

**MICHIGAN STATE**  

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**UNIVERSITY**

# Project Plan Presentation

## Digital Banking Car App

### The Capstone Experience

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

# Project Sponsor Overview

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- American credit Union
- Founded at Michigan State University in 1937
- Headquarters in East Lansing, MI
- Over \$7.28 billion in assets
- Over 330,000 members



# Project Functional Specifications

- Michigan's new cell phone law leads to a need for MSUFCU customers to have a safe and convenient digital banking experience in vehicles
- 1 touch controls on infotainment system
- Voice-activated banking controls for essential tasks
  - Member2Member transfer, checking balances, checking transaction history, loyalties, etc.



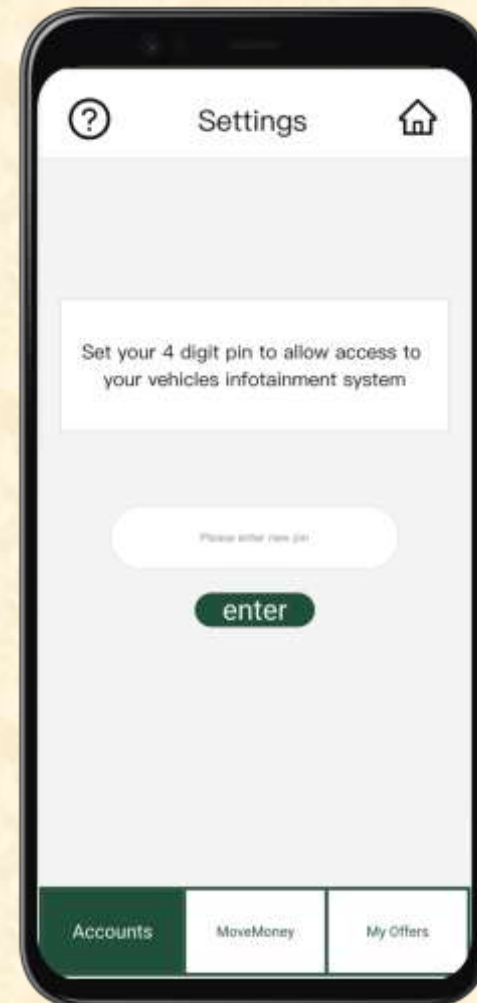
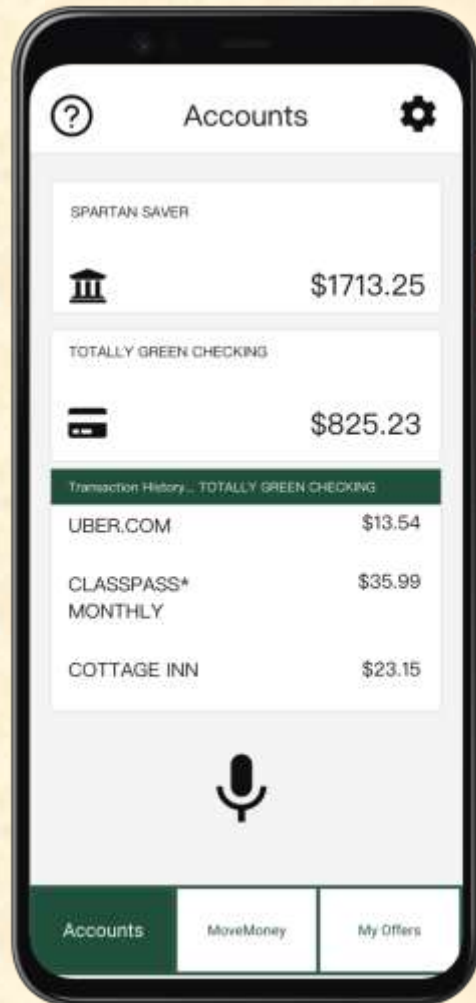
# Project Design Specifications

