MICHIGAN STATE
U N I V E R S I T Y

Project Plan
Digital Assistant and Personal Financial Coach

The Capstone Experience

Team MSUFCU

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From Students…
…to Professionals

Functional Specifications

- A digital assistant that can answer basic questions about a member's account

- Gives advice to members and can set goals for them

- Can analyze trends in member's spending habits

- Can compare member's spending to other members in similar demographic
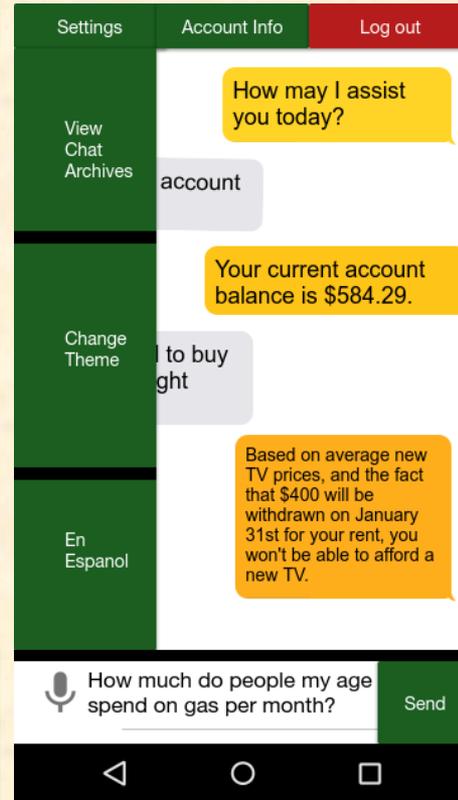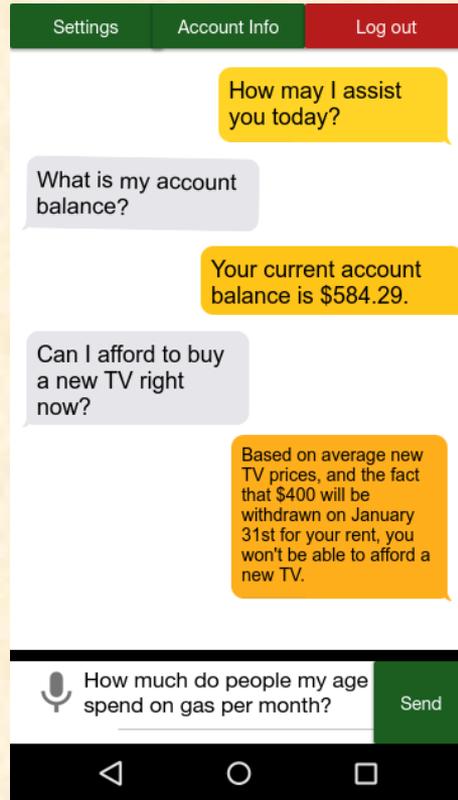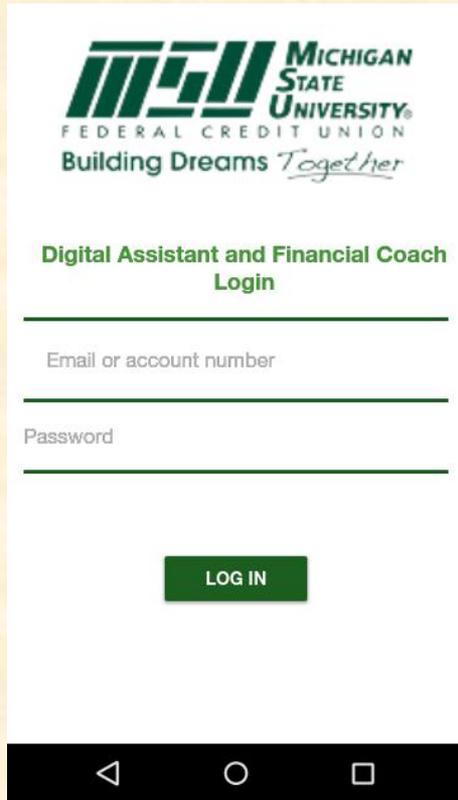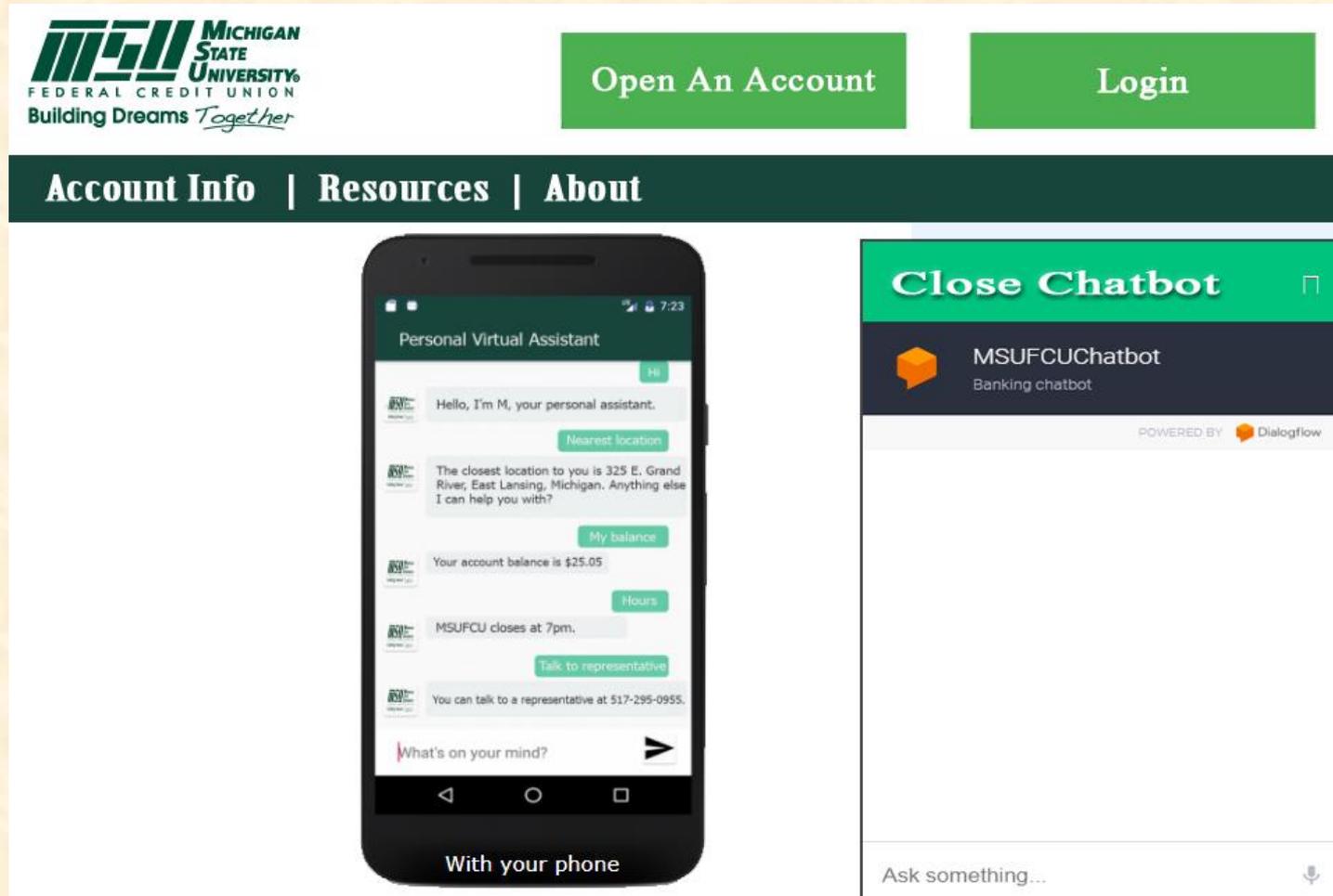
Design Specifications

