

MICHIGAN STATE

UNIVERSITY

The Capstone Experience

Dr. Wayne Dyksen

Department of Computer Science and Engineering
Michigan State University
Fall 2011



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

Course Goals

- 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

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



Project Deliverables

- 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, 2245 Engineering Building
- Presentations By
 - Professor
 - Teams
 - Status Reports
 - Formal Presentations
 - Project Plan
 - Alpha
 - Beta
 - Project Videos
 - Guest Speakers



All-Hands Meetings

- 08/31: Capstone Overview
- 09/05: (Labor Day, No Meeting)
- 09/07: Project Plan
- 09/12: Project Schedule and Risk
- 09/14: Team [Status Reports](#)
- 09/19: Resume Writing and Interviewing
- 09/21: Team [Project Plan Presentations](#)
- 09/26: Team [Project Plan Presentations](#)
- 09/28: Team [Project Plan Presentations](#)
- 10/03: Team [Project Plan Presentations](#)
- 10/05: [Career Gallery](#)
- 10/10: Prototyping
- 10/12: Creating and Giving Presentations
- 10/17: Team [Alpha Presentations](#)
- 10/19: Team [Alpha Presentations](#)
- 10/24: Team [Alpha Presentations](#)
- 10/26: Team [Alpha Presentations](#)
- 10/31: [Design Day](#) and the [Project Videos](#)
- 11/02: Camtasia
- 11/07: Team Beta Presentations
- 11/09: Team Beta Presentations
- 11/14: Team Beta Presentations
- 11/16: Team Beta Presentations
- 11/21: Team Status Reports
- 11/23: Team Status Reports
- 11/28: Ethics and Professionalism
- 11/30: Intellectual Property and Copyright
- 12/05: Team [Project Videos](#)
- 12/07: Team [Project Videos](#) and [All Deliverables](#)
- 12/08 : [Design Day](#) Setup
- 12/09: [Design Day](#)
- 12/15: Team [Project Videos](#)



MICHIGAN STATE

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The Capstone Experience

Team Auto-Owners

Department of Computer Science and Engineering
Michigan State University

Fall 2011



*From Students...
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Life Home Car Business

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protecting your family



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The "No Problem" People[®]

Have questions? Want coverage? See why thousands of customers nationwide rely on Auto-Owners for "No Problem" service in life, home, car, or business insurance.



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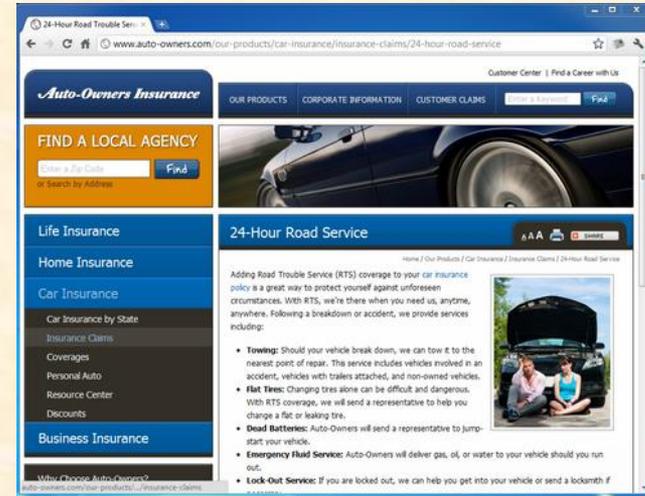
[Find an Agency](#)

[Career Center](#)

Team Auto-Owners Project Overview

24-Hour Road Service Mobile Apps

- Functionalities
 - Request Road Service via Mobile Apps
 - GPS-Based Local Searches
 - Service Centers
 - Restaurants
 - Hotels
- Features
 - iPhone, iPad, and Android User Apps
 - Web Administrator App
 - Interface with Vendor, Quest
 - Process Insured Policy Information
 - Pulled from Auto-Owners Database
 - Pushed to Quest
- Technologies
 - Apple iOS iPhone and iPad SDK, C, Objective-C
 - Google Android SDK, Java
 - CSS, HTML5, JavaScript



Lansing, Michigan



Team Auto-Owners

Justin Hammack, Paul Fritschen, Lingyong Wang

Screen Mockups



Main Screen

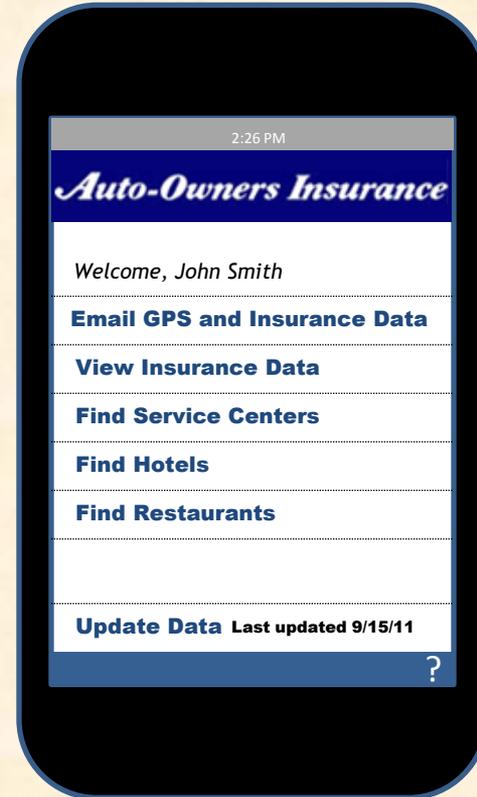


Main Screen

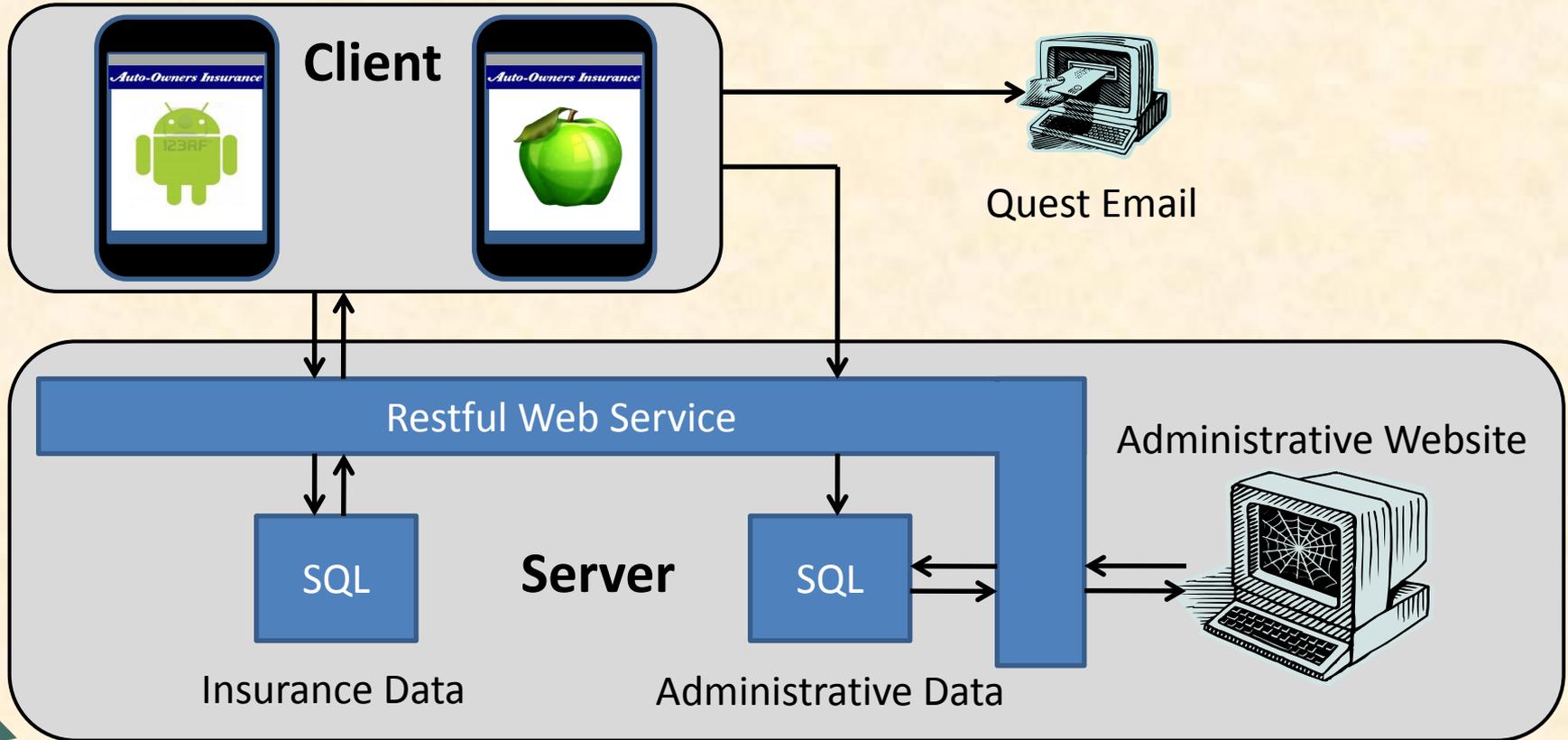
The Capstone Experience Team: Auto-Owners Insurance Project Plan

Team Auto-Owners Project Plan Presentation

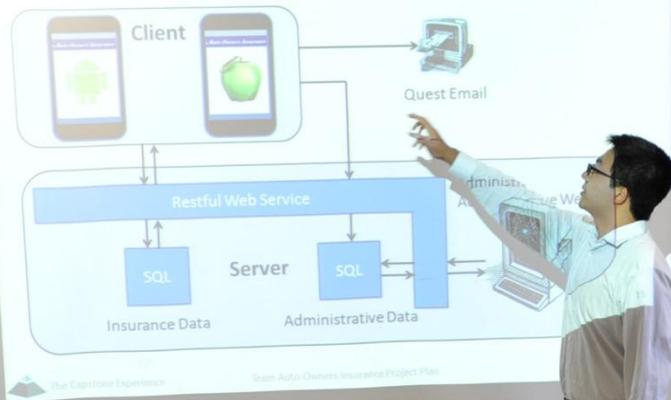
Team Auto-Owners Screen Mockup



Team Auto-Owners Architecture Diagram



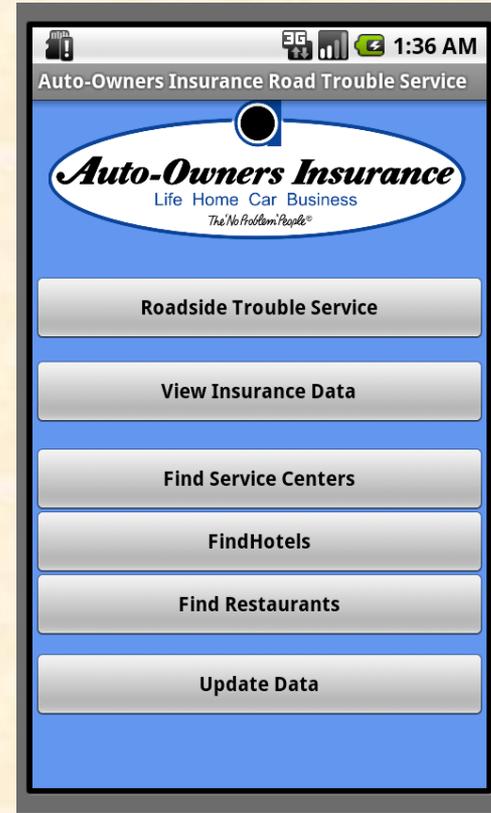
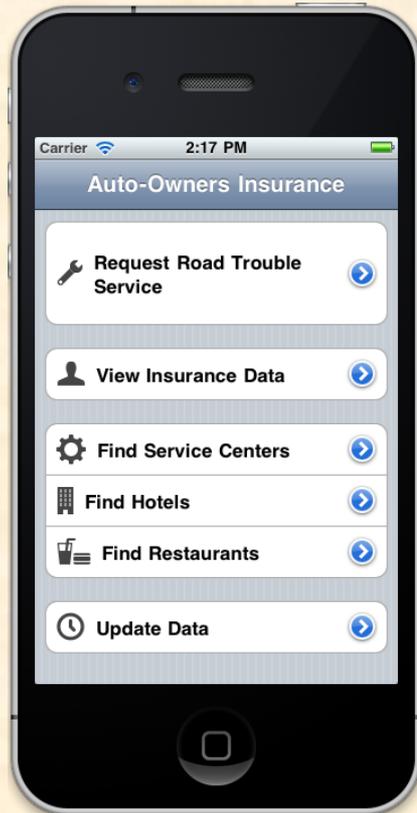
System Architecture



Team Auto-Owners
Project Plan Presentation

Team Auto-Owners Alpha Presentation

Mobile Apps Home Screens





Team Auto-Owners Alpha Presentation

Team Auto-Owners Alpha Presentation

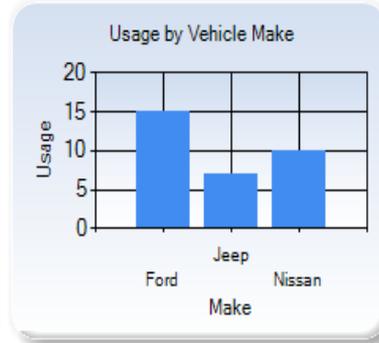
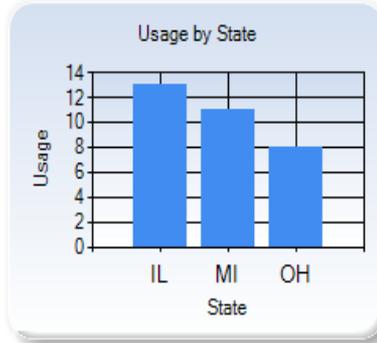
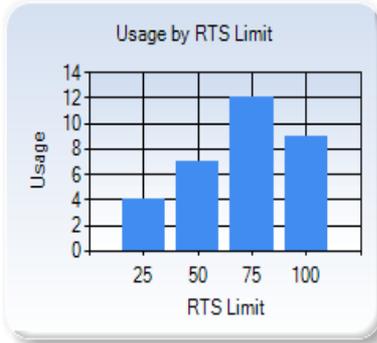
Administrative Website

Road Service Mobile App Monitoring

Statistics

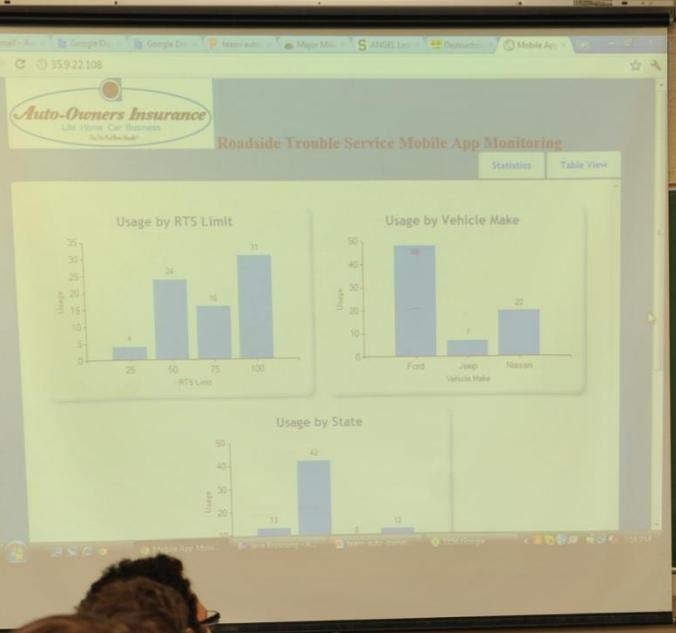
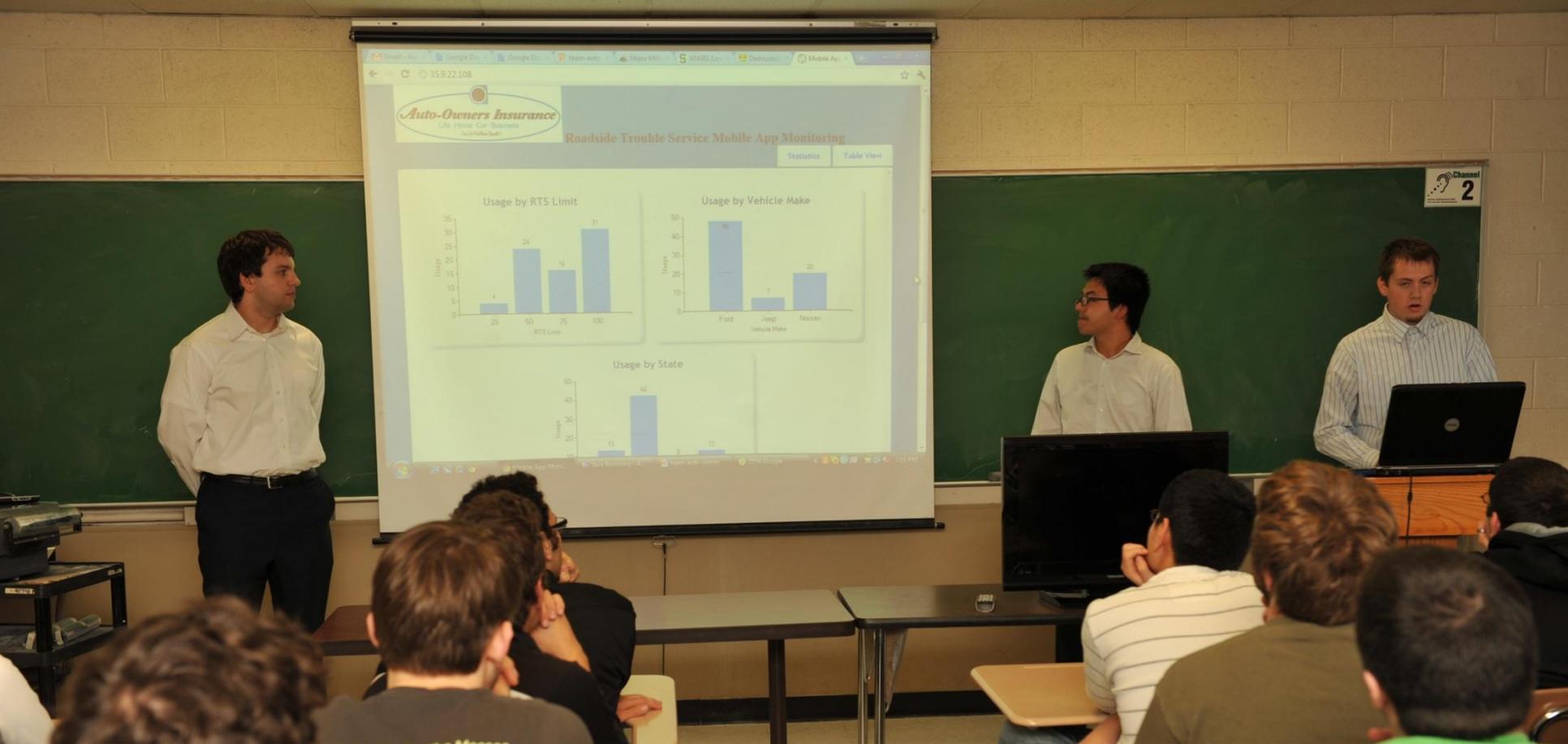
Table View

State:





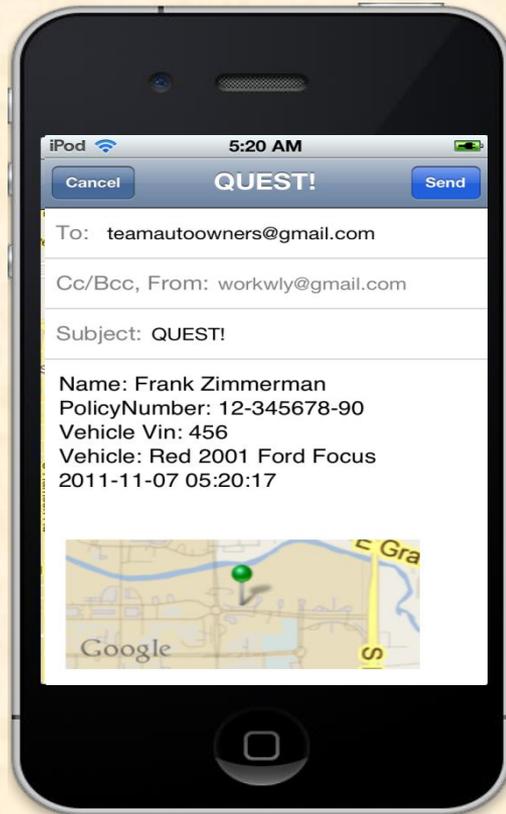
Team Auto-Owners Alpha Presentation



Team Auto-Owners
Beta Presentation

Team Auto-Owners Beta Presentation

iPhone App

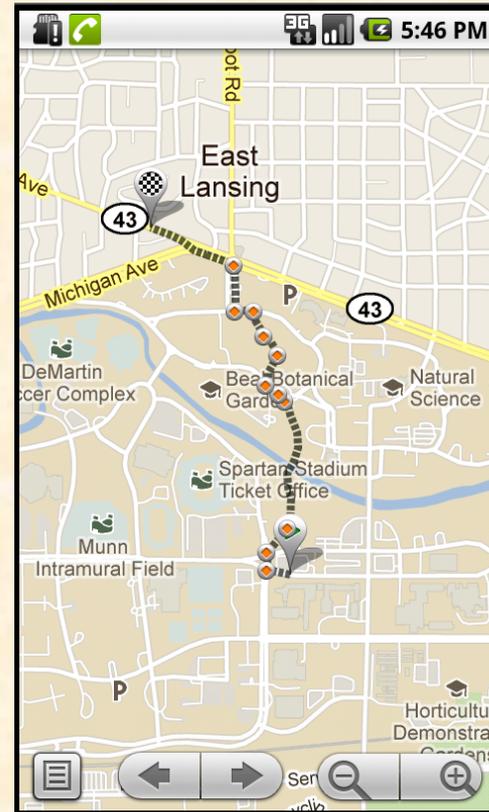
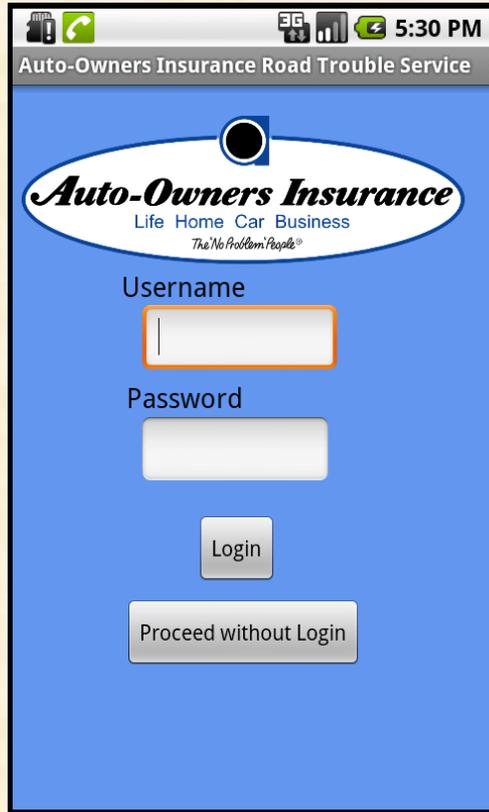




Team Auto-Owners Beta Presentation

Team Auto-Owners Beta Presentation

Android App





Team Auto-Owners Beta Presentation

PLEASE
NO FOOD OR
BEVERAGES.
NO FEET ON
FURNITURE.
THANK YOU

Newspaper




Auto-Owners Insurance 24-Hour Road Service Mobile Apps

When going on a vacation or simply driving home from work, the less or other car problems you can meet if they Auto-Owners Insurance provide 24-hour road service to their customers, aiding in the acquisition of help.

Unfortunately, when problems occur, customers often do not have their personal information or their exact location.

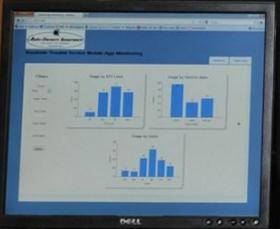
With this in mind, we have developed iPhone and Android mobile apps that allow a customer's Auto-Owners account information and have the ability to determine a customer's exact location using the phone's GPS at the event of trouble.

When in need of roadside assistance, a customer needs a help request to Auto-Owners with a few button presses, after which our app places a phone call on the customer's phone to verify that their truck is indeed on the way.

In addition to being able to view their own account information, Auto-Owners customers can search for maps to nearby restaurants, hotels, and service centers.

As counterparts to our mobile apps, we have developed a website for use by Auto-Owners Insurance agencies to monitor and track the customer use our mobile apps. Auto-Owners agencies can view app usage by service coverage level, state, and a variety of other parameters.

The applications are developed with Objective-C and Java. The website is built with PHP using MVC3. Both use a multi-user workflow in communication with MySQL database.


**Midwestern State University
Team members (left to right)**

- Justin Thompson
- Patrick Mottiggen
- Paul Fritshem
- Lingqun Wang
- John Shan Long, China

**Auto-Owners
Corporate Sponsors**

- Bob Burman
- Lanning, Michigan
- Chris Burns
- Lanning, Michigan
- Tony Dean
- Lanning, Michigan
- Phillip Fawcett
- Lanning, Michigan
- Scott Lips
- Lanning, Michigan
- Jim Buehner
- Lanning, Michigan



Team Auto-Owners
Design Day

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The Capstone Experience

Team Boeing

Department of Computer Science and Engineering
Michigan State University

Fall 2011



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...to Professionals*



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- ▶ [Employment & Diversity](#)
- ▶ [Employee/Retiree](#)
- ▶ [Environment](#)
- ▶ [Global Corporate Citizenship](#)
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Special Feature

- ▶ [787 Milestones](#)

In The News:

Boeing-Built DIRECTV 12 Satellite Delivers 1st Signals From Space

Boeing: Brigade Combat Team Modernization Increment 1 to Enter Production

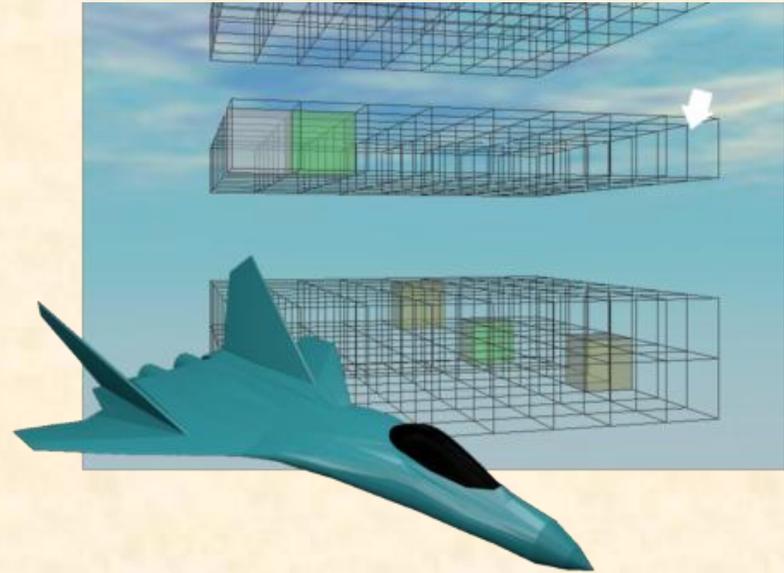
Boeing, Air Austral Announce Order for Two Next-Generation 737-800s

Boeing Delivers Four Next-Generation 737-900ERs to Lion

Team Boeing Project Overview

BAPS 2: Battle Aircraft Position Share 2

- Functionalities
 - Two-Player Game
 - Destroy Targets of Opposing Team
 - Use Aircraft with Various Capabilities
 - Integrated with [Battle Aircraft Position Share](#)
 - Based on Cyber Attacks
 - Gain Information
 - Disrupt Operations
- Features
 - Playable on iPhone and Android
 - Supports Both 1-Player and 2-Player Modes
 - Integration of Remote Cyber Attacks
- Technologies
 - iPhone and Android App Development
 - HTML5, JavaScript, WebGL
 - Blender (3D Modeling)
 - Internetworking
 - Data Encryption and Cyber Security
 - [BAPS: Battle Aircraft Position Share](#), Spring 2011



St. Louis, Missouri





Team Boeing

Devin Rose, Nick Palm, Chris Heuser, Josh Theisen



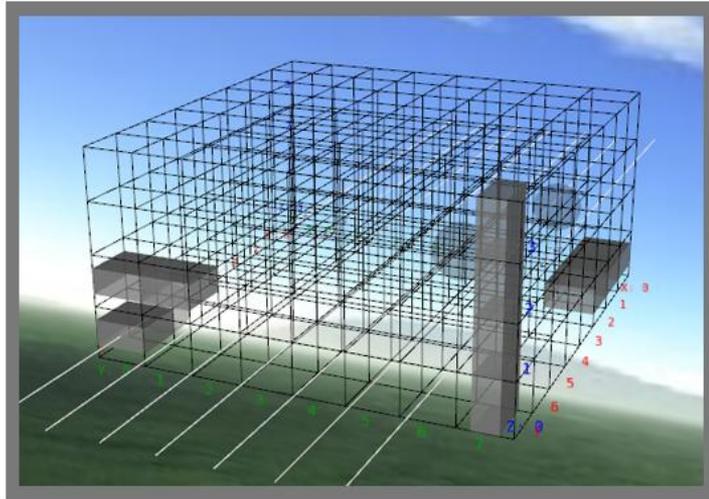
Screen Mockups



- Remember
- Heading
- Look UP DN MOVE FIRE

Team Boeing
Project Plan Presentation

Team Boeing Screen Mockup



Remember

Heading

Look:

