



Project Plan Presentation

Audit Management System

The Capstone Experience

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Fall 2022



*From Students...
...to Professionals*

Project Sponsor Overview

- United Airlines is one of the largest airlines in the world
- International carrier, but flies mostly in the US
- Over 800 planes and 100 million passengers per year



Functional Specifications

- Provides efficient way to create and edit United Airlines Audits on iOS devices
- Audits can be created, saved, and edited easily throughout the iOS app
- Managers can assign audits to their auditors
- Auditors can login to the app continuing where they left off saving time
- Auditors can check back on previous audits, confirming safety over time



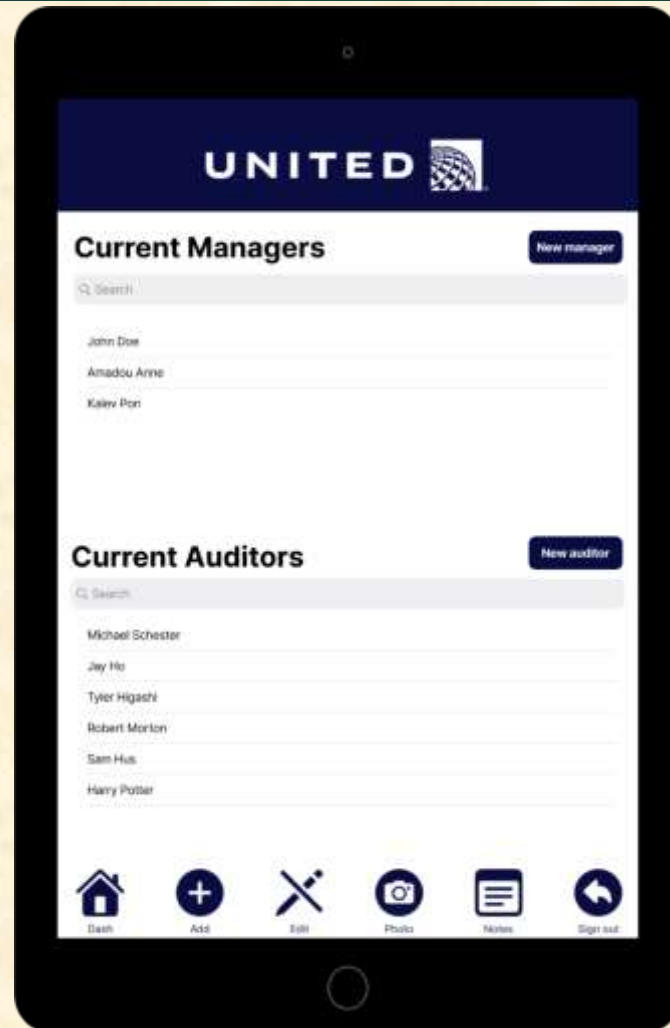
Design Specifications

Admin role:

