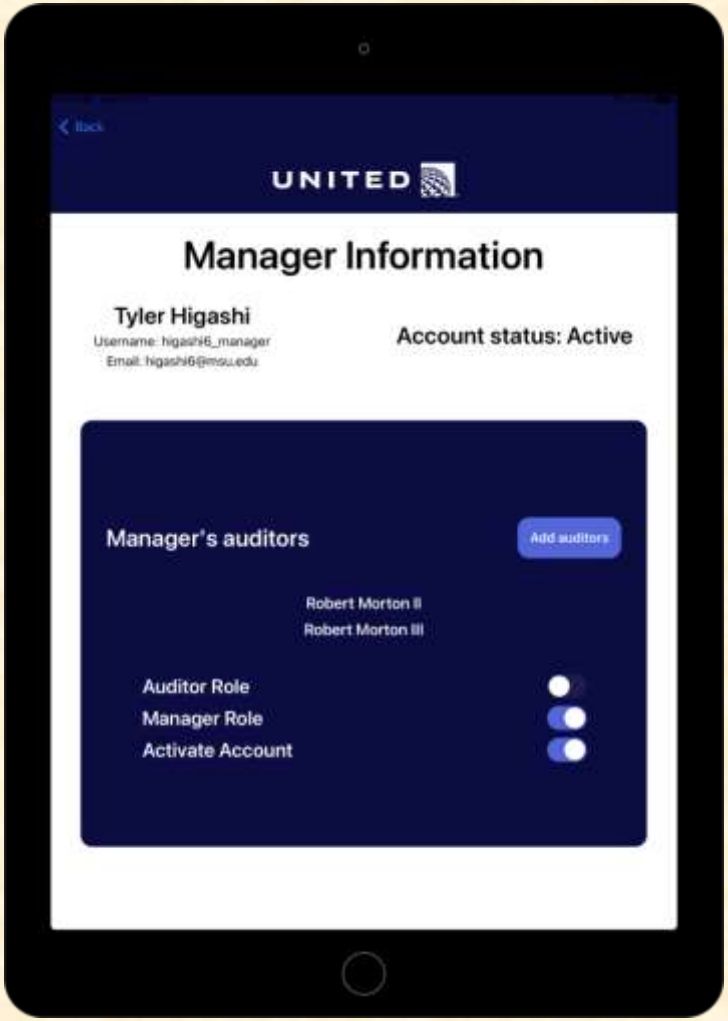
System Architecture



Admin view of an auditor



Admin view of a manager



Checklist