UP

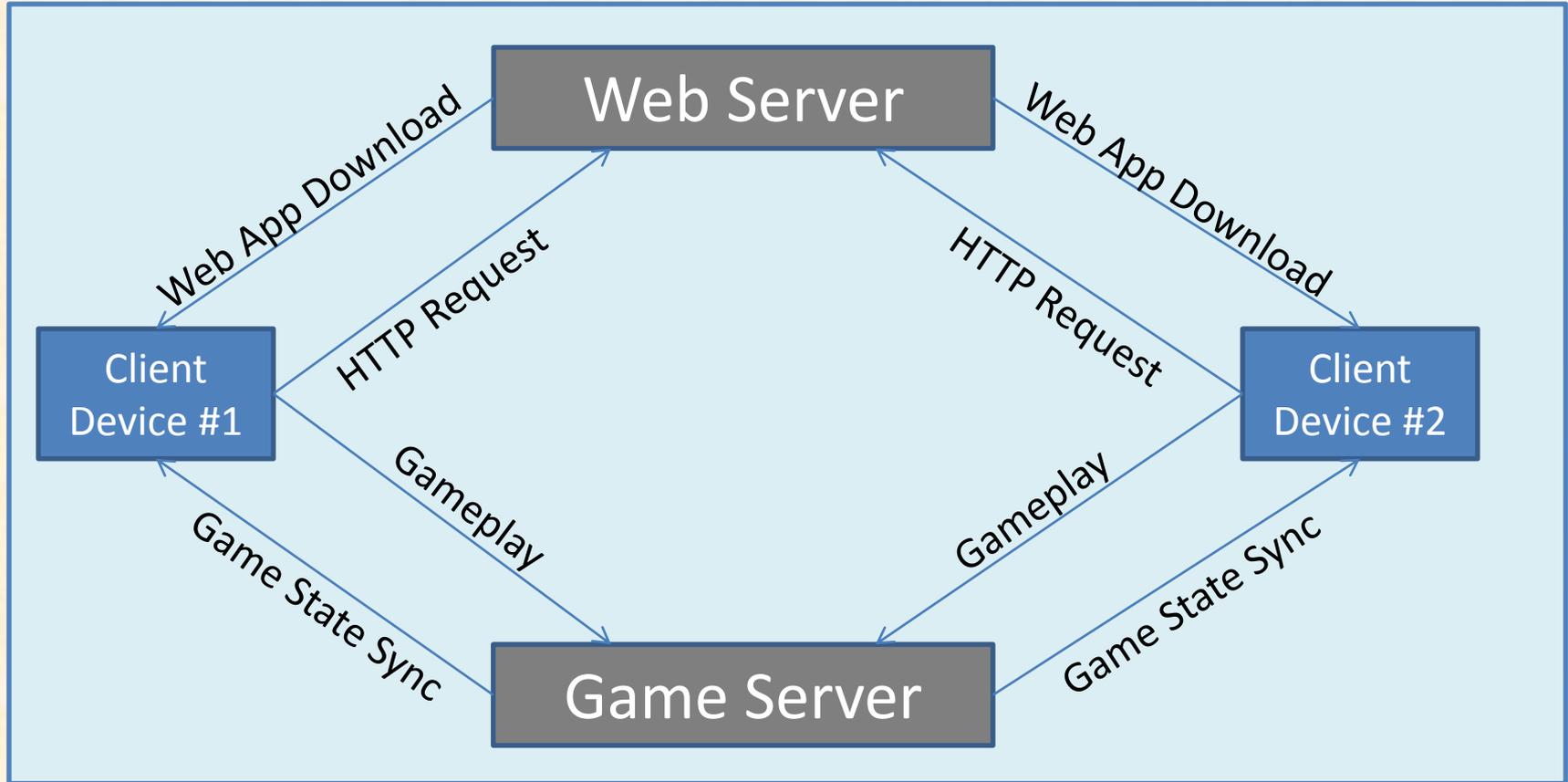
DN

MOVE

FIRE



Team Boeing Architecture Diagram





System Architecture

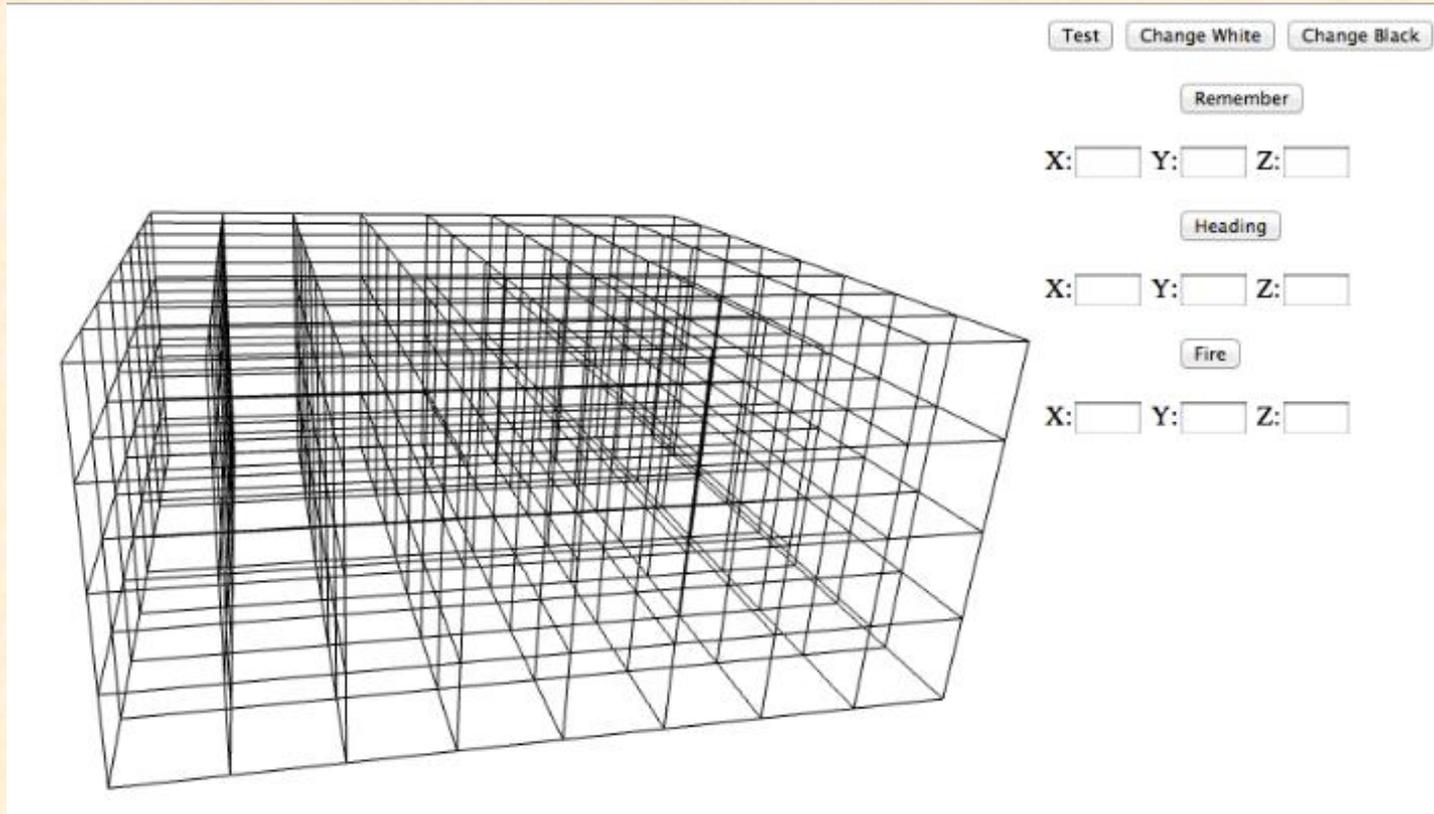


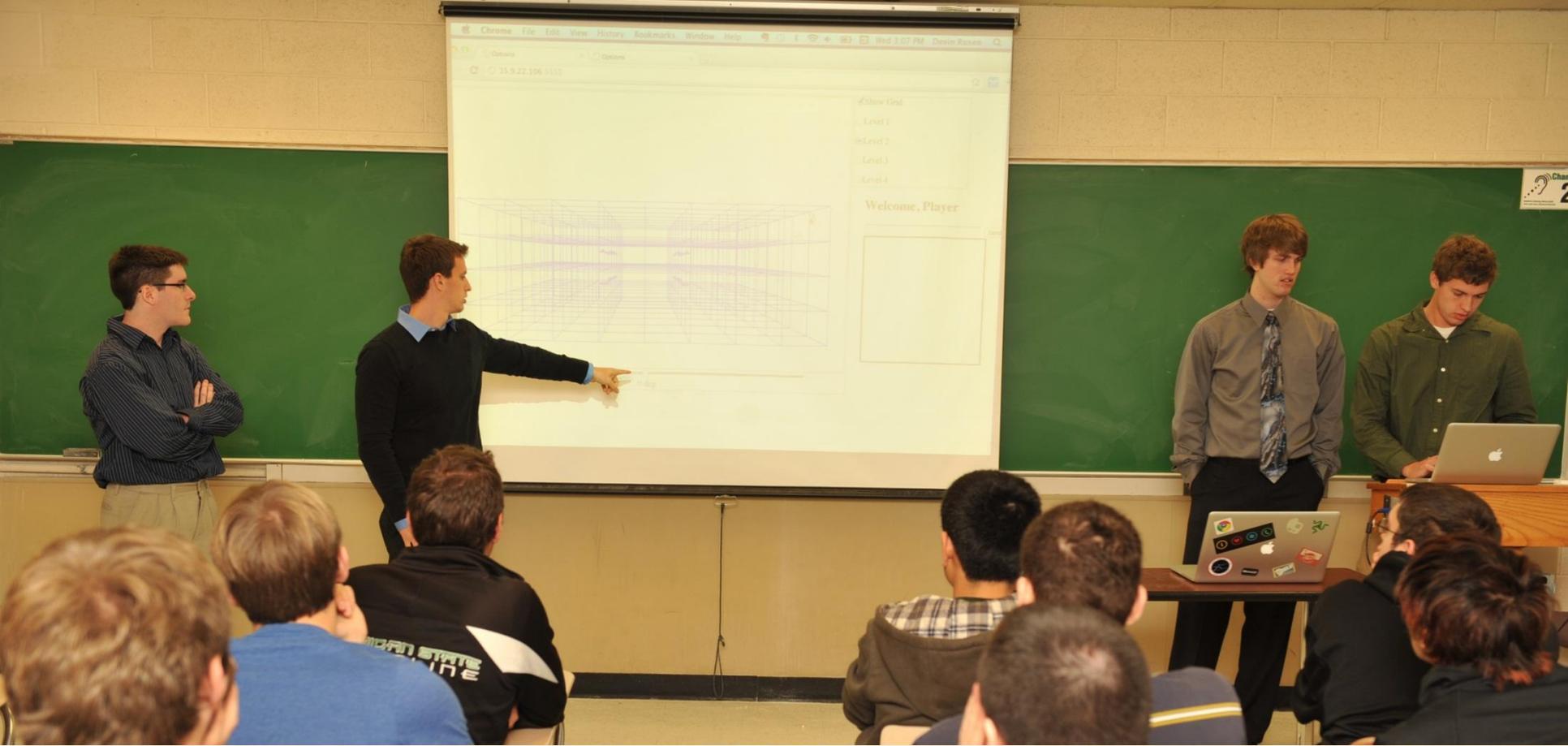
Team Boeing
Project Plan Presentation

MSU Physical Plant
www.ppp.msu.edu

Team Boeing Alpha Presentation

WebGL

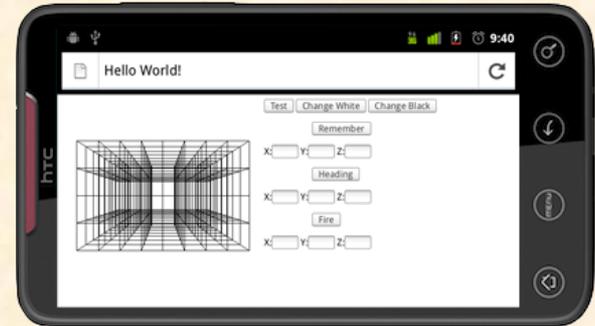
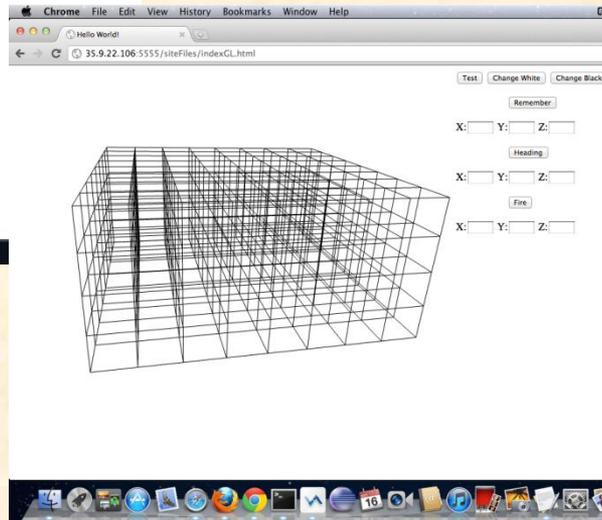
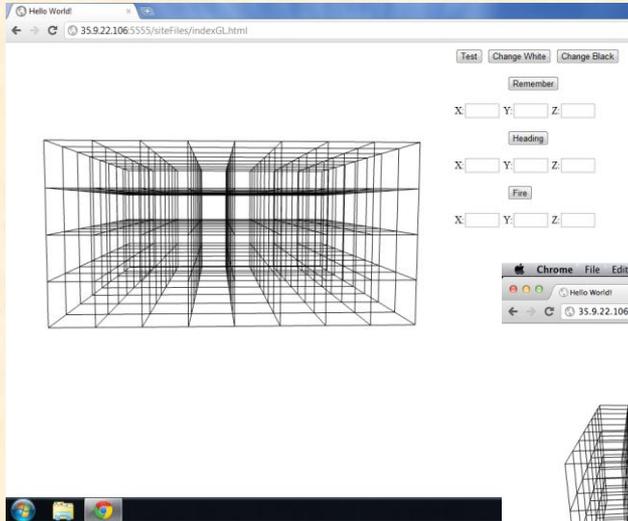




Team Boeing Alpha Presentation

Team Boeing Alpha Presentation

Cross Platform

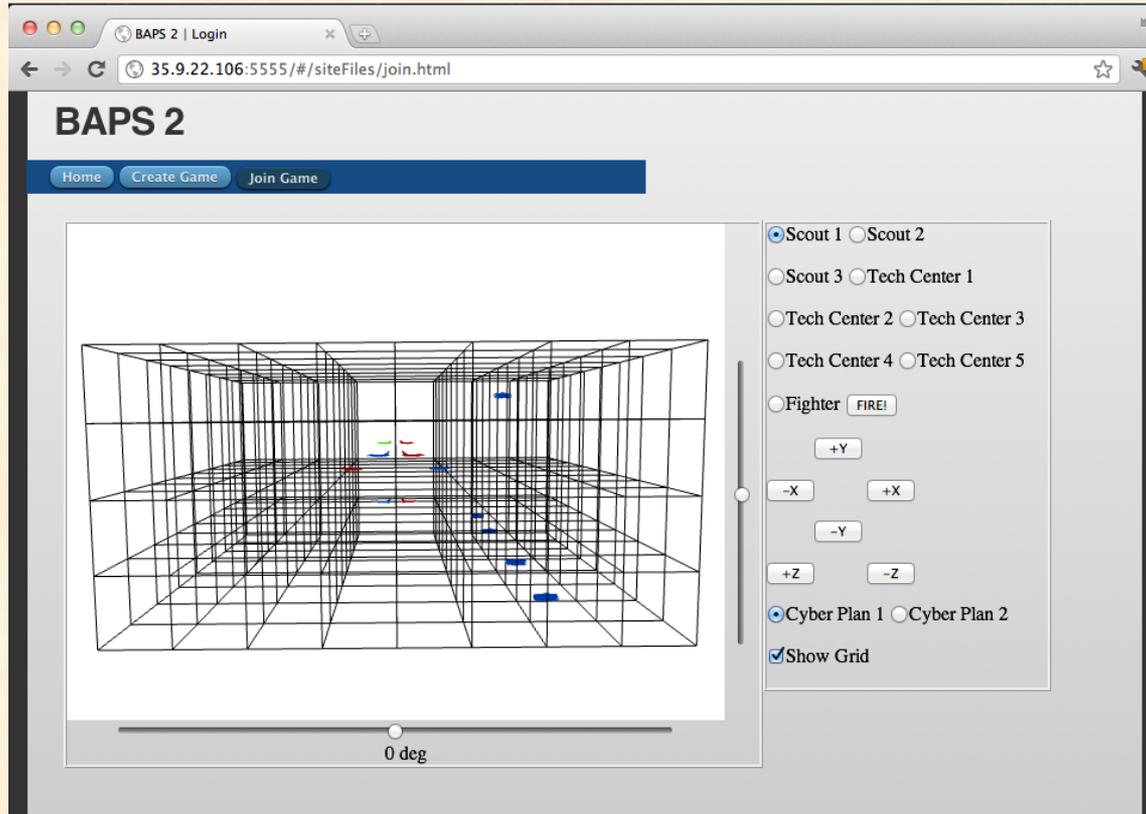


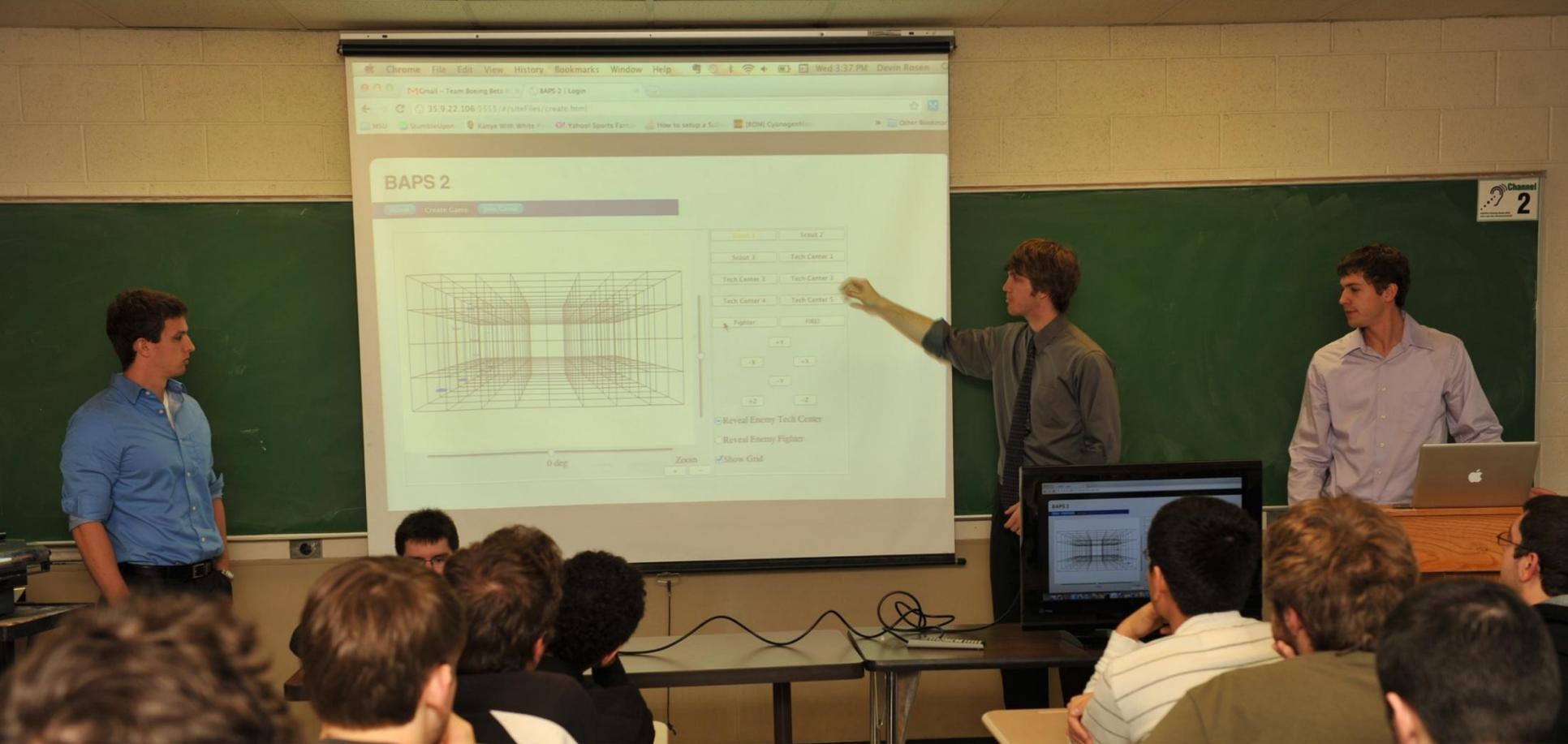


Team Boeing
Alpha Presentation

Team Boeing Beta Presentation

Game Screen with Grid

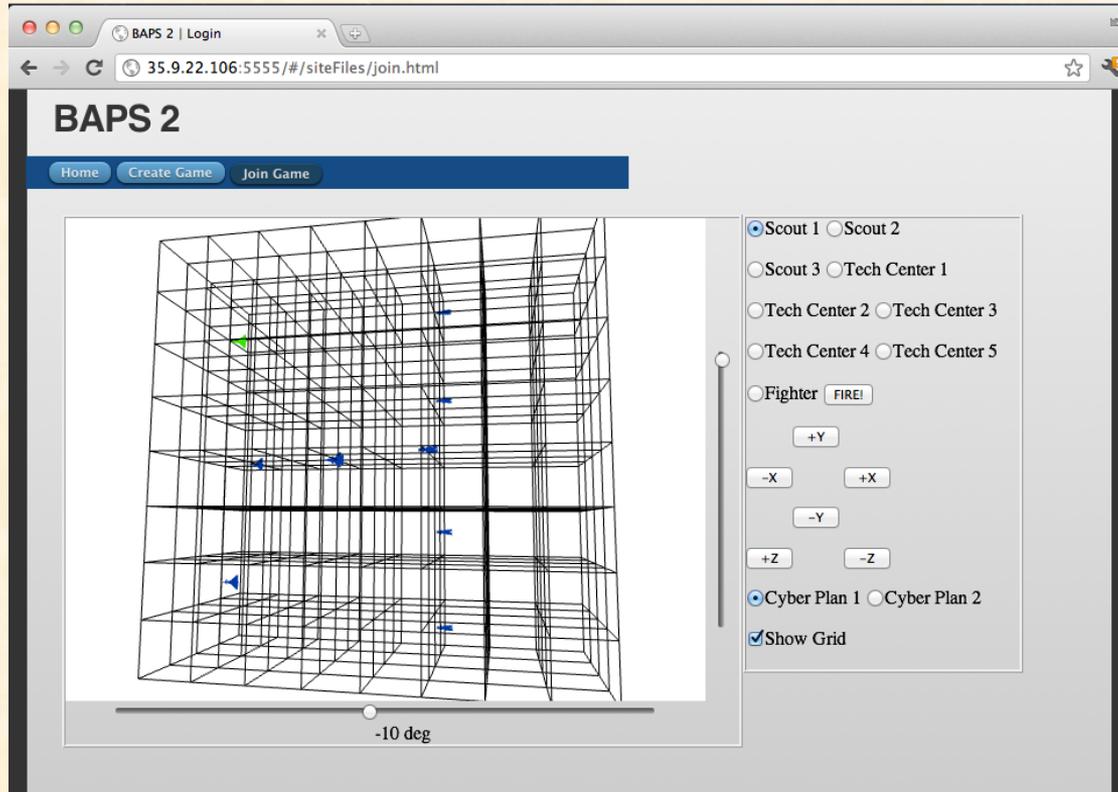




Team Boeing Beta Presentation

Team Boeing Beta Presentation

Game Screen Top Down View



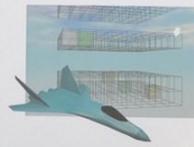


Team Boeing Beta Presentation



The Boeing Company BAPS 2: Battle Aircraft Position Share 2

Battle Aircraft Position Share 2, or BAPS 2, is a game in which two players compete in a 3D arena to destroy their enemy's targets, which include technology centers and planes. Players must protect their own targets by intercepting enemy communications and reacting accordingly. The game occurs in real time, with each player working to command their entire fleet through both offensive and evasive maneuvers. Continuous and strategic command of technology centers is essential to mounting a strong defense. In addition, each player selects a cyber-defense plan, which offers certain advantages and disadvantages, depending on whether or not the player is playing offensively or defensively. Players must deal with information overload and respond to feedback resulting from game events. Players who react both quickly and effectively will have an advantage in the game.



Since BAPS 2 is a web app, it can be played on many devices from different locations. The web app connects to a central game server, which keeps the game synchronized across all devices. This server also ensures that network latency does not have significant influence on the game. Communication between the web app and the game server is encrypted.

BAPS 2 is compatible with Windows XP/Vista/7, Mac OS X, Linux, Android, and iOS. The visuals are rendered in WebGL. Network connections between the game web app and the game server are made through WebSockets.



Michigan State University Team Members (left to right)

- David Rosen
Lansing, Michigan
- Nicholas Palm
Ypsilanti, Michigan
- Christopher Heuser
Brighton, Michigan
- Johann J. Theisen
Saginaw, Michigan

Boeing Corporate Sponsors

- Pete Cline
St. Louis, Missouri
- Matt Daniels
St. Louis, Missouri
- Bill Federman
Seattle, Washington
- Jayson F. Vincent
St. Louis, Missouri
- Steve Yelley
St. Louis, Missouri

Team Boeing Design Day

MICHIGAN STATE

UNIVERSITY

The Capstone Experience

Team Ford

Department of Computer Science and Engineering
Michigan State University
Fall 2011



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 Drive one.

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- COMMERCIAL
- ALL
- TECHNOLOGY
- SHOPPING TOOLS

40MPG x 3

 UP TO **40 MPG HWY²**
ALL-NEW 2012 **FOCUS SE** with SFE

 **41 MPG CITY²**
2012 **FUSION HYBRID**

 UP TO **40 MPG HWY²**
2011 **FIESTA SE** with SFE



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2011 Explorer. 

