

MICHIGAN STATE

U N I V E R S I T Y

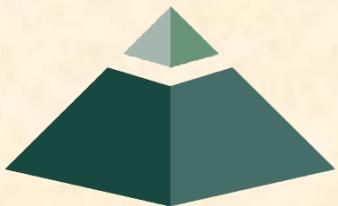
Project Plan
Whirlpool Indoor Maps
The Capstone Experience

Team Whirlpool

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

Functional Specifications

- Indoor Mapping of Large Buildings
 - Locate and book

- Google Integration
 - Authenticate and navigate

- Directions/Navigation
 - Indoor & outdoor



Functional Specifications

- Search
 - Conference rooms & buildings
- Filter
 - Capacity, availability, and logistics
- Favorites
 - Fast & convenient

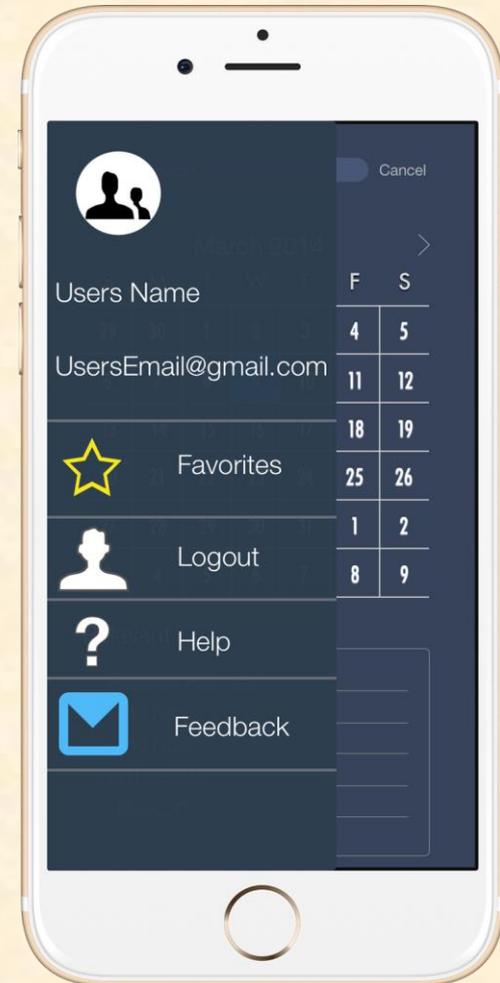
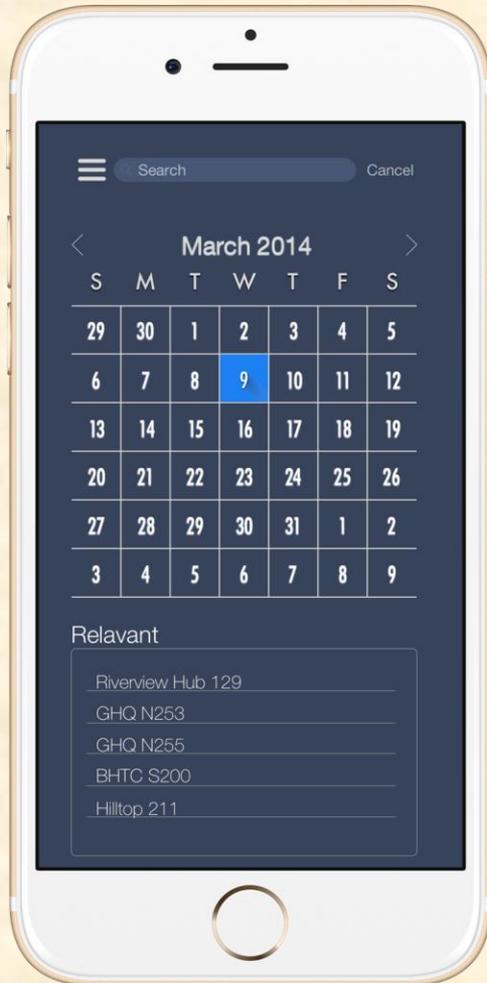