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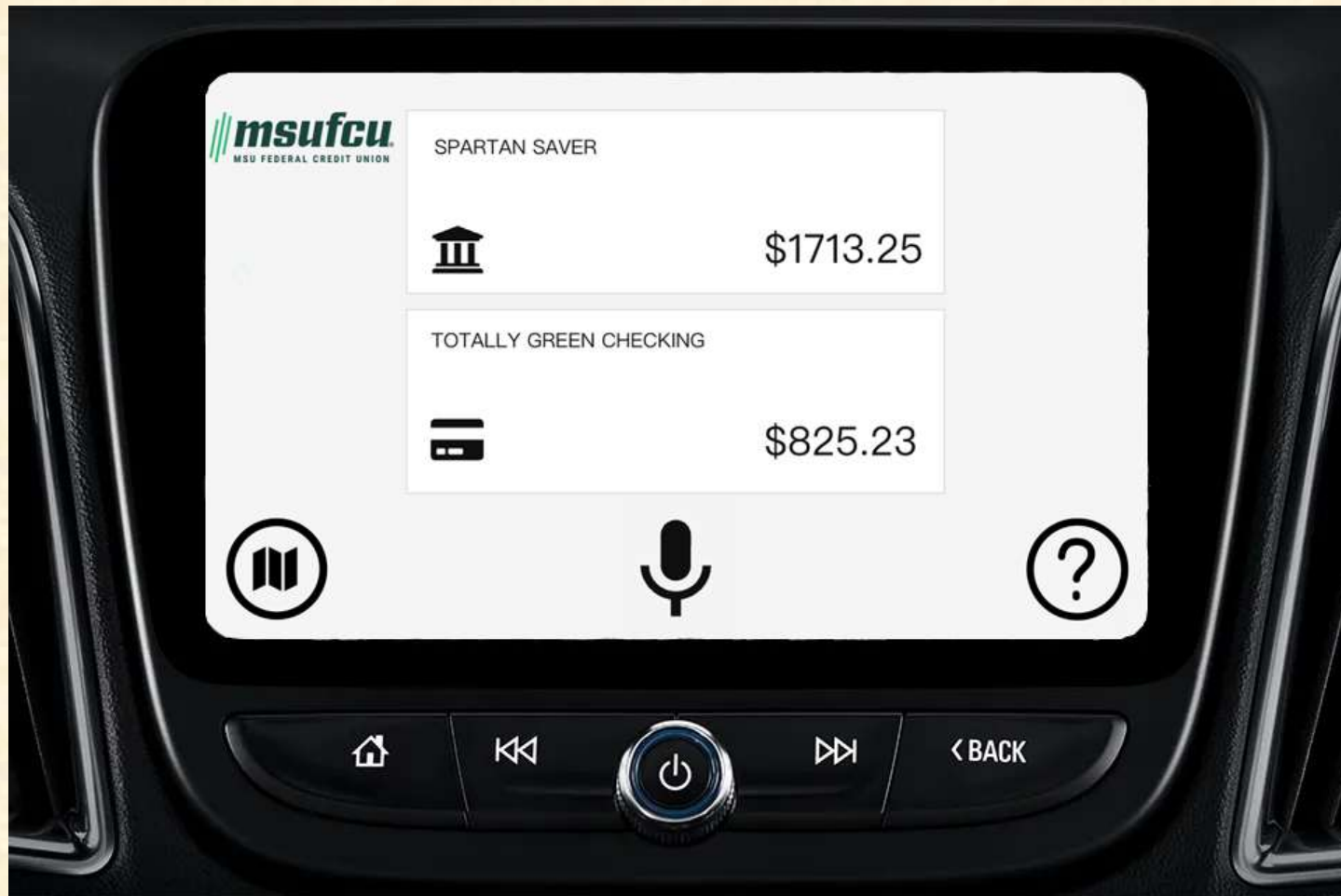
- Secure PIN sign-in
- Simple and safe to use
- View account balances
- Check latest transactions
- Contact customer support
- View near by loyalty offers and get directions
- Transfer funds to accounts or to other members



