

**MICHIGAN STATE**  

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**U N I V E R S I T Y**

# The Capstone Experience

Dr. Wayne Dyksen

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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

# Course Goals

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- Build a Significant Software System
- Work in a Team Environment
- Learn New Tools and Environments
- Build and Administer Systems
- Develop Communication Skills
- Develop Interview Talking Points
- Consider Issues of Ethics and Professionalism



# Course Goals

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- Teams of Students
- Build Significant Software System
  - Design
  - Develop
  - Debug
  - Document
  - Deliver
- For Corporate Clients
- In 15 (Short) Weeks



# Project Deliverables

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- Project Plan Document & Presentation
- Alpha Presentation
- Beta Presentation
- Project Software & Documentation
- Project Video
- Design Day

See [Major Milestones](#).



# All-Hands Meetings

- MW, 3:00-3:50pm, 2250 Engineering Building
- Presentations By
  - Professor
  - Teams
    - Status Reports
    - Formal Presentations
      - Project Plan
      - Alpha
      - Beta
    - Project Videos
  - Guest Speakers



# All-Hands Meetings

- 01/12: Course Overview
- 01/14: Project Plan
- 01/19: (Martin Luther King Day, No Meeting)
- 01/21: Risks and Prototypes
- 01/26: Team [Status Report Presentations](#)
- 01/28: Schedule and Teamwork
- 02/02: Team [Project Plan Presentations](#)
- 02/04: Team [Project Plan Presentations](#)
- 02/09: Team [Project Plan Presentations](#)
- 02/11: Team [Project Plan Presentations](#)
- 02/16: Resume Writing and Interviewing
- 02/18: Creating and Giving Presentations
- 02/23: Team [Alpha Presentations](#)
- 02/25: Team [Alpha Presentations](#)
- 03/02: Team [Alpha Presentations](#)
- 03/04: Team [Alpha Presentations](#)
- 03/09: (Spring Break, No Meeting)
- 03/11: (Spring Break, No Meeting)
- 03/16: Status Reports
- 03/18: Status Reports
- 03/23: [Design Day](#) and the [Project Videos](#)
- 03/25: Camtasia Demo
- 03/30: Ethics and Professionalism
- 04/01: Intellectual Property
- 04/06: Team [Beta Presentations](#)
- 04/08: Team [Beta Presentations](#)
- 04/13: Team [Beta Presentations](#)
- 04/15: Team [Beta Presentations](#)
- 04/20: Status Reports
- 04/22: Status Reports
- 04/27: [Project Videos](#)
- 04/29: [Project Videos](#) and [All Deliverables](#)
- 04/30: [Design Day Setup](#)
- 05/01: [Design Day](#)
- 05/06: [Project Videos](#)



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# The Capstone Experience

Team Amazon

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



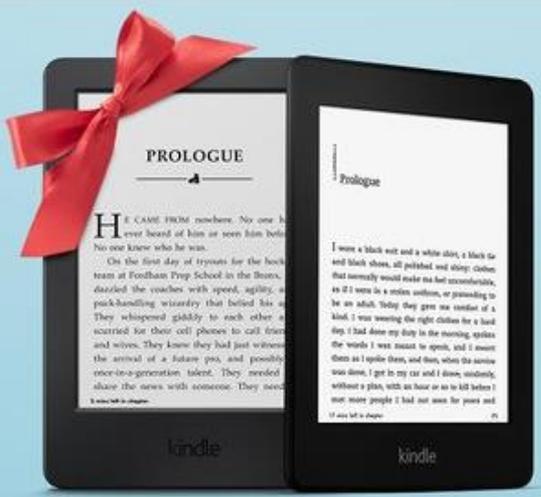
*From Students...  
...to Professionals*

**amazon**



FREE TWO-DAY SHIPPING ON SELECT FIRE AND KINDLE DEVICES

Limited-time offers



kindle paperwhite

~~\$119~~ \$99

kindle

~~\$79~~ \$59



Amazon Gift Cards

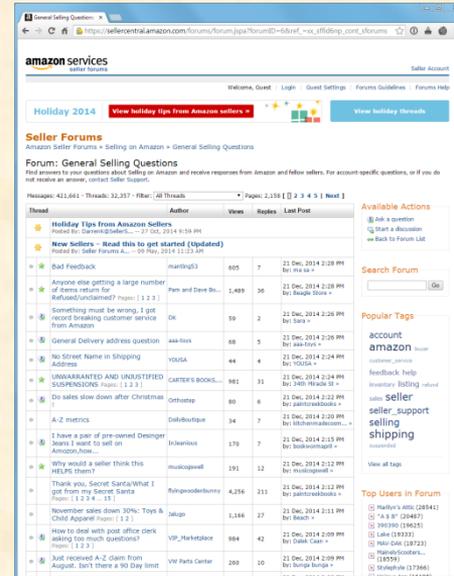
Email Now for Instant Delivery

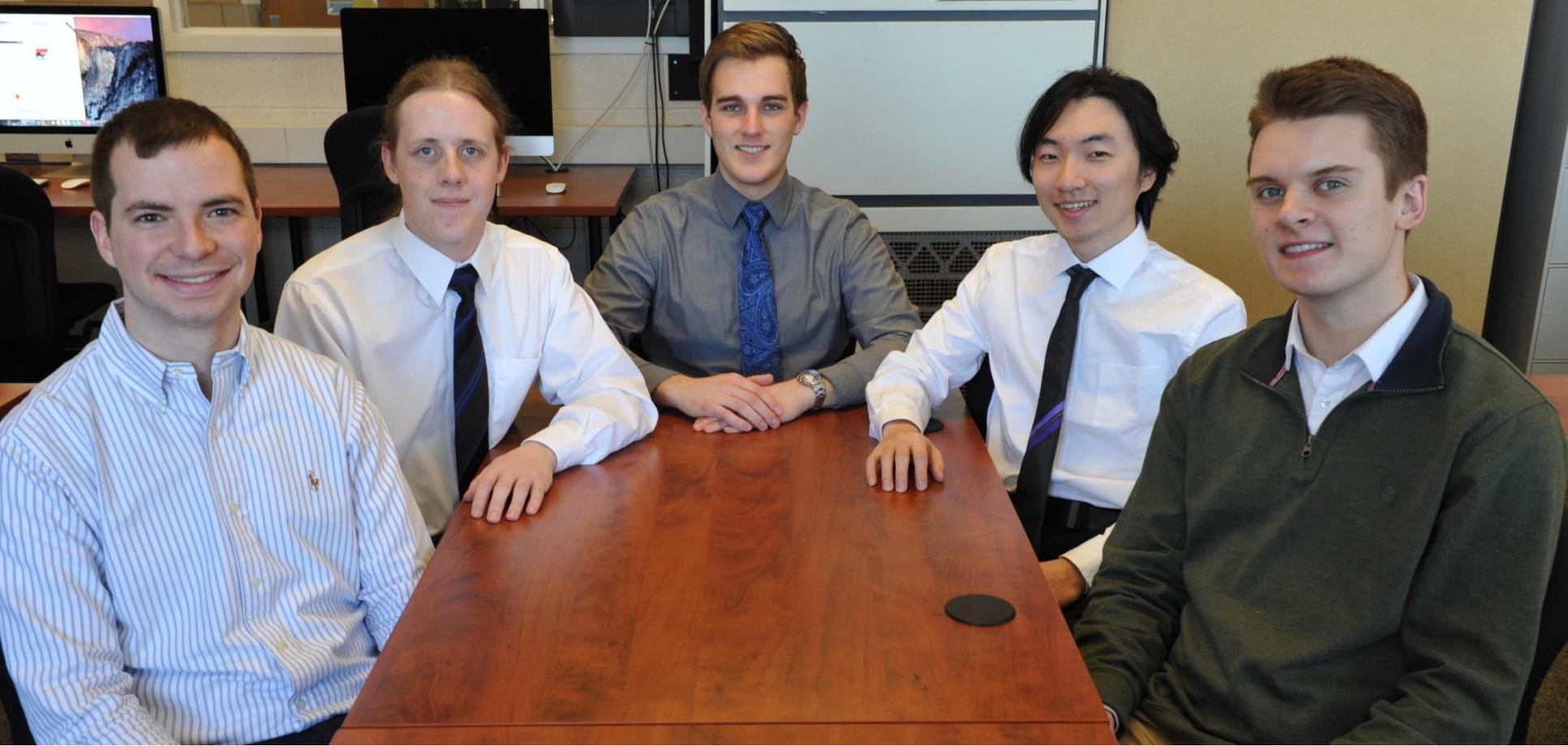


# Team Amazon Project Overview

## Text Classification of Seller Forums Content

- Functionalities
  - Unlock Value of Amazon's Seller Forums Boards
    - 65,000 Questions Per Year
    - 2,100,000 Replies Per Year
  - By Identifying and Classifying Conversations
- Features
  - Provide Searchable Breakdown of Topics by Day or Week
  - Track Volume of Topics and Identify Trends
  - Send Alerts When Specific Topic Volume Spikes
  - Visualize Forum Volume by Topics and Terms Over Time
- Technologies
  - Amazon Web Services (AWS)
    - Kenesis Client Library
    - Redshift Cloud Data Storage
  - XML (Extensible Markup Language)
  - Relational Database
  - Document Clustering and Text Classification
  - Web Development (CSS, HTML, PHP, JavaScript)



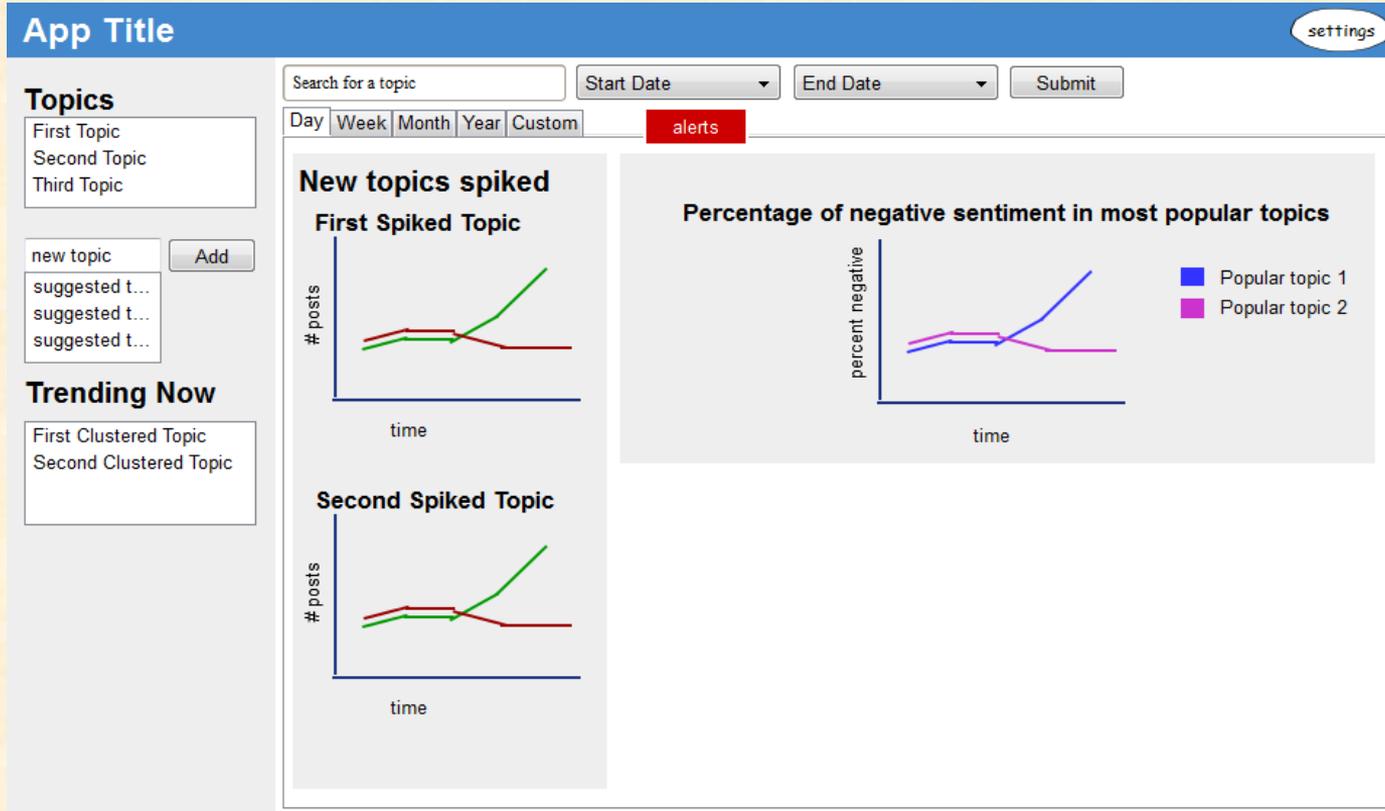


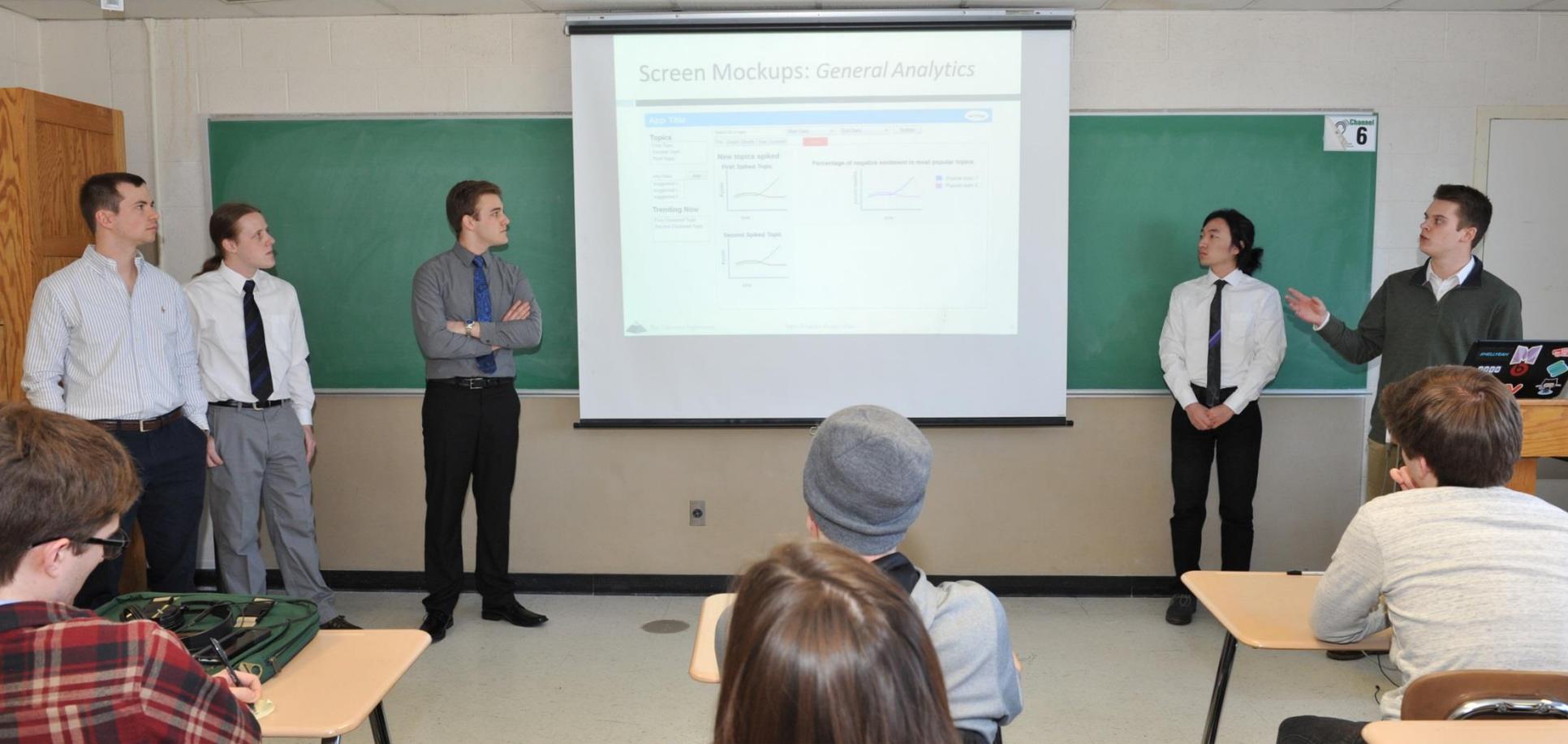
## Team Amazon

Max Goovaerts, Ben Taylor, Luke Pritchett, Johnny Zheng, Carl Johnson

# Team Amazon Project Plan Presentation

Screen Mockup

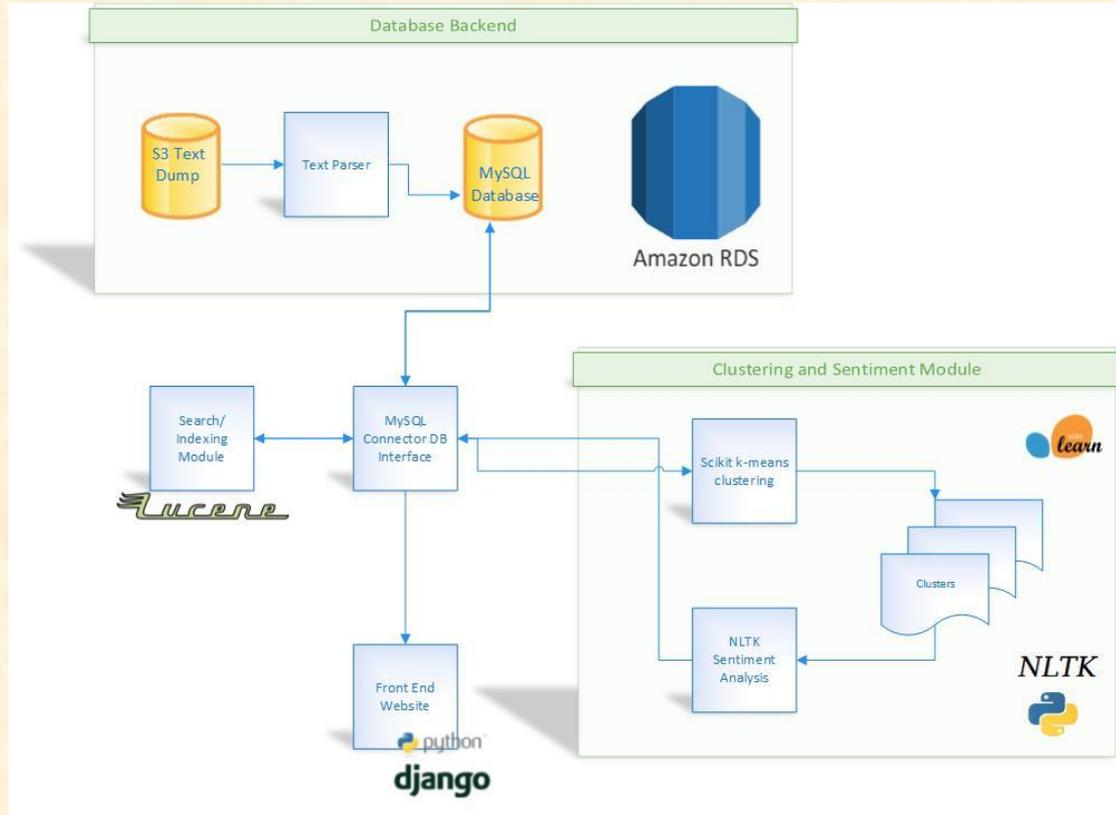




Team Amazon  
Project Plan Presentation

# Team Amazon Project Plan Presentation

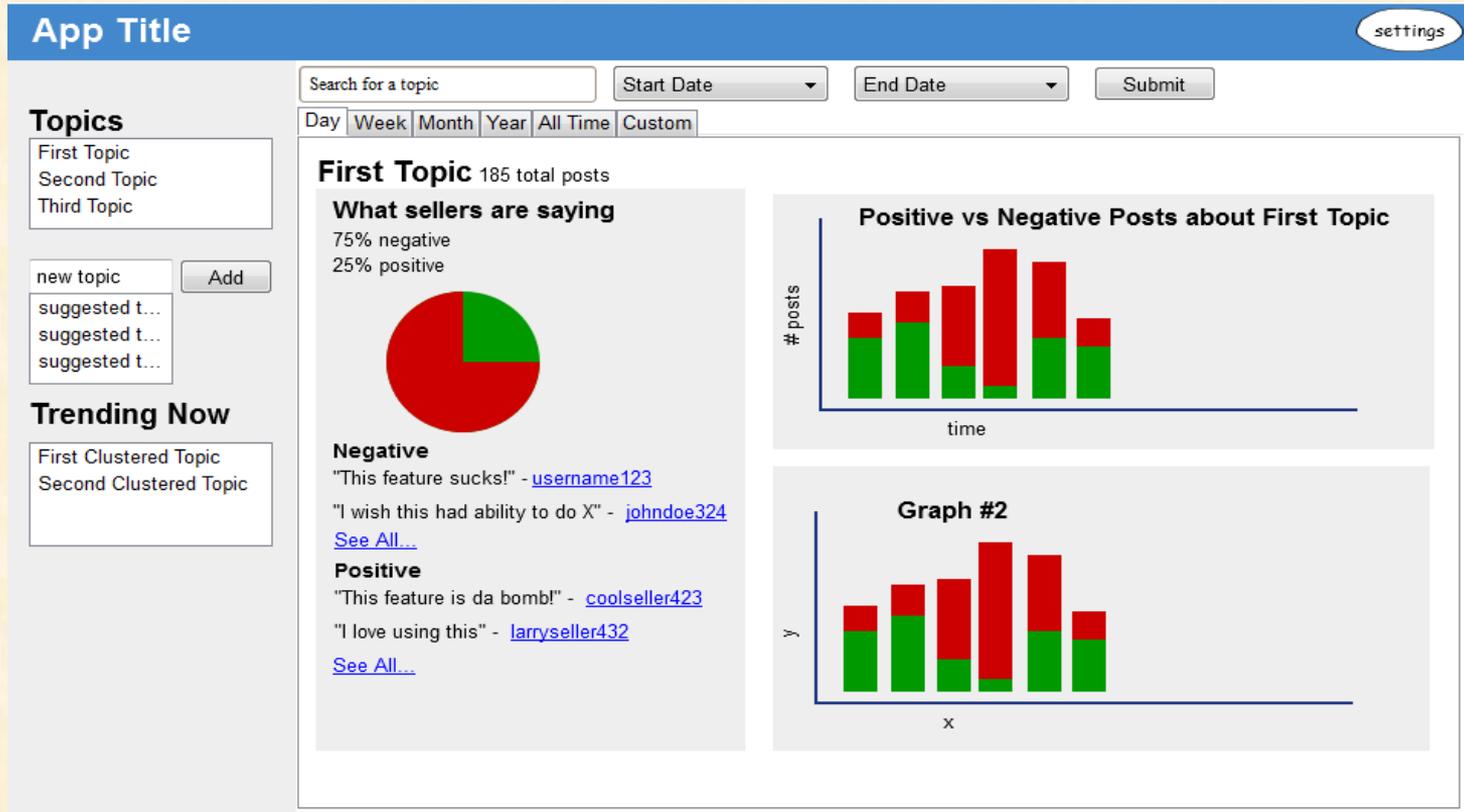
## Architecture Diagram

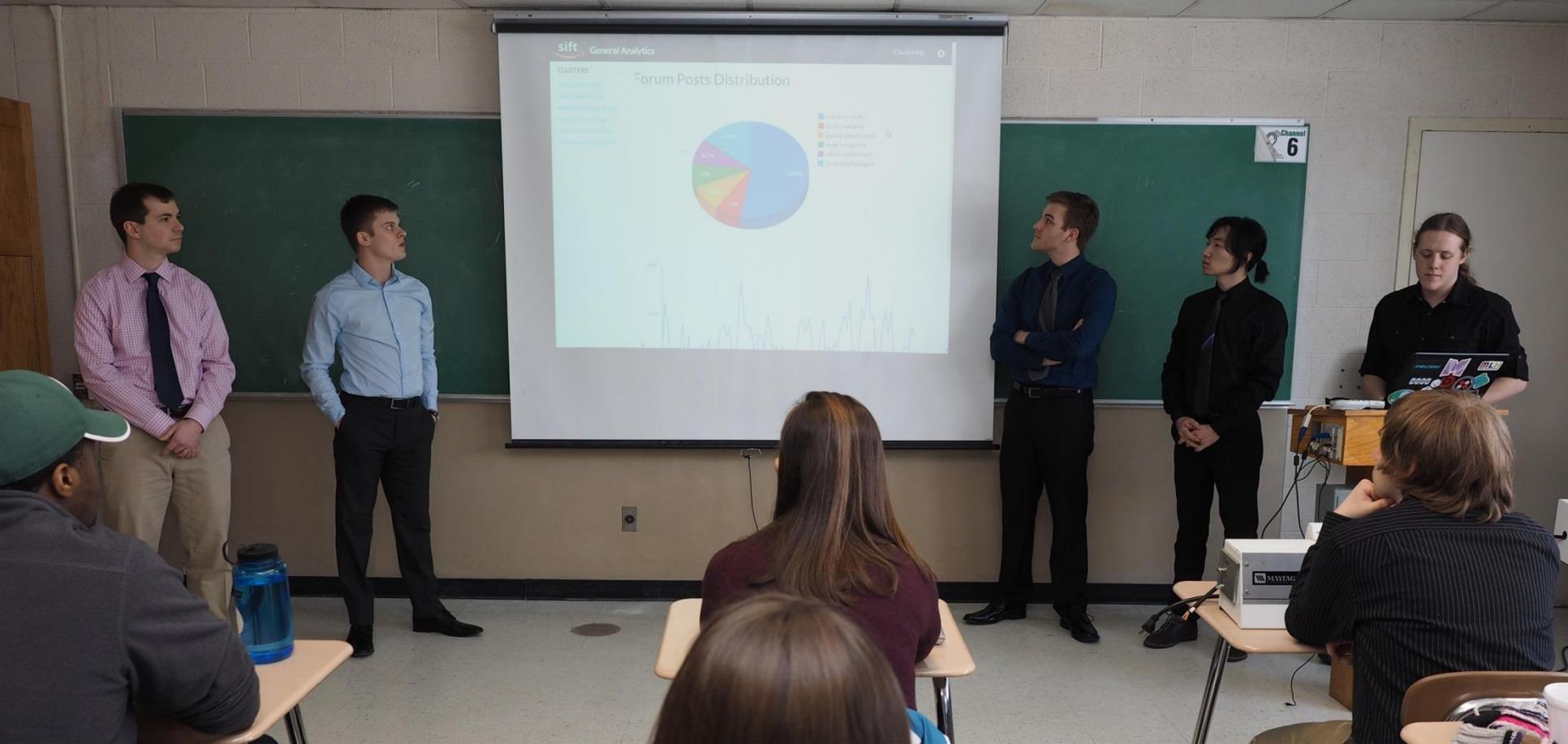




# Team Amazon Project Plan Presentation

Screen Mockup

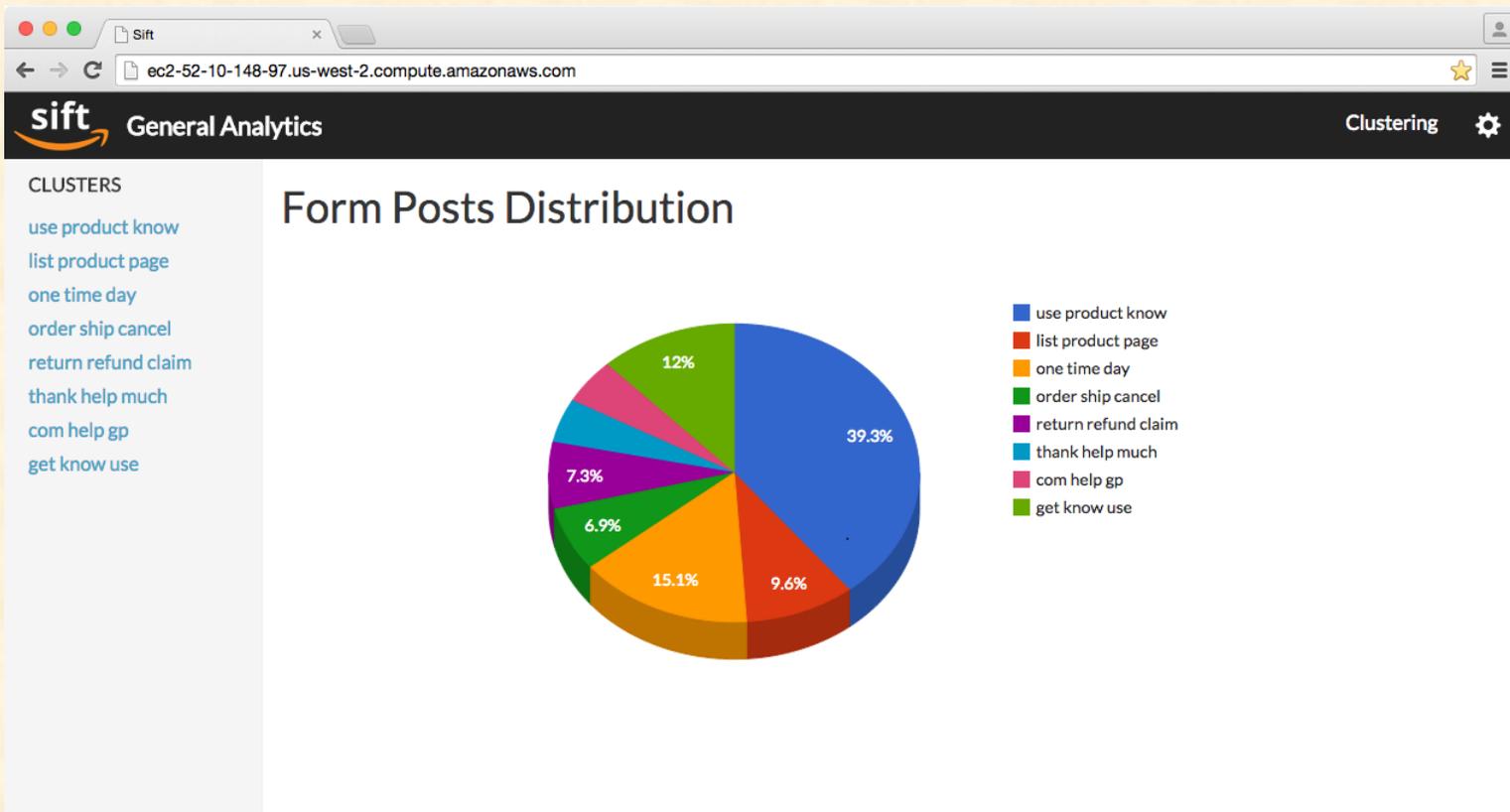




Team Amazon  
Alpha Presentation

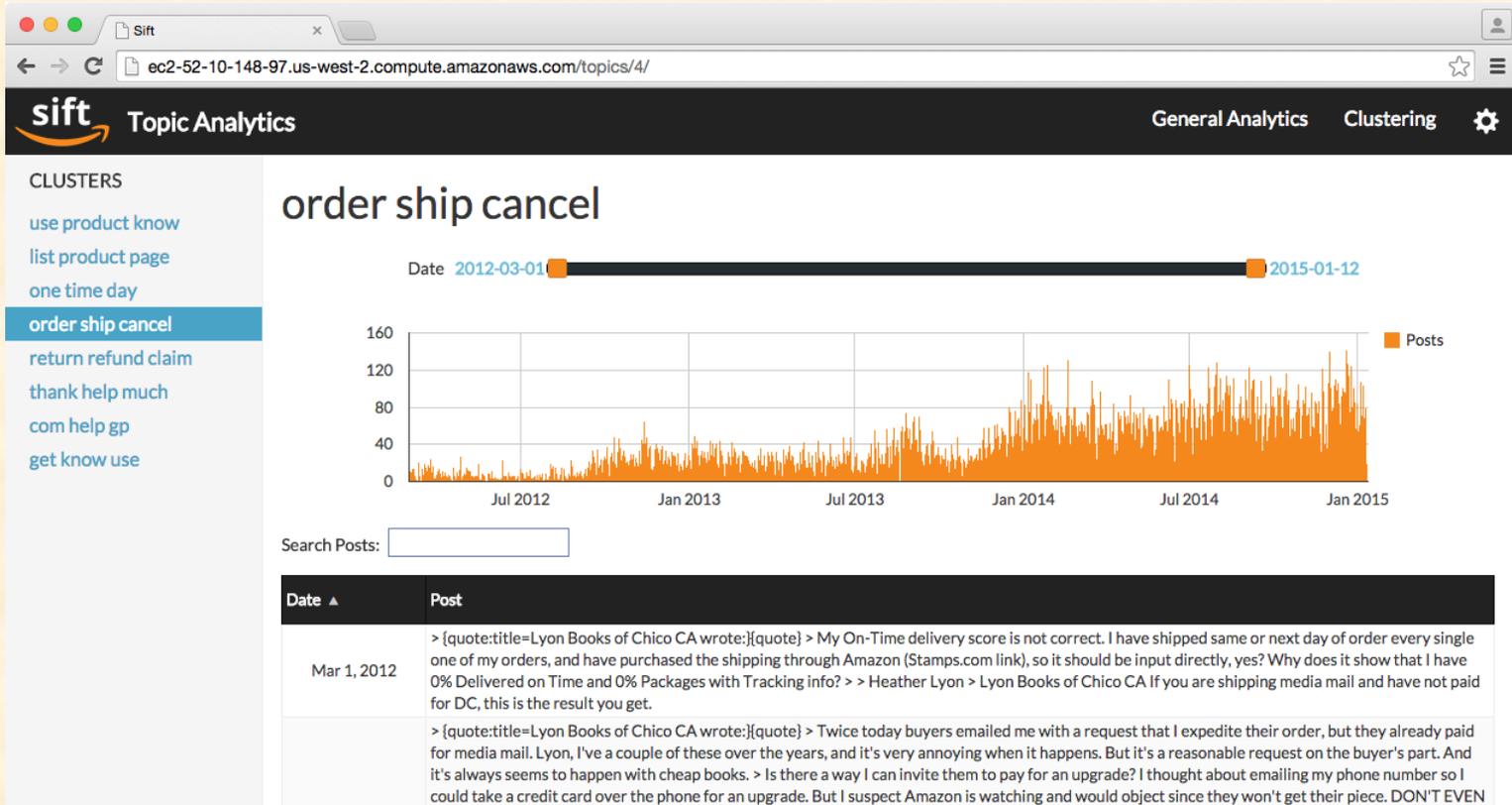
# Team Amazon Alpha Presentation

General Analytics



# Team Amazon Alpha Presentation

## Cluster Details





# Team Amazon Alpha Presentation

# Team Amazon Alpha Presentation

## Clustering Configuration

The screenshot shows a web browser window with the URL `ec2-52-10-148-97.us-west-2.compute.amazonaws.com/clustering/`. The page title is "Clustering Configuration". The interface includes a navigation bar with the "sift" logo, "Clustering", "General Analytics", and "Clustering" (with a gear icon). The main content area has a heading "Clustering Configuration" and several configuration fields:

- Date Range:** Two date input fields showing "2014-12-23" and "2015-02-23".
- All Posts:** A checkbox that is currently unchecked.
- Number of Clusters:** A text input field containing the value "8".
- Clustering Type:** A dropdown menu with "K-Means" selected.
- Max Number of Features:** A text input field containing the value "10000".
- Run:** A button to execute the configuration.

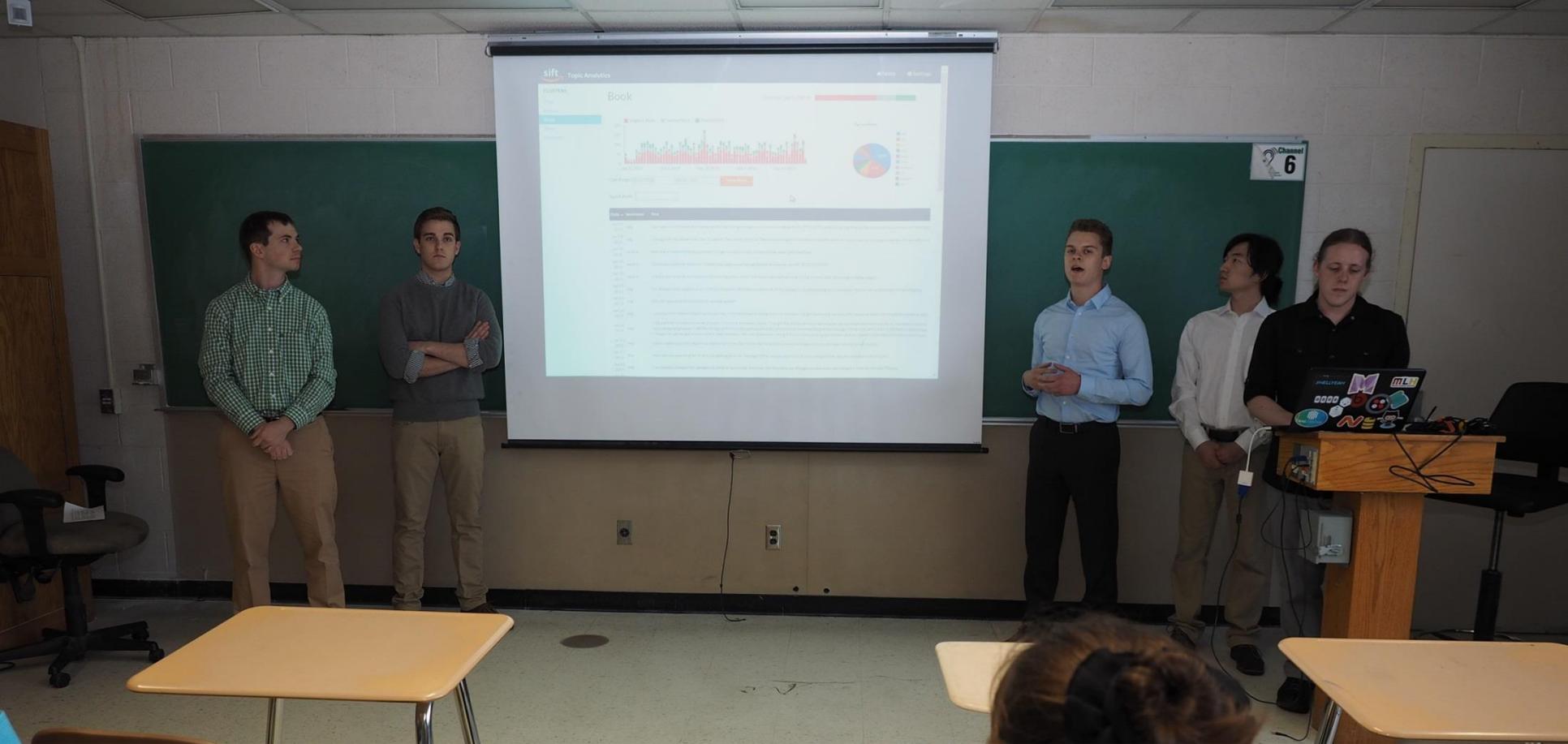
To the right of the configuration fields is an "Info" box with the following text:

**Info**

This site uses [term frequency-inverse document frequency \(tf-idf\)](#) vectorization of posts on the Amazon Seller Forums to perform fast [K-means clustering](#) using the [mini-batch algorithm](#).

- **Date Range:** Generate clusters on posts made in a certain date range, or cluster all posts
- **Number of Clusters:** Adjust the number of clusters the algorithm attempts to fit posts to
- **Clustering Type:** Select whether standard K-means or mini-batch (faster) clustering is used
- **Max Number of Features:** The max features attributes indicates how many unique words should be considered when clustering; additional (lower-frequency) words will be ignored by the clustering algorithm.

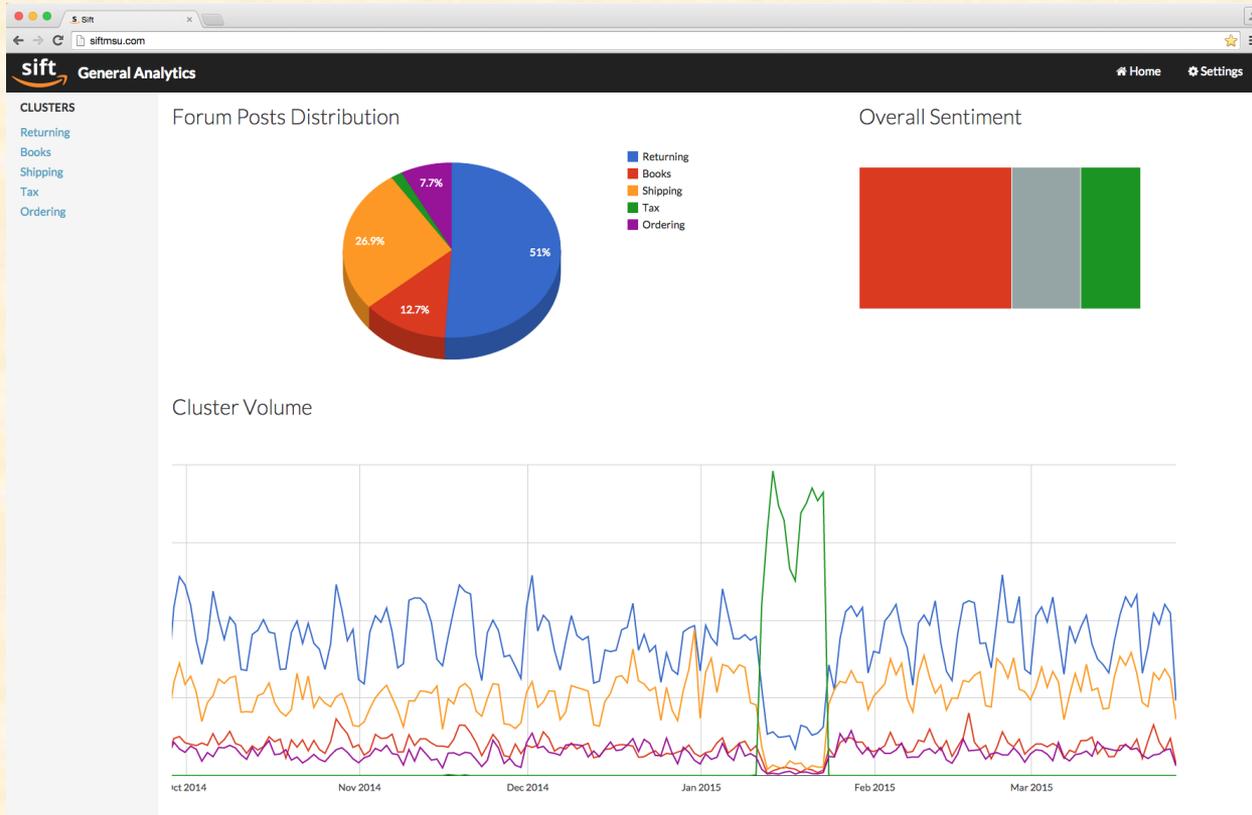




# Team Amazon Beta Presentation

# Team Amazon Beta Presentation

## General Analytics





**sift Clustering**

### Clustering Configuration

**Run Clustering**

**Run Clustering**

**Cluster Run Details**

Run ID	Start Time	End Time	Status	Number of Clusters	Number of Points	Number of Centroids	Number of Iterations	Number of Points	Number of Centroids	Number of Iterations
run-2015-10-01-10-00-00	2015-10-01 10:00:00	2015-10-01 10:00:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-01-00	2015-10-01 10:01:00	2015-10-01 10:01:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-02-00	2015-10-01 10:02:00	2015-10-01 10:02:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-03-00	2015-10-01 10:03:00	2015-10-01 10:03:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-04-00	2015-10-01 10:04:00	2015-10-01 10:04:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-05-00	2015-10-01 10:05:00	2015-10-01 10:05:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-06-00	2015-10-01 10:06:00	2015-10-01 10:06:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-07-00	2015-10-01 10:07:00	2015-10-01 10:07:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-08-00	2015-10-01 10:08:00	2015-10-01 10:08:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-09-00	2015-10-01 10:09:00	2015-10-01 10:09:00	Completed	10	1000	100	100	1000	100	100
run-2015-10-01-10-10-00	2015-10-01 10:10:00	2015-10-01 10:10:00	Completed	10	1000	100	100	1000	100	100

Channel 6

# Team Amazon Beta Presentation

# Team Amazon Beta Presentation

## Settings: Cluster Configuration

The screenshot shows the Sift Clustering web application interface. At the top, there's a navigation bar with the Sift logo and 'Clustering' text, along with 'Home' and 'Settings' links. The main content area is titled 'Clustering Configuration' and is divided into three sections: 'Run Clustering', 'Stop Words', and 'Cluster Run Details'.

**Run Clustering**

Date Range:

All Posts

Number of Clusters:  Clustering Type:

Max Number of Features:

**Stop Words**

2000  
 2001  
 2002  
 2003  
 2004  
 2005

**Info**

This site uses term frequency-inverse document frequency (tf-idf) vectorization of posts on the Amazon Seller Forums to perform fast K-means clustering using the mini-batch algorithm.

**Date Range**  
Generate clusters on posts made in a certain date range, or cluster all posts

**Number of Clusters**  
Adjust the number of clusters the algorithm attempts to fit posts to

**Clustering Type**  
Select whether standard K-means or mini-batch (faster) clustering is used

**Max Number of Features**  
The max features attributes indicates how many unique words should be considered when clustering; additional (lower-frequency) words will be ignored by the clustering algorithm.

**Cluster Run Details**

RunDate	StartDate	EndDate	Clusters	Features	BatchSize	SampleSize	Number of Posts	Normalized Inertia	SiloScore	
Apr 7, 2015	Feb 29, 2012	Mar 26, 2015	5	1000	1000	34070	13628	681400	0.94269594	0.011
Apr 7, 2015	Feb 29, 2012	Mar 26, 2015	5	1000	1000	34070	13628	681400	0.94191564	0.0106
Apr 7, 2015	Feb 29, 2012	Mar 26, 2015	5	1000	1000	34070	13628	681400	0.94044141	0.0106
Apr 7, 2015	Feb 29, 2012	Mar 26, 2015	5	1000	1000	34070	13628	681400	0.9408883	0.0103
Apr 7, 2015	Feb 29, 2012	Mar 26, 2015	5	1000	1000	34070	13628	681400	0.94055643	0.0116
Apr 7, 2015	Feb 29, 2012	Mar 26, 2015	5	1000	1000	34070	13628	681400	0.94160518	0.0098
Apr 7, 2015	Feb 29, 2012	Mar 26, 2015	5	1000	1000	34070	13628	681400	0.94280679	0.0087
Apr 6, 2015	Feb 5, 2015	Apr 5, 2015	8	1000	1000	2774	1109	55495	0.92229028	0.0139
Apr 6, 2015	Feb 29, 2012	Mar 26, 2015	5	1000	1000	34070	13628	681400	0.94205924	0.0094
Apr 5, 2015	Feb 29, 2012	Mar 26, 2015	5	1000	1000	34070	13628	681400	0.9413463	0.0097

1 2 3 4 5 6 7 8 9 10 11





Team Amazon  
Design Day

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# The Capstone Experience

## Team Auto-Owners

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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



# ***Auto-Owners Insurance***

Life Home Car Business

*The "No Problem" People®*

**Auto-Owners Insurance**

OUR PRODUCTS

CORPORATE INFORMATION

CUSTOMER CLAIMS

Find

▼ Find a Local Agency

Find

or Search by Address



Quality Coverage in 26 States

▶ Customer Log In



# HIGHEST CUSTOMER SATISFACTION

"HIGHEST CUSTOMER SATISFACTION AMONG AUTO INSURERS IN THE NORTH CENTRAL REGION"

[Click for more information.](#)

**Life Insurance**

Protecting your family

Life insurance, annuities, long term

**Home Insurance**

Property and liability

Regardless of which homeowners

**Car Insurance**

Security while on the road

"No Deductible"® claimsmen for theft

**Business Insurance**

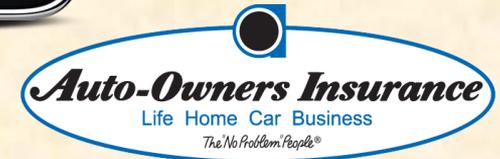
Guarding your investment

We insure a variety of businesses.