Design Specifications

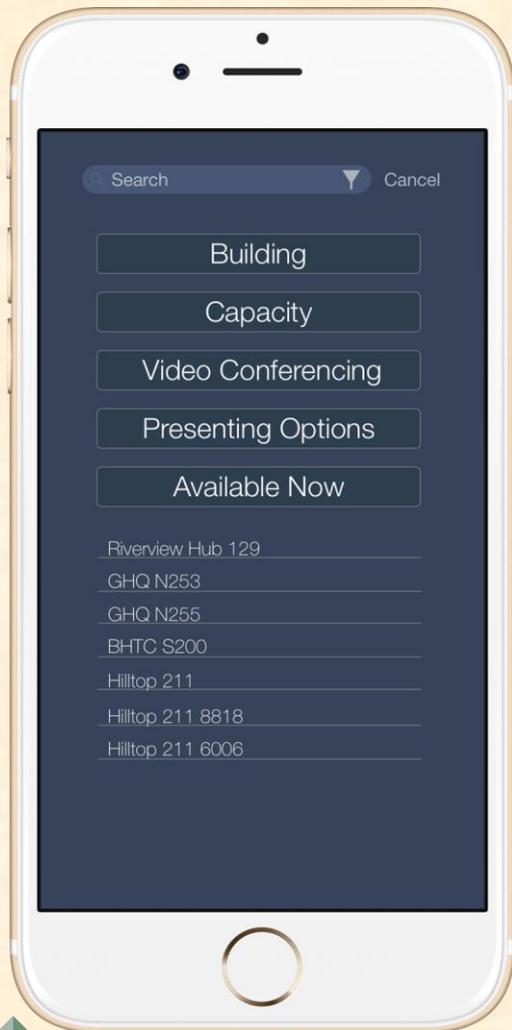
- Home Screen
 - Calendar & relevant rooms
- Search Screen
 - Advanced filter
- Room Screen
 - Location & related info
- Directions
 - Current location & landmark



