The Capstone Experience

Dr. Wayne Dyksen
Department of Computer Science and Engineering
Michigan State University
Spring 2018
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

- TTh, 3:00-4:20 p.m., 1279 Anthony Hall
- Presentations By
  - Professor
  - Teams
    - Status Report Presentations
    - Formal Presentations
      - Project Plan
      - Alpha
      - Beta
    - Project Videos
  - Guest Speakers
All-Hands Meetings

- 01/09: Capstone Overview
- 01/11: Project Plan
- 01/16: Risks and Prototypes
- 01/18: Schedule and Teamwork
- 01/23: Team Status Report Presentations
- 01/25: Team Status Report Presentations
- 01/30: Team Project Plan Presentations
- 02/01: Team Project Plan Presentations
- 02/06: Team Project Plan Presentations
- 02/13: Resume Writing and Interviewing
- 02/15: Creating and Giving Presentations
- 02/20: Team Alpha Presentations
- 02/22: Team Alpha Presentations
- 02/27: Team Alpha Presentations
- 03/01: Team Alpha Presentations
- 03/06: (Spring Break, No Meeting)
- 03/08: (Spring Break, No Meeting)
- 03/13: Team Status Report Presentations
- 03/15: Team Status Report Presentations
- 03/20: Design Day and the Project Videos
- 03/22: Camtasia Demo
- 03/27: Intellectual Property
- 03/29: Ethics and Professionalism
- 04/03: Team Beta Presentations
- 04/05: Team Beta Presentations
- 04/10: Team Beta Presentations
- 04/12: Team Beta Presentations
- 04/17: Status Report Presentations
- 04/19: Status Report Presentations
- 04/24: Project Videos
- 04/26: Project Videos and All Deliverables
- 04/26: Design Day Setup
- 04/27: Design Day
- 04/27: Project Videos
- 04/27: Design Day Setup
- 04/27: Project Videos
- 05/03: Project Videos
- 05/03: Project Videos
The Capstone Experience

Team Accenture

Department of Computer Science and Engineering
Michigan State University
Spring 2018
NEW ISN’T ON ITS WAY.
WE’RE APPLYING IT RIGHT NOW.

Accenture is answering real business challenges for our clients through innovation and deep industry knowledge. Here’s how.
Team Accenture
Project Overview

AMAP: Automated Malware Analysis Platform

• Functionalities
  ▪ Automate Analysis of Malware
  ▪ Provide All-Inclusive Platform

• Features
  ▪ Ingest Malware Samples
  ▪ Decode Configuration Settings
  ▪ Recover Malware Artifacts
  ▪ Create Relationships in iDefense Platforms
  ▪ Save Payloads in Malware Repository

• Technologies
  ▪ Accenture iDefense Malware Repository
  ▪ Accenture iDefense IntelGraph
  ▪ Database Technologies
    o MongoDB
    o mySQL
  ▪ Python
Team Accenture
Griffin Metevia, Sam Kling, Julian Ellis, Andrew Mitchell, Teng Xu
Team Accenture
Project Plan Presentation

Screen Mockup: Malware Search

AMAP: Automated Malware Analysis Platform

Malware Sample Search

- Sample ID
- Strong Password: ID 000000, Custom: 14
- File Test: ID 000000, Custom: 0
- Slack Install: ID 000000, Custom: 1
- Custom Foo: ID 000000, Custom: 32
- api-manual: ID 000000, Patch: 22

File Name: 040d71e56512ao786bcs.xls
File Size: 77824 bytes
File Mime: application/vnd.ms-excel
File Type: Composite Document File V2 Document
MD5: 040d71e56512ao786b
SHA1: a4jn43kn34mk34kmk343mk3443mk
Notes:
Team Accenture
Project Plan Presentation
Team Accenture
Project Plan Presentation

Architecture Diagram

AMAP Modules

iDefense
Part of Accenture Security

Malware Database

Data Server

AMAP Dashboard

python™

mongoDB, django

HTML, JS, CSS

Accenture

The Capstone Experience
Team Accenture
Project Plan Presentation
Team Accenture
Alpha Presentation
### Analysis Status

<table>
<thead>
<tr>
<th>#</th>
<th>SHA236</th>
<th>MDS</th>
<th>Overall Progress</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>b3d9caf5ebc2267bcbdf8f39f53313ebab9b94ae879evedfaa553467f3799</td>
<td>eb684b58470e2e02b95a9a6f8b83c1abe5</td>
<td>18-1-27 1:54:24</td>
<td>View</td>
</tr>
<tr>
<td>2</td>
<td>dff02aca124204cf7f72129e75d76e4f965d11e775229d29aaf2e0c3de4dd</td>
<td>48712e4752b6b67662ca94350b4014391c</td>
<td>18-2-2 1:19:52</td>
<td>View</td>
</tr>
<tr>
<td>3</td>
<td>d7c8f54aa9fbb2a4c3b6be09fb6d6ac2e0e9f664ec0eb16a037b60f2d</td>
<td>35018a2f02cbb8a97276d5c97377b5</td>
<td>18-2-3 5:52:45</td>
<td>View</td>
</tr>
<tr>
<td>4</td>
<td>2e112b0b3fa0a225e6b2441b245359d07352b674949b474477d105</td>
<td>9490ed870d11730d8a8e9577f81b91907</td>
<td>18-2-3 6:00:23</td>
<td>View</td>
</tr>
<tr>
<td>5</td>
<td>9ac3acc4d6a7088405136b5262e13534acz78153b23f51e4f776b90cd9f4be</td>
<td>68b339a9893e34099c70bad5c199c940</td>
<td>18-2-5 12:32:02</td>
<td>View</td>
</tr>
</tbody>
</table>
Team Accenture
Alpha Presentation

Module Selection Page
Team Accenture
Alpha Presentation

Dashboard

- Todays Processed Files
  - New Malicious Files: 1125
  - New Non-Malicious Files: 500

- Average Processing Time
  - Time: 3.5 minutes

- File Types

- Malware Processed Per Hour
- New Malware Samples Per Hour
Team Accenture
Beta Presentation
Team Accenture
Beta Presentation

AMAP Wizard

AMAP Wizard

AMAP is Currently Running

Config Options:
- Time between each pull from database: 10 seconds
- Files retrieved during each pull: 1

Active Modules:
- rat decoder
- file-type
- SHA256
- sha1
- Cuckoo

Return to Dashboard
Quit AMAP
Team Accenture
Beta Presentation

My Modules
- ratdecoder
  - Update
  - Delete
- file-type
  - Update
  - Delete
- SHA256
  - Update
  - Delete
- sha1
  - Update
  - Delete
- Cuckoo
  - Update
  - Delete
Team Accenture
Beta Presentation
Team Accenture
Beta Presentation

AMAP Dashboard

Todays Processed Files
New Malicious Files: 1125
New Non-Malicious Files: 500

Average Processing Time
Time: 3.5 minutes

File Types

Malware Processed Per Hour

New Malware Samples Per Hour
Team Accenture @ Design Day
Andrew Mitchell, Teng Xu, Julian Ellis, Griffin Metevia, Sam Kling
The Capstone Experience

Team Amazon

Department of Computer Science and Engineering
Michigan State University
Spring 2018
AMPED: Amazon Marketplace Podcast Earnings Detection

• Functionalities
  ▪ Play Podcasts
  ▪ Show Listeners Related Amazon Products
  ▪ Support Listener’s Favorite Content Producer

• Features
  ▪ Create Integrated Audio Player
  ▪ Enable Uploading of Podcast by Producer
  ▪ Transcribe Speech to Text
  ▪ Comprehend Content
  ▪ Find Related Amazon Products
  ▪ Package Results Into API for Player

• Technologies
  ▪ AWS Compute & Database Services
  ▪ Amazon Transcribe
  ▪ Amazon Comprehend
  ▪ Amazon Item Search
  ▪ Amazon Queuing and Notification Services
  ▪ Amazon Elastic Beanstalk and API Gateway
Team Amazon
Zach Whitener, Hansheng Zhao, Dillon Stock, Cam Korzecke, Chess Luo
Project Plan Presentation

Screen Mockup: Web App Dashboard

Team Amazon

The Capstone Experience
Team Amazon
Project Plan Presentation
System Architecture

Team Amazon
Project Plan Presentation
Team Amazon

Project Plan Presentation

Screen Mockup: Podcast Details Page
Team Amazon
Alpha Presentation
Team Amazon
Alpha Presentation

AMPED Dashboard
Podcast Library and Product Detail Page
Team Amazon
Beta Presentation
Team Amazon
Beta Presentation

AMPED Dashboard
Team Amazon Beta Presentation

Podcast Library

What America Sells To The World
Fresh Air
2018-02-20 00:26

Episode 821: The Other Davos
On Point
2018-02-20 00:26
Team Amazon
Beta Presentation

Product Display

FIRE TV STICK WITH ALEXA VOICE REMOTE
$39.99
Team Amazon @ Design Day
Dillon Stock, Zach Whitener, Cam Korzecke, Chess Luo, Hansheng Zhao
The Capstone Experience

Team Aptiv

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Team Aptiv
Project Overview

CMS: Cybersecurity Management System

- Functionalities
  - Automate Aptiv’s Cybersecurity Process
  - Visualize and Analyze Data Trends

- Features
  - Modules for all Cybersecurity Processes
    - Threat Analysis and Risk Assessment
    - Vulnerability/Penetration Assessment
    - Mitigation Remediation
    - Incident Response
  - Database Visualizations and Analysis
    - Threats/Risks
    - Vulnerabilities
    - Incidents
    - Mitigations
  - Provide Communication Through Task Manager and Request System

- Technologies
  - ASP.NET (C#)
  - CSS/HTML
  - MS SQL
  - Synopsys Protecode
  - Microsoft Azure
Team Aptiv
Dillon Brown, Clayton Peters, Ashtaan Rapanos, Winton Qian, Wei Jiang
Team Aptiv
Project Plan Presentation

Screen Mockup: Incomplete Project Page
Team Aptiv
Project Plan Presentation

Architecture Diagram

Internal Network

Internal Server

Microsoft Azure

SQL Database Server

Application Server

.NET Web Application

Active Directory

APTIV

Admin

Product Engineer

Cybersecurity

Protecode SC
Team Aptiv Alpha Presentation
Team Aptiv
Alpha Presentation

Dashboard
Team Aptiv
Alpha Presentation

Product Dashboard
Team Aptiv
Beta Presentation
Team Aptiv
Beta Presentation

Product Lines

![Image of Product Lines](localhost:52572/ProductLine/Index)
Team Aptiv
Beta Presentation
Team Aptiv
Beta Presentation

TARA Module
Team Aptiv @ Design Day
Winton Qian, Dillon Brown, Ashtaan Rapanos, Clayton Peters, Wei Jiang
The Capstone Experience

Team Auto-Owners

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Auto-Owners
INSURANCE
LIFE • HOME • CAR • BUSINESS
For What Matters Most

Insurance built around your needs by a local independent agent

FIND AN AGENT FOR A QUOTE

Why choose an independent agent?

