MICHIGAN STATE UNIVERSITY

Project Plan Presentation

Personalized Augmented Reality Experience

The Capstone Experience

Team MSUFCU

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From Students…
…to Professionals

Project Sponsor Overview

- MSUFCU is a federal credit union based out of East Lansing
- Committed to superior banking and betterment of local communities
- As of 2024, MSUFCU serves 361,000 members and has $7.71 billion in assets

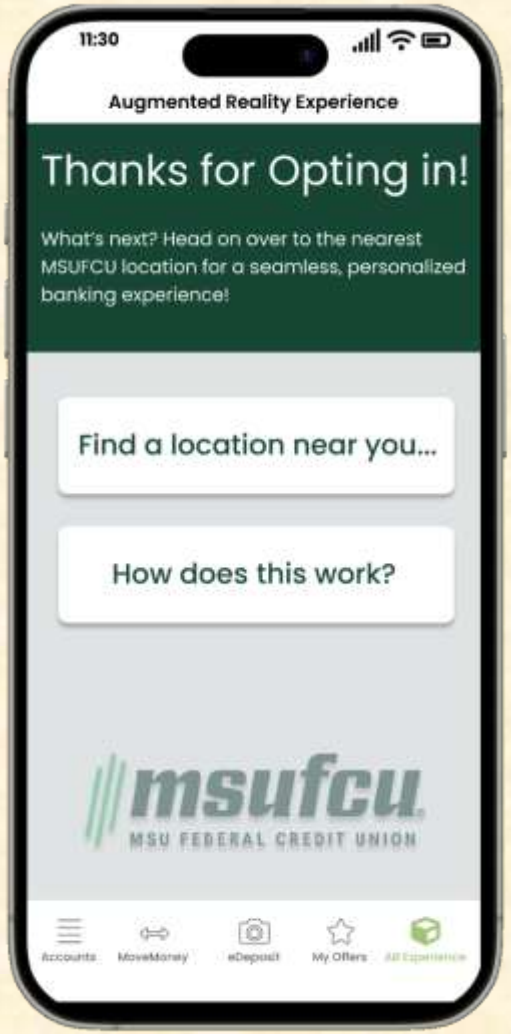
Project Functional Specifications

- Project aims to create an innovative approach to the in-person banking experience
- Increases efficiency and personalizes in-branch visits
- Allows users to control their visit and the level of interaction needed
- Embraces modern technology while promoting old-school banking

Project Design Specifications

- Prompt user engagement in the AR experience via mobile push notification (geolocation)
- Facial recognition to complete the sign-in process
- Personalized visit recommendations based on previous visits to location
- External display guiding customer through specific branch services
- Optional experience open to user's who opt in