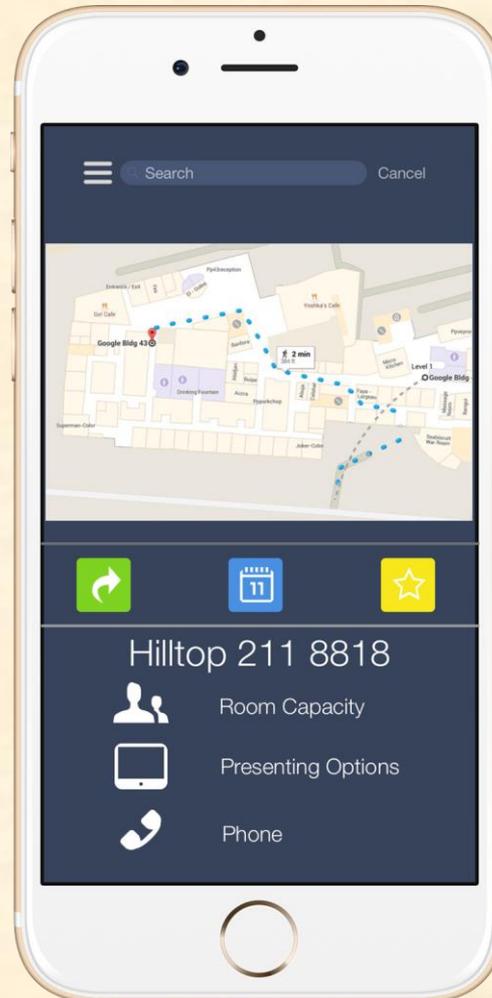
Screen Mockup: Home Screen



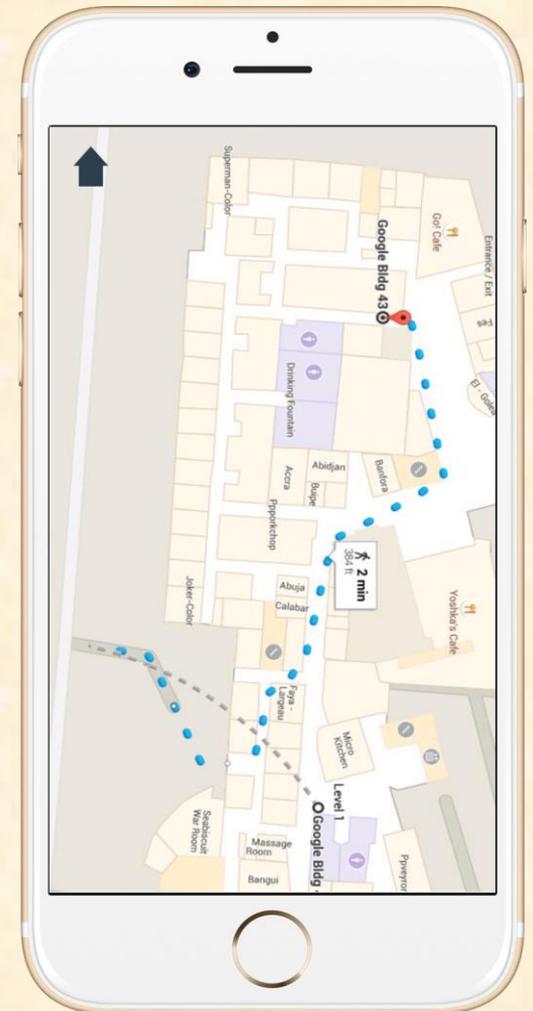
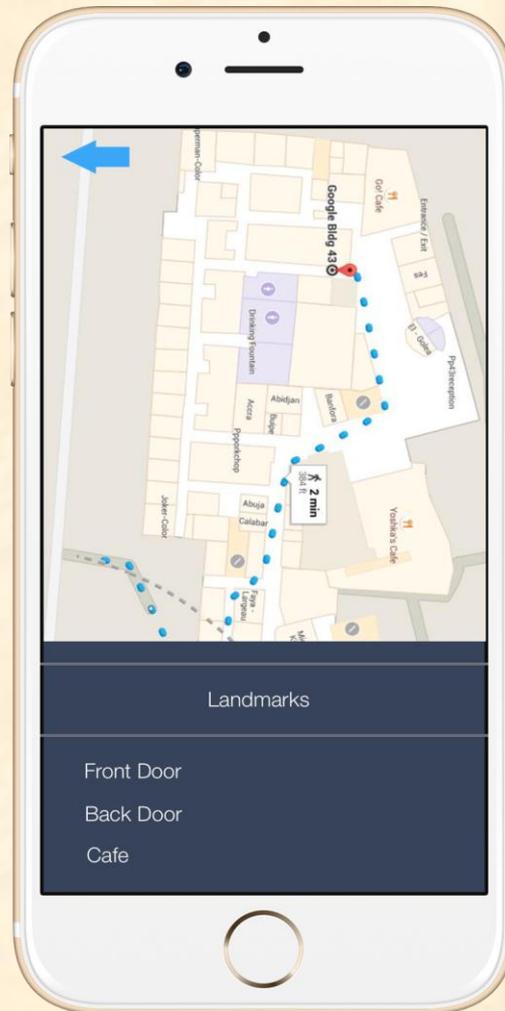
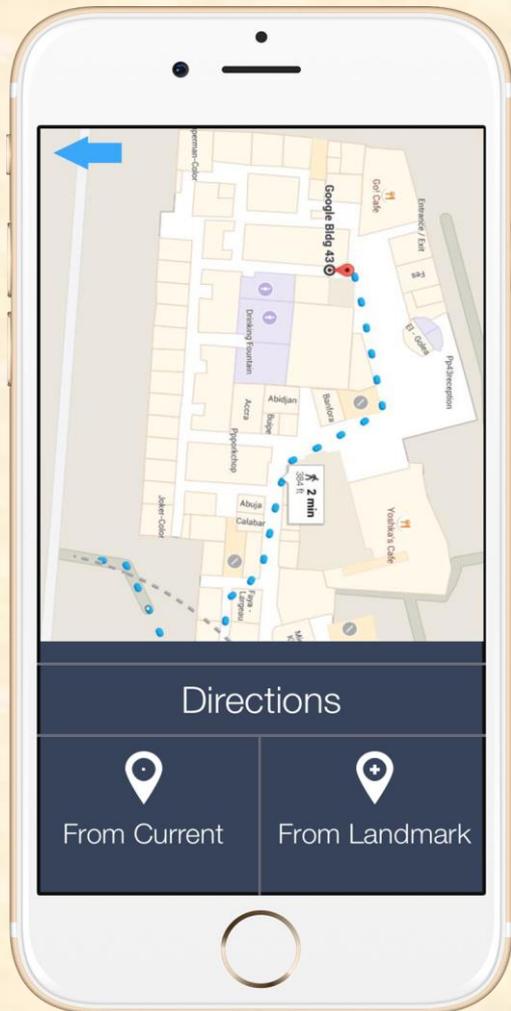
Screen Mockup: Search Screen