# Team Auto-Owners Project Overview

## Claims First Notice of Loss Application

- Functionalities
  - Enable Submission of Loss Notice Information
  - By Customer or Independent Agent
  - Using Mobile Device
- Features
  - Mobile Apps
    - Support Both Android and iPhone/iPad
    - Handle Various Loss Types
    - Support Multimedia Input (Text, Voice, Photo, Video)
  - Web Apps
    - For Independent Agents
      - Sign Up
      - Customize Experience
    - For Auto-Owners Associates
      - Administer System
      - Generate Reports
- Technologies
  - Apple iPhone and iPad Development (Objective-C, Xcode)
  - Google Android Development (Java)
  - Web Development (CSS, HTML, PHP, JavaScript)
  - Relational Databases



Lansing, Michigan

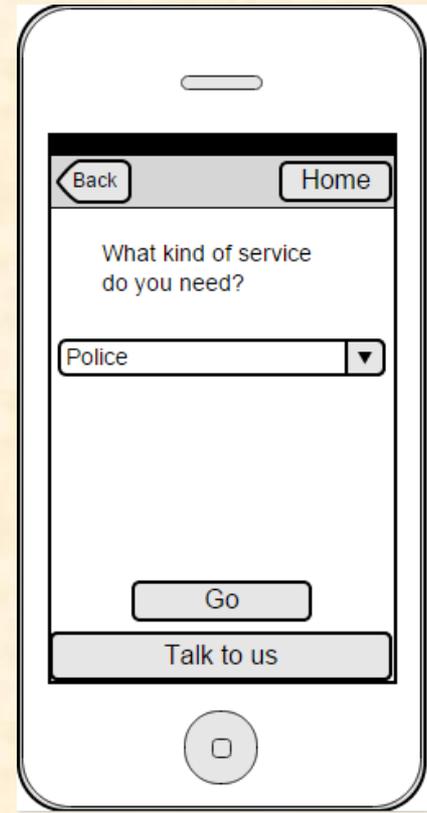
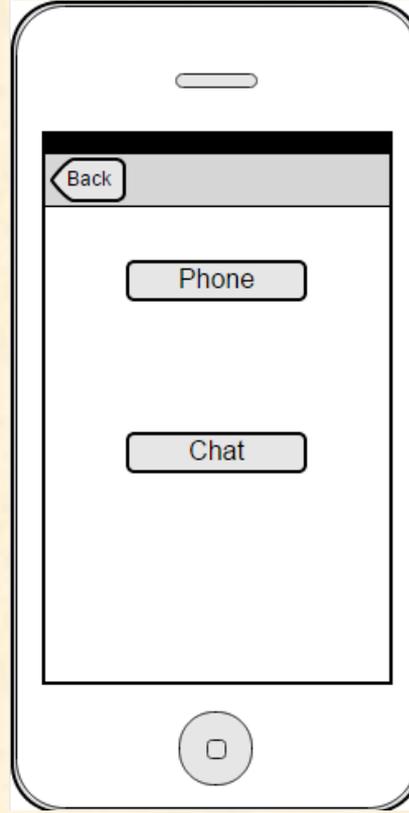
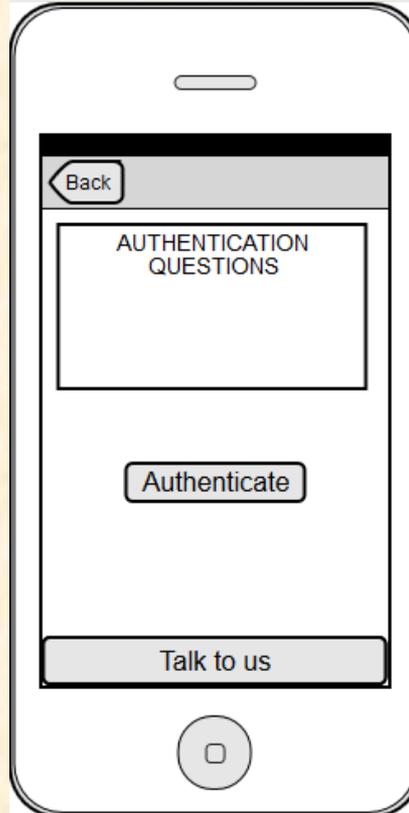
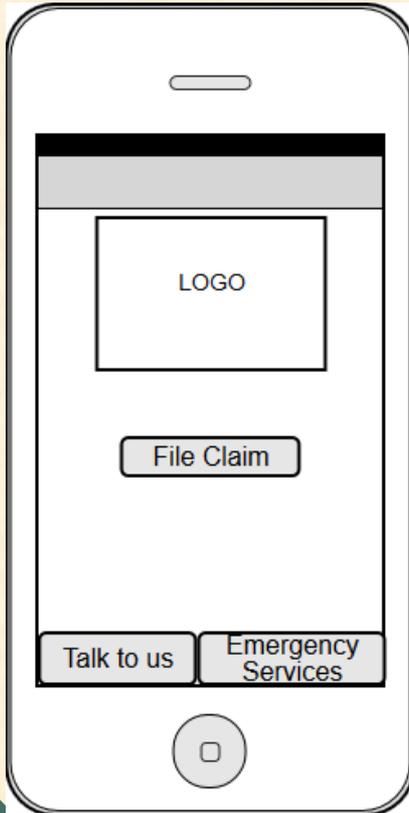


## Team Auto-Owners

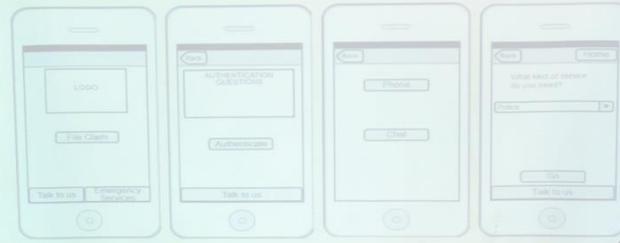
David Kircos, Anthony Tesorero, Alex Morton, Si Wang

# Team Auto-Owners Project Plan Presentation

## Screen Mockups



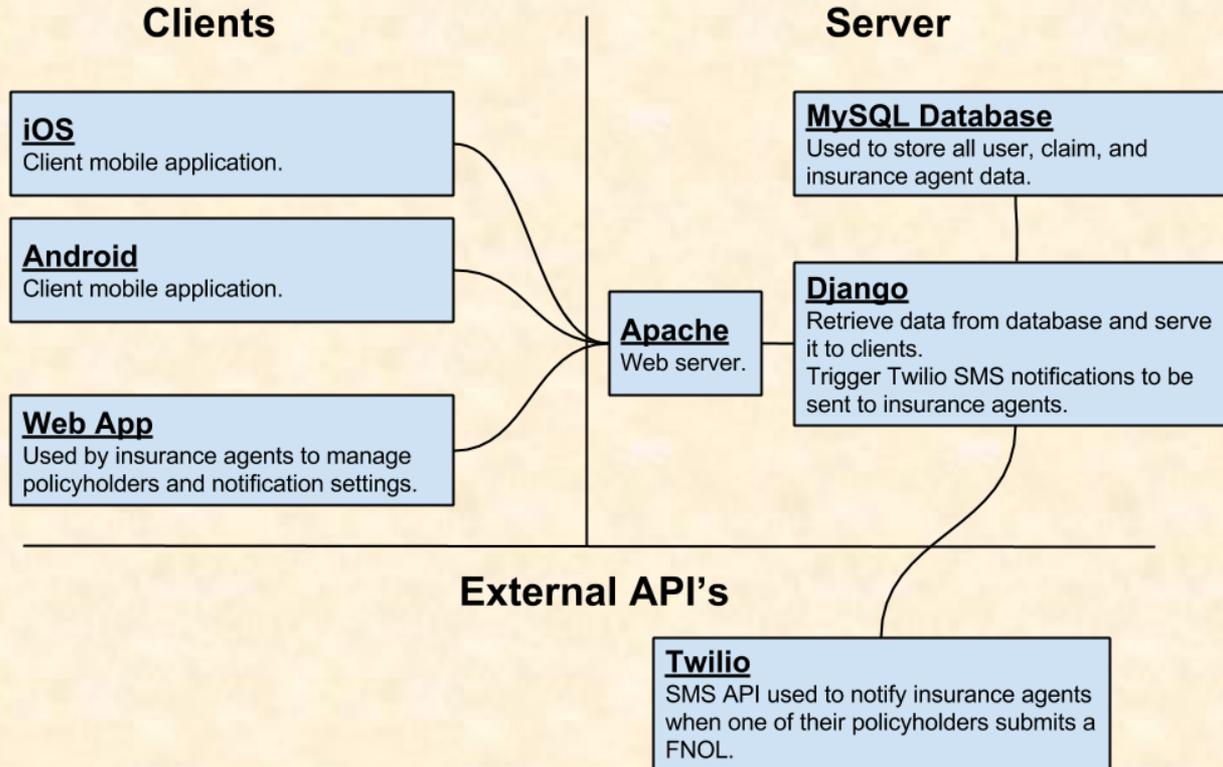
## Screen Mockup: Home Screen Options



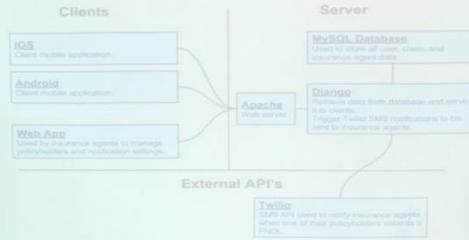
Team Auto-Owners  
Project Plan Presentation

# Team Auto-Owners Project Plan Presentation

## Architecture Diagram



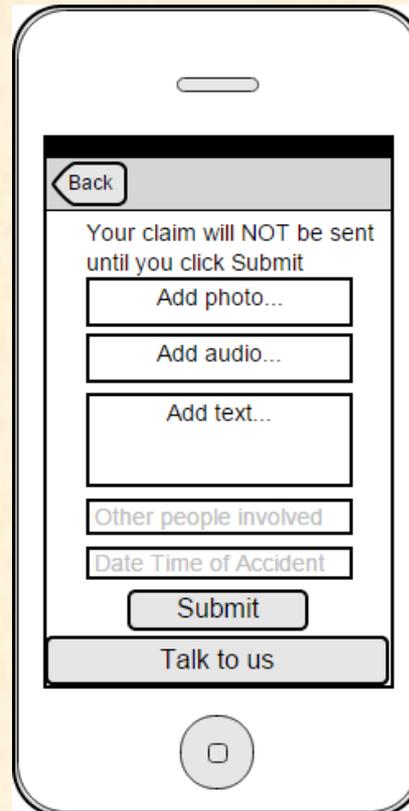
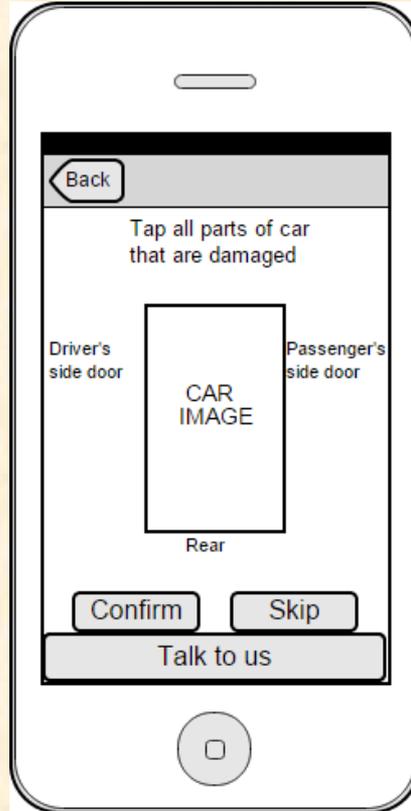
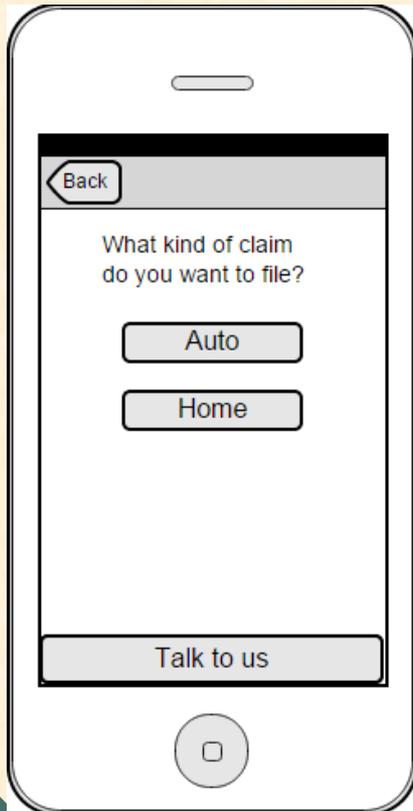
# System Architecture



Team Auto-Owners  
Project Plan Presentation

# Team Auto-Owners Project Plan Presentation

## Screen Mockups





# Team Auto-Owners Alpha Presentation

# Team Auto-Owners Alpha Presentation

iPhone Home Screen

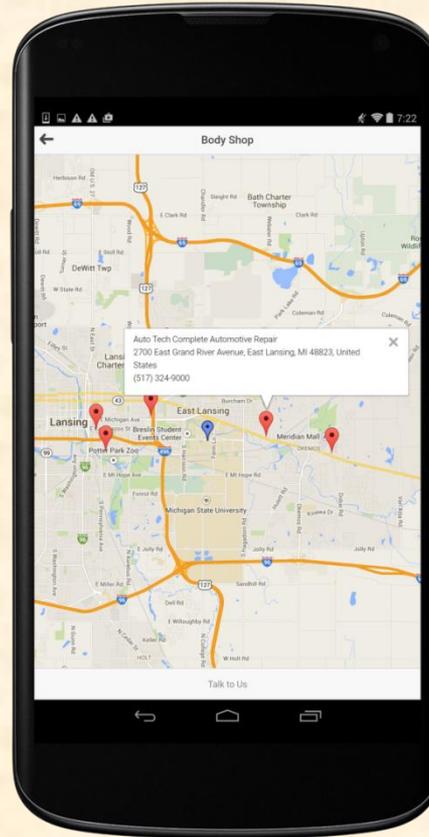


The Capstone Experience



# Team Auto-Owners Alpha Presentation

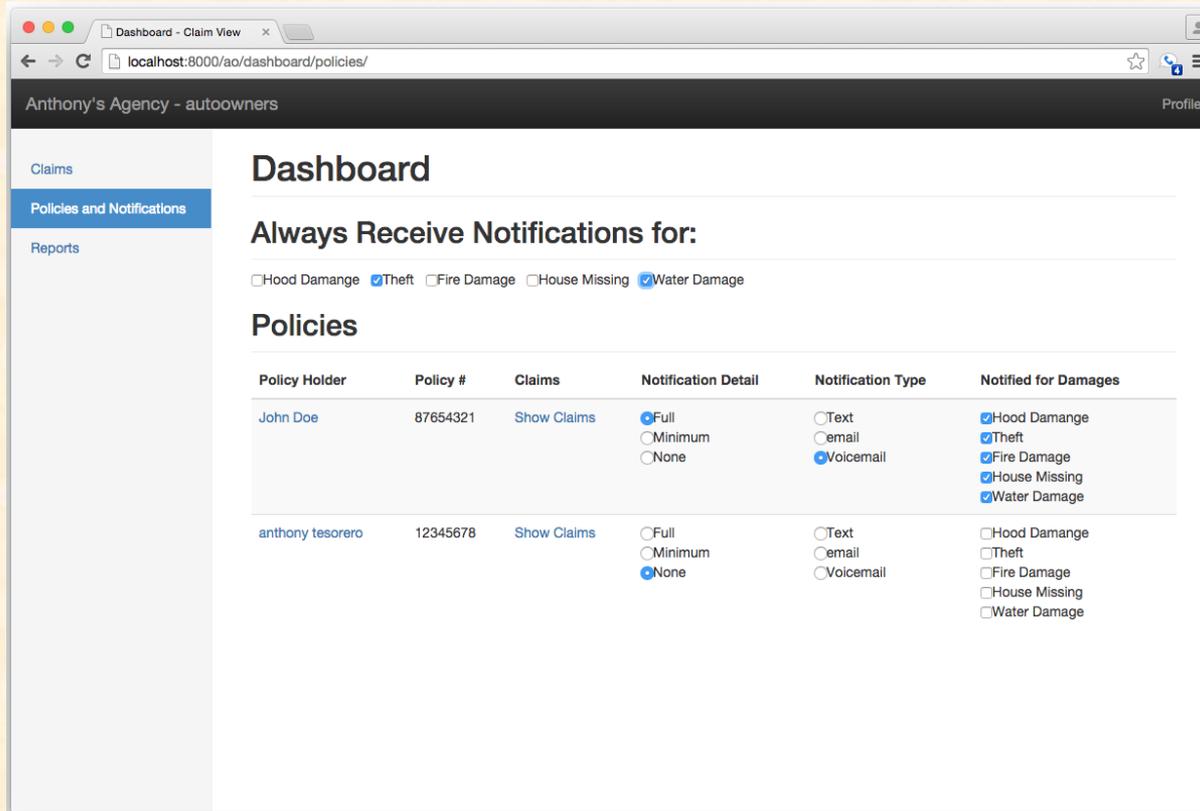
Android Emergency Services





# Team Auto-Owners Alpha Presentation

## Notification Preferences



The screenshot shows a web browser window with the URL `localhost:8000/ao/dashboard/policies/`. The page title is "Anthony's Agency - autoowners" and the user profile is "Profile". The left sidebar has three items: "Claims", "Policies and Notifications" (selected), and "Reports".

### Dashboard

#### Always Receive Notifications for:

Hood Damage  Theft  Fire Damage  House Missing  Water Damage

#### Policies

Policy Holder	Policy #	Claims	Notification Detail	Notification Type	Notified for Damages
John Doe	87654321	<a href="#">Show Claims</a>	<input checked="" type="radio"/> Full <input type="radio"/> Minimum <input type="radio"/> None	<input type="radio"/> Text <input type="radio"/> email <input checked="" type="radio"/> Voicemail	<input checked="" type="checkbox"/> Hood Damage <input checked="" type="checkbox"/> Theft <input checked="" type="checkbox"/> Fire Damage <input checked="" type="checkbox"/> House Missing <input checked="" type="checkbox"/> Water Damage
anthony tesorero	12345678	<a href="#">Show Claims</a>	<input type="radio"/> Full <input type="radio"/> Minimum <input checked="" type="radio"/> None	<input type="radio"/> Text <input type="radio"/> email <input type="radio"/> Voicemail	<input type="checkbox"/> Hood Damage <input type="checkbox"/> Theft <input type="checkbox"/> Fire Damage <input type="checkbox"/> House Missing <input type="checkbox"/> Water Damage

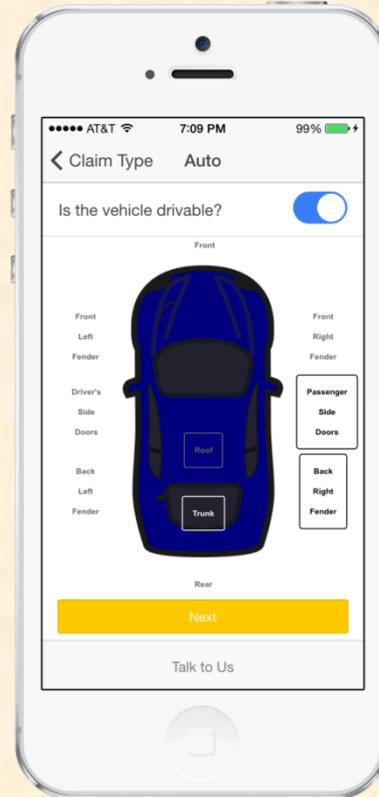




# Team Auto-Owners Beta Presentation

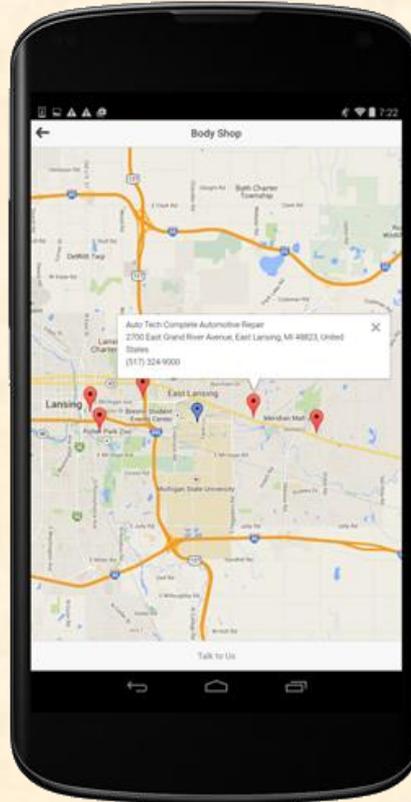
# Team Auto-Owners Beta Presentation

iPhone Auto Claim



# Team Auto-Owners Beta Presentation

## Android Emergency Service Map





# Team Auto-Owners Beta Presentation

# Team Auto-Owners Beta Presentation

## Web App Notification Preferences

The screenshot displays a web browser window with the URL `35.9.22.107/ao/dashboard/policies/`. The page title is "Dashboard - Claim View" and the user is logged in as "Guest". The navigation menu includes "Claims", "Notifications" (which is active), and "Reports".

### Dashboard

#### autoowners Global Notifications

Notification detail:

Notification type:

Natures of Loss:

- collision
- comprehensive
- bodily injury
- property damage
- RTS
- dwelling
- contents
- liability
- All

#### Policy Based Notifications

Show  entries

Search:

Policy Holder	Policy #	Set/View Preferences
<a href="#">Adaline Kling</a>	18362513	<a href="#">Change Preferences</a>
<a href="#">Adrienne Kohler</a>	85651004	<a href="#">Change Preferences</a>
<a href="#">Agatha Haley</a>	53972768	<a href="#">Change Preferences</a>
<a href="#">Aiden Terry</a>	77248139	<a href="#">Change Preferences</a>
<a href="#">Alaina Mosciski</a>	56048020	<a href="#">Change Preferences</a>
<a href="#">Alba Rogahn</a>	93370894	<a href="#">Change Preferences</a>
<a href="#">Alejandra Fahey</a>	95148559	<a href="#">Change Preferences</a>



DEPART  
OFFICE  
DIVISION OF  
COMPUT

1338



**A**uto-Owners Insurance, a FORTUNE 500 company founded in 1916 as the first major insurer in the country, Auto-Owners is known for its exceptional financial strength and customer service among the American major insurers.

The experience of a loss can be a very difficult time. Auto-Owners is committed to providing its policyholders with claim service that is as timely and as easy as possible during these difficult times.

Using the Claim Fast Start, Auto-Owners policyholders can submit their initial claim information, upload their "lost items" list, receive their mobile photos of any time and from anywhere.

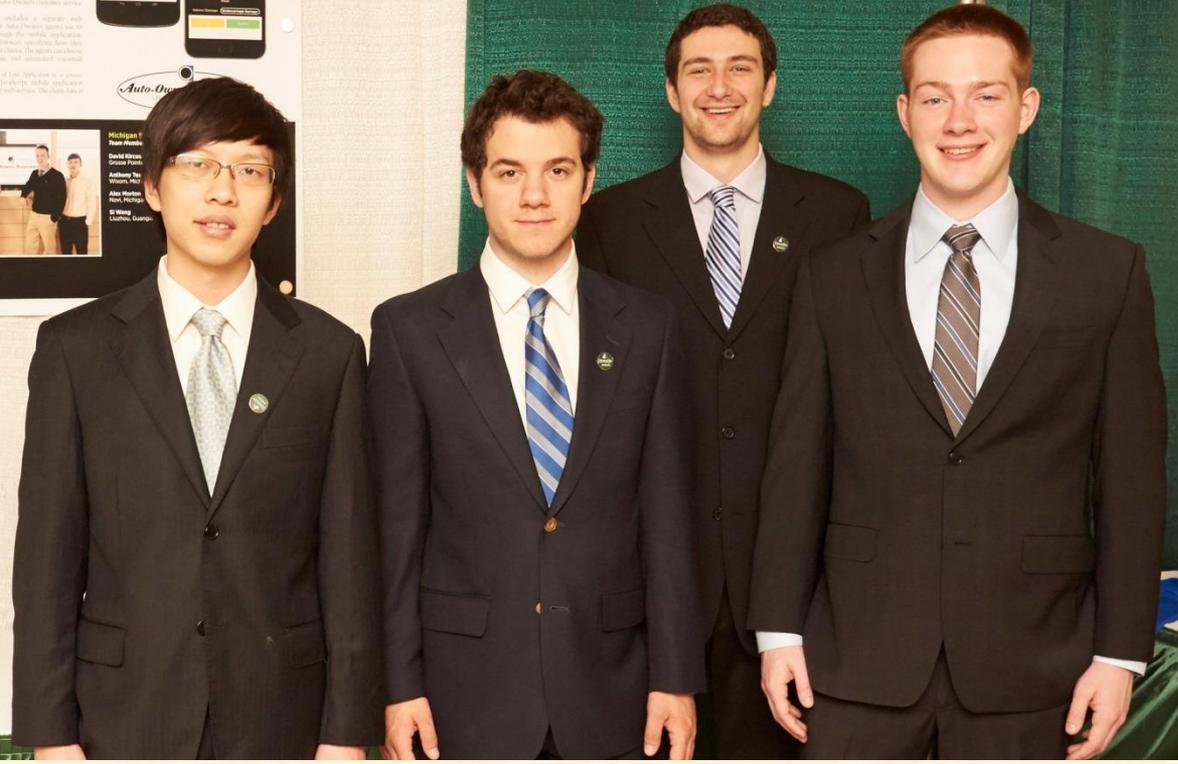
The application supports both home and commercial claims. Policyholders can upload photos, location data, damage descriptions and notes. Mobile communication services can be located and accessed. Policyholders can communicate directly with Auto-Owners customer service representatives.

The software system includes a separate web application that independent Auto-Owners agents can use to track claims submitted through the mobile application. Agents are notified when a claim is submitted, how they would like to proceed and how they can help the policyholder receive their claim payment and settlement.

The Claim Fast Start of Auto-Owners is a combination of the ITSM and Service Desk operations that are used to manage the claims process. This claim data is used in the ITSM software.

**Auto-Owners**

**Michigan ITSM**  
David Wilson  
David Jones  
Anthony Taylor  
Alex Barker  
Hart, Michigan  
Elaine  
LUMIN, Guangxi



# Team Auto-Owners Design Day

**MICHIGAN STATE**  

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**UNIVERSITY**

# The Capstone Experience

Team Boeing

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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



***BOEING***



# Defense, Space & Security



**Growler: Our warfighters don't leave home without one (Video)**

The Growler's capabilities provide critical protection to our warfighters. [More >>](#)

# Team Boeing Project Overview

## Business Developer's Electronic Sales Bag

- Functionalities
  - Transform Boeing Business Developer's Business Processes
  - From Multiple Paper-Based Systems to Unified Tablet-Based System
  - Like Pilot's Electronic Flight Bag
- Features
  - Provide Immediate Electronic Access
    - To Everything
    - From Anywhere
    - At Any Time
  - Manage Entire Business Developer's Work Cycle
    - Customer Information
    - Boeing Product "Cards"
    - Huthwaite Call Plans
    - Boeing Program Presentations
  - Handle Multimedia Documentation (Input)
- Technologies
  - Microsoft Surface Pro
  - Web Development (CSS, HTML, PHP, JavaScript)
  - Responsive Design
  - Relational Databases



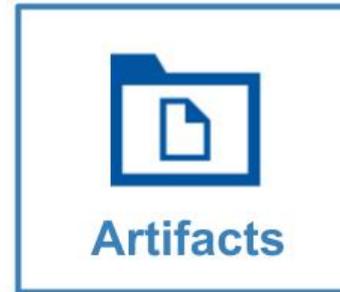


## Team Boeing

Mike Gerard, Andy Lieblich, Jourdan West, Dan Roman

# Team Boeing Project Plan Presentation

Screen Mockup

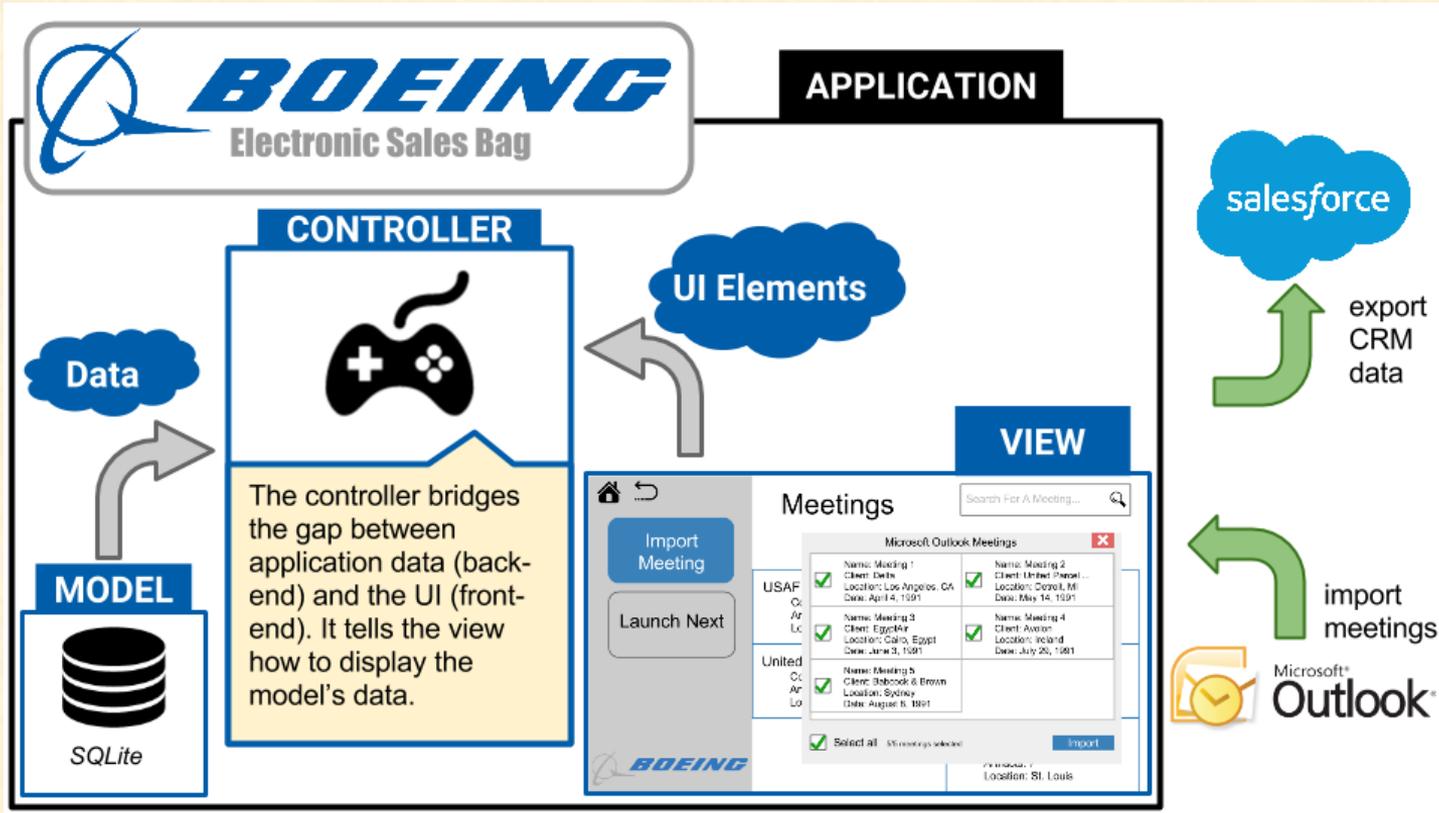




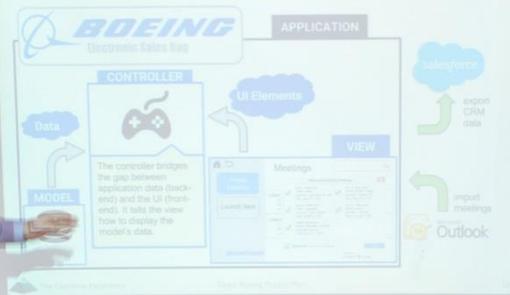
# Team Boeing Project Plan Presentation

# Team Boeing Project Plan Presentation

## Architecture Diagram



# System Architecture



Team Boeing  
Project Plan Presentation

# Team Boeing Project Plan Presentation

Screen Mockup

**Meetings** Search For A Meeting...

**Microsoft Outlook Meetings**

<input checked="" type="checkbox"/>	Name: Meeting 1 Client: Delta Location: Los Angeles, CA Date: April 4, 1991	<input checked="" type="checkbox"/>	Name: Meeting 2 Client: United Parcel ... Location: Detroit, MI Date: May 14, 1991
<input checked="" type="checkbox"/>	Name: Meeting 3 Client: EgyptAir Location: Cairo, Egypt Date: June 3, 1991	<input checked="" type="checkbox"/>	Name: Meeting 4 Client: Avolon Location: Ireland Date: July 29, 1991
<input checked="" type="checkbox"/>	Name: Meeting 5 Client: Babcock & Brown Location: Sydney Date: August 8, 1991		

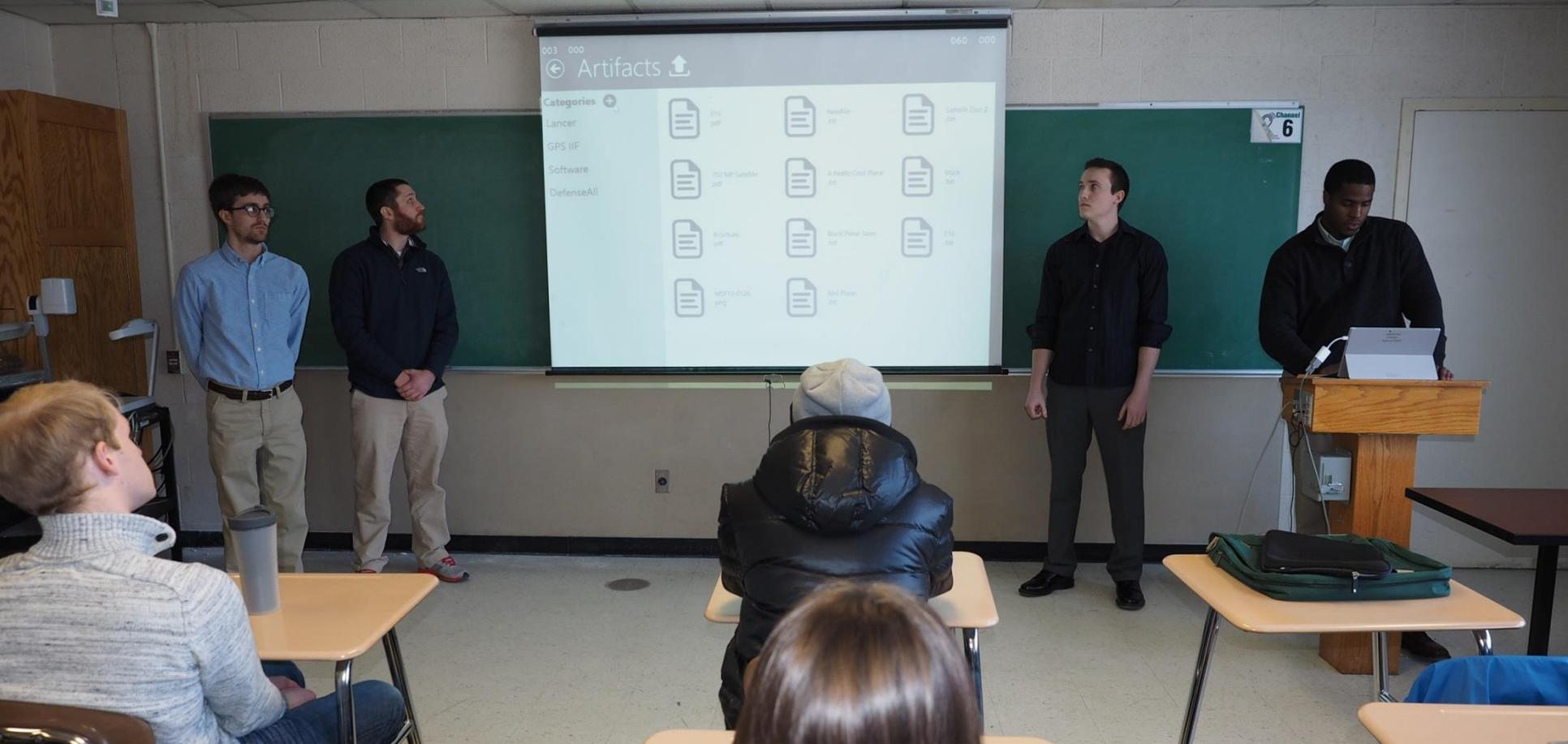
Select all 5/5 meetings selected **Import**

USAF  
Cc  
Ar  
Lo

United  
Cc  
Ar  
Lo

BOEING

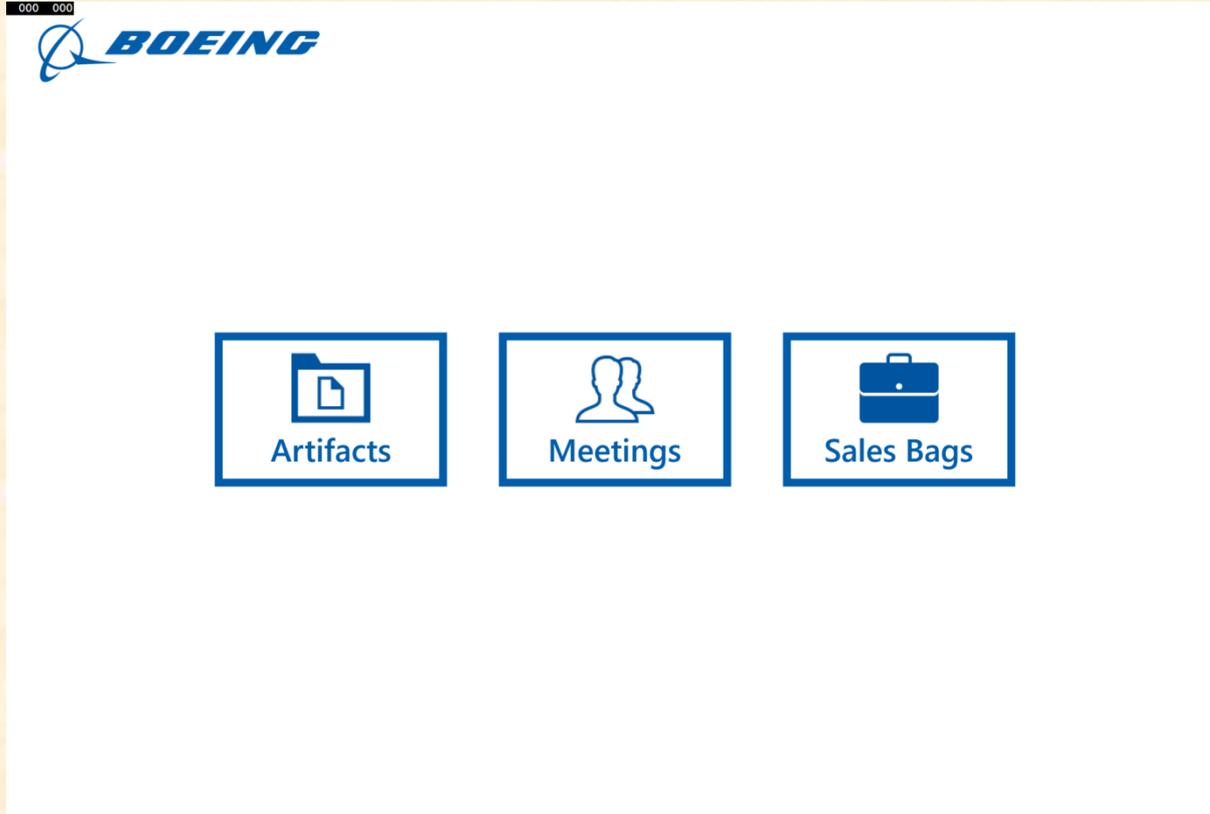
Location: St. Louis



Team Boeing  
Alpha Presentation

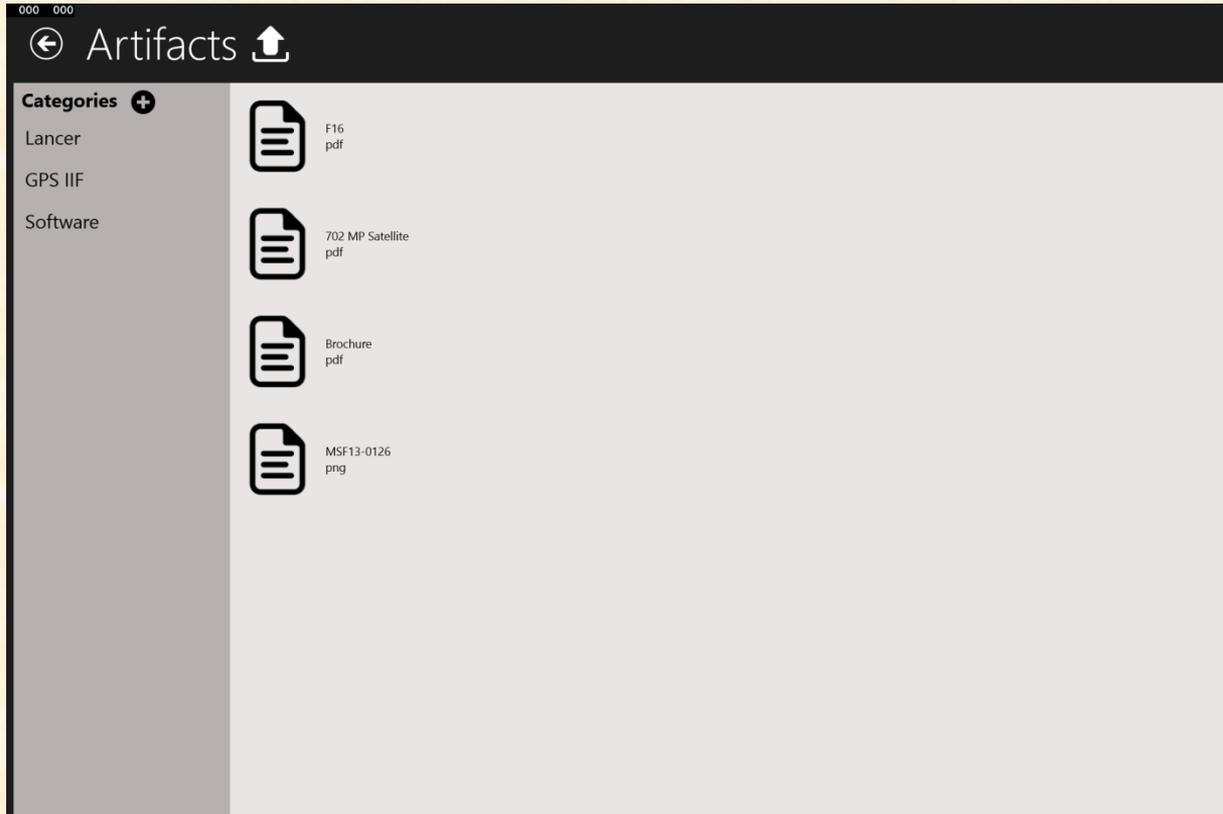
# Team Boeing Alpha Presentation

Home Page



# Team Boeing Alpha Presentation

Artifacts Page



000 000

← Artifacts ↑

**Categories** +

- Lancer
- GPS IIF
- Software

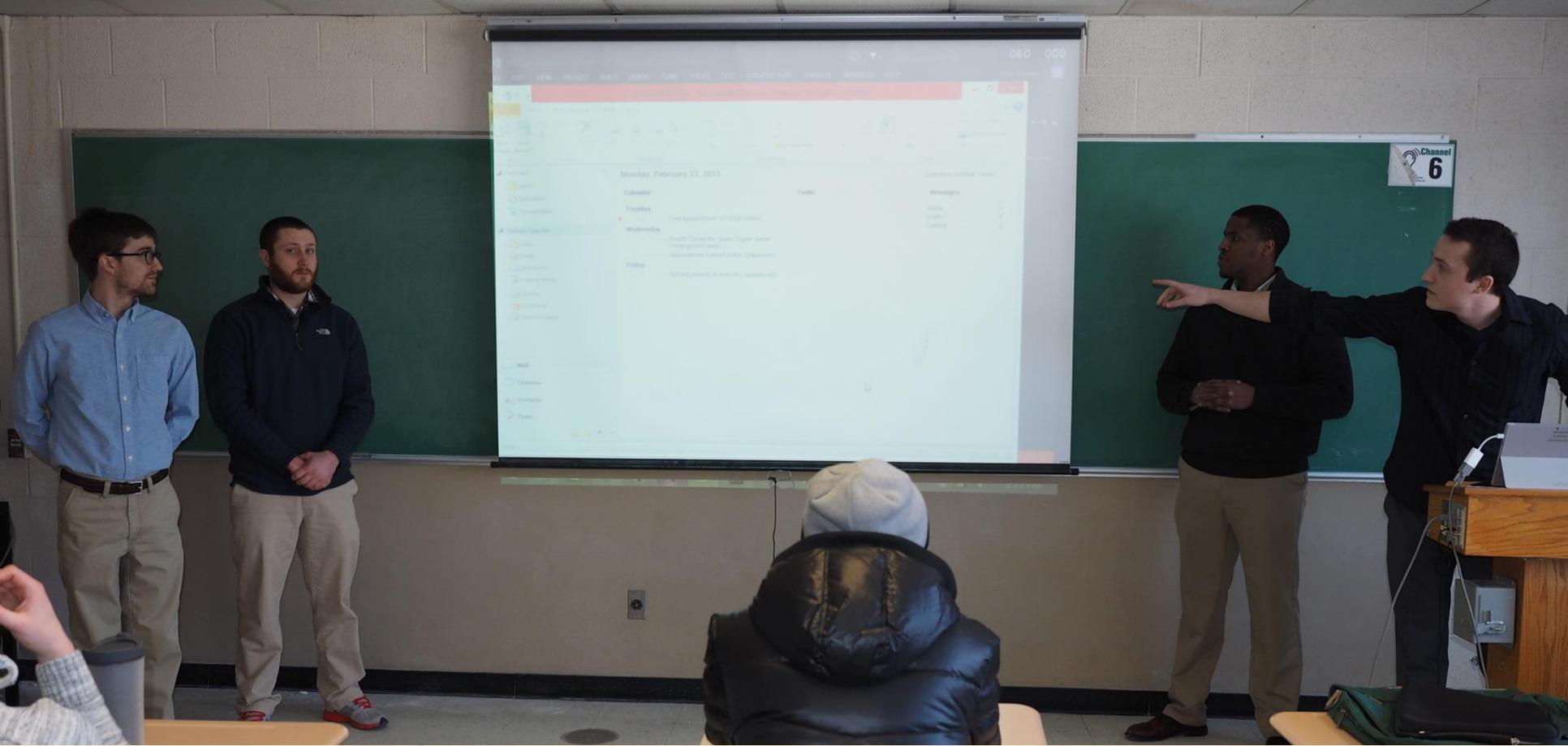
F16  
pdf

702 MP Satellite  
pdf

Brochure  
pdf

MSF13-0126  
png





# Team Boeing Alpha Presentation

# Team Boeing Alpha Presentation

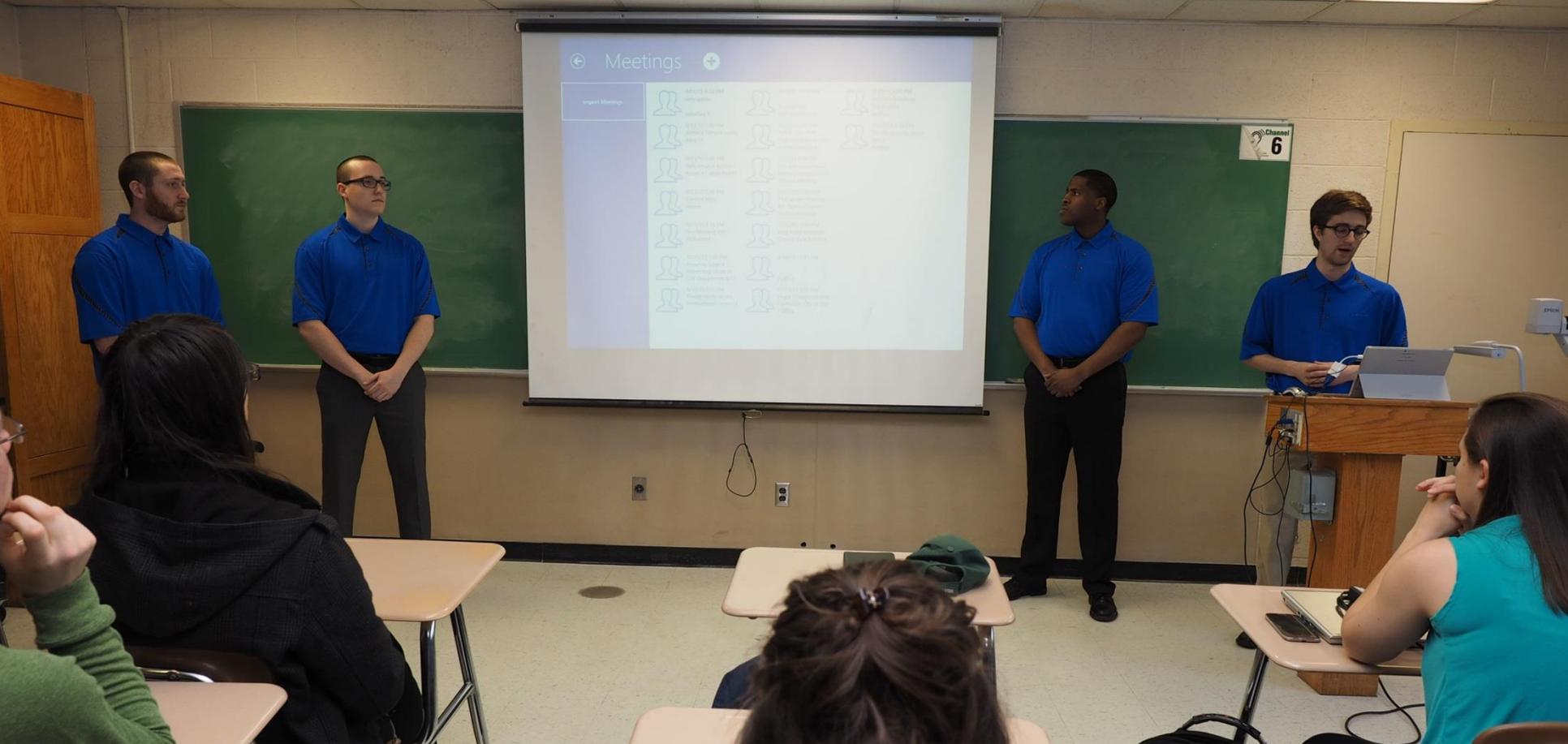
Meetings Page

007 000

← Meetings +

Import Meetings	 Client DateTime Location
Delete Meeting	 Client DateTime Location
Launch Meeting	 Client DateTime Location
	 Client DateTime Location





# Team Boeing Beta Presentation

# Team Boeing Beta Presentation

Main View



# Team Boeing Beta Presentation

## Artifact View

Artifacts

New Edit

Some Folder 1 Artifacts.	Chinook Chinook.png
CategoryA 0 Artifacts.	F16Interior F16Interior.png
CategoryB 0 Artifacts.	JetDocument2 TestDemopTxfFile.txt
CategoryC 3 Artifacts.	ExportPDF ExportPDF.pdf
DemoASdd 2 Artifacts.	245725_HRpc 245725_HRpc.pdf
737Com 737Com.txt	
747-400 747-400.png	
747-400Air 747-400Air.png	
787Dreamliner 787Dreamliner.png	
icon stuff BBJ.docx	
C17Embedded C17Embedded.txt	
C17exterior C17exterior.png	

BOEING

ADVANCED FLIGHT REPLAY TOOL (AFRT)



Advanced Flight Replay Tool (AFRT)  
Military Training, Flight Test & Debrief

**Advanced Flight Replay Tool (AFRT)**

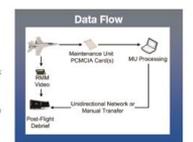
The Boeing AFRT provides high quality post-flight debrief without an ACMI pod while minimizing the time to collect data for debrief.