Team Ford Project Overview

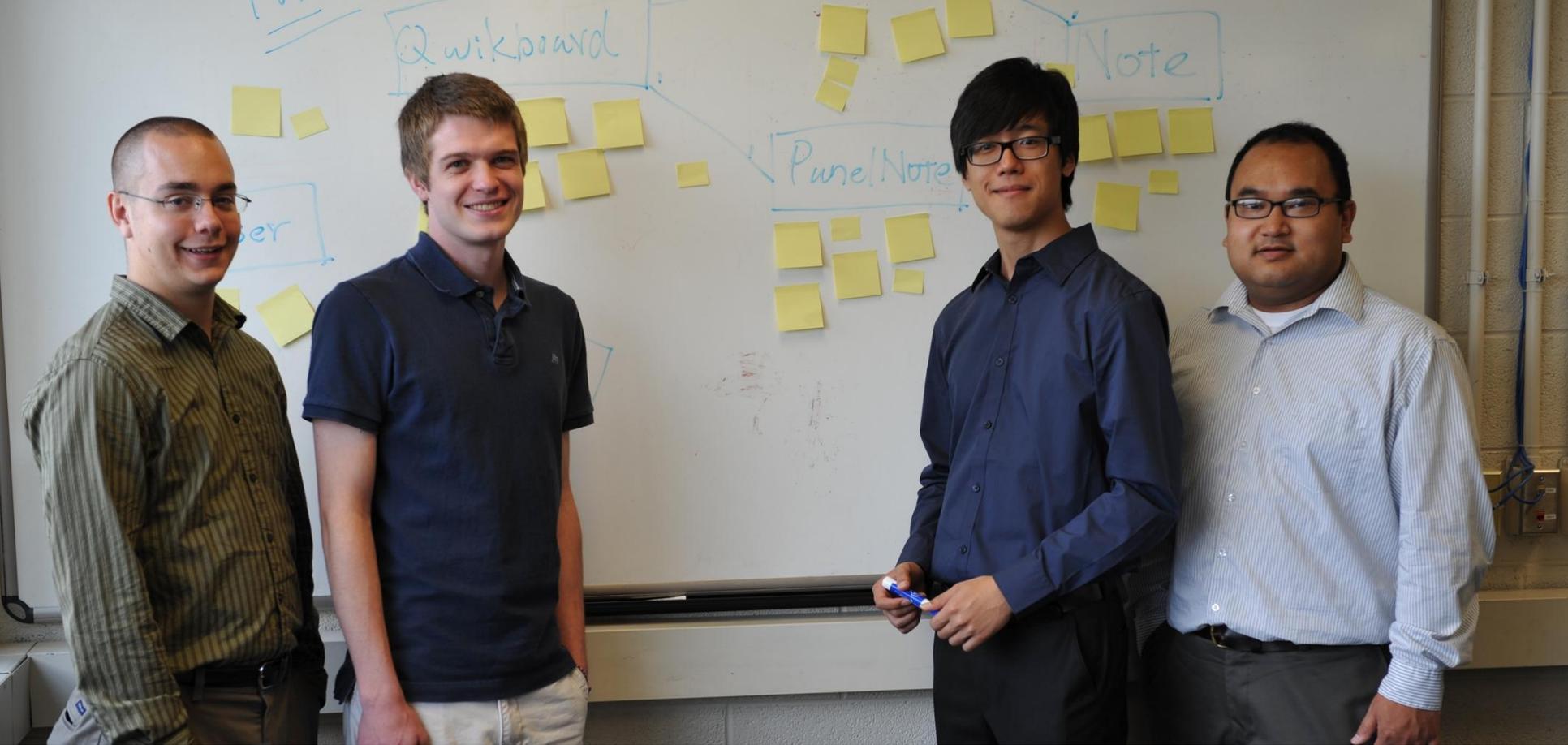
Ford Qwikboard

- Functionalities
 - Virtual “Sticky” Note Boards
 - Share Ideas, Plans, Announcements, Etc.
 - Use Cases
 - Connect Geographically Dispersed Teams
 - Support War Room Processes and Methods
 - Enable Virtual Team Brainstorming
- Features
 - Organized by Teams, Projects and Purposes
 - Dividable into Panels
 - Support Rich Content, #Hashtags and @UserID
 - Accessible via Web, Tablets and Mobile Devices
 - Integrated with Microsoft Office and SharePoint
- Technologies
 - HTML5, JavaScript/AJAX, CSS
 - Microsoft Office and SharePoint
 - Microsoft SQL Server 2008
 - Ford Directory Services (FDS)
 - Lightweight Directory Access Protocol (LDAP)



Dearborn, Michigan





Team Ford

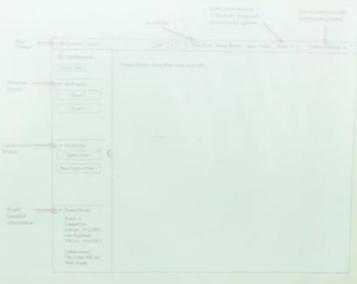
Will White, Luke Davis, Jin Hou, Dan Tran



Screen Mockups

Step 2 - Initial Login Screen

- Left Panel: all the Quikboards that the user has organized by personal Quikboards and Shared Quikboards with a detailed properties panel at the bottom
- Left Panel is a collapsible panel to provide additional screen space for the canvas work area
- The main features of the app are located in the toolbar area
- Ability to see who is currently editing



Team Ford
Project Plan Presentation

Team Ford Screen Mockup

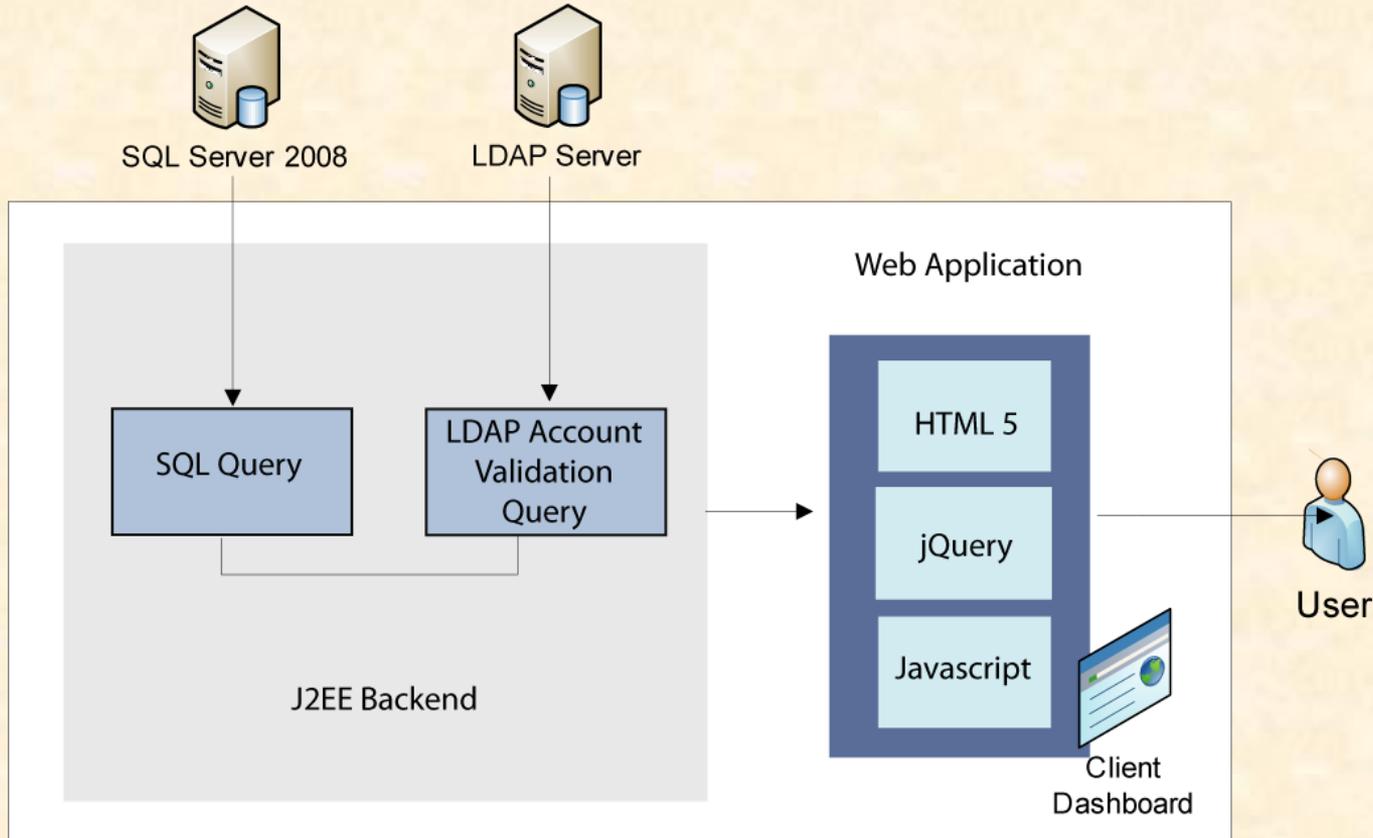
The screenshot displays a web application interface for 'Team Ford'. The main area features a Kanban board with four columns: 'Todo', 'In Work', 'Test', and 'Done'. Each column contains a light blue rectangular placeholder. A yellow 'New Note' button is positioned below the 'In Work' column. A modal window titled 'Edit Shared Board' is overlaid on the board, containing a text input field with 'Alpha Team', a 'Current Board Admin' field with 'Luke', and a table of users with permission levels. The table has columns for 'Admin', 'Collaborator', and 'Observer'. The 'Alpha Team' group is selected in the left sidebar. A red arrow points from the text 'Radio Buttons for Permission Levels' to the radio buttons in the modal table.

Radio Buttons for Permission Levels

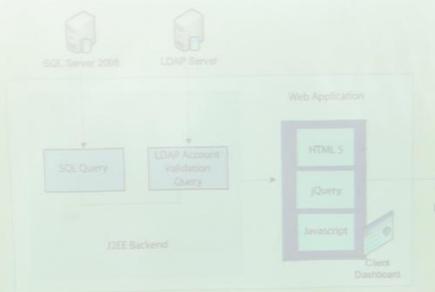
	Admin	Collaborator	Observer
Luke	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Will	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Jin	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Michael	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Gopal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Team Ford Architecture Diagram



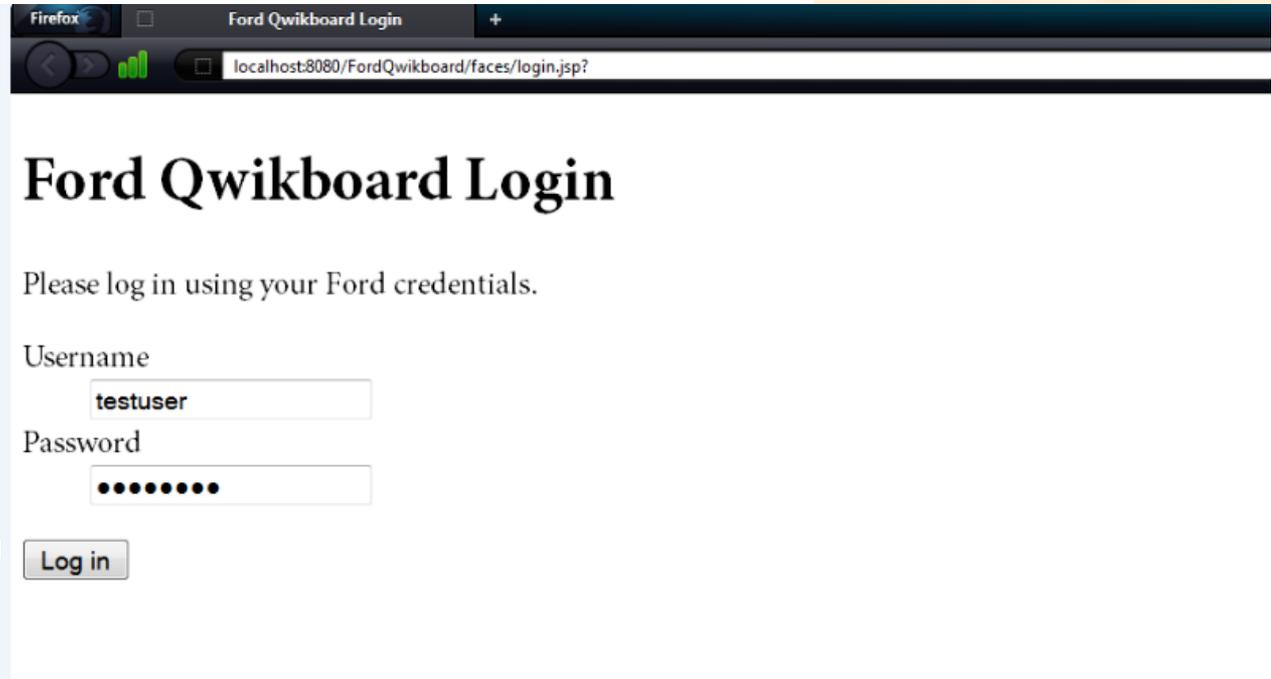
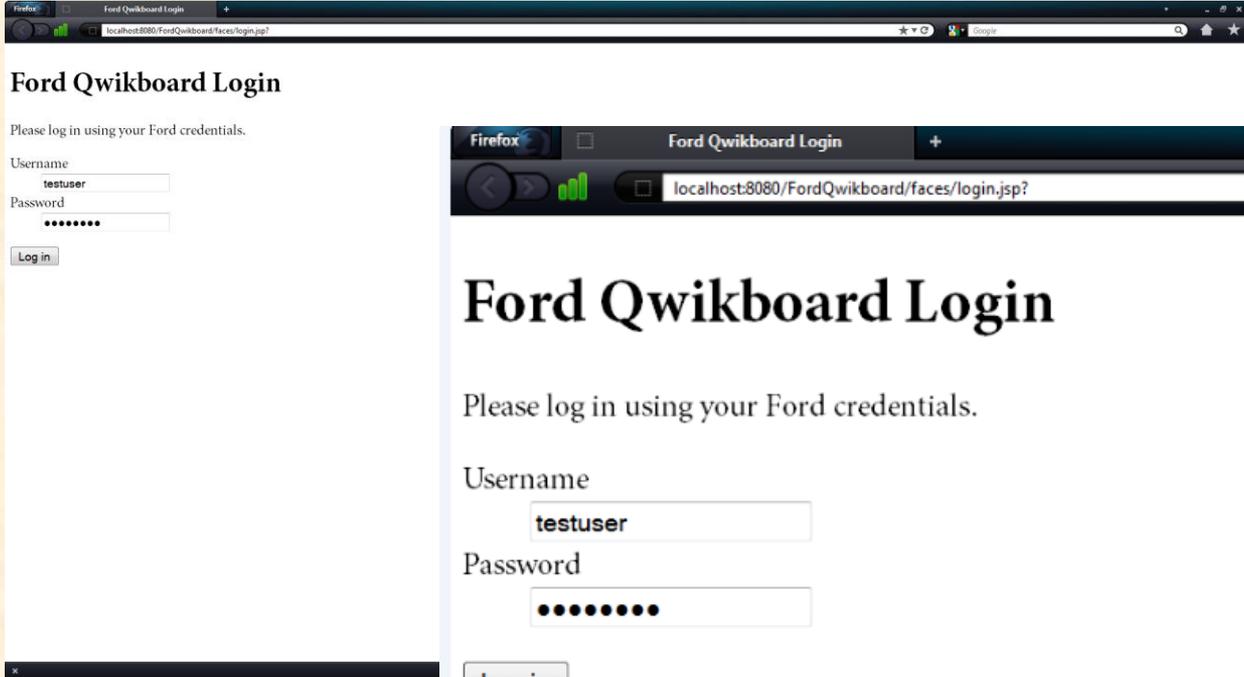
System Architecture



Team Ford
Project Plan Presentation

Team Ford Alpha Presentation

Login Screen





Team Ford Alpha Presentation

Team Ford Alpha Presentation

Dashboard

The screenshot shows a Firefox browser window displaying a dashboard titled "Ford Qwikboard". The address bar shows the URL "localhost:8080/FordQwikboard/faces/Ford_content/home.jsp#55". The browser's toolbar includes the Ford logo, navigation buttons, and a search bar. A sidebar on the left contains a "Qwikboards" menu with options: "demo", "helloooo", "shut up will", "team mustang", and "Panels". The main content area features four yellow sticky notes arranged in a staggered layout. Each note has a title and a "Last Modified" timestamp at the bottom:

- Engine**: Last Modified: 2011-10-16 22:9:12
- Style**: Last Modified: 2011-10-16 22:9:3
- Wheels**: Last Modified: 2011-10-16 22:9:0
- Interiors**: Last Modified: 2011-10-16 22:9:9

The browser's status bar at the bottom right shows a magnification level of 120%.





Team Ford Alpha Presentation

Team Ford Beta Presentation

Add Qwikboard

The screenshot displays the Team Ford Qwikboard interface. On the left, a sidebar contains the Ford logo, a 'Qwikboards' dropdown menu with 'alpha' selected, and a 'Panels' section. The main workspace features several panels: a pink panel with the text 'hello', an orange panel, a video player titled 'Mustang GT500' showing a car, and a blue panel. A central dialog box prompts the user to 'Please enter a name for your new Qwikboard.' with the text 'beta' entered. On the right, a 'Video' section contains a yellow panel, a video player titled 'Top Gear Lotu...' showing a car, and another blue panel. Each panel includes a 'Last Modified' timestamp.





Team Ford Beta Presentation

Team Ford Beta Presentation

Edit Note

The screenshot displays the Team Ford Beta Presentation interface. On the left, a sidebar contains the Ford logo, a 'Qwikboards' dropdown menu, and a list of items including 'alpha' and 'Panels'. The main workspace features several sticky notes: a pink note with the text 'hello' (last modified 2011-11-7 0:57:46), an orange note (last modified 'Last'), a yellow note (last modified 2011-11-7 0:57:12), and a blue note (last modified 2011-11-7 1:5:25). A video player is visible, showing a clip titled 'Mustang GT500' (last modified 2011-11-7 1:6:27) and another titled 'Top Gear Lotu ...' (last modified 2011-11-7 1:3:24). A central modal window titled 'Edit a StickyNote' is open, showing a rich text editor with the text 'hello', a 'Color' selection tool, and a 'Choose File' button with the message 'No file chosen'. The interface also includes a top navigation bar with icons for zoom, Qwikboards, navigation, grid, help, and user management.





Team Ford Beta Presentation

The Ford Motor Company Ford Qwikboard

Ford is a global company that has many geographically dispersed teams. In order for these teams to be able to communicate more effectively and efficiently we designed and written Ford Qwikboard.

Ford Qwikboard is a "sticky note" web application that allows users to share key ideas through text, audio, video and various office attachments. For easy organization a Qwikboard is able to be broken into different sections called pages.

When a user logs in they see their current Qwikboards, able to be broken into different sections called pages. They can create a new Qwikboard and they can add users with whom they will be able to collaborate. The Qwikboard is one big open space to share thoughts and ideas freely with peers.

The Qwikboard is updated in real time, which allows for instant communication and feedback. This eliminates outdated conference rooms and cluttered whiteboards.

The Ford Qwikboard is very user friendly web application that captures the natural look and feel of using "sticky notes" on a whiteboard. Everything is easily located with large buttons. Our application replaces cluttered war room processes and whiteboard work starting with a clean and efficient virtual one accessible at any time.

Ford Qwikboard is written in HTML5 with Java, JavaScript, Ruby and multiple open source frameworks. It runs on any modern web browser or mobile device.



Michigan State University

Team Members (left to right)

William S. White Jr.
Farmington, Michigan
Luka Chvojka
East Lansing, Michigan
Jin Hyeon
Changchun, China
Dash Tran
Farmington, Michigan

Ford

Corporate Sponsors

Paul Grier
Dearborn, Michigan
Adam Hays
Dearborn, Michigan
Cedric Kamm
Dearborn, Michigan
Michael Senaldi
Dearborn, Michigan
Laura Strickland
Dearborn, Michigan
Michael Rika
Dearborn, Michigan

Team Ford Design Day

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Team GE Aviation

Department of Computer Science and Engineering
Michigan State University

Fall 2011



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12,405,144* hours

The GE90 reaches 10 million hours of flight

* Estimated based on fleet averages



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GENx-2B First Engine to Test

GE's GENx-2B engine for the new Boeing 747-8 airplane achieves 70,000 Lbs. takeoff thrust in first test.



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Interactive



Team GE Aviation Project Overview

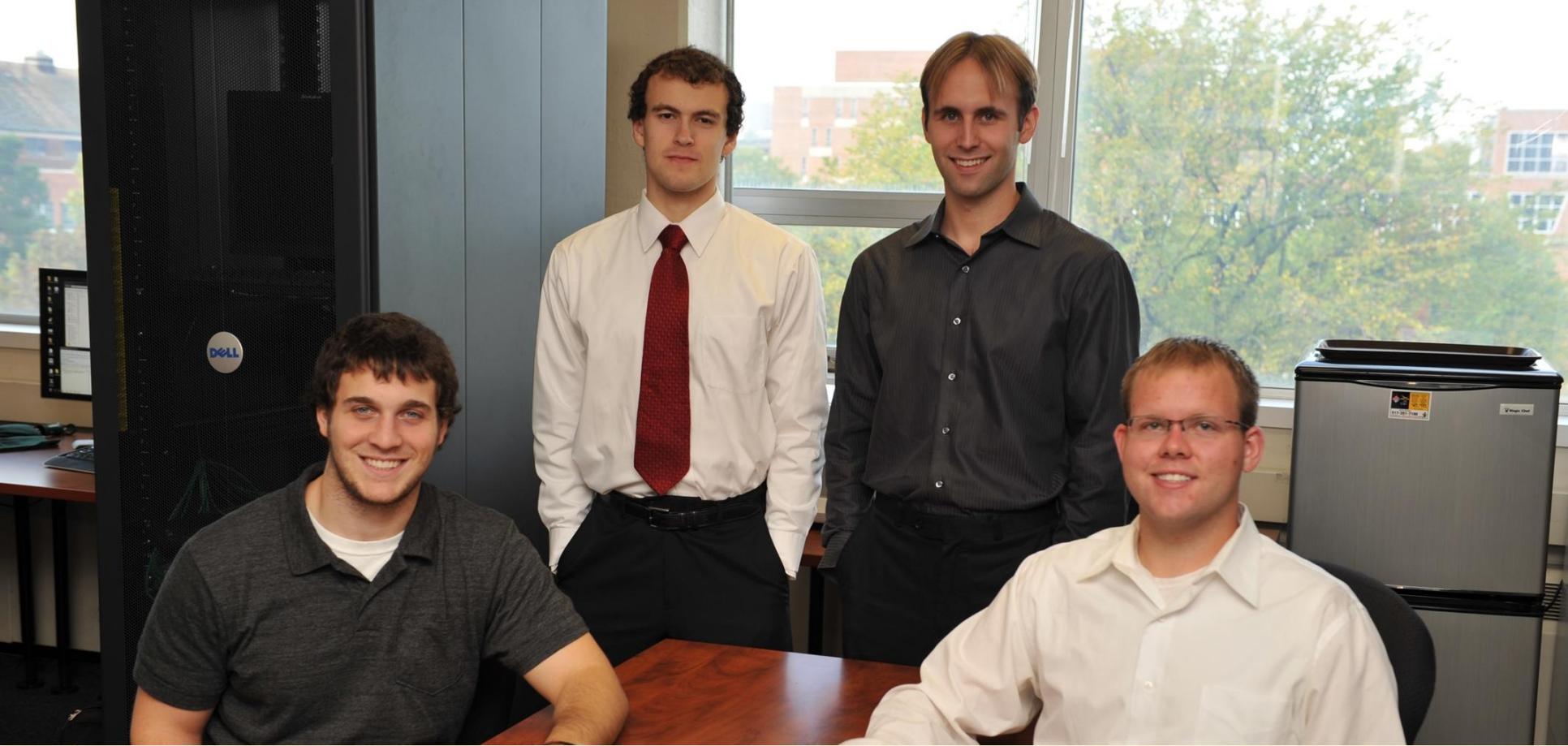
NextGen Aircraft Taxi Assistance

- Functionalities
 - Airplane Ground Taxi Assistance
 - Safely Guide Pilots During Low Visibility
 - From Current Ground Position
 - To Point of Arrival or Departure
- Features
 - Three-Dimensional Visualization
 - Designed for Next Generation Flight Deck
 - Path Based On
 - Surface Route Information
 - Surface and Air Movement Information from Aircraft
 - X-Plane NOAA RUC Plug-In
- Technologies
 - X-Plane
 - Open GL, GL Studio, GLUT, GLEW
 - ARINC424 Data Streams
 - NOAA RUC (Rapid Update Cycle)
 - 4D Path Predictions
 - [MSU Next Generation Flight Deck](#)



Grand Rapids, Michigan





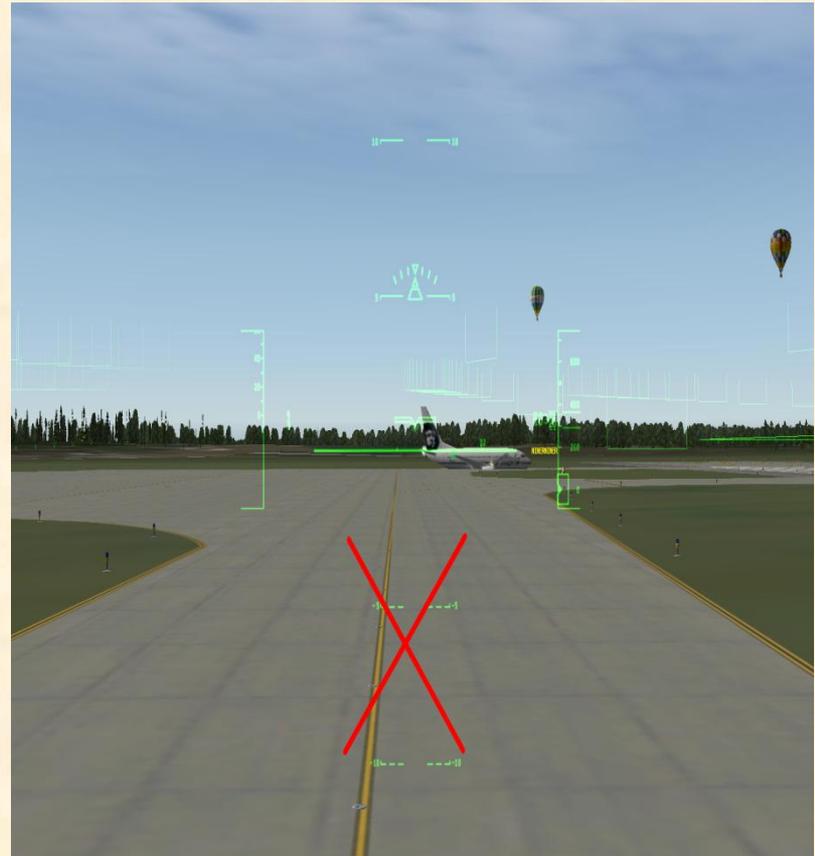
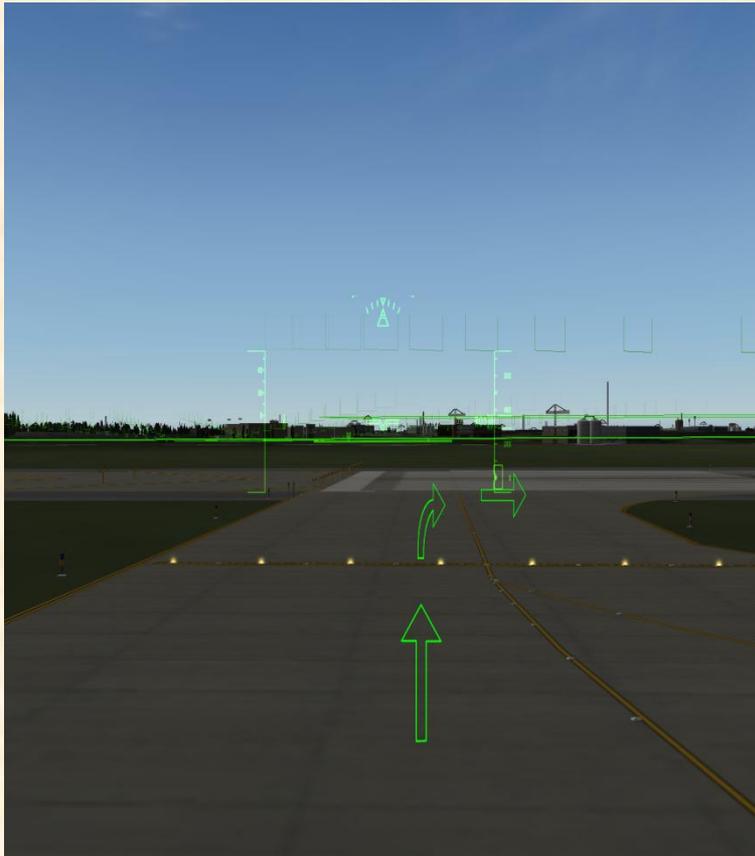
Team GE Aviation

