

MICHIGAN STATE

U N I V E R S I T Y

Project Plan SYNC Calendar

The Capstone Experience

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

Functional Specifications

- Allows users to view, manage, and listen to their calendar and/or tasks while driving
- Integrates with your Google account to sync your calendar and tasks
- Utilizes voice recognition to mitigate the need for taking your eyes off of the road
- Allows administrators the ability to view and analyze usage data

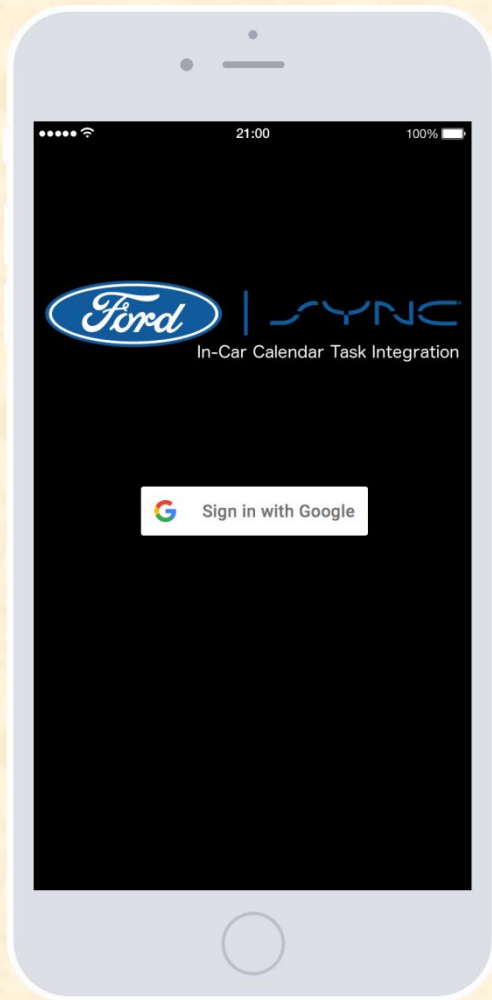


Design Specifications

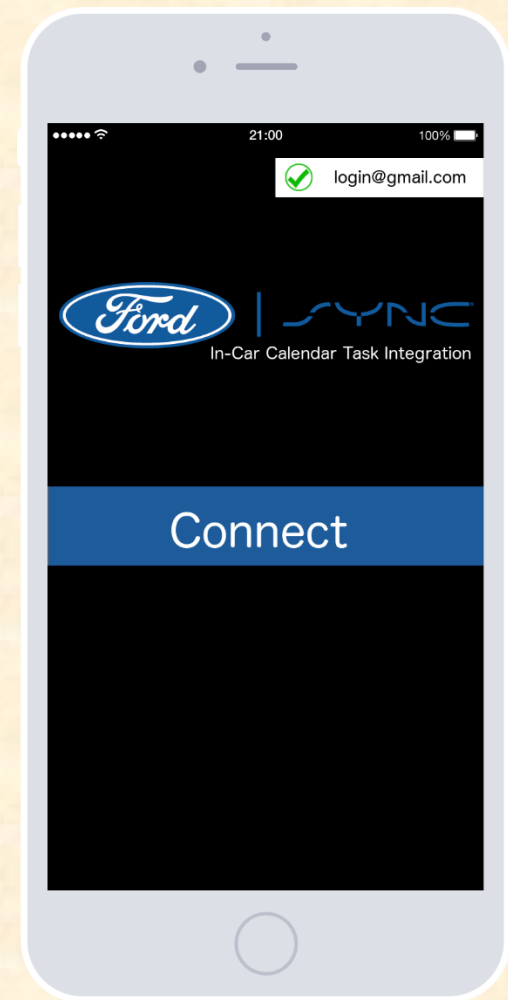
- SYNC AppLink Mobile application
 - Hosted on both iOS and Android
 - Connects to the SYNC 3 in-vehicle system
- Microsoft Server 2012 R2
 - MS SQL Database to store usage data
- Web Application
 - Hosted on Microsoft Server 2012 R2 using IIS
 - PHP and JavaScript
 - Provides an interface for our MS SQL database
 - Only viewable by administrators