**AFRT Provides:**

- Quick Preparation of Data
- Multiple Aircraft Support
- 2D Tactical Representations
- Aircraft Details Windows
- Multiple 3D Views (6) with Overlays and View Controls
- Synchronous Flight Video
- Debrief Recording

- Built on Boeing Training Systems Debrief Framework (Easily Upgradable)
- Event Timeline Including Event Details
- Debiturally 2D and 3D Content
- Color Coded Aircraft and Trails for easy Identification
- Multi-Multi Flight Support File (MFF)
- Single Stream Synchronous SSR Video
- F/A 18 A - D Support (as required)

**Data Flow**

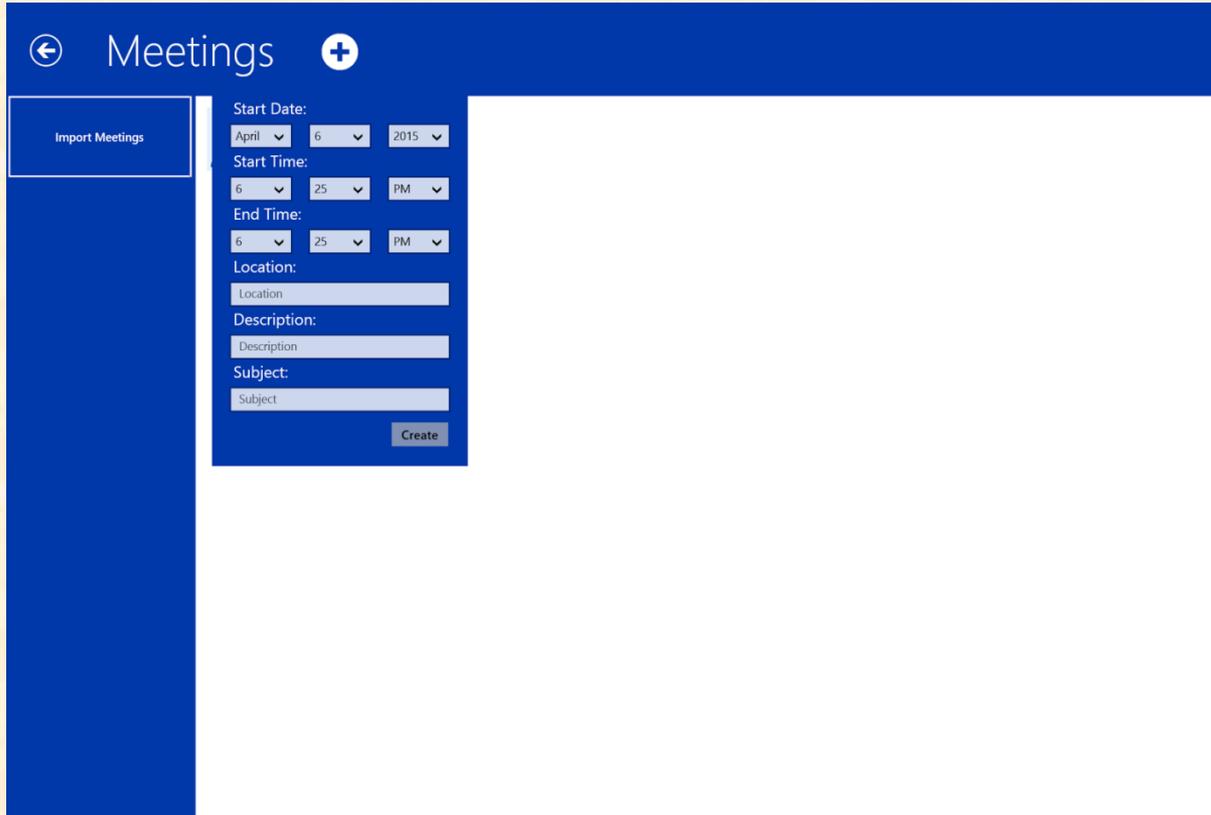




# Team Boeing Beta Presentation

# Team Boeing Beta Presentation

Create Meeting



The screenshot displays a web application interface for creating a meeting. The top navigation bar is blue and contains a back arrow, the text 'Meetings', and a plus sign icon. On the left side, there is a vertical blue sidebar with a button labeled 'Import Meetings'. The main content area is white and contains a form for creating a meeting. The form fields are as follows:

- Start Date:** Three dropdown menus showing 'April', '6', and '2015'.
- Start Time:** Three dropdown menus showing '6', '25', and 'PM'.
- End Time:** Three dropdown menus showing '6', '25', and 'PM'.
- Location:** A text input field with the placeholder text 'Location'.
- Description:** A text input field with the placeholder text 'Description'.
- Subject:** A text input field with the placeholder text 'Subject'.

A 'Create' button is located at the bottom right of the form.





The Boeing Company  
Business Developer's Site

Boeing is the world's largest aerospace company and a leader in the development of commercial aircraft. The world's largest manufacturer of commercial aircraft, Boeing has a rich history of innovation and excellence. The company's commercial aircraft division is the world's largest, with a fleet of over 10,000 aircraft in service. Boeing's commercial aircraft division is the world's largest, with a fleet of over 10,000 aircraft in service.

Boeing's commercial aircraft division is the world's largest, with a fleet of over 10,000 aircraft in service. Boeing's commercial aircraft division is the world's largest, with a fleet of over 10,000 aircraft in service.

**BOEING**

Michigan State University  
Panel Members (left to right):  
Alan Bennett, Professor, MSU  
John Gossard, Professor, MSU  
David H. Johnson, Professor, MSU  
Dan Johnson, Director, MSU  
Dan Johnson, Director, MSU

Boeing  
Project Director  
Dr. Alan Bennett  
Dr. John Gossard  
Dr. David H. Johnson  
Dr. Dan Johnson

Team Boeing  
Design Day

**MICHIGAN STATE**  
**UNIVERSITY**

# The Capstone Experience

Team Ford

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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





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Crossovers & SUVs

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Owner

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Saved Items



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# Team Ford Project Overview

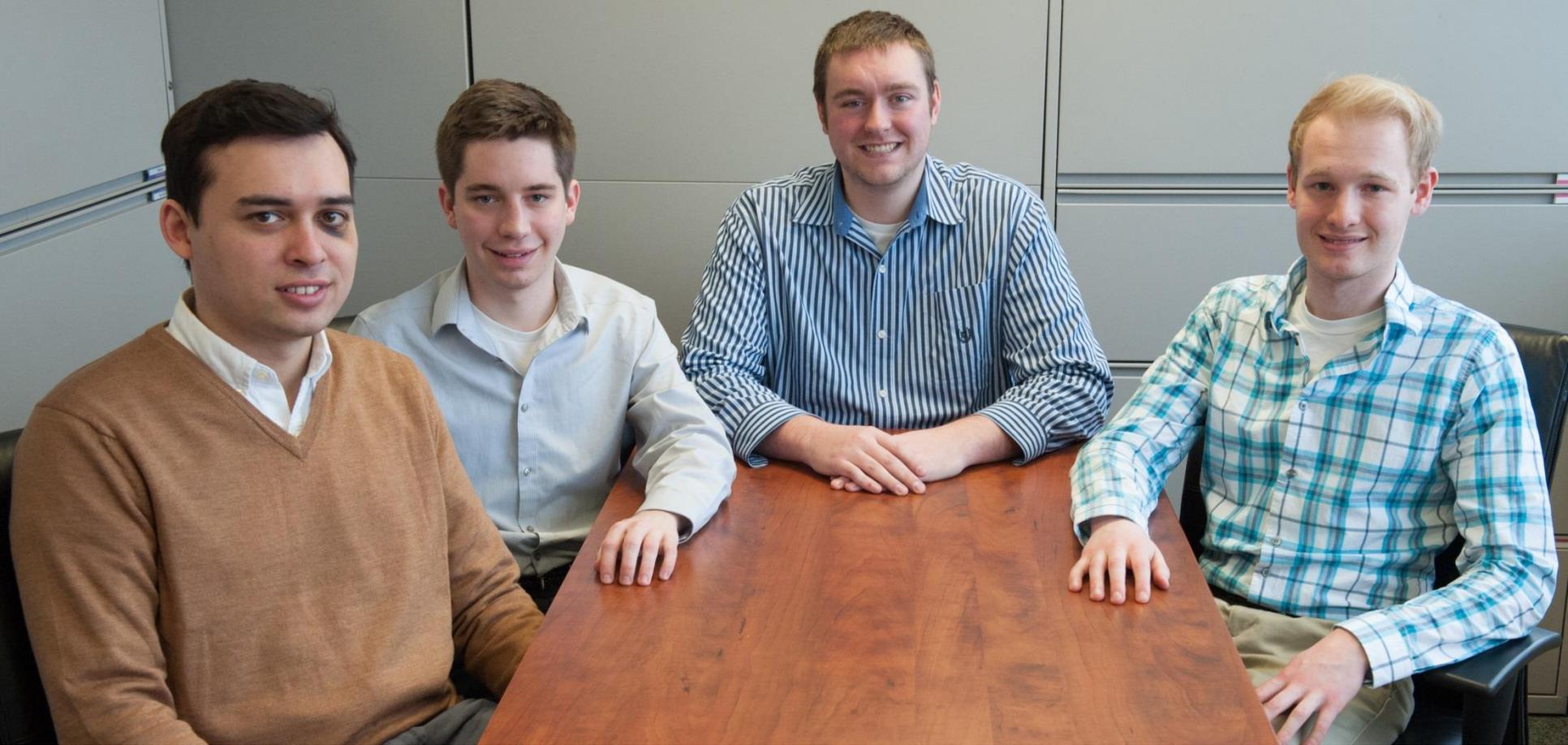
## Electric Vehicle Charging Station App

- Functionalities
  - Optimize Use of Electric Vehicle Charging Stations
  - On Ford's Dearborn Campus
- Features
  - End User Native Mobile Apps
    - Locate Available Charging Station
    - Receive Push Notifications re Subscribed Availability
  - Charging Station App
    - Detect Arrival and Departure of Vehicles
    - Use BLE Beacons
  - Web Services Backend
    - Actively Monitor, Track and Manage All Stations
    - Authenticate and Manage Users
- Technologies
  - Bluetooth Low Energy (BLE) Beacons
  - iPhone and Android Development (Objective-C, Java)
  - Web Development (CSS, HTML, PHP, JavaScript)
  - Java 2 Platform Enterprise Edition (J2EE)
  - Microsoft SQL Server



Dearborn, Michigan



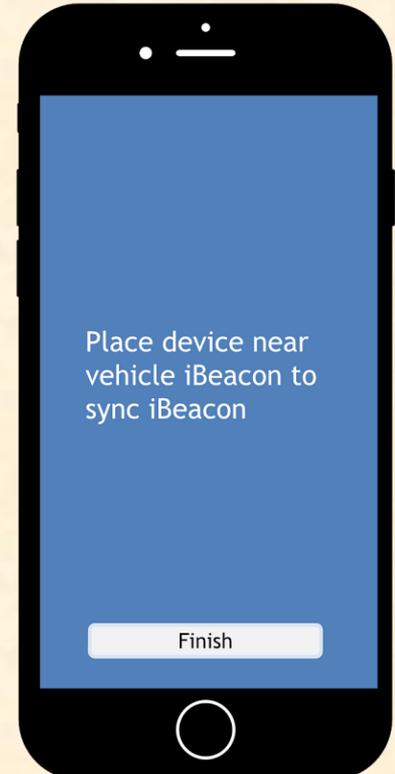
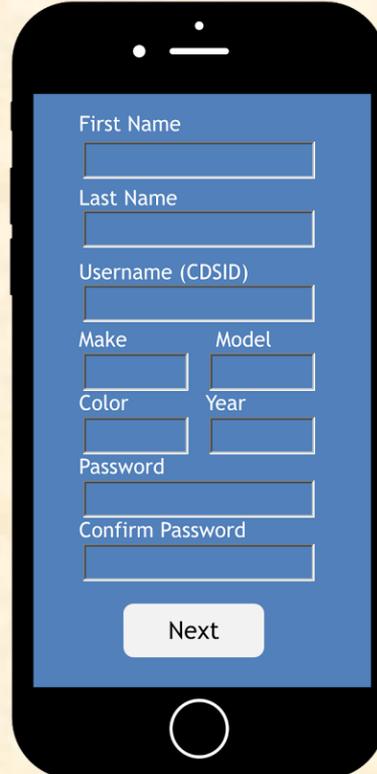


## Team Ford

Ryan Switzer, Kevin Karabon, Justin Grothe, Brian Jurgess

# Team Ford Project Plan Presentation

## Screen Mockups

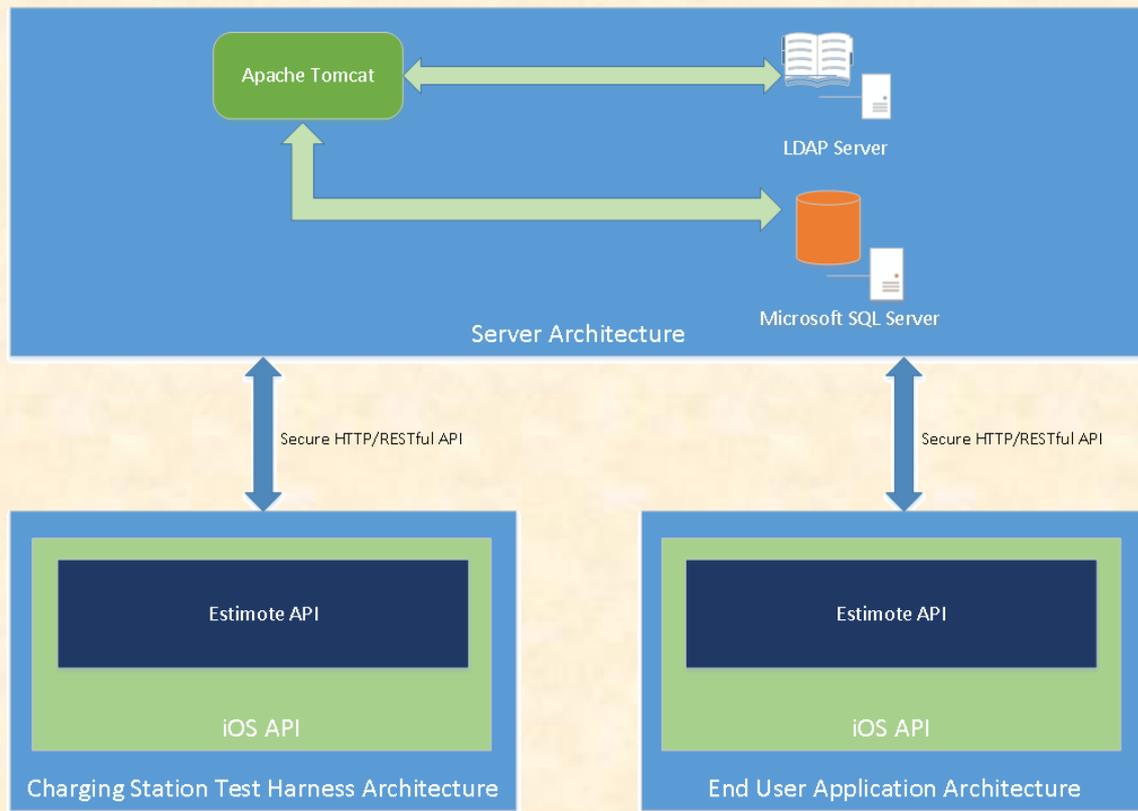




# Team Ford Project Plan Presentation

# Team Ford Project Plan Presentation

## Architecture Diagram



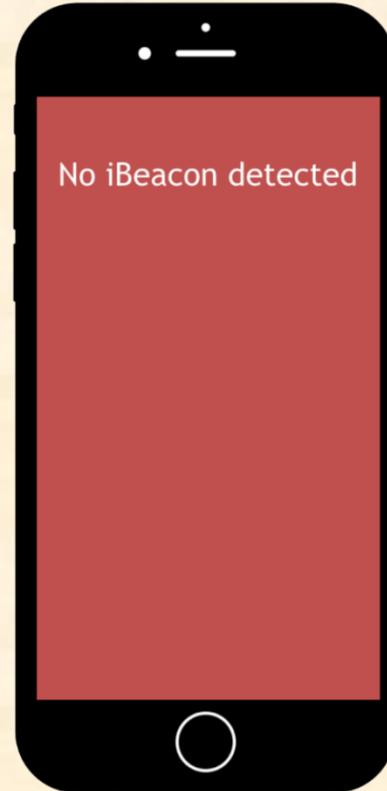
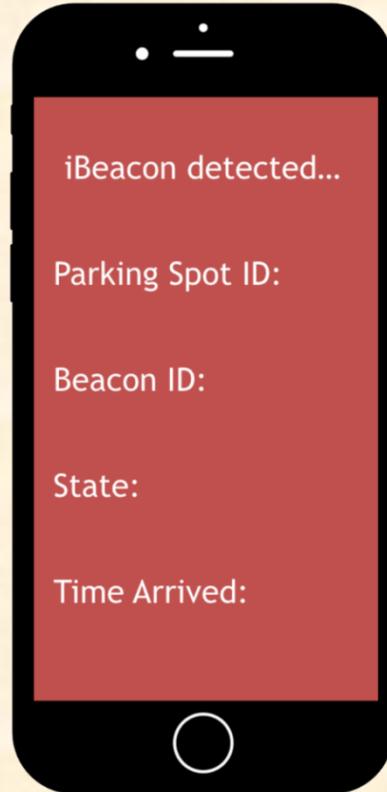
## System Architecture



Team Ford  
Project Plan Presentation

# Team Ford Project Plan Presentation

Screen Mockups

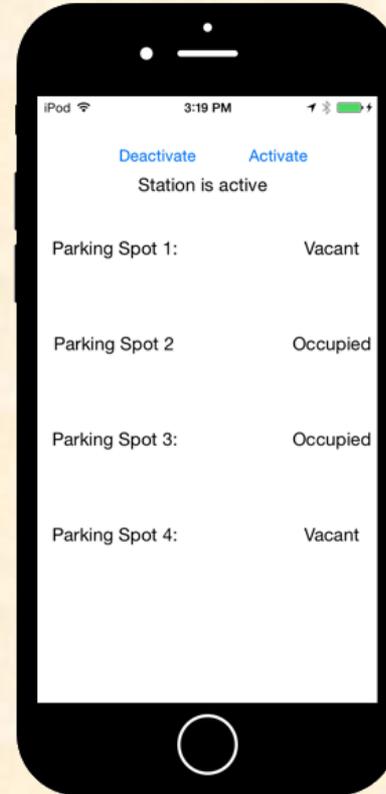
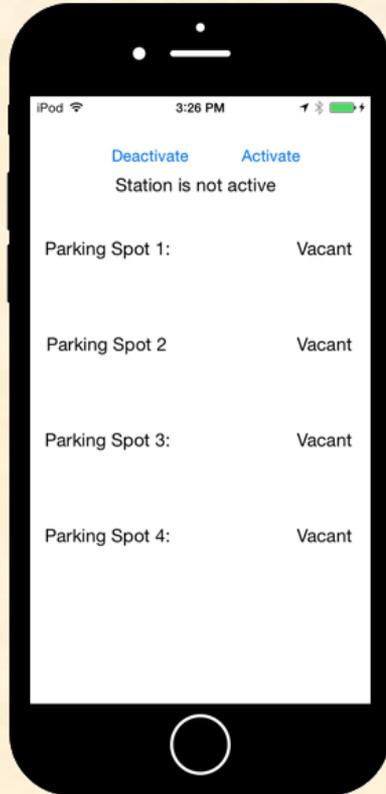




Team Ford  
Alpha Presentation

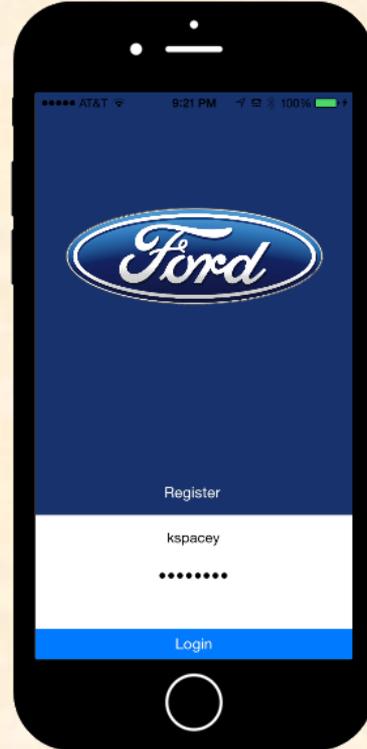
# Team Ford Alpha Presentation

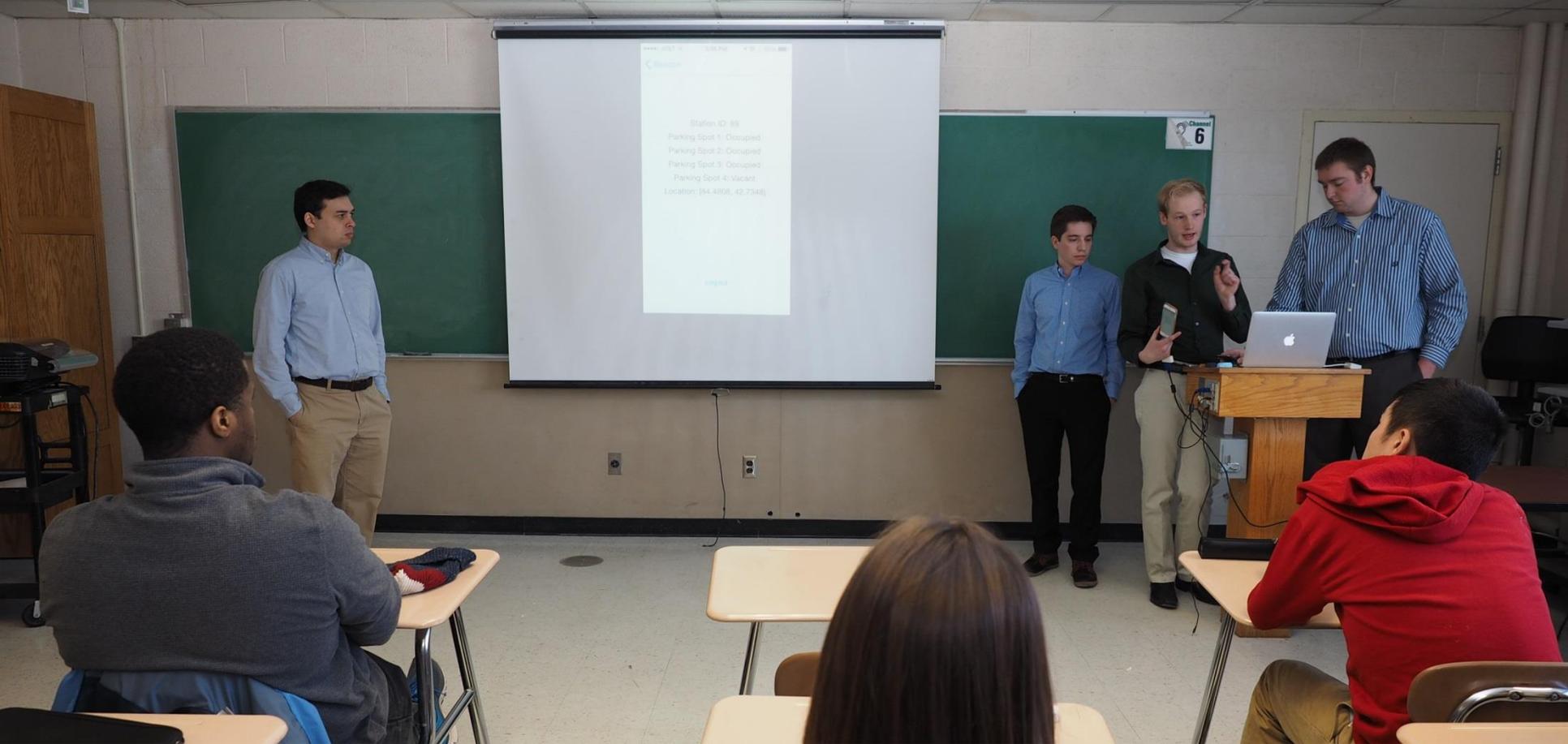
## Harness Application



# Team Ford Alpha Presentation

User App Login

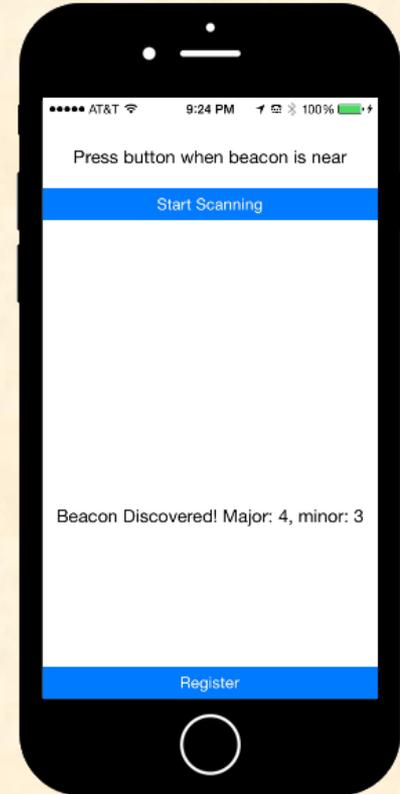
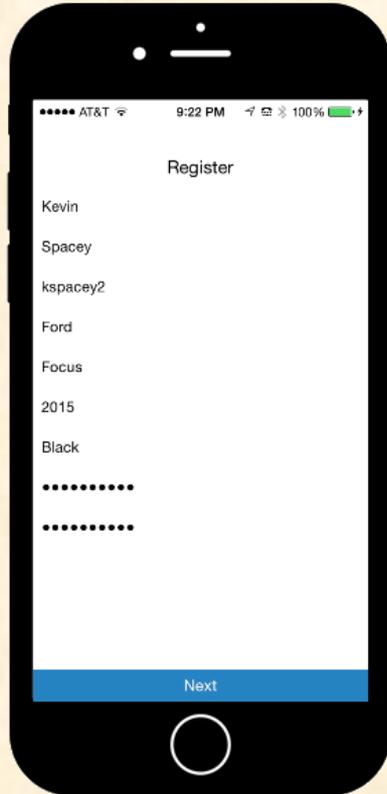




# Team Ford Alpha Presentation

# Team Ford Alpha Presentation

## User Application Registration

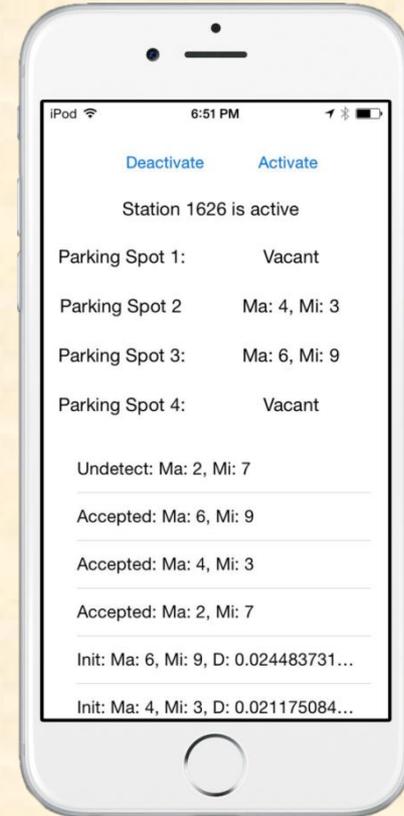
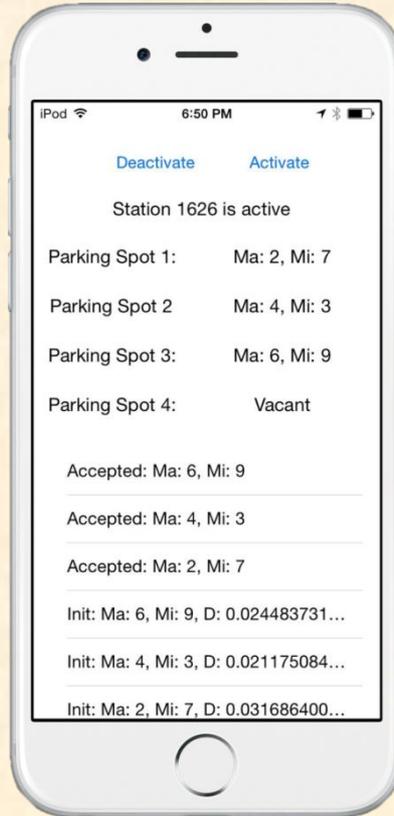
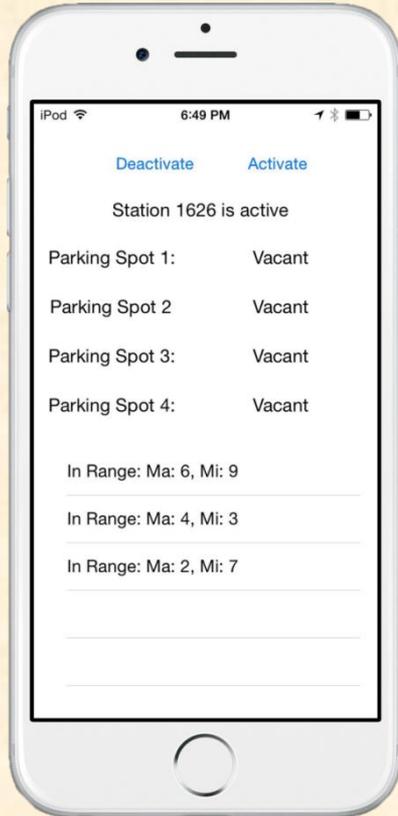




# Team Ford Beta Presentation

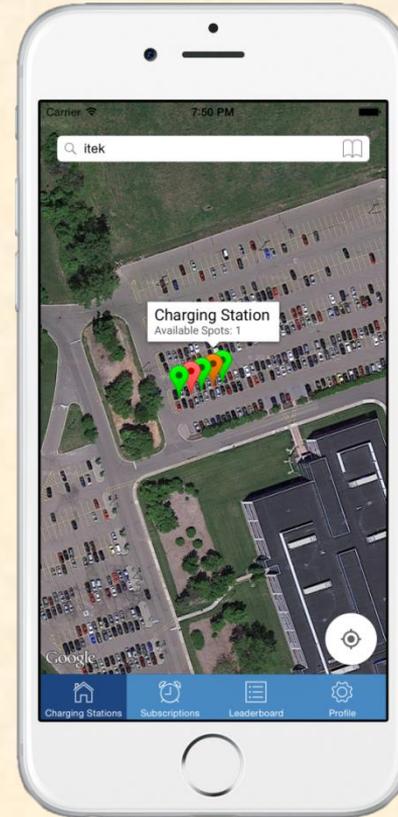
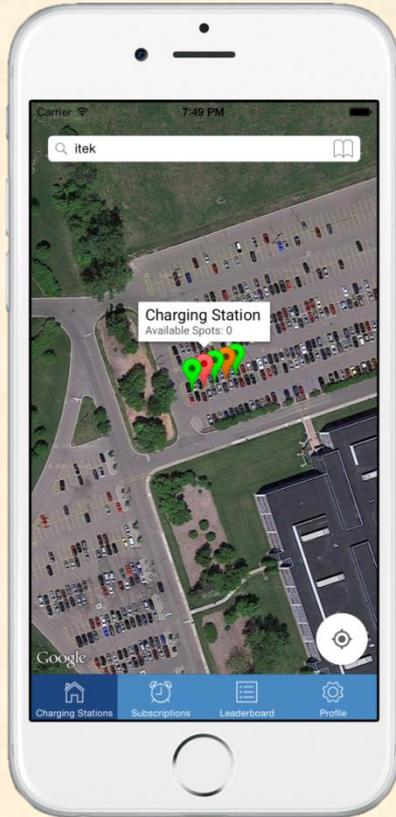
# Team Ford Beta Presentation

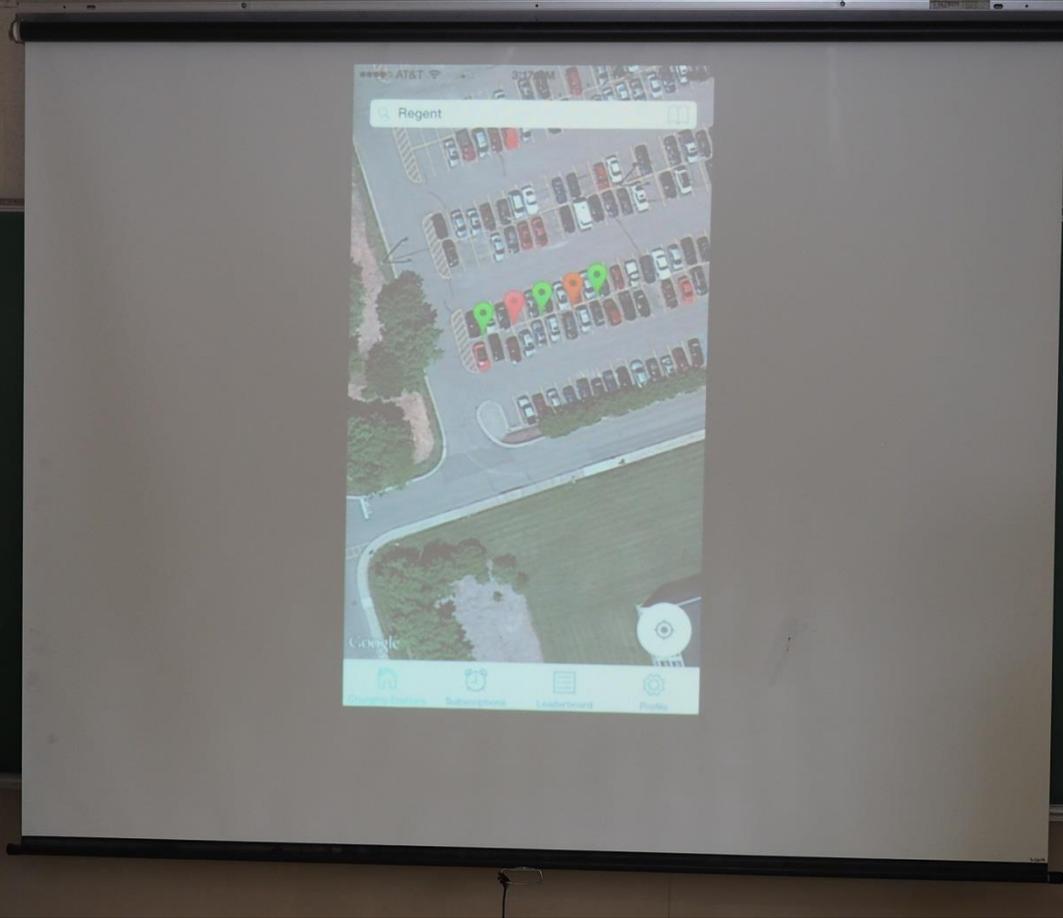
## Test Harness Application



# Team Ford Beta Presentation

## Charging Station Availability Map

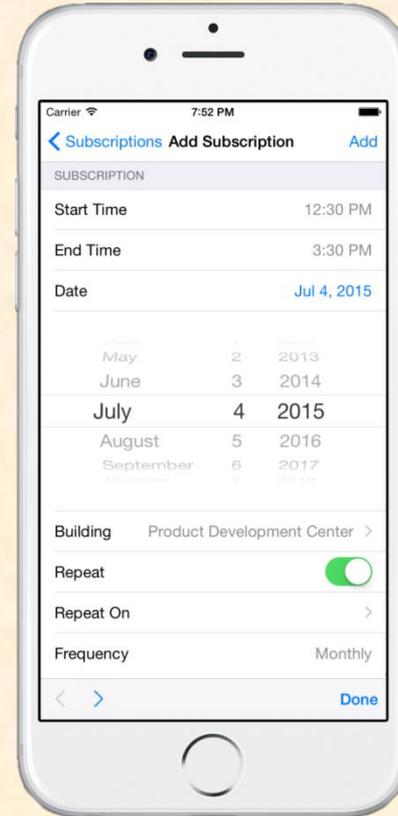
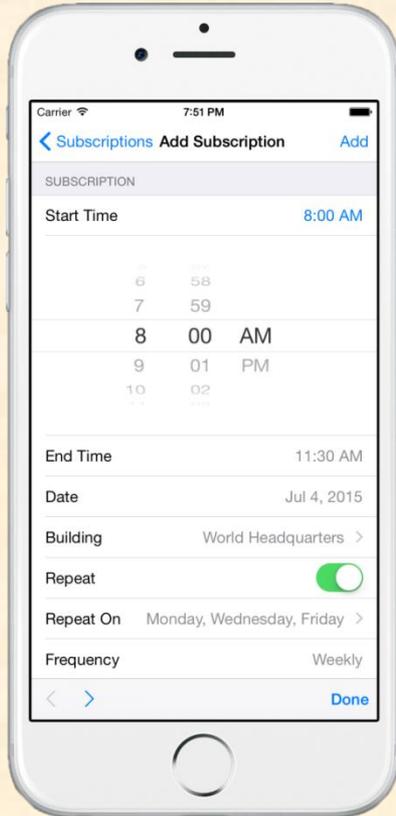




# Team Ford Beta Presentation

# Team Ford Beta Presentation

## Subscriptions





Team Ford  
Design Day

**MICHIGAN STATE**  

---

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# The Capstone Experience

Team GM

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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...to Professionals*



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EXPLORE ALL GM VEHICLES



SHOP CHEVY.COM



SHOP BUICK.COM

GMC

SHOP GMC.COM



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# Team GM

## Project Overview

### Employee Companion Mobile Application

- Functionalities
  - Enable GM Employees
  - Manage IT Service Center Live Appointments
  - Using Mobile App
- Features
  - Support iPhone and iPad
  - Locate Nearest IT Service Center Live
  - Manage Appointments
    - Add
    - Change
    - Cancel
  - Send Push Notifications
    - Power Outages
    - Emergency Messages
    - Appointment Reminders
    - Product Recalls
- Technologies
  - iPhone and iPad Development (Objective-C, Xcode)
  - Web Development (CSS, HTML, PHP, JavaScript)
  - Microsoft SQL Server



Detroit, Michigan



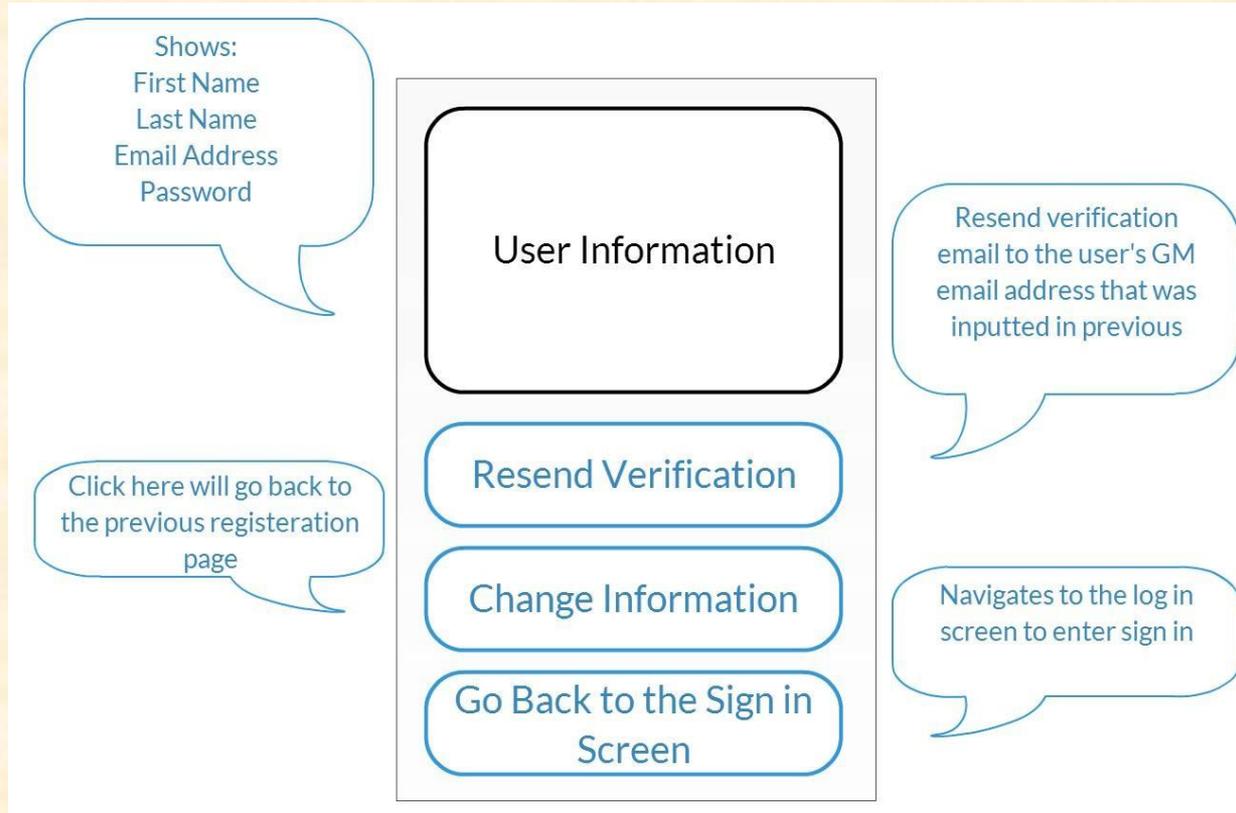


## Team GM

Nate Seifert, Jacob Ray, Yutaka Iwasaki, Ryan Boyce, Derrick Dunville

# Team GM Project Plan Presentation

## Screen Mockup

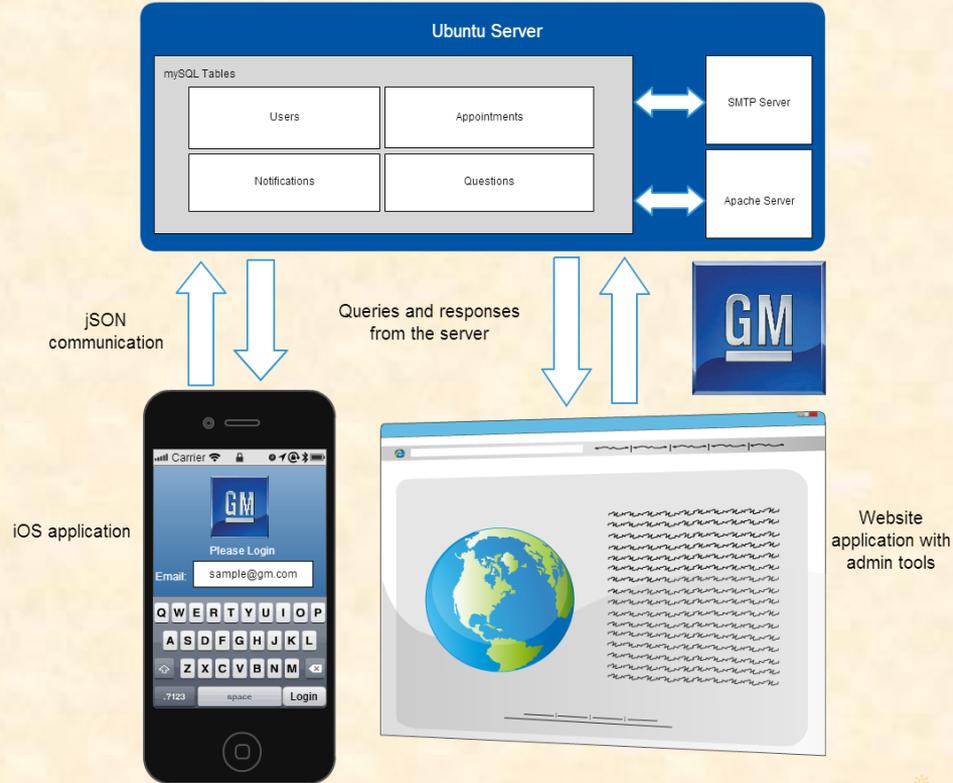




# Team GM Project Plan Presentation

# Team GM Project Plan Presentation

## Architecture Diagram

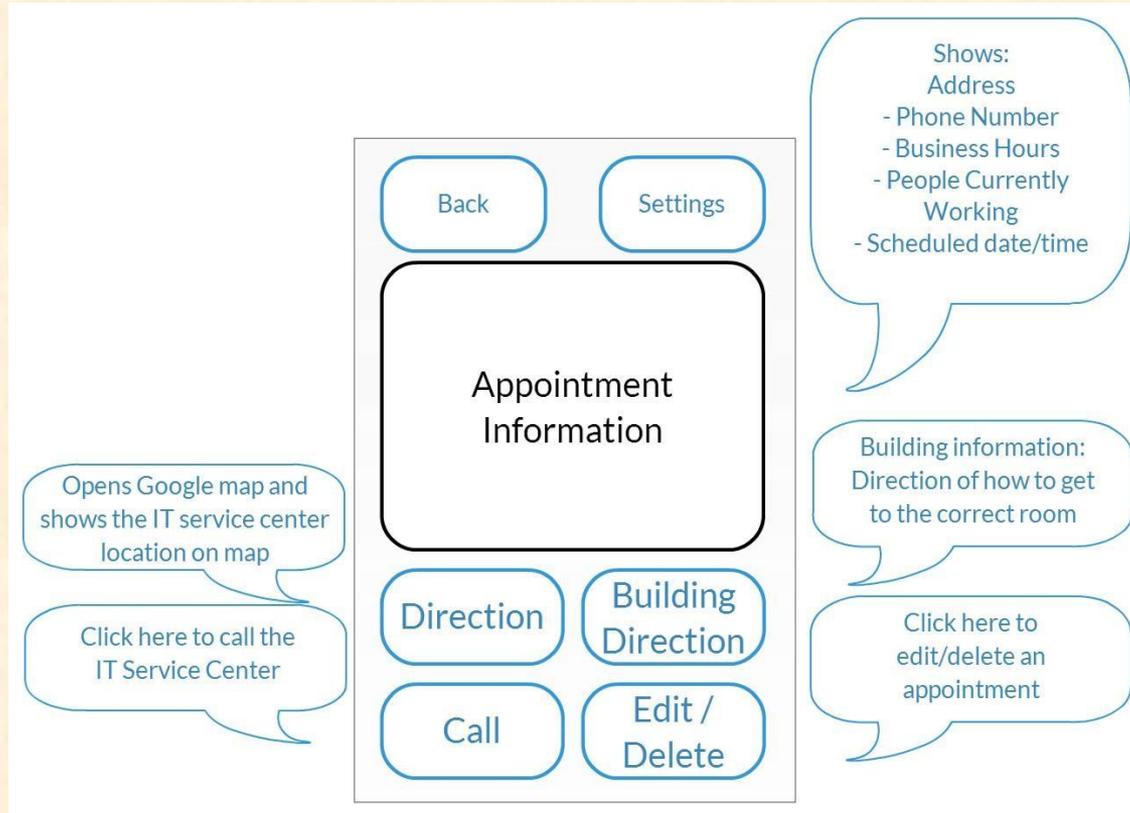




Team GM  
Project Plan Presentation

# Team GM Project Plan Presentation

Screen Mockup





# Team GM Alpha Presentation

# Team GM Alpha Presentation

## Scheduling Screen

The screenshot displays the 'GM COMPANION' app interface for the 'Appointments' section. The background is a photograph of a modern building with a large fountain in the foreground. The interface includes a dark sidebar on the left with navigation options: Home, My Appointments, IT Centers, FAQ, and Admin. The main content area features a 'Create New Appointment' form with fields for 'Please select a date:' and 'Please select a time:', a 'Schedule Appointment' button, and a 'Your Appointments' section with a 'View Appointments' button. The 'GM' logo is in the top left, and the word 'COMPANION' is in large blue letters across the top. The word 'Appointments' is in the top right corner.