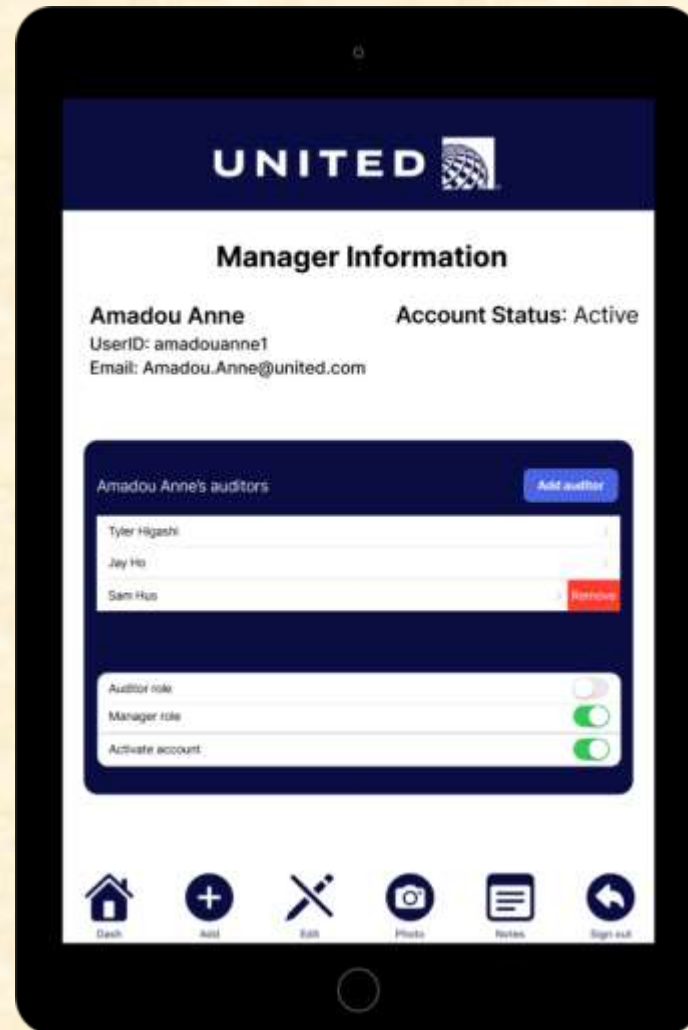
- View a list of current managers
- View a list of current auditors
- View user information if they select a user (manager or auditor)
 - Able to view user's manager's information if selected user is an auditor
 - Able to view user's auditors' information if selected auditor is a manager
- Able to activate or de-activate a user account
- Able to change role of user
 - Current auditor can become manager
 - Current manager can become auditor
- Ease of Data Entry/Deletion
 - Previous implementation only allowed for three entries in each data table section
 - It should be easy to add + remove additional sections on the fly during an audit
- Deletion Safeguards
 - While deleting records should be easy for the user, accidents do happen
 - Our app follows Apple Human Interaction guidance to limit unwanted data loss



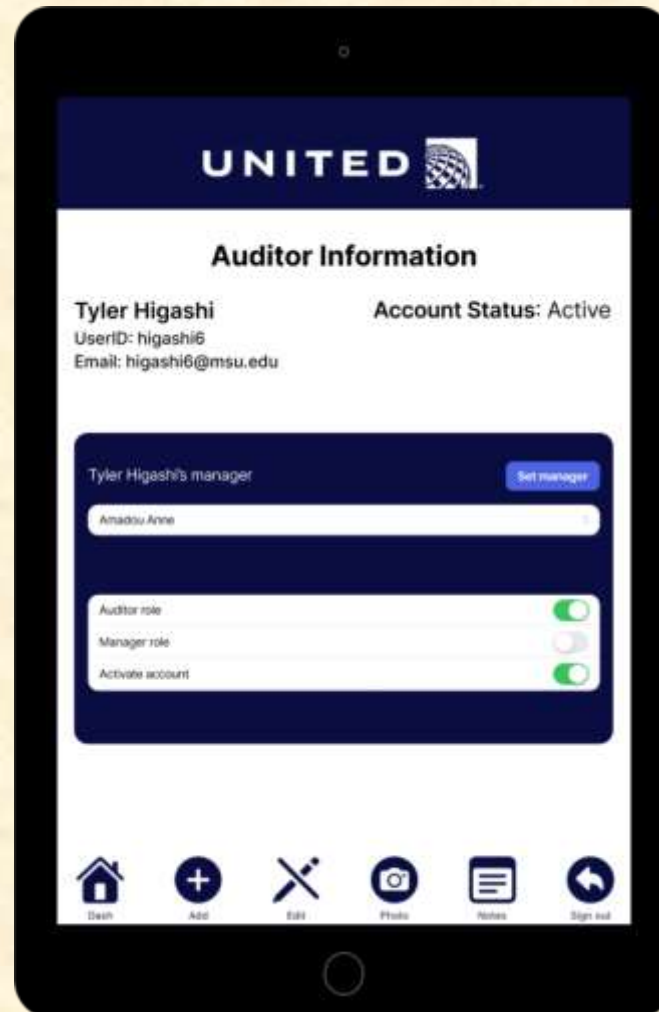
Screen Mockup: Admin views current users



