MICHIGAN STATE
UNIVERSITY

Project Plan
GM Transportation Experience

The Capstone Experience

Team GM

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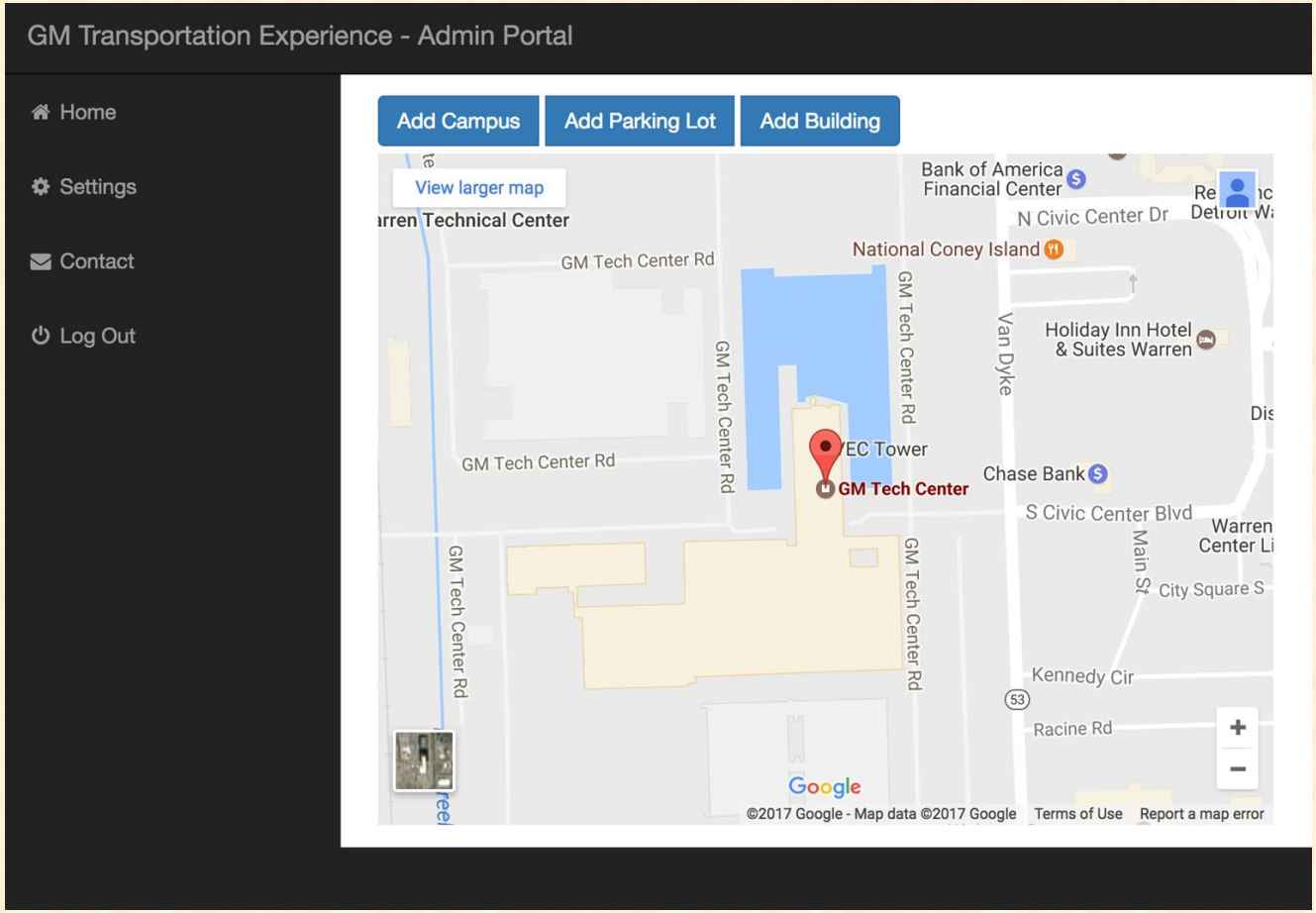
Functional Specifications

- Help Visitors and Employees Find a Parking Spot
- Build iOS and Android Applications for Users
- Build a Web Portal for Administrators