# Team GM Alpha Presentation

## Appointment Details

The screenshot shows the GM Companion app interface on an iPad. At the top, it displays the time as 9:03 PM and the battery level at 86%. The app title is "GM COMPANION". Below this, the section is titled "APPOINTMENT DETAILS".

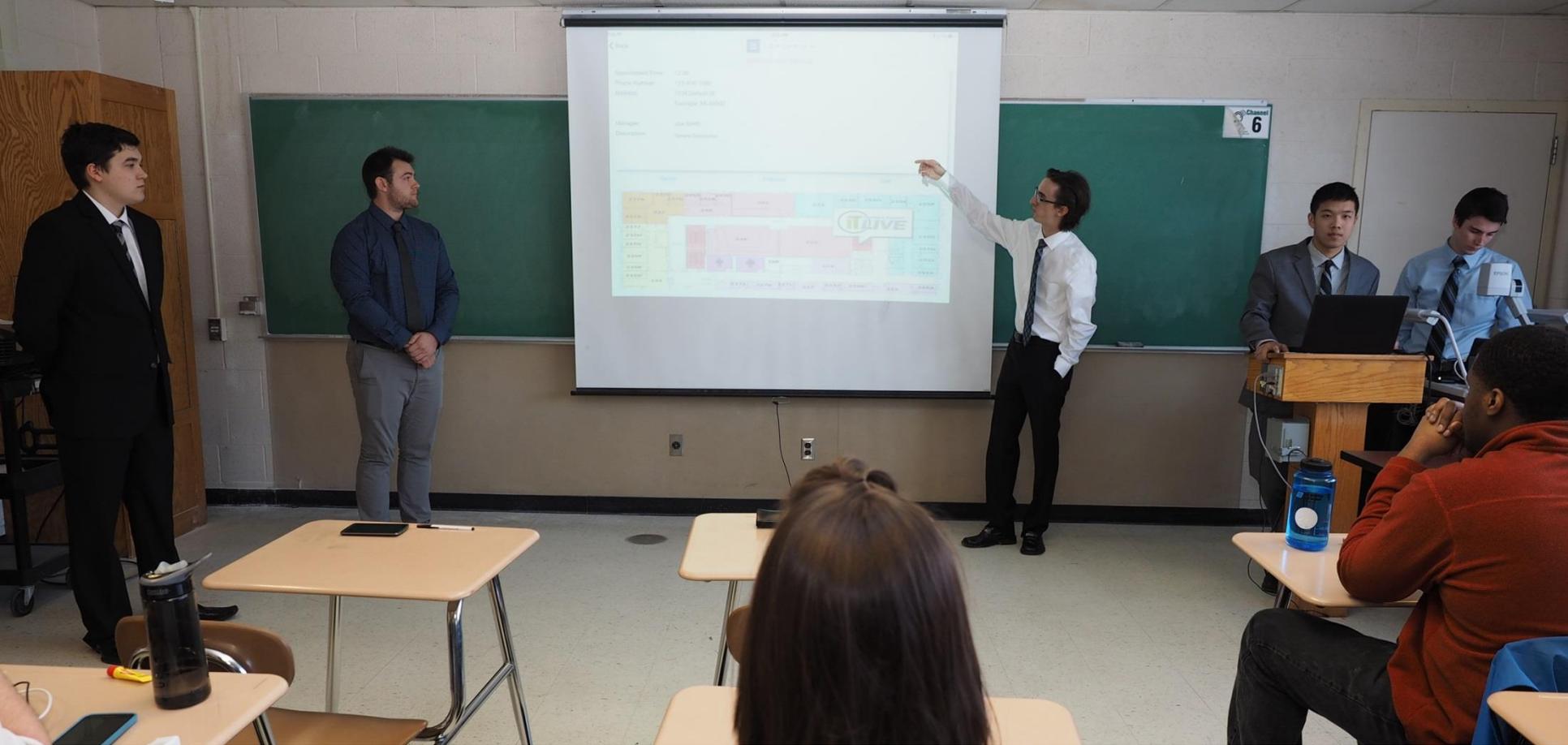
The appointment details are as follows:

- Appointment Time: 12:00
- Phone Number: 123-456-7890
- Address: 1234 Default St, Example, MI 40000
- Manager: Joe Smith
- Description: General Description

Below the details are three buttons: "Cancel", "Directions", and "Call".

The bottom half of the screenshot shows a floor plan of a building. The rooms are color-coded and labeled with alphanumeric codes. A callout box with the "iLIVE Service Center" logo is positioned over room 253. The floor plan includes various rooms such as 237B, 237A, 237J, 235H, 235G, 235F, 235E, 235D, 235, 237C, 237D, 245A, 245B, 245C, 245, 247, 248, 228, 224, 227J, 227K, 227L, 227, 225J, 225K, 225, 225A, 253, 255C, 255D, 255E, 255F, 255G, 255H, 255J, 255K, 2005, 2006, 2007, 2008, 2009, 200A, 200B, 200C, 200D, 200E, 200F, 200G, 200H, 200I, 200J, 200K, 200L, 200M, 200N, 200O, 200P, 200Q, 200R, 200S, 200T, 200U, 200V, 200W, 200X, 200Y, 200Z.





# Team GM Alpha Presentation

# Team GM Alpha Presentation

## IT Service Center Live Details

The screenshot displays the GM Companion app interface on an iPad. At the top, the status bar shows the time as 8:16 PM and battery at 36%. The app header includes the GM logo and the text 'COMPANION'. Below this is the 'IT Service Center LIVE' logo. The main content area is titled 'Warren Technical Center' and contains a white information box with the following details:

- LOCATION:** Warren Technical Center, Room 1G20-17
- Change Location:** A blue button with a circular arrow icon.
- HOURS:** M-F: 8:00 AM - 4:30 PM, SAT-SUN: Closed
- Schedule Appointment:** A blue button with a telephone icon.

Below the information box is a map titled 'FACILITY LOCATION' showing the location of the Warren Technical Center in Warren, MI. A red location pin is placed on the map, with a callout box that reads 'Warren Technical Center, Warren, MI'. The map shows surrounding streets such as E 14 Mile Rd, E 13 Mile Rd, E 12 Mile Rd, and E 11 Mile Rd, as well as major roads like I-75 and I-96. The Google logo and copyright information are visible at the bottom of the map.

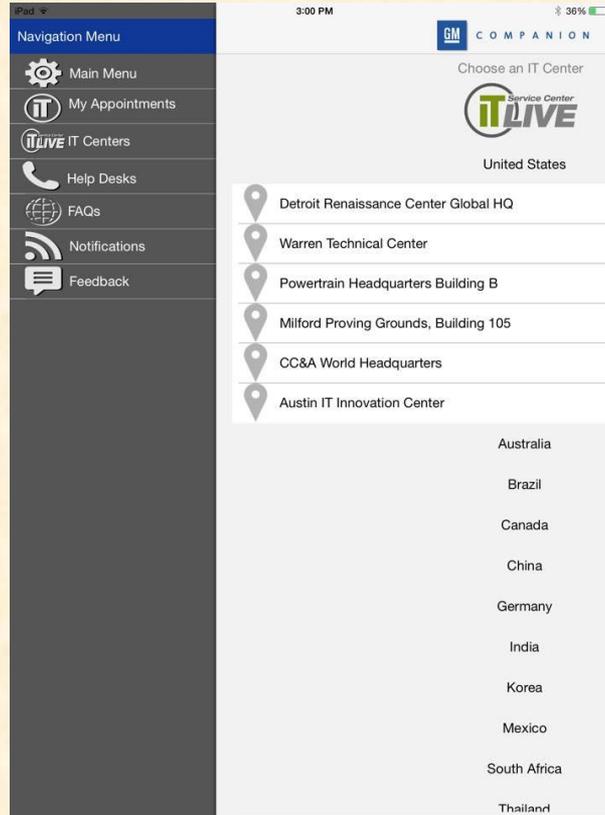




# Team GM Beta Presentation

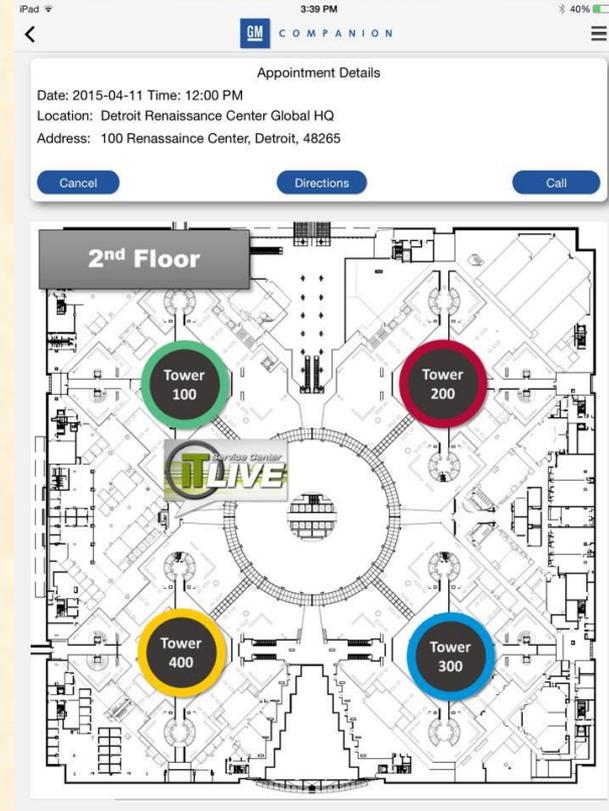
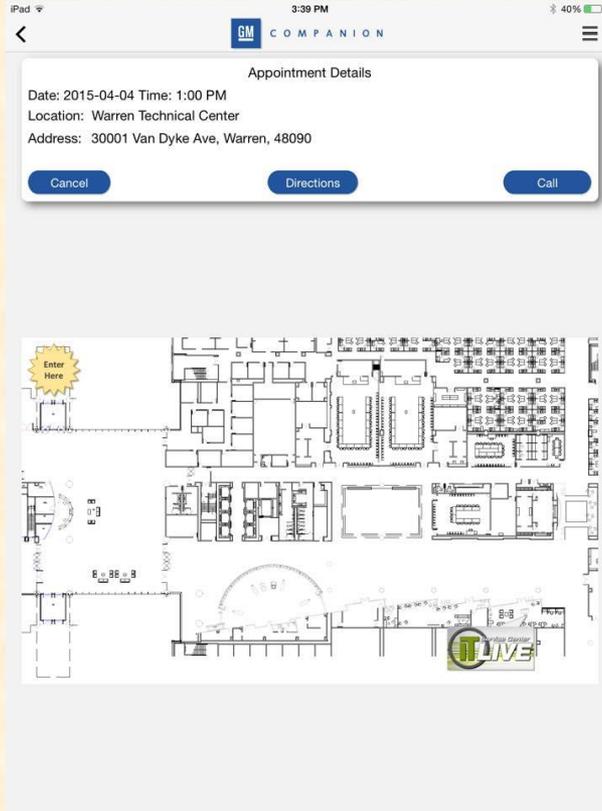
# Team GM Beta Presentation

## Mobile App Navigation Bar



# Team GM Beta Presentation

## Appointment Details

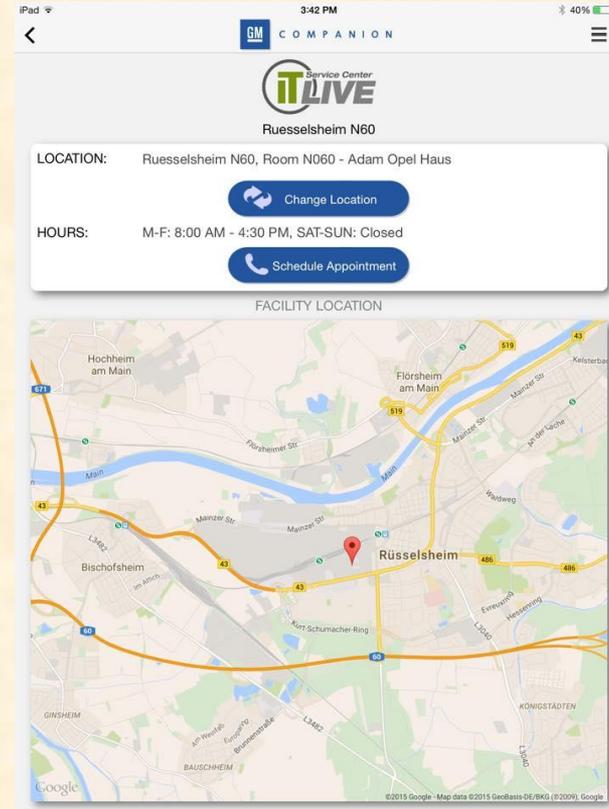
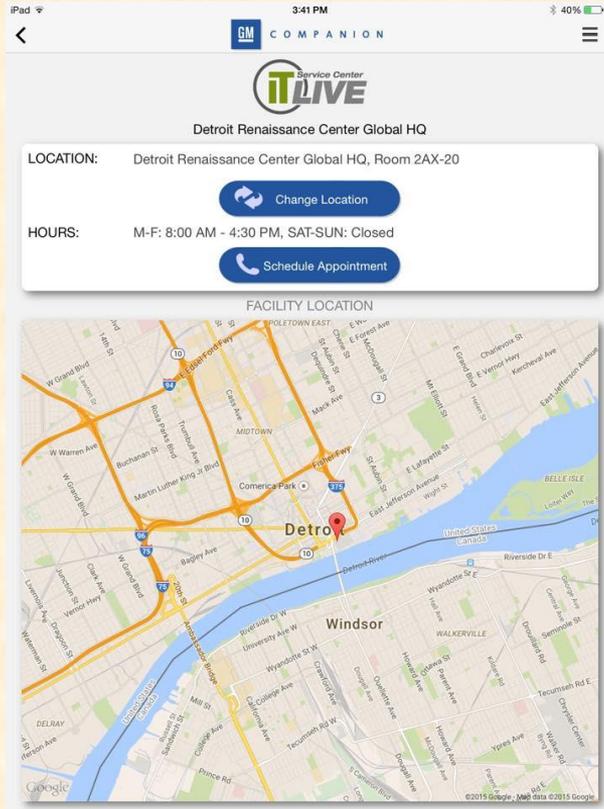




# Team GM Beta Presentation

# Team GM Beta Presentation

## Location Based Scheduling





Team GM  
Design Day

**MICHIGAN STATE**  
**UNIVERSITY**

# The Capstone Experience

Team Meijer

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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...to Professionals*

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**8.99** Certified Angus Beef Bone-In Roast

**2.99\*** Meijer Bakery 9" Pie

**2.99** Baked Potatoes

**99c** Kraft Whip Topping

**1.89** Seasoned Bread or Crackers

**99c** Kraft Eye Vegetables

**2.55** Meijer Butter

**2.53** Kraft Philadelphia Cream Cheese

**1.99** Cook's Spiral Sliced Roast Ham

This Weeks Ad - 12/21  
Prices good December 21 - December 27

view

**meijer**

**last-minute deals**

**Great Gifts, Great Savings**  
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Closed Christmas Day  
Re-open December 26 at 6 am

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**\$3** Honey Princess Biting Ball Single Pack  
Shower, Biting Ball Wand or Make-Up

**\$4** Hot Wheels or Matchbox 5 Car

**\$4** Barbie Beach Out  
Reg. \$10.00, \$10.00

Last Minute Deals - 12/21  
Prices good December 21 - December 24

view

# Team Meijer Project Overview

## Product Availability Check using Glassware

- Functionalities
  - Enable Meijer Team Members
  - Check on Product Availability for Customers
  - Hands-Free Using Google Glass
- Features
  - Lookup Product Via Barcode
  - Determine Product Availability At
    - Local Store (Other Shelves, Backroom, Truck)
    - Other Stores Nearby
    - Distribution Centers
  - Provide Visual Feedback to Meijer Associate
  - Track Location of Meijer Associate in Store
  - Generate Aggregated Analytics on Usage
- Technologies
  - Google Glass Development
  - iBeacon
  - iPhone and iPad Development (Objective-C, Xcode)
  - Microsoft .NET Framework, C#, ASP.NET
  - Microsoft Azure
  - Microsoft SQL Server
  - Meijer Web Services
  - Responsive Design (Xamarin or PhoneGap)
  - Crashlytics



**meijer**<sup>®</sup>

Grand Rapids, Michigan

The Capstone Experience





# Team Meijer

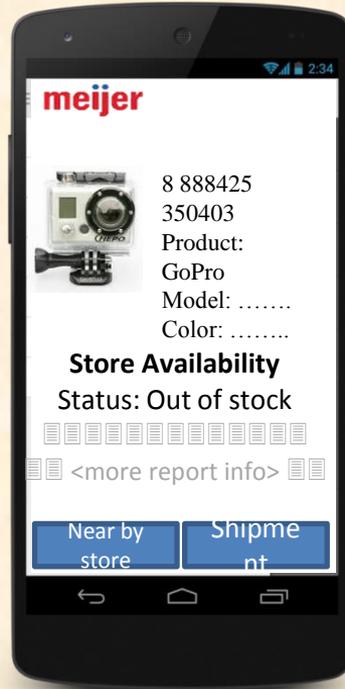
Scott Rucinski, Ethan Ettema, Jim Howell, Luan Tran

# Team Meijer Project Plan Presentation

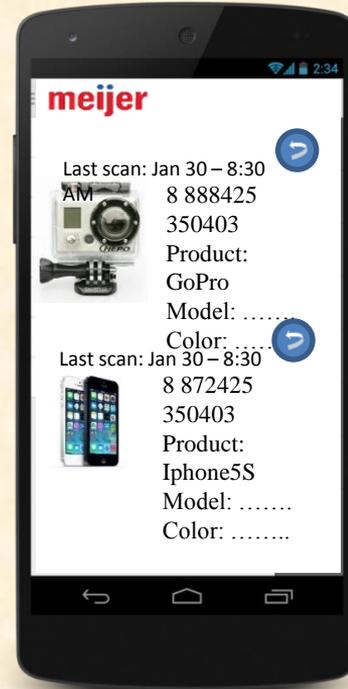
## Screen Mockups



Image loaded &  
ready to be analyzed



Product info screen



Recently viewed  
scan results





## Screen Mockup: Mobile Application



Image loaded & ready to be analyzed.



Product info screen.

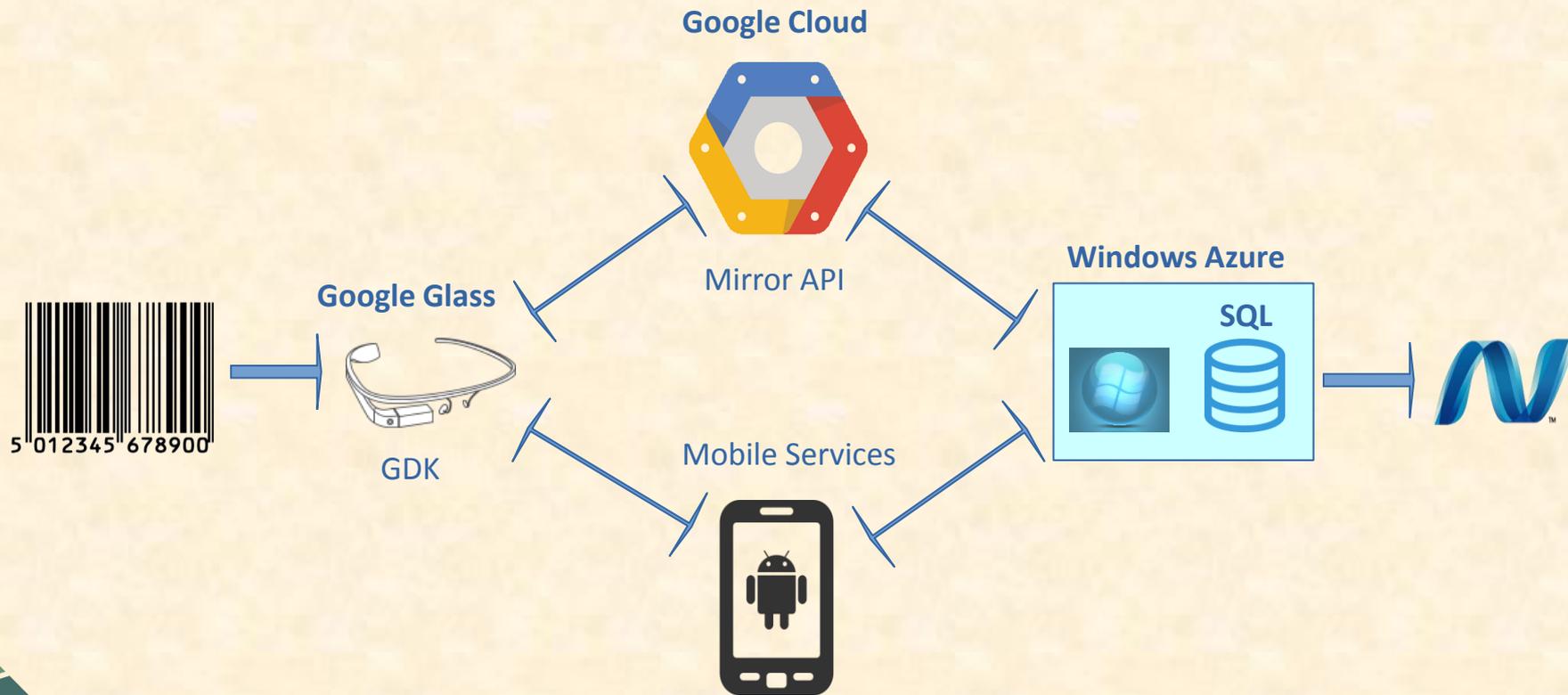


Recently viewed scan results.

# Team Meijer Project Plan Presentation

# Team Meijer Project Plan Presentation

## Architecture Diagram





Team Meijer  
Project Plan Presentation

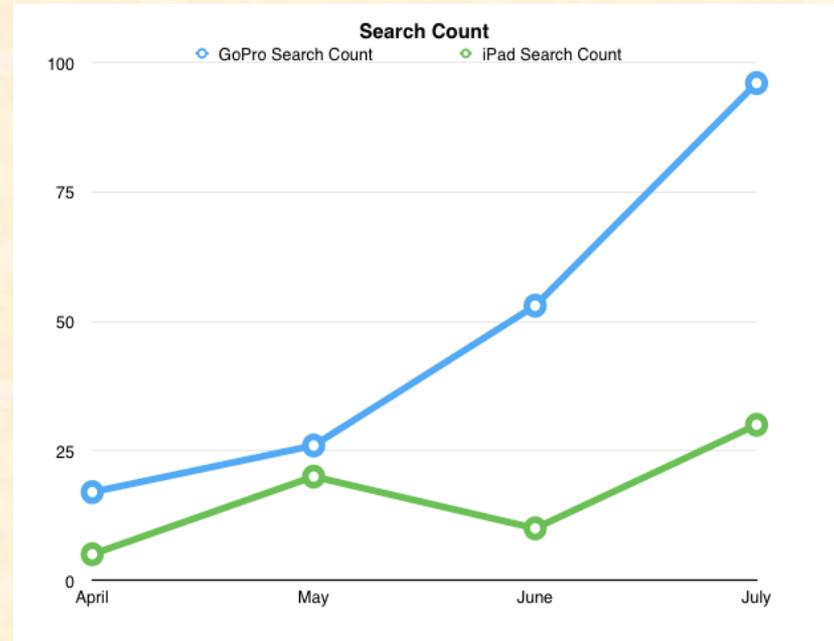
# Team Meijer Project Plan Presentation

Screen Mockups

Order by:

## GoPro Searches

Date	Location	In-Store Availability	Other Data...
1-20-15	East Lansing		5
1-20-15	East Lansing		4
1-21-15	Okemos		4
1-22-15	East Lansing		3





# Team Meijer Alpha Presentation

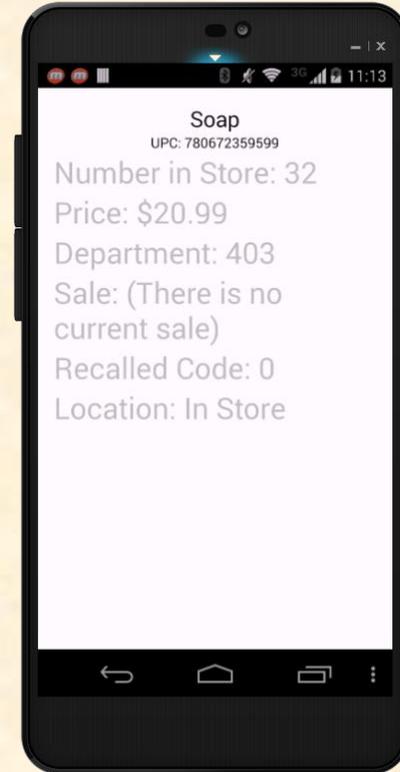
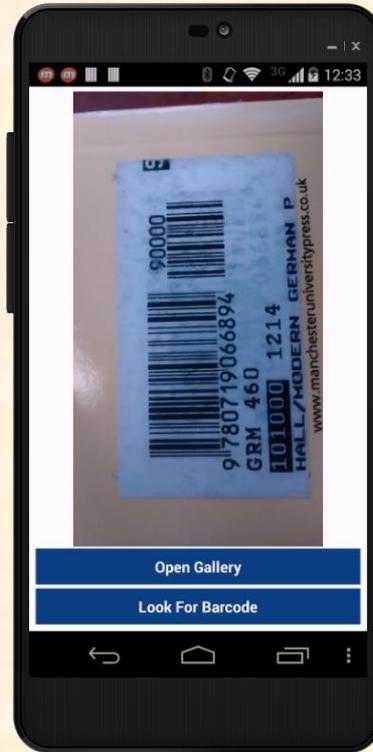
# Team Meijer Alpha Presentation

## Glass App Scan Menu



# Team Meijer Alpha Presentation

Android App



The Capstone Experience





# Team Meijer Alpha Presentation

# Team Meijer Alpha Presentation

## Associates' Web Portal



### EMPLOYEE PORTAL

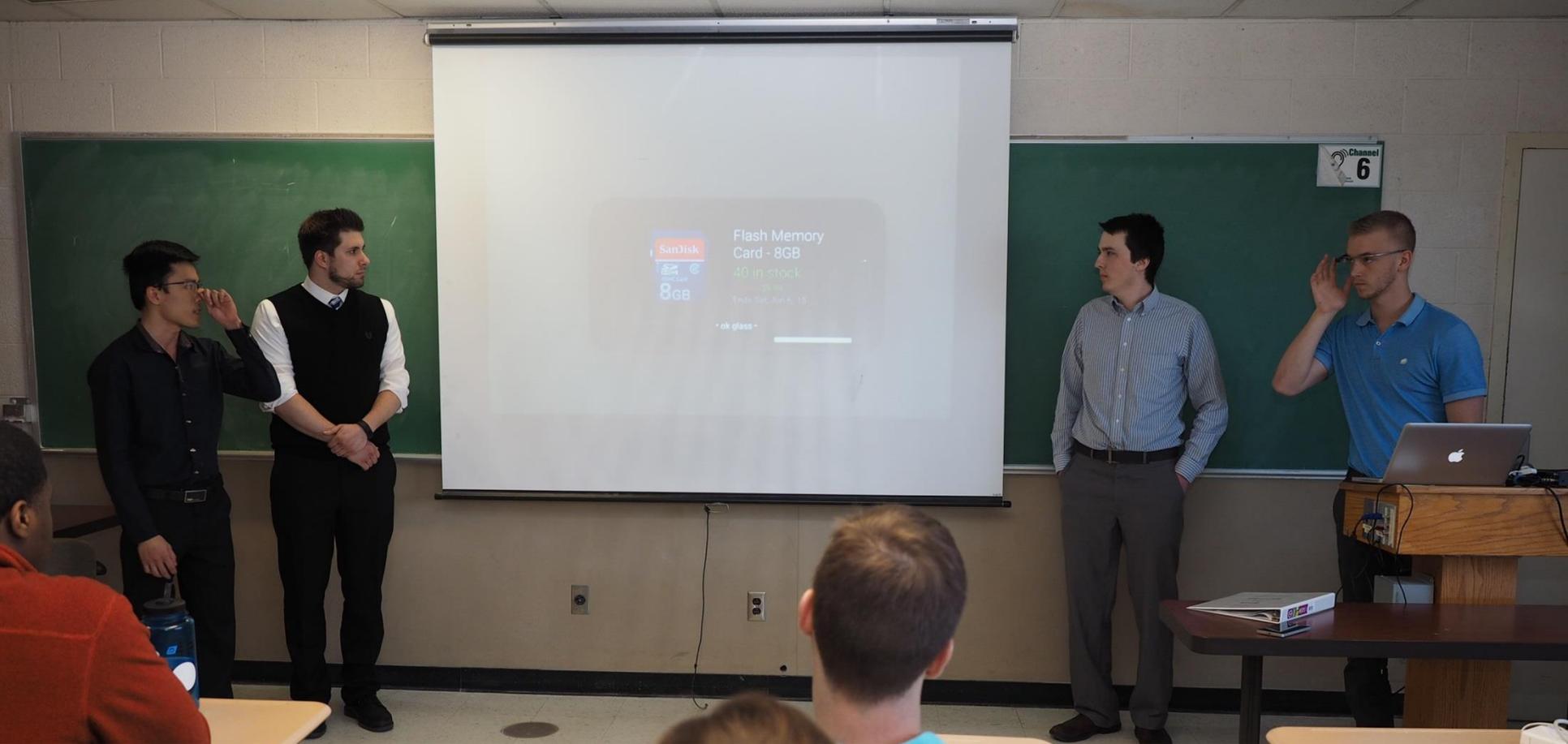
Search Term:

Search For:  Order By:

9 item(s) found.

ID	UPC	Description	Balance On Hand	Time
E71DBF3E-D572-4D1F-A361-5DC29A2DA432	00000000006637	Fish	7	2-21-2015 05:45:47
DD55C810-3A23-4CB6-99E4-E0C25AB2A945	00000000006637	Fish	10	2-20-2015 15:21:17
6678CBDE-14AC-4E9D-BAE9-043F8EB08468	00000000006637	Fish	10	2-21-2015 11:33:43
A654E9B8-B0FC-42EB-B506-F79CE29E2183	00000000006637	Fish	11	2-20-2015 10:41:17
3490BED6-BA1D-4F3C-872A-9C3E754AC201	00000000006637	Fish	11	2-21-2015 07:28:06
7EEB56BB-4FEC-41DF-B286-9B3E47FD366E	00000000006637	Fish	12	2-20-2015 08:01:38
2E4593F1-FC1D-43B5-A2CB-57D1D6BF8655	00000000006637	Fish	13	2-19-2015 13:45:21
2839D52B-91F1-41CD-860E-1ECEA1DBE1D4	00000000006637	Fish	15	2-19-2015 14:32:51
F3B3B314-7833-4019-B775-A7EC90033004	00000000006637	Fish	15	2-19-2015 20:15:07

Michigan State University - Capstone Experience



# Team Meijer Beta Presentation

# Team Meijer Beta Presentation

Product Info on Glassware



GoPro  
4 in stock  
~~\$199.99~~ \$149.99  
Ends: Tue, Jun 19, '18  
MSU

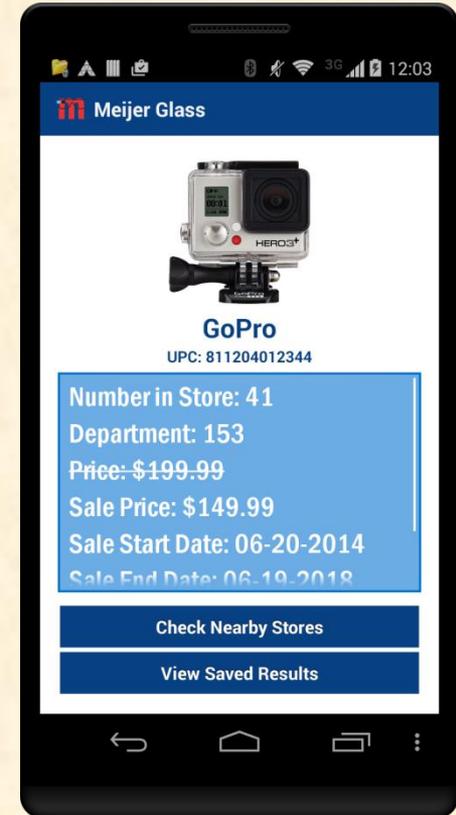
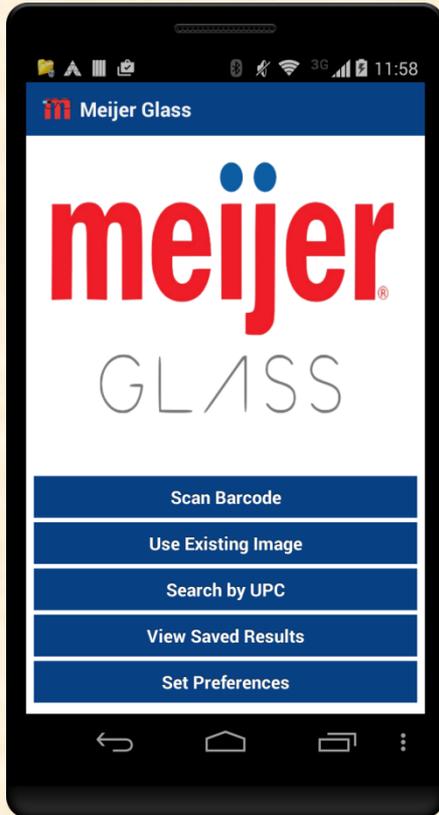
" ok glass "

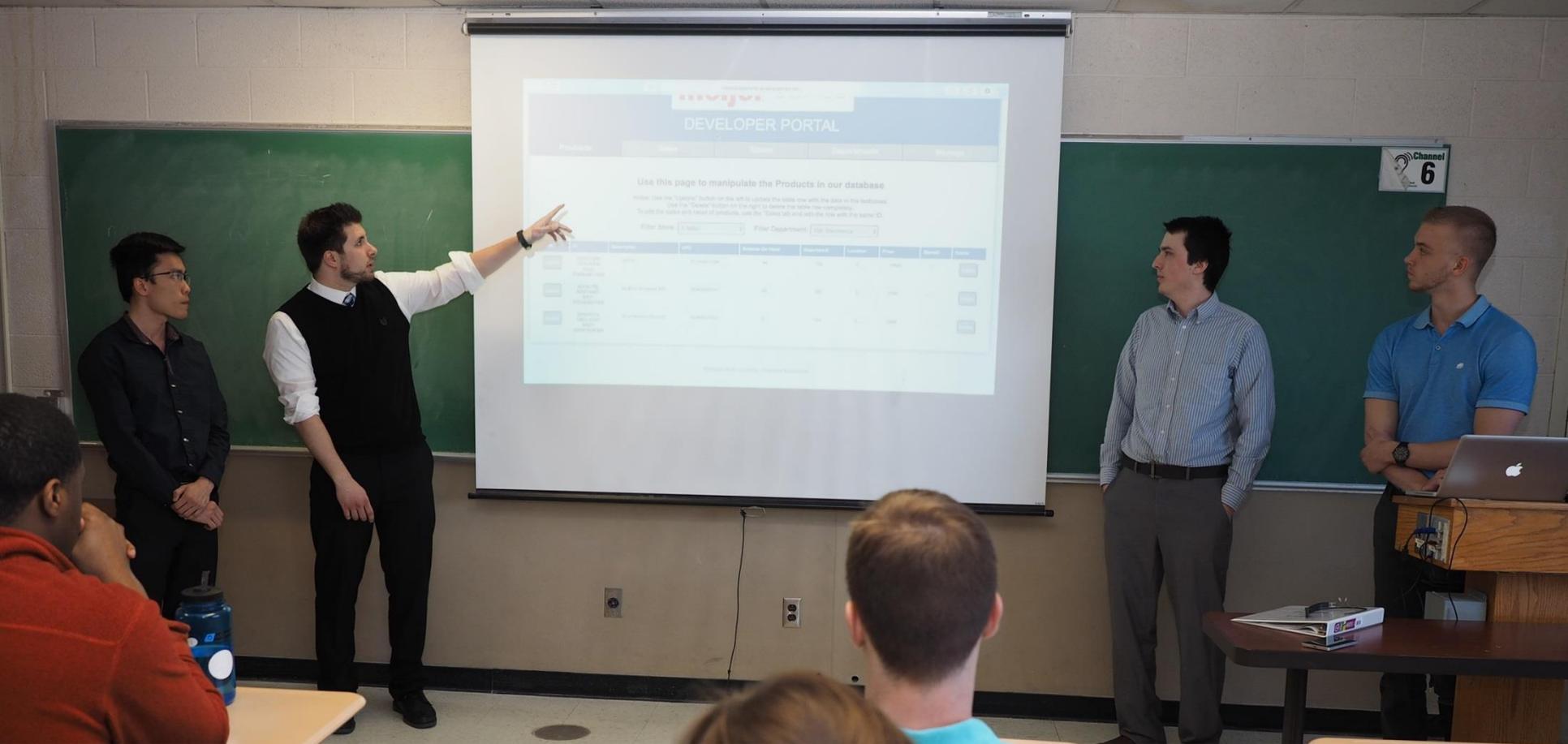
just now



# Team Meijer Beta Presentation

Android App

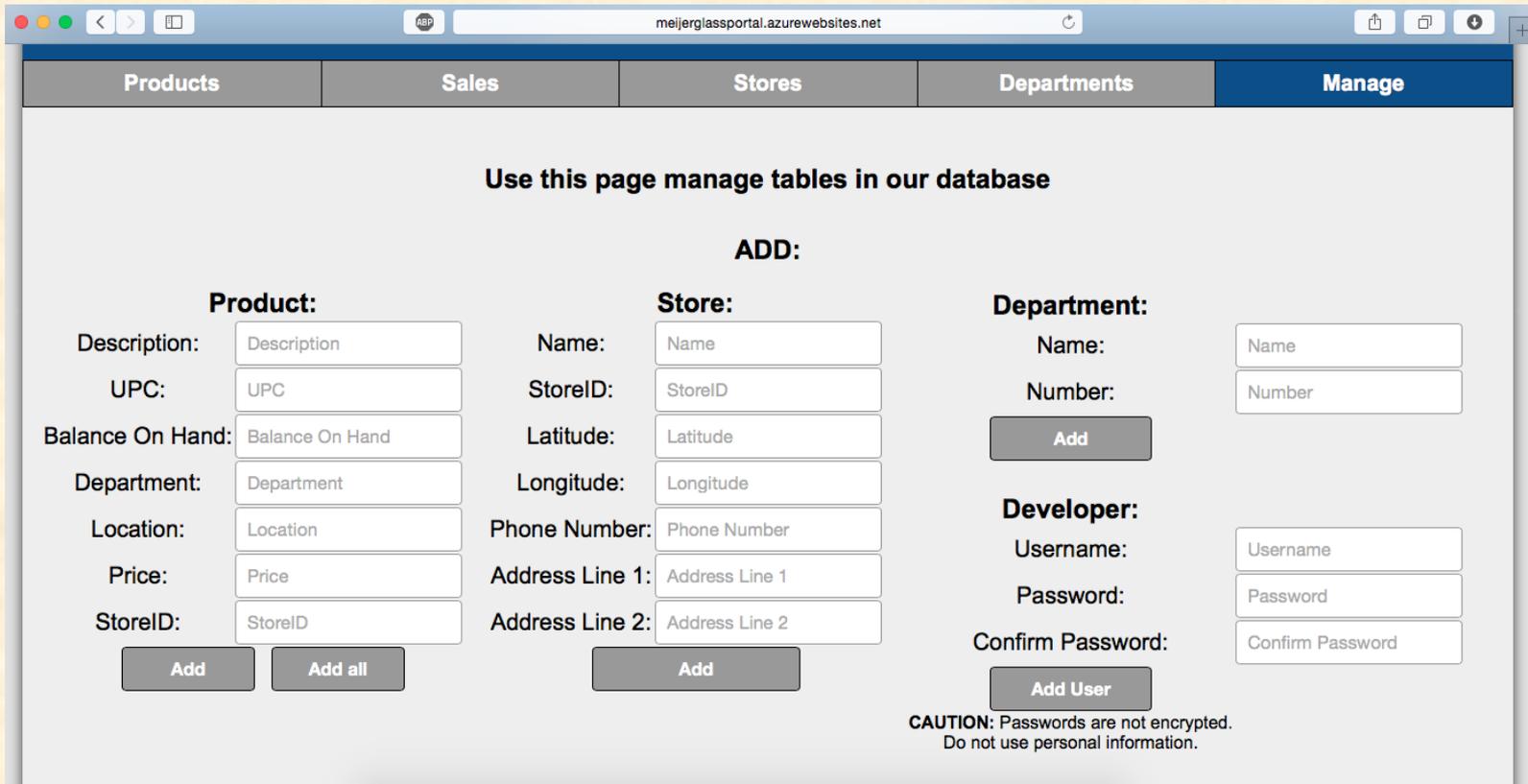




# Team Meijer Beta Presentation

# Team Meijer Beta Presentation

## Website Developer Portal



The screenshot shows a web browser window with the URL `meijerglassportal.azurewebsites.net`. The page has a navigation bar with tabs for **Products**, **Sales**, **Stores**, **Departments**, and **Manage**. The **Manage** tab is active. Below the navigation bar, the text reads "Use this page manage tables in our database".