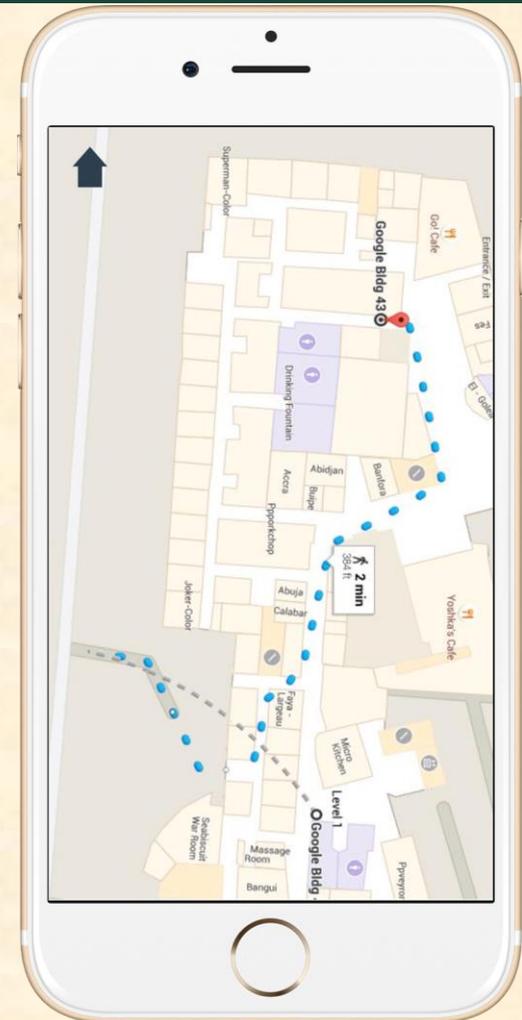
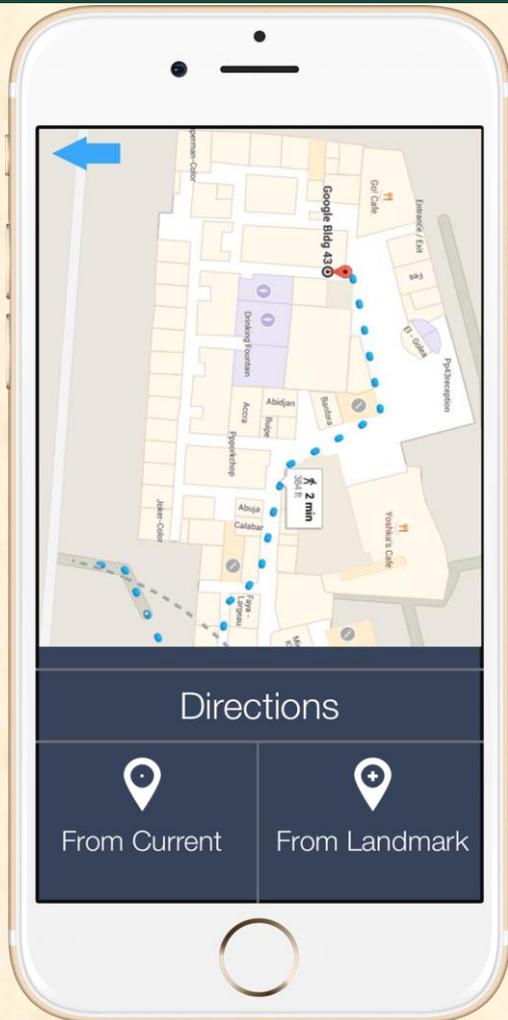
Screen Mockup: Room Screen