Screen Mockup: Admin view of manager



Screen Mockup: Admin view of auditor

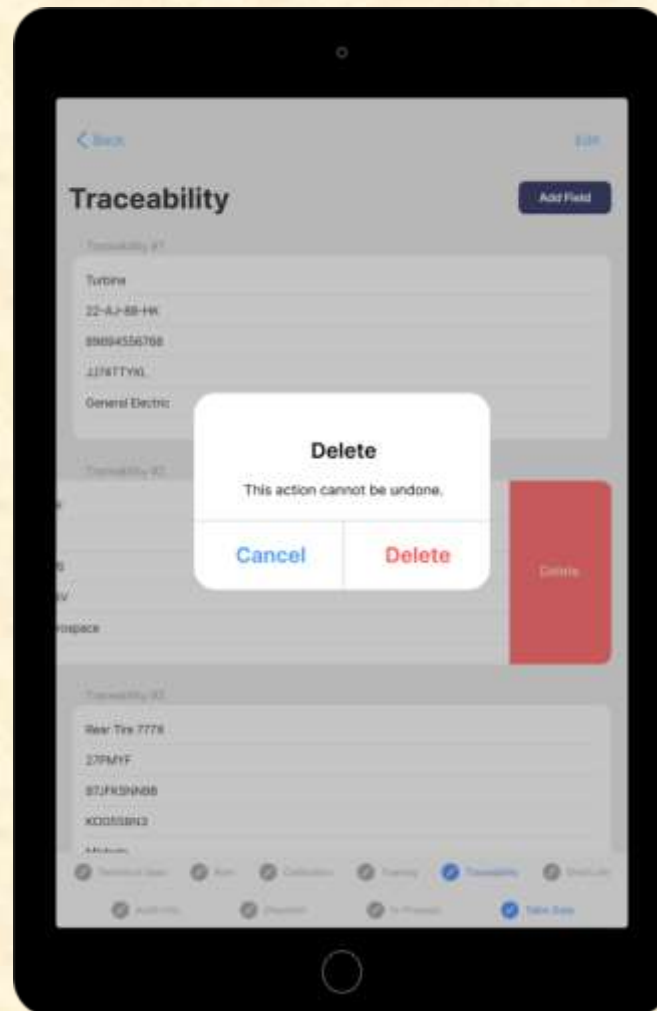


Screen Mockup: New Data Entry

The mockup shows a mobile application interface for data entry. At the top, there is a navigation bar with a back arrow and the word 'Back' on the left, and an 'Edit' link on the right. Below this is a header section with the title 'Traceability' and an 'Add Field' button. The main content area contains three identical form sections, each labeled 'Traceability #1', 'Traceability #2', and 'Traceability #3'. Each form section has five input fields: 'Product', 'Part Number', 'Serial Lot #', 'P.O. Number', and 'Supplier'. At the bottom of the screen is a navigation bar with several icons and labels: 'Home', 'Add Info', 'Checklist', 'In Progress', 'Traceability' (which is highlighted with a blue circle), and 'Start Log'. Below these icons are additional labels: 'Add Info', 'Checklist', 'In Progress', and 'Trace Data'.