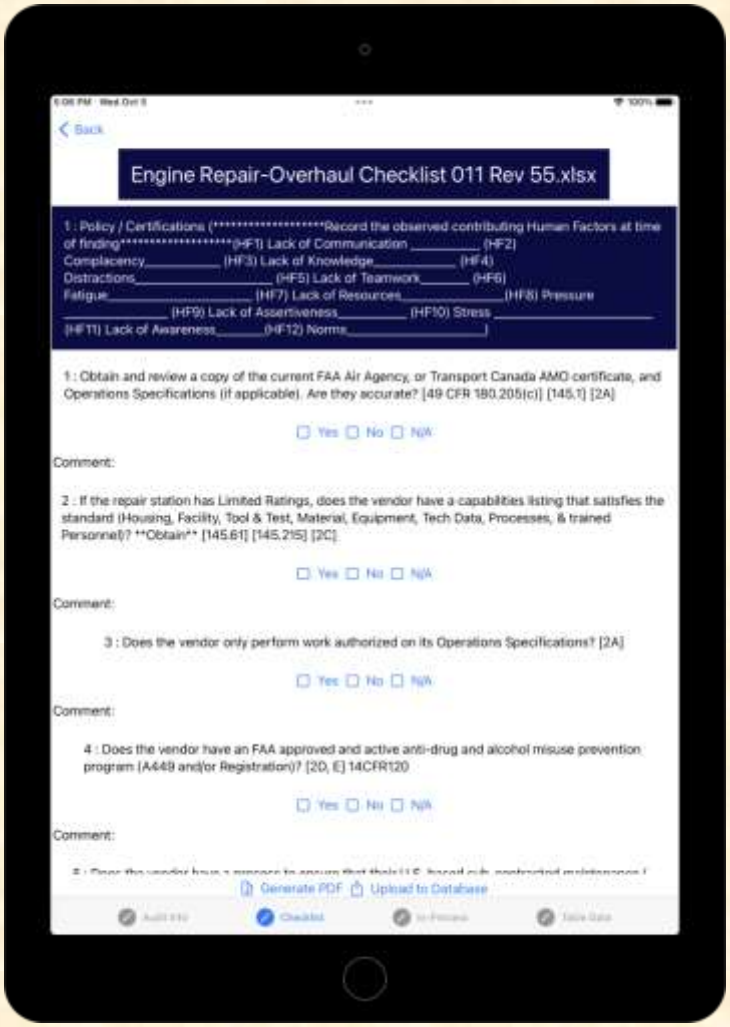
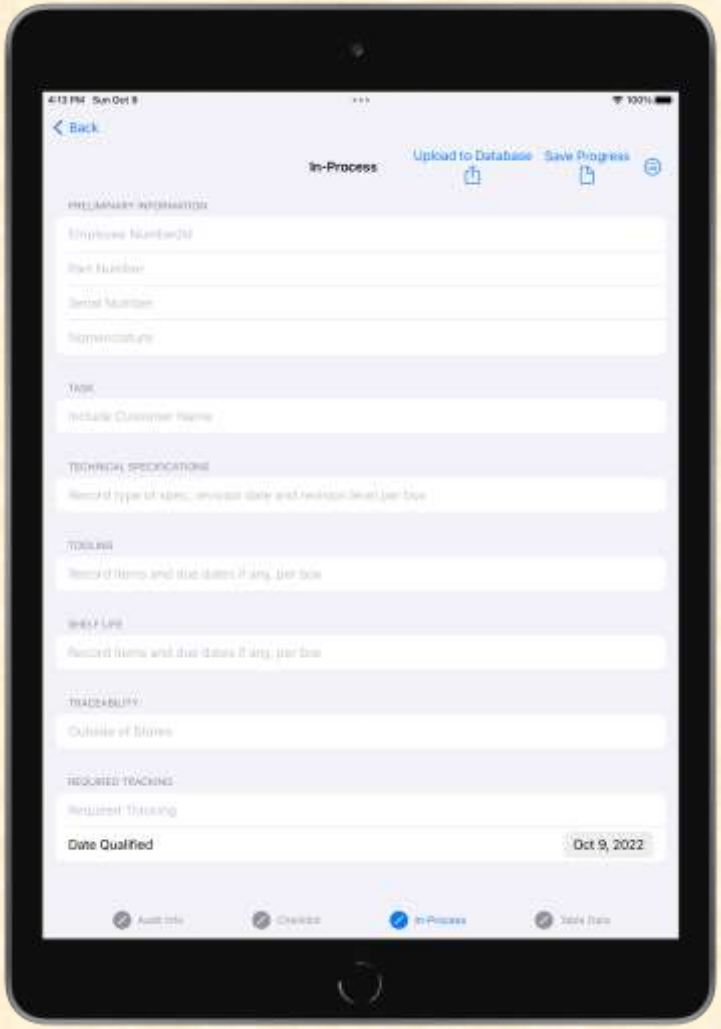
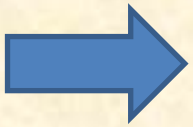