**ADD:**

**Product:**

Description:

UPC:

Balance On Hand:

Department:

Location:

Price:

StoreID:

**Store:**

Name:

StoreID:

Latitude:

Longitude:

Phone Number:

Address Line 1:

Address Line 2:

**Department:**

Name:

Number:

**Developer:**

Username:

Password:

Confirm Password:

**CAUTION:** Passwords are not encrypted.  
Do not use personal information.





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# The Capstone Experience

Team MSUFCU

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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



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### What's New @ MSUFCU


[Enter Your Child in the MSU Game Ball Delivery Contest](#)
[MSUFCU Announces Headquarters Expansion](#)
[Apple Pay Coming to MSUFCU Mid-2015](#)

### Upcoming Events


**MSUFCU Night at MSU  
Women's Basketball Game**  
 Thursday, January 08

[View all events >>](#)

### Current Rates


[Loans](#) [Home Loans](#) [Savings](#) [Business](#)

Auto Loan as low as 2.250% APR

# Team MSUFCU Project Overview

## Financial 4.0 Interactive Financial Education

- Functionalities
  - Educate MSU Students
  - On Personal Financial Matters
  - Using Web Technologies
- Features
  - Cover Variety of Topics
    - Budgeting
    - Debt
    - Credit
    - Etc.
  - Be Fun, Creative, Interactive and Engaging
  - Support Both
    - Responsive Web App
    - Native iPhone/iPad and Android Apps
  - Integrate with MSUFCU Content Management System
- Technologies
  - Web Development (CSS, HTML, PHP, JavaScript, jQuery)
  - iPhone/iPad and Android Development (Objective-C, Java)
  - Responsive Design
  - Microsoft .NET Framework, C#, ASP.NET
  - MySQL



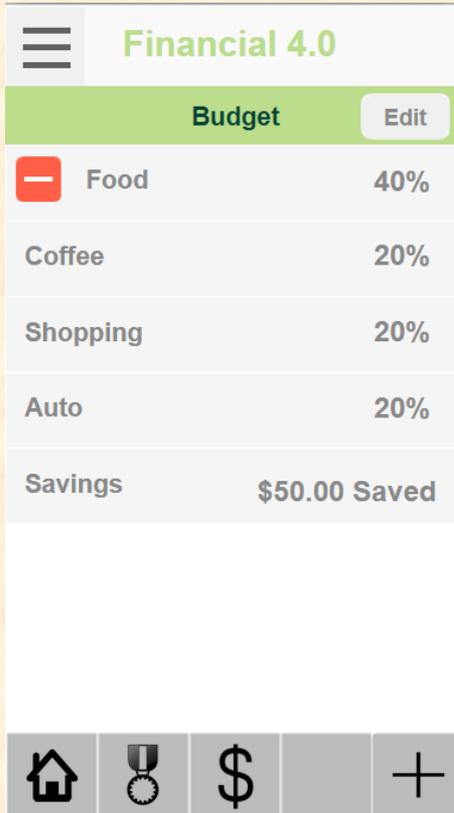


## Team MSUFCU

Josh Cornett, Vinny Sabatini, Ashlee DeLine, Matt LaBrenz, James Estell

# Team MSUFCU Project Plan Presentation

Screen Mockups

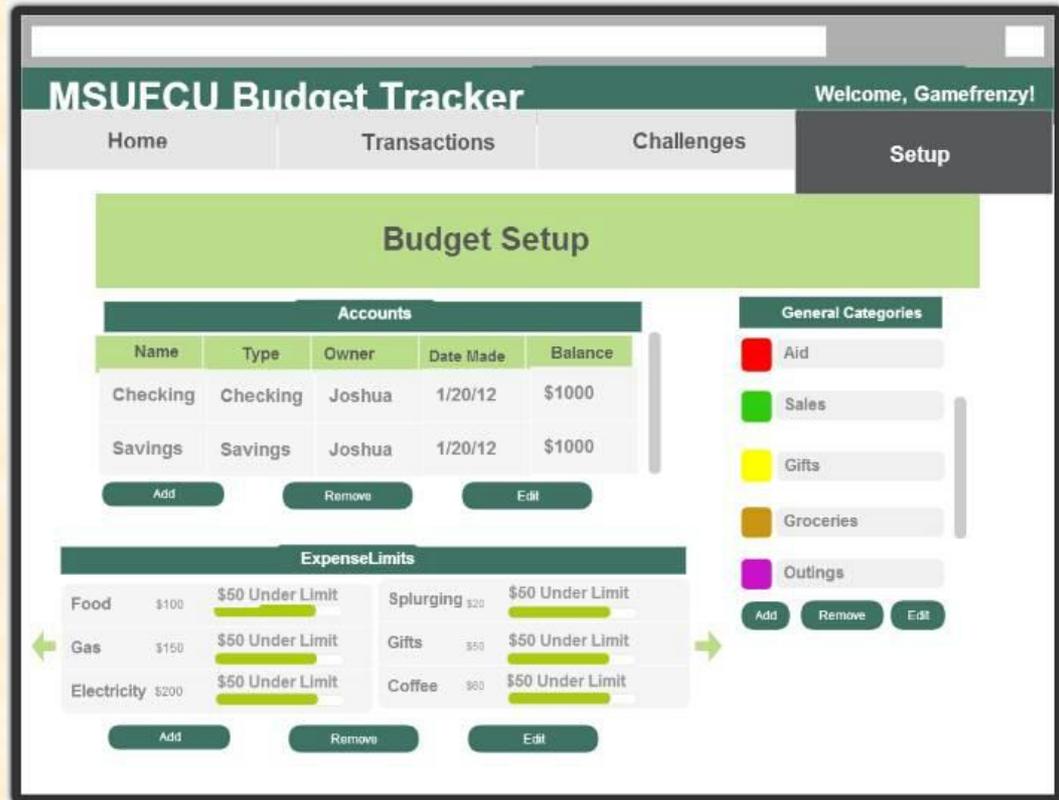


Financial 4.0

**Budget** Edit

- Food 40%
- Coffee 20%
- Shopping 20%
- Auto 20%
- Savings **\$50.00 Saved**

Home | Medal | \$ | +



MSUFCU Budget Tracker Welcome, Gamefrenzy!

Home | Transactions | Challenges | **Setup**

### Budget Setup

Accounts				
Name	Type	Owner	Date Made	Balance
Checking	Checking	Joshua	1/20/12	\$1000
Savings	Savings	Joshua	1/20/12	\$1000

Add Remove Edit

Expense Limits			
Food	\$100	\$50 Under Limit	Splurging \$20
Gas	\$150	\$50 Under Limit	Gifts \$50
Electricity	\$200	\$50 Under Limit	Coffee \$80

Add Remove Edit

General Categories	
<span>Red</span>	Aid
<span>Green</span>	Sales
<span>Yellow</span>	Gifts
<span>Brown</span>	Groceries
<span>Purple</span>	Outings

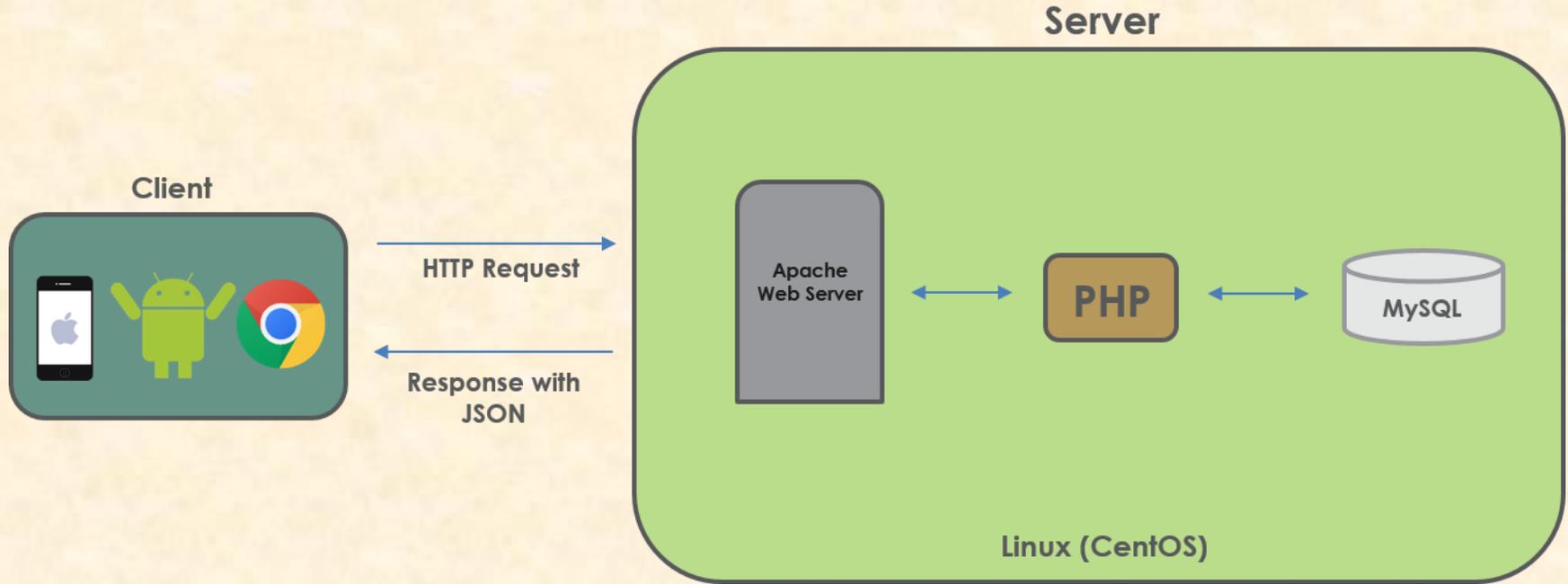
Add Remove Edit



# Team MSUFCU Project Plan Presentation

# Team MSUFCU Project Plan Presentation

## Architecture Diagram

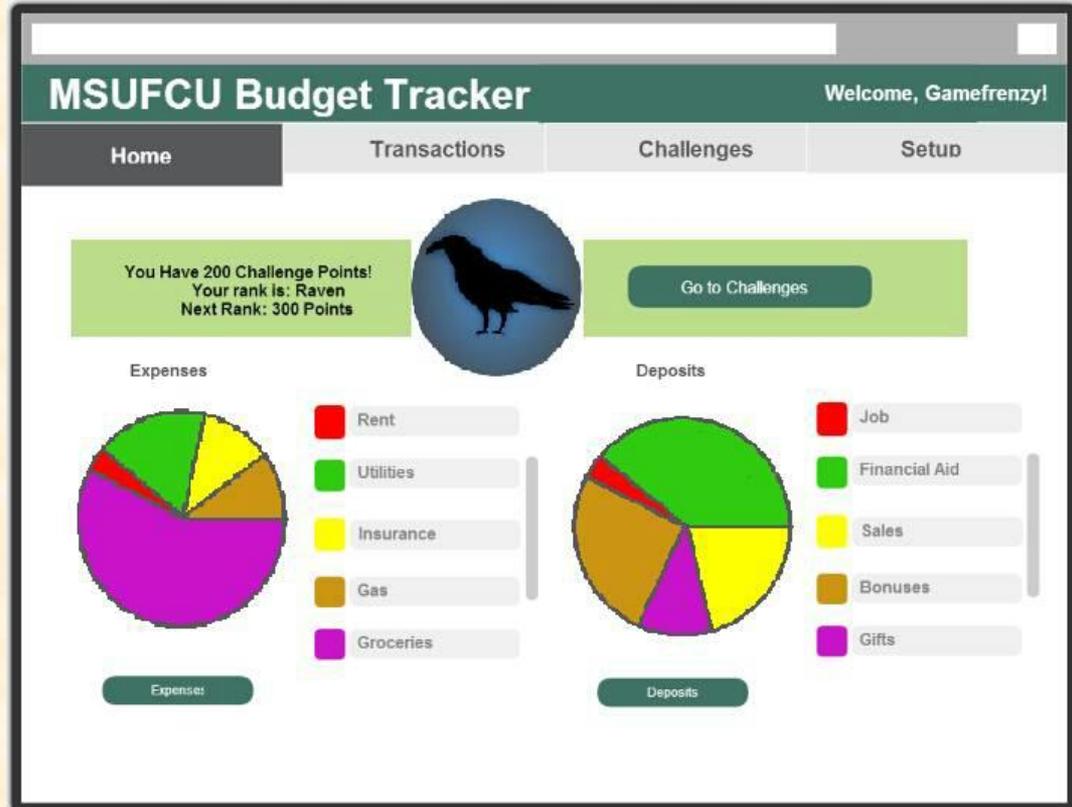
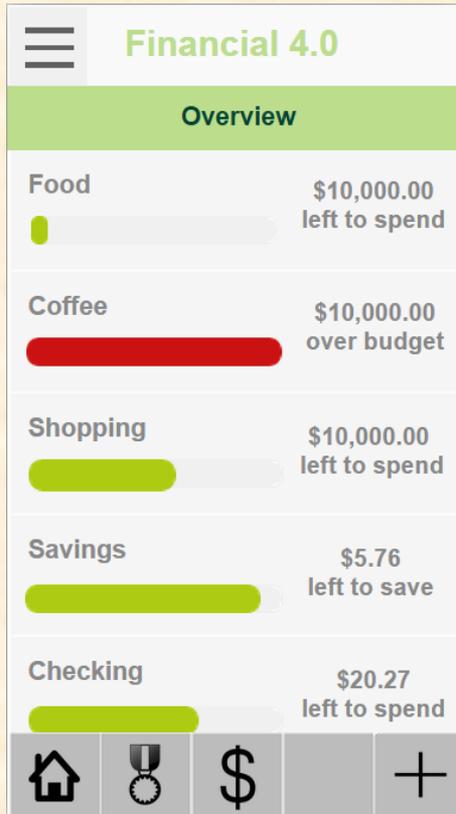




# Team MSUFCU Project Plan Presentation

# Team MSUFCU Project Plan Presentation

Screen Mockups

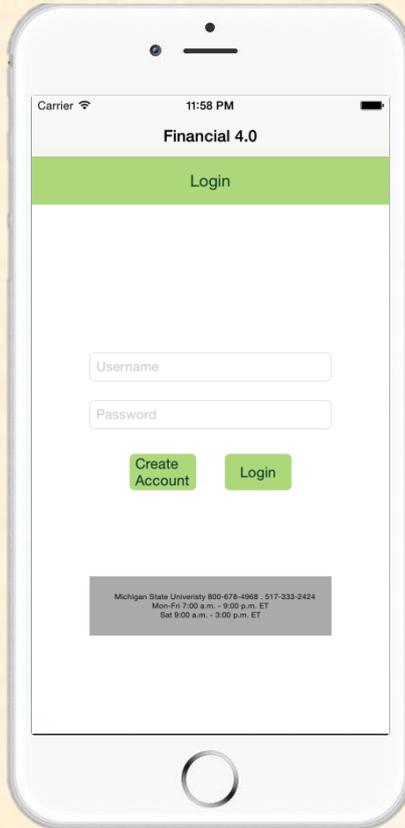




Team MSUFCU  
Alpha Presentation

# Team MSUFCU Alpha Presentation

Login Screen



## MSUFCU Budget Tracker

Please Sign In

Email:

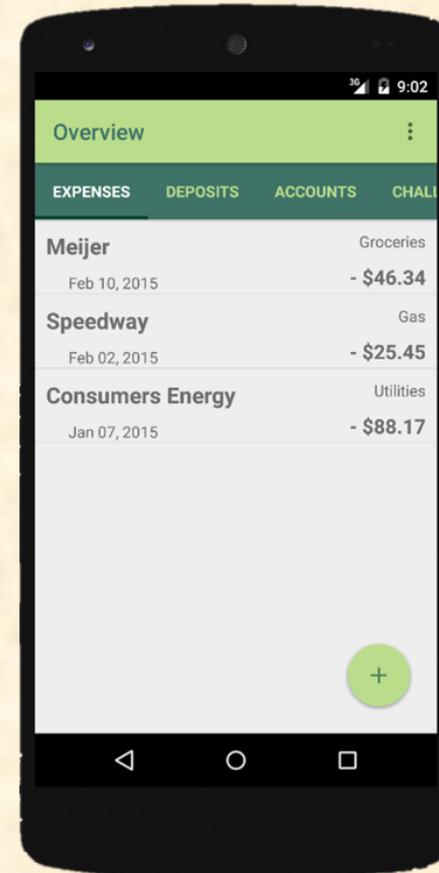
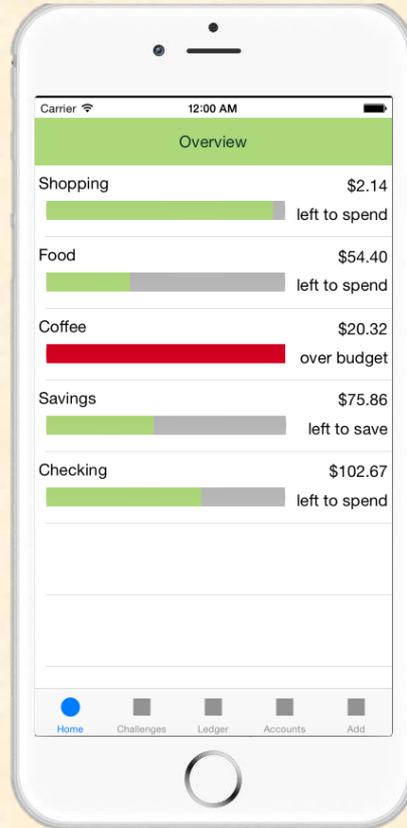
Password:

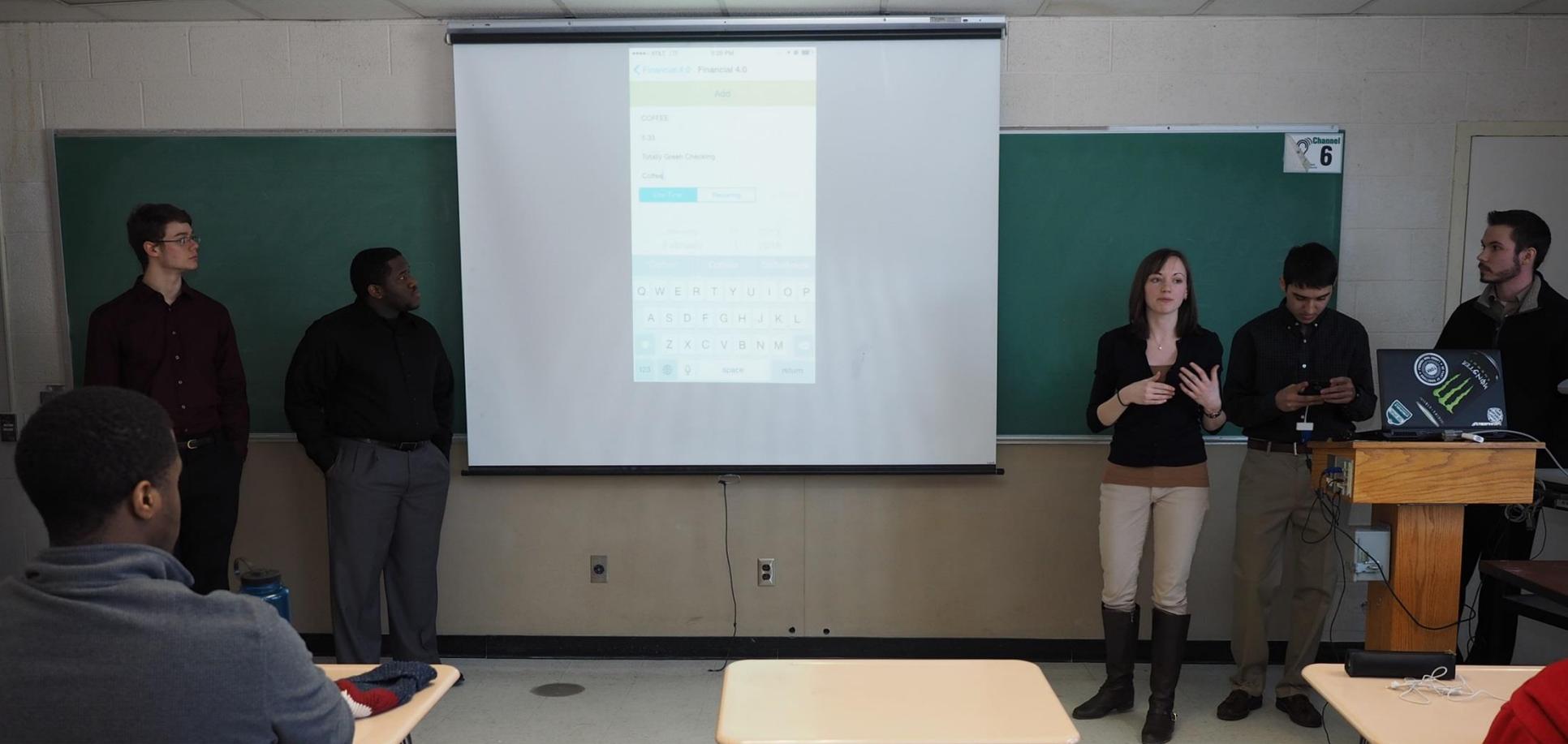
Michigan State 800-678-4968 • 517-333-2424  
Mon-Fri 7:00 a.m. - 9:00 p.m. ET  
Sat 9:00 a.m. - 3:00 p.m. ET



# Team MSUFCU Alpha Presentation

## Overview Screen





# Team MSUFCU Alpha Presentation

# Team MSUFCU Alpha Presentation

Ledger Screen

## MSUFCU Budget Tracker

Welcome sabati15! ▾

HOME TRANSACTIONS

CHALLENGES SETUP

### Transactions

EXPENSES DEPOSITS

Description	Date	Amount	Account	Category	Category Select
Pancheros	2015-01-28	\$8.54	Totally Green Checking	Fast Food	Coffee
Starbucks	2015-01-30	\$3.24	Totally Green Checking	Coffee	Groceries
Meijer	2015-02-01	\$35.76	Totally Green Checking	Groceries	Fast Food
Phone Charger	2015-02-01	\$18.74	Totally Green Checking	Electronics	Electronics
Gas	2015-02-08	\$31.58	Totally Green Checking	Travel	Travel

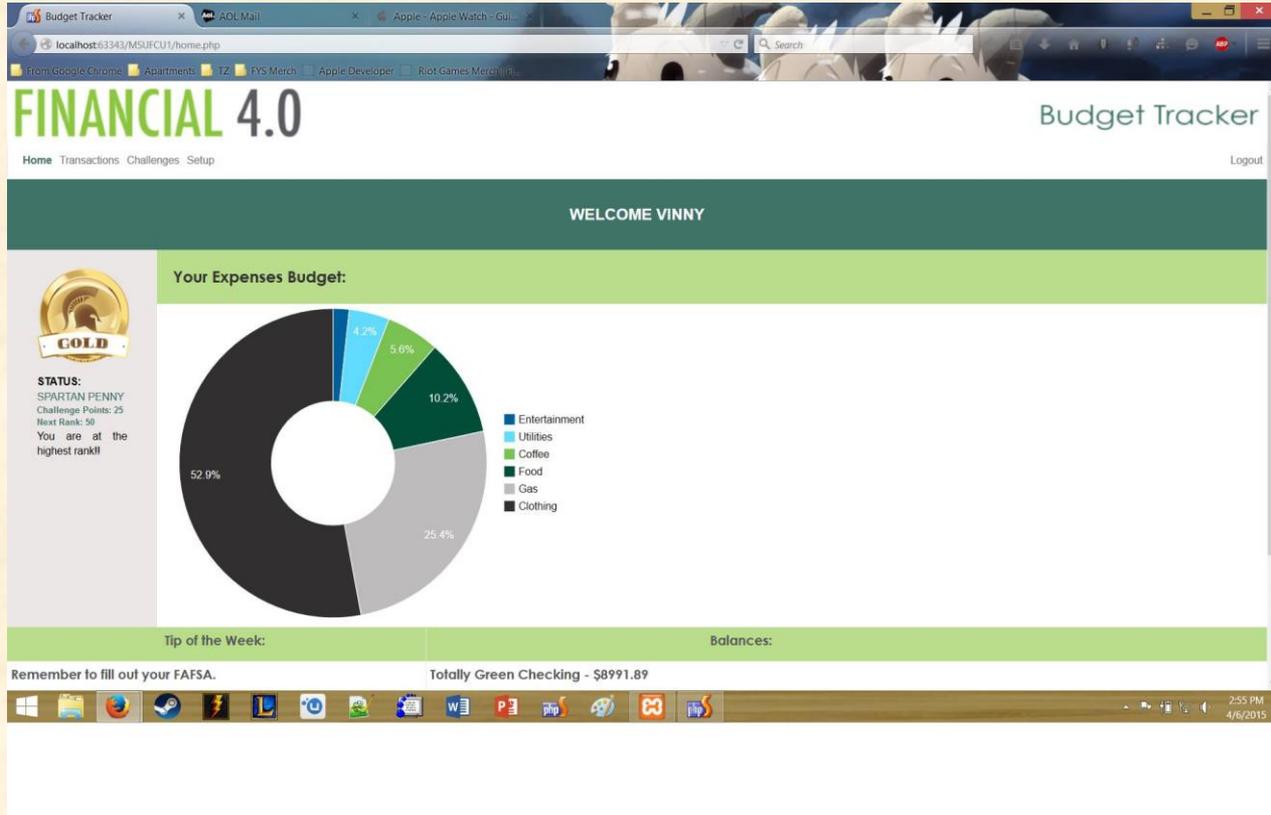
Add Remove Edit Add Remove Edit



# Team MSUFCU Beta Presentation

# Team MSUFCU Beta Presentation

## Web App Home Screen



# Team MSUFCU Beta Presentation

## Mobile Challenge Screens

Carrier 2:58 PM

< Financial 4.0

### Easy on The Gas

Win this challenge by only spending 75% of your monthly gas budget.



**EASY ON THE GAS**

Start Date: 03/20/2015  
End Date: 04/20/2015  
Points Awarded: 15

—  
Your Progress So Far

3G 3:58

### Overview

CHALLENGES DEPOSITS ACCOUNTS CHALLENGES

<h4>52 Week Challenge</h4>  <p>Finishing this challenge will mean you have saved over \$1300!</p> <p><b>Reward: 40 Points</b></p>	<h4>Easy on The Gas</h4>  <p>Find other ways of transportation this month and save your wallet!</p> <p><b>Reward: 15 Points</b></p>
<h4>Caffeine Cutback</h4>  <p>Cutback on your caffeine intake and save your budget!</p> <p><b>Reward: 15 Points</b></p>	<h4>Shopping Freeze</h4>  <p>Resist the shopping temptation while keeping your checking account happy.</p> <p><b>Reward: 20 Points</b></p>

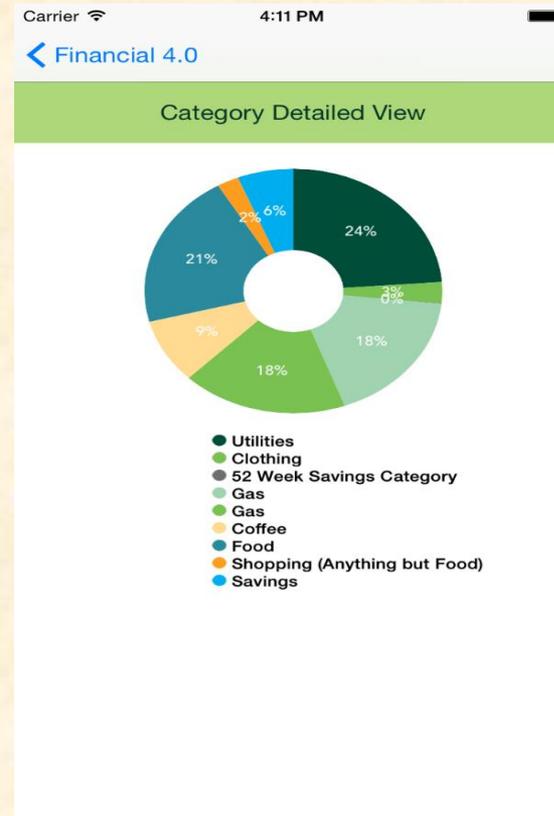
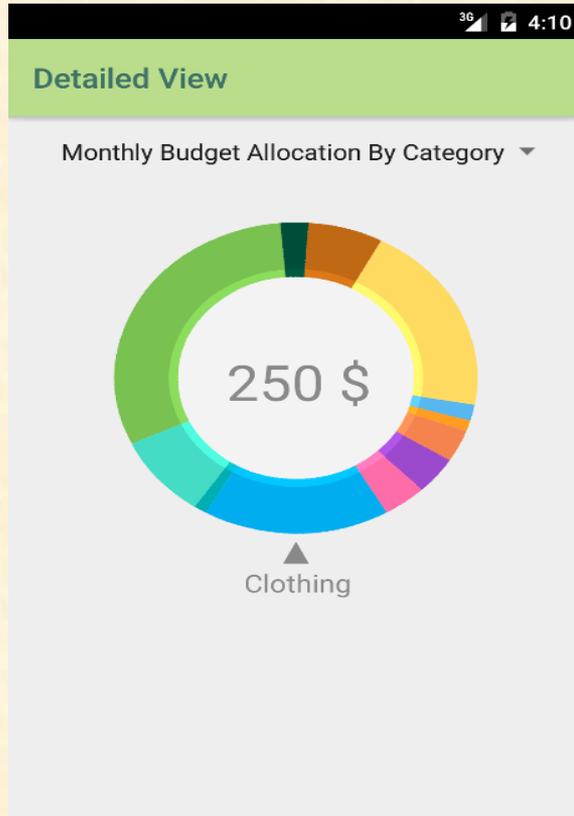




# Team MSUFCU Beta Presentation

# Team MSUFCU Beta Presentation

## Mobile Category Detailed View





### MSU Federal Credit Union Financial 4.0 Interactive Budgeting Tool

Microsoft's new operating system, Windows 8, is a game-changer for mobile devices. It's designed to be used on a variety of devices, from desktop computers to smartphones. This means that you can now use your smartphone to access your budgeting tool, making it easier than ever to manage your finances on the go.



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Caitlin Thomas, Michigan  
Vince Kubiak  
Caitlin Thomas  
Ashley Sackel  
Kaitlin Thomas  
Paul Lambert  
Kaitlin Thomas  
James Egan  
Kaitlin Thomas

**MSUFCU**  
Kaitlin Thomas  
Kaitlin Thomas

# Team MSUFCU Design Day

**MICHIGAN STATE**  
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# The Capstone Experience

## Team Quicken Loans

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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*Get started, and get saving*

Refinance

Buy a Home



# Team Quicken Loans Project Overview

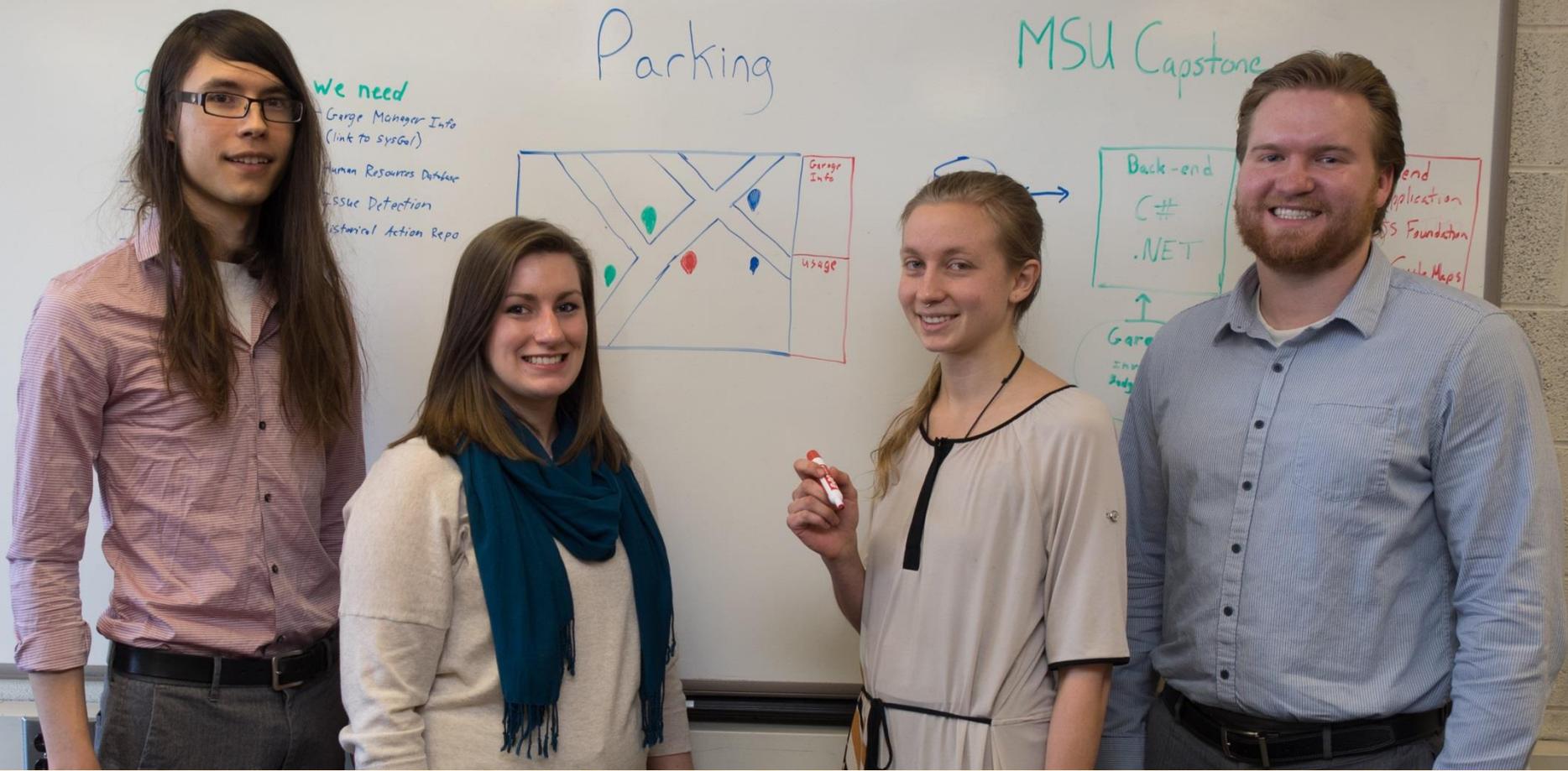
## Parking Allocation and Expense Reconciliation

- Functionalities
  - Manage Parking Garage Spaces
  - For 8,000 Quicken Loans Team Members
  - In Multiple Parking Garages
  - In Downtown Detroit
- Features
  - Allocate Parking Spaces to Team Members
  - Process Billing Invoices Electronically
  - Provide Parking Team Dashboard
    - Visualize Parking Garage Space Assignments
    - Monitor Parking Garage Usage
    - Push Capacity-Reached Notifications
    - Reconcile Parking Usage with Billing
  - Integrate into Quicken Loans' Backend
- Technologies
  - Web Development (CSS, HTML, PHP, JavaScript)
  - Microsoft SQL Server
  - Microsoft Visual Studio
  - Microsoft Active Directory



**Quicken Loans<sup>®</sup>**  
Engineered to **Amaze<sup>™</sup>**  
Detroit, Michigan



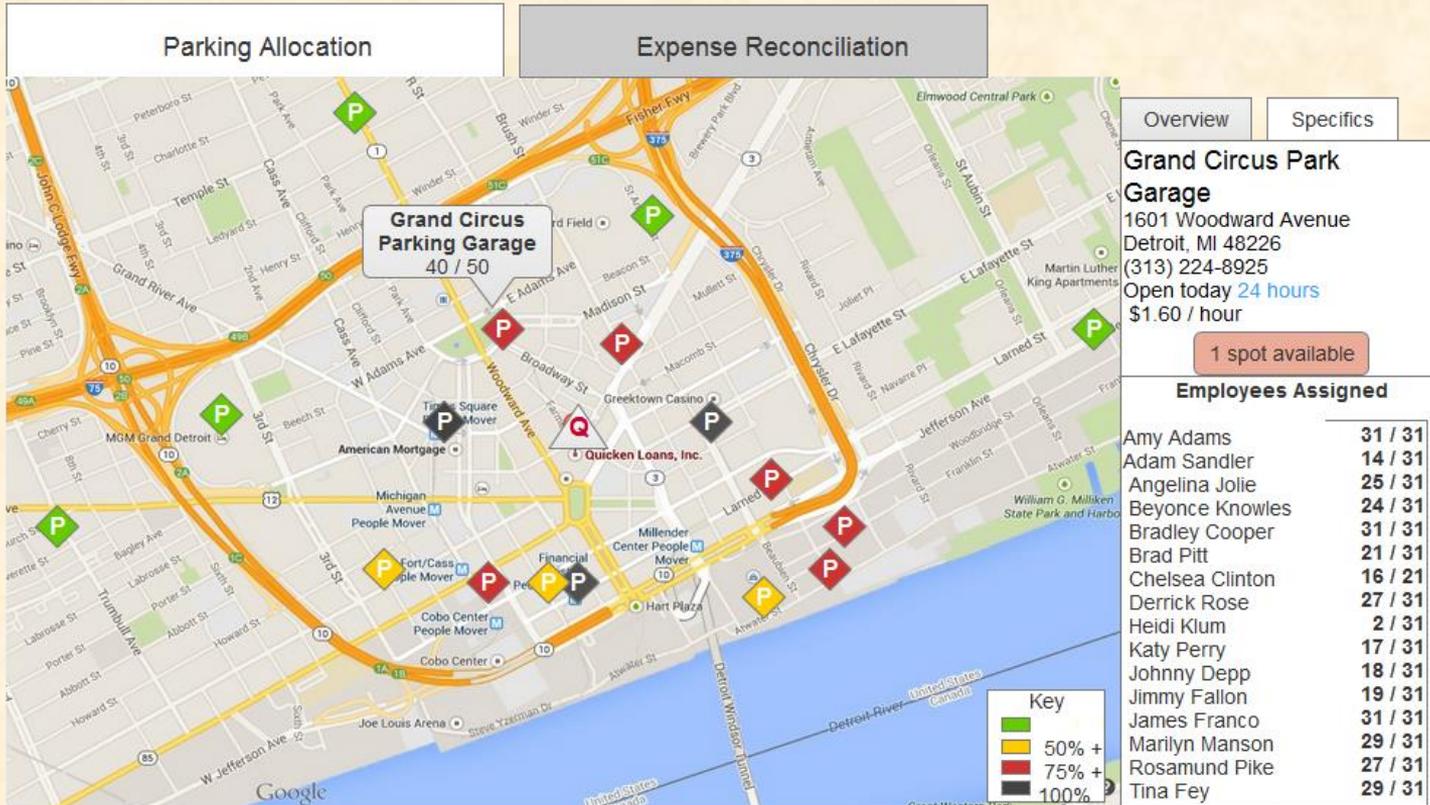


## Team Quicken Loans

Tim Hasselbeck, Elizabeth Florian, Chelsea Bridson, Matt Soulliere

# Team Quicken Loans Project Plan Presentation

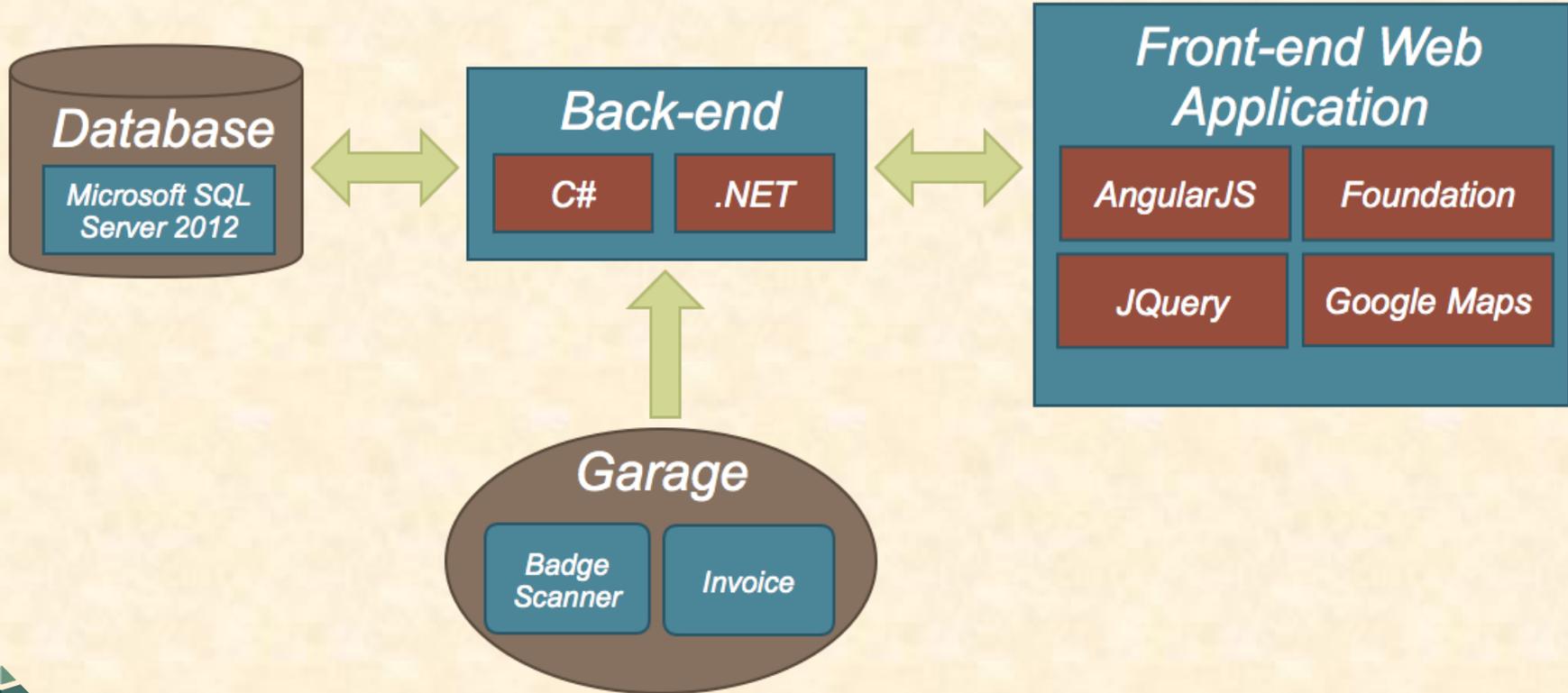
Screen Mockup





# Team Quicken Loans Project Plan Presentation

Architecture Diagram

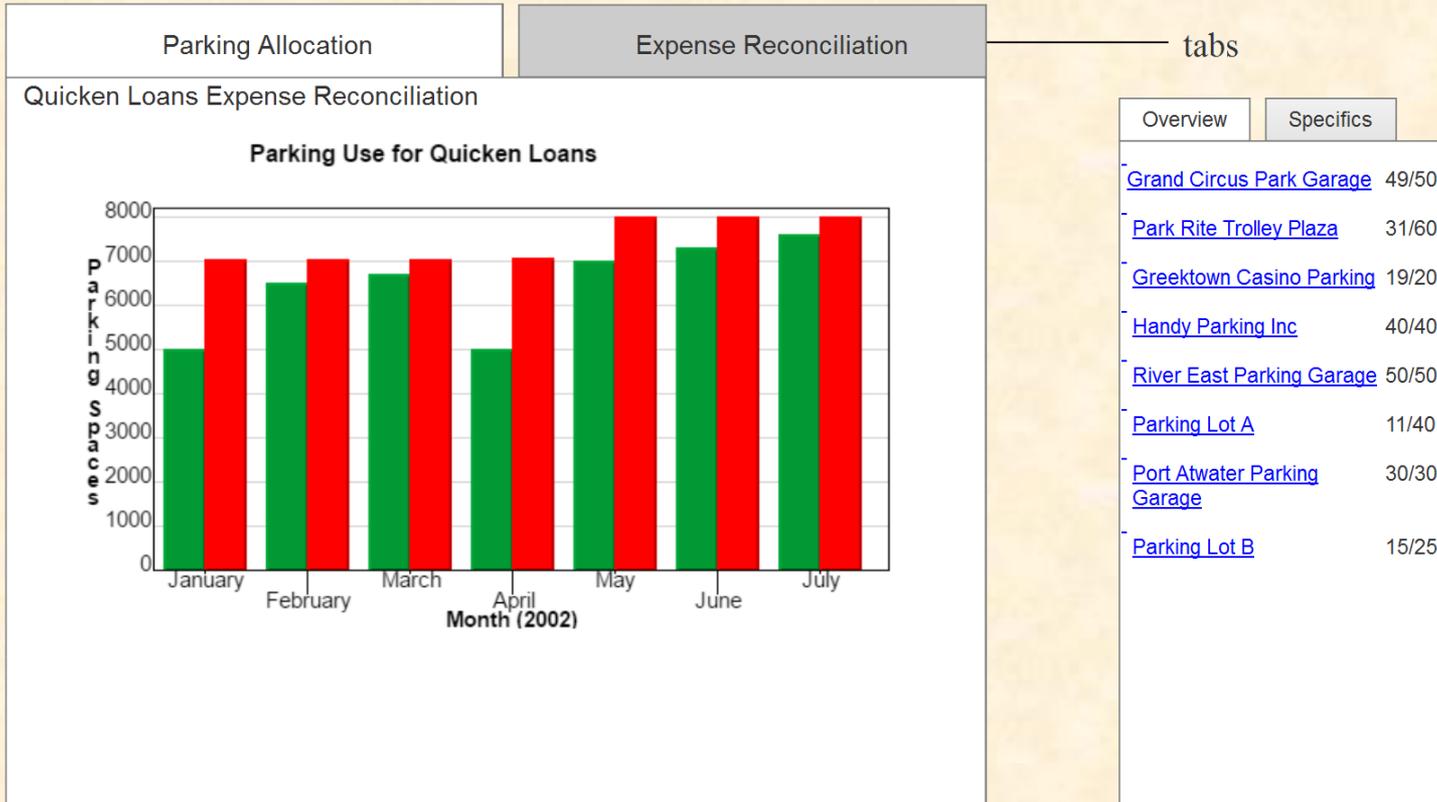




Team Quicken Loans  
Project Plan Presentation

# Team Quicken Loans Project Plan Presentation

Screen Mockup

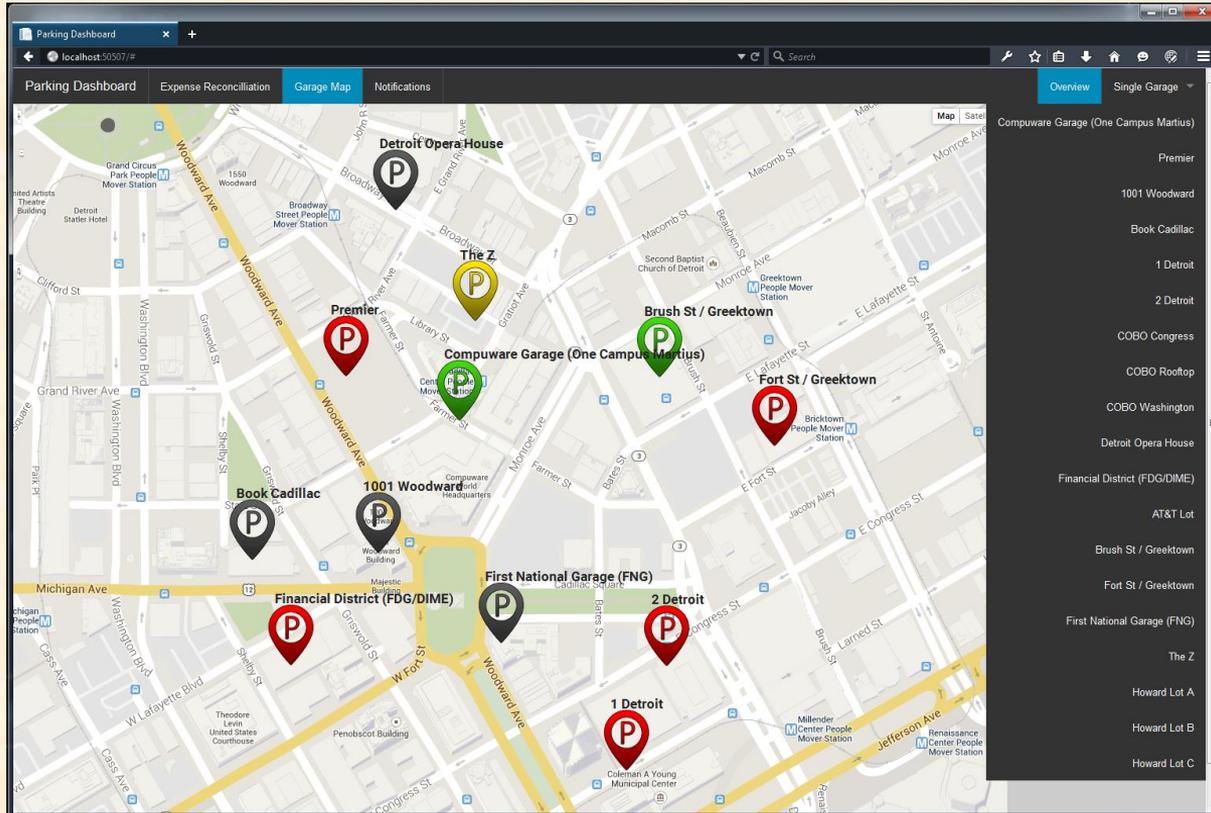




# Team Quicken Loans Alpha Presentation

# Team Quicken Loans Alpha Presentation

## Garage Map



# Team Quicken Loans Alpha Presentation

## Expense Reconciliation

The screenshot displays a web application interface for 'Expense Reconciliation'. The main content area features a table with three columns: 'Garages', 'Issue', and 'Date'. The table lists various garage names and their associated issues, such as 'Failure to De-allocate' and 'Un-allocated Team Member', along with dates from 10/28/2010 to 10/29/2010. A sidebar on the right provides detailed metrics for a selected garage, 'Compuware Garage (One Campus Martius)', including Capacity, Leased Spaces, Team-Member Spaces, Required Buffer Size, Average Cost Per Space, and Average Transient Sale Price. The interface includes a navigation menu at the top with options like 'Parking Dashboard', 'Expense Reconciliation', 'Garage Map', and 'Notifications'. A search bar and various utility icons are also visible in the top right corner.