Mitch Thelen, Jacob Walker, Jason Cepela, John Richter

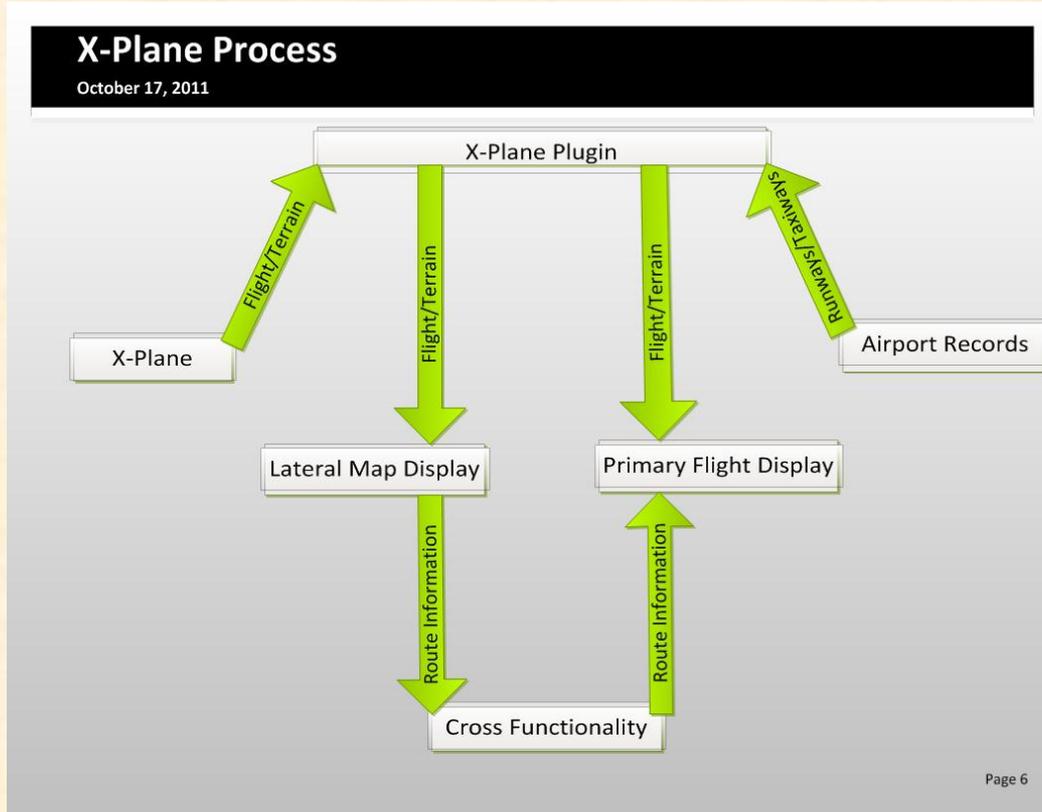


Team GE Aviation Project Plan Presentation

Team GE Aviation Screen Mockup



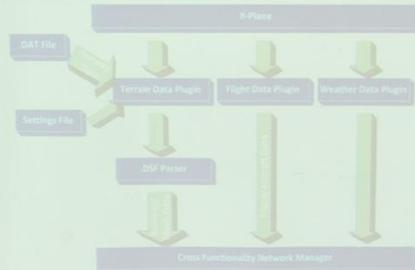
Team GE Aviation Architecture Diagram



System Architecture

X-Plane Process

September 20, 2011



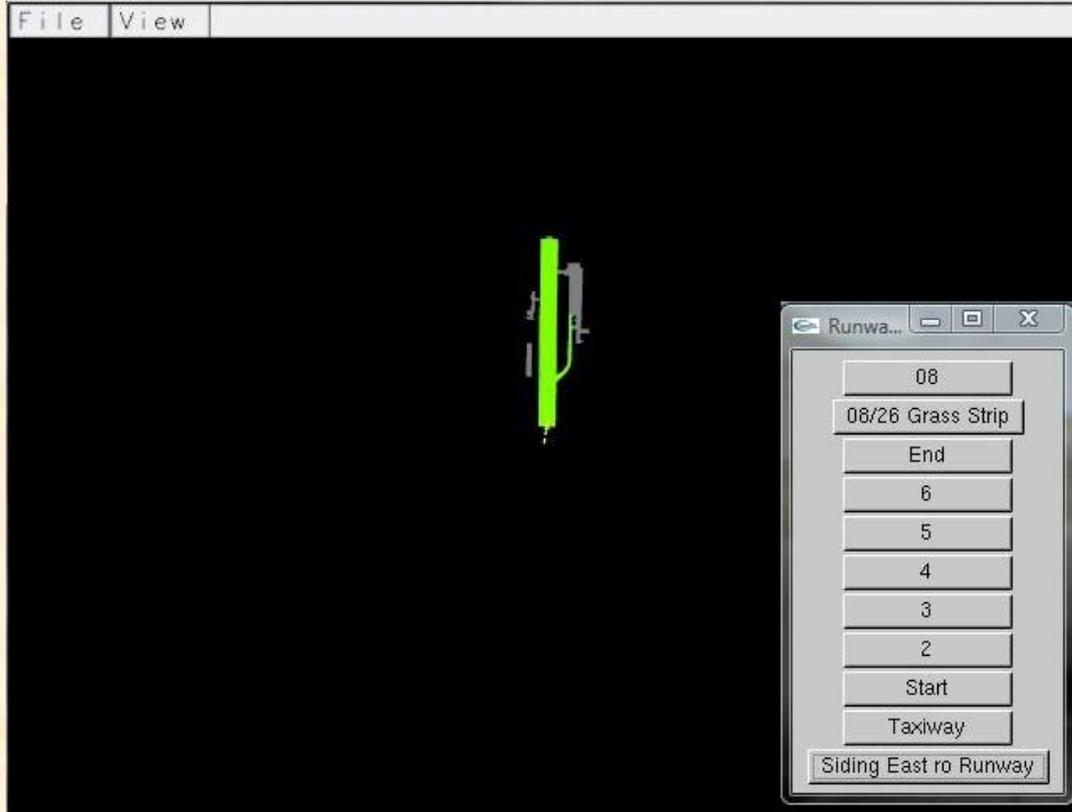
The Cockpit Experience

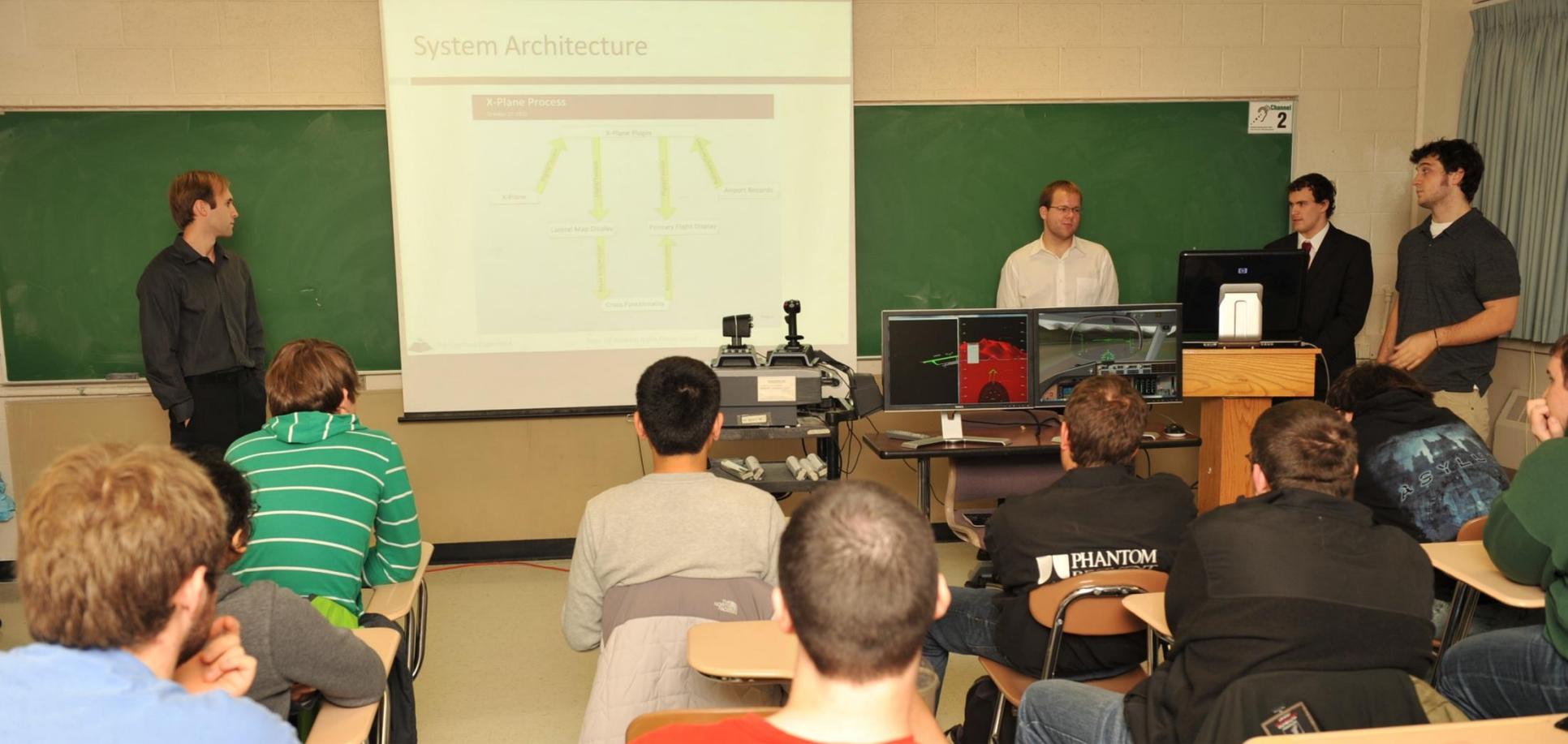
Team GE Aviation Project Plan

Team GE Aviation
Project Plan Presentation

Team GE Aviation Alpha Presentation

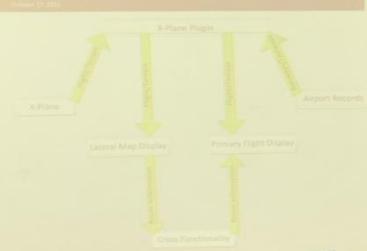
Route Selection





System Architecture

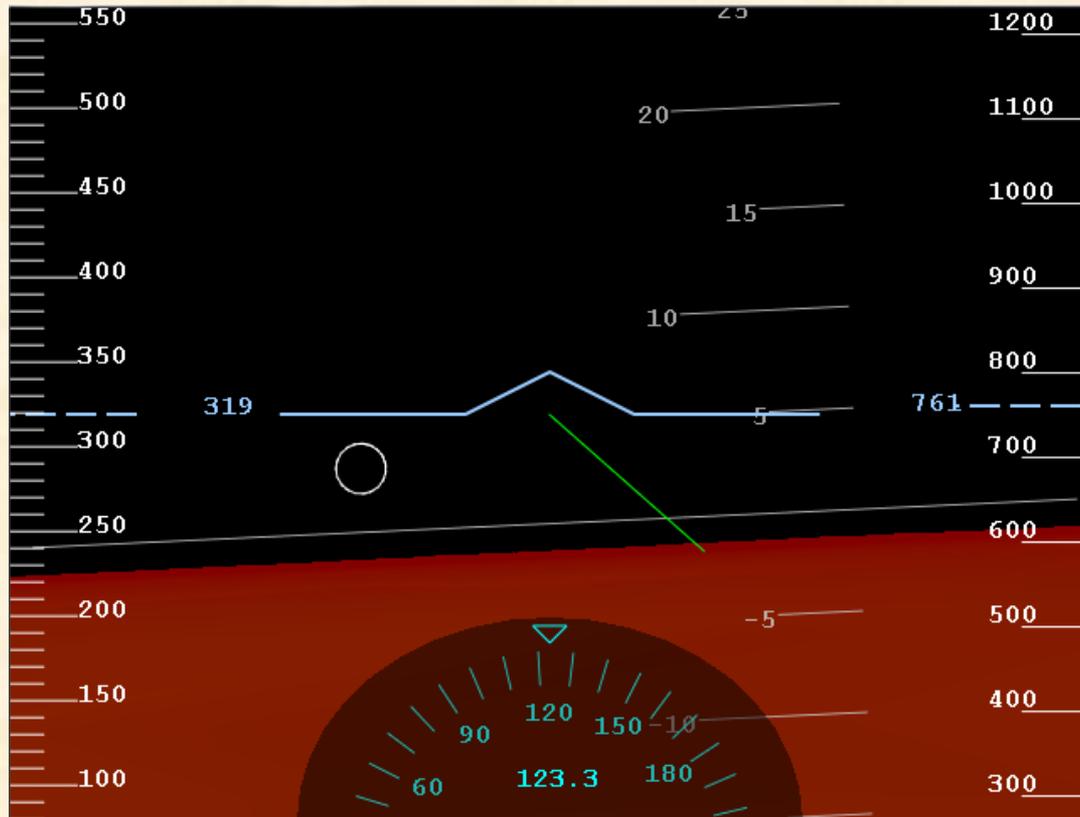
X-Plane Process



Team GE Aviation
Alpha Presentation

Team GE Aviation Alpha Presentation

Route Guidance

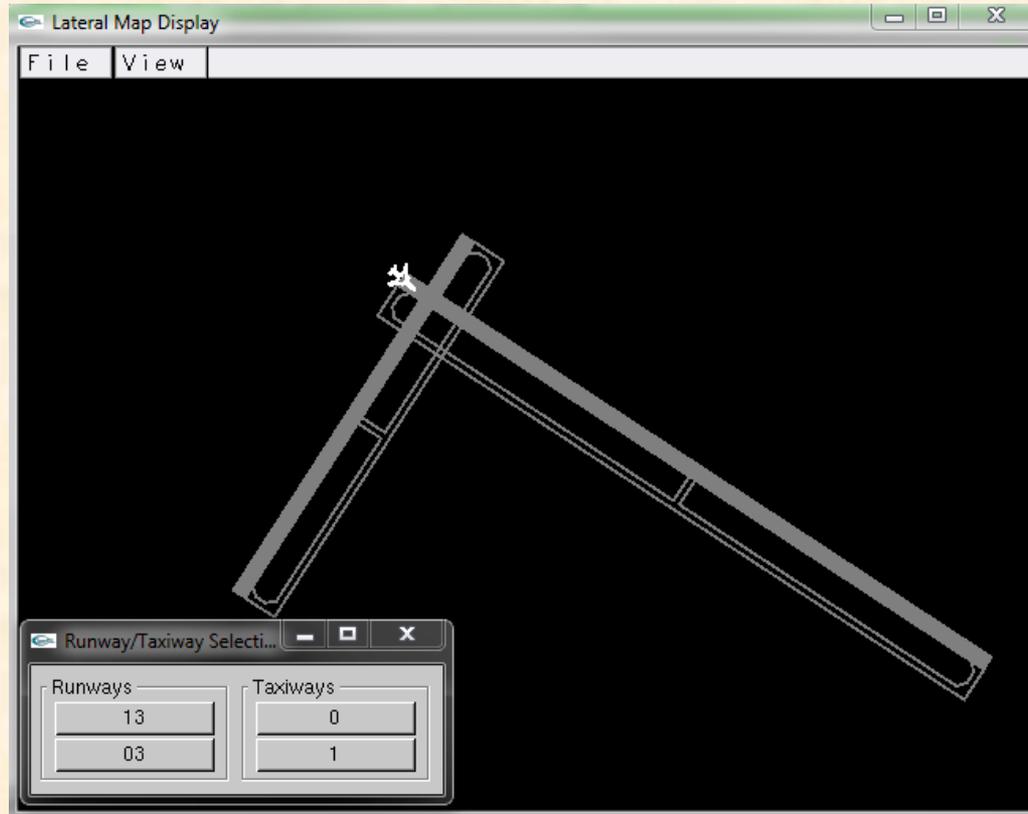




Team GE Aviation Alpha Presentation

Team GE Aviation Beta Presentation

Lateral Map Display





Team GE Aviation Beta Presentation

Team GE Aviation Beta Presentation

Primary Flight Display





Team GE Aviation Beta Presentation



Team GE Aviation
Design Day

MICHIGAN STATE

UNIVERSITY

The Capstone Experience

Team Meijer

Department of Computer Science and Engineering
Michigan State University

Fall 2011



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- Furniture
- Home & Crafts
- Garden & Outdoor
- Sports & Recreation
- Pet
- Online Sale
- Music & Movies
- Electronics
- Photo
- Toys
- Video Games
- Baby & Kids
- Jewelry & Accessories
- Gift Shop & Gift Cards
- Clearance

Spend Your Meijer Gift Card, Get **FREE Standard Shipping!**

dailysteal

dailysteal

18 Hrs 41 Mins 28 Secs



Acoustic Research

After Christmas Online Clearance Save 20-60%!

clearance **save 20-60%**

Team Meijer Project Overview

Tablet-Based Point-of-Sale System

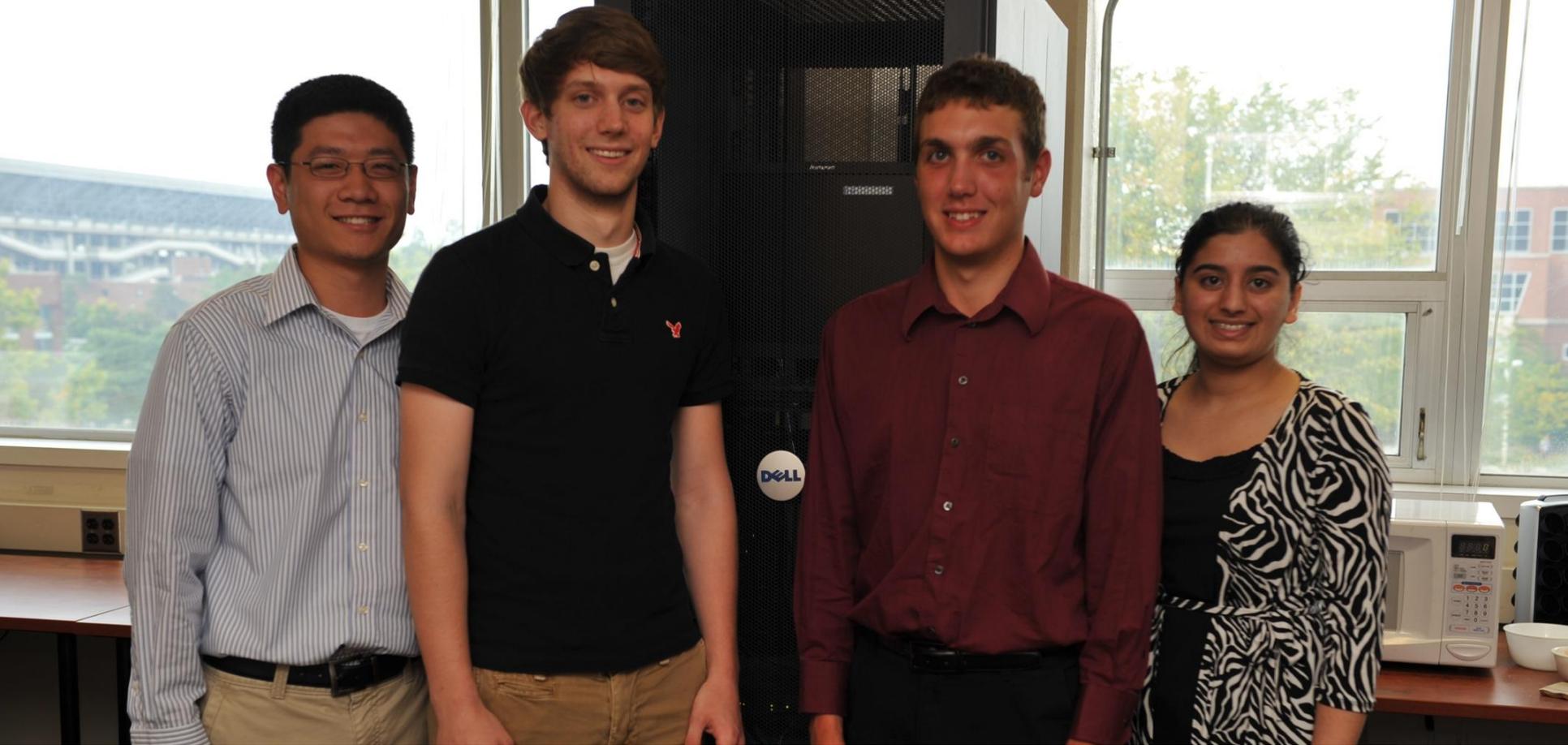
- Functionalities
 - Tablet-Based Self-Checkout System
 - For Use by Customers and Employees
 - Supports Various UPC Barcode Scanners
 - Interfaces with Meijer's Virtual Point-of-Sale Subsystem
- Features
 - HP Slate 500 Web Apps
 - SOAP 1.1-Based .NET Service for VPOS Transactions
 - Common Extensible .NET Service for UPC Scanners
 - Employee Monitoring of Customer
 - Transaction Totals and Item Exceptions
- Technologies
 - Microsoft Windows Server 2008 R2
 - Microsoft Visual Studio 2010
 - Microsoft .NET, C# 4.0
 - CSS, HTML 5
 - XML
 - SOAP (Simple Object Access Protocol)



meijer®

Grand Rapids, Michigan





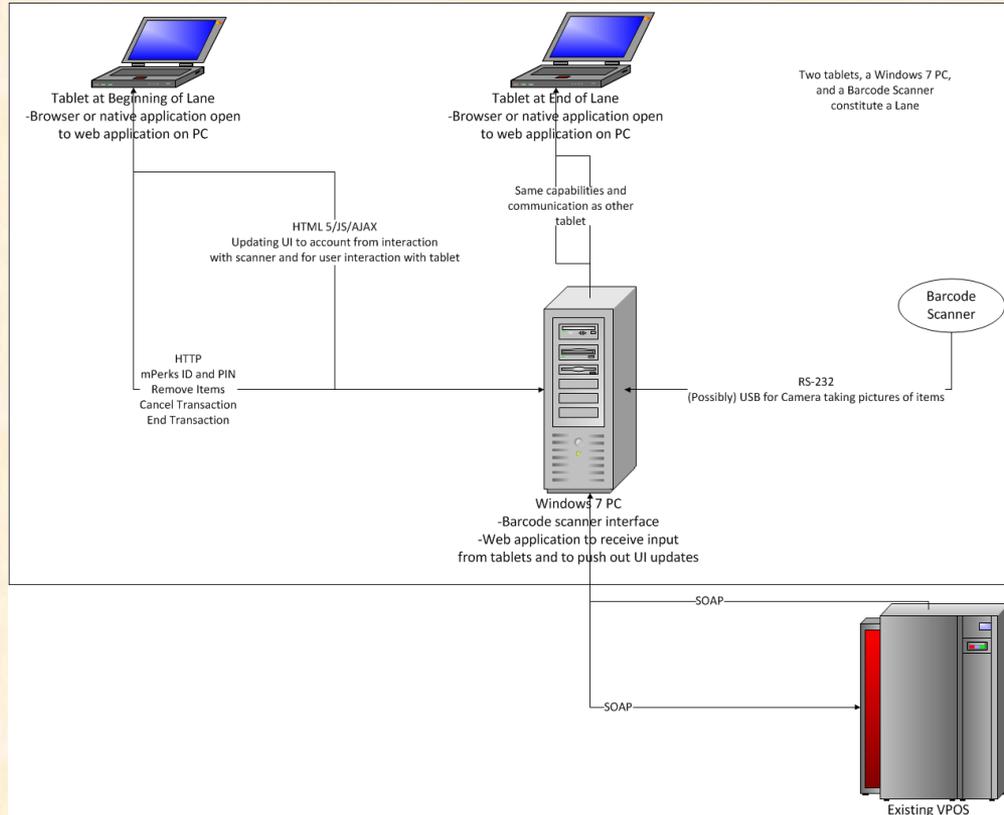
Team Meijer

Mark Sun, Andrew Rockwell, Peter Rifel, Rita Adhi



Team Meijer Project Plan Presentation

Team Meijer Architecture Diagram



Screen Mockups



Figure 2.3 Product Code Input Screen

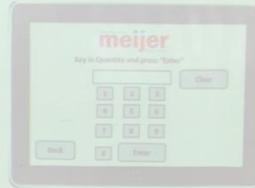


Figure 2.4 Product Quantity Input Screen

Team Meijer
Project Plan Presentation

Team Meijer Screen Mockup





Team Meijer Alpha Presentation

Team Meijer Alpha Presentation

Customer Login





Team Meijer Alpha Presentation

Team Meijer Alpha Presentation

Item Scan



Team Meijer Beta Presentation

Main Screen





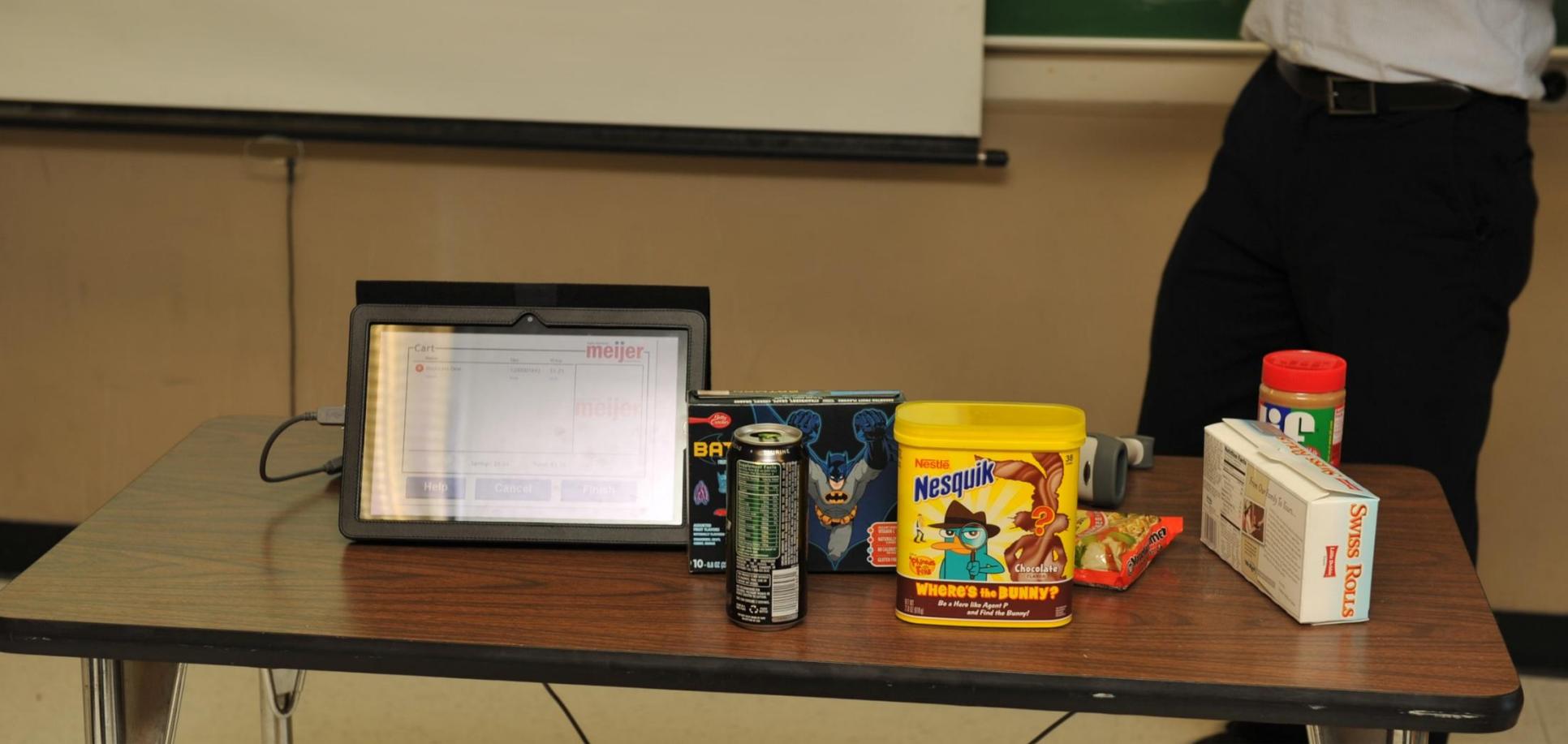
Cart meijer

Name	UPC	Price
1 Popcorn	2800068090	\$3.99
2 Popovers Item		\$0.00
3 Ramen Noodle	4178900211	\$0.20
4 Snack Cakes	2430004130	\$1.06
5 Mountain Dew	1200001643	\$1.25
6 Jif Pnt Btr	5150024128	\$2.09
7 Jif Pnt Btr	5150024128	\$2.09

Savings: \$1.04 Total: \$10.78

Help Cancel Finish

Team Meijer
Beta Presentation



Team Meijer Beta Presentation

Team Meijer Beta Presentation

Item Scan





Team Meijer Beta Presentation



Meijer
Tablet-Based Point-of-Sale System

With over 200 stores, Meijer continues to grow steadily because they value their customers. To better enhance the shopping experience, Meijer is experimenting with innovative ways to use mobile devices in the checkout process.

Our Tablet-Based Point-of-Sale System is a creative new interface, which provides Meijer customers with a "next generation" checkout experience.

Our tablet-based system uses handheld scanners to identify each item to be purchased. It then sends a unique product identifier to Meijer's Point-of-Sale system, which responds with the correct information about the item.

Shoppers interact with their tablets at the checkout station. The tablet displays information about the scanned items such as their name, description, and price. Our system handles a variety of transactions such as price or item modification.

The goal of our tablet-based system is to replace the bulky cashiers' devices that are currently in use. One important advantage is that the tablet itself is small, self-contained, and relatively inexpensive. In the event that a tablet breaks, simply shutting down a self-checkout station, the broken tablet can easily be replaced with a working one.

Our application runs in web browsers on the new tablets. The software is written in C# with ASP.NET MVC. Data is stored in Microsoft SQL Server 2008. The UI for our system is written in HTML5, CSS3, and JavaScript.



meijer



Team Meijer
Design Day

MICHIGAN STATE

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The Capstone Experience

Team Motorola Mobility

Department of Computer Science and Engineering
Michigan State University

Fall 2011



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...to Professionals*



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 WELCOME TO **MOTOROLA**



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FOR **BUSINESS**

Team Motorola Mobility Project Overview

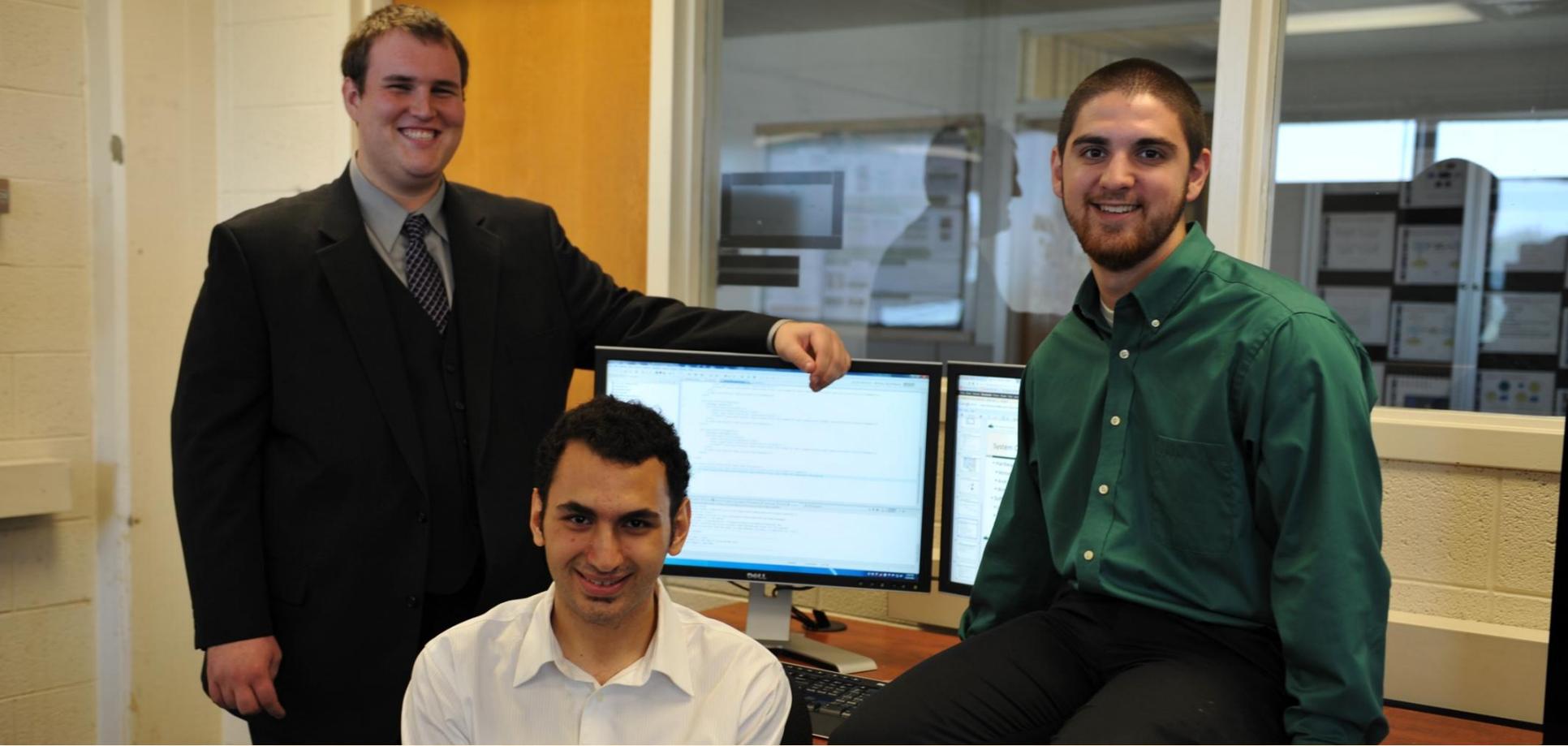
Synchronized Program Content Delivery

- Functionalities
 - Provide Enhanced Television Program Information
 - Actor Biographies
 - Upcoming Actor Appearances on Talk Shows
 - Merchandise Seen on Show
 - Etc.
 - Pushed to Mobile Devices
 - While Consumer Watches Content
 - Presented in Non-Intrusive Manner
- Features
 - Triggered at Specific Times in Program
 - Synchronized Between TV and Mobile Device
 - Displayed in Customizable Selectable Layers
- Technologies
 - iPhone, iPad Development (Objective-C)
 - Android Development (Java)
 - Java (Servlets, JEE, JSE)
 - Web Services (RESTful)
 - Web Development (XML, JSON, JavaScript, GWT)
 - Database (iBatis, Hibernate, MySQL)
 - [Enhanced Program Guides for Mobile Devices](#), Fall 2010
 - [Enhanced Content Authoring Services](#), Spring 2011