- Can be accessed by members through iOS, Android, Alexa, and a web app
- After logging in, Android and iOS apps will feature a chatbot that has similar design to standard messaging app (can respond to both vocal and written commands)
- Alexa app only responds to vocal commands
- Web app will feature the chatbot as well as access to detailed account information and other MSUFCU services

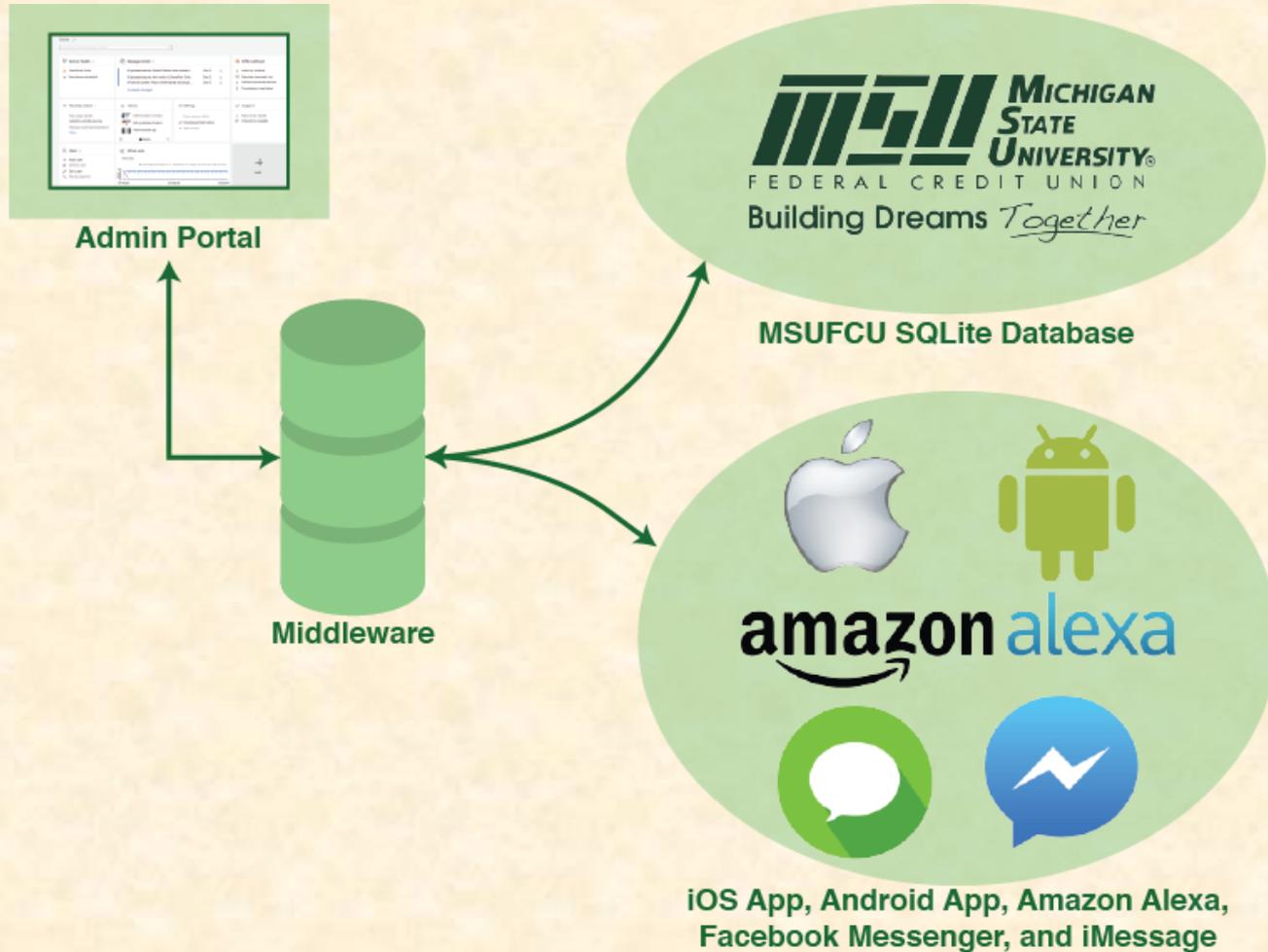# Screen Mockup: Android App
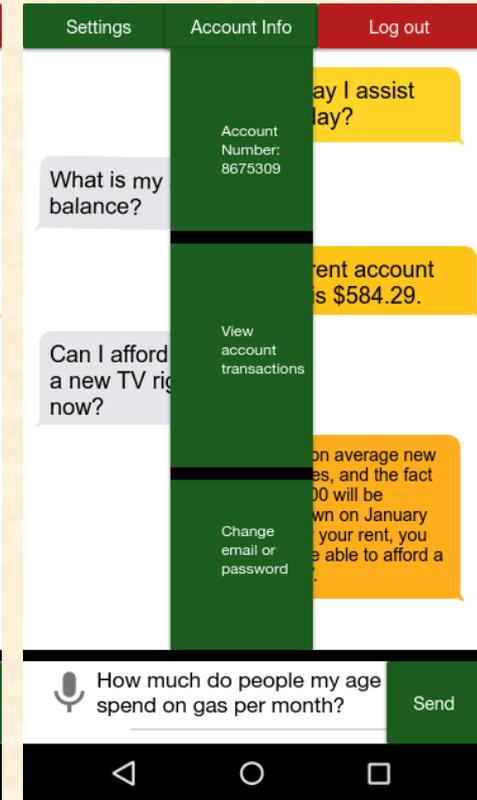
Screen Mockup: Web Admin Portal

Technical Specifications

- Database stores information about MSUFCU users and their transactions using SQLite

- Application server provides digital assistant and personal finance coach through Node.js

- Users can interact with digital assistant and personal finance coach through several front end services.

System Architecture

Admin Portal

MSUFCU SQLite Database

Middleware

iOS App, Android App, Amazon Alexa,
Facebook Messenger, and iMessage

System Components

- Hardware Platforms
  - Amazon Echo
  - Android Phones
  - Apple iPhones
  - Capstone Server
- Software Platforms / Technologies
  - JavaScript (Node.js)
  - Java
  - Swift
  - SQLite
  - Alexa Skills Kit
  - Ubuntu Server OS

Risks

- Building off of Previous Code
  - This project is building off work done by a previous capstone team
  - We will work with clients to ensure our code works well with previous code; we will also contact old team members if necessary
- Working with Voice Recognition Software
  - No experience with voice recognition or speech-to-text
  - We will research best practices and use previous code to develop our knowledge
- Using Machine Learning to Make Predictions
  - Making comparisons between members of similar demographics requires machine learning techniques
  - We will research best methods for this type of data analysis and we will rely on clients to assist us
- Integration of Android, Alexa, iOS, and Administrative Web App
  - Making these systems communicate with each other may prove to be difficult
  - We plan to use a centralized database to maintain consistency between all different platforms

Questions?