Back
Engine Repair-Overhaul Checklist 011 Rev 55.xlsx
1 : Policy / Certifications (**********Record the observed contributing Human Factors at time of finding**********(HF1) Lack of Communication _____ (HF2) Complacency_____ (HF3) Lack of Knowledge_____ (HF4) Distractions_____ (HF5) Lack of Teamwork_____ (HF6) Fatigue_____ (HF7) Lack of Resources_____(HF8) Pressure _____ (HF9) Lack of Assertiveness_____ (HF10) Stress _____ (HF11) Lack of Awareness_____(HF12) Norms_____)
1 : Obtain and review a copy of the current FAA Air Agency, or Transport Canada AMO certificate, and Operations Specifications (if applicable). Are they accurate? [49 CFR 180.205(c)] [145.1] [2A]
Yes No N/A
Comment:
2 : If the repair station has Limited Ratings, does the vendor have a capabilities listing that satisfies the standard (Housing, Facility, Tool & Test, Material, Equipment, Tech Data, Processes, & trained Personnel)? **Obtain** [145.61] [145.215] [2C]
Yes No N/A
Comment:
3 : Does the vendor only perform work authorized on its Operations Specifications? [2A]
Yes No N/A
Comment:
4 : Does the vendor have an FAA approved and active anti-drug and alcohol misuse prevention program (A449 and/or Registration)? [2D, E] 14CFR120
Yes No N/A
Comment:
Generate PDF
Upload to Database