MOTOROLA

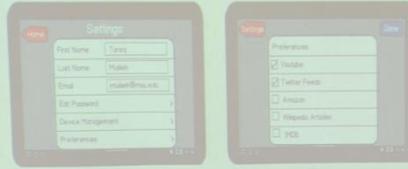
Libertyville, Illinois



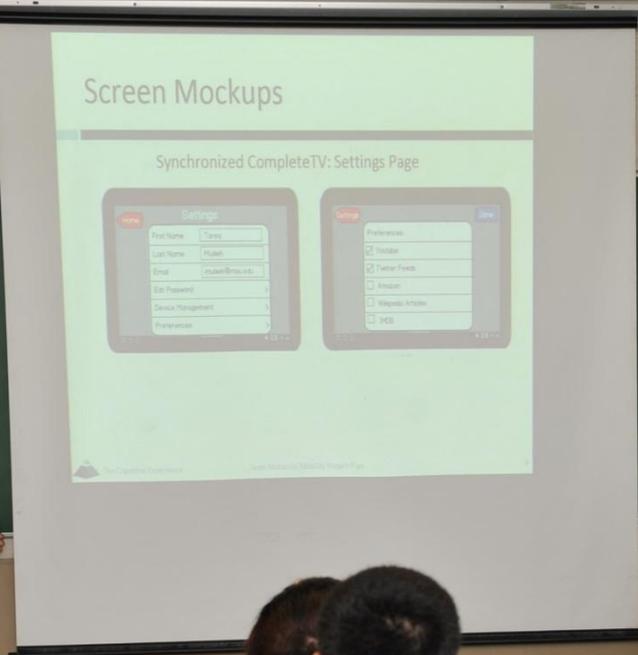
Team Motorola Mobility
Tim Belcher, Paul Detkowski, Tareq Musleh

Screen Mockups

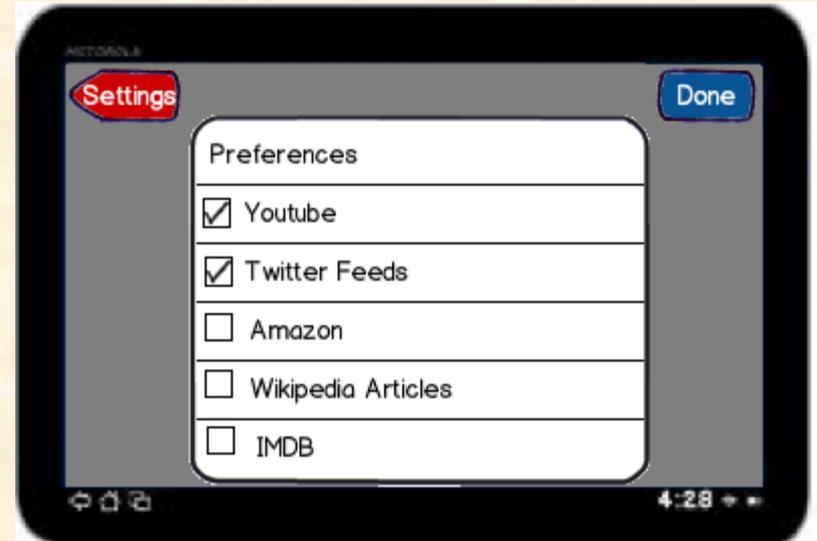
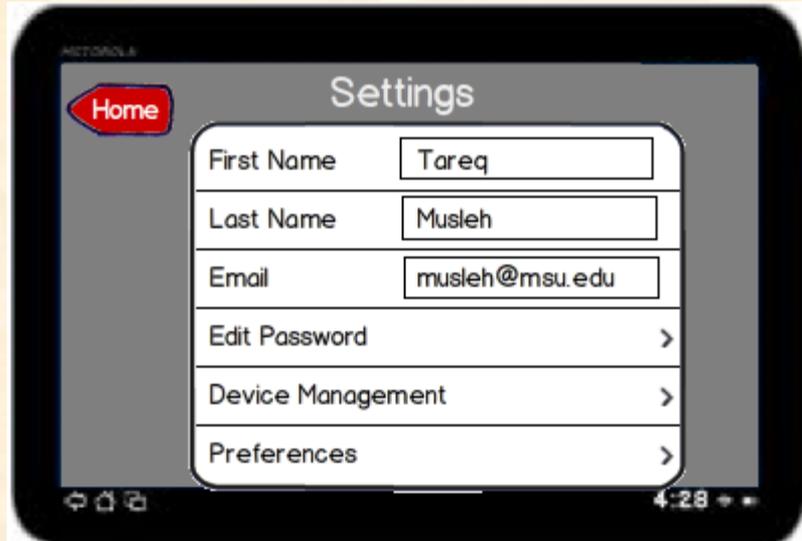
Synchronized CompleteTV: Settings Page



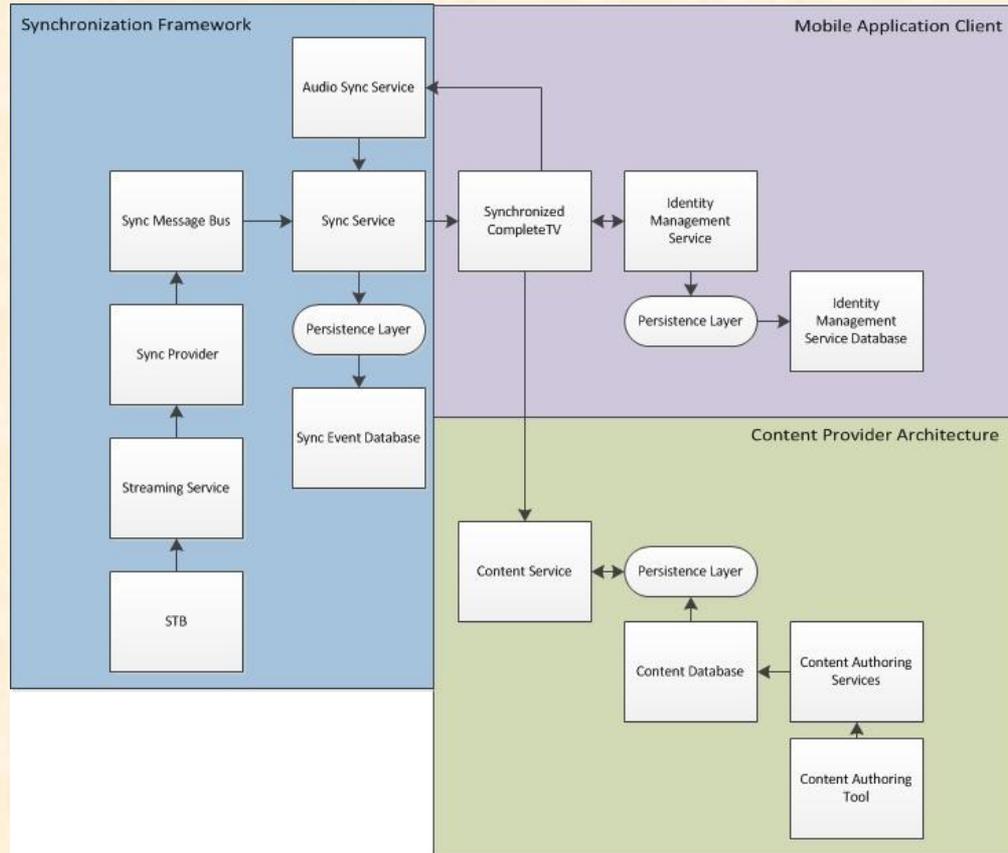
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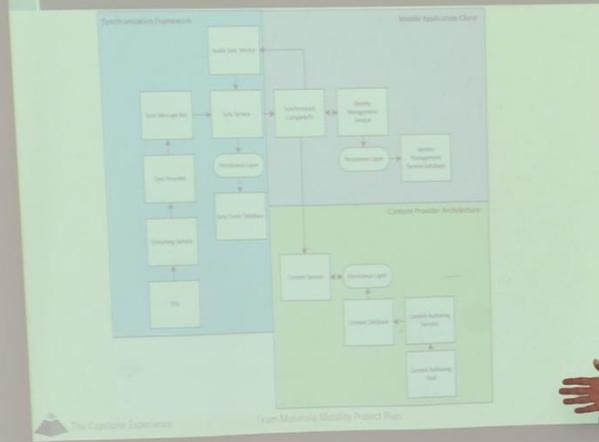
Team Motorola Mobility Screen Mockup



Team Motorola Mobility Architecture Diagram



System Architecture



Team Motorola Mobility
Project Plan Presentation

Team Motorola Mobility Alpha Presentation

Set Top Box Program Guide

Program Guide

4:24PM

SUN 10/16	4:00	4:30	5:00
1 FOX	Home Improvement	Everybody Loves Raymond	The Simpsons
2 TBS	Everybody Loves Raymond	Everybody Loves Raymond	Everybody Loves Raymond
3 CN	The Looney Tunes Show	Looney Tunes	The Simpsons

Home Improvement

30MIN LEFT

"The Son Also Mooches"- Tim worries that his mother will lose her investment in his brother's risky business venture; Jill gets glasses.





Team Motorola Mobility Alpha Presentation

Team Motorola Mobility Alpha Presentation

Mobile Program Guide

← Back Select

Select A Program

SUN 10/16 10/16	11:00 11:00	12:30 12:30	13:00 13:00
1 FOX	Home Improvement	Everybody Loves Raymond	The Simpsons
2 TBS	Everybody Loves Raymond	Everybody Loves Raymond	Everybody Loves Raymond
3 CN	The Looney Tunes Show	Looney Tunes	The Simpsons

The Looney Tunes Show
-21980290MIN LEFT
"The Foghorn Leghorn Story"- Foghorn Leghorn casts Daffy as himself in a movie about his life. In the mean time, Bugs and Yosemite Sam find a potentially expensive vase buried in the backyard.





Team Motorola Mobility Alpha Presentation

Team Motorola Mobility Beta Presentation

Content Page

The screenshot shows a mobile application interface for watching the TV show "Home Improvement". At the top, there is a header bar with "Watching: 'Home Improvement'" and a "Select Episode" button. Below the header, there is a row of social media and service icons: Amazon, IMDb, Wikipedia, Biography, Biography, Biography, Facebook, and Android Market. To the left of this row is a user profile for "Tim Allen" with several text-based posts. To the right is a "Current Episode Description" section. The interface is clean and modern, with a focus on social media integration and content discovery.

Select Episode

Watching: "Home Improvement"

Tim Allen

<http://t.co/yprAdgX> <http://t.co/vchiaGww>

on the set of Last Man Standing
<http://t.co/1rC1Jwlr>

on the set of Last Man Standing with
(director) John Pasquin <http://t.co/Loa13R3Y>

Saying hello from a live taping here in
LA. The show airs while I tape. How was
it folks?

In case you missed it <http://t.co/CEMcpTK5> <http://t.co/h5maLq2o>

just got the new DROID BIONIC
@motorola Too cool, frickin fast just the
way I like it. like my cars!

amazon

IMDb

W

Biography

Biography

Biography

f

android market

Home Improvement

Home Improvement

Home Improvement (TV series)

Home Improvement - Patricia Richardson

Home Improvement - Pamela Anderson

Home Improvement - Tim Allen

Home Improvement

Netflix

Logged in as: Test

Filter: All Types

Current Episode Description:
Jill's newlywed sister spoils Tim's poker night when she brings her marital problems to Jill and Tim.



Team Motorola Mobility Beta Presentation

Team Motorola Mobility Beta Presentation

Set Top Box Program Guide VOD

Video on Demand

3:09PM

All

Comedy

Animated

The Simpsons

Looney Tunes

The Simpsons

"Trash of the Titans" - Homer runs for sanitation commissioner after the garbage man stops picking up his trash. Voices of Dan Castellaneta, Julie Kavner, Nancy Cartwright and Yeardley Smith. Guest voices of actor Steve Martin and music group U2.





Lecture Capture for the Masses
www.camtastirelay.com

Team Motorola Mobility Beta Presentation



Motorola Mobility Synchronized Program Content Delivery

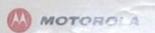
Increasingly today, consumers are improving and enhancing their lives in a variety of ways through the use of mobile devices like Android phones and tablets, iPhones, and iPads. While many things have changed significantly, the television viewing experience has changed relatively little in comparison.

To that end, the Synchronized Program Content Delivery framework provides viewers with a highly interactive, highly immersive television experience. While a viewer is watching their favorite show, an app can display auxiliary information related to the show on the viewer's mobile devices, in sync with the show.

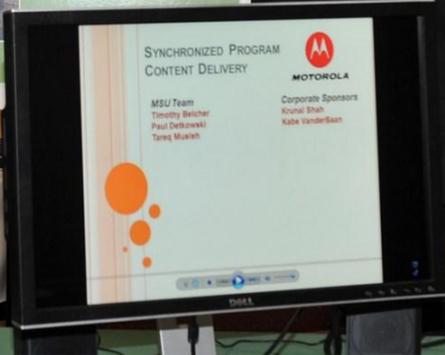
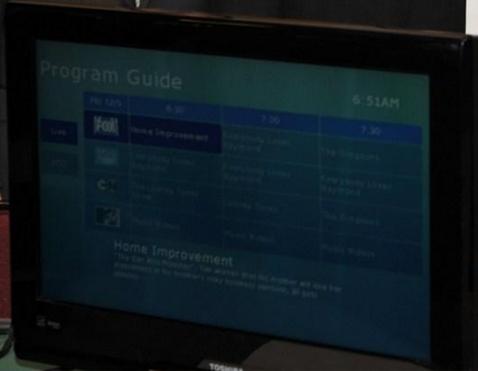
Advertisers can utilize our system to market their products to a targeted audience. For example, if Hugh Laurie walks in wearing your favorite athlete's jersey, an icon would appear with a link to the website where the jersey may be purchased.

Viewers are able to sync their mobile devices via their cable box, or if they're away from their cable box, the app can record an audio snippet of the show, identify the program, and sync accordingly. If capturing an audio snippet is not a feasible option, then the user can manually select the show on the app.

Our Synchronized Program Content Delivery service is built on a RESTful web framework using Kotlin, Java, MySQL and PostgreSQL. Our intuitive mobile apps are written using jQuery and jQuery Mobile optimized for the Motorola Xoom, and are deployed via a Glassfish server.



MSU Team
Timothy Belcher
Paul Delfino
Tareq Mullah



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The Capstone Experience

Team Sparrow

Department of Computer Science and Engineering
Michigan State University

Fall 2011



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- ▶ [For Physicians](#)
- ▶ [For Associates](#)

[Our services: quick view](#)

Latest news

Lansing woman looks forward to Christmas at home after Sparrow surgeons save hand | December 16, 2010

Team Sparrow Project Overview

iSupport Device Management System

- Functionalities
 - Manage Devices Throughout Hospital
 - Desktop Computers
 - Printers, Faxes, Scanners and Copiers
 - Over 2,000 Devices
 - Improve Reliability and Response Time
 - Location Aware via Facility Maps
 - Suggest Alternate Devices
- Features
 - Configurable Dashboard Interface
 - Web, iPhone and iPad Apps
 - Generate Helpdesk Tickets
 - Produce Reports
- Technologies
 - CSS, HTML5, JavaScript
 - Apple iOS iPhone and iPad SDK, C, Objective-C
 - Microsoft SharePoint and SQL Server
 - Microsoft .NET

iSupport Dashboard

Development site for iSupport

Incidents Application Search

Donnys says the backup generators are failing and we are losing power to the hospital!

The SPARROWdata.net system is infected with wormblaster32 trojan

The phone is down on the terrace floor, fix it asap

Help with putting Windows XP sp3 on my dekstop workstation computer.

Help me with my password, this machine is broken. Computers are so confusing!

Need two extra sticks of PC3-5200 8-8-8-4 timed ram!

[View Ticket Log](#)

Facility Map

Floors: Cardiology Wing

Calendar

February 2011						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	1	2	3	4	5
6	7	8	9	10	11	12

Help Desk Reports

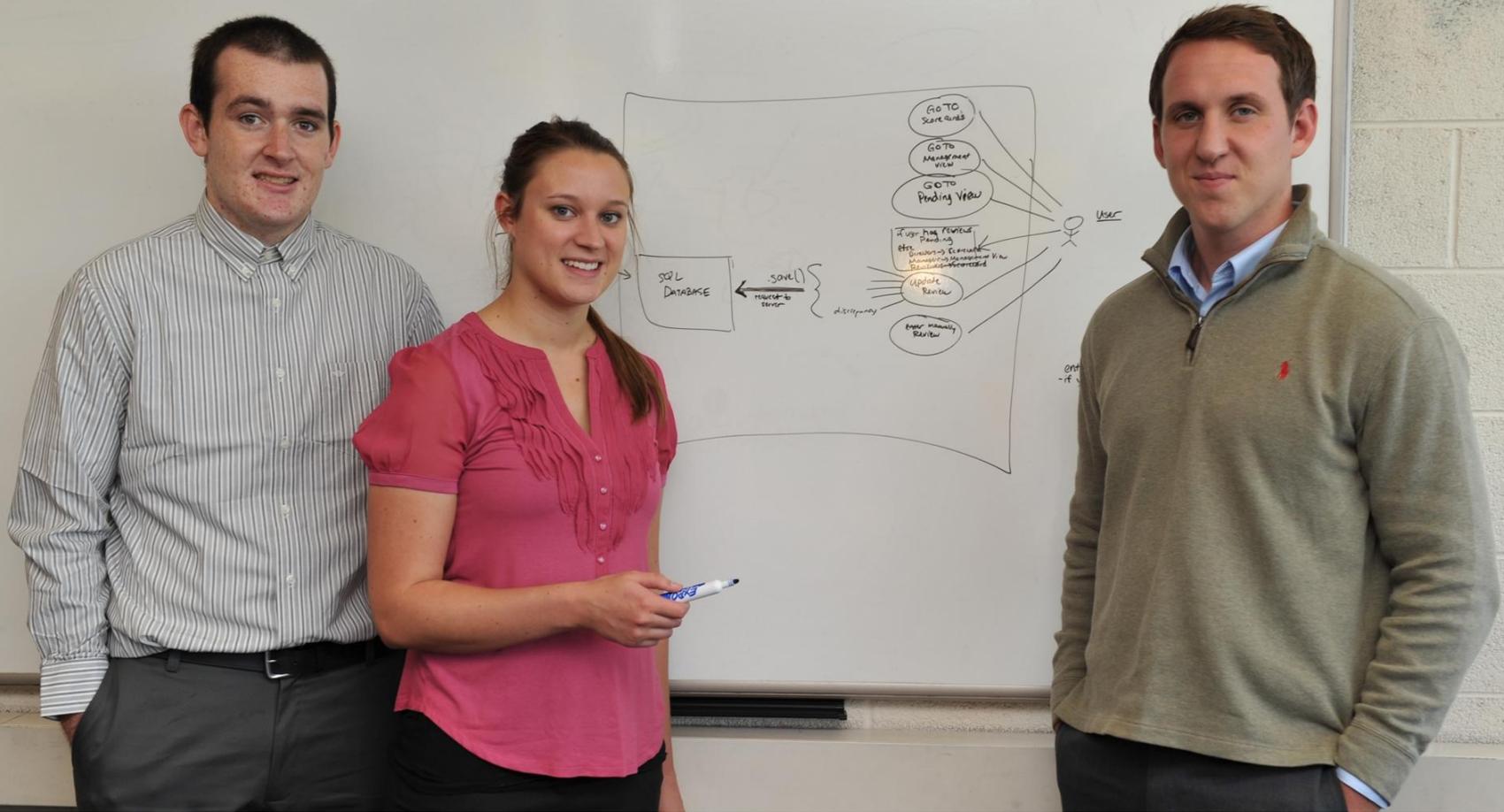
Number of Tickets/Level Reported

Level 1: 3
Level 2: 23
Level 3: 4

Time Since...

Last Ticket: 4 days 6 hours 50 minutes and 25

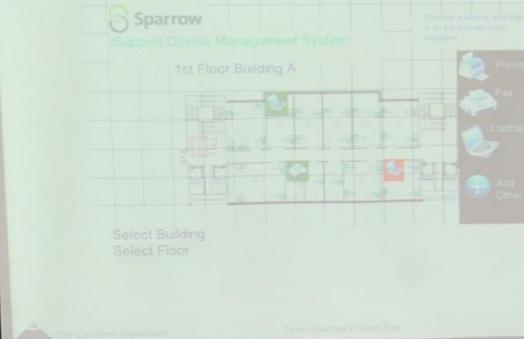
Last Level 1 Ticket: 4 days 6 hours 52 minutes and 36



Team Sparrow

John Happ, Angela Mireau, Travis Newport

Screen Mockups



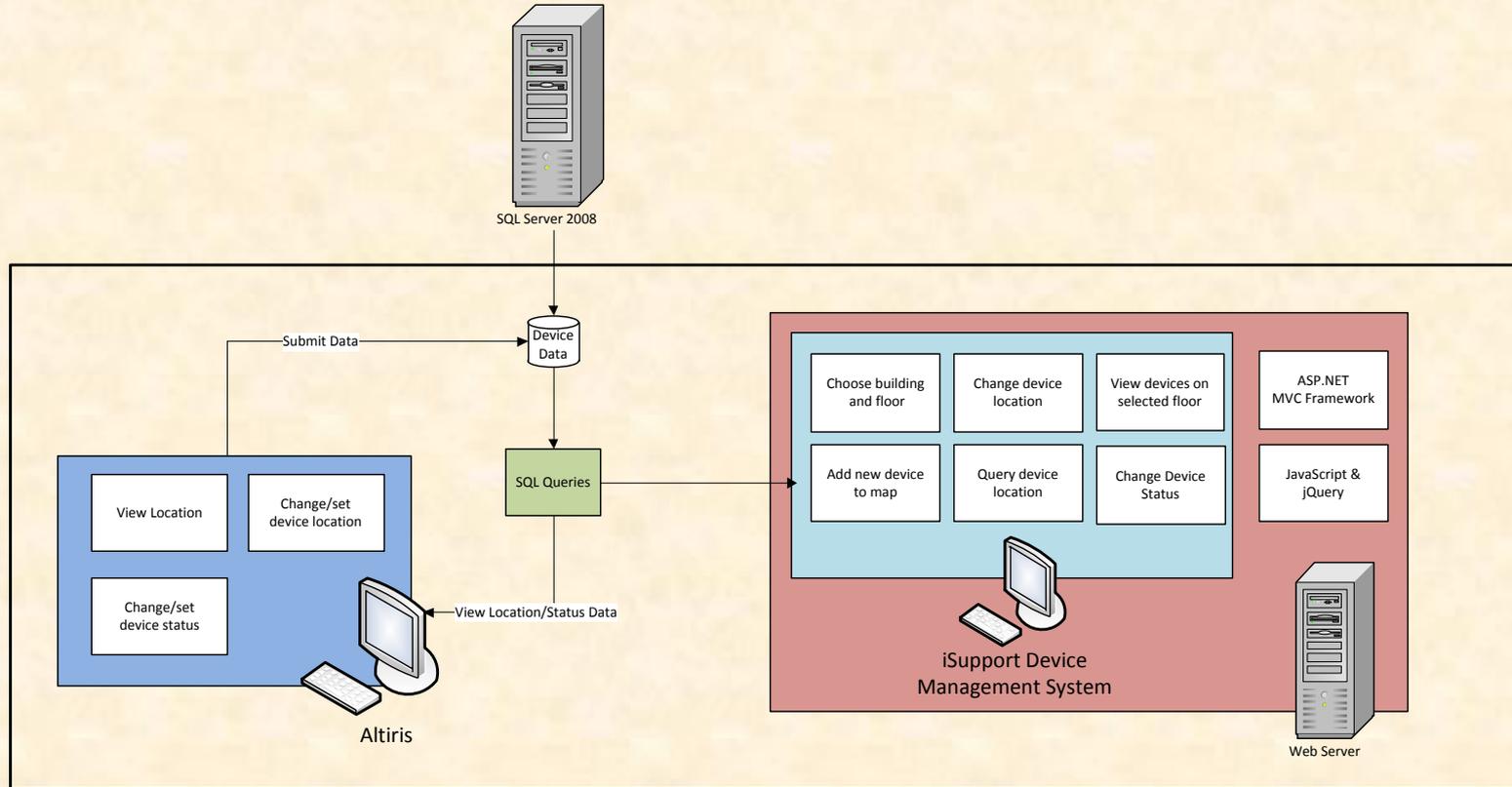
Team Sparrow Project Plan Presentation

Team Sparrow Screen Mockup

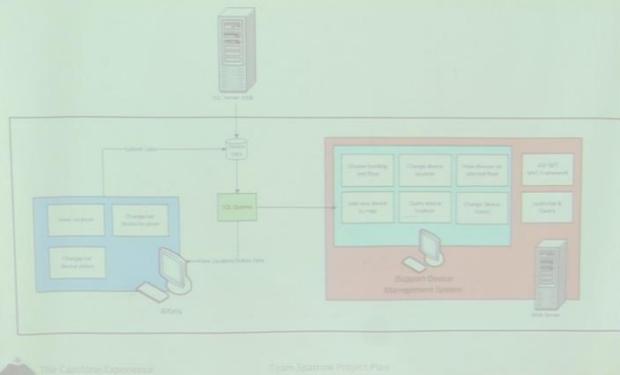
The screenshot displays the Sparrow iSupport Device Management System interface. At the top left is the Sparrow logo and the text "iSupport Device Management System". Below this is a floor plan titled "1st Floor Building A" showing a grid of desks numbered 62-74. A red box highlights desk 67, labeled "TD1". Various device icons are placed on the desks: a laptop on desk 66, a printer on desk 73, and another laptop on desk 70. On the right side, a panel titled "Choose a device and place it on the correct map location:" lists "Printer", "Fax", "Laptop", and "Add Other" with corresponding icons. At the bottom left, there are two dropdown menus labeled "Select Building" and "Select Floor".



Team Sparrow Architecture Diagram



System Architecture



Team Sparrow
Project Plan Presentation

Team Sparrow Alpha Presentation

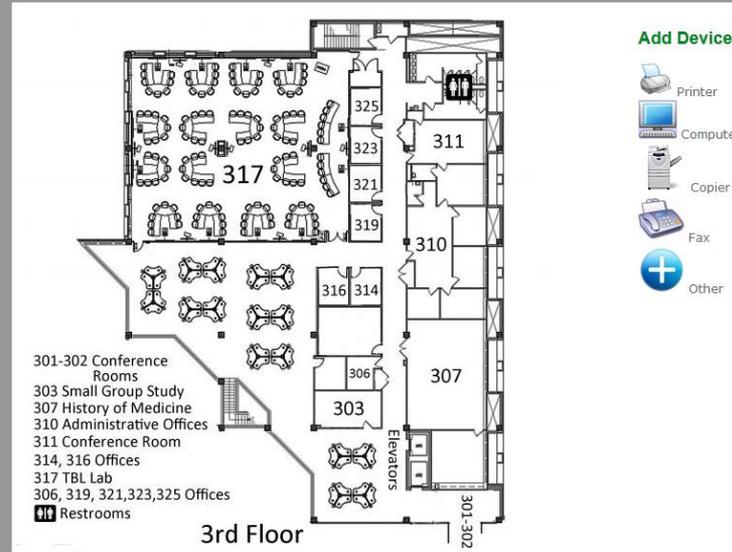
Launch Page



iSupport Device Management System

Device ID:

Lansing Main
St. Lawrence
Dewitt
Ionia
MAC





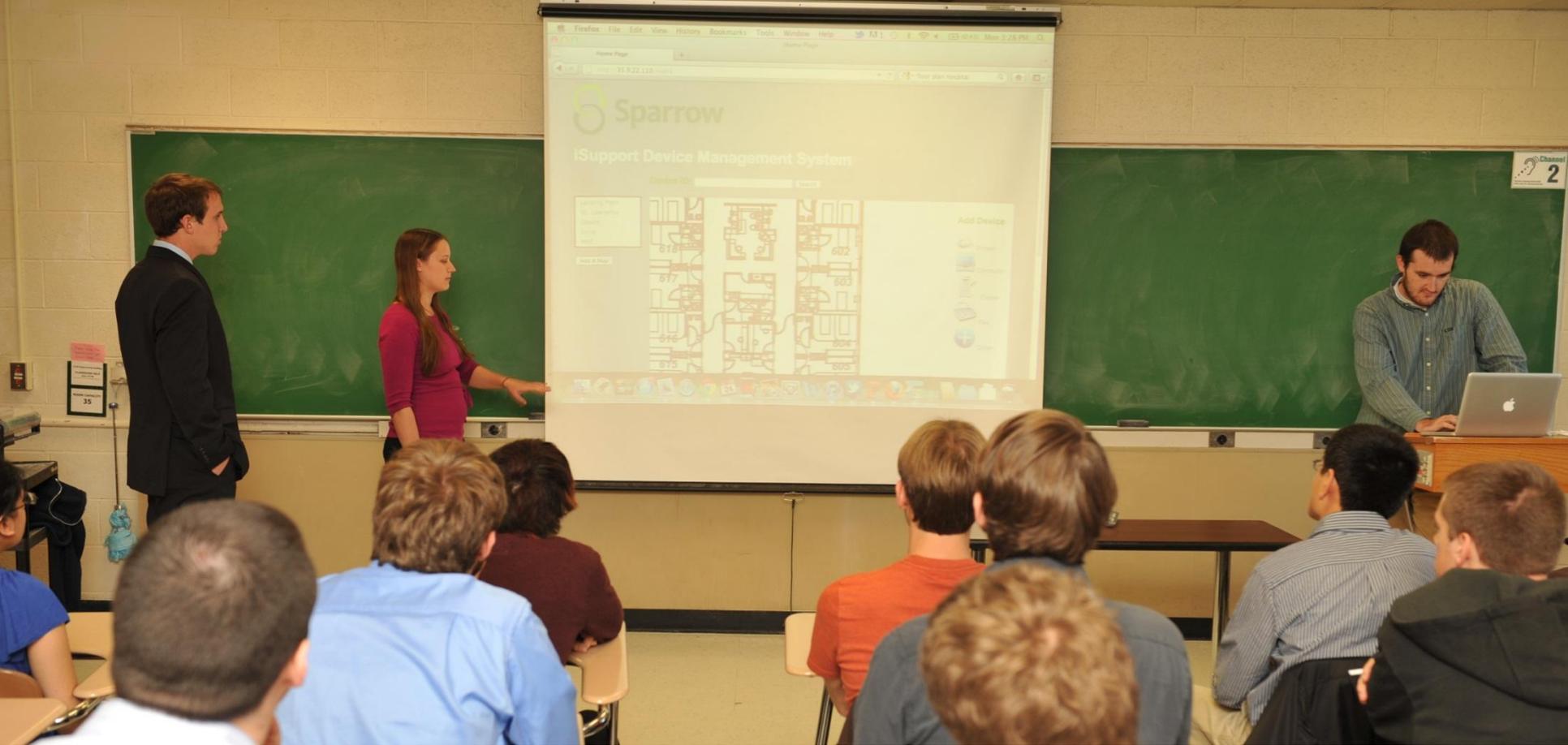
Team Sparrow Alpha Presentation

Team Sparrow Alpha Presentation

Adding a New Device

The screenshot displays the Sparrow iSupport Device Management System interface. At the top left is the Sparrow logo. Below it, the text "iSupport Device Management System" is visible. A search bar labeled "Device ID:" with a "search" button is present. On the left side, there is a list of locations: Lansing Main, St. Lawrence, Dewitt, Ionia, and MAC, with an "Add A Map" button below. The main area shows a floor plan of the 3rd floor with room numbers 301-302, 303, 306, 307, 311, 317, 321, 323, and 325. A blue plus sign is overlaid on room 311. An "Add Device" dialog box is open, containing a "Device ID:" field, a "Status:" dropdown menu set to "Online", and "Submit" and "Cancel" buttons. To the right of the floor plan is an "Add Device" menu with icons for Printer, Computer, Copier, Fax, and Other (represented by a blue plus sign). A legend at the bottom left of the floor plan identifies rooms: 301-302 Conference, 303 Small Group Study, 307 History of Medicine, 310 Administrative Offices, 311 Conference Room, 314, 316 Offices, 317 TBL Lab, 306, 319, 321, 323, 325 Offices, and Restrooms. The text "3rd Floor" is centered below the floor plan.