Pay Your Bill

Report a Claim

Policies to Meet Your Needs
Team Auto-Owners
Project Overview

**IMAGINE: IMAGe INtake Experience**

- **Functionalities**
  - Evaluate Physical Environments (for Insurance Purposes)
  - Leverage Virtual Reality
  - Create Virtual Environments Using Spherical Camera

- **Features**
  - Support Image Import From Spherical Camera
  - Classify the Environment
  - Detect and Identify Objects
  - Create Virtual Environment
  - Provide Playback, Navigation and Inspection
  - Build and Display Inventory View

- **Technologies**
  - Unity Game Engine
  - Oculus Rift and Touch Controllers
  - Oculus Rift Sensor
  - Ricoh Theta V Spherical Camera
  - Image Processing and Recognition
Team Auto-Owners
Zack Geizer, Reece Cole, Sean Larabell, Nick Frederick, Xinyun Zhao
Team Auto-Owners
Project Plan Presentation

Architecture Diagram

Server-Side Applications
- Object Recognition System
  - Submits Environment Images for Object Identification
  - Creates Object Listings in Object Database
- User System
  - Manages User Data, Updates Data, Retrieves Data, Creates Data
- Database
  - MariaDB

Client-Side Applications
- VR Application
  - Provides object data and image environments
  - Displays panoramic view of uploaded environment and object info
- Web Application
  - Creates environments, allows user to create and edit object and environment data

External Hardware
- Oculus Rift Headset
- Oculus Rift Controllers
- Omnidirectional Camera

Graphical connections indicate data flow and interaction between components.
Team Auto-Owners
Project Plan Presentation

Screen Mockup: VR User Interface
Team Auto-Owners
Alpha Presentation

Web: Inventory List
Team Auto-Owners
Alpha Presentation

Object Detection
Team Auto-Owners
Alpha Presentation

VR: Selecting Object Nodes
Team Auto-Owners
Beta Presentation

Website Environments Page
Team Auto-Owners
Beta Presentation

Object Recognition Bounding Boxes
Team Auto-Owners
Beta Presentation

VR Object Nodes and Info Display
Team Auto-Owners @ Design Day
Reece Cole, Nick Frederick, Xinyun Zhao, Zack Geizer, Sean Larabell
The Capstone Experience

Team Dow

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Solutions for Human Progress

News & Features
Dow to Expand Propionic Acid Facility in Texas
Dow COO Jim Fitterling Presented the “Doing a World of Good” Medal for Advancing the Societal Contributions of

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Virtual Reality Simulation for Railcar Loading

- **Functionalities**
  - Teach How to Load a Railcar Safely
  - Via First Person Virtual Reality Game

- **Features**
  - Support Two Levels of Difficulty
    - Non-Certified
    - Certified
  - Handle Various Scenarios
    - Normal Filling
    - Response to Spills
  - Manage Player Points
    - Award for Positive Actions
    - Deduct for Negative Actions
  - Enable Interaction with Game Objects
    - Personal Protective Equipment (PPE)
    - D-Rails
    - Slide Valves
  - Use Audio to Indicate When Action Needed
  - Simulate Different Weather Conditions
  - Provide Feedback to Player at Game End

- **Technologies**
  - Unity Game Engine
  - Vive and Touch Controllers
  - Vive SDK
  - Microsoft .NET / C#
  - Xamarin

Team Dow
Project Overview

The Capstone Experience

Midland, Michigan
Team Dow
Kyle White, Matthew Smith, John Yoo, JD Hayward, David Wang
Team Dow
Project Plan Presentation

Screen Mockup: The Loading Area
Team Dow
Project Plan Presentation
Team Dow
Project Plan Presentation

Software
- Photoshop (Ps)
- 3DS MAX
- Audacity
- C#
- SDK

Hardware
- Unity
- Steam VR
- VRTK

Language
- 3D

Assets
- STEAM

Architecture Diagram
Team Dow
Project Plan Presentation
Team Dow
Project Plan Presentation

Screen Mockup: The Railcar
Team Dow
Alpha Presentation
Team Dow
Alpha Presentation

Loading Area
Team Dow
Alpha Presentation

Load Arm and Spreader
Team Dow
Alpha Presentation
Team Dow Beta Presentation
Team Dow
Beta Presentation

Load Arm and Spreader
Team Dow
Beta Presentation
Team Dow
Beta Presentation

Incoming Railcar
Team Dow @ Design Day
Matthew Smith, David Wang, Kyle White, John Yoo, JD Hayward
The Capstone Experience

Team DRIVEN-4

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Driven To Enable Your Success!

We are technology leaders who were in your shoes yesterday. We can help you achieve your PLM, IoT & CyberSecurity journey like no-one else.
Team DRIVEN-4
Project Overview

2020 Business in a Box

• Functionalities
  ▪ Develop Futuristic Business Environment
  ▪ Base on Internet of Things (IoT) Architecture
  ▪ Target 2020 and Beyond

• Features
  ▪ Model Five to Ten Components
  ▪ Connect Components via WiFi
  ▪ Validate and Verify Design via Simulation
  ▪ Develop Manufacturing Processes and Artifacts
  ▪ Demonstrate Capabilities for Collaboration and Integration
  ▪ Utilize Various Product Development Software Systems

• Technologies
  ▪ Computer Aided Design (CAD) / Siemens NX and PTC CREO
  ▪ Product Lifecycle Management (PLM) / Siemens Teamcenter and PTC Windchill
  ▪ Design Simulation Tools / PTC and Siemens
  ▪ Factory Floor Simulation / Siemens
  ▪ IoT Platforms / PTC ThingWorx and Siemens MindSphere
  ▪ 3D Printing
  ▪ Conveyor and Sight System
  ▪ Augmented and Virtual Reality (VR/VR) / PTC Thingworx Studio
Team DRIVEN-4
Nick Mikelsavage, Brian Pinsky, Charles Carroll, Betty Wu, Sam Coffey
Team DRIVEN-4
Project Plan Presentation

Screen Mockup: Manufacturing
Team DRIVEN-4
Project Plan Presentation

Architecture Diagram
Team DRIVEN-4
Project Plan Presentation

Screen Mockup: AR Service
Team DRIVEN-4
Alpha Presentation
Team DRIVEN-4
Alpha Presentation

Manufacturer’s Web Portal Dashboard
Team DRIVEN-4
Alpha Presentation

Customer Mobile Application
Team DRIVEN-4
Alpha Presentation
3D Model for Augmented Reality
Team DRIVEN-4
Beta Presentation
### Manufacturer Dashboard

#### All Devices

<table>
<thead>
<tr>
<th>Name</th>
<th>Last Movement Magnitude</th>
<th>Current Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>device-1</td>
<td>1187.87</td>
<td>73</td>
</tr>
<tr>
<td>device-2</td>
<td>1234</td>
<td>68</td>
</tr>
<tr>
<td>device-3</td>
<td>47000</td>
<td>0</td>
</tr>
<tr>
<td>device-4</td>
<td>5000</td>
<td>0</td>
</tr>
<tr>
<td>device-5</td>
<td>30000</td>
<td>0</td>
</tr>
<tr>
<td>Or/Else</td>
<td>27000</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Customers - Lansing Area

![Map of Lansing Area]

#### Current Device Magnitudes

![Bar chart showing magnitudes]

---

**Team DRIVEN-4**

_**Beta Presentation**_

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*The Capstone Experience*
Customer View
Team DRIVEN-4
Beta Presentation
Team DRIVEN-4
Beta Presentation

Device Simulator and AR
Team DRIVEN-4 @ Design Day
Nick Mikelsavage, Charles Carroll, Sam Coffey, Betty Wu, Brian Pinsky
The Capstone Experience

Team GM

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Team GM
Project Overview

Plato: DevBot for Microsoft Teams

• Functionalities
  ▪ Create and Manage Virtual Machines
  ▪ Manage and Run Test Cases
  ▪ Target GM Developers

• Features
  ▪ Provide Single Unified Environment
  ▪ Integrate with Microsoft Teams
  ▪ Design Simplified User Controls
  ▪ Use Natural Language Processing

• Technologies
  ▪ CSS / HTML5 / JavaScript
  ▪ Microsoft
    • .NET / C#
    • Bot Framework
    • Language Understanding Intelligent Services (LUIS)
    • Team Foundation Server
    • Teams / O365
    • Azure
  ▪ Natural Language Processing (NLP)
  ▪ RESTful Web Services and JSON
Team GM
Alex Lepird, Tao Tao, Simeon Goolsby, Matthew Eaton, Colin Coppersmith
Team GM
Project Plan Presentation

Screen Mockup: VM Creation

- User Simeon Goolsby requests an Ubuntu VM with 4 cores and 120GB of RAM.
- User Plato confirms the VM creation with ID V000002389.
- The VM named Baron is shown with the following specifications:
  - ID: V000002389
  - OS: Ubuntu
  - Memory: 120GB
  - Cores: 4
  - Status: Running
Team GM
Project Plan Presentation
Team GM
Project Plan Presentation

Architecture Diagram
Do not delete this textbox. It's used as a marker in VB code. See VB Module UTL_PresentationSlidesSend2FB.
Team GM
Project Plan Presentation

Screen Mockup: Web Dashboard

- Microsoft Azure SQL
- Microsoft Azure
- Visual Studio Team Foundation Server
- Azure Bot Service
- Microsoft .NET Framework
- Microsoft Teams
-  

The Capstone Experience
Team GM
Alpha Presentation
Team GM
Alpha Presentation

VM Creation Through Bot
Team GM
Alpha Presentation

Virtual Machines Dashboard
Team GM
Alpha Presentation
Team GM
Alpha Presentation

Information on Clicked Test
Team GM
Beta Presentation
Team GM
Beta Presentation

Tests Dashboard

Plato Dashboard  Login  Register  Virtual Machines  Tests

Team GM

Search...