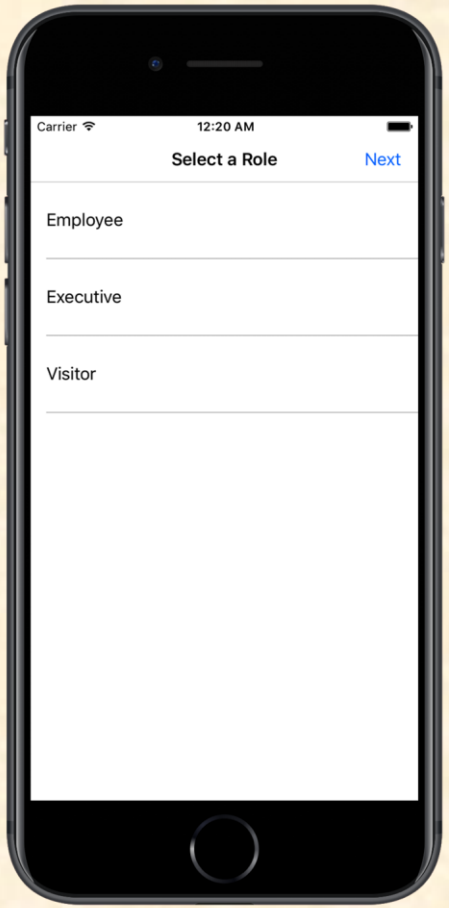
Design Specifications

- App To Be Used in Parking Lot While Driving
- Simple User Interface with Large Visual Elements
- Limiting User Interaction
  - Text-To-Speech APIs