Screen Mockup: Deletion Safeguard

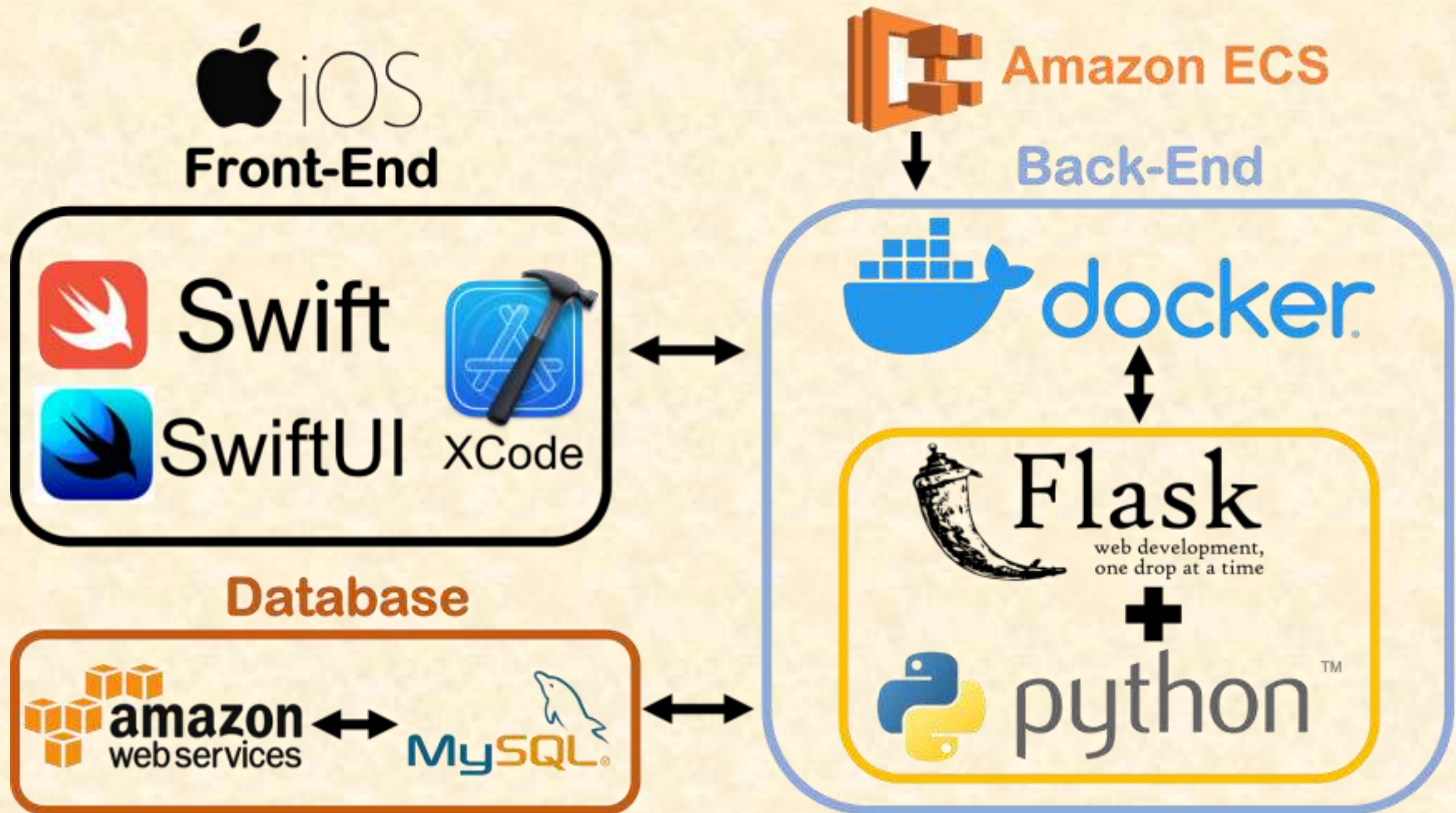


Technical Specifications

- The app is written in Swift for the iOS. It will be run on an iPad.
- The app will use a MySQL database hosted by AWS as its datastore.
- The app will access the database through a Flask server hosted by Amazon ECS.



System Architecture



System Components

- Hardware Platforms
 - iPad
- Software Platforms / Technologies
 - Swift
 - iOS
 - Python
 - Flask
 - Docker
 - MySQL
 - AWS
 - Amazon ECS



Risks

- Secure connection (HTTPS) for custom API routes
 - We want to configure the public IPv4 DNS address of our API is not a secure connection, we want to have a secure connection (HTTPS)
 - Research AWS EC2 security group and Docker to find a way to set up HTTPS connection for our API through security group or Dockerfile
- Create and edit multiple in-process table in the iOS app
 - Currently, user can only create and edit one in-process table. Our client wants to be able to create and edit multiple in-process audits while on the field
 - Re-design the user interface of the in-process tab and present the design to our client so we are on the same page. Save data for each in-process tab
- Allow users to import an in-process audit sheet to different tables
 - We want to develop an import button that import data from different table to current table
 - Research SwiftUI and Swift to see if there is an good built-in object for this feature, but also make sure we get data from correct table when developing this feature
- Save data on iPad locally
 - In case of loss of internet access during an audit saving to the database is not possible. To overcome this, saving directly to the hardware, in this case iPad, would be needed.
 - Research about saving local data with Swift to see the connection between Swift and hardware system



Questions?

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