Garages	Issue	Date
COBO Congress	Failure to De-allocate	10/28/2010
N/A	Un-allocated Team Member	10/28/2010
Detroit Opera House	Out-Dated Badge ID	10/29/2010
Book Cadillac   AT&T Lot	Duplicate Allocation	10/28/2010
1001 Woodward	Failure to De-allocate	10/28/2010
Howard Lot A	Invalid Allocation	10/28/2010
Premier	Invalid Allocation	10/28/2010
COBO Rooftop	Invalid Allocation	10/28/2010
2 Detroit	Failure to De-allocate	10/28/2010
Howard Lot C	Invalid Allocation	10/28/2010
COBO Congress	Failure to De-allocate	10/28/2010
N/A	Un-allocated Team Member	10/28/2010
Detroit Opera House	Out-Dated Badge ID	10/29/2010
Book Cadillac   AT&T Lot	Duplicate Allocation	10/28/2010

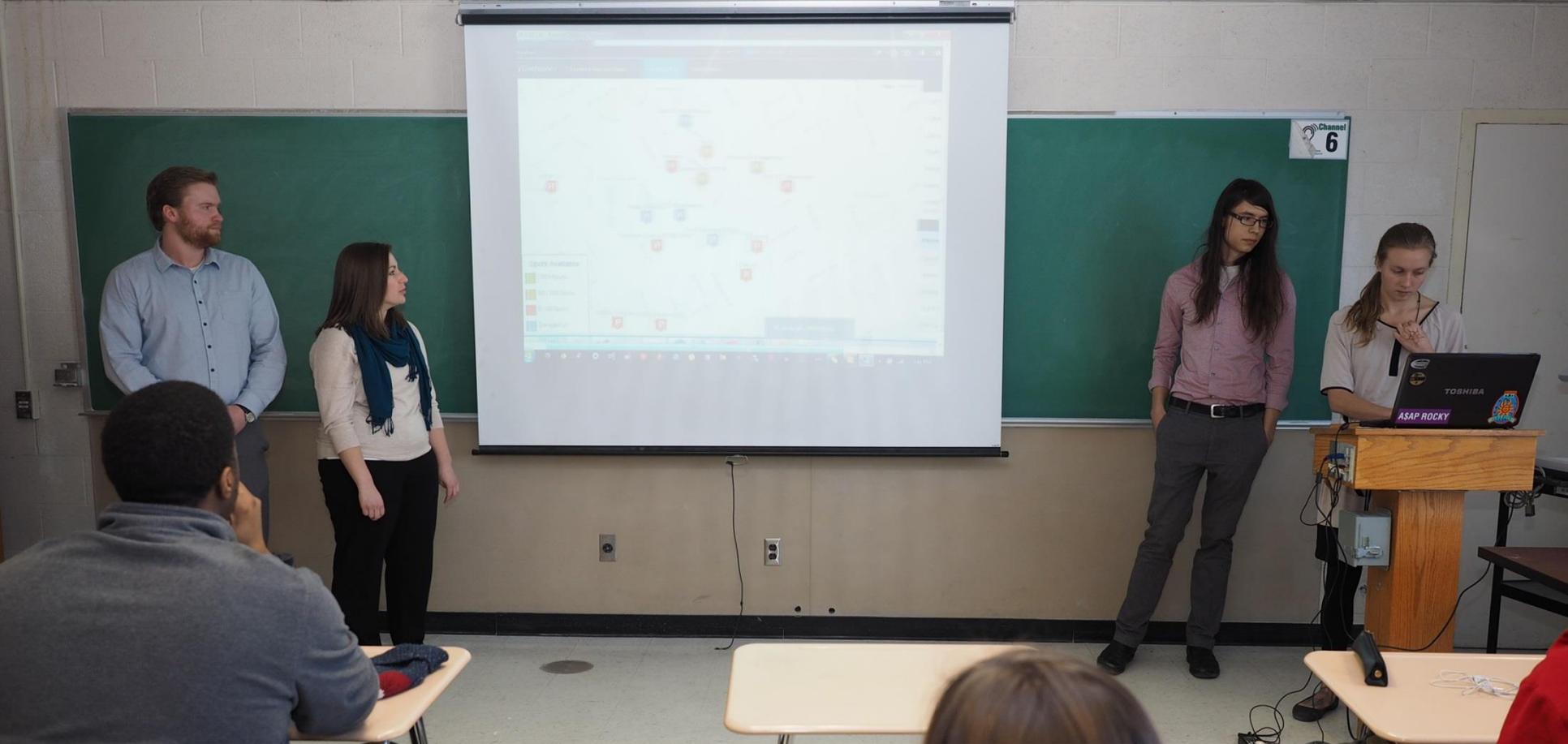
**Compuware Garage (One Campus Martius) Metrics:**

- Cost Per Month:
- Capacity: Premier
- Leased Spaces: 1001 Woodward
- Team-Member Spaces: Book Cadillac
- Required Buffer Size: 1 Detroit
- Average Cost Per Space: 2 Detroit
- Average Transient Sale Price:

**Garage List (from sidebar):**

- Compuware Garage (One Campus Martius)
- Premier
- 1001 Woodward
- Book Cadillac
- 1 Detroit
- 2 Detroit
- COBO Congress
- COBO Rooftop
- COBO Washington
- Detroit Opera House
- Financial District (FDG/DIME)
- AT&T Lot
- Brush St / Greentown
- Fort St / Greentown
- First National Garage (FNG)
- The Z
- Howard Lot A





Team Quicken Loans  
Alpha Presentation

# Team Quicken Loans Alpha Presentation

## Invoice Upload

Failure to De-allocate 10/28/2010 Add Invoice

### Invoice Submission

Invoice Number:

Garage:

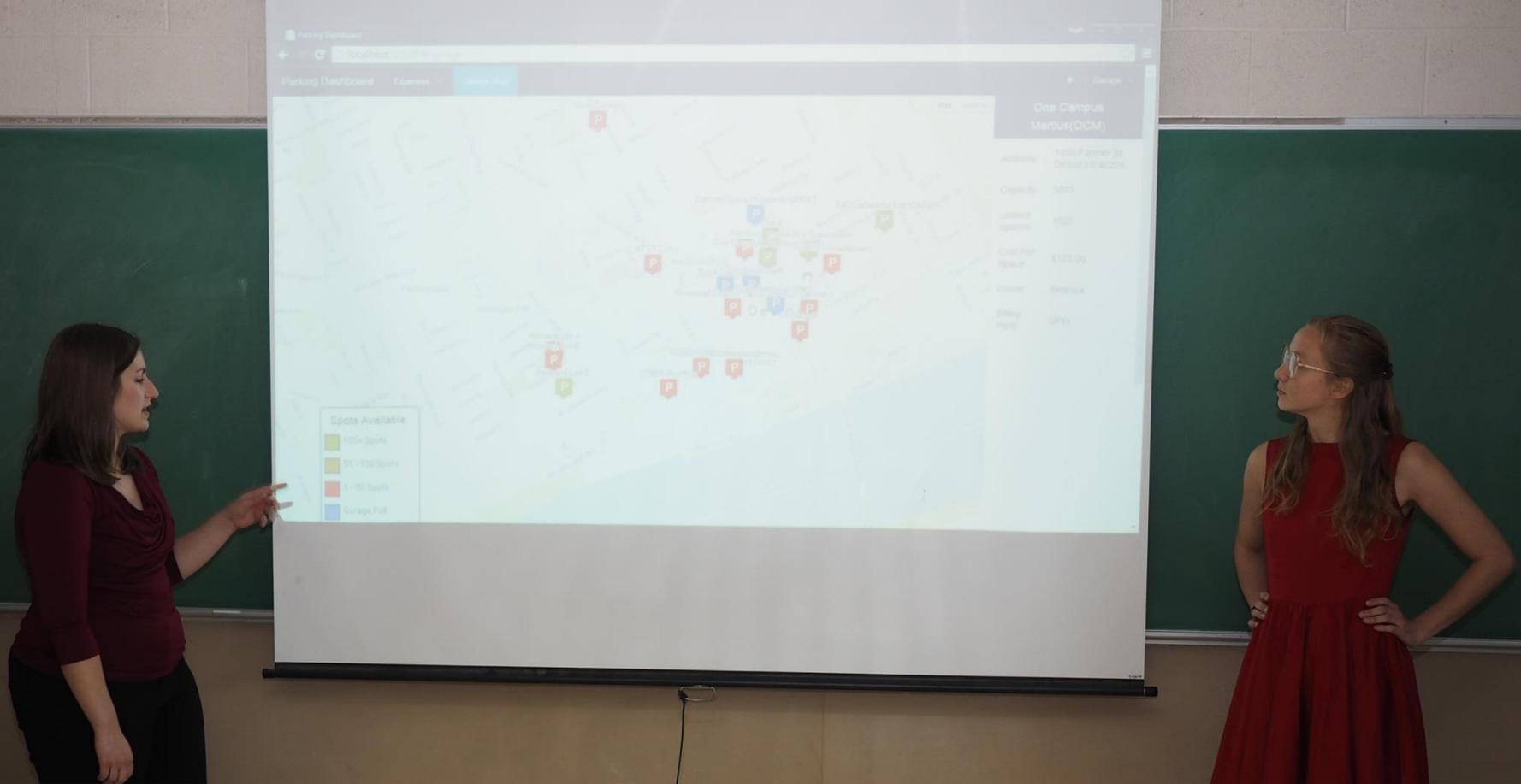
Amount Billed:

Date Received:  Number of Leased Spots:

Billing Start Date:  Number of Validations:

UPM-QL @ 1001WW 122014.xls





# Team Quicken Loans Beta Presentation

# Team Quicken Loans Beta Presentation

## Garage Map

The screenshot displays a parking management dashboard. At the top, there are navigation tabs: "Parking Dashboard", "Expenses", "Garages", "Notifications", and "Garage". The main area is a map of Detroit, Michigan, with various parking spots marked by colored icons. A legend in the bottom-left corner, titled "Spots Available", defines the icons: a green square for "100+ Spots", a yellow square for "51 - 100 Spots", a red square for "1 - 50 Spots", and a blue square for "Garage Full".

On the right side, a detailed view for the "One Campus Martius(OCM)" garage is shown. It includes the following information:

- Address: 1188 Farmer St, Detroit MI 48226
- Capacity: 3085
- Leased Spaces: 1825
- Cost Per Space: (blank)
- Owner: Bedrock
- Billing Party: UPM
- Garage Manager ID: 1

Below this information is a "Parking Usage" table:

Name	Usage
Carson Alexander	0/31
Meredith Alonso	0/31
Arturo Anand	0/31
Gytis Barzdukas	0/31
Yan Li	0/31
Peggy Justice	0/31



# Team Quicken Loans Beta Presentation

## Upload an Invoice

Parking Dashboard Expenses ▾ Garages ▾ Notifications

[Upload History](#)  
[Upload an Invoice](#)  
[Upload a Parker Report](#)  
[Upload a Card Activity Report](#)  
[Detected Issues](#)

### Upload an Invoice

This form allows you to upload an invoice along with one or more active parker reports. This data will be ingested into the database and can be used in the Expense Reconciliation Tool to identify discrepancies in the active parker reports from Garage managers.

#### Invoice Meta-Data

Invoice Number: <input type="text"/>	Amount Billed: <input type="text"/>
Number of Leased Spots: <input type="text"/>	Number of Validations: <input type="text" value="optional"/>
Month/Year of Billing <input type="text" value="required"/>	Date Received: <input type="text" value="optional"/>

#### Active Parker Reports + -

Garage:





# Team Quicken Loans Beta Presentation

# Team Quicken Loans Beta Presentation

## Identify Discrepancies

Parking Dashboard Expenses Garages Notifications

### Identify Discrepancies

This page identifies errors in invoices for a Garage. Here you will select a Garage along with the Month and Year to check for errors. The system will check the database for errors and generate a report to use.

Month/Year:

Garage:

#### Detected Issues for 1001 Woodward Garage

Name	BadgeID	Action	Date
Louise [redacted]	22764	Remove	
Ryan [redacted]	21747	Remove	
Diana [redacted]	303360	Remove	
Melissa [redacted]	42784	Remove	
James [redacted]	304387	Remove	
Kevin [redacted]	35802	Remove	
John [redacted]	21174	Remove	
Dawn [redacted]	40171	Remove	
Sean [redacted]	45573	Remove	





Team Quicken Loans  
Design Day

MICHIGAN STATE  

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# The Capstone Experience

## Team Spectrum Health

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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

**SPECTRUM HEALTH**





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Who We Are

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## Soaring to New Heights

New look for Helen DeVos Children's Hospital (HDVCH) combines the excellence of Spectrum Health with care that is uniquely for kids



SPECTRUM HEALTH  
*Helen DeVos*  
children's hospital



### MyHealth

Manage your health information from a secure online account.

**Enroll**

**Sign-in**

[Looking for MySpectrum?](#)

### Locations



Children's Hospital



Flu Vaccinations

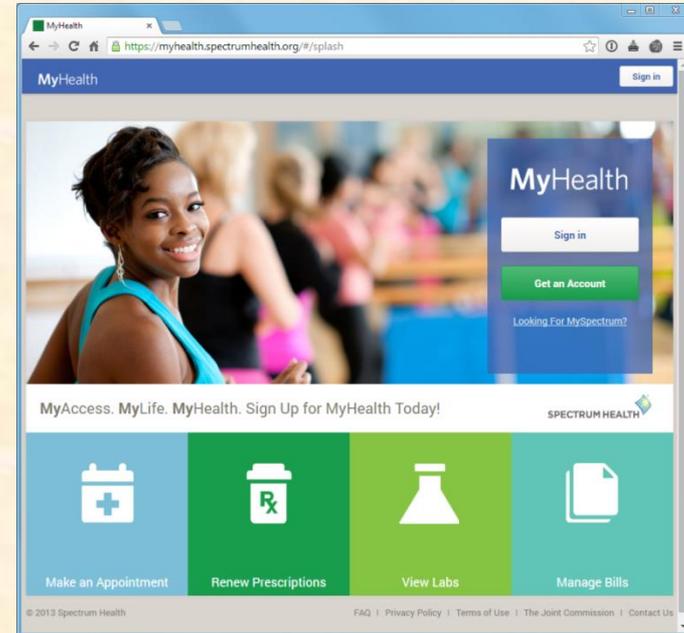


Cancer Genetics

# Team Spectrum Health Project Overview

## Mobile Appointment Check-In and Payment

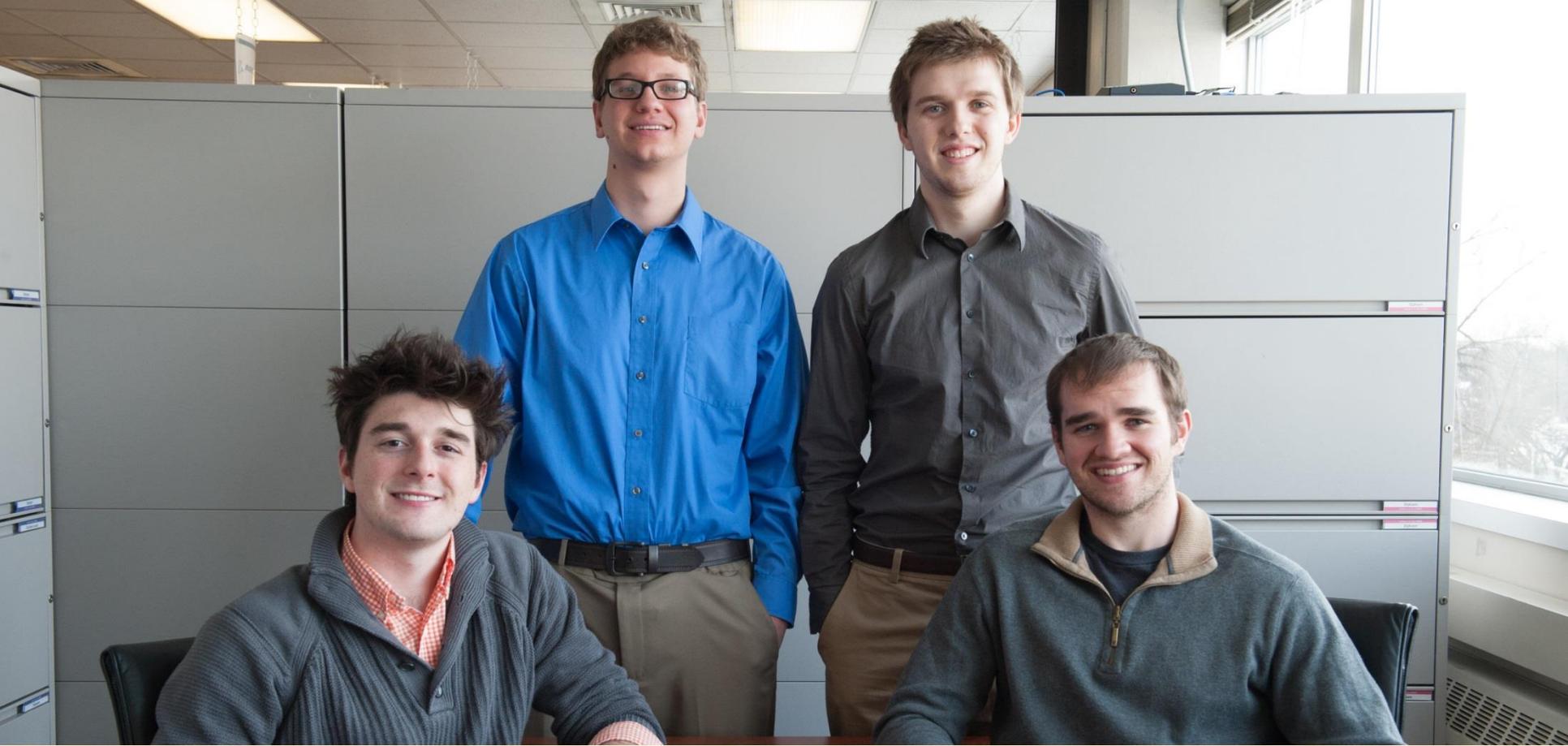
- Functionalities
  - Enable Spectrum Health Patient
  - Check-In For Appointment and Pay For Service
  - Using Mobile Device
- Features
  - Check In Patient
    - When Within Certain Distance of Facility
    - Display Appointment Details
  - Accept Payment
    - Support Variety of Payment Options
    - Link Patient Payment Accounts with [MyHealth](#) Account
  - Upload Documents
    - Driver's License
    - Insurance Card
    - Payment Information Like Photo of Credit Card or Check
  - Follow Style of Spectrum's [MyHealth](#) Site
- Technologies
  - Web Development (CSS, HTML, PHP, JavaScript)
  - Google AngularJS
  - RedHat Linux and JBoss
  - Microsoft ASP.net
  - Microsoft Internet Information Services (IIS) 7.0
  - REST and SOAP Web Service Layers
  - iBeacon



**SPECTRUM HEALTH**

Grand Rapids, Michigan

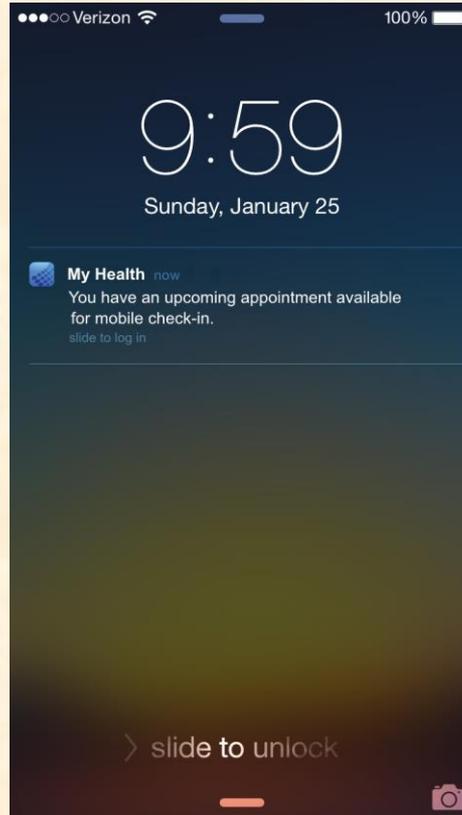




**Team Spectrum Health**  
Joe Reeder, J.J. Peter, Eric Drews, Justin Rush

# Team Spectrum Health Project Plan Presentation

Screen Mockup





## Screen Mockup: Validate Information

Personal Information

Name: John Doe

Address: 123 Main St  
Houston, TX 77001

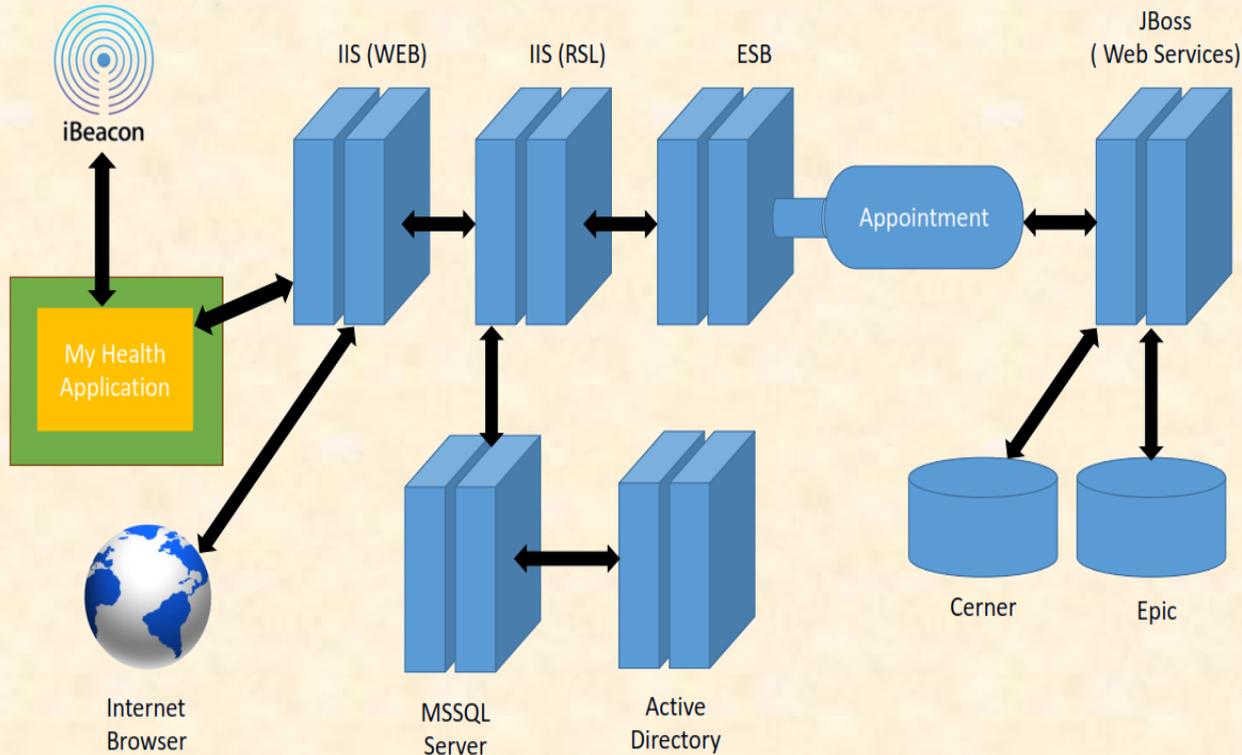
Is your information correct?

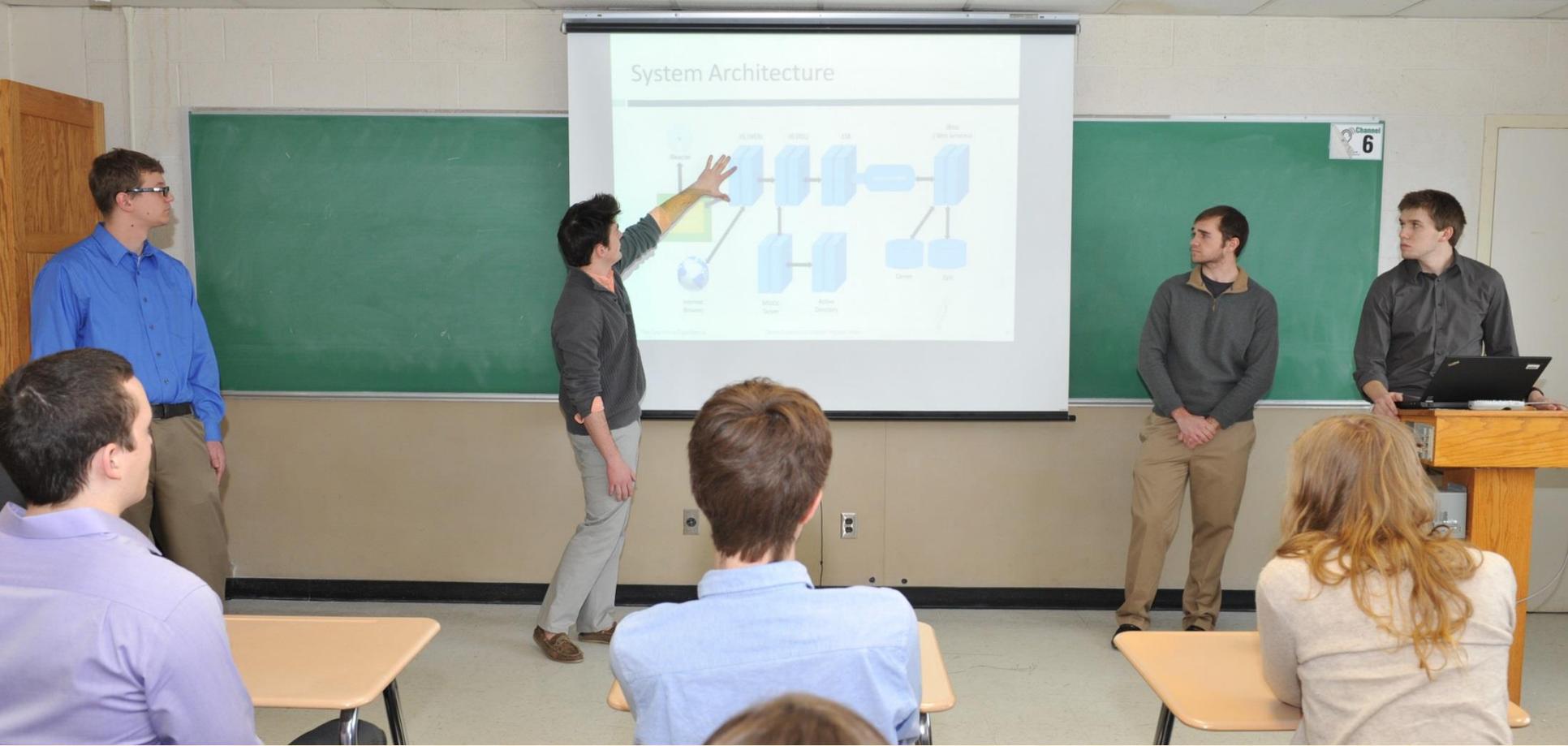
No  Yes

Team Spectrum Health  
Project Plan Presentation

# Team Spectrum Health Project Plan Presentation

## Architecture Diagram





# Team Spectrum Health Project Plan Presentation

# Team Spectrum Health Project Plan Presentation

Screen Mockups

A mobile application screen mockup for the 'Personal Information' form. The header includes the 'SPECTRUM HEALTH' logo, a user profile icon for 'John', and a navigation bar with tabs for 'Personal Information', 'Insurance', 'Co-Payment', and 'Checked In'. The form displays the following information: Name: John Doe; Address: 123 Nowhere Dr., Middleof, NW 99999. Below the information, it asks 'Is this information correct?' and provides 'Edit' and 'Yes' buttons. At the bottom, there are 'Back', 'Cancel', and 'Next' navigation buttons. The footer contains the copyright notice '© 2015 Spectrum Health'.

A mobile application screen mockup for the 'Personal Information' form, identical to the one on the left. It features the same header, navigation, and form content: Name: John Doe; Address: 123 Nowhere Dr., Middleof, NW 99999. The confirmation question 'Is this information correct?' is followed by 'Edit' and 'Yes' buttons. The bottom navigation includes 'Back', 'Cancel', and 'Next' buttons. The footer shows '© 2015 Spectrum Health'.

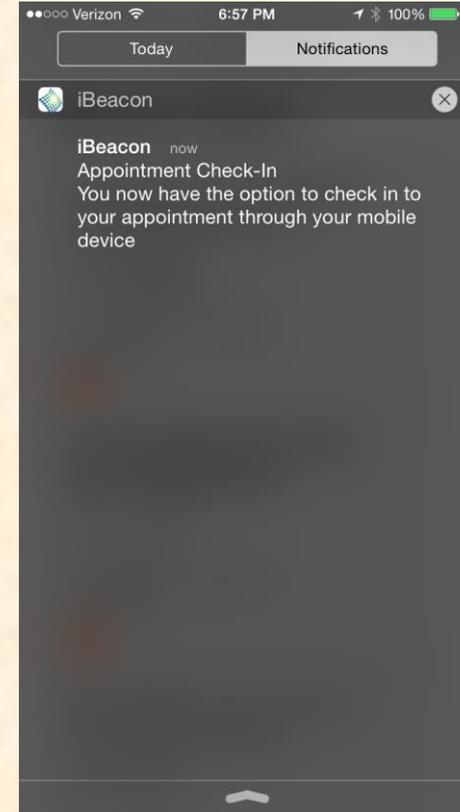
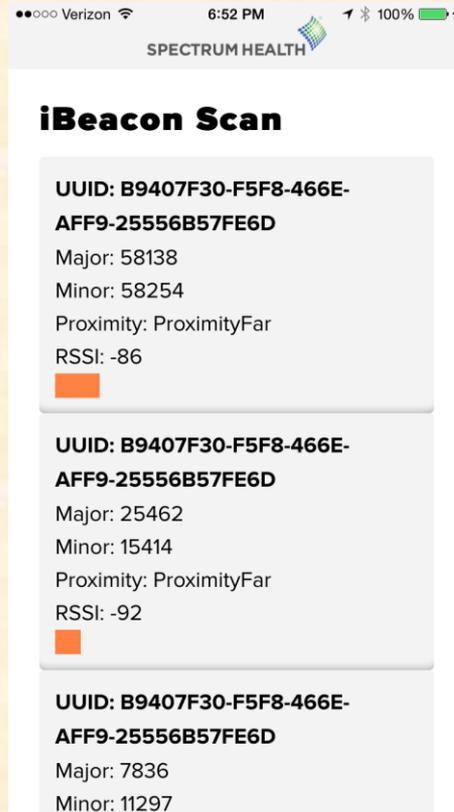




# Team Spectrum Health Alpha Presentation

# Team Spectrum Health Alpha Presentation

## iBeacon Scan and Notification



# Team Spectrum Health Alpha Presentation

Check-In

 SPECTRUM HEALTH

[< Back](#)

Mobile Check-In

Personal **Contact** Insurance Copayment Review

**EMERGENCY CONTACT INFORMATION**

FIRST NAME

LAST NAME

RELATIONSHIP TO YOU

© 2014 Spectrum Health

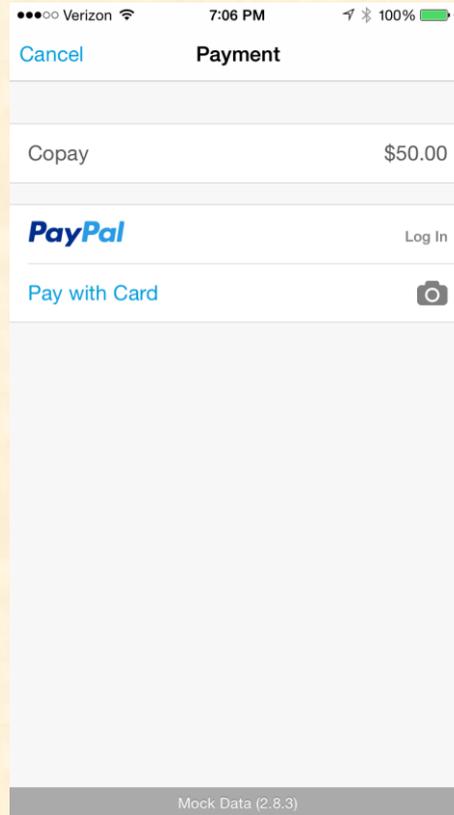




# Team Spectrum Health Alpha Presentation

# Team Spectrum Health Alpha Presentation

Payment

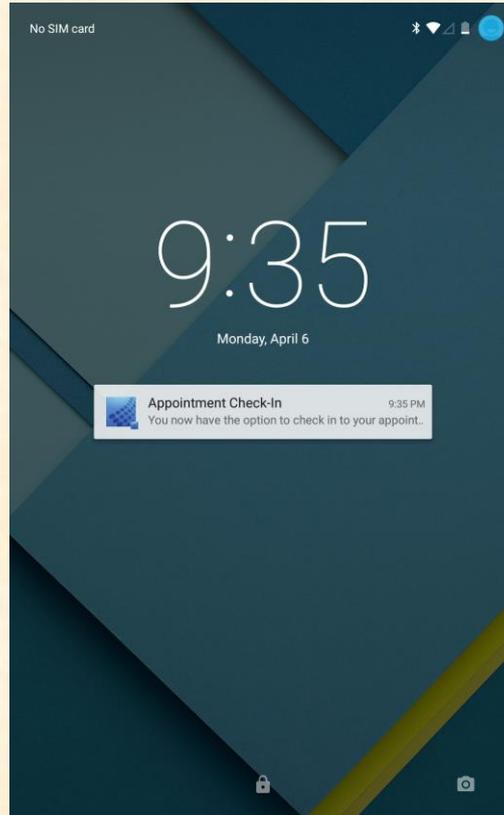




# Team Spectrum Health Beta Presentation

# Team Spectrum Health Beta Presentation

## Check-In Notification



# Team Spectrum Health Beta Presentation

## Verify Personal Information

© 2014 Spectrum Health

SPECTRUM HEALTH

< Back

Mobile Check-In

Personal Contact Insurance Copayment Review

IS THIS INFORMATION CORRECT?

FIRST NAME RICK

LAST NAME JOHNSON

DATE OF BIRTH 5/8/07 (MM/DD/YYYY)

No, Back Yes, Next

Detailed description: This is a mobile application screenshot for 'SPECTRUM HEALTH'. The screen is titled 'Mobile Check-In' and shows a progress bar with five steps: 'Personal' (active), 'Contact', 'Insurance', 'Copayment', and 'Review'. The main heading is 'IS THIS INFORMATION CORRECT?'. Below this, there are three input fields: 'FIRST NAME' with the value 'RICK', 'LAST NAME' with 'JOHNSON', and 'DATE OF BIRTH' with '5/8/07' and a '(MM/DD/YYYY)' label. At the bottom, there are two buttons: 'No, Back' and 'Yes, Next'.

© 2014 Spectrum Health

SPECTRUM HEALTH

< Back

Mobile Check-In

Personal Contact Insurance Copayment Review

ENTER REVISED INFORMATION

STREET ADDRESS 2001 MAIN ST

STREET ADDRESS 2

CITY WANKERSHIM CITY

STATE LA

ZIPCODE 99876

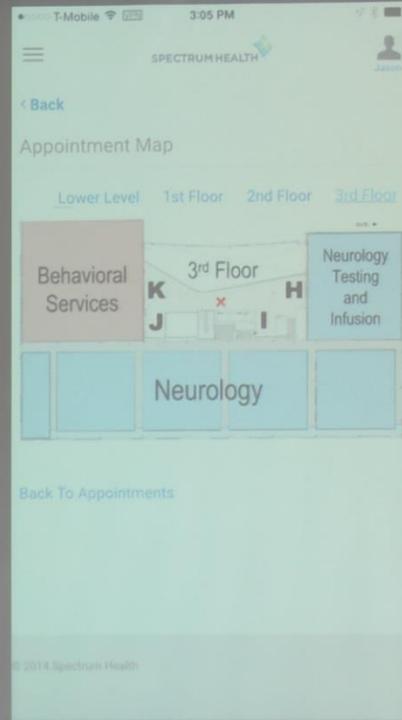
HOME PHONE (248) 743-1278

CELL PHONE (248) 709-8907

EMAIL JOHNSONNR@MSU.EDU

Cancel Submit Changes

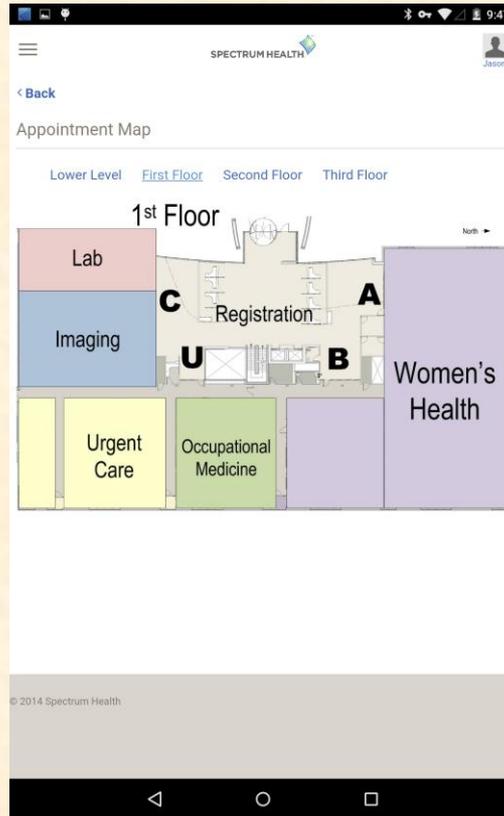
Detailed description: This is a mobile application screenshot for 'SPECTRUM HEALTH'. The screen is titled 'Mobile Check-In' and shows a progress bar with five steps: 'Personal' (active), 'Contact', 'Insurance', 'Copayment', and 'Review'. The main heading is 'ENTER REVISED INFORMATION'. Below this, there are several input fields: 'STREET ADDRESS' with '2001 MAIN ST', 'STREET ADDRESS 2' (empty), 'CITY' with 'WANKERSHIM CITY', 'STATE' with 'LA', 'ZIPCODE' with '99876', 'HOME PHONE' with '(248) 743-1278', 'CELL PHONE' with '(248) 709-8907', and 'EMAIL' with 'JOHNSONNR@MSU.EDU'. At the bottom, there are two buttons: 'Cancel' and 'Submit Changes'.

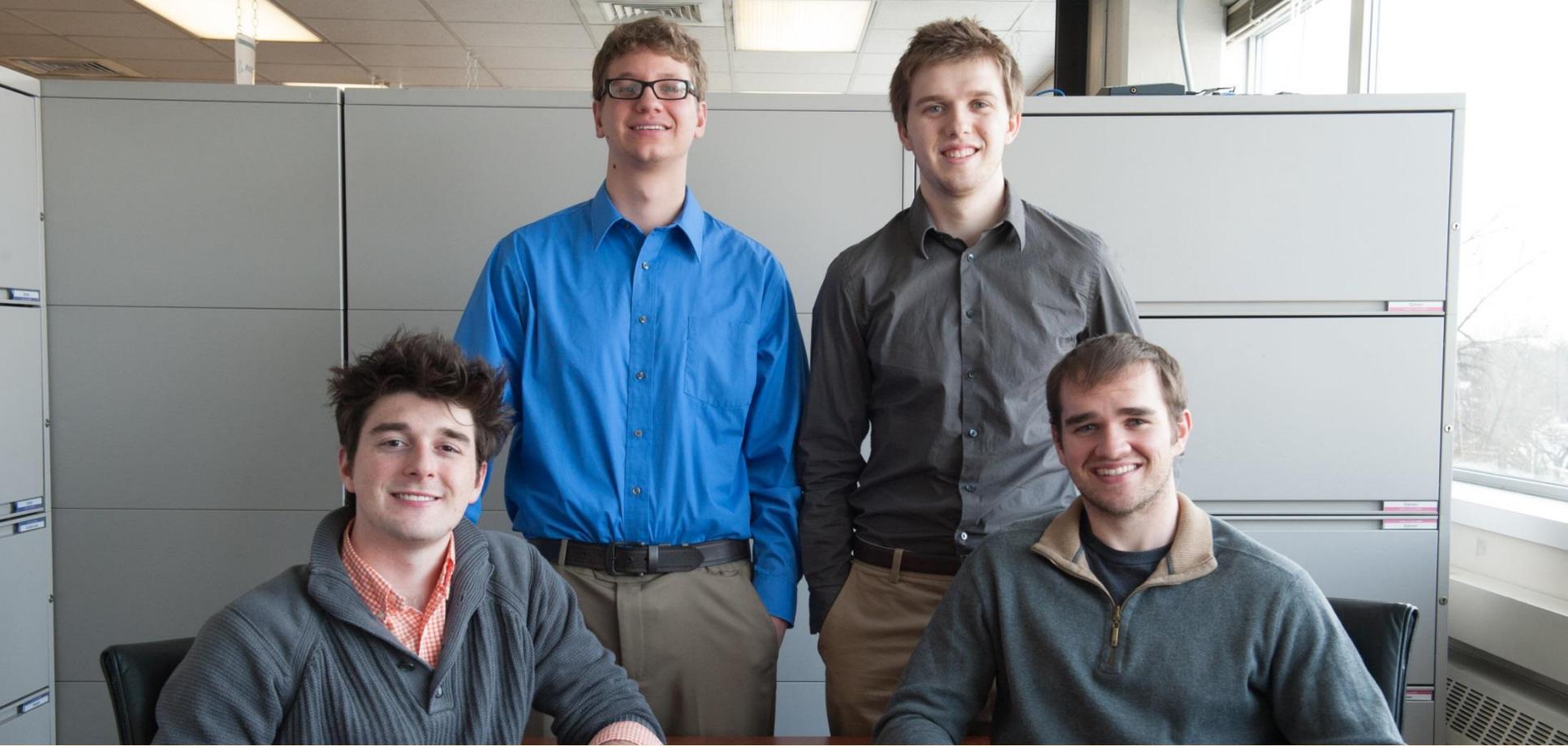


# Team Spectrum Health Beta Presentation

# Team Spectrum Health Beta Presentation

View Map of Building





**Team Spectrum Health**  
Joe Reeder, J.J. Peter, Eric Drews, Justin Rush



**MICHIGAN STATE**  

---

**UNIVERSITY**

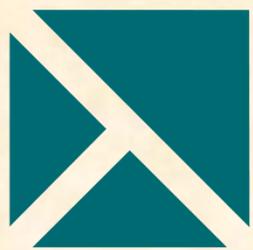
# The Capstone Experience

Team TechSmith

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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



TechSmith®



# Welcome to the Family, Knowmia!

We're excited to announce that we've added Knowmia Teach to our family of products, giving TechSmith the ability to help everyone from teachers to business professionals excel with video-based learning.