TestSuspendVirtualMachine
Last ran 10 hours ago by coppers4@gmfuture.net

TestGetVirtualMachine
Last ran 10 hours ago by coppers4@gmfuture.net

Daily Test Runs
Pass
Fail
Creating a VM

Colin Coppersmith (MSU) 11:33 PM
gm-plato create a debian virtual machine with 16gb of ram and 4 cores and a 256gb hard drive

gm-plato 11:33 PM
I can help you create a virtual machine! Let's get started.

What would you like to name your virtual machine?

Colin Coppersmith (MSU) 11:33 PM
gm-plato CoolDebianVM

gm-plato 11:33 PM
Would you like to create a Debian VM with 16GB of RAM, 4 Cores, and 256GB of hard disk space?

Colin Coppersmith (MSU) 11:33 PM
gm-plato yes

gm-plato 11:33 PM
OK! Your virtual machine has been created! Click 'start' to start it!

CoolDebianVM
OS: Debian RAM: 16GB Cores: 4 Disk Space: 256GB Status: New
Team GM @ Design Day
Tao Tao, Simeon Goolsby, Alex Lepird, Matthew Eaton, Colin Coppersmith
The Capstone Experience

Team Herman Miller

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Team Herman Miller
Project Overview

Adjust: Augmented Reality Chair Adjustment

• Functionalities
  ▪ Simplify Adjusting High Performance Office Chair
    o Ergonomic
    o “Developer Chair”
  ▪ Use Chatbot to Explain How

• Features
  ▪ Automatically Identify Chair via Photo
  ▪ Provide Step-by-Step Instructions
  ▪ Customize to User’s Ergonomic Needs
  ▪ Support Apple iOS and Google Android Devices
  ▪ Leverage Facebook Messenger

• Technologies
  ▪ Apple iOS / Swift
  ▪ Google Android / Java
  ▪ Image Processing and Recognition
  ▪ Natural Language Processing (NLP)
  ▪ Facebook Messenger
Team Herman Miller
Kevin Gaban, Mike Bremiller, Kyle Kinsey, Jacob Weber, Han Huang
Team Herman Miller
Project Plan Presentation

Screen Mockup: Identifying Chair

Tap the "Adjust" button and sit in your chair to begin guided adjustment.

Aeron (remastered)
Screen Mockup: Identifying Chair
Team Herman Miller
Project Plan Presentation

Architecture Diagram

3D assets

Model Target Generator

Camera Input

Vuforia matches model target to camera input

Unity displays appropriate interactive 3D model

iOS

Builds

Xcode

Builds

Android

Vuforia

Camera Input

Model Target Generator

3D assets

Team Herman Miller
Project Plan Presentation

Architecture Diagram
Team Herman Miller
Project Plan Presentation
Team Herman Miller
Project Plan Presentation

Screen Mockup: Interactive 3D Model

Step 1: Height Adjustment
Locate and tap the highlighted height adjustment level on your Aeron chair.
Team Herman Miller
Alpha Presentation

Interactive Model

Step 2: Seat Depth Adjustment

Return to Camera  Back  Next
Front handles on the right and left sides of the seat.

In the proper position, you will have approximately three-fingers of clearance between the back of your knees and the seat edge.

To increase or decrease depth: Lift your thigh weight from the front of the seat. Gently lift up the front handles on the right and left sides to disengage the locking seat depth adjustment. Slide seat forward or back into proper depth for use; then release downward to lock the seat.
Step 1: Height Adjustment

Team Herman Miller
Alpha Presentation
Team Herman Miller
Alpha Presentation

Main Menu

Menu

Camera
Use your phone’s camera to detect your Herman Miller chair.

Gallery
Select from our gallery of Herman Miller office chairs.

About Us
Learn more about Herman Miller and our range of products.
Chair Detection Interface

Scan Chair

Detecting Chair...

Chair Detected: Embody

Adjust Chair
Team Herman Miller
Beta Presentation

Interactive Adjustment Interface

Getting Started...

Sit all the way back in your seat.

Make sure your entire back is making contact with the backrest.

Let's Go!
Do not delete this textbox. It's used as a marker in VB code.

See VB Module UTL_PresentationSlidesSend2FB.

Team Herman Miller
Beta Presentation
Team Herman Miller
Beta Presentation

Firebase Analytics Dashboard
Team Herman Miller @ Design Day
Kevin Gaban, Jacob Weber, Mike Bremiller, Kyle Kinsey, Han Huang
The Capstone Experience

Team Meijer

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Santa Bucks are back!
last time this year!

save over $50
Thrifty: Personal Shopping Assistant

- Functionalities
  - Streamline Shopping Experience
  - Leverage Mobile App
  - Interact by Voice or Chatting

- Features
  - Create Mobile Apps
    - Apple iOS
    - Google Android
  - Determine Product Information
    - Location in Store
    - Stock
    - Sale
    - Coupon
  - Compare Prices to Other Stores
  - Integrate with mPerks
  - Send Notifications to In-Store Team Members

- Technologies
  - Microsoft
    - .NET Framework (C# / ASP.NET)
    - Bot Framework
    - Language Understanding Intelligent Service (LUIS)
    - Azure
    - Application Insights
    - Visual Studio
  - Xamarin
  - Meijer Web Services
  - SQL Server / MongoDB
Team Meijer
Emerson Chen, Zach Richardson, Megan Lippert, Jacob Bonesteel, Aaron Carlso
Team Meijer
Project Plan Presentation

Screen Mockup: Chat Interface

Hi, I'm Thrifty, you're personal shopping assistant! Feel free to ask me anything, or you can tap this message for some more options.

Ask Thrifty
mPerks Help

These are some of the FAQ's tap one to begin your search.

"Is there a coupon for ___?"
"Is ___ in stock?"
"What are the competitor prices for ___?"
"Where can I find ___?"

Ask Thrifty
mPerks Help
Team Meijer
Project Plan Presentation
Team Meijer
Project Plan Presentation

- Architecture Diagram

- iOS
  - Apple Speech

- Android
  - Google Speech

- Bot Framework
- Azure
  - mperks
  - SQL
- Competitor Pricing

- LUIS
  - BLUEBIRD
Screen Mockup: Functionality

- **Soda Pop**
- **Coca-Cola**
- **Pepsi**
- **Dr. Pepper**

**Coca-Cola**: 24 pk
- $7.99 ea
- Aisle 12

- **Out-of-Stock**
- **Coupon Available**
- **Competitor Prices**

**Competitor Prices**
- Coca-Cola: 24 pk
  - Meijer: $7.99
  - Walmart: $7.99
  - Kroger: $7.99
  - Target: $8.99

**Ask Thrifty**
Do not delete this textbox. It's used as a marker in VB code. See VB Module UTL_PresentationSlidesSend2FB.

Team Meijer
Alpha Presentation
Team Meijer
Alpha Presentation

Home Screen
The Capstone Experience

Team Meijer
Alpha Presentation

Help Manual

These are some of the FAQ's. Tap one to begin your search.

"Is there a coupon for ______?"

"Is ______ in stock?"

"What are the competitor prices for ______?"

"Where can I find ______?"
Team Meijer
Alpha Presentation
Team Meijer
Alpha Presentation

Product Page and Conversations
Team Meijer
Beta Presentation

Chat Interface

Hi, I'm Thrifty, your personal shopping assistant! Feel free to ask me anything, or you can tap the help button below for some more options.

is coke cheaper elsewhere
Here is what I found for our competitor's price:

Diet Coke 20 oz, bottle
Meijer: $1.89
Target: $1.89
Walmart: $1.78

Coke Mexico - 12 oz
Meijer: $1.19
Target: $1.29

Ask Thrifty

How much is Diet Coke

Here is what I found

Diet Coke 20 oz, bottle $1.89
Diet Coke - 24 12 oz Cans $7.99
Diet Coke - 8/12 oz Bottles $4.59
Diet Coke Caffeine Free, 12 oz, 24 pk $7.99
Diet Coke Caffeine Free - 8/12 oz Bottles $4.59

mPerks
Help
Location
Team Meijer
Beta Presentation

Product Page

Ice Cream Cake Roll, Oreo, 32 fl oz
$9.99
Aisle 28

Click Here if the item is Out of Stock
Check if Coupon Available
Check Competitor Prices

Related Products

Ask Thrifty

Diet Coke Caffeine Free - 6/12 oz Bottles
$4.59
Aisle 3

Coupons Available
Competitor Prices

Product Out of Stock, Notify Store

Related Products:
Team Meijer
Beta Presentation
Team Meijer
Beta Presentation

mPerks
Team Meijer @ Design Day
Jacob Bonesteel, Aaron Carlso, Megan Lippert, Zach Richardson, Emerson Chen
The Capstone Experience

Team Michigan State University

Department of Computer Science and Engineering
Michigan State University
Spring 2018
**Team Michigan State University**  
**Project Overview**  

**Pulse: Classroom Engagement System**

- **Functionalities**
  - Provide Real-Time Feedback and Communication During Class
  - Keep Track of Student Attendance

- **Features**
  - Provide Web App for Instructors
    - Create Questions, Surveys and Quizzes
    - Open Questions and Quizzes at Specific Times
    - View and Save Results in Real Time
      - Class Results with Charts and Graphs
      - Individual Results
    - Push Content to Student Devices
    - View Student Questions and Comments
    - Track and View Class Attendance
  - Provide Mobile App for Students
    - Answer Survey and Quiz Questions During Class
    - View Instructor-Posted Content
    - Post Questions and Comments
  - Take Attendance with Mobile Devices via iBeacons

- **Technologies**
  - Apple iOS / Swift
  - Google Android / Java or Kotlin
  - Amazon Web Services (AWS)
  - iBeacons
Team Michigan State University
Owen McMahon, Adam Blaida, Lauren Malik, Yaqeen Al-Marhoon, David York, Andrew Schafer
Team Michigan State University
Project Plan Presentation

Android and iOS Design

Question 1
Here is someone describing a issue they have with something related to the class. Students will be able to add new posts, view posts, add posts only for in...