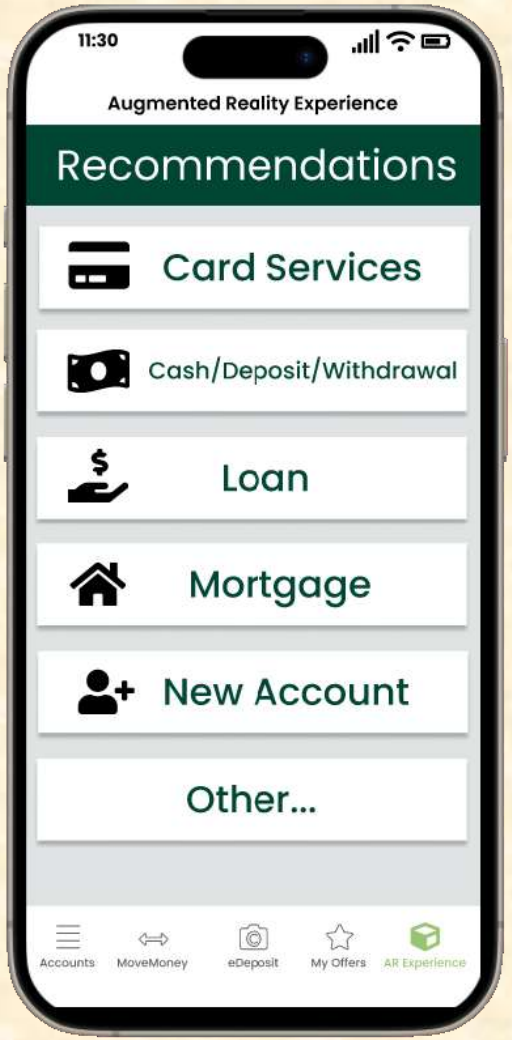
Screen Mockup: Opt-In Service

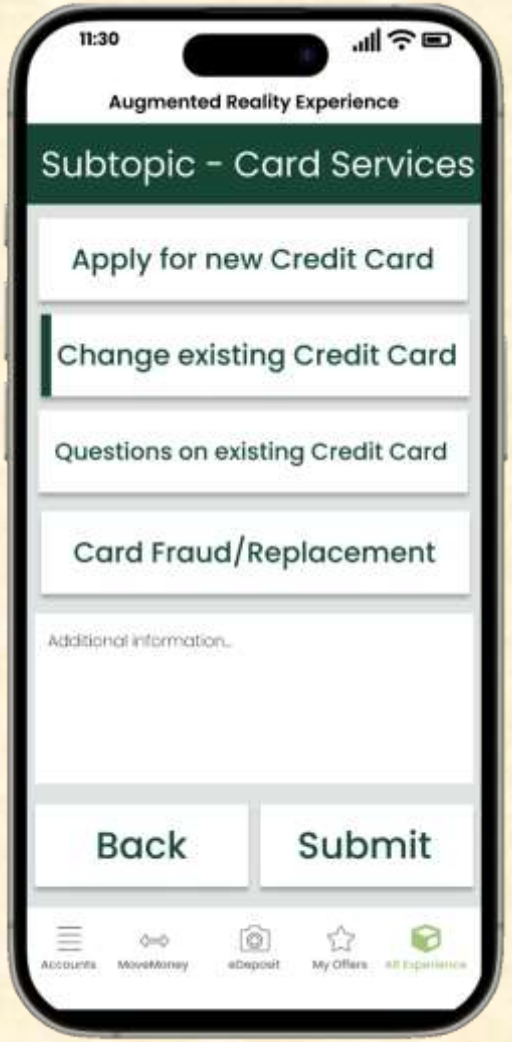


Screen Mockup: Location Based Notifications

Screen Mockup: Personalized Experience

Screen Mockup:
Tailored Recommendations

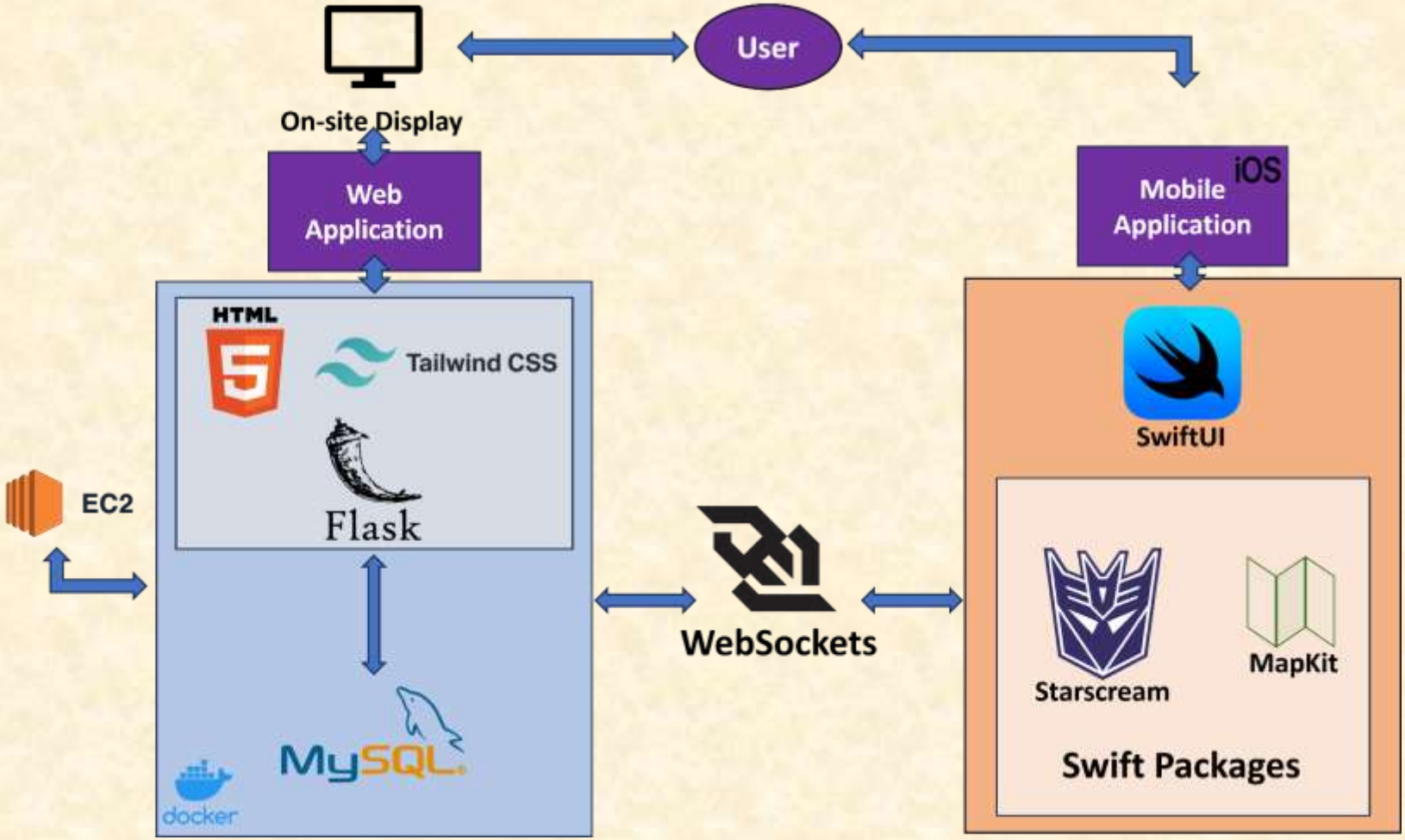




Project Technical Specifications

- Full stack application built with a WebSocket server
- Mobile application developed using SwiftUI (MapKit and Starscream packages)
- Web application developed with HTML, Tailwind CSS, and JavaScript
- Flask-SocketIO and Starscream extensions provide WebSocket handling for real-time communication
- Back-end server hosted by AWS and containerized by Docker

Project System Architecture



Project System Components

- Hardware Platforms
  - On-site External Screen
  - Computer or Smart TV
  - Mobile Device (iOS)
- Software Platforms / Technologies

IOS Mobile Application:

- SwiftUI, MapKit, Starscream

Web Application:

- Tailwind CSS, MySQL, HTML5, Flask, Amazon Web Services EC2

Project Risks

- Real-time phone-to-screen connection
  - Users will be greeted by an external screen, synchronously guiding them through branch activities. There are uncertainties about establishing an efficient and effective connection between the two devices
  - Members have explored using WebSockets via Flask-SocketIO to establish a secure and realtime connection
- User's location in relation to MSUFCU using geofencing
  - The user's location is needed to send an AR Experience notification when they are at a MSUFCU branch, along with requiring accurate geofencing for MSUFCU's branch location.
  - The user's location can be found using SwiftUI and the branch location can be found using Google Maps API, this can be tested on-site after implementation
- Privacy with two-factor authentication
  - Authentication for accessing private banking information must align with the proposal's augmented reality specifications and incorporate facial recognition technology
  - Require the user to bring their own phone and authenticate using iPhone's facial recognition
- Personalized features for each user
  - In an augmented reality experience, the software should offer customized features based on the user's perceived intent for visiting the branch or their past branch interactions
  - The branch activity options will be presented through being stored in a MySQL database hosted on AWS EC2, providing suggestions reflective of their consistent engagement

Questions?