Table Data - "In Process" Sheets





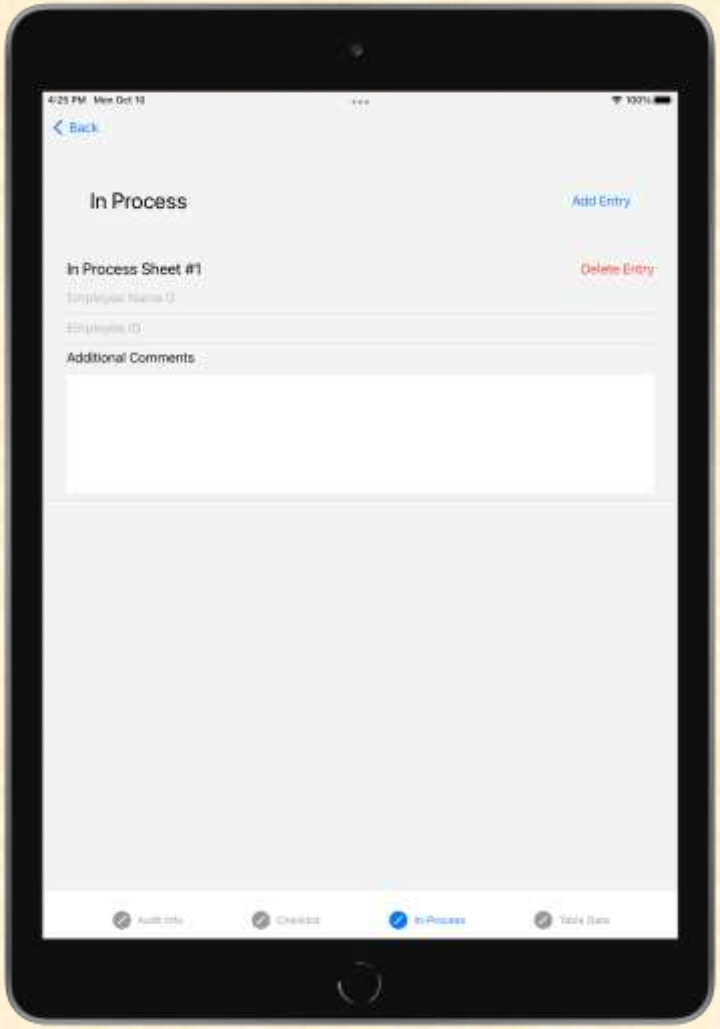
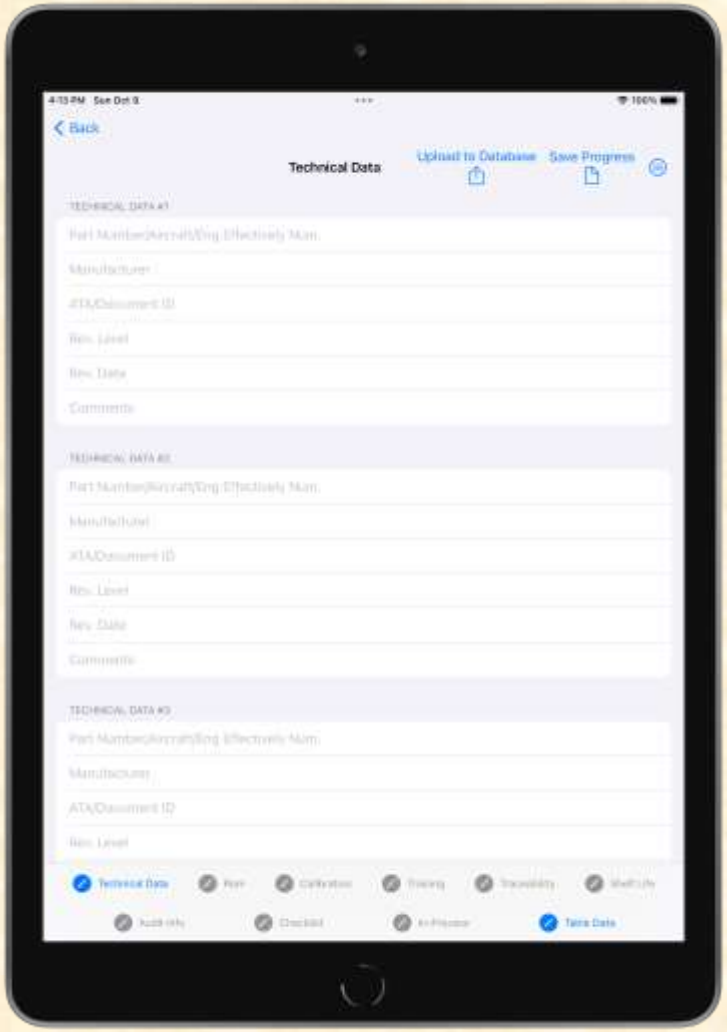
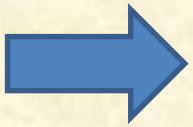
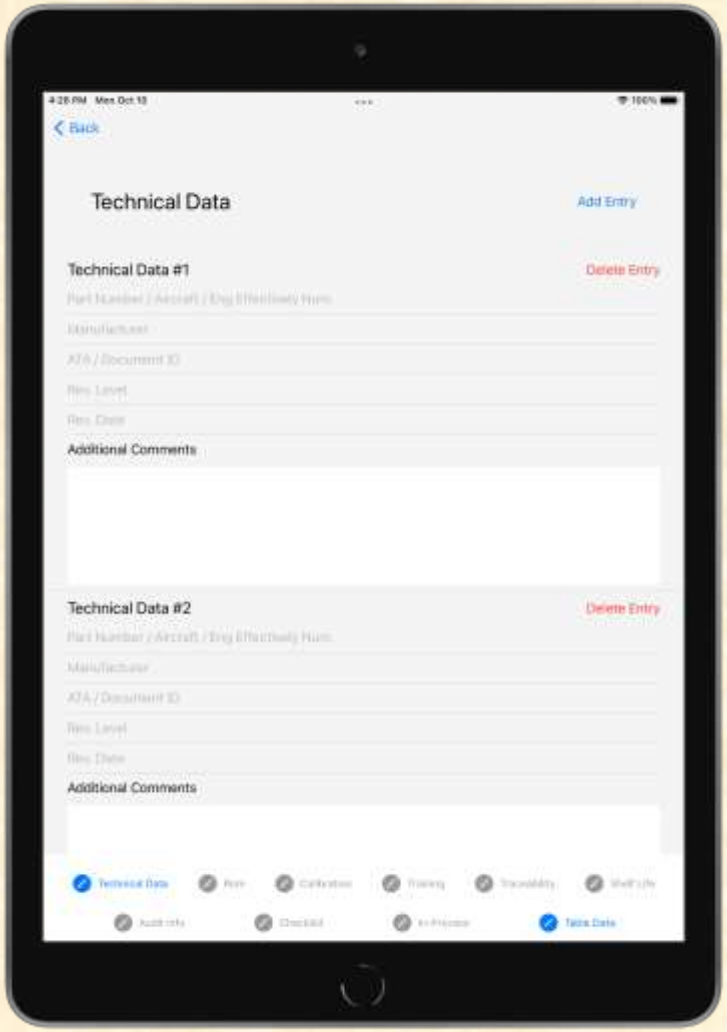