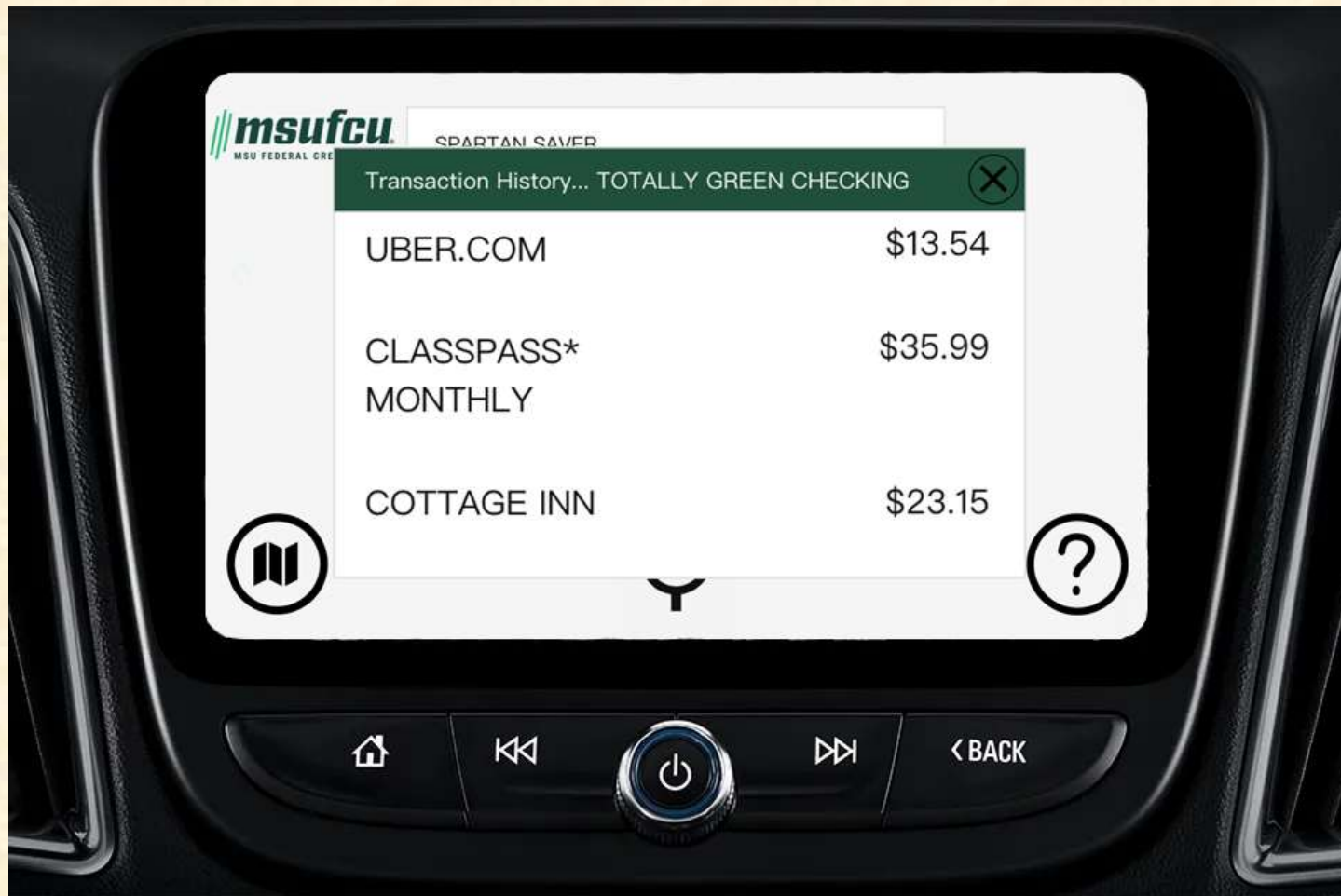
# Screen Mockup: Phone Application



# Screen Mockup: Infotainment Home



# Screen Mockup: Recent Transactions



# Screen Mockup: Loyalties



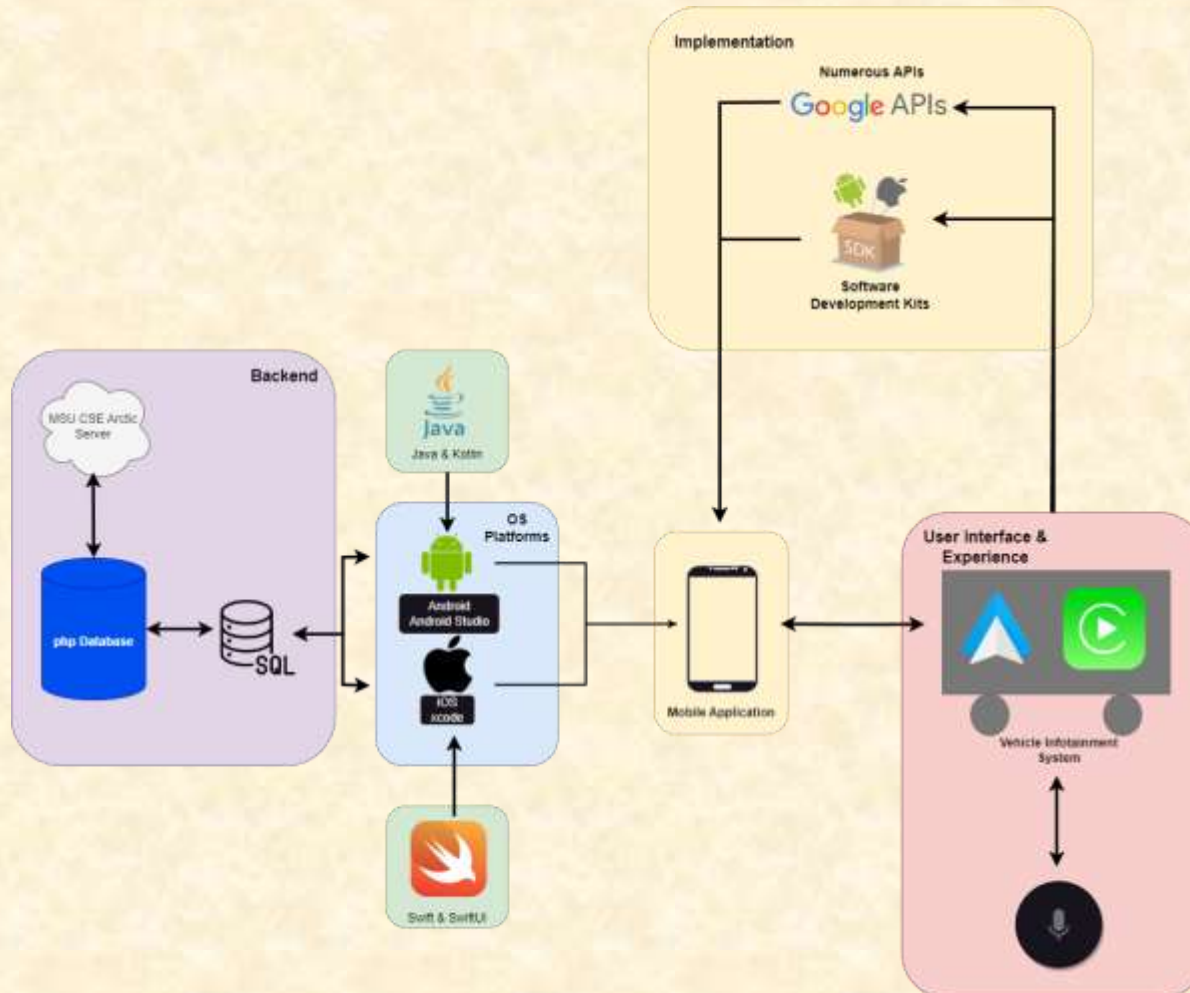


# Project Technical Specifications

- PHP is hosted on the MSU CSE Arctic Server
- SQL is hosted on PHPMyAdmin
- Android app developed in Java and Kotlin on Android Studio
- iOS app developed in Swift and SwiftUI on Xcode
- Automotive and phone emulator on Android Studio
- APIs for google maps
- SDKs for speech recognizer from Android developer website



# Project System Architecture



# Project System Components

- Hardware Platforms
  - Android mobile cell phone
  - Vehicle infotainment system
  - Cloud based MSU CSE Arctic server
- Software Platforms / Technologies
  - Android Studio and xcode
  - Android Phone and Automotive emulator
  - PHPStorm and SQL
  - SDKs from Android's developer website



# Project Risks

- User Safety
  - Application user interface and experience must be simple and safe to use within a vehicle.
  - Research and test different implementations to ensure our app is not overly complex.
- Apple CarPlay Emulator
  - Unable to emulate Apple CarPlay without entitlements from Apple.
  - MSUFCU is aware of this, allowing us to spear head the Android development. MSUFCU is attempting to request entitlements for their Apple developer account.
- Voice Commands
  - No experience implementing code that uses voice commands
  - Research and test implementations for how to implement voice control as well as use MSUFCU's boost.ai to assist in development
- Database Logistics
  - Database for backend customer information is set up but is not yet connected to the application
  - Implement the database system in the application
- MSUFCU APIs
  - Restricted access to currently used APIs within MSUFCU mobile application
  - Communicating with MSUFCU and their IT team to gain access



# Questions?

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