Team Sparrow Alpha Presentation

Team Sparrow Beta Presentation

Adding a Building

The screenshot displays the Sparrow iSupport Device Management System interface. At the top left is the Sparrow logo. Below it is the title "iSupport Device Management System". A search bar labeled "Search Asset Tag:" is present. On the left side, there is a sidebar with the following content:

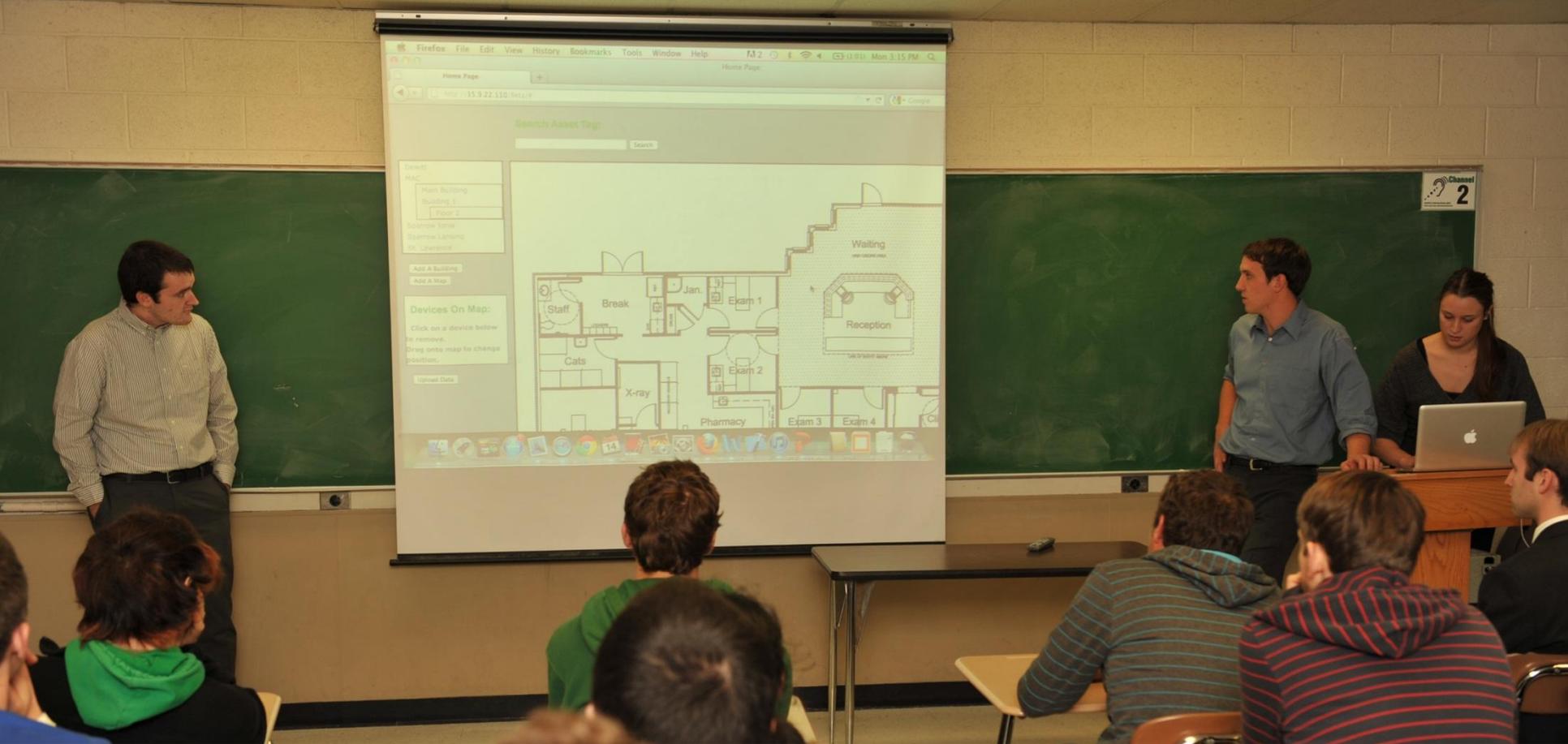
- Location list: Dewitt, Michigan Athletic Center, Sparrow Ionia, Sparrow Lansing, St. Lawrence.
- Buttons: "Add A Building" and "Add A Map".
- Section: "Devices On Map:" with instructions: "Click on a device below to remove. Drag onto map to change position."
- Asset list:
 - Asset: 1 Type: fax
 - Asset: 12 Type: computer
 - Asset: 2 Type: copier
 - Asset: 3 Type: printer
 - Asset: 4 Type: other
 - Asset: 5 Type: computer
 - Asset: 554 Type: fax
 - Asset: 555 Type: other
 - Asset: 666 Type: fax
 - Asset: 777 Type: copier
 - Asset: 987 Type: printer
 - Asset: 99999999 Type: printer
- Button: "Upload Data"

The main area shows a floor plan map with several rooms labeled (619, 618, 617, 616, 615, 614, 612, 607, 606). A modal window titled "Enter Building Information" is open over room 607. The modal contains the following fields:

- Campus: Dewitt (dropdown menu)
- Building Name: [text input]
- County: [text input]
- Street Address: [text input]
- City: [text input]
- State: [text input]
- Zip Code: [text input]
- Buttons: "Submit" and "Cancel"

Additional map labels include "127 SF" and "NEURO/ORTHO 6 SOUTH 11,779 SF".





Team Sparrow Beta Presentation

Team Sparrow Beta Presentation

Adding a New Device

The screenshot displays the Sparrow iSupport Device Management System interface. At the top left is the Sparrow logo and the text "iSupport Device Management System". Below this is a "Search Asset Tag:" field with a "Search" button. The main area shows a floor plan of a building with various rooms and corridors. A blue plus sign icon is positioned on the floor plan, and a modal window titled "Enter Device Data" is open over it. The modal window contains an "Asset Tag:" input field and "Submit", "Cancel", and "Submit" buttons. On the left side, there is a sidebar with a list of buildings: "Dewitt", "Michigan Athletic Center", "Sparrow Ionia", "Sparrow Lansing", and "St. Lawrence". Below this list are buttons for "Add A Building" and "Add A Map". A section titled "Devices On Map:" contains instructions: "Click on a device below to remove." and "Drag onto map to change position." It lists four assets: "Asset: 1112 Type: computer", "Asset: 122323548 Type: other", "Asset: 454545 Type: fax", and "Asset: 9999998 Type: copier". Below this list is a "Upload Data" button. On the right side, there is an "Add Device" section with a list of device types: "computer", "copier", "fax", "other", and "printer". Each type has a checked checkbox and a corresponding icon. Below this list are buttons for "Change Filter", "Zoom Out", and "Zoom In".

Sparrow
iSupport Device Management System

Search Asset Tag: Search

Dewitt
Michigan Athletic Center
Sparrow Ionia
Sparrow Lansing
St. Lawrence

Add A Building
Add A Map

Devices On Map:
Click on a device below to remove.
Drag onto map to change position.
Asset: 1112 Type: computer
Asset: 122323548 Type: other
Asset: 454545 Type: fax
Asset: 9999998 Type: copier

Upload Data

Enter Device Data
Asset Tag:
Submit
Cancel
Submit

Add Device
 computer
 copier
 fax
 other
 printer

Change Filter
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Team Sparrow Beta Presentation



Sparrow Health System iSupport Device Management System

Sparrow is one Michigan's largest health providers, with a diverse range of services and facilities. Sparrow has one Lansing location, Sparrow Central Campus, located in East Lansing, Sparrow Specialty Hospital, Michigan Advanced Care Medical Group, Radiology, and several other locations. Each of these facilities house dozens of high-tech devices, which are critical to the care of their patients. In a hospital setting, keeping these devices working is a matter of life or death.

Our iSupport Device Management System allows Sparrow IT helpdesk staff the ability to track devices used in practice, by location, capital and computer. When a device fails, we receive help Sparrow IT staff to make hospital staff to quickly find an alternate working device, as well as getting device repair done quickly.

These repairable replacement buildings are displayed on the Sparrow IT helpdesk, and the status of hardware devices used in practice, by location, capital and computer. When a device fails, we receive help Sparrow IT staff to make hospital staff to quickly find an alternate working device, as well as getting device repair done quickly.

A helpful overview can be found at www.sparrow.org. We are all the devices on that floor, and we which devices are working and not working.

A helpful overview can be found at www.sparrow.org. We are all the devices on that floor, and we which devices are working and not working.

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- Michigan State University**
- Team Members (left to right):**
- Paul Bennett
 - Angela Miller
 - Johnathan Miller
 - Lucas, Michigan
- Sparrow**
- Operational Business**
- Tom Best
 - Lansing, Michigan
 - John Best
 - Lansing, Michigan



Team Sparrow
Design Day

MICHIGAN STATE

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The Capstone Experience

Team Spectrum Health

Department of Computer Science and Engineering
Michigan State University

Fall 2011



*From Students...
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Select Type of Location

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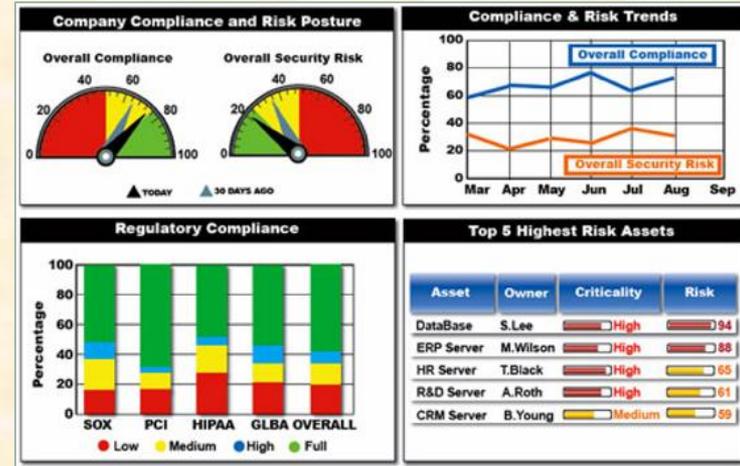
Family Medicine Center

Patient Experience Award

Team Spectrum Health Project Overview

Log Monitoring Compliance

- Functionalities
 - Automate Log Monitoring
 - Improve Compliance
 - Provide Automated
 - Alerts to Management
 - Forensic Evidence
- Features
 - Configurable Dashboard User Interface
 - Aggregation of Disparate Event Logs
 - Drill Down to Root Causes
 - Correlation Between Events and Problems
 - Reports for Action and Compliance
- Technologies
 - Microsoft SharePoint 2010
 - Epic, Cerner (Electronic Medical Record Systems)
 - Health Quest, Lawson (Financial Systems)
 - CA Service Desk (Ticketing System)
 - Syslog, P2Sentinel (Logging Systems)



SPECTRUM HEALTH

Grand Rapids, Michigan





Team Spectrum Health
Will Seeger, Kate Bonnen, Wayne Stiles, Collin Lotus



Team Spectrum Health
Project Plan Presentation

Team Spectrum Health Screen Mockup

Spectrum Health Top Bar 3.2.4 **Screen Mockup**

Quick Status
You have 6 unhandled discrepancies, and 5 audits in the red.

Discrepancies Scorecard
Monthly | View System Logs... | View System Logs...
Corner
→ Access Management
→ Elevated Access
→ Direct Data Access

Compliance Scorecard
Monthly | View System Logs... | View System Logs...

Most discrepancies

User	Number	Policy	Link
Jennifer Kyrmin	6	Log 1	log.xls
Mark Kyrmin	3		log.xls
Virgilio Cezar	2		log.xls
Todd Simonides	2		
Carol Elihu	1		

Policy Procedures

Audit Log
audit log information here

Log Manager © Spectrum Health

MS Active Directory Login 3.2.3
login here
Will Seeger
IT Manager
3 Reviewees

Dashboard
Log Reports
Old Logs
Search

Discrepancies
New
Old
Unhandled

Manage
Layout
Setup
Notifications

Reviewees
Wilhemsmild von Wiernersmilzen
2 discrepancies
Jane Doe
0 discrepancies
Bob Seger
0 discrepancies

Annotations:
 - Quick Status bar - displays items that need to be handled currently
 - should allow you to view over different time periods
 - Drop downs will allow you to navigate to the Audit View
 - Side bar will allow you to customize and quickly get to different sections
 - All charts and graphs should be generated with CSS and HTML
 - Small customizable boxes will allow you to get other quick references you need
 - Option - Managers will be able to review each user below them that has items to finish
 - Will try to customize view screen based upon level of employee, higher level employees will see just those below them

Spectrum Health Top Bar 3.2.5

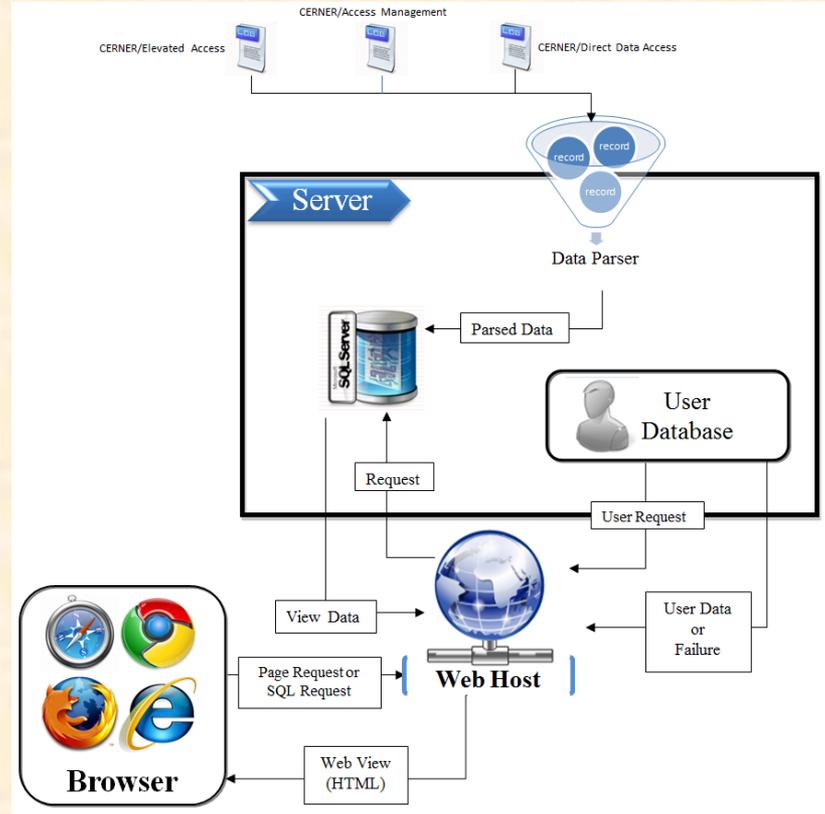
Quick Status
You have 6 unhandled discrepancies, and 5 audits in the red.

Past/Pending Items for Review
Sort By?

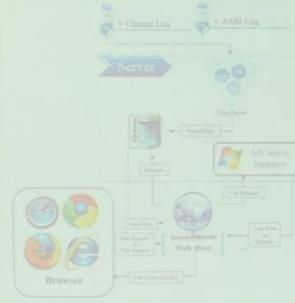
Reviewer Sign-off	Initiator	Exception	Exception Date	Corrective Action	Modified	Modified By	Log
⌚	Jennifer Kyrmin	Log Failure...	3/27/2007	Unspecified	Jennifer Kyrmin	3/27/2007	📄
✅	Mark Kyrmin	Data entered Invalid...	6/27/2007	Data Reparsed	Jennifer Kyrmin	3/27/2007	📄
⌚	Virgilio Cezar	Access Error...	3/27/2007	Unspecified	Jennifer Kyrmin	3/29/2007	📄
❌	Carol Elihu	Serial Error...	5/27/2007	Serial Error Persists	Jennifer Kyrmin	7/05/2007	📄

Annotations:
 - Past/Pending Items - Allows you to check all items you need to check and/or sign off on
 - Reviewer sign-off or exception should be clickable to see Review View
 - Users should be clickable to find more info on them
 - Log should be clickable to get the original XLS file

Team Spectrum Health Architecture Diagram



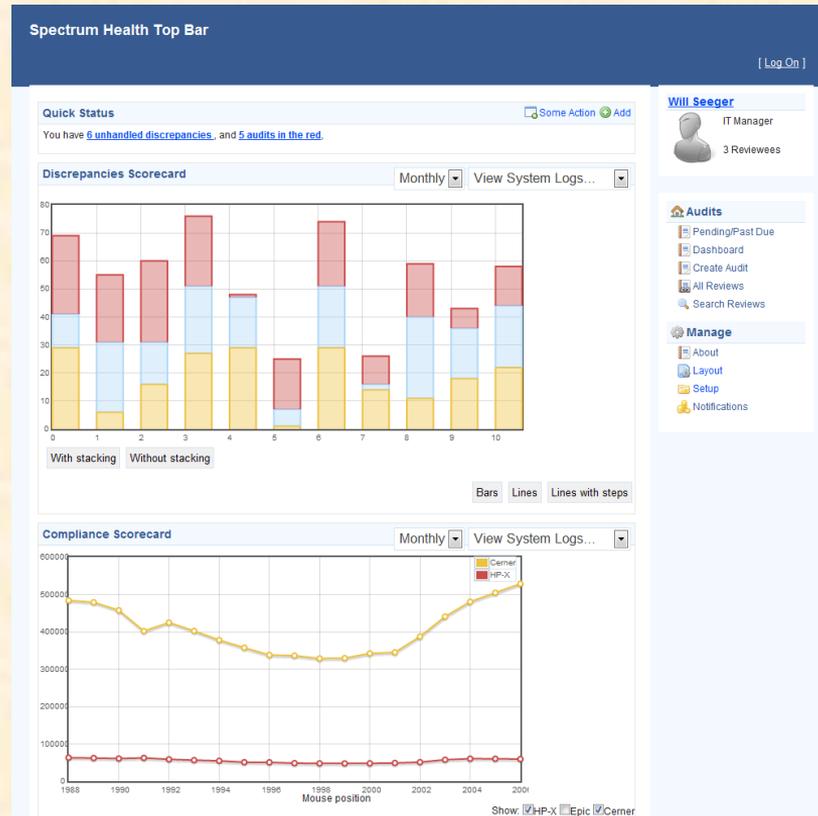
System Architecture



Team Spectrum Health
Project Plan Presentation

Team Spectrum Health Alpha Presentation

Scorecard View





Team Spectrum Health
Alpha Presentation

Team Spectrum Health Alpha Presentation

Pending View

Spectrum Health Top Bar

[Log On]

Quick Status

Some Action + Add

You have [6 unhandled discrepancies](#), and [5 audits in the red](#).

[click Here to see the latest review](#).

Pending/Past Due Reviews

[Create New Conclusion](#)

AIX

Dashboard

Due Date	Initiator	Description	System	Audit Type	Reviewer	Status	
10/21/2011 12:00:00 AM	Barny Stinson	Failed to properly fix error	Cerner	Access Management	Ted Mosby	Active	Edit Details Delete
10/21/2011 12:00:00 AM	Marshall Erikson	Need to fix automation, bug causing information deletion	Lawson	Change Control	Lilly Aldrin	Open	Edit Details Delete

Will Seeger

IT Manager

3 Reviewees

Audits

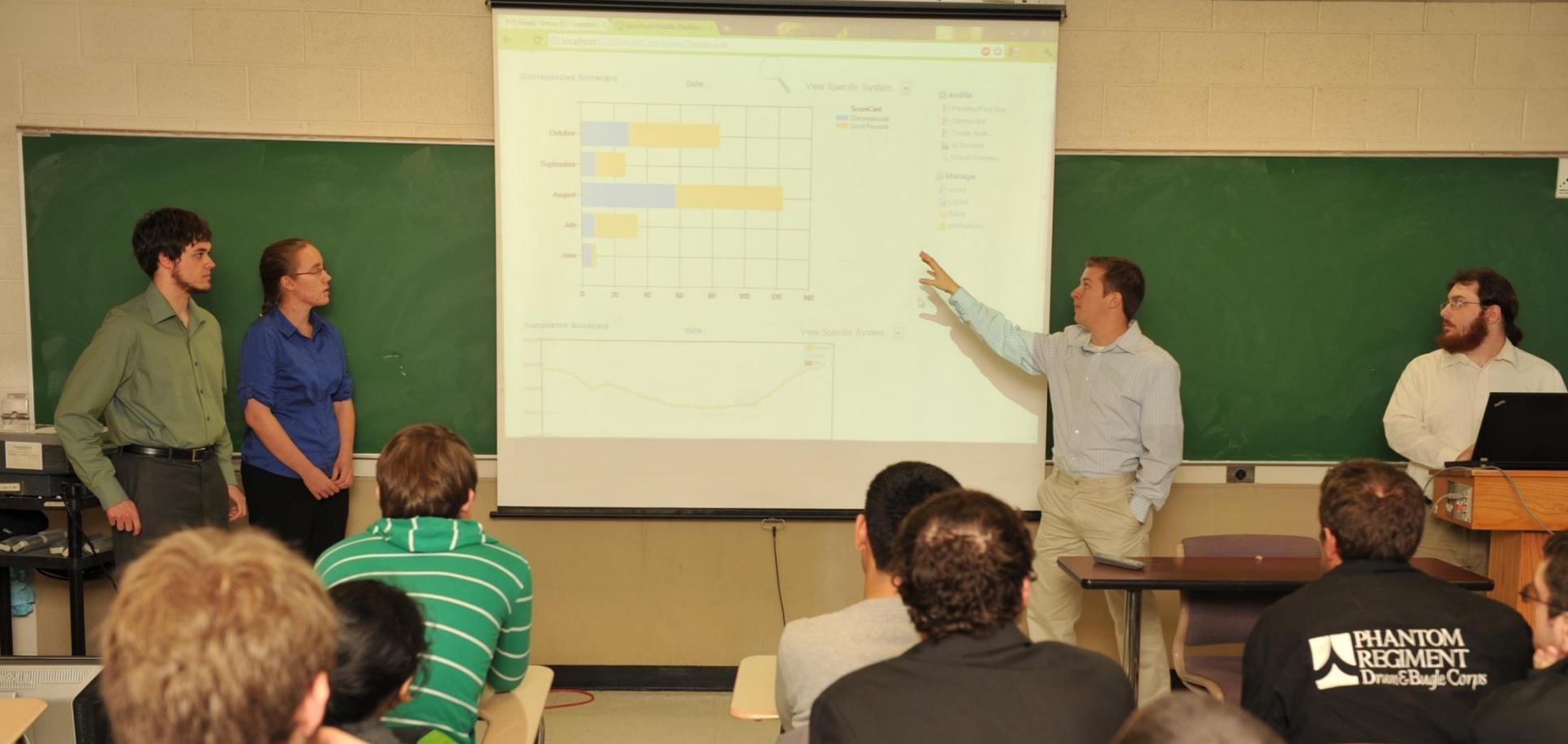
- Pending/Past Due
- Dashboard
- Create Audit
- All Reviews
- Search Reviews

Manage

- About
- Layout
- Setup
- Notifications

Log Manager © Spectrum Health

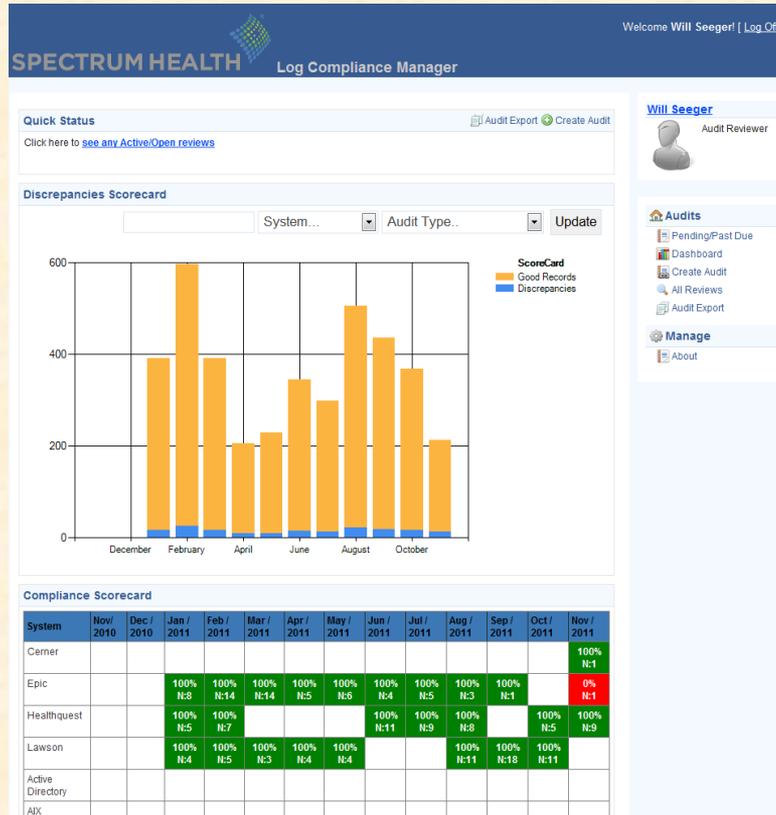




Team Spectrum Health Alpha Presentation

Team Spectrum Health Beta Presentation

Scorecards: System Statistics





Team Spectrum Health Beta Presentation

Team Spectrum Health Beta Presentation

Details of a Review

Audit Review: 3

[Assign Ticket](#) [Upload](#) [Attachments](#) [View History](#)

Due Date
11/13/2011 3:19:43 PM

System
Cerner

Audit Type
Access Management

Reviewer Name
Will Seeger

Initiator Name
Ted Mosby

Activity Date
11/6/2011 3:19:43 PM

Status
Open

Corrective Action
Personnel

Exception Response
qwer

Description

Period End

Audits

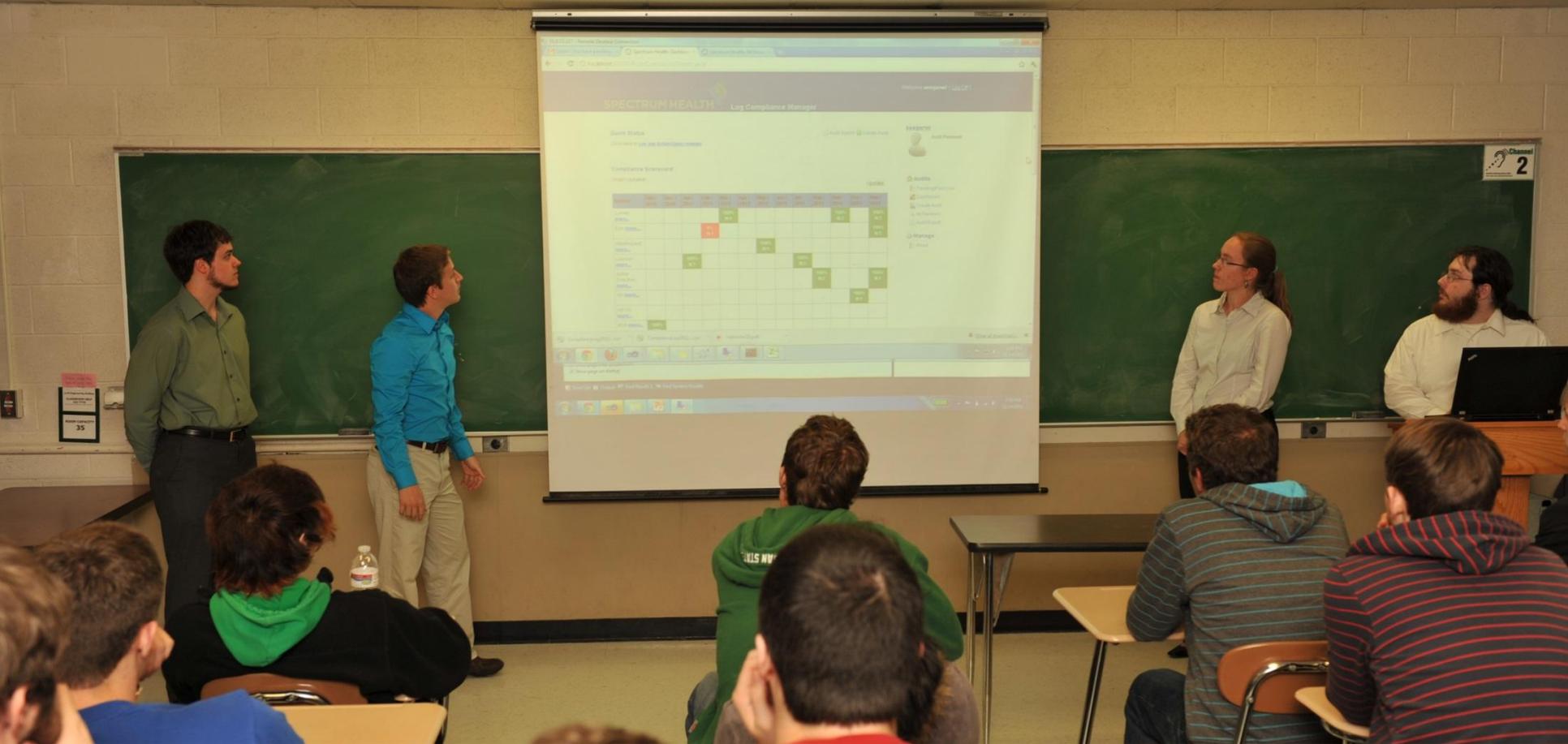
- Pending/Past Due
- Dashboard
- Create Audit
- All Reviews
- Audit Export