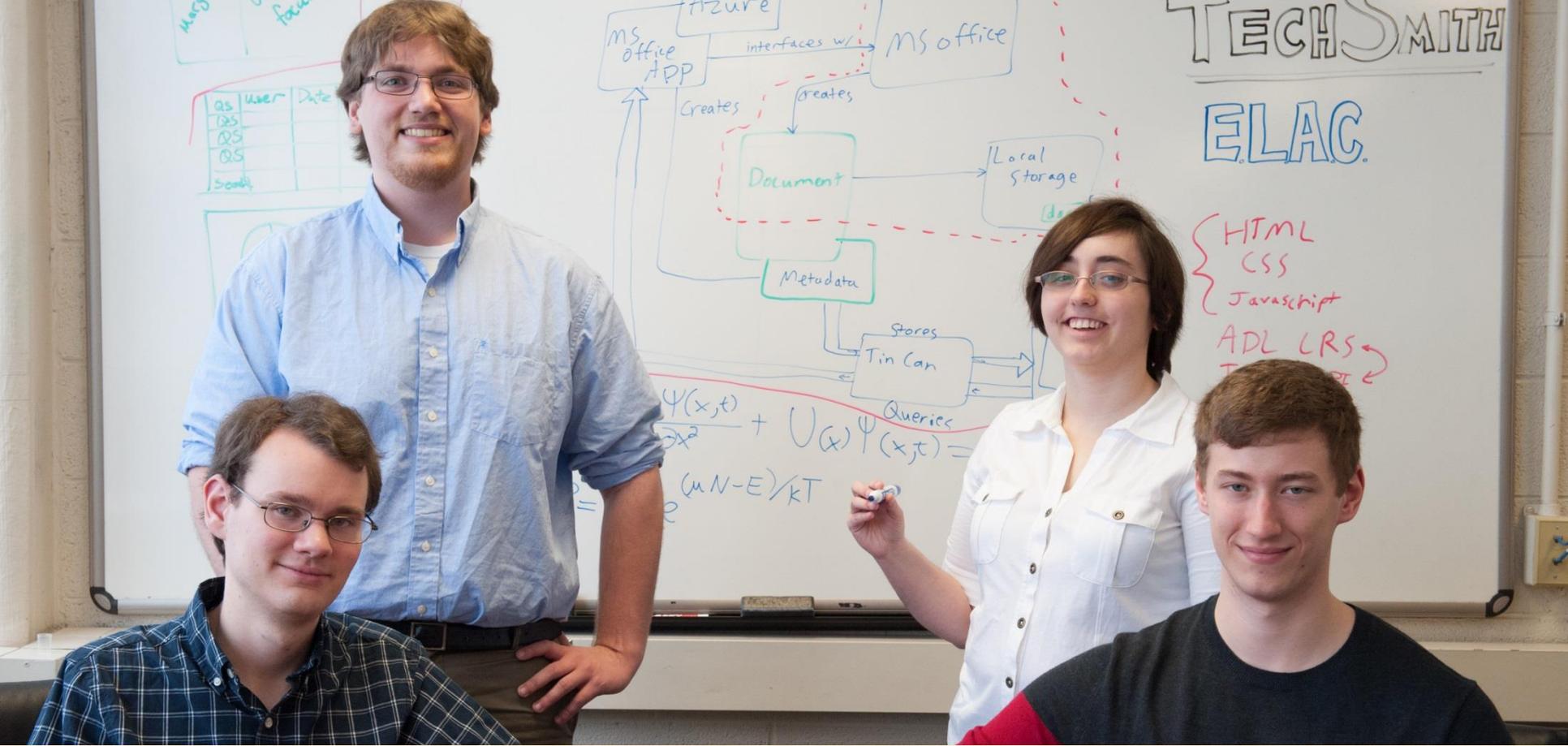
[LEARN MORE](#)

# Team TechSmith Project Overview

## Enterprise Learning Activity Capture

- Functionalities
  - Track Digital Learning in an Enterprise
  - By Associating People with Digital Learning Experiences
    - Read a Wikipedia Article
    - Watched a YouTube Video
    - Etc.
- Features
  - Develop Microsoft Office/Office 365 Apps
    - Collect and Send Tin Can API Statements
      - "I know this."
      - "I learned this."
      - "I experienced this."
    - Present Knowledge Views to User
  - Leverage Learning Activity
    - To Entire Enterprise
    - By Exposing Views of Learning Activity
    - Using Microsoft "Office Graph"
- Technologies
  - Tin Can API
    - Advanced Distributed Learning (ADL)
    - Learning Record Store (LRS)
  - Ubuntu
  - Python
  - RESTful Web Services
  - Microsoft Office/Office 365





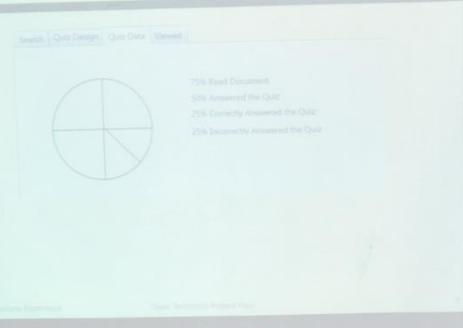
# Team TechSmith

Drew Murray, Ben Blazy, Mariah Gilman, Stephan Hutecke





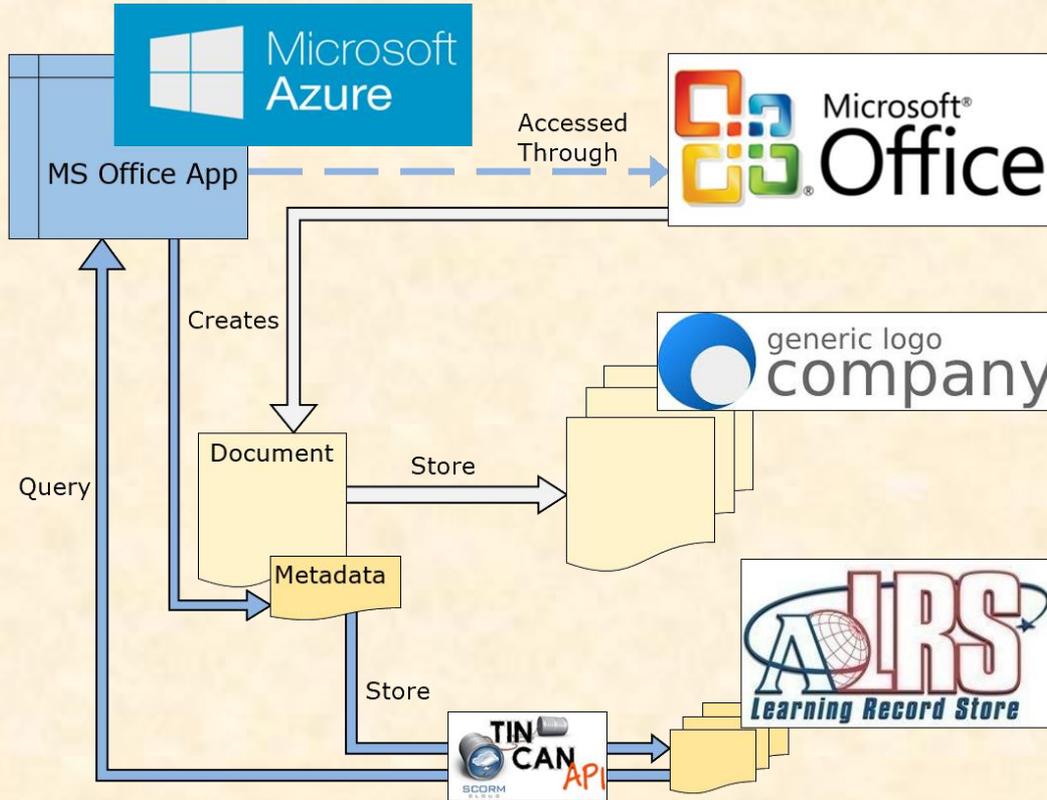
## Screen Mockup: Quiz Data Tab

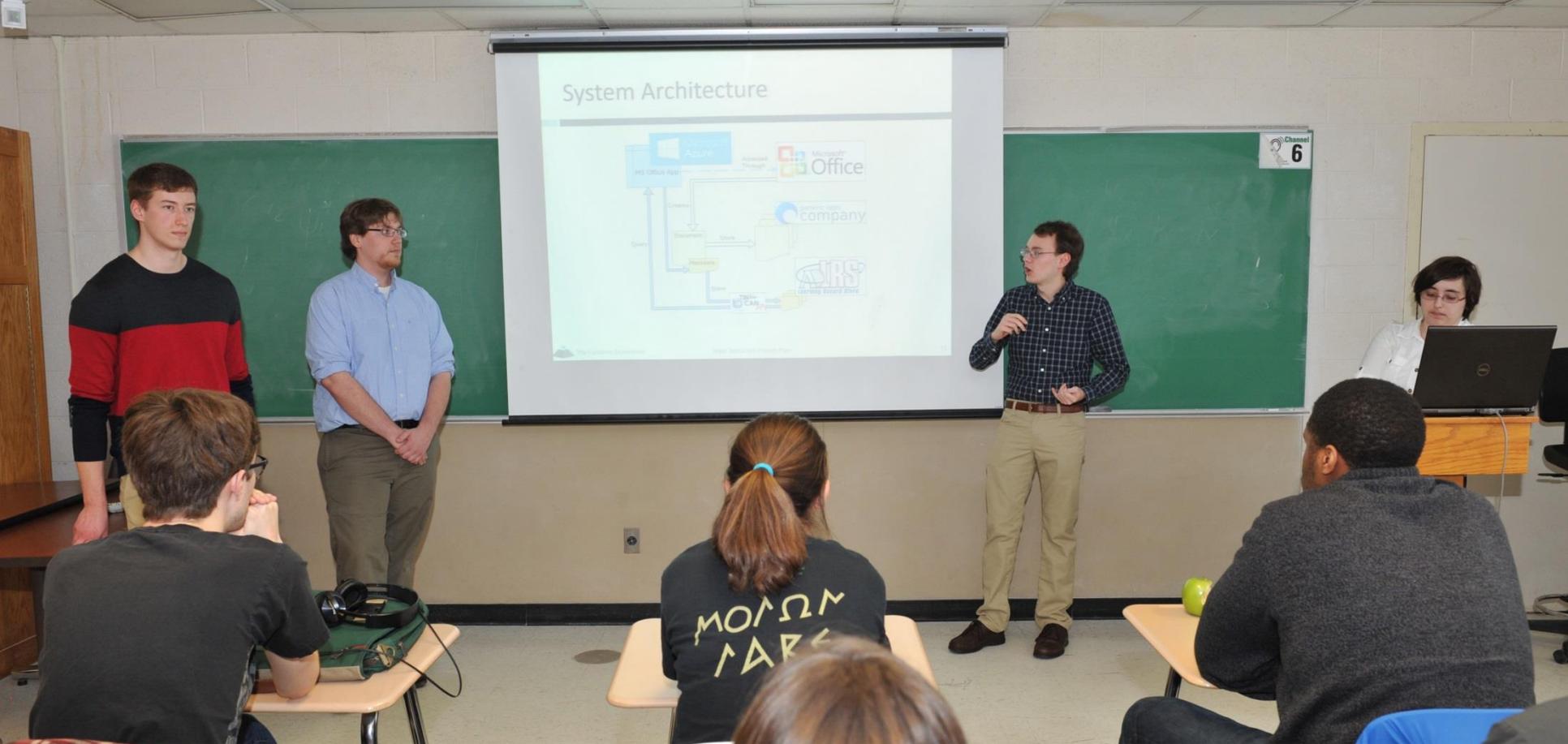


Team TechSmith  
Project Plan Presentation

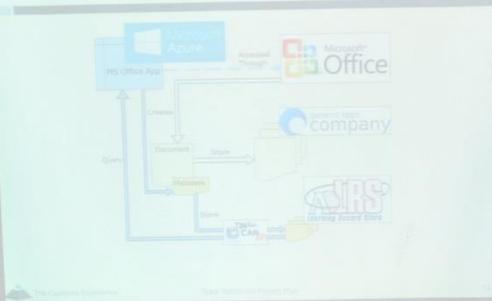
# Team TechSmith Project Plan Presentation

## Architecture Diagram





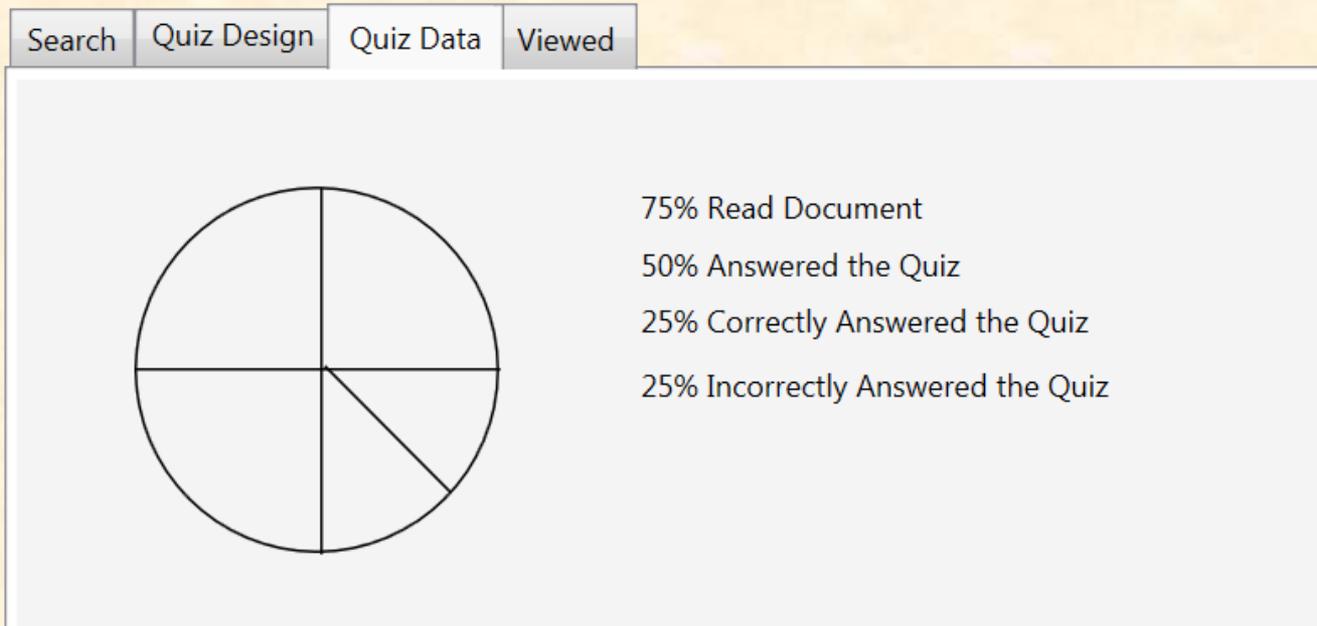
# System Architecture

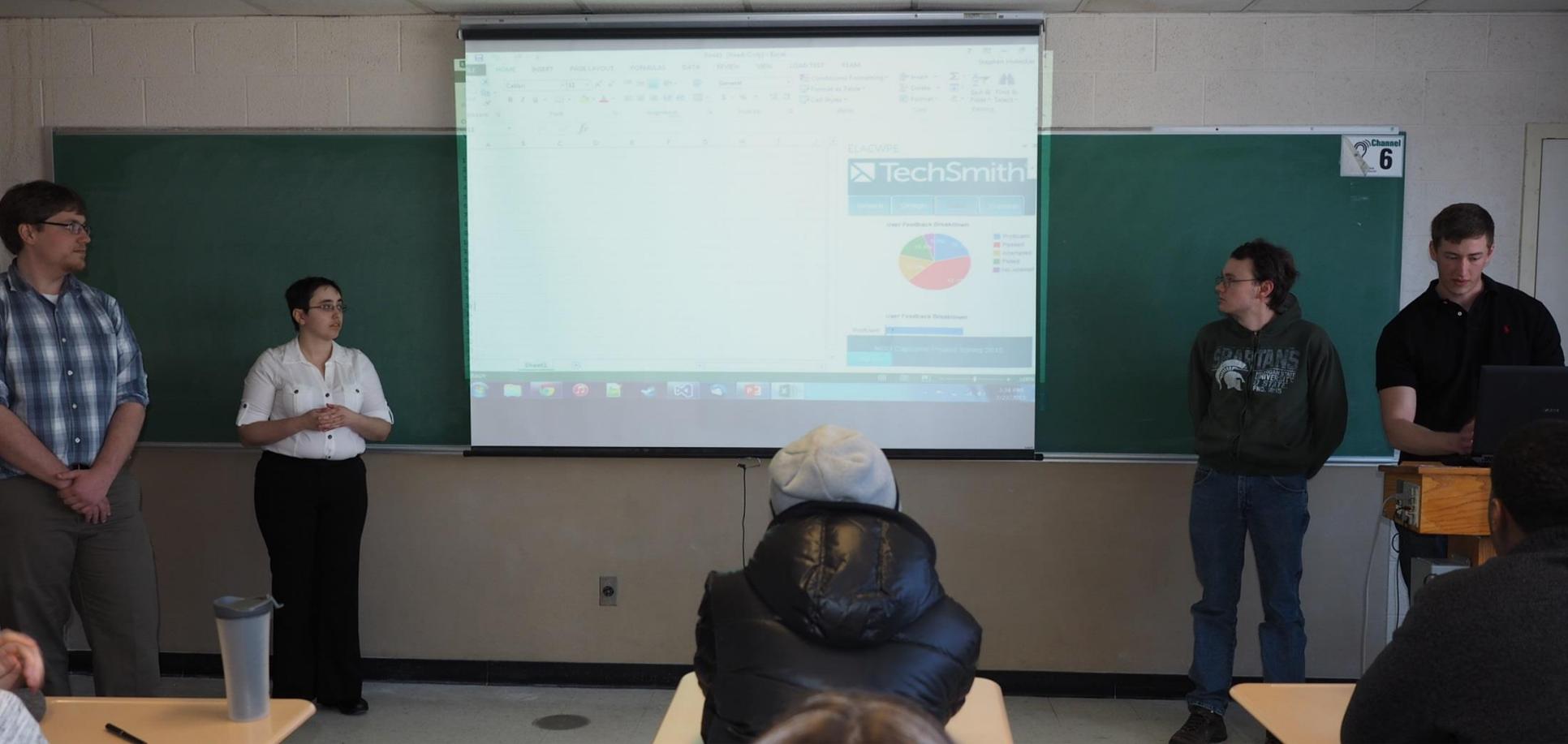


Team TechSmith  
Project Plan Presentation

# Team TechSmith Project Plan Presentation

Screen Mockup





Team TechSmith  
Alpha Presentation

# Team TechSmith Alpha Presentation

## Task Pane App

The screenshot shows a Microsoft Excel spreadsheet titled "Book1 [Read-Only] - Excel". The ribbon includes FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, VIEW, and TEAM. The task pane app, titled "ELACWPE", is overlaid on the right side of the spreadsheet. It features the TechSmith logo and navigation tabs for "System", "Design", "Data", and "Current". Below these tabs are buttons for "QS 1", "QS 2", "QS 3", "QS 4", and "Search". The main content of the task pane is a table with the following columns: "User", "Date", "Document", and "Author". The table contains 20 rows of data, all with "Book1" as the document name and "Unknown" as the author. The dates range from 2015-02 to 2015-02-22. At the bottom of the task pane, there is a "Log out" button and the text "MSU Capstone: Project Spring 2015".

User	Date	Document	Author
	2015-02-22		
	2015-02		
test	22101 56:58:51Z	Book1	Unknown
	2015-02		
test	22101 56:41:08Z	Book1	Unknown
	2015-02		
test	21122 11:34:61Z	Book1	Unknown
	2015-02		
test	21122 11:24:21Z	Book1	Unknown
	2015-02		
f	21122 10:12:48Z	Book1	Unknown
	2015-02		
f	21121 33:48:47Z	Book1	Unknown
	2015-02		
f	21121 33:10:71Z	Book1	Unknown
	2015-02		
f	21121 17:59:34Z	Book1	Unknown
	2015-02		
f	21121 16:57:47Z	Book1	Unknown
	2015-02		
f	21121 16:38:14Z	Book1	Unknown
	2015-02		
f	21121 16:07:60Z	Book1	Unknown
	2015-02		
f	21121 12:32:16Z	Book1	Unknown
	2015-02		
f	21121 11:13:64Z	Book1	Unknown
	2015-02		
f	21121 10:21:71Z	Book1	Unknown
	2015-02		
f	21121 09:40:48Z	Book1	Unknown
	2015-02		
f	21121 08:58:26Z	Book1	Unknown
	2015-02		
f	21121 06:41:52Z	Book1	Unknown
	2015-02		
f	21121 04:54:05Z	Book1	Unknown
	2015-02		



# Team TechSmith Alpha Presentation

Login and Search

ELACWPE



Username

Password

Login

ELACWPE



Search Design Data Current

QS 1 QS 2 QS 3 QS 4 Search

User	Date	Document	Author
	<b>2015-2-22</b>		
test	2015-02-22T01:56:58.512Z	Book1	Unknown Author
test	2015-02-22T01:56:41.083Z	Book1	Unknown Author
test	2015-02-21T22:11:34.612Z	Book1	Unknown Author
test	2015-02-21T22:11:24.214Z	Book1	Unknown Author
1	2015-02-21T22:10:12.485Z	Book1	Unknown Author
1	2015-02-21T21:33:48.473Z	Book1	Unknown Author



## What's left to do?

- Features
  - Better organization of search results output
  - Port to MS Outlook
  - Implement reader feedback ("quizzes")
  - Data visualization
  - Hierarchy Storage
- Documentation
  - Input formatting
  - Initial setup instructions
  - Source code
- Comprehensive testing

Team TechSmith  
Alpha Presentation

# Team TechSmith Alpha Presentation

## Quiz Design and Results

ELACWPE

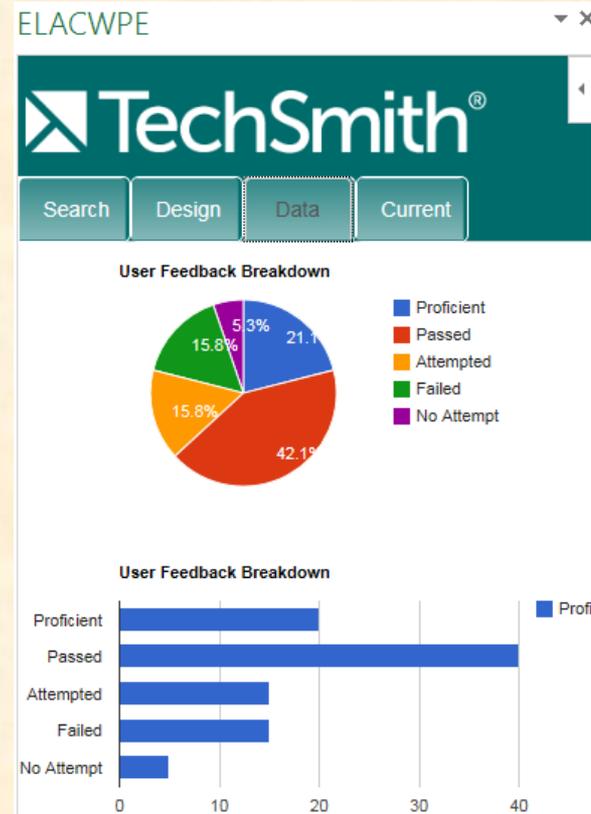
TechSmith®

Search Design Data Current

Radio Check Text

Make your Own Radio Button Quiz!

Submit

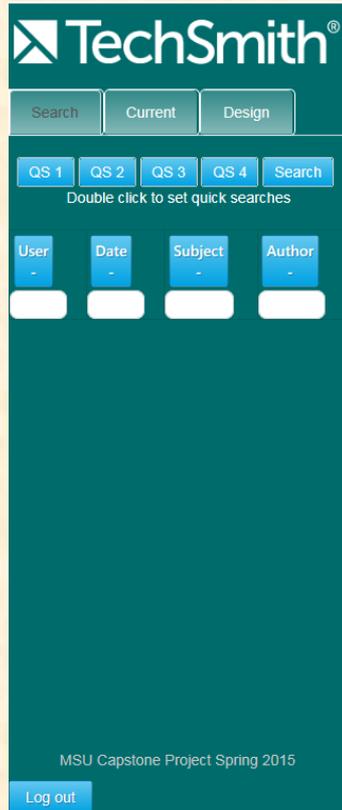




# Team TechSmith Beta Presentation

# Team TechSmith Beta Presentation

## Search Tab



TechSmith®

Search Current Design

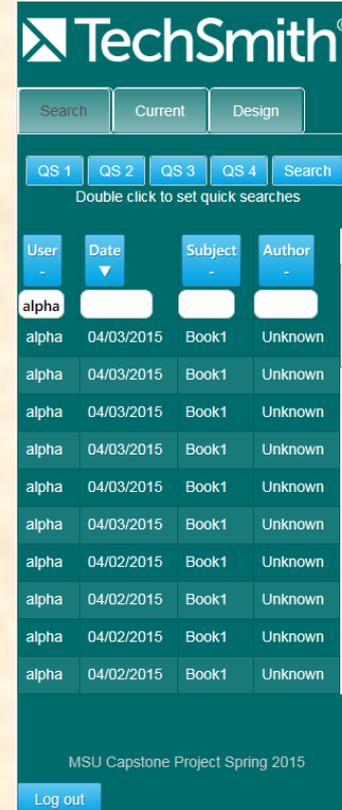
QS 1 QS 2 QS 3 QS 4 Search

Double click to set quick searches

User Date Subject Author

MSU Capstone Project Spring 2015

Log out



TechSmith®

Search Current Design

QS 1 QS 2 QS 3 QS 4 Search

Double click to set quick searches

User Date Subject Author

User	Date	Subject	Author
alpha			
alpha	04/03/2015	Book1	Unknown
alpha	04/03/2015	Book1	Unknown
alpha	04/03/2015	Book1	Unknown
alpha	04/03/2015	Book1	Unknown
alpha	04/03/2015	Book1	Unknown
alpha	04/03/2015	Book1	Unknown
alpha	04/02/2015	Book1	Unknown
alpha	04/02/2015	Book1	Unknown
alpha	04/02/2015	Book1	Unknown
alpha	04/02/2015	Book1	Unknown

MSU Capstone Project Spring 2015

Log out

# Team TechSmith Beta Presentation

## Taking a Quiz

TechSmith®

Search Current Quiz Data

Submit

Question 1. test

- : answer1
- : answer2
- : answer3
- : answer4
- : answer5

Question 2. test

- : answer6
- : answer7
- : answer8
- : answer9
- : answer0

Question 3. test

MSU Capstone Project Spring 2015

Log out

TechSmith®

Search Current Quiz Data

Submit

Question 1. test

- : answer1
- : answer2
- : answer3
- : answer4
- : answer5

Question 2. test

- : answer6
- : answer7
- : answer8
- : answer9
- : answer0

Question 3. test

MSU Capstone Project Spring 2015

Log out

Quiz Submitted

Quiz has been submitted successfully!

Your score was: 1/3

Ok

Question 1. test

- : answer1
- : answer2
- : answer3
- : answer4
- : answer5

Question 2. test

- : answer6
- : answer7
- : answer8
- : answer9
- : answer0

Question 3. test

MSU Capstone Project Spring 2015

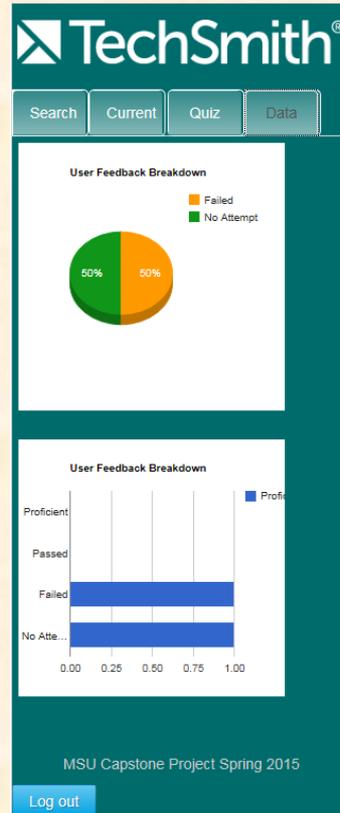
Log out



# Team TechSmith Beta Presentation

# Team TechSmith Beta Presentation

[View Quiz Statistics](#)





Team TechSmith  
Design Day

**MICHIGAN STATE**  

---

**UNIVERSITY**

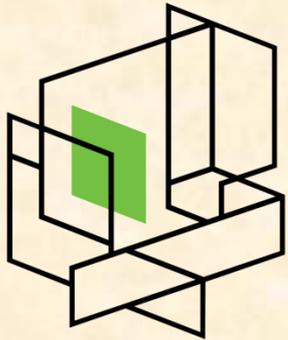
# The Capstone Experience

## Team Urban Science

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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



URBAN SCIENCE™



Develop Dealer Network

Improve Dealer Performance

Manage Leads

Optimize Marketing

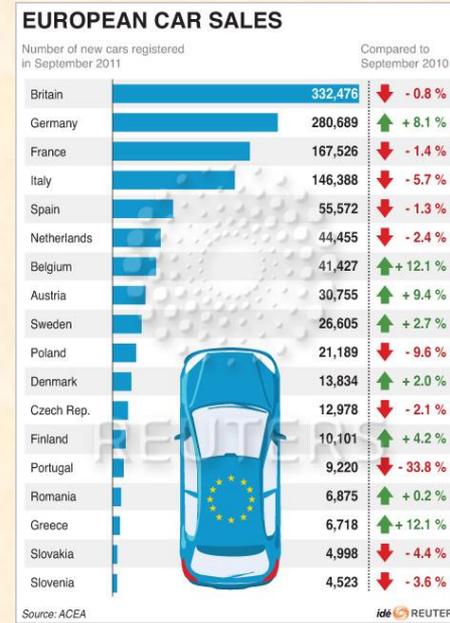
The Power of 4™

PEOPLE x DATA x PROCESS x TECHNOLOGY = BEST-IN-CLASS SOLUTIONS

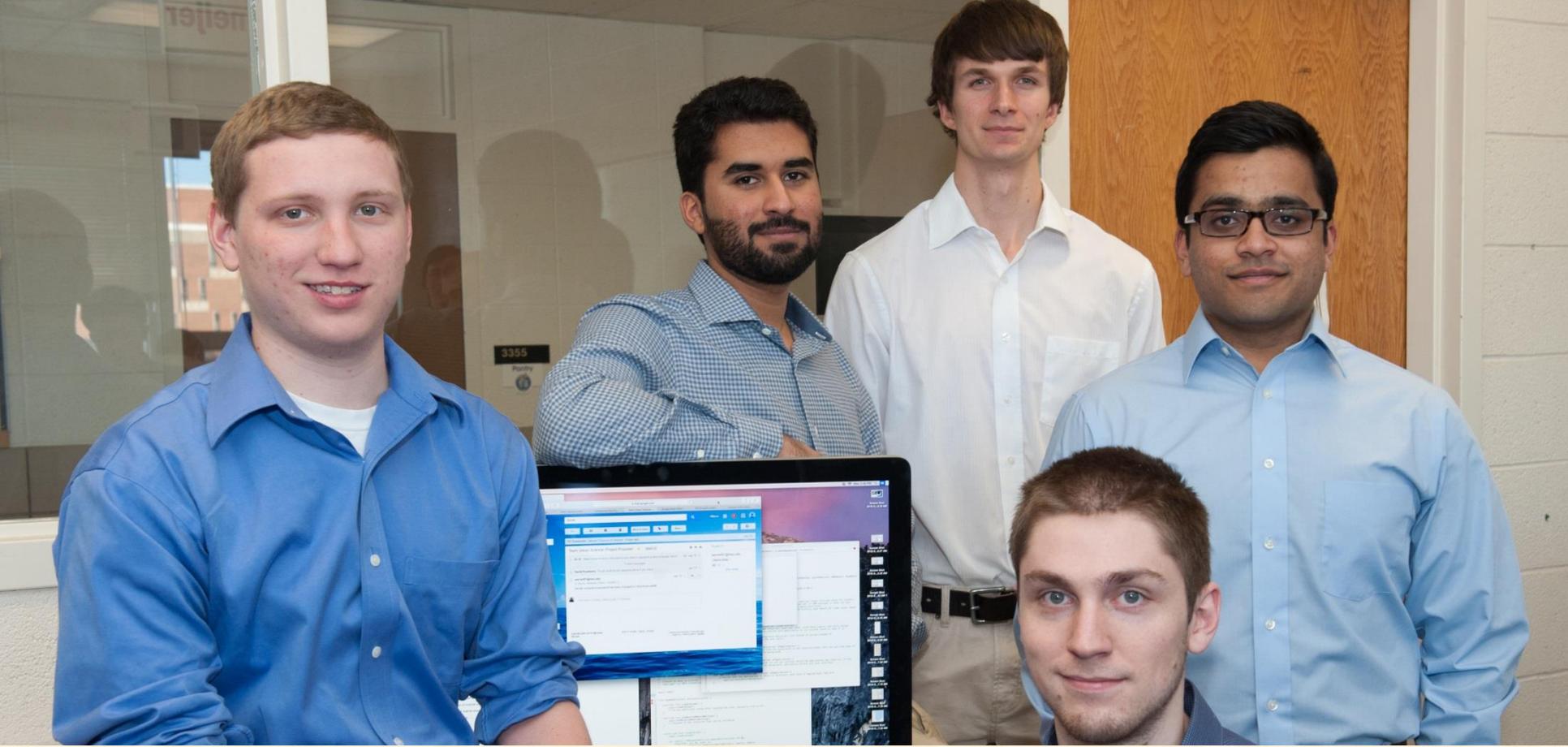
# Team Urban Science Project Overview

## Global Dealer Census and Market Share Viewer

- Functionalities
  - Empower Automobile Global Marketing Managers
  - Understand What Cars Are Selling and Where
  - Relate to the Competition
- Features
  - Native Support For Android Tablets and iPads
  - Visualize Market Data by Country
    - Sales
    - Market Share
    - Number of Dealerships and Competitor's Dealerships
    - Display Graphs and Maps
    - Various Management Levels Views Up to CEO
  - Include Drill Down Capabilities By Region and Country
  - Push Notifications re New Data
  - Provide Administrative Web Interface
- Technologies
  - iPhone and Android Development (Objective-C, Java)
  - Web Development (CSS, HTML, PHP, JavaScript)
  - Microsoft SQL Server
  - Microsoft Visual Studio



URBAN SCIENCE  
Detroit, Michigan



## Team Urban Science

Lucas Madill, Abdulla Alkawai, David Pusdesris, David Warner, Dhruv Rajput

# Team Urban Science Project Plan Presentation

Screen Mockups

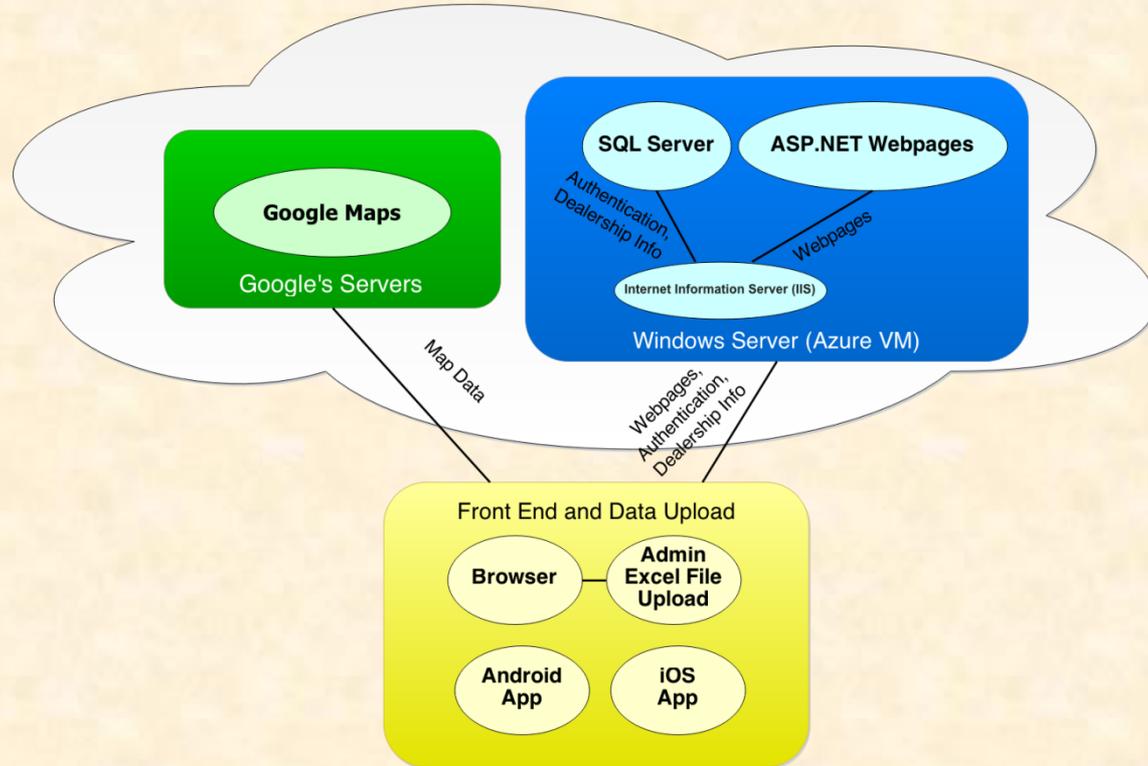




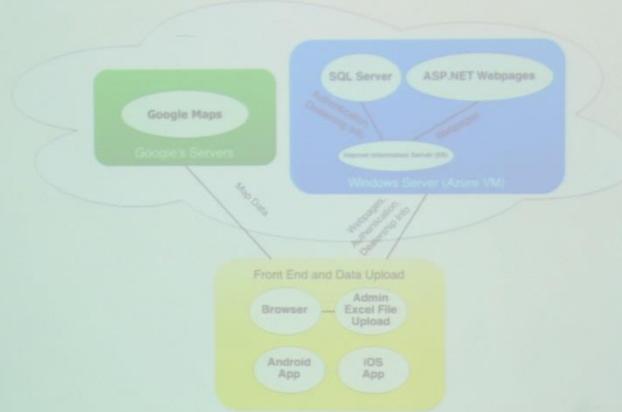
# Team Urban Science Project Plan Presentation

# Team Urban Science Project Plan Presentation

## Architecture Diagram



## Technical Specifications & System Architecture

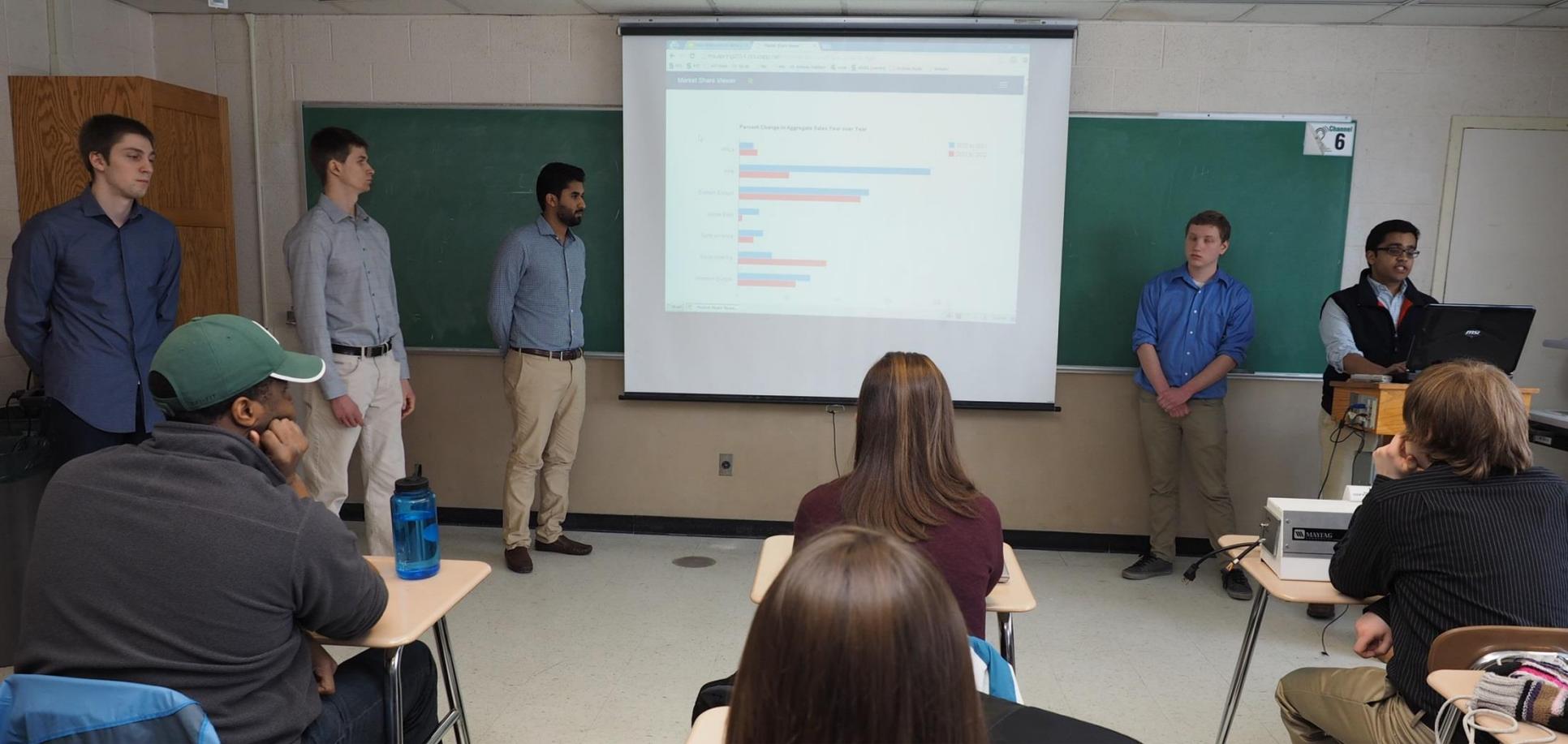


Team Urban Science  
Project Plan Presentation

# Team Urban Science Project Plan Presentation

Screen Mockups

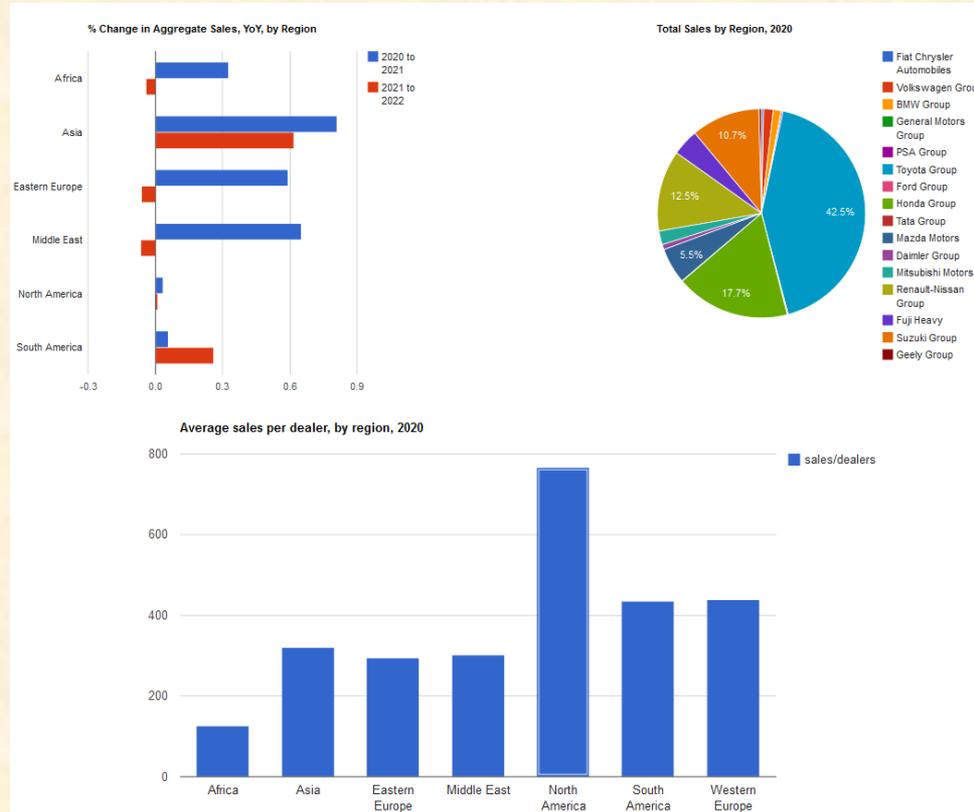




Team Urban Science  
Alpha Presentation

# Team Urban Science Alpha Presentation

CEO View



The Capstone Experience



# Team Urban Science Alpha Presentation

Regional View

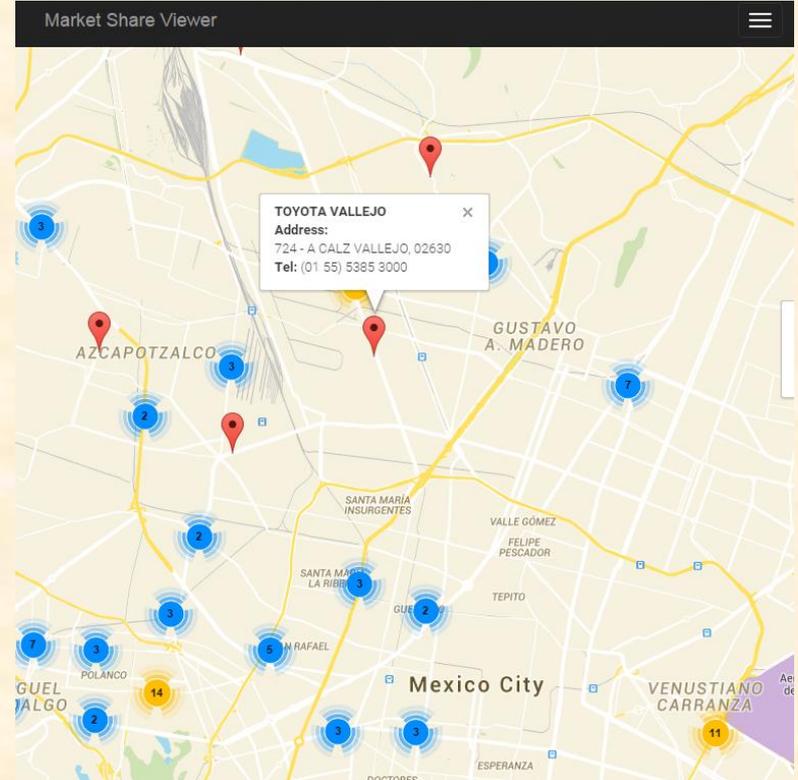
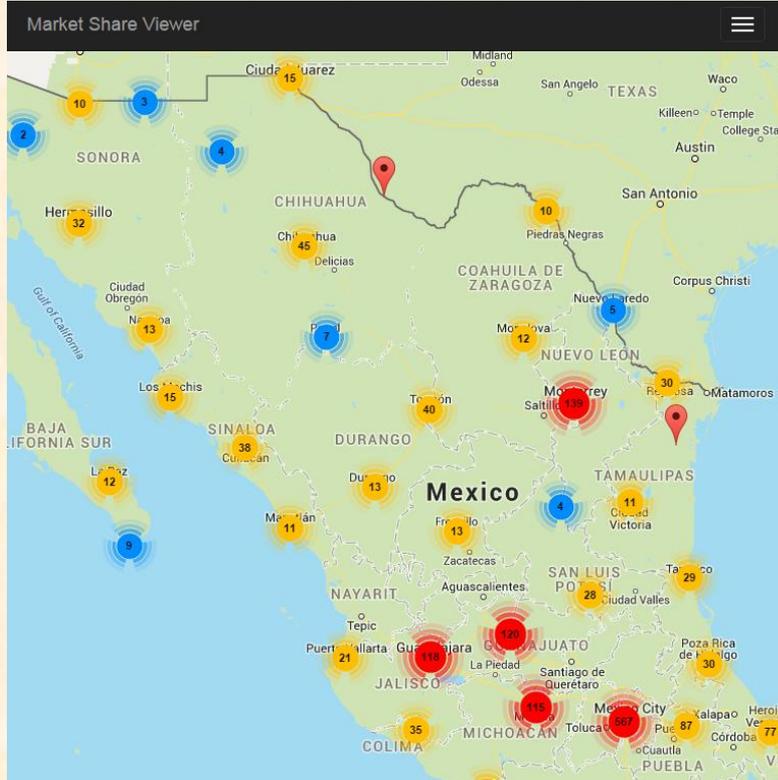


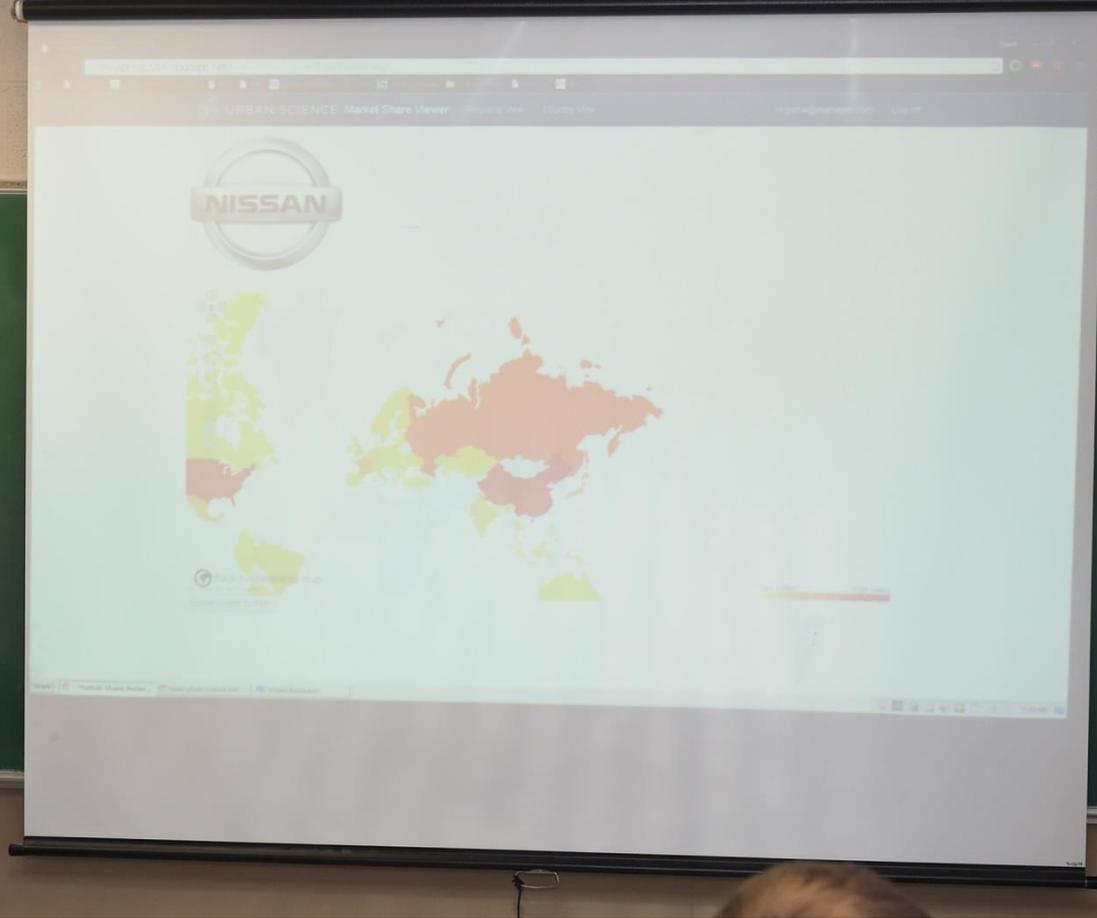


Team Urban Science  
Alpha Presentation

# Team Urban Science Alpha Presentation

Country View





# Team Urban Science Beta Presentation

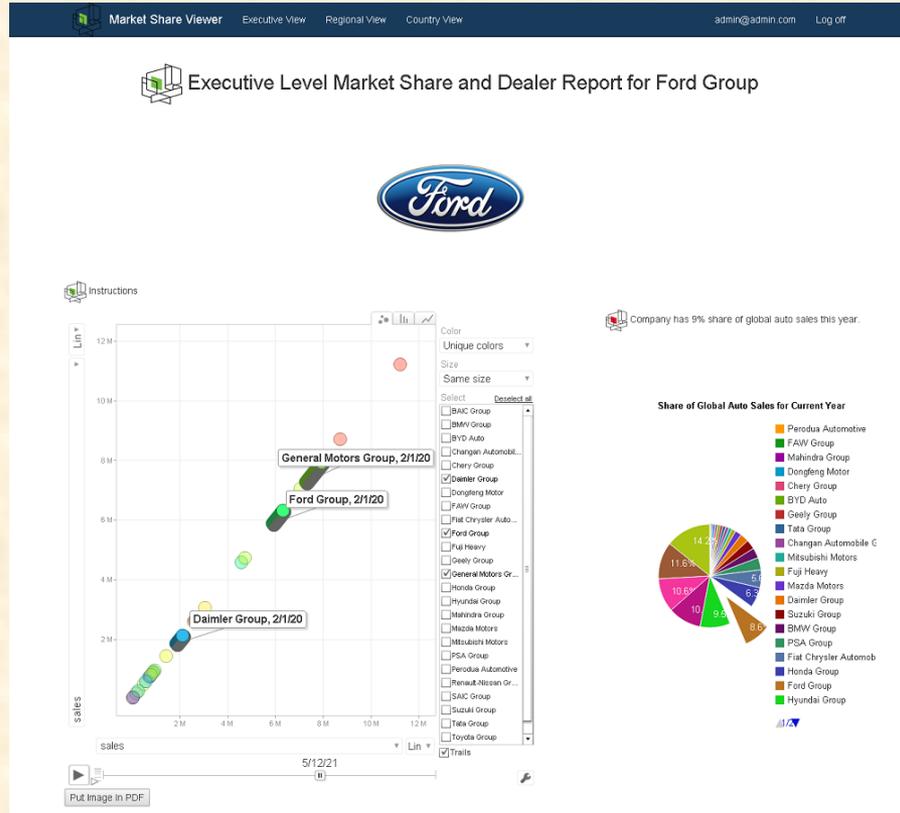
# Team Urban Science Beta Presentation

## Executive Web View



# Team Urban Science Beta Presentation

## Executive Web View





## Team Urban Science Beta Presentation

# Team Urban Science Beta Presentation

## Regional View





Team Urban Science  
Design Day

**MICHIGAN STATE**  
**UNIVERSITY**

# The Capstone Experience

Team Whirlpool

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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



**Whirlpool**

**CORPORATION**





EVERY DAY, CARE™

LAUNDRY

KITCHEN

TOTAL HOME

FILTERS & ACCESSORIES

SERVICE & SUPPORT



Asking the right questions—that's caring.