Question 2
Here is someone describing a issue they have with something related to the class. Students will be able to add new posts, view posts, add posts only for in...

Question 3
Here is someone describing a issue they have with something related to the class. Students will be able to add new posts, view posts, add posts only for in...

Question 4
Here is someone describing a issue they have with something related to the class. Students will be able to add new posts, view posts, add posts only for in...
Team Michigan State University
Project Plan Presentation
Team Michigan State University

Project Plan Presentation

Architecture Diagram

- Mobile Student Client
- Sockets
- Estimote Beacons
- ID
- API Gateway
- Elastic Beanstalk
- EC2
- SNS
- RDS
- Instructor Web Client
- Amazon Web Services

The Capstone Experience
Team Michigan State University
Project Plan Presentation
Team Michigan State University
Project Plan Presentation

Screen Mockup: Forums - Web
Do not delete this textbox. It's used as a marker in VB code.

See VB Module UTL_PresentationSlidesSend2FB.

Team Michigan State University
Alpha Presentation
Team Michigan State University
Alpha Presentation

Mobile Questions

Question 1
00:20

Which university resides on the banks of the Red Cedar River?

- University of Michigan
- Wayne State University
- Michigan State University
- Oakland University

Submit

The Time Complexity of this Algorithm is:

- O(N)
- CONSTANT
- O(100N)
- O(N^2)

Submit
Team Michigan State University Alpha Presentation
The Time Complexity of this Algorithm is:

- O(1)
- Constant
- O(n^2)
- O(logN)
Team Michigan State University Beta Presentation
Quiz on Friday has been moved.
The quiz over ray tracing and OpenGL will be next week, Tuesday the 12th.

Problem Solved
👍 Thanks for the help everyone!

Study Group
Would anyone like to meet to prepare for the quiz Friday?

Homework 2 Reminder
A lot of you have forgotten to change the app name from “app_name” to your username. If you were one of these forgetful souls, please resubmit.

Problems with Visual Studio
It is brought to my attention that many of you are having trouble with step8. Make sure you are using version 5.0 of OpenGL plugin.
Team Michigan State University
Beta Presentation

Mobile - Forum
Team Michigan State University
Beta Presentation

Web Question View – Short Answer

![Bar chart showing results for A, B, and C with A having the highest value.]
Team Michigan State University @ Design Day
David York, Andrew Schafer, Lauren Malik, Yaqeen Al-Marhoon, Owen McMahon, Adam Blaida
The Capstone Experience

Team Mozilla

Department of Computer Science and Engineering
Michigan State University
Spring 2018
The new Firefox

Fast for good.

With 2x the speed, built-in privacy protection and Mozilla behind it, the new Firefox is the better way to browse.

Download Firefox

Firefox Privacy Notice
Team Mozilla  
Project Overview

Dark Theme Darkening

- Functionalities
  - Increase Customizability of Firefox
  - Leverage Firefox Quantum Theming API

- Features
  - Provide Ability to Customize New Areas
    - Menus
    - Sidebars
    - In-Product Pages
  - Apply CSS Custom Variables and JavaScript
  - Leverage Inter-Process Communication
    - Pass Messages
    - Between Privileged and Unprivileged Code
  - Support Apple macOS, Microsoft Windows and Linux
  - Ship with Future Release of Firefox

- Technologies
  - CSS
  - JavaScript
  - Python
  - XUL / XBL / HTML
  - Mercurial
  - IRC Cloud
  - Bugzilla
  - Review Board
  - Microsoft Windows
  - Apple macOS
  - Linux

Mountain View, California
Team Mozilla
Vivek Dhingra, Connor Masini, Dyl Stokes, Bogdan Pozderca, Zhengyi Lian
Team Mozilla
Project Plan Presentation

Screen Mockup: In-Product Page
Team Mozilla
Project Plan Presentation
Team Mozilla
Project Plan Presentation

Architecture Diagram

- Firefox Theme
- Chrome Theme

API

CSS
Team Mozilla Project Plan Presentation
Project Plan Presentation

Screen Mockup: Menus
Team Mozilla
Alpha Presentation

Auto-Complete Styling
Alpha Presentation

Popup Styling
See VB Module UTL_PresentationSlidesSend2FB.
Team Mozilla
Alpha Presentation

Find Bar and Menu Styling
Team Mozilla Beta Presentation
Team Mozilla
Beta Presentation
Address Bar Auto-Complete Styling
Team Mozilla
Beta Presentation

Sidebar Styling
Team Mozilla Beta Presentation
Team Mozilla
Beta Presentation

In-Product Page Styling
The Capstone Experience

Team MSUFCU

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Your morning coffee could win you $800.

Find Out More
Digital Assistant and Personal Financial Coach

- **Functionalities**
  - Offer Personalized Financial Coaching Services
  - Use Digital Assistant

- **Features**
  - Answer Questions and Provide Recommendations
    - Can I afford to buy that?
    - How much can I spend at the store today?
    - What do people like me spend on rent?
  - Take Actions and Provide Services
  - Handle Text and Voice Input
  - Create Middleware API to MSUFCU
  - Analyze Anonymized Account and Transaction Data
  - Support Apple iOS and Google Android Devices
  - Integrate with Various Services
    - Facebook Messenger
    - Apple iMessage
    - Amazon Alexa
  - Provide Administrative Web Portal

- **Technologies**
  - CSS / HTML / PHP / JavaScript
  - Apple iOS / Swift
  - Google Android / Java
  - Facebook Messenger API
  - Apple iMessage
  - Amazon Echo / Alexa Skills Kit
  - Machine Learning (ML)
  - Natural Language Processing (NLP)
  - MySQL / Encryption Based on SQL Standards
Team MSUFCU
Patrick Dame, Dallas Nowak, Michael Carter, Rachel Beard, Dane Holmberg
Team MSUFCU
Project Plan Presentation

Screen Mockups: Android App
Team MSUFCU
Project Plan Presentation
Team MSUFCU
Project Plan Presentation

Architecture Diagram

Admin Portal

MSUFCU SQLite Database

Middleware

iOS App, Android App, Amazon Alexa, Facebook Messenger, and iMessage
Team MSUFCU
Project Plan Presentation
Team MSUFCU
Project Plan Presentation

Screen Mockup: Web Admin Portal

Account Info | Resources | About
System Architecture

Team MSUFCU
Alpha Presentation
Alexa, transfer $500 from my checking account to another checking account.

Welcome, Kathryn. How may I help you?

Please enter the account number of the account you would like to transfer to.

6000.

Please confirm transferring $500 from your checking account.
Team MSUFCU
Alpha Presentation

Android App
Do not delete this textbox.
It's used as a marker in VB code.
See VB Module UTL_PresentationSlidesSend2FB.
Team MSUFCU
Alpha Presentation

Facebook Messenger
Team MSUFCU Beta Presentation
Team MSUFCU
Beta Presentation

Android and iOS Chatbots
I see you spent $124.62 at RadioShack, Taco Bell, Toys ‘R’ Us a number of times last month, Elim. You could save $18.69 if you cut back just 15% over the next month and $224.28 if you continue this trend over the next year! Would you like me to help you implement this savings plan?
Alexa, transfer $500 from my checking account to another checking account.

6000.

Welcome, Kathryn. How may I help you?

Please say the account number of the account you would like to transfer to.

Please say your Alexa PIN to confirm this transaction of $500 to account 6000.
Team MSUFCU @ Design Day
Patrick Dame, Rachel Beard, Michael Carter, Dallas Nowak, Dane Holmberg
The Capstone Experience

Team Phoenix Group

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Customer Service System with Chatbot

• Functionalities
  ▪ Enhance Customer Service Experience
  ▪ Ensure Easy Access to Product User Manuals
  ▪ Answer Customer Questions via Chatbot

• Features
  ▪ Create Web and Android Apps
  ▪ Manage Quick Reference Guides (QRCs)
    o Ingest by Photo or PDF
    o Determine Keywords via OCR
    o Search via Text and Voice
    o Display Like E-Book
  ▪ Provide Companion Administrative App
  ▪ Implement Chatbot on Corporate Website
    o Product Inventory
    o Available QRCs
    o Various Frequently Asked Questions (FAQs)
  ▪ Drive Customers to Contact Sales Reps

• Technologies
  ▪ CSS / HTML / PHP / JavaScript
  ▪ Google Android Tablets and Phones / Java
  ▪ Microsoft Bot Framework
  ▪ Microsoft Language Understanding Intelligent Service (LUIS)
  ▪ Docker
  ▪ Kubernetes
  ▪ MongoDB
  ▪ Optical Character Recognition (OCR)
Team Phoenix Group
Project Plan Presentation

Screen Mockup: QRG Home Screen

Quick Reference Guide Viewer

Search for QRG ...  
advanced QRG search

Hello, Amanda

Add QRG

VERIFONE VX 680
XEVA440
RETAIL

First Data FD130
750FD130
RETAIL

VERIFONE VX 520
XEVA440
RESTAURANT

Showing top viewed
Team Phoenix Group
Project Plan Presentation
Team Phoenix Group
Project Plan Presentation

Architecture Diagram
Team Phoenix Group
Project Plan Presentation

Quick Reference Guide Viewer

manufacturer
Verifone

terminal type
VX 680

application type
Retail

product number
0300034

version
XEVA440

Add comment ...
Team Phoenix Group
Alpha Presentation

QRG Viewer View Screen
Team Phoenix Group
Alpha Presentation
Team Phoenix Group
Alpha Presentation

Customer Service Chatbot
Team Phoenix Group
Beta Presentation

QRG Manager Application: Home Screen
# Team Phoenix Group Beta Presentation

QRG Manager Application: Administration Screen

![Application Screenshot](image_url)

**User**

<table>
<thead>
<tr>
<th>User</th>
<th>Add QRG</th>
<th>Edit QRG</th>
<th>Admin</th>
</tr>
</thead>
<tbody>
<tr>
<td>James Abbott</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatema Alsaleh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lauren Anderson</td>
<td>+</td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Jackson Avery</td>
<td>+</td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Olivia Baker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dan Bell</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mary Bunch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jonny Dowdall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bob Dyksen</td>
<td>+</td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Wayne Dyksen</td>
<td>+</td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Emily Enbody</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charles Erickson</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarah Fillwock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>James Finch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>James Mariani</td>
<td>+</td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Erin Owen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Search user...**