Manage

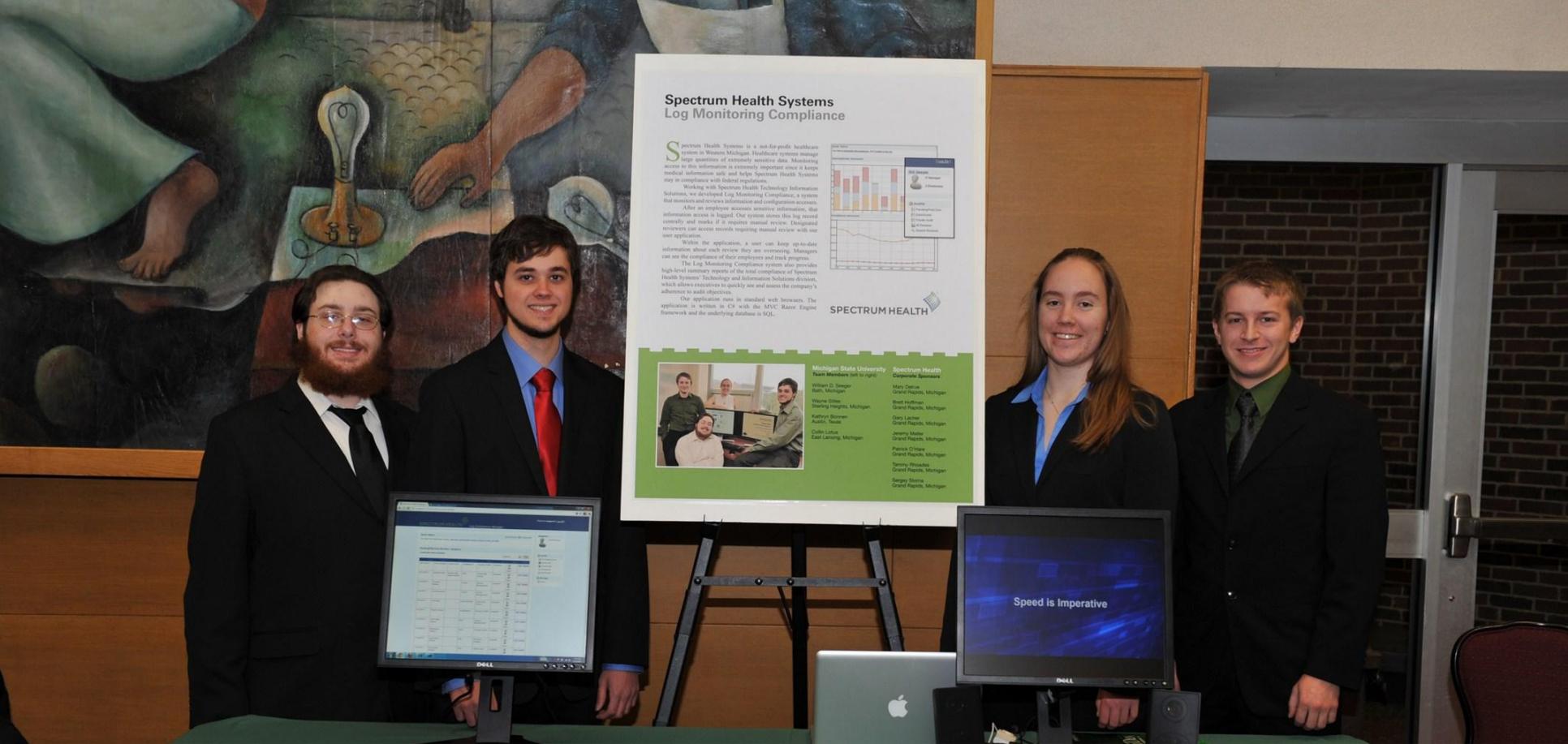
- About

Item History

Modified By	Modified Date
2	11/6/2011 3:20:02 PM



Team Spectrum Health
Beta Presentation



Spectrum Health Systems Log Monitoring Compliance

Spectrum Health Systems is a not-for-profit healthcare system in Western Michigan. Healthcare systems manage large quantities of extremely sensitive data. Monitoring access to this information is extremely important since it keeps medical information safe and helps Spectrum Health Systems stay in compliance with federal regulations.

Working with Spectrum Health Technology Information Solutions, we developed Log Monitoring Compliance, a system that monitors and reviews information and configuration accesses.

After an employee accesses sensitive information, that information access is flagged. Our system stores this log record centrally and makes it available for manual review. Designated reviewers can access records requiring manual review with our user application.

Within the application, a user can keep up-to-date information about each review they are overseeing. Managers can see the compliance of their employees and track progress.

The Log Monitoring Compliance system also provides a high-level summary report of the total compliance of Spectrum Health Systems' Technology and Information Solutions division, which allows executives to quickly see and assess the company's adherence to audit objectives.

Our application runs in standard web browsers. The application is written in C# with the MVC Razor Engine framework and the underlying database is SQL.



SPECTRUM HEALTH



Michigan State University

Team Members (left to right)

William Z. Steeger

East Lansing, Michigan

Wayne Siles

Spring Heights, Michigan

Kurtis Sawyer

Auburn, Texas

Chris Linton

East Lansing, Michigan

Spectrum Health

Original System

Mark Deane

Grand Rapids, Michigan

Brad Hoffman

Grand Rapids, Michigan

Stan Zerkel

Grand Rapids, Michigan

Jeremy Miller

Grand Rapids, Michigan

Patrick O'Hara

Grand Rapids, Michigan

Tammy Rinkovich

Grand Rapids, Michigan

Sergiy Stepan

Grand Rapids, Michigan

Team Spectrum Health Design Day

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The Capstone Experience

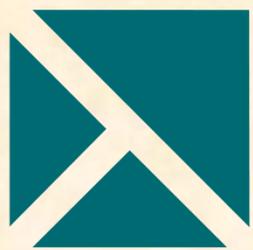
Team TechSmith

Department of Computer Science and Engineering
Michigan State University

Fall 2011



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Team TechSmith Project Overview

Mobile Web Reporter

- Functionalities
 - Enable “Citizen Journalists”
 - Create Video Content in the Field
 - Publish to YouTube, Facebook and Screencast.com
- Features
 - Mobile App
 - iPhone and iPad
 - Android Phone and Tablet
 - Capture Content from Camera and Web Browser
 - Add Voice Narrations and Annotations
 - Support
 - Reusable Content
 - Geotagging
 - History of Shared Content
 - Notifications of Likes, Replies and Comments
- Technologies
 - Apple iOS iPhone and iPad SDK, C, Objective-C
 - Google Android SDK, Java
 - YouTube, Facebook and Screencast .com APIs



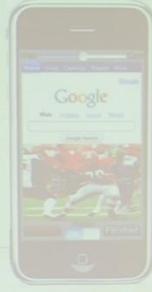
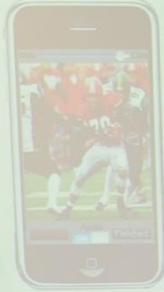


Team TechSmith

Jacob Anderson, Memo Barutcuoglu, Josh Berger



Screen Mockups

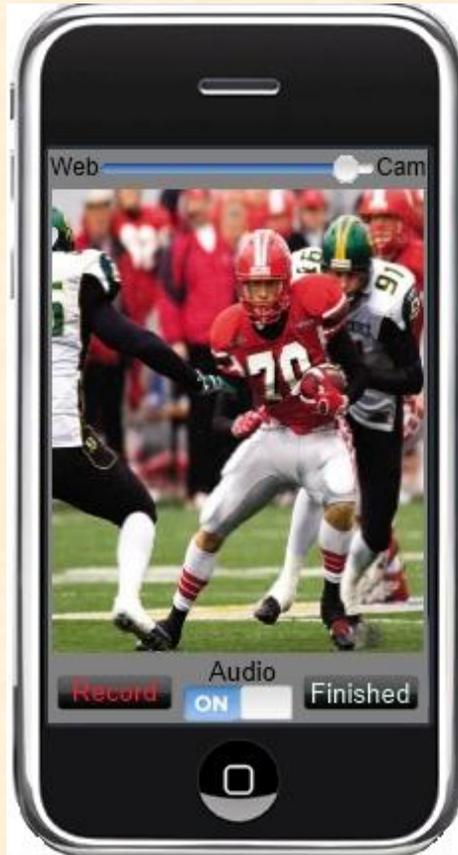


Team TechSmith Project Plan

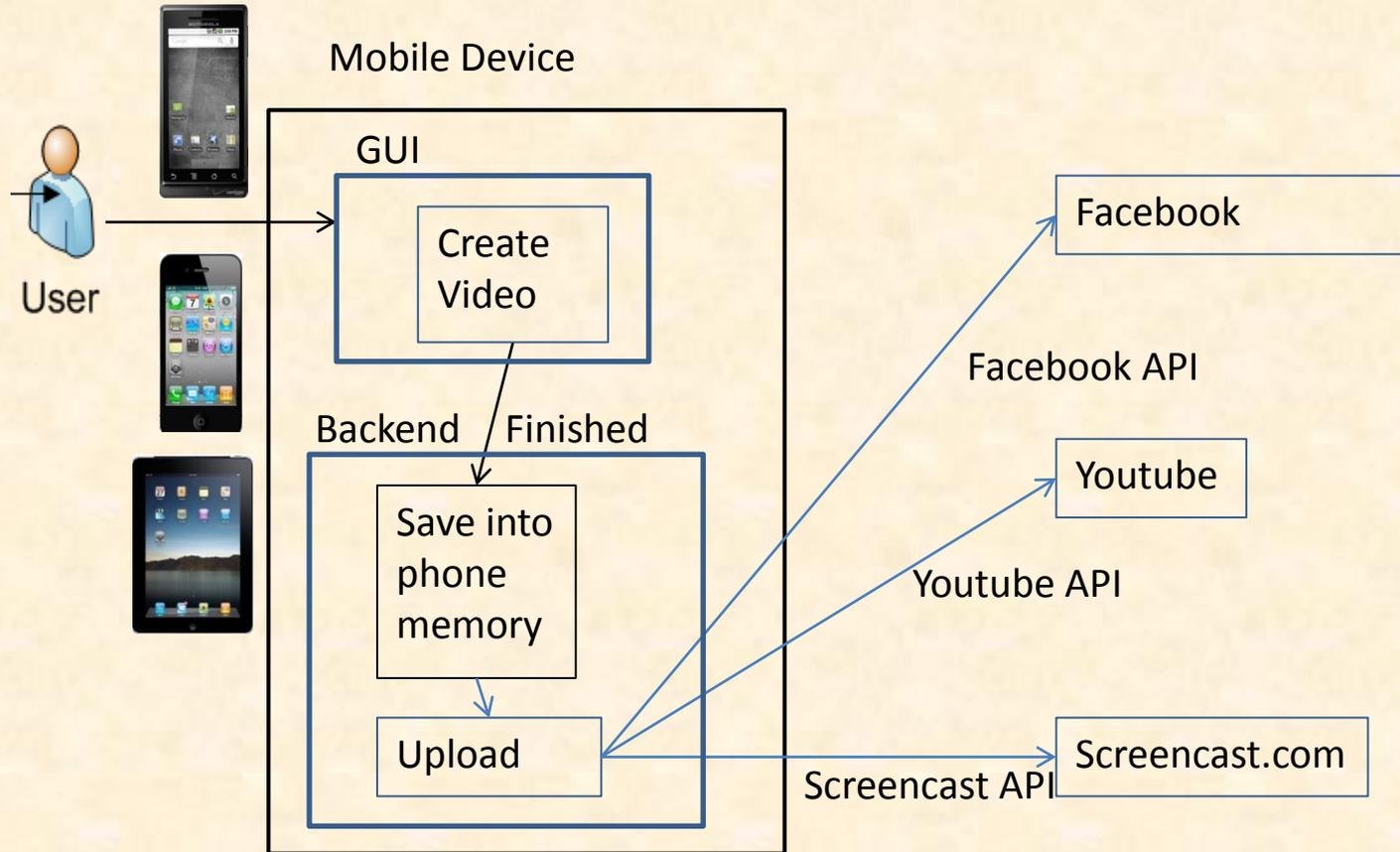
Team TechSmith Project Plan

Team TechSmith Project Plan Presentation

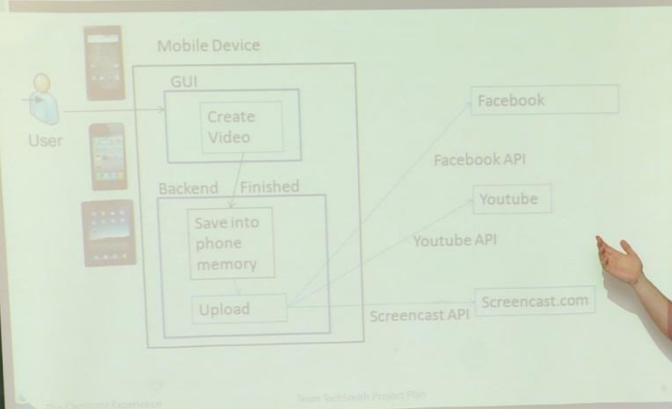
Team TechSmith Screen Mockup



Team TechSmith Architecture Diagram



System Architecture



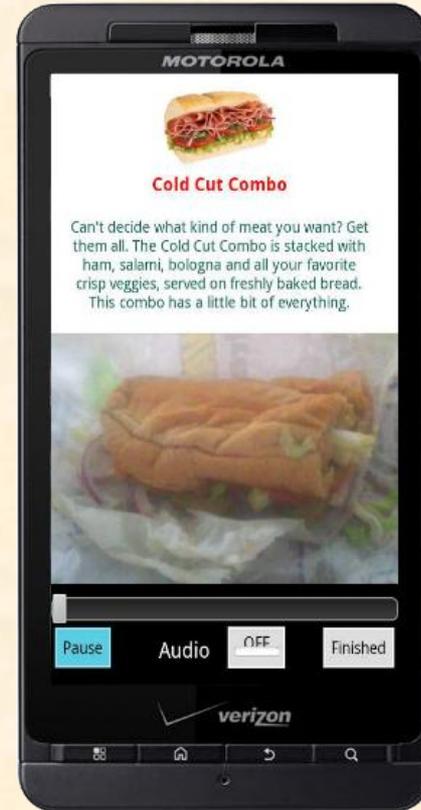
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Project Plan Presentation



Team TechSmith Alpha Presentation

Team TechSmith Alpha Presentation

Restaurant Use Case





Team TechSmith Alpha Presentation

Team TechSmith Beta Presentation

Parking Report Web

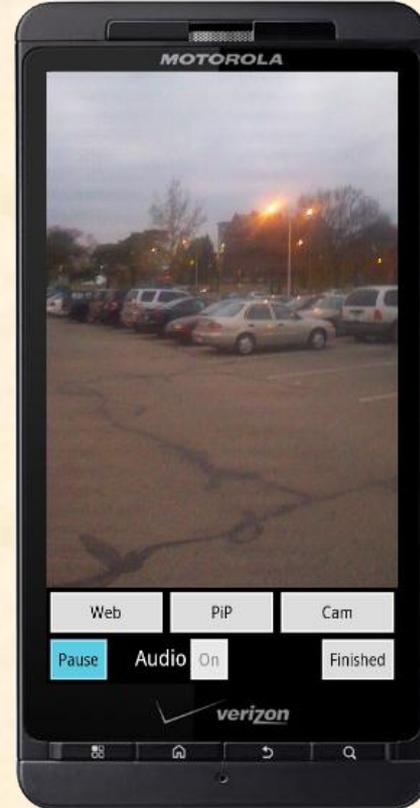




Team TechSmith Beta Presentation

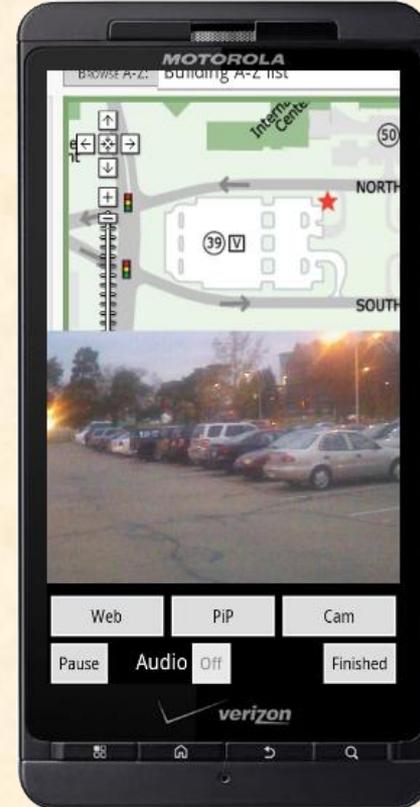
Team TechSmith Beta Presentation

Parking Report Cam



Team TechSmith Beta Presentation

Parking Report PiP





Team TechSmith Beta Presentation

TechSmith Mobile Web Reporter

The Mobile Web Reporter enables users to make journalist style videos from their mobile devices. The app has a web browser embedded so that the user can search for relevant information in the background as well as record their audio commentary and video of their environment.

For example, let's say that you go out to eat at a restaurant with your family and, in the middle of dinner, your friends at home ask you what you think of the place. Instead of trying to explain it to them, with the Mobile Web Reporter you are simply able to take your phone, pull up online ratings, and make a video of your experience all in real time.

Once you are satisfied with your report you can save the video to your phone and continue eating, or you can upload the video to the web right away. You have the option of uploading your video to social networking websites like Facebook. In a matter of moments your friends at home are able to see and hear what you are experiencing.

The major design challenges for the Mobile Web Reporter are recording a video that captures both the screen and camera, creating an easy to use workflow, and achieving good performance on mobile devices.

The Mobile Web Reporter is a mobile app designed for iPhone and iPad (iOS), using Objective C, and for Android, using Java and C++. For the iPhone and iPad, videos are created in MPEG-4 format using the AV Foundation. In the Android app videos are created in WebM format using a native encoder.



TechSmith



Michigan State University

Team Members (left to right)

Jacob Anderson

Grand Lodge, Michigan

Mehmet Barutcuoglu

Michigan, Turkey

Joshua Berger

Grand Lodge, Michigan

TechSmith

Corporate Sponsors

Chris Bowman

Charmco, Michigan

Dean Givens

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Eliz Hamilton

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Jeffrey Morgan

Charmco, Michigan

Team TechSmith Design Day

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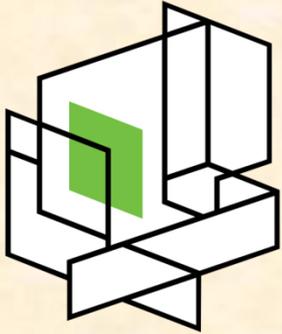
Team Urban Science

Department of Computer Science and Engineering
Michigan State University

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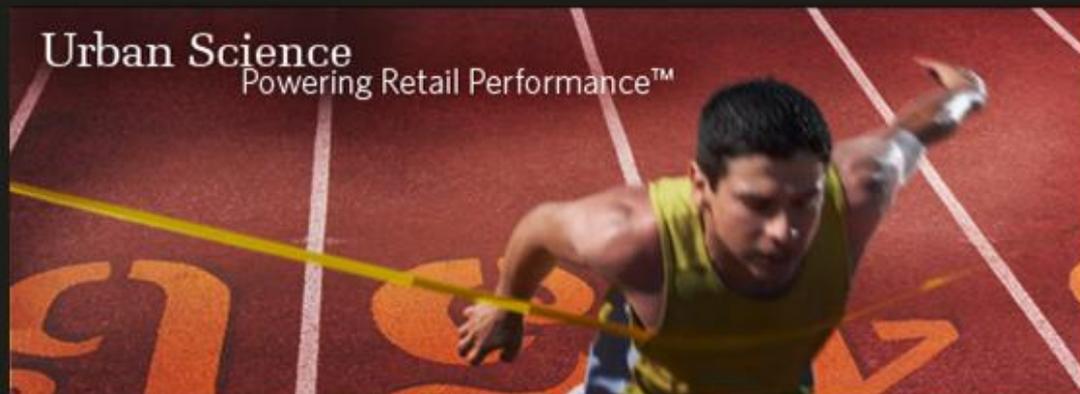
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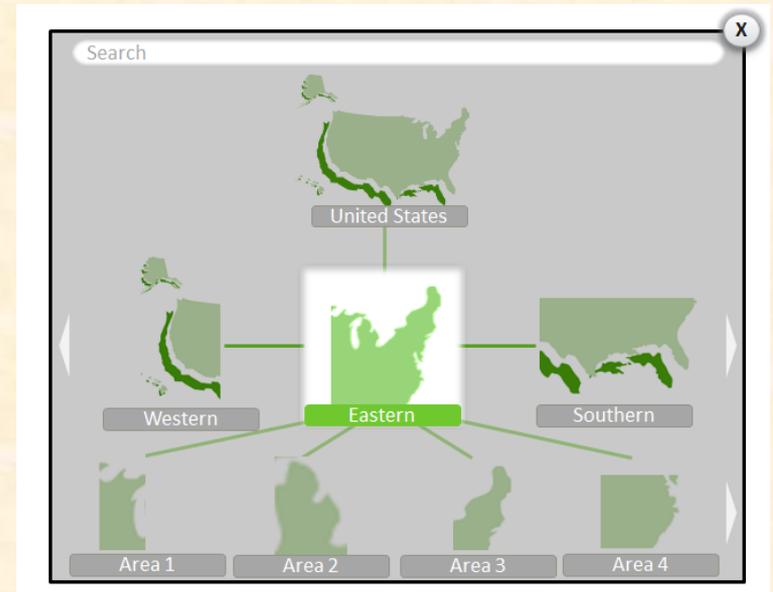
Contact Us

1.800.321.6900 [EMAIL](#)

Team Urban Science Project Overview

Visual Hierarchy Selection

- Functionalities
 - Visual Control for n-Level Hierarchy
 - Navigation
 - Selection
 - Search
 - Examples
 - Geography (United States > Eastern > Area 2 > Michigan)
 - Lead Source (Brand > Audi USA > Audi A8)
 - Vehicle Model (Audi A6 > Audi A6 3.0T)
- Features
 - Visually Appealing and User Friendly
 - Hierarchy Nodes
 - Include Image and Text
 - May Have Multiple Parents
 - Supports Web and Mobile Devices
- Technologies
 - HTML5
 - ASP.NET
 - JavaScript
 - SQL Server



URBAN SCIENCE.
Detroit, Michigan



Team Urban Science
Neil Owen, Brian Smith, Christian Hessler

Screen Mockups

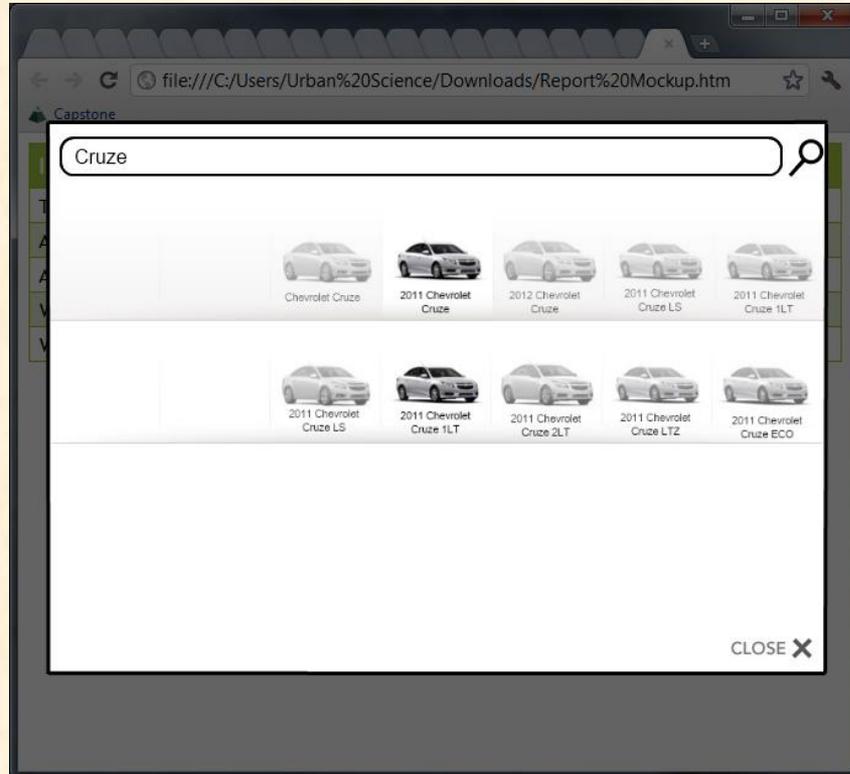
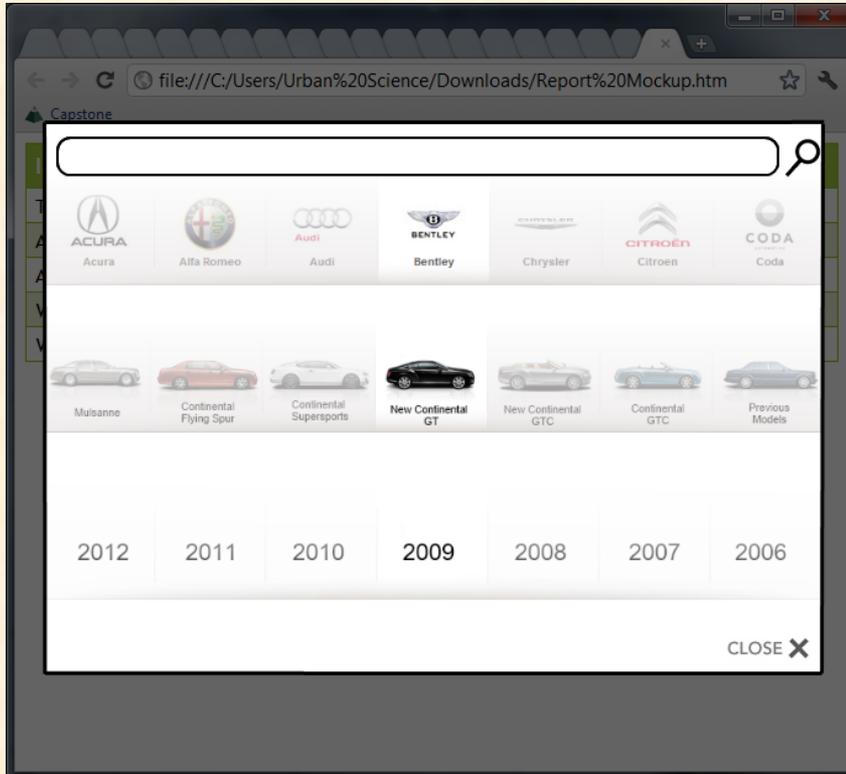