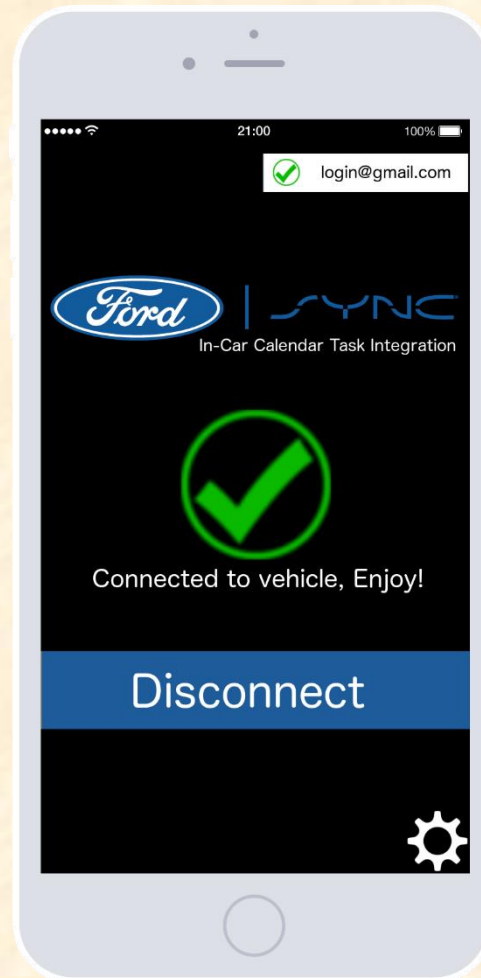
Screen Mockup: Mobile Application



User logs into Google

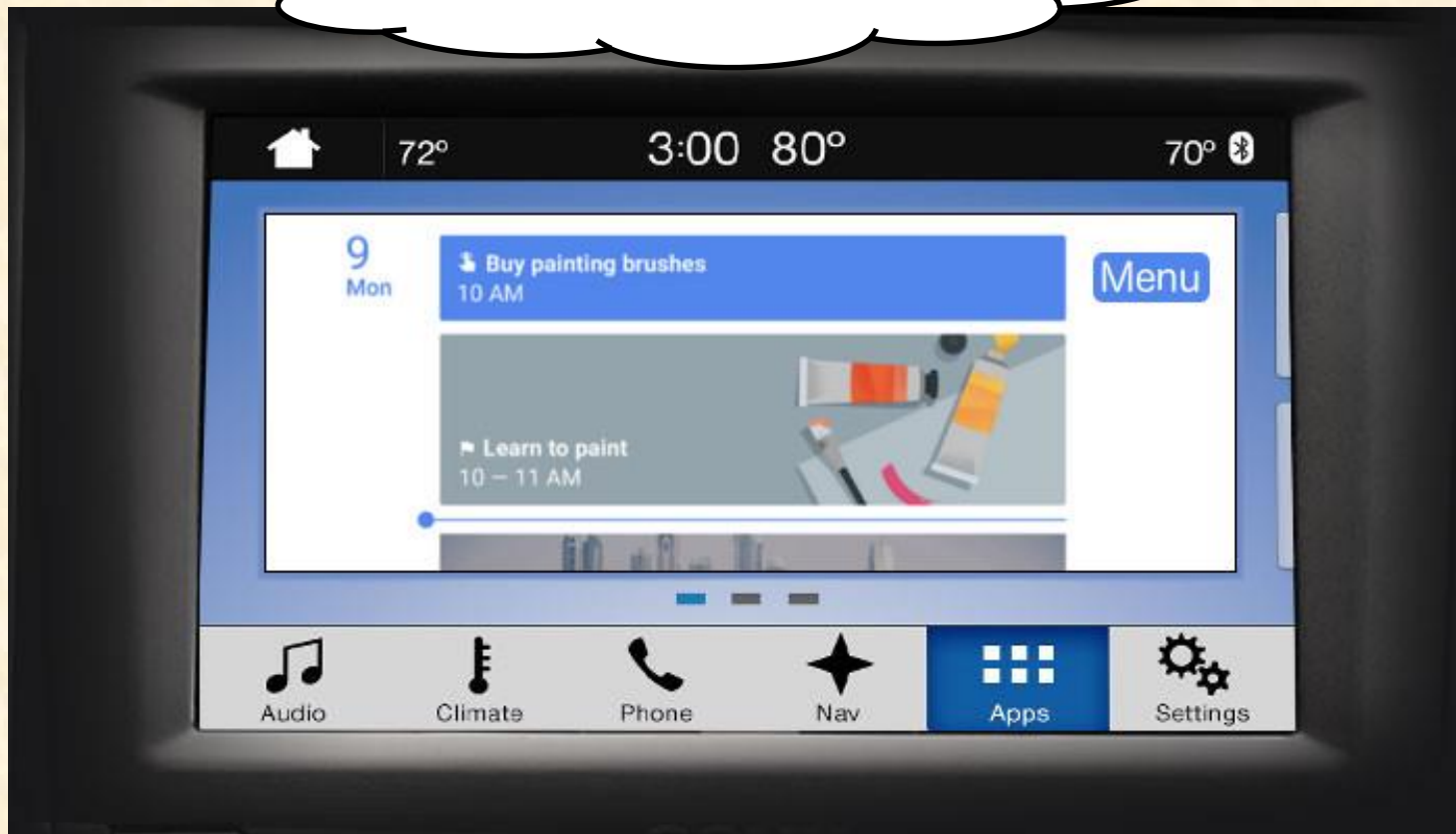


Screen Mockup: Mobile Application



Screen Mockup: SYNC 3 Screen

“Show todays calendar”



Example Voice Commands

Action	Command	Example
Add a calendar event	"Add an event for [event] in/at [location], [date] at [time]"	Add an event for dinner at Los Tres Amigos, Saturday at 7:00pm"
Delete a calendar event	"Clear my calendar for/on [date]" "Clear my calendar from [time] to [time] for/on [date]" "Clear my [event] for/on [date]"	"Clear my calendar from 11:00am to 1:00pm for tomorrow"
Update a calendar event	"Change the [variable] of [event] for/on [date] to [variable]"	"Change the time of dinner on Saturday to 8:00pm"
Read remaining events for today	"Read remaining events for today"	"Read remaining events for today"



Technical Specifications

- iOS
 - Swift
 - Using Xcode
- Android
 - Java
 - Using Android Studio
- SYNC AppLink Application
 - Marshals information between Google's APIs to SYNC
- Microsoft Server 2012 R2
 - MS SQL database
- Google Calendar API and Google Task API



System Architecture



System Components

- Hardware Platforms
 - iPhone
 - Android
 - Ford Vehicles with SYNC 3
 - Rack Mounted Server
- Software Platforms / Technologies
 - iOS 7+
 - Android 4.0+ (Ice Cream Sandwich)
 - SYNC 3 AppLink Emulator
 - Microsoft Server 2012 R2



Testing

- Xcode Unit Testing for iOS
- JUnit Unit Testing for Android
- PHP Unit Testing
- Field Testing in a Ford/Lincoln vehicle with SYNC



Risks

- SYNC 3 AppLink Emulator
 - iOS not pairing with the emulator
 - Android apps not displaying on the emulator
 - Client investigating source within the Ford AppLink Development Team
- Voice Recognition
 - No experience with voice recognition
 - Starting small with basic commands through Ford's API
- Mobile Development
 - No mobile development background on team
 - Starting with basic Hello Worlds and working up from there
 - No mobile testing ever done within team
 - Using our knowledge from PHP unit testing
- Familiarity with SYNC 3 and the AppLink Emulator
 - Next to no familiarity with SYNC 3 or the AppLink Emulator
 - Testing out and learning with sample apps that Ford offers