Screen Mockup: Directions



Screen Mockup: Directions

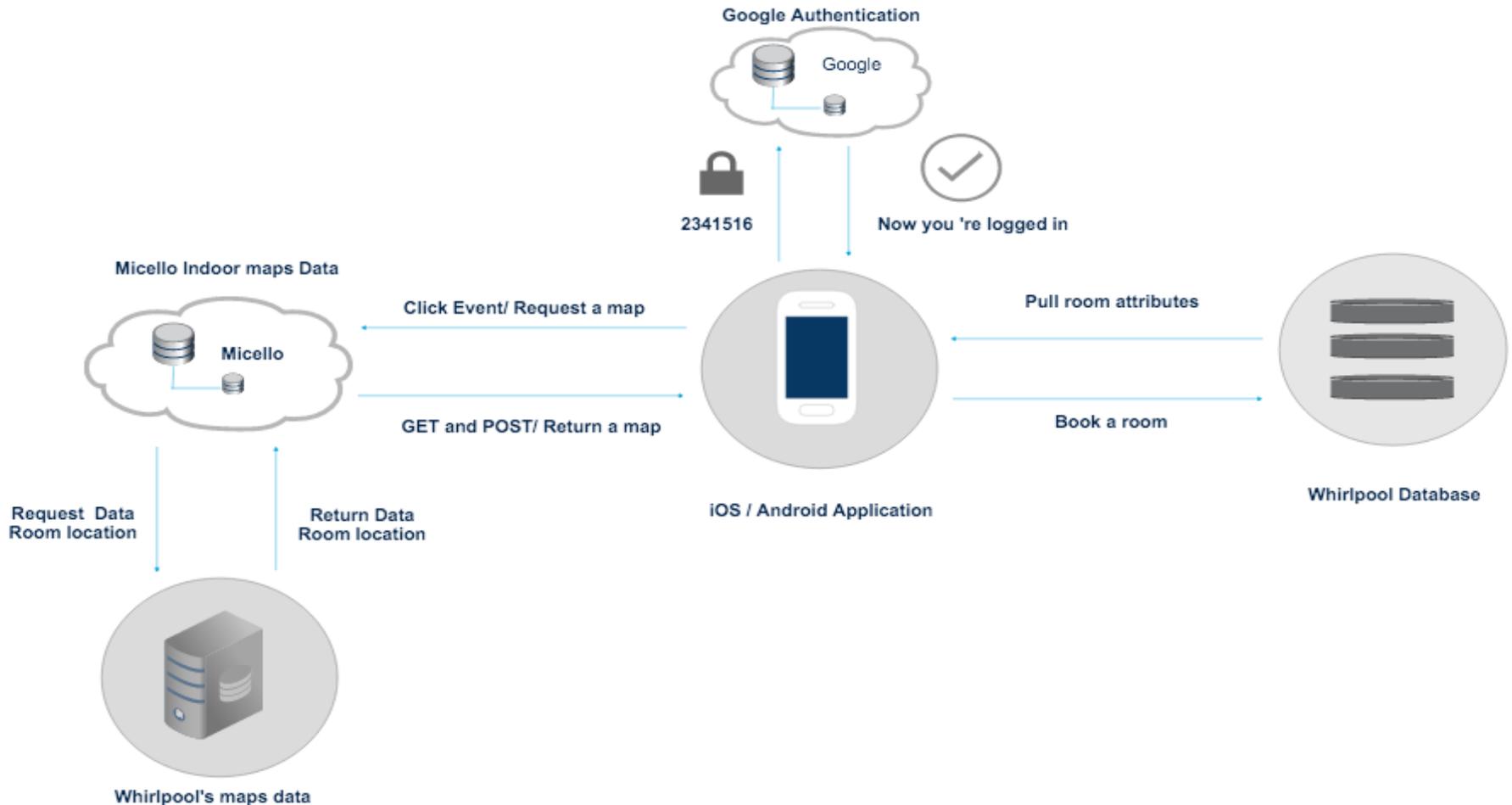


Technical Specifications

- Android/iOS application
- Google Authentication and maps SDK
- Micello API for indoor mapping and turn by turn directions
- Real time updating and pulling of facility room information



System Architecture



System Components

- Hardware Platforms
 - Google Cloud
 - Whirlpool Database

- Software Platforms / Technologies
 - xCode, Android Studio
 - Swift, Java, HTML, JavaScript
 - Phone Geo-location



Testing

- Test-driven development (TDD)
 - Swift & Java
- Android application
 - Nexus 7, Samsung S5, Samsung S6
- iOS application
 - iPhone 5s, iPhone 6, iPad



Risks

- Geo-locating within buildings.
 - GPS , floors, and the approximation
 - Mitigation: WIFI (for now)
- Implementing Micello API and SDK
 - Micello : Javascript for IOS, SDK Android
 - Mitigation: Webviews
- Turn by turn navigation
 - Challenge with the indoor positioning
 - Mitigation: User select a starting point
- Google map integration with Micello
 - Switching between the two maps slows response time
 - None