- Lauren Anderson
  - Administrator
  - Add QRG
  - Modify/Remove QRG

**Buttons**

- Delete User
Team Phoenix Group @ Design Day
Sarah Fillwock, James Finch, Aman Goshu, Fatema Alsaleh, Dan Shumaker
The Capstone Experience

Team Proofpoint

Department of Computer Science and Engineering
Michigan State University
Spring 2018
GARTNER MQ LEADER IN ENTERPRISE INFORMATION ARCHIVING FOR 6 YEARS RUNNING

GET THE GARTNER REPORT
Team Proofpoint
Project Overview

Next Generation Malware Analysis Platform

• Functionalities
  ▪ Process Millions of Malware Samples Daily
  ▪ Develop New and Innovative Techniques

• Features
  ▪ Build Lifecycle Processing Dashboard
  ▪ Leverage Many Malware Tools
  ▪ Create Malware Signatures Automatically
  ▪ Identify “Like” Samples and Clusters
  ▪ Visualize Malware Clusters
    o Provide Drill Down Capability
    o Show Signatures Created
  ▪ Prioritize Samples for Further Analysis

• Technologies
  ▪ Malware Sandboxing
  ▪ Network Intrusion Detection Systems (IDS)
  ▪ Statistical Analysis
Team Proofpoint
Graham Thomas, Yash Patel, Crystal Lewis, Brad Doherty, George Zhao
Team Proofpoint
Project Plan Presentation

Screen Mockup: Nodal Graph

**Batch Information**
- Files Processed: 103/250
- Time Elapsed: 00:15:23
- Flagged Files: 15

**Flagged Files**
- TMP1CE2.TMP
- Memo.pdf
- DriverPack.exe
- Virus.exe
- NotSpyware.jar
Team Proofpoint
Project Plan Presentation
Team Proofpoint
Project Plan Presentation

Architecture Diagram

[Diagram showing components of a project plan, including Malware Analysis System, Dynamic Decision Logic, Static Malware Detection Tools, Signature Information Aggregator, Cuckoo Malware Sandbox, SQLite Database Server, Postman API, Web Server, Apache, and Bootstrap Javascript Framework.]
Team Proofpoint
Project Plan Presentation
Team Proofpoint
Project Plan Presentation

Screen Mockup: File Analysis

Batch Information
Files Processed: 103/250
Time Elapsed: 00:15:23
Flagged Files: 15

File Analysis
File Name: WannaCry.exe
File Signature: File matched known signature of Ransom:WannaCry
Behavior Profile: Behaves like a trojan and a worm
File Size: 5.65MB

Flagged Files
TMP1CE2.TMP
Memo.pdf
DriverPack.exe
Virus.exe
NotSpyware.jar
Team Proofpoint
Alpha Presentation
# Analyzed Malware

<table>
<thead>
<tr>
<th>SID</th>
<th>File Name</th>
<th>File Type</th>
<th>Flagged?</th>
<th>YARA Match</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C6A13AF583109680CCB54FBB2B3D14E4BA06E9C7A363C884B1383C5EE81FAA</td>
<td>PE32 executable (DLL) (GUI) Intel 80386 (stripped to external PDB), for MS Windows</td>
<td>No</td>
<td>XMRIG_Miner</td>
</tr>
<tr>
<td>8</td>
<td>48678EC33D22C571774ACE303C4C771BA46C8121F8E46FA807E54787671DE13</td>
<td>PE32 executable (DLL) (GUI) Intel 80386 (stripped to external PDB), for MS Windows</td>
<td>No</td>
<td>XMRIG_Miner</td>
</tr>
</tbody>
</table>
Team Proofpoint

Alpha Presentation

In Depth Analysis of a File

### In-Depth Analysis of 6BDE693CE8EB45445C0B38E3DE3AF97E0D21C8D333E8408B52E711EA67ABFD27

<table>
<thead>
<tr>
<th>File Information</th>
<th>Statistic Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>File Extension</td>
<td>PE32+ executable (console) x86-64, for MS Windows</td>
</tr>
<tr>
<td>File Size</td>
<td>330.8 KB (330752 bytes)</td>
</tr>
<tr>
<td>Total Analysis Time</td>
<td>00:00:1.295</td>
</tr>
<tr>
<td>Static Analysis Time</td>
<td>00:00:1.295</td>
</tr>
<tr>
<td>Dynamic Analysis Time</td>
<td>00:00:0.000</td>
</tr>
</tbody>
</table>

### File Hashes

<table>
<thead>
<tr>
<th>Hash Types</th>
<th>Hash Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE Hash</td>
<td>3N9K8y0RTEU3h0XouZQg9mWf89l593gRYR+Ngj7v4R7N7EN0E52T4AS79g8NhRY9yf</td>
</tr>
<tr>
<td>SHA256</td>
<td>6BDE693CE8EB45445C0B38E3DE3AF97E0D21C8D333E8408B52E711EA67ABFD274</td>
</tr>
<tr>
<td>SHA1</td>
<td>8200F500G49B73912D24363797D9C2948B84E676</td>
</tr>
<tr>
<td>MD5</td>
<td>0C86062A58943A523F019C8C60E3E3C3B0</td>
</tr>
</tbody>
</table>

### Similar Malware

<table>
<thead>
<tr>
<th>File Name</th>
<th>PE Hash</th>
</tr>
</thead>
<tbody>
<tr>
<td>317E8BD0B8BE50AF3683E296C9485D10B8E02DFB638BC1A14E35AAB8913167</td>
<td>3N9K8y0RTEU3h0XouZQg9mWf89l593gRYR+Ngj7v4R7N7EN0E52T4AS79g8NhRY9yf</td>
</tr>
<tr>
<td>4E33D22ED5C5CAE8E565A91A89D72032CF9335F6247472C27E983B364</td>
<td>3N9K8y0RTEU3h0XouZQg9mWf89l593gRYR+Ngj7v4R7N7EN0E52T4AS79g8NhRY9yf</td>
</tr>
<tr>
<td>695CC78DB2FBF7388573C7808D903D3CD4AD3CF777CA99F35770427178D</td>
<td>3N9K8y0RTEU3h0XouZQg9mWf89l593gRYR+Ngj7v4R7N7EN0E52T4AS79g8NhRY9yf</td>
</tr>
</tbody>
</table>
Team Proofpoint
Alpha Presentation
### Top 25 Yara Rules Matched

<table>
<thead>
<tr>
<th>Yara Rule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
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</tr>
</tbody>
</table>

And 846 more files...
Automated Signatures

Generated Signatures

Signature Generation Page
Team Proofpoint @ Design Day
Yash Patel, Graham Thomas, George Zhao, Crystal Lewis, Brad Doherty
The Capstone Experience

Team Quicken Loans

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Fundamenta: Trust in New Home Construction

- Functionalities
  - Enable Collaborative New Home Construction
  - Include All Players

- Features
  - Create Responsive Web App
  - Allow Choice of Home Model, Exterior and Interior
  - Support Various Roles
    - Home Buyer
    - Builder
    - Multiple Contractors
    - City Inspector
  - Use Dynamic Workflow
  - Alert Players When Action Assigned or Due
  - Provide Full Transparency
    - Deliverables
    - Milestones
    - Workflow
    - Complete Transaction History
  - Utilize Blockchain for Storage
    - Home Buyer’s Build Requirements
    - Workflow Tasks

- Technologies
  - CSS / HTML / JavaScript / AngularJS
  - Microsoft .NET
  - Blockchain
  - Hyperledger
  - Microsoft Azure or Amazon Web Services (AWS)
Team Quicken Loans
Vishal Adusumilli, Riley Annis, Erin O'Hara, Turner Anderson, Jaiwant Bhushan
Project Plan Presentation

Screen Mockup: User Login

Username
Enter a username...

Password
Enter a password...

Role
- Home Buyer
- Builder
- Contractor

Log In or Sign Up
Do not delete this textbox. It's used as a marker in VB code. See VB Module UTL_PresentationSlidesSend2FB.
Team Quicken Loans
Project Plan Presentation
Team Quicken Loans
Project Plan Presentation

Screen Mockup: Build Workflow

Funamenta by Quicken Loans

House Options
- Model
- Exterior
- Interior

Conversation
- Home Buyer: How much longer?
- Builder: I'll let the contractor answer.
- Contractor: About 1 month left.
- Home Buyer: Great, thank you!

Tasks:
- Task 22
- Task 21
- Task 20
- Task 19
- Task 18
- Task 17
- Task 16
- Task 15
- Task 14
- Task 13
- Task 12
- Task 11
- Task 10
- Task 9
- Task 8
- Task 7
- Task 6
- Task 5
- Task 4
- Task 3
- Task 2
- Task 1

Cancel
Save
Submit
Leave a comment...
Team Quicken Loans Alpha Presentation
Team Quicken Loans

Alpha Presentation

Sign Up
Team Quicken Loans
Alpha Presentation

Dashboard

The Capstone Experience
Team Quicken Loans Alpha Presentation
Team Quicken Loans
Alpha Presentation

Build Status
Team Quicken Loans Beta Presentation
Team Quicken Loans
Beta Presentation

Dashboard
Team Quicken Loans
Beta Presentation

![Progress screenshot](image)
Team Quicken Loans Beta Presentation
Team Quicken Loans
Beta Presentation
Team Quicken Loans @ Design Day
Jaiwant Bhushan, Vishal Adusumilli, Erin O'Hara, Turner Anderson, Riley Annis
The Capstone Experience

Team Rook

Department of Computer Science and Engineering
Michigan State University
Spring 2018
OPTIMIZE SECURITY OPERATIONS

Force is a Security Operations Management Platform that equips your team for success by optimizing security resource workflows, metrics, and outcomes.
Team Rook
Project Overview

Endpoint Data Monitoring and Analysis Agent

• Functionalities
  ▪ Detect and React to Security Threats
  ▪ Capture and Analyze Agent Health Metrics and Log Files

