MICHIGAN STATE UNIVERSITY Project Plan Ground Safety Action Program and QC Audit Center The Capstone Experience Team United Airlines Airport Operations

Allison Lollo Camille Emig Tudor Robaciu Josh Jarvis Ivan Zhang

Department of Computer Science and Engineering Michigan State University

Spring 2020



From Students... ...to Professionals

Functional Specifications

- The current system requires users to be at a computer to fill out the forms.
- This process is very inconvenient.
- Our team will create an iOS mobile application to be able to submit, manage, and track GSAP and QC Audit forms

Design Specifications

- Modern User Interface
- Location based file catering
- Editing permissions for assigned audits
- Autocomplete dropdown fields
- Save form with time expiration
- Image upload

Screen Mockup: GSAP Selector

UNITED		
Create New	GSAP Form	
LAX - 1/15	Expires in 3 hours	
LAX - 1/06	Expires in 8 hours	
LAX - 1/07	Expires in 23 hours	

Screen Mockup: GSAP Form

0	
	sh Timer
Flight Information	~
Not Applicable *Indicates request Aircraft Type*	uired field
Aircraft Number*	
Carrier Code*	
Form Type*	
Flight Number*	
GMT Scheduled Date*	
Departure Airport*	

	0
UNITE	D
ogout 19:59 Remaining	Refresh Timer
Flight Information	~
X Not Applicable	
Aircraft Type	
N/A	
Aircraft Number	
N/A	
Carrier Code	
N/A	
Form Type	
N/A	
Flight Number	
N/A	
GMT Scheduled Date	
N/A	
Departure Airport	
	_

Screen Mockup: QC Form Selector

LAX Open Audit Forms:	
	Service Audit – January 202
LAX QC G2 Customer Service Audit – January 2020 2016-01-12 15:12:34 35% Complete ID: 00134	Mainline CS Gate Standard Work
LAX QC G2 Mainline Ramp	0% Complete 2016-01-12 15:12:34
Audit – January 2020 2016-01-13 15:12:34 87% Complete ID: 00146	Mainline CS Lobby Standard Work
	20% Complete 2016-01-12 15:12:34
LAX QC G2 UAX Ramp Audit – January 2020 2016-01-15 15:12:34 50% Complete ID: 00154	Mainline CS Customer Interaction
LAX QC G2 UAX Ramp	15% Complete 2016-01-12 15:12:34
Audit – January 2020 2016-01-07 15:12:34 0% Complete ID: 00157	Mainline CS Training and Qualification
	68% Complete 2016-01-12 15:12:34

The Capstone Experience

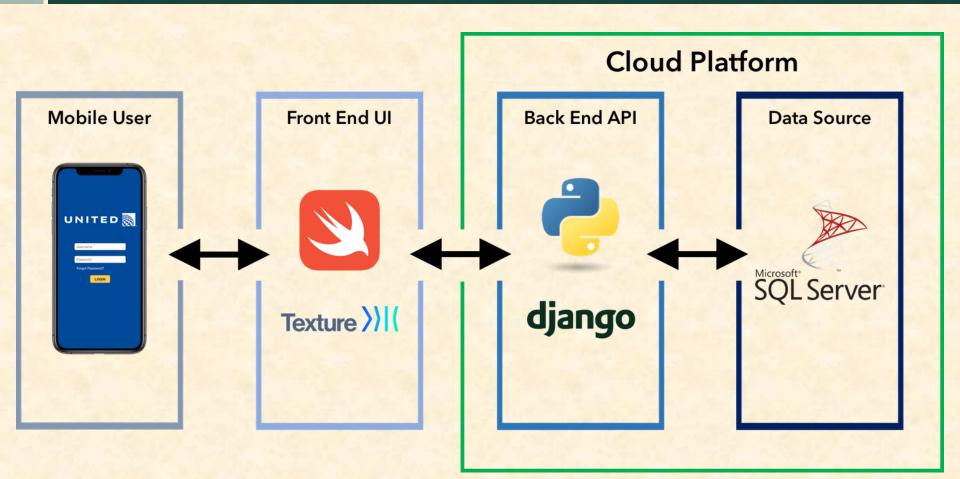
Screen Mockup: QC Audit Form

LAX QC G2 Customer Service Audit – January 2020	UNITED LOGOUT LAX QC G2 Customer Service Audit – January 2020
Mainline CS Gate Standard Work	Agent asked the customer if they had any (j) hazardous materials such as lithium-ion betteries, e-cigarettes and smart bags.
Agent used Welcome Announcement.	Not Applicable Comment
Not Applicable Comment Score: out of	Score: out of O Add Photo
Agent asked the customer if they had any hazardous materials such as lithium-ion betteries, e-cigarettes and smart bags.	Agent used Upgrade and Standby List (i) Clearance announcements.
Not Applicable Comment	Score: out of Carlot Add Photo
Score: out of	Save and Continue

Technical Specifications

- Mobile Application
 - Swift native application for iPhone and iPad
- Backend API
 - Connection from the iOS app to the database
- Microsoft SQL Server Database
 - Test data from the client will be stored and used during development

System Architecture



System Components

- Hardware Platforms
 - Microsoft SQL Server
- Software Platforms / Technologies
 - Python
 - django
 - Swift
 - Texture
 - XCode
 - PyCharm

Risks

Lack of API for EtQ

- No available API for EtQ.
- Build an EtQ-like database as a placeholder.
- Integrating with Oracle Access Manager(OAM)
 - No extensive documentation for OAM iOS SDK.
 - Research SDK and previous use of OAM in iOS apps.
- Application Management Portal for Editing Audit Checklist Fields
 - Admins must be able to edit questions.
 - Add columns to existing tables or create new tables.
- Easy Integration of Final Product for Client
 - Transfer app from mock back-end to United's EtQ system.
 - Use United technologies, thoroughly document back-end.

Questions?