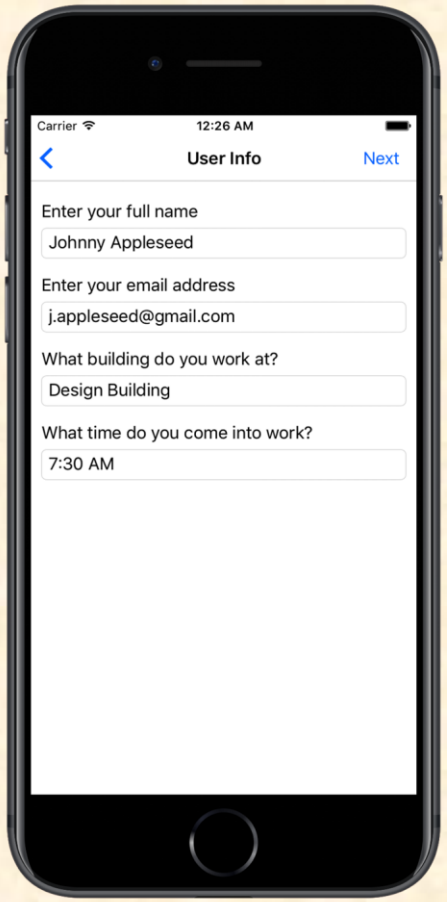
Screen Mockup: Web Interface

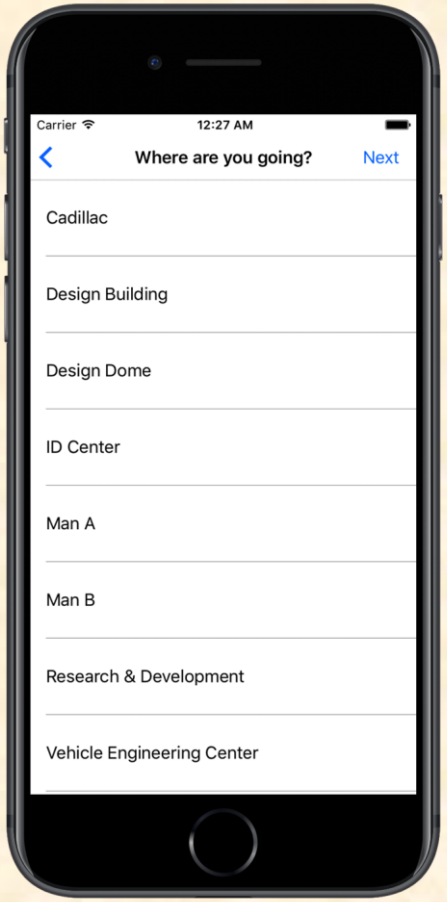


Screen Mockup: Phone Interface



Screen Mockup: Phone Interface

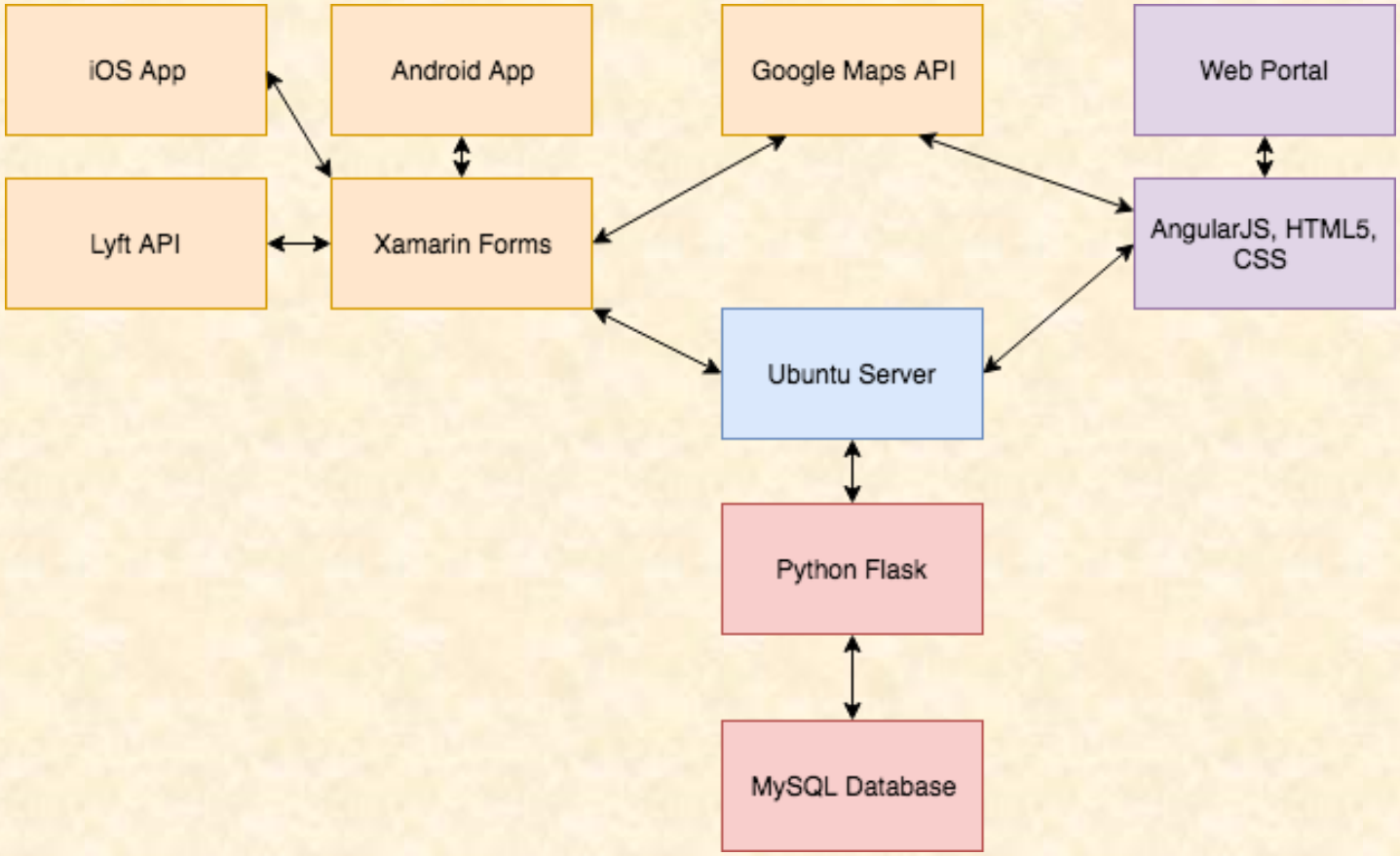




Technical Specifications

- Server
  - Ubuntu Server 16.04.1
  - MySQL
  - Python Flask For Backend RESTful API
- Mobile Applications
  - Xamarin Forms (C#)
  - Google Maps API
  - Lyft API
- Web Portal
  - HTML5, Bootstrap CSS, AngularJS
  - Google Maps API

System Architecture



System Components

- Hardware Platforms
  - Ubuntu Server 16.04.1
  - MySQL
  - Etc…
- Software Platforms / Technologies
  - Xamarin Studio
  - Visual Studio Code
  - GitHub
  - Etc…

Testing

- Use MSU Campus Parking Lots
  - Geofence Small Area, Then Test With a Few Lots
- Postman for API Testing
  - Google Maps API
  - Lyft API
  - Our backend API

Risks

- Predictive Parking Analysis
  - Need to Predict Parking Lot Availability
  - Historical User Data
- Limiting User Interaction
  - App To Be Used in Parking Lot While Driving
  - Simple UI, Prior Data Inputting
- Xamarin Forms
  - Limited Features with Xamarin Forms
  - Limit Stretch Goals, Keep Realistic Expectations

Questions?