• Features
  ▪ Create Endpoint Dashboard
    o Enable Remote Agent Configuration
    o Do Health Checks and Data Analysis
    o Display Health Check Information
    o Create Alert Thresholds.
  ▪ Store Metrics and Log Files
    o RESTful Endpoint
    o Amazon Simple Storage Service (S3)
    o Locally
  ▪ Implement State Awareness
  ▪ Support Cross Platform Compatibility
  ▪ Integrate with Rook’s Force Platform

• Technologies
  ▪ Force Platform
  ▪ Go
  ▪ JavaScript / JSON
  ▪ Python / Django
  ▪ React / Redux
  ▪ Ubuntu 16.04
  ▪ Amazon Simple Storage Service (S3)
  ▪ RESTful Web Services
Team Rook
Jeremy Specht, Bohao Gao, Vikram Thakur, Jared Clark, Drew Gilbertson
Team Rook
Project Plan Presentation

Screen Mockup: System Health
Team Rook
Project Plan Presentation
Architecture Diagram

- Lambda
- S3 API
- REST API
- React JS
- REST API
- Elasticsearch
- Django
- S3
- Agents
- Local Storage
Team Rook
Project Plan Presentation

Screen Mockup: Configuration
Team Rook
Alpha Presentation
Team Rook
Alpha Presentation

Storage System
Team Rook
Beta Presentation

Agent Management Console
Team Rook
Beta Presentation

Agent Configuration Tab
Team Rook
Beta Presentation
Team Rook
Beta Presentation

Windows Agent Product Validator

RoOK Agent System

Step 1: Please Choose your Operation System
- Unix
- Windows

Step 2: Please Input your Key
Key: 

Step 3: Click "Submit" button to verify your ClientKey

Welcome to ROOK Agent
Team Rook @ Design Day
Jared Clark, Jeremy Specht, Bohao Gao, Vikram Thakur, Drew Gilbertson
The Capstone Experience

Team SpartanNash

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Team SpartanNash
Project Overview

Volunteer Tracking System

- Functionalities
  - Simplify Tracking of Associate Volunteer Hours
  - Use Web and Mobile Apps

- Features
  - Create Apps for Volunteer Reporting
    - Web
    - Apple iOS
    - Google Android
  - Handle Various Inputs
    - Associate ID
    - Name and Location of Place
    - Type of Service
    - Number of Hours
  - Track Hours
  - Enable Photo and Video Uploading
  - Utilize Geolocation for Easy Location Reporting
  - Gamify with Badging and Leader Board
  - Send Notifications
    - Volunteers
    - Program Facilitators
  - Build Companion Web Administrative App

- Technologies
  - CSS / HTML / JavaScript
  - Apple iOS / Swift
  - Google Android / Java
  - React Native
  - MySQL

Volunteer Tracking System

Project Overview

Team

SpartanNash

Grand Rapids, Michigan
Team SpartanNash
Tianyi Li, Aleks Bonev, Abbott Wang, Denis Andreev, Nino Candela
Team SpartanNash
Project Plan Presentation

Screen Mockup
Screen Mockup: SpartanNash

Team SpartanNash
Project Plan Presentation
Team SpartanNash
Project Plan Presentation
Team SpartanNash
Project Plan Presentation

Screen Mockup

Setup Screen:
- Username
- Password
- SIGN IN
- Forget your Password?
  - Recover

Volunteer Form:
- Organization Name *
  - Enter the Organization Name
- Volunteer Activity or Event Name *
  - Enter the Event Name
- Area of support *
  - None selected
- Area not on the list (optional)
  - Enter the areas
- Commitment *
  - One Time
- Date of Event *
  - 01/29/2018
- Hour of Event *
- Message
  - Enter extra message here...

Submit →
Do not delete this textbox. It's used as a marker in VB code. See VB Module UTL_PresentationSlidesSend2FB.

Team SpartanNash
Alpha Presentation
Team SpartanNash
Alpha Presentation

Newsfeed and Profile
Volunteer Tracking Form
Team SpartanNash
Beta Presentation
Team SpartanNash
Beta Presentation

Leaderboards
Team SpartanNash
Beta Presentation

Volunteer Tracking Form

Volunteer Hour Form

Organization Name

Volunteer Activity or Event Name

Area of Support: Advocacy
Commitment Type: One Time

Date: 2018-01-01

Length of Volunteer Time (hours):

Please Describe Your Experience

Submit
Team SpartanNash
Beta Presentation

Newsfeed
Team SpartanNash @ Design Day
Abbott Wang, Tianyi Li, Aleks Bonev, Denis Andreev, Nino Candela
The Capstone Experience

Team Spectrum Health

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Team Spectrum Health
Project Overview

Spectrum Health Go

- Functionalities
  - Improve Patient and Visitor Experience
  - Help Navigate Spectrum Health Facilities

- Features
  - Create Apple iOS and Google Android Apps
  - Provide Real-Time On-Screen Directions
  - Guide via Pre-Configured Waypoints
  - Use Optical Character Recognition (OCR)
  - Collect Anonymous Route Data
  - Provide Administrative Web App
    - Create and Print Waypoints
    - Configure and Improve Routes
    - Add New Locations and Routes

- Technologies
  - CSS / HTML / JavaScript
  - Apple iOS / Swift
  - Google Android / Java
  - Microsoft .NET / C#
  - Microsoft SQL Server
  - Microsoft Azure
  - GitHub / ZenHub
  - Optical Character Recognition (OCR)
  - Identity Server
Team Spectrum Health
Andrew Astakhov, Collin Skonieski, Rachel Polus, Pierce Neal, Xin Zhao
Team Spectrum Health
Project Plan Presentation

Screen Mockup: Android App

From... East Wing Stairwell
To... Main Lobby

From... Main Lobby
To... Room C114

Waypoint Recognized!
Updating location to:
Main Lobby

Go Upstairs
Step 1 of 6

Walk Down East Hall
Step 2 of 6

Spectrum GO

The Capstone Experience
Team Spectrum Health
Project Plan Presentation
Team Spectrum Health
Project Plan Presentation

Architecture Diagram

- **Web Application**: ASP.NET, REST API
- **SQL Database**
- **iOS Application**: ALAMOFIRE
- **Android**: Retrofit
Team Spectrum Health Project Plan Presentation
Team Spectrum Health
Project Plan Presentation

SpectrumGO LOBBY Waypoint

Paths

- To Operating Room
  - Directions: Turn left. Walk forward until Angle: -90
  - Update
- To Nursing Ward
  - Update
- To Cardiology
  - Directions: Turn around. Take the first Angle: 180
  - Update
- To Pharmacy
  - Directions: Take the staircase on your Angle: 45
  - Update

Add | Delete
Team Spectrum Health Alpha Presentation
Team Spectrum Health
Alpha Presentation

Web Application
Team Spectrum Health
Alpha Presentation

iOS Application

SPECTRUM HEALTH
Select Facility
Select Destination

Spectrum GO

Select Facility:
Select Destination:

waypoint 1
waypoint 2
waypoint 3

Turn Left
Stop
Team Spectrum Health
Alpha Presentation

Android Application
Team Spectrum Health Beta Presentation
Team Spectrum Health
Beta Presentation
Web Application Waypoint Page
Team Spectrum Health
Beta Presentation

iOS Application

SPECTRUM HEALTH
Select Facility
Select Destination
Spectrum GO

SPECTRUM HEALTH
Select Facility:
MSU
Select Destination:
Select Destination
Done

waypoint 1
waypoint 2
waypoint 3

Turn Left
Stop
See VB Module UTL_PresentationSlidesSend2FB.
Team Spectrum Health
Beta Presentation

Android Application
Team Spectrum Health @ Design Day
Andrew Astakhov, Xin Zhao, Pierce Neal, Rachel Polus, Collin Skonieski
The Capstone Experience

Team Symantec

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Securing the Cloud Generation

Fueled by the world's largest civilian threat intelligence network

LEARN MORE

REPORT

Symantec Named a Leader in

REPORT

Gartner Positions Symantec as
Detecting Security Threats from User Authentications

- **Functionalities**
  - Detect Security Threats
  - Use Symantec Validation and ID Protection (VIP)
  - Visualize VIP Authentication Patterns

- **Features**
  - Ingest VIP Reporting Service Log Data
  - Create Operational Dashboard with Alerting
    - Number of Authentications Per Time Unit
    - Successful vs Failed Authentications
    - Unique Users Per Time Unit
    - Distribution of Risk Reasons
  - Create Security Dashboard and Alerting
    - Trends of Failed Authentications
    - Find Risky Users
    - Flag Increases in Credential Use
  - Integrate with Splunk Enterprise and Splunk Cloud

- **Technologies**
  - Symantec VIP Reporting Service
  - Splunk
  - Amazon Web Service (AWS)
  - RESTful Web Services
  - Elastic Search, Kibana, Logstash
  - Apache Spark

Team Symantec
Project Overview

Detecting Security Threats from User Authentications

- **Functionalities**
  - Detect Security Threats
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  - Visualize VIP Authentication Patterns

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  - Apache Spark

Team Symantec
Project Overview

Detecting Security Threats from User Authentications

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- **Technologies**
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  - Splunk
  - Amazon Web Service (AWS)
  - RESTful Web Services
  - Elastic Search, Kibana, Logstash
  - Apache Spark
Team Symantec
Robert Novak, Abby Urbanski, Stephen Alfa, Keerthana Kolisetty, Echo Wu
Team Symantec
Project Plan Presentation

Screen Mockup: Dashboard in Splunk
Project Plan Presentation

Architecture Diagram
Team Symantec
Project Plan Presentation
Team Symantec
Project Plan Presentation

Screen Mockup: Dashboard in ELK
Do not delete this textbox.
It's used as a marker in VB code.
See VB Module UTL_PresentationSlidesSend2FB.