The Candidate Experience

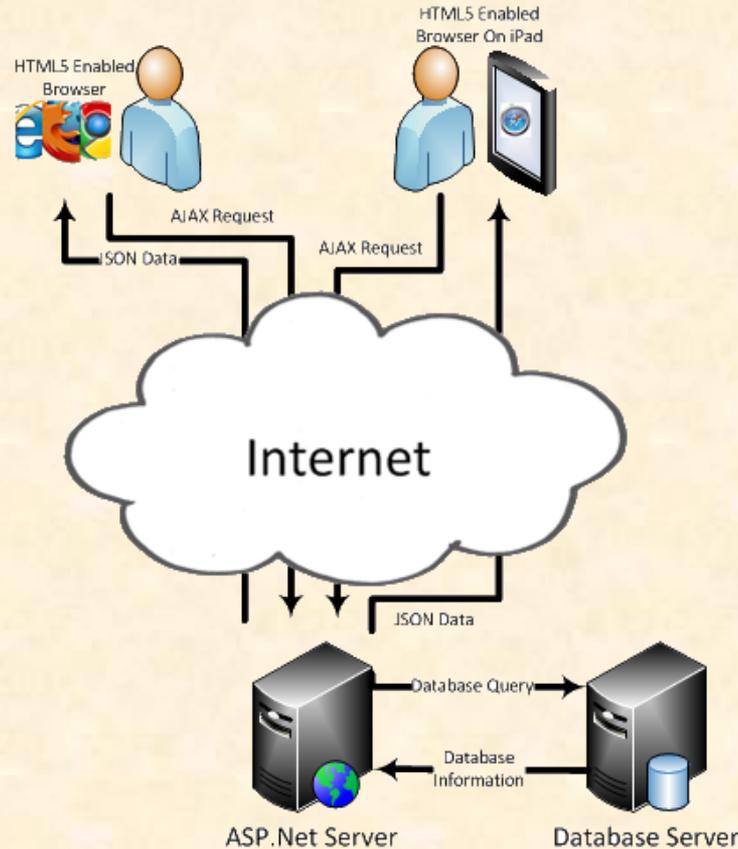
Team Urban Science Project Plan

Team Urban Science
Project Plan Presentation

Team Urban Science Screen Mockup



Team Urban Science Architecture Diagram



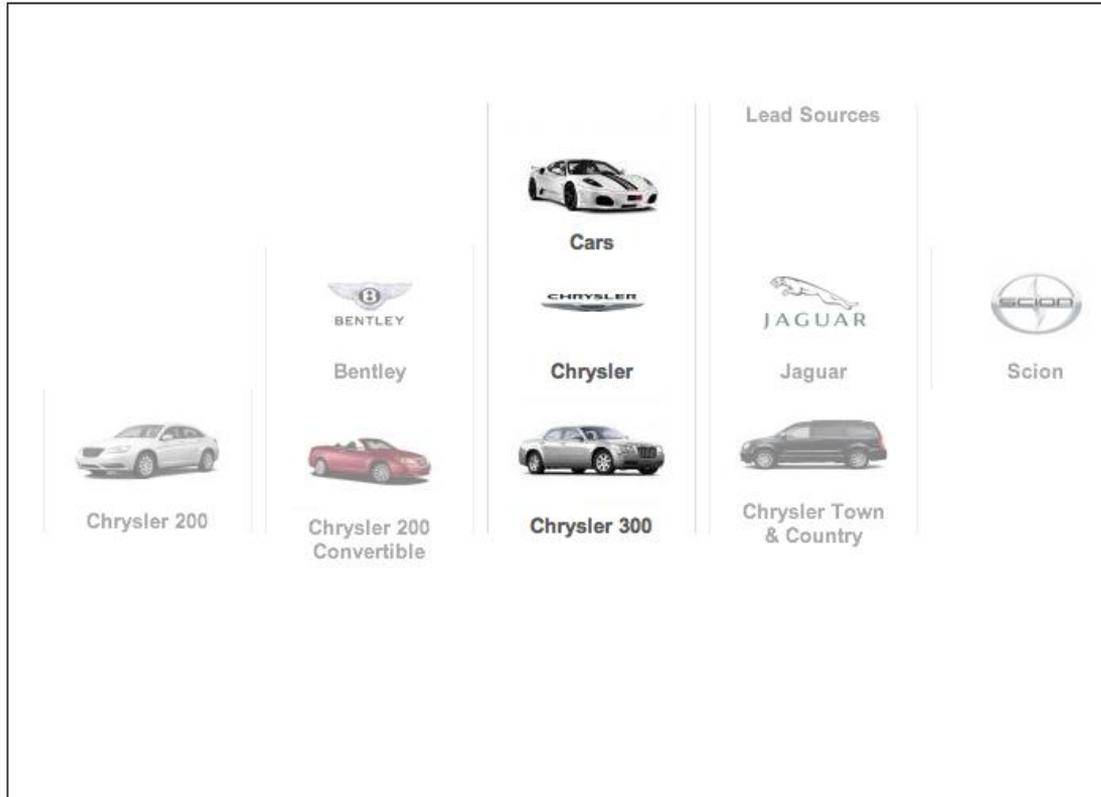
System Architecture



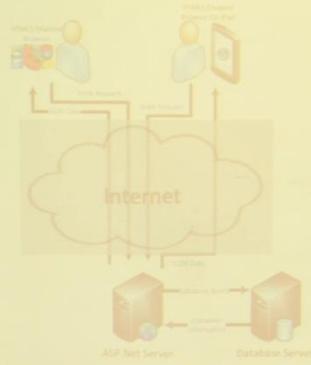
Team Urban Science
Project Plan Presentation

Team Urban Science Alpha Presentation

Making a Selection



System Architecture



Team Urban Science
Alpha Presentation

Team Urban Science Alpha Presentation

Grid View

 Cars	 BENTLEY Bentley			
 Mulsanne	 Continental Flying Spur	 Continental Supersports	 New Continental GT	 New Continental GTC
 Continental GTC				
Bentley				

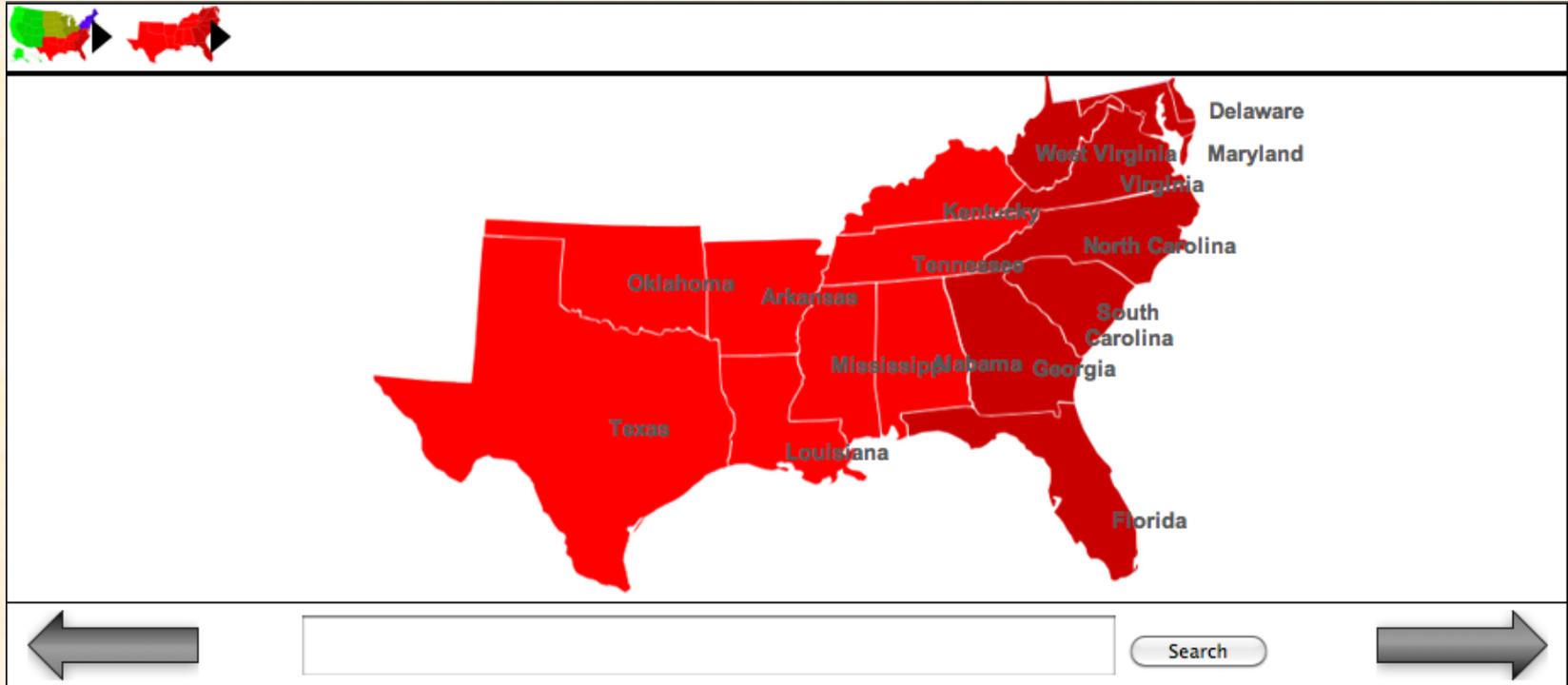




Team Urban Science Alpha Presentation

Team Urban Science Beta Presentation

Selecting a Region





Team Urban Science Beta Presentation

Team Urban Science Beta Presentation

Selecting Multiple Items

The screenshot displays a car selection interface. At the top, there are logos for Jaguar, Land Rover, and Bentley, with navigation arrows. Below this is a grid of car models. The models are arranged in two rows. The first row contains: XF, XJ, XK, Chrysler 200, Chrysler 200 Convertible, and Chrysler 300. The second row contains: Chrysler Town & Country, Mulsanne, Continental Flying Spur, Continental Supersports, New Continental GT, and Continental GTC. A search bar is located at the bottom of the grid, with a left arrow on the left and a right arrow on the right. The search bar contains the text "Search".

XF	XJ	XK	Chrysler 200	Chrysler 200 Convertible	Chrysler 300
Chrysler Town & Country	Mulsanne	Continental Flying Spur	Continental Supersports	New Continental GT	Continental GTC



Team Urban Science Beta Presentation

Urban Science Visual Hierarchy Selection

Urban Science is an automotive consulting company, helping manufacturers better evaluate, structure, and manage their dealer networks and marketing programs through a combination of scientific analysis and software solutions.

In order to manage marketing and research data efficiently, Urban Science utilizes multiple hierarchical organization systems. This data is currently presented in a traditional tree-based manner. The goal of Visual Hierarchy Selection is to allow users to navigate through this same data in a more intuitive, modern, and visual fashion.

Visual Hierarchy Selection provides a natural user experience across keyboard, mouse, and touch-based interfaces. A search feature is implemented to allow for quicker selection, both through the entire hierarchy and on each level during navigation. Due to the variety of data managed, Visual Hierarchy Selection implements multiple display styles, allowing data to be visually represented in an appropriate manner for the content.

The hierarchical data is retrieved before it is requested by the user and stored, so that Visual Hierarchy Selection provides not only a visually appealing interface but one that is also responsive and easy to use.

Visual Hierarchy Selection is built to run in any modern browser, using Javascript and HTML. The data is stored in an SQL database on a server running Microsoft SQL Server 2008, and retrieved using ASP.NET.



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Urban Science

Urban Science Corporate Sponsors

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Detroit, Michigan
- Randy Beale
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Team Urban Science Design Day

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The Capstone Experience

Dr. Wayne Dyksen

Department of Computer Science and Engineering
Michigan State University
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Capstone Lab
View of Spartan Stadium



Capstone Lab
View of Spartan Stadium

MICHIGAN STATE

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The Capstone Experience

Design Day Award Winners

December 9, 2011



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All-Hands
Design Day, December 9, 2011



Auto-Owners Exhibition Award Spectrum Health, Fall 2011

[Log Monitoring Compliance](#)

William D. Seeger, Wayne Stiles, Collin Lotus, Kathryn Bonnen

Presented by Jim Schumacher and Bob Buchanan of [Auto-Owners Insurance](#)



Chrysler Praxis Award

Team Motorola Mobility, Fall 2011

[Synchronized Program Content Delivery](#)

Paul J. Detkowski, Tareq Musleh, Timothy Belcher

Presented by Karen Wrobel of [Chrysler](#)



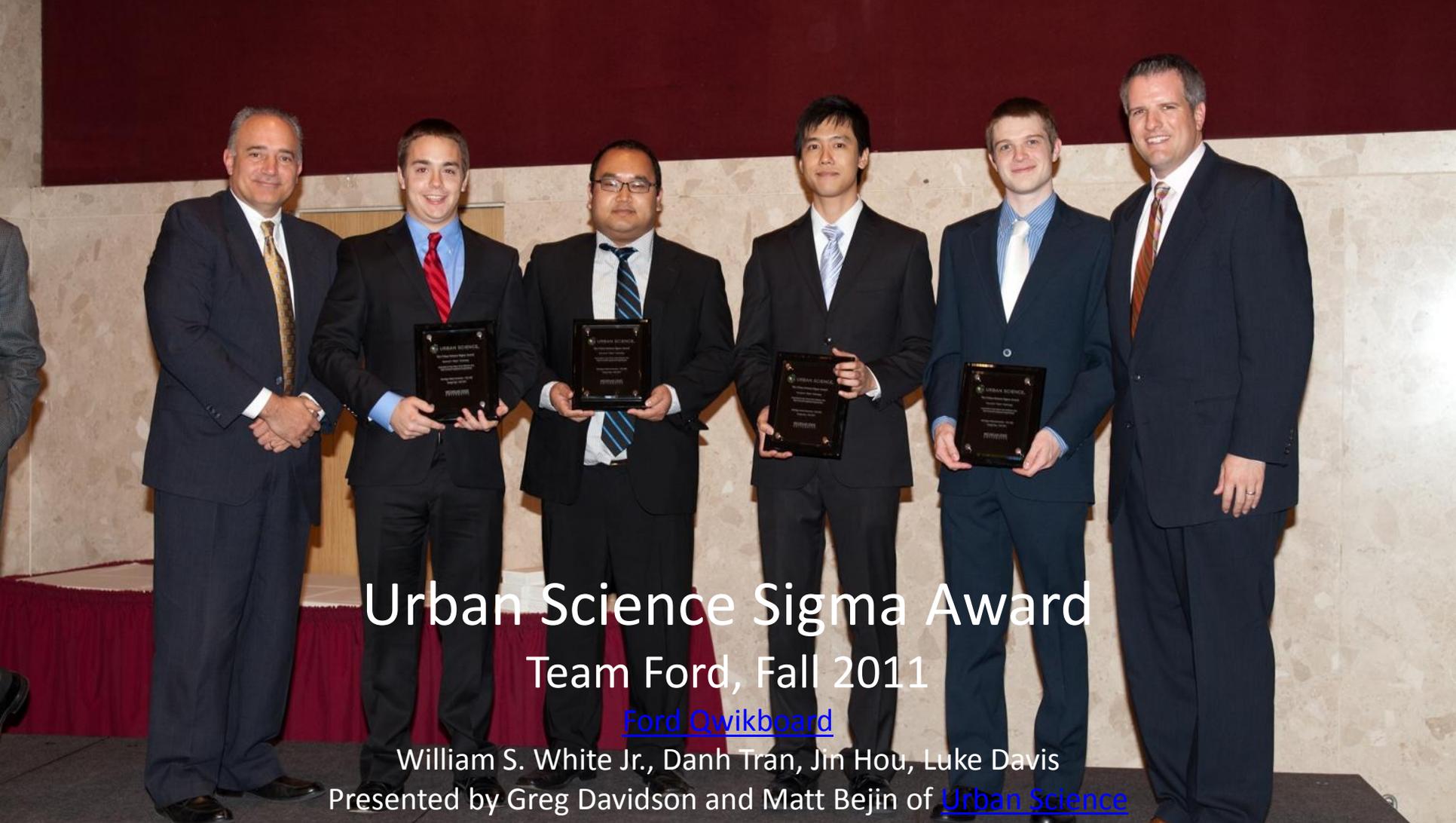
TechSmith Screencast Award

Team GE Aviation, Fall 2011

[NextGen Aircraft Taxi Assistance](#)

Johnathan Richter, Jacob Walker, Jason Cepela, Mitchell Thelen

Presented by Dean Craven of [TechSmith](#)



Urban Science Sigma Award

Team Ford, Fall 2011

[Ford Qwikboard](#)

William S. White Jr., Danh Tran, Jim Hou, Luke Davis

Presented by Greg Davidson and Matt Bejin of [Urban Science](#)

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Design Day Award Winners

April 29, 2011



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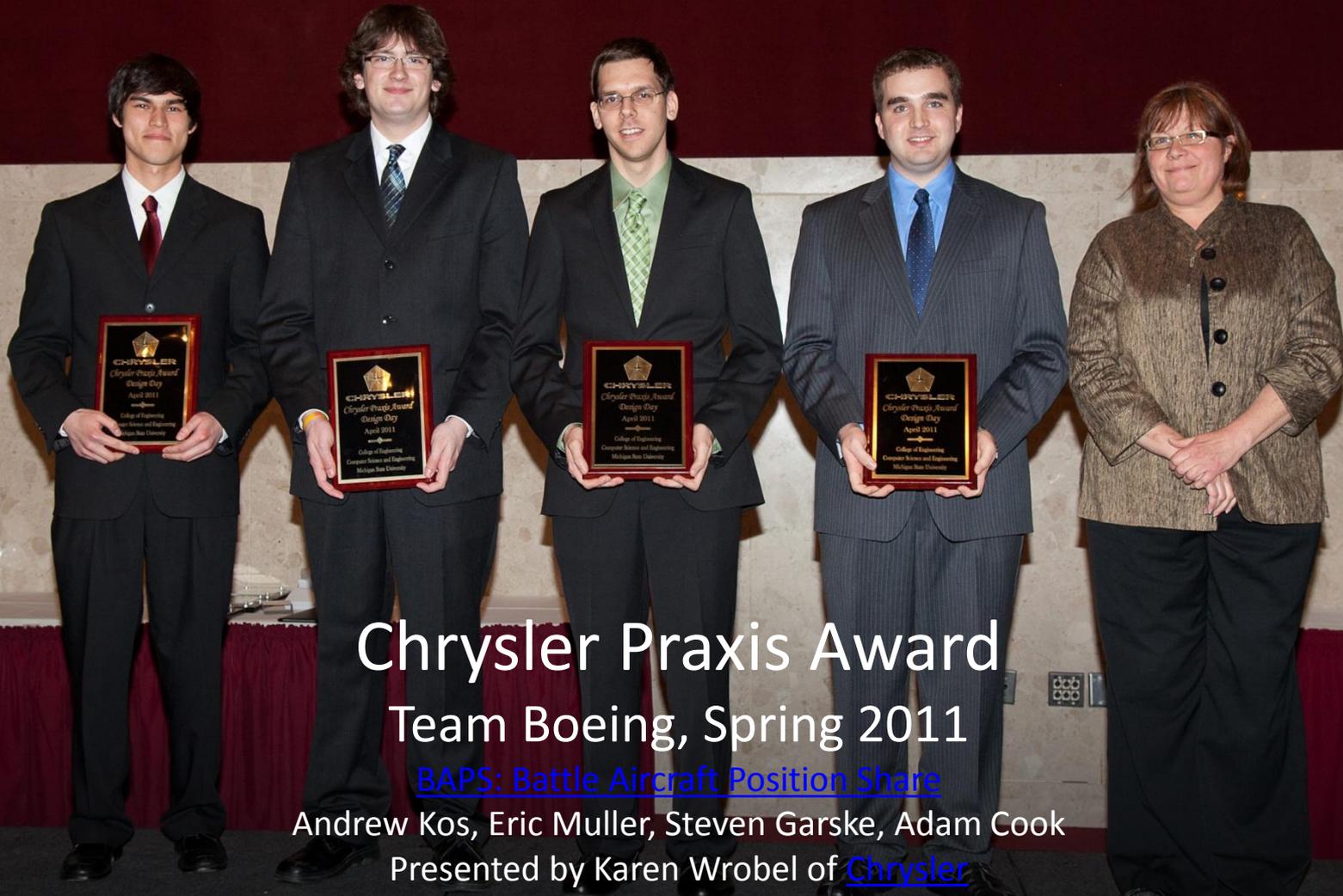
Auto-Owners Exhibition Award

Team Raytheon, Spring 2011

[Dynamic Spectrum Access for Network Radios](#)

Matt Bowser, James Voss, William Bonner, Srinivasa Settaluri

Presented by Scott Lake and Bob Buchanan of [Auto-Owners Insurance](#)



Chrysler Praxis Award

Team Boeing, Spring 2011

[BAPS: Battle Aircraft Position Share](#)

Andrew Kos, Eric Muller, Steven Garske, Adam Cook

Presented by Karen Wrobel of [Chrysler](#)



TechSmith Screencast Award

Team Medtronic, Spring 2011

[Cloud-Based Athletics Operations Center](#)

Michael Holp, Evan Francis, Christopher Paterson, Caitlin Russ

Presented by Dean Craven of [TechSmith](#)



Urban Science Sigma Award
Team Sparrow, Spring 2011

[iSupport Center](#)

Ryan Hewitt, Dianna Kay, Brett McMillen, Maurice Wong

Presented by Randy Berlin of [Urban Science](#)

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Auto-Owners Exhibition Award

Team Meijer, Fall 2010

[ITS Products and Services Request System](#)

Matt Packowski, Austin McCarty, Andrew Thielking

Presented by Scott Lake and Bob Buchanan of [Auto-Owners Insurance](#)



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Computer Science and Engineering
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Chrysler Praxis Award

Team Motorola, Fall 2010

[Enhanced Program Guide for Mobile Devices](#)

Andrew Rossow, Drew Hanlon, Tim Aubel, Brian Cripe

Presented by Karen Wrobel of [Chrysler](#)



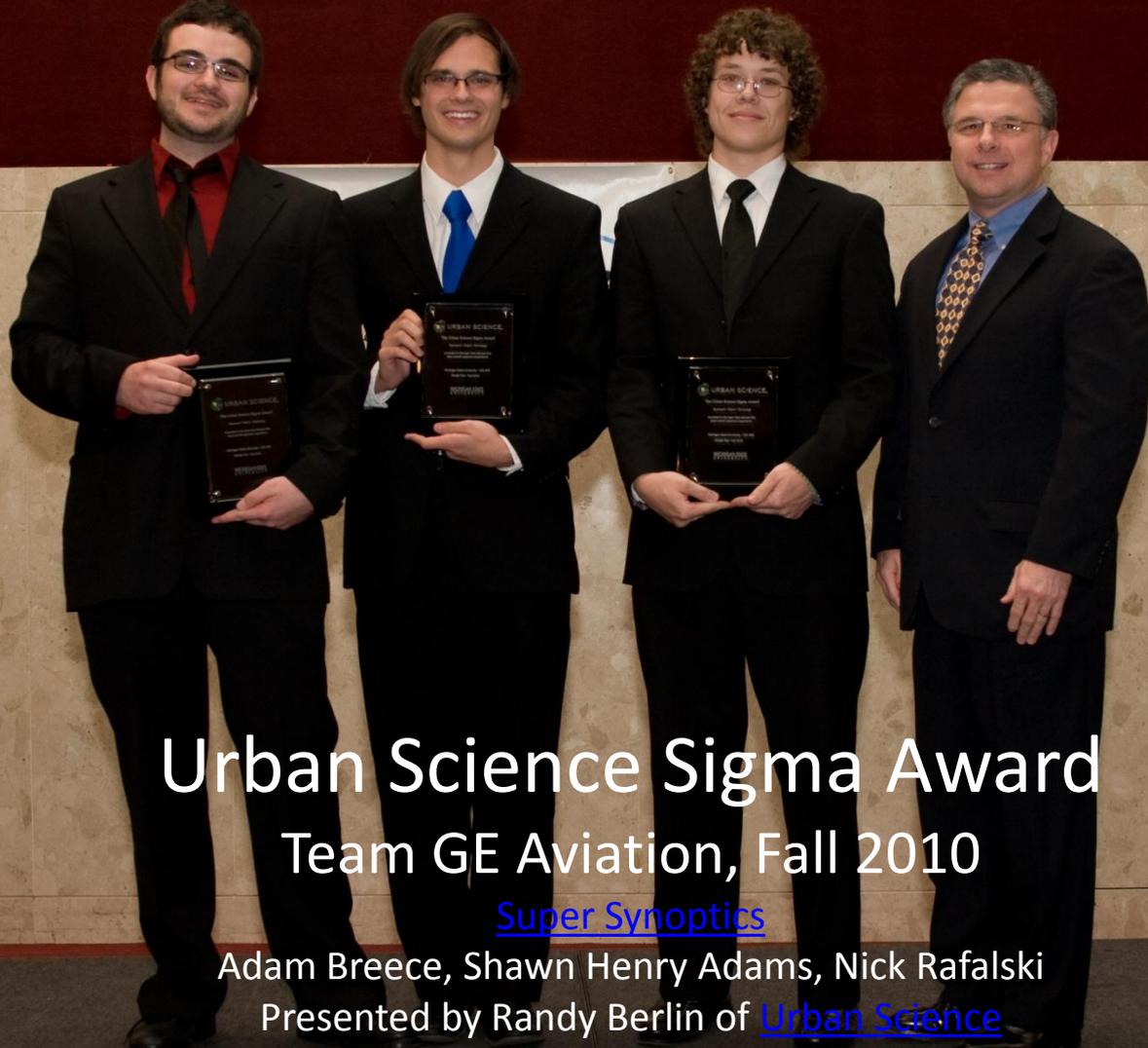
TechSmith Screencast Award

Team Medtronic, Fall 2010

[Medtronic Wellness Portal](#)

Zach Riggle, Joe Heldt, Chris Van Wiemeersch, Vu Bui

Presented by Dean Craven of [TechSmith](#)



Urban Science Sigma Award

Team GE Aviation, Fall 2010

[Super Synoptics](#)

Adam Breece, Shawn Henry Adams, Nick Rafalski

Presented by Randy Berlin of [Urban Science](#)

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Auto-Owners Exhibition Award

Team GE Aviation, Spring 2010

[Flight Deck Lateral Map Display](#)

Jason Ridgon, Jordan Clare, Cory Sites, Adam Dupler

Presented by Ron Simon of [Auto-Owners Insurance](#)





Chrysler Praxis Award

Team Boeing, Spring 2010

[XML Texture Composition](#)

Jeremiah Cunningham, Jessica Parks, Marc Coleman, Jonathan Harris

Presented by Rick Rose of [Chrysler](#)



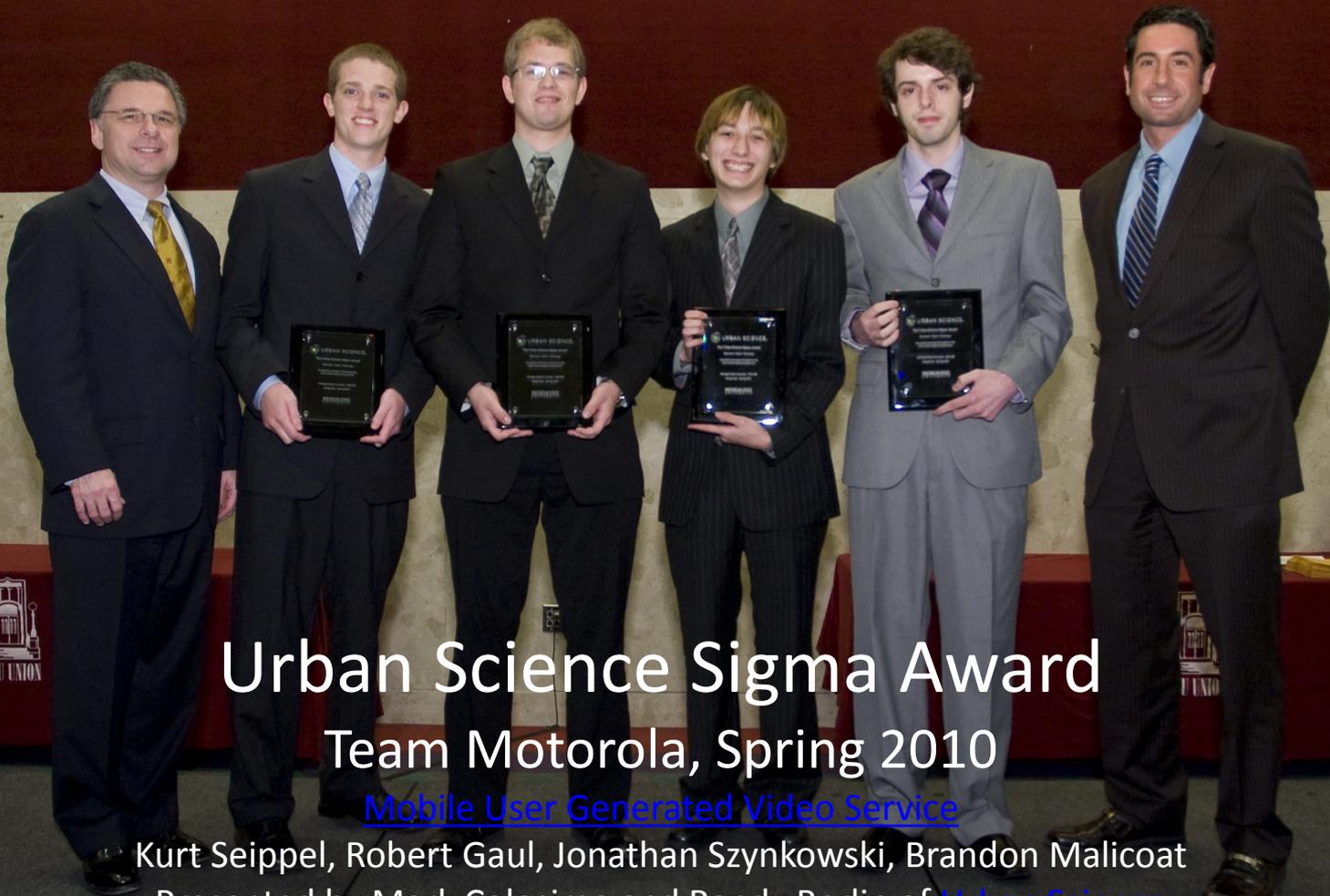
TechSmith Screencast Award

Team Medtronic, Spring 2010

[Mobile Health Management System](#)

Michael Keeseey, Kevin Chen, Karthik Chokkaram, Meghan McNeil

Presented by Dean Craven of [TechSmith](#)



Urban Science Sigma Award

Team Motorola, Spring 2010

[Mobile User Generated Video Service](#)

Kurt Seippel, Robert Gaul, Jonathan Szykowski, Brandon Malicoat

Presented by Mark Colosimo and Randy Berlin of [Urban Science](#)

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The Capstone Experience

Dr. Wayne Dyksen

Department of Computer Science and Engineering
Michigan State University
Spring 2011



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Life Home Car Business

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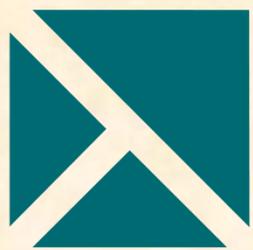
MOTOROLA



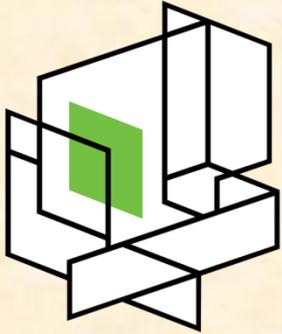
Sparrow

SPECTRUM HEALTH





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