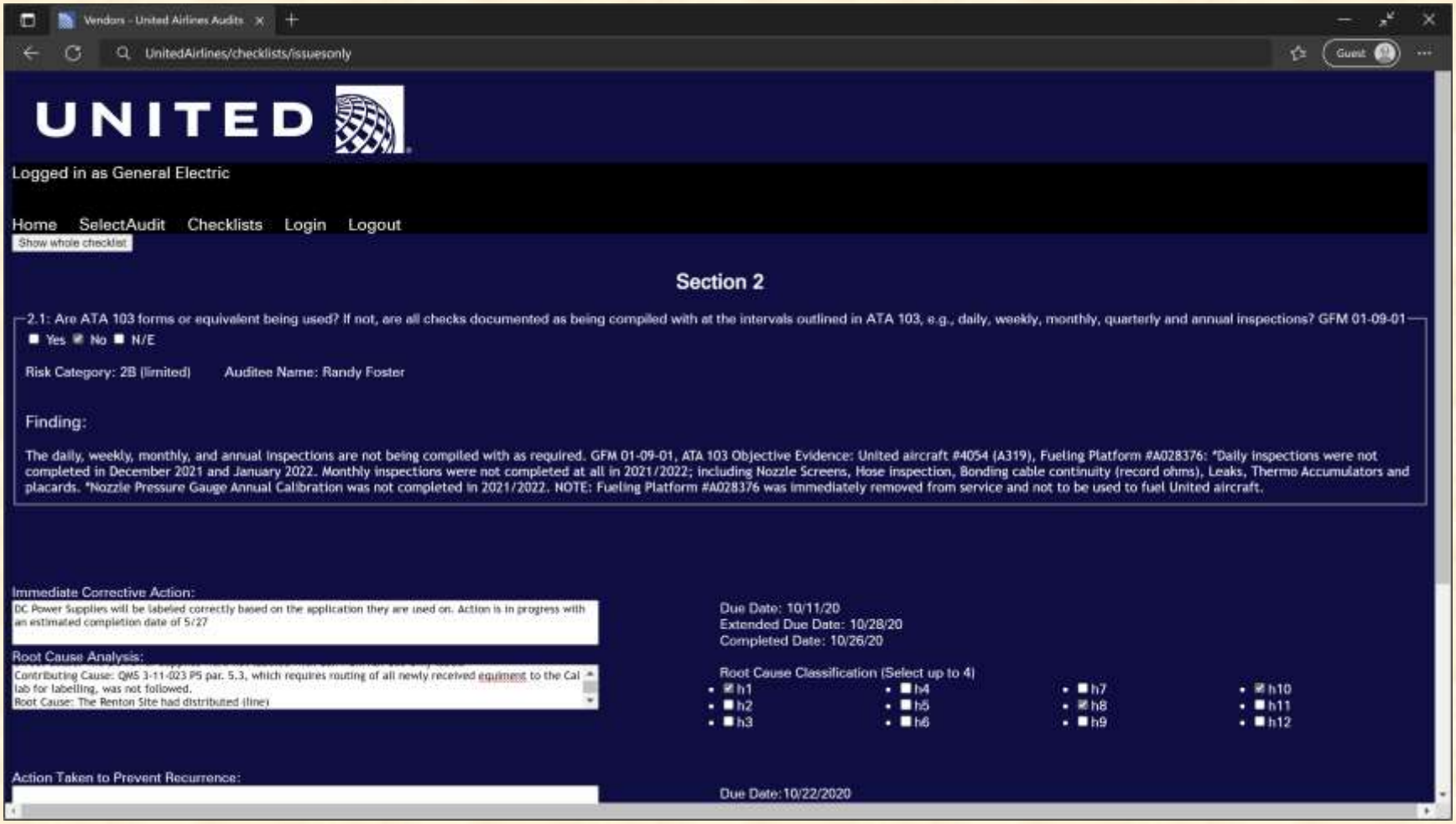
Table Data – Technical Data



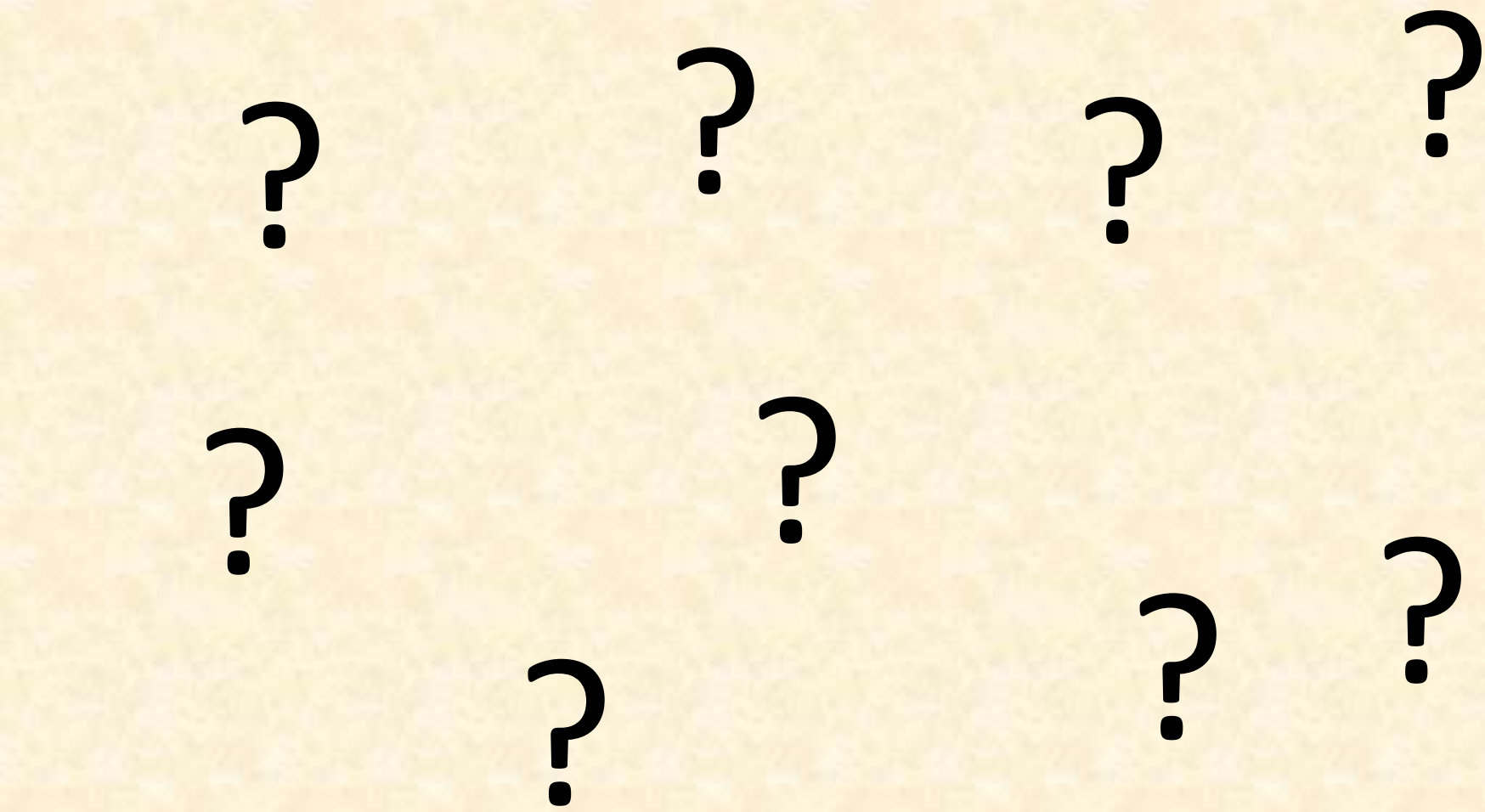




Vendor Website



What's left to do?

- AWS EC2 Secure Connection
- iOS App:
  - All views need to be synced after admin change roles or the account status of users
  - Store data locally on the iPad in addition to the cloud
  - Fix cached views on Table Data not updating when mutated
- Website:
  - Vendors responding to issue findings on the website
  - Add ability for United Admins to create audits via website
- Admins:
  - Ability to view audits on the website
  - Ability to assign audits on iOS app

Questions?