Team Symantec
Alpha Presentation
Team Symantec
Alpha Presentation

Splunk Dashboard

Operational Trends

<table>
<thead>
<tr>
<th>Message</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team A</td>
<td>9,079</td>
</tr>
<tr>
<td>Team B</td>
<td></td>
</tr>
<tr>
<td>Team C</td>
<td></td>
</tr>
<tr>
<td>Team D</td>
<td></td>
</tr>
<tr>
<td>Team E</td>
<td></td>
</tr>
<tr>
<td>Team F</td>
<td></td>
</tr>
</tbody>
</table>

Authentication Status

<table>
<thead>
<tr>
<th>Date</th>
<th>Users Created Over Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-02-17</td>
<td></td>
</tr>
<tr>
<td>2016-02-18</td>
<td></td>
</tr>
<tr>
<td>2016-02-19</td>
<td></td>
</tr>
</tbody>
</table>

Number of Authentications Over Last Few Days

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of Authentications</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-02-17</td>
<td>9,079</td>
</tr>
<tr>
<td>2016-02-18</td>
<td>500</td>
</tr>
<tr>
<td>2016-02-19</td>
<td>500</td>
</tr>
</tbody>
</table>
Team Symantec
Alpha Presentation

ELK Dashboard

Dashboard / Operational Dashboard

Record Count

6,226
Record Count

Number of Users

477
Number of Users

Authentication Status

Authentication per Hour

Users Created Over Time

Uses lucene query syntax
Team Symantec
Alpha Presentation

ELK Alerting on Slack
Team Symantec
Beta Presentation
Team Symantec

Beta Presentation

Splunk: Operation Trends Dashboard
Team Symantec Beta Presentation

Splunk: Geolocation Dashboard
The Capstone Experience

Team Symantec
Beta Presentation

ELK: Operational User Analysis Dashboard

Dashboard / Operational User Analysis

Users Created Over Time

Unique Users Authenticated

2,166
Users

Number of Users Created

128
Users Created

Top Authenticating Users

<table>
<thead>
<tr>
<th>Users</th>
<th>Number of Authentications</th>
</tr>
</thead>
<tbody>
<tr>
<td>spiker</td>
<td>350</td>
</tr>
<tr>
<td>GLDC5I</td>
<td>15</td>
</tr>
<tr>
<td>OUB06R</td>
<td>15</td>
</tr>
<tr>
<td>6H9QR1</td>
<td>14</td>
</tr>
<tr>
<td>7S1LYA</td>
<td>14</td>
</tr>
<tr>
<td>F8UGGF</td>
<td>14</td>
</tr>
<tr>
<td>407PLU</td>
<td>13</td>
</tr>
<tr>
<td>1BT7XF</td>
<td>12</td>
</tr>
<tr>
<td>AD24CH</td>
<td>12</td>
</tr>
<tr>
<td>E7APA6</td>
<td>11</td>
</tr>
</tbody>
</table>
Team Symantec @ Design Day
Keerthana Kolisetty, Abby Urbanski, Echo Wu, Robert Novak, Stephen Alfa
The Capstone Experience

Team TechSmith

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Create Powerful Visuals. No Design Skills Needed.

TechSmith makes it simple for everyone to create high-quality screenshots, screencasts, and videos.
Team TechSmith
Project Overview

Snagit and Camtasia Output Extensibility

• Functionalities
  ▪ Simplify Sharing of Media Produced by TechSmith Products
  ▪ Extend Output Capabilities of Snagit and Camtasia

• Features
  ▪ Use TechSmith Extensibility Framework
  ▪ Build Three Plugins
    o TechSmith Video Review
    o Wistia
    o Student Choice
  ▪ Design Highly Polished User Experience (UX)
  ▪ Provide Media Upload Service with Link
  ▪ Create Independent Test Harness

• Technologies
  ▪ Microsoft .NET / C#
  ▪ Windows Presentation Foundation (WPF)
  ▪ TechSmith Cloud SDK
  ▪ TechSmith Extensibility Framework (TEF)
  ▪ Managed Extensibility Framework
Team TechSmith
Ryan Schiller, Logan Arent, Collin Dillinger, Carter Chamberlain
Team TechSmith
Project Plan Presentation

Screen Mockup: Output Mockups
Team TechSmith
Project Plan Presentation
Team TechSmith
Project Plan Presentation

Screen Mockup: Test Harness
Team TechSmith
Alpha Presentation
Team TechSmith
Alpha Presentation

SnagIt Share Menu
Team TechSmith
Alpha Presentation

TechSmith Video Review Output Options

TechSmith Account
Logged in as:
example@gmail.com
Learn more about TechSmith Accounts.

TechSmith Video Review
Title: test
Review-by Date: 2/28/2018
Reviewer Prompt: Would love some feedback on the colors

Upload Cancel
Team TechSmith
Alpha Presentation
Team TechSmith
Beta Presentation
Updated Wistia Options

Select a Project

- Project: Wistia Beta Project
- Media Count: 1

Project Details
- Created: Monday, February 26, 2018 5:08 PM
- Updated: Sunday, April 1, 2018 10:38 PM

Wistia Output Options

- Project: Wistia Beta Project
- Name: Wistia upload
- Description: Screengrab upload

Upload  Cancel

Wistia upload

Storage for Wistia Beta media.
Team TechSmith @ Design Day
Ryan Schiller, Logan Arent, Carter Chamberlain, Collin Dillinger
The Capstone Experience

Team Union Pacific

Department of Computer Science and Engineering
Michigan State University
Spring 2018
The Spirit Locomotive Honors U.S. Armed Forces

Locomotive No. 1943, The Spirit, spotlights Union Pacific’s relationship with thousands of veterans who helped build America after defending the United States – a tradition dating back to the company’s founding. Find out more.
Team Union Pacific
Project Overview

“Alexa, what’s my work schedule look like?”

• Functionalities
  ▪ Provide Information About Upcoming Work Assignments
  ▪ Utilize Voice Activated Digital Assistant
  ▪ Target Trainmen, Yardmen and Enginemen (TY&E)

• Features
  ▪ Create Suite of Mobile Apps
    o Responsive Design
    o Support Apple iOS and Google Android Devices
  ▪ Manage Users
    o Register
    o Identify
    o De-Activate
  ▪ Support All Major Voice Interfaces
    o Amazon Echo
    o Google Home
    o Apple Siri
    o Microsoft Cortana
  ▪ Use JSON Web Services
  ▪ Write Documentation for Each System

• Technologies
  ▪ Java
  ▪ JavaScript / AngularJS
  ▪ Amazon Echo
  ▪ Google Home
  ▪ Apple Siri
  ▪ Microsoft Cortana
  ▪ Natural Language Processing (NLP)
Team Union Pacific
Jared McMillan, Daniel Agbay, M Kim, David Hubble, Austin McGee
Team Union Pacific
Project Plan Presentation

Screen Mockup: Mobile Application
Team Union Pacific Project Plan Presentation
Team Union Pacific
Project Plan Presentation

Architecture Diagram

- User Preferences
- Train Lineup
- Employee Authentication
- Employee Queue
- Company Database
- JavaScript webpage
- Assistants
Alexa, open the PST app.

Hello Sparty, what can I help for you today?

What's my times out?

You are currently 4th out right now.

Thanks, that's all.
Team Union Pacific
Alpha Presentation
Team Union Pacific
Alpha Presentation

Google Assistant Interaction

Hello Team Union Pacific, welcome to PSTTechnologies Schedule App Alpha! You can request information about a train lineup or request your current position in the employee queue.

please show me train line up 1234

Ok! Here is information for lineup 1234. Train QWE456, departure time 9:00 a.m. Train ABC123, departure time 12:00 p.m. Train PIP987, departure time 1:00 p.m. Is there anything else I can do for you?

yeah what’s my current position

Your current position is 10th.

Hello Team Union Pacific, welcome to PSTTechnologies Schedule App Alpha! You can request information about a train lineup or request your current position in the employee queue.

please show me train line up 1234

Ok! Here is information for lineup 1234. Train QWE456, departure time 9:00 a.m. Train ABC123, departure time 12:00 p.m. Train PIP987, departure time 1:00 p.m. Is there anything else I can do for you?

yeah what’s my current position

Your current position is 10th.

Sure. Getting the test version of my test app.

Hello Team Union Pacific, welcome to PSTTechnologies Schedule App Alpha! You can request information about a train lineup or request your current position in the employee queue.

please show me train line up 1234

Ok! Here is information for lineup 1234. Train QWE456, departure time 9:00 a.m. Train ABC123, departure time 12:00 p.m. Train PIP987, departure time 1:00 p.m. Is there anything else I can do for you?

yeah what’s my current position

Your current position is 10th.
Alexa, open my PST app.
Welcome to PST application, you may request train lineup info or your queue position.
Show me train lineup 1234.
Here is train lineup 1234: MSU2018, departure time 10:00am, ABC123 departure time 3:00pm.
Would you like to check other things?
Yes, what's my position?
You are 5th.
Would you like to check other things?
Stop.
Team Union Pacific
Alpha Presentation
Team Union Pacific
Alpha Presentation

Web App Reporting Page

The Capstone Experience
Team Union Pacific
Beta Presentation
Team Union Pacific

Beta Presentation

Request Train Lineup

Hello Jared, welcome to PSTechnologies Schedule App Alpha! You can request information about a train lineup or request your current position in the employee queue.

Show me lineup 1234

Ok Jared, here is information for train lineup 1234. qwe456 at 09:00AM, abc123 at 12:00PM, pip987 at 01:00PM. Is there anything else I can help you with?

Change my time format to Military time

Ok Jared, your time format is now Military time.

Show me lineup 1234

Ok Jared, here is information for train lineup 1234. qwe456 at 09:00, abc123 at 12:00, pip987 at 13:00. Is there anything else I can help you with?
I'd like to change what you call me

Ok! What would you like to change it to?

Daniel

Done, I'll now call you Daniel.

Goodbye

My test app left the conversation

Talk to my test app

Okay. Let's get the test version of my test app.

Hello Daniel, welcome to PSTechnologies Schedule App Alpha! You can request information about a train lineup or request your current position in the employee queue.
Team Union Pacific
Beta Presentation

Web App Dashboard
Team Union Pacific @ Design Day
David Hubble, Jared McMillan, Austin McGee, M Kim, Daniel Agbay
The Capstone Experience

Team Urban Science

Department of Computer Science and Engineering
Michigan State University
Spring 2018
EVERYONE HAS AN OPINION. WE HAVE SCIENCE.