See Details

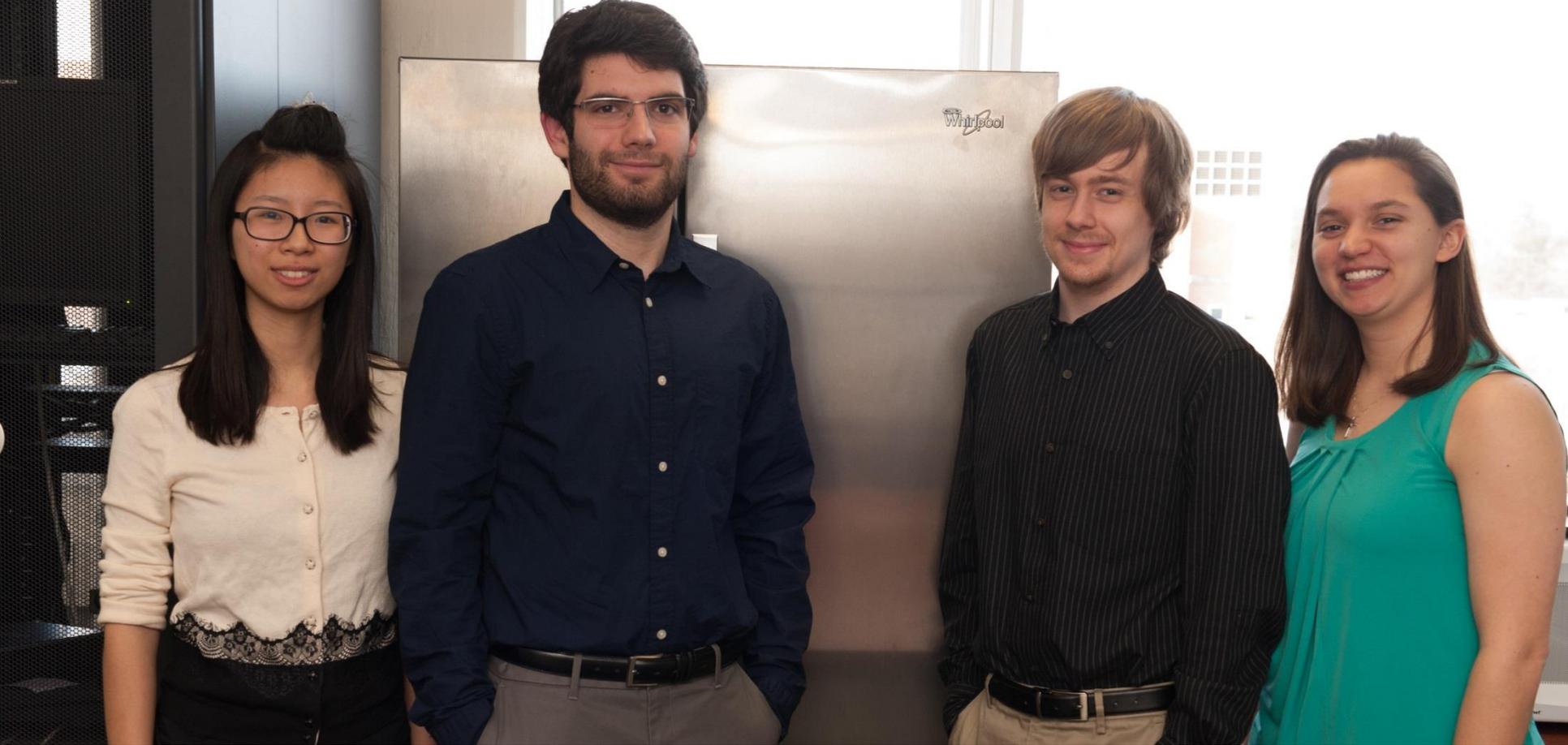
# Team Whirlpool Project Overview

## Laundry Room Tablet Payment System

- Functionalities
  - Enable Customers to Pay for Laundry Services
  - In Apartment Complexes and Laundromats
  - Using Low Cost Android or Windows Tablets
- Features
  - Support
    - Select Washer and Dryer Options
    - Notifications via Phone Call, Email or Text Message
    - Feedback to Facility Owner
    - Loyalty Programs
    - Location Hours, Contact Information, Etc.
    - Credit Card Swiping
  - Compliment Existing Whirlpool Phone App
  - Provide Responsive Cross-Platform Design
- Technologies
  - Web Development (CSS, HTML, PHP, JavaScript)
  - JavaScript Object Notation (JSON)
  - Responsive Design (Xamarin, C#)
  - RESTful Web Services
  - Whirlpool Cloud Services
  - Microsoft Visual Studio
  - Microsoft SQL Server



Benton Harbor, Michigan

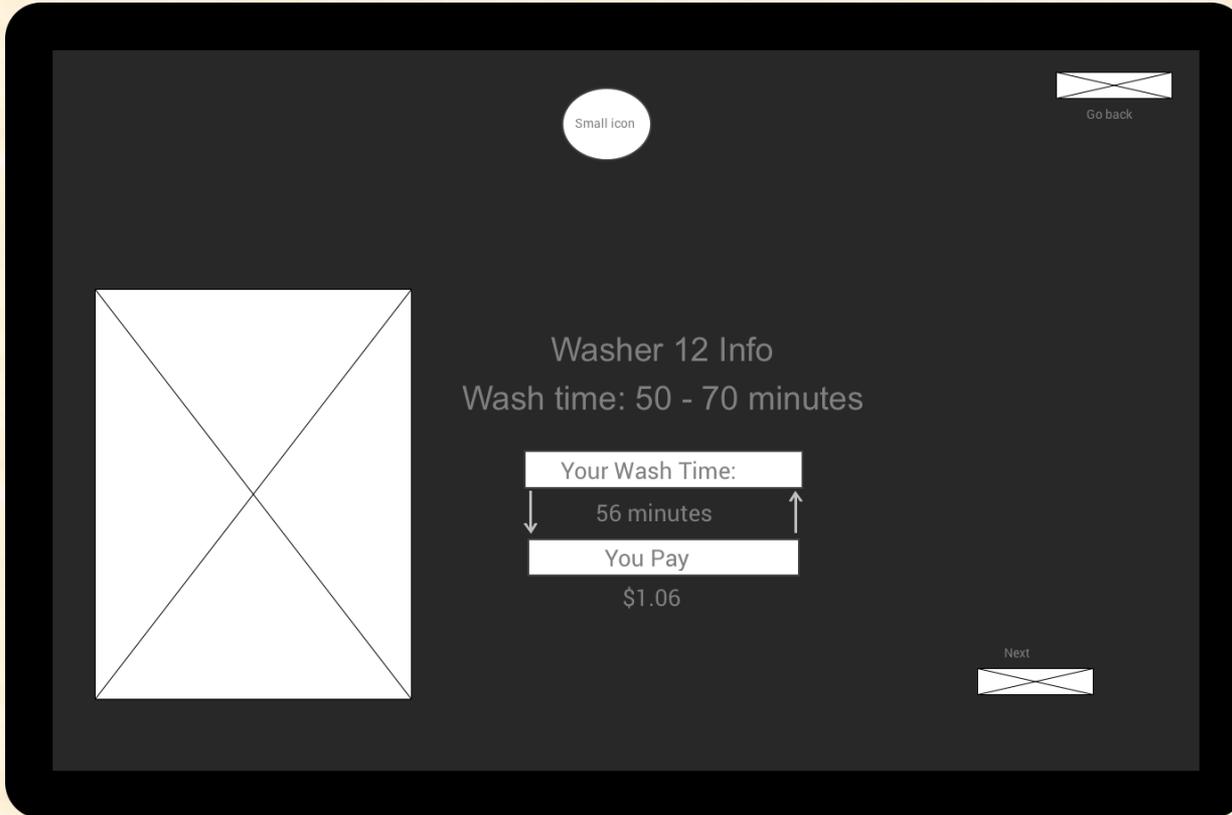


## Team Whirlpool

Angie Sun, Alex Kambeitz, Evan Swinehart, Sam Bentzel

# Team Whirlpool Project Plan Presentation

Screen Mockup

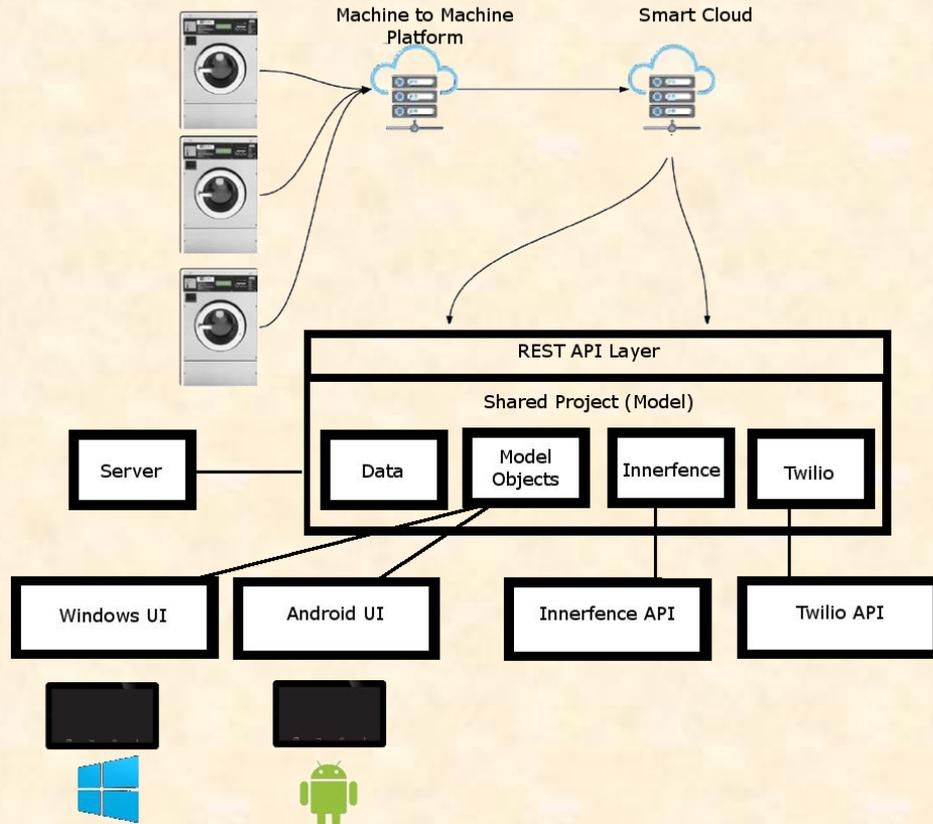


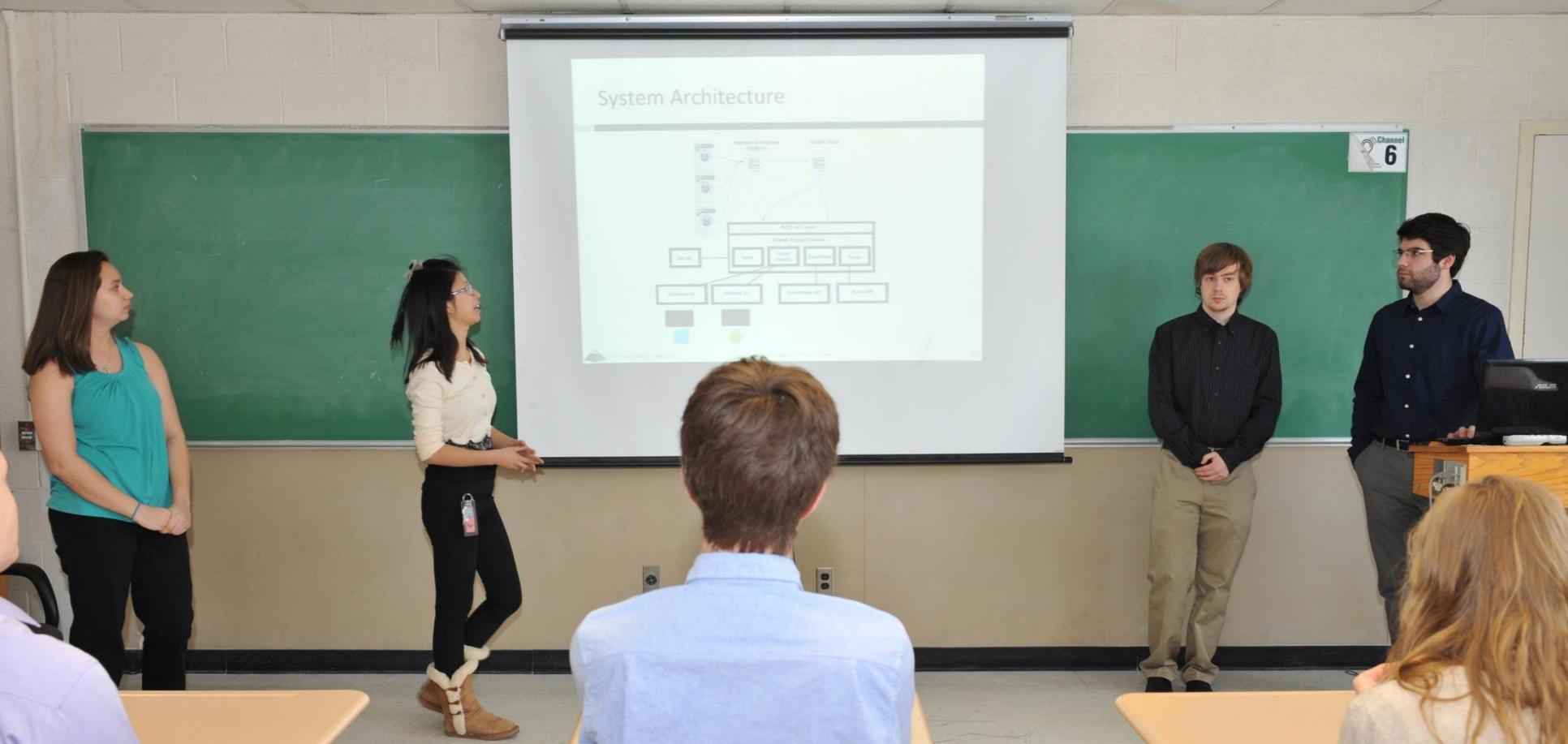


# Team Whirlpool Project Plan Presentation

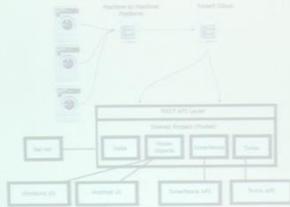
# Team Whirlpool Project Plan Presentation

## Architecture Diagram





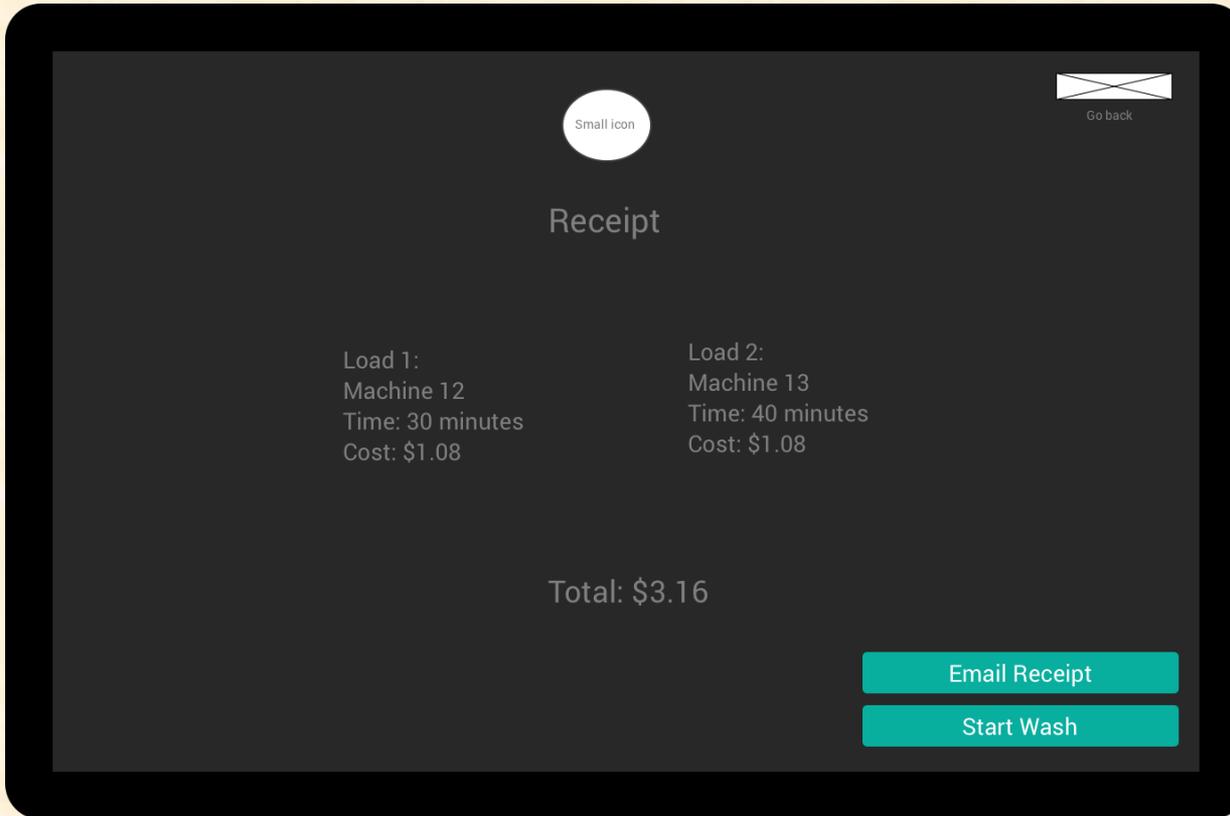
## System Architecture



Team Whirlpool  
Project Plan Presentation

# Team Whirlpool Project Plan Presentation

Screen Mockups

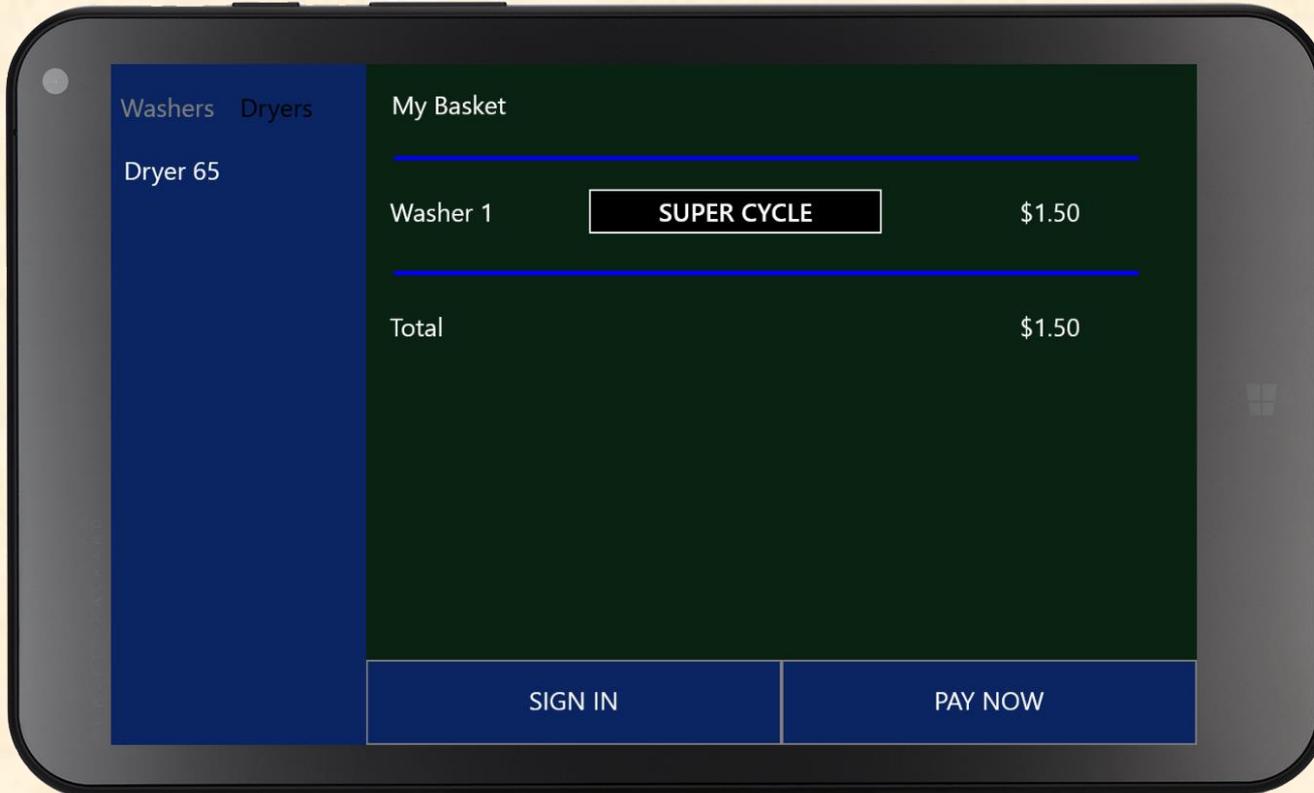




# Team Whirlpool Alpha Presentation

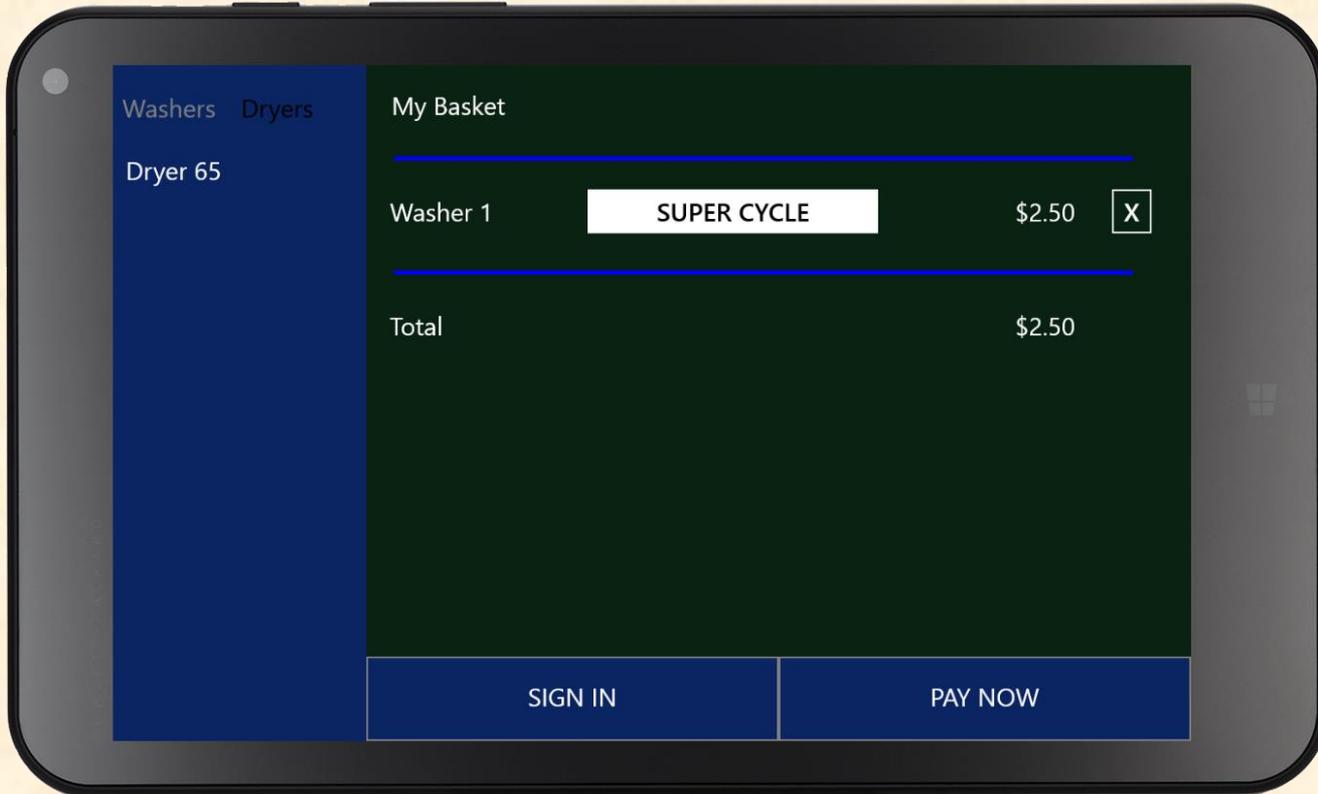
# Team Whirlpool Alpha Presentation

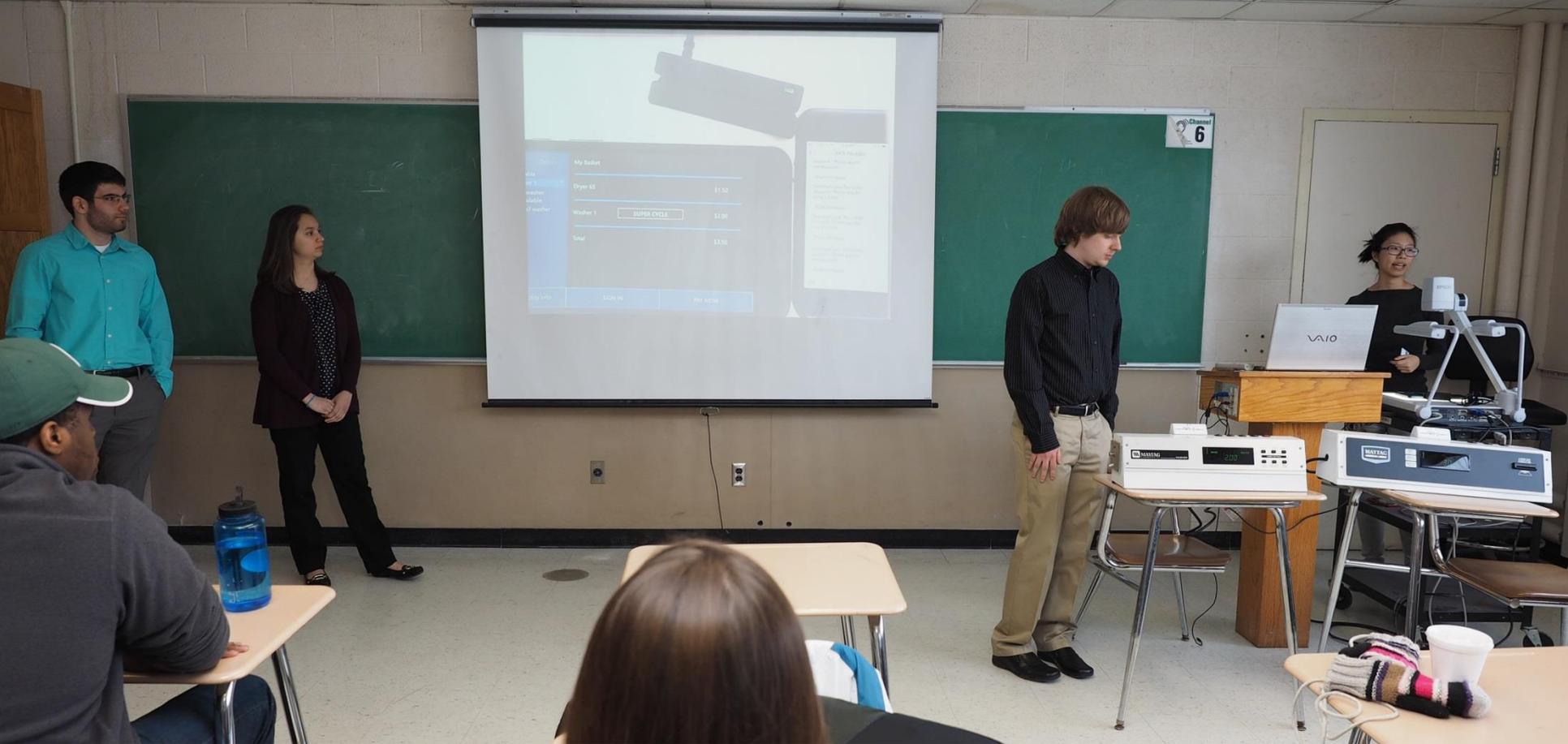
## Adding/Removing Machines



# Team Whirlpool Alpha Presentation

Super Cycle

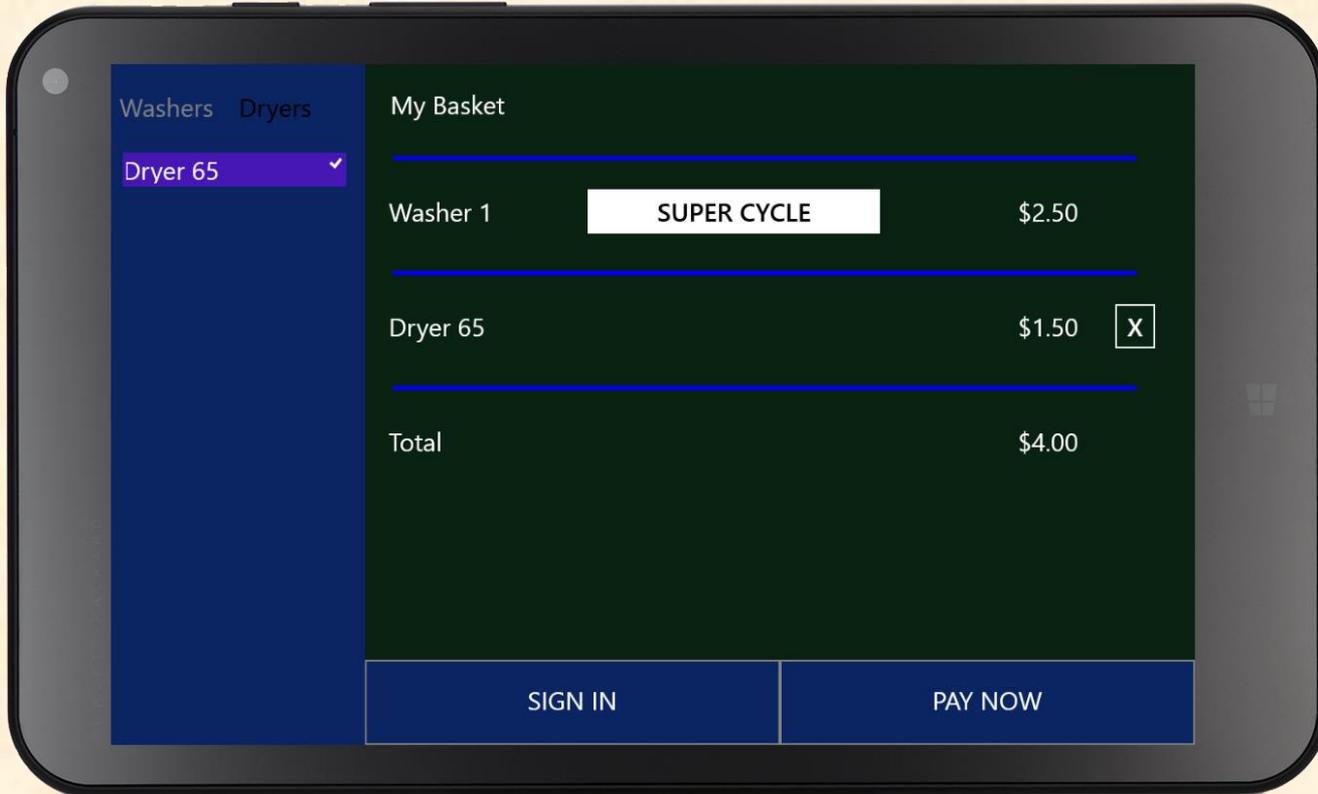




Team Whirlpool  
Alpha Presentation

# Team Whirlpool Alpha Presentation

Dryer



The Capstone Experience





# Team Whirlpool Beta Presentation

# Team Whirlpool Beta Presentation

## Adding/Removing Machines

WASH	DRY	MY BASKET
<input checked="" type="checkbox"/> Available	<input type="checkbox"/> Unavailable	
	Dryer	Washer <span>SUPER CYCLE</span> \$2.00 <input type="button" value="X"/>
	Dryer 14	Dryer <input type="button" value="-"/> <input type="button" value="+"/> 30 min \$1.50
		Total \$3.50
		<input type="button" value="SIGN IN"/> <input type="button" value="PAY NOW"/>



# Team Whirlpool Beta Presentation

## Super Cycle and Top Off

WASH	DRY	MY BASKET	
<b>Available</b>	Unavailable		
Washer	Dryer	<input type="button" value="-"/> <input type="button" value="+"/> 11 min	\$0.50
Washer 6	Washer	<input type="button" value="SUPER CYCLE"/>	\$2.25 <input type="button" value="X"/>
Total			\$2.75
<input type="button" value="SIGN IN"/>		<input type="button" value="PAY NOW"/>	





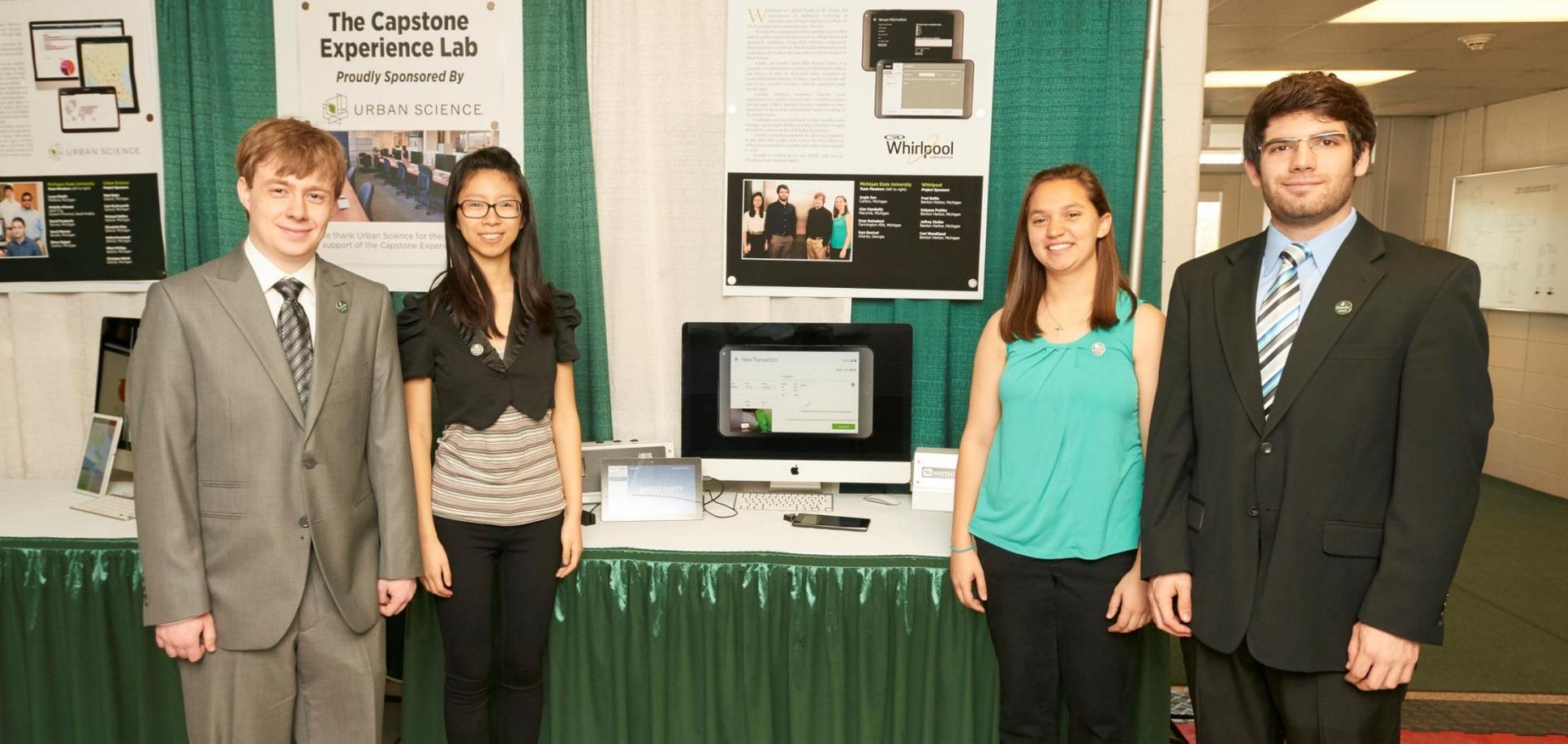
# Team Whirlpool Beta Presentation

# Team Whirlpool Beta Presentation

After Payment

<b>WASH</b>	<b>DRY</b>	<b>MY BASKET</b>	<a href="#">Have a problem? Let us know.</a>
<b>Available</b>	Unavailable	BASKET EMPTY	
Washer			
Washer 6			
You have successfully paid for the machines! Do you want a text when your wash is finished?			
<input type="text" value="My phone number"/>			
<input type="button" value="Yes"/> <input type="button" value="No thanks"/>			
<b>SIGN IN</b>		<b>PAY NOW</b>	





**The Capstone Experience Lab**  
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**URBAN SCIENCE**

**Whirlpool**

**Michigan State University**  
Team Whirlpool (left to right):  
Caleb, Design  
Zachary, Design

**Whirlpool**  
Product Design  
Product Design

**Team Whirlpool  
Design Day**

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**U N I V E R S I T Y**

# The Capstone Experience

Dr. Wayne Dyksen

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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



Capstone Lab  
View of Spartan Stadium



Capstone Lab  
View of Spartan Stadium sans Smokestack



Capstone Lab  
Winter View of Spartan Stadium

**MICHIGAN STATE**  

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**U N I V E R S I T Y**

# The Capstone Experience

Design Day Award Winners

May 1, 2015



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



All-Hands  
Design Day, May 1, 2015



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MICHIGAN ST.  
**Design**  
COLLEGE OF

MICHIGAN STATE UNIVERSITY  
**Design Day**  
ENGINEERING

# Auto-Owners Exhibition Award

## Team Whirlpool, Spring 2015

Launder: Laundry Room Tablet Payment System

Sam Bentzel, Evan Swinehart, Angie Sun, Alex Kambeitz

Scott Lake of Auto-Owners Insurance



# General Motors Praxis Award

Team Ford, Spring 2015

Electric Vehicle Charging Station App

Ryan Switzer, Justin Grothe, Kevin Karabon, Brian Jurgess

Presented by Mike Adelson and Fred Killeen of General Motors



# TechSmith Screencast Award

Team GM, Spring 2015

Employee Companion Mobile Application

Jacob Ray, Yutaka Iwasaki, Ryan Boyce, Nate Seifert, Derrick Dunville

Presented by Dewey Hou of TechSmith

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nDay  
ENGINEERING

# Urban Science Sigma Award

## Team Amazon, Spring 2015

SIFT: Seller-Forums Information Filtering Tool

Ben Taylor, Max Goovaerts, Carl Johnson, Johnny Zheng, Luke Pritchett

Presented by Kathy Krauskopf and Matt Bejin of Urban Science

MICHIGAN STATE  

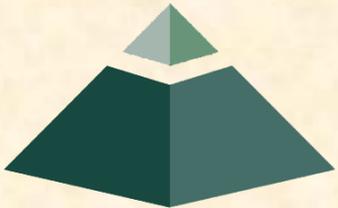
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# The Capstone Experience

Design Day Award Winners

December 5, 2014



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



All-Hands  
Design Day, December 5, 2014

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innovation  
excellence  
leadership  
vision  
globalization  
teamwork

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# Auto-Owners Exhibition Award

Team Spectrum Health, Fall 2014

Employee Discount Mobile App

Ruchira Ramani, Josh Pélcher, Emily Van Norman, Marco Botros, Aries Xue

Scott Lake of Auto-Owners Insurance



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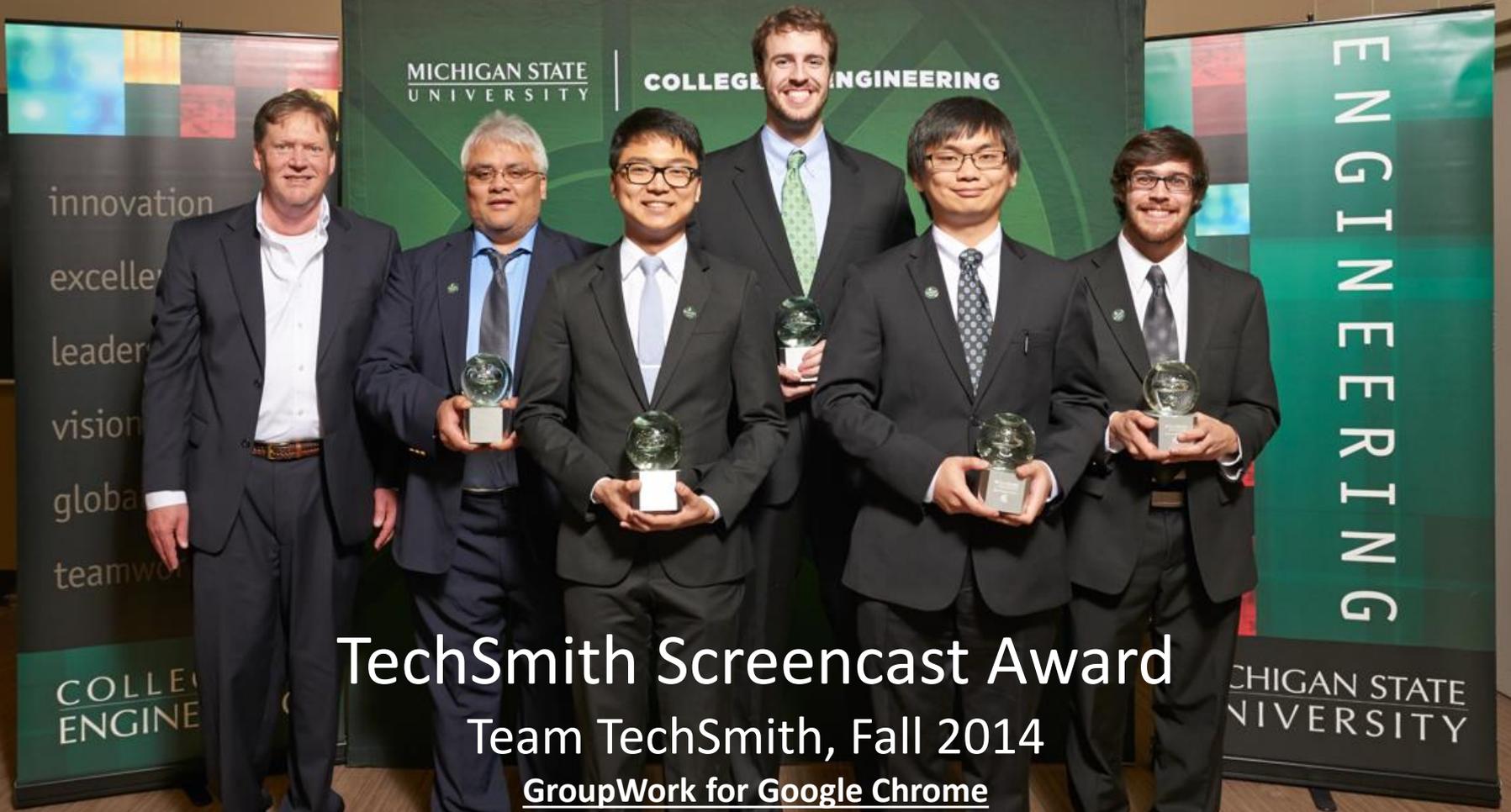
# General Motors Praxis Award

## Team Auto-Owners, Fall 2014

Navigation Assistant and Accident History App

Austin Huynh, Isaac Vogler, Zach Ray, Megan Frankel, Tim Sloncz

Presented by Christian Stier and Mike Adelson of General Motors



# TechSmith Screencast Award

Team TechSmith, Fall 2014

GroupWork for Google Chrome

Gerald Kizer, Spencer Yi, Christian Fincher, Ryan Chen, Justin Fila

Presented by Dean Craven of TechSmith



# Urban Science Sigma Award

Team Meijer, Fall 2014

Mobile Location-Based Product Promotion

Dan Leclerc, Jason Bull, Kevin Pauly, Xavier Durand-Hollis

Presented by Kathy Krauskopf, Matt Bejin and Mike DeRiso of Urban Science

**MICHIGAN STATE**  

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**U N I V E R S I T Y**

# The Capstone Experience

Dr. Wayne Dyksen

Department of Computer Science and Engineering  
Michigan State University  
Spring 2015



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

**amazon**





# ***Auto-Owners Insurance***

Life Home Car Business

*The "No Problem" People®*



***BOEING***





**meijer**<sup>®</sup>



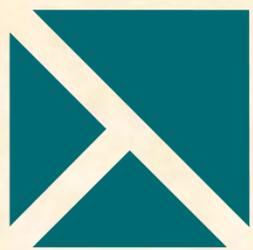
F E D E R A L C R E D I T U N I O N

Building Dreams *Together*

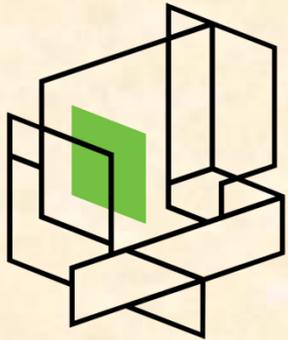
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