Since the day we started, we’ve been a force for change. We started with a problem to solve. We scrutinized it, developed a theory, tested it and applied the solution. And we have the same approach today, we listen to our clients’ needs and find a solution. We’re curious, objective, empirical and determined. Through this spirit, we invented The Power of 4™ formula to bring scientific discipline to the business world. It’s how we are Guiding Business Through Science.
Team Urban Science
Project Overview

**Mobile Maestro**

- **Functionalities**
  - Control Maestro Exoskeletal Arm
  - Use Mobile App with Voice Input

- **Features**
  - Handle Various Arm Controls
    - Up, Down, Lock
    - Lock, Standby
  - Provide Voice Control
    - Safe Word for Home/Reset Position
    - All Functions
  - Implement Self-Leveling with Calibration
  - Support Apple iOS and Google Android
  - Collect Usage Statistics

- **Technologies**
  - Maestro Exoskeletal Arm
  - CSS / HTML / JavaScript
  - Microsoft .NET / C#
  - Apple iOS / Swift
  - Google Android / Java
  - Bluetooth Low Energy (BLE)
  - Natural Language Processing (NLP)
Team Urban Science
Mustafa Jebara, Dane Rosseter, Samantha Oldenburg, Alex Wuillaume, Shun Ran
Screen Mockup: Home Screen
Team Urban Science
Project Plan Presentation

Architecture Diagram

[Diagram showing Azure, Internet, SQL, Bluetooth, commands, and a mobile device]
Team Urban Science
Project Plan Presentation

Screen Mockup: Leveling Settings

Adjust leveling calibration

Raise

Lower
Team Urban Science
Alpha Presentation
Team Urban Science
Alpha Presentation

Up and Lock Active
Team Urban Science
Alpha Presentation
Team Urban Science
Alpha Presentation

Setting Page
Team Urban Science
Beta Presentation

Main Page – No Buttons Active
Team Urban Science
Beta Presentation
Main Page – Up and Lock Active
Auto Leveling Setup

Team Urban Science
Beta Presentation
Team Urban Science @ Design Day
Shun Ran, Dane Rosseter, Samantha Oldenburg, Alex Wuillaume, Mustafa Jebara
The Capstone Experience

Team USAA

Department of Computer Science and Engineering
Michigan State University
Spring 2018
WE PROUDLY SERVE MILITARY MEMBERS AND THEIR FAMILIES

Since 1922, we have stood by our members. We’ve provided years of guidance and assistance — from helping establish financial independence, to raising a family, to retirement.
Team USAA
Project Overview

LIMElight: Life Insurance Made Easy

• Functionalities
  ▪ Obtain Life Insurance Quote
  ▪ Improve the Experience
    o For Applicant
    o For Insurer
  ▪ Decrease Duration, Complexity and Cost

• Features
  ▪ Provide Smooth User Experience
    o Responsive Web
    o Native Apple iOS and Google Android Apps
  ▪ Generate Personalized Quote
    o Use Minimal Inputs from Applicant
    o Leverage Machine Learning
    o Match Underwritten Premium Closely
  ▪ Create Health Record Blockchain
    o Controlled by Applicant
    o Ensure Privacy and Security
    o Accessible via RESTful API

• Technologies
  ▪ Apple iOS / Swift
  ▪ Google Android / Java
  ▪ Blockchain
  ▪ Machine Learning / Python
  ▪ Microsoft Azure
  ▪ RESTful Web Services
  ▪ JavaScript / REACT / Angular 2+ / Vue
Team USAA
Xingchi Zhou, Nathaniel Finley, Abe Ahmed, Mike Ronayne, Dong Lee
Team USAA
Project Plan Presentation

Screen Mockup: Quoting Process
Team USAA
Project Plan Presentation
Team USAA
Project Plan Presentation

Architecture Diagram

- Blockchain Backend (Azure)
- REST API
- Ethereum
- Execute Smart Contract
- Data
- machine learning
- Machine Learning Backend (Azure)
- REST API
- Azure Functions
- Data
- Machine Learning
- Result

- React
- Frontend Web Application (Azure)
- User Input
- Quote
- Execute Smart Contract
- Get Health Record
- Modify Permissions
Team USAA Project Plan Presentation
Team USAA
Project Plan Presentation

Screen Mockup: Patient Login

Manage Who Can View Your Health Records

<table>
<thead>
<tr>
<th>Entity</th>
<th>Permission</th>
</tr>
</thead>
<tbody>
<tr>
<td>USAA</td>
<td>Y</td>
</tr>
<tr>
<td>Sparrow Health</td>
<td>N</td>
</tr>
</tbody>
</table>

Update
Team USAA  
Alpha Presentation
Team USAA
Alpha Presentation

Quote Result

Image of a browser window showing a USAA quote result:

Quoted Monthly Payment
$60/Month

Quote ID
89437

Next Steps
Contact USAA today with your Quote ID to get started
800-531-USAA
Welcome Bob Jones

Your ID: bob@gmail.com

Your Authorized Practitioners

dr.kelly@sparrow.org

Authorize A Practitioner

Here is a list of practitioners you may authorize

Dr. Ted Seuss

Authorize
Team USAA Beta Presentation
Team USAA
Beta Presentation

Your Personalized Quote

Price
$60/Month

Quote ID
13611

Next Steps
Contact USAA today with your Quote ID to get started
1-800-531-USAA
Team USAA Beta Presentation
Team USAA
Beta Presentation

Dataset Analysis

Risk Class 2
46% of Applicants
56% Accuracy

Risk Class 4
39% of Applicants
58% Accuracy
Team USAA @ Design Day
Xingchi Zhou, Nathaniel Finley, Dong Lee, Mike Ronayne, Abe Ahmed
The Capstone Experience

Team Yello

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Humanize
The Candidate Experience

Provide unprecedented speed and transparency throughout the candidate journey
InViAnTo: Interview Video Analysis Tool

• Functionalities
  - Evaluate Video Interview Automatically
  - Include Sentiment and Emotional Analysis

• Features
  - Design and Build Web App
    - Record Live Video
    - Support Prerecorded Video
    - Enable Viewing and Rerecording by Applicant
  - Transcribe All Recordings and Store with Video
  - Apply Sentiment Analysis on Transcription
  - Run Emotion Detection on Audio and Video
  - Provide Administrative Web App
    - To View Results
    - By Hiring Team

• Technologies
  - CSS / HTML / JavaScript / JSON
  - Ruby on Rails
  - Microsoft Azure Emotion API
  - Microsoft Language Understanding Intelligent Services (LUIS)
  - Machine Learning
    - TensorFlow
    - scikit-learn
Team Yello
Jonathon Zeitler, Leo Yao, Jenn Proos, Quan Zhou, Brian Wang
Team Yello
Project Plan Presentation

Screen Mockup: Staff Management Page

Yello Capstone
Michigan State University
CSE 498

Follow Us!
Team Yello
Project Plan Presentation
Team Yello
Project Plan Presentation

Architecture Diagram

- PostgreSQL: Database
- open-tok: Video Capture
- Video Analysis
- Analysis Results
- Web Application
- Server

- HEROKU
- Azure
- Storage
- Video Indexer API
- Text Analytics API
- Emotion API
Team Yello
Project Plan Presentation
Team Yello
Project Plan Presentation

Screen Mockup: Interview Recording Page

Question 1
Talk about your self

Next Question
Team Yello
Alpha Presentation
Team Yello
Alpha Presentation

Candidate Video Response

Facebook Web Designer

Question 2

Describe a situation where you had to work in a team that didn’t get on very well. What happened? What did you do and what role did you take? How did the situation evolve?
Managing Interviews

- **Data Analytics Scientist**
  - **Author:** Bob (bob@recruiter.co)
  - We are looking for a qualified data scientist to apply his or her expertise in quantitative analysis, data mining, and the presentation of data to see beyond the numbers and understand how our users interact with both our consumer and business products.

- **Facebook Web Designer**
  - **Author:** Bob (bob@recruiter.co)
  - We are looking for an experienced developer to design and create web interfaces using Javascript, HTML5, and CSS.

- **Google Software Engineer**
  - **Author:** Susan (susan@recruiter.co)
  - We are looking for an engineer with extensive experience in web development.
Team Yello
Alpha Presentation
Team Yello
Alpha Presentation

Editing An Interview

Senior Test Engineer

We are looking for a quality assurance engineer to build out a set of modern test automation suites for Ruby and Java applications.

Question 1:
Think about an instance in which you came up with a project idea which was implemented primarily because of your efforts. What was it about? What was its outcome? What was your role?

Question 2:
Describe a situation in which you met a major obstacle in order to complete a project. How did you deal with it? What steps did you take?

Question 3:
Tell about an instance when you had to communicate a really bad piece of news to your supervisor or team members. How did you handle it? What was the outcome?

Invite Candidate

Invited Candidates

Name: Select a Candidate

Email: candidate@yello.co

Completed?: No

Invite
Team Yello
Beta Presentation

Prerecorded Response Page

Taekwondo Instructor

Question 1

Do you have a national ranking? If so, what is it?

Time Limit: 00:30

Submit

Finish

Back to Interviews
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Beta Presentation
Summary:

Emotion Score: 😊 Joy
Sentiment Score: 0.7 (Positive)
Sentiment Variation: 0.07

Question 1:
Are you excited about working here?

Transcript Sentiment:
0.89 (Positive)
Transcript:
I am so excited about the work at yellow. I love learning day. I love working on nacle. I love Elasticsearch pagoda. I love Keith. [0.89]

Emotion:
Top Emotion: 😊 Joy
Team Yello @ Design Day
Brian Wang, Jenn Proos, Quan Zhou, Leo Yao, Jonathon Zeitler
The Capstone Experience

Dr. Wayne Dyksen
Department of Computer Science and Engineering
Michigan State University
Spring 2018
The Capstone Experience Lab
The Capstone Experience Lab
The Capstone Experience Lab
The Capstone Experience Lab
The Capstone Experience Lab
The Capstone Experience Lab
View of Spartan Stadium
The Capstone Experience

Design Day Award Winners

December 8, 2017
Auto-Owners Exhibition Award

Team TechSmith, Spring 2017

Teacher’s Virtual Toolbelt
Alex Crimin, Zeke Zandbergen, Yang He, Ryan Cornillie

Presented by Scott Lake of Auto-Owners Insurance
MSU Federal Credit Union Praxis Award
Team Union Pacific, Spring 2017
Learning New Train Routes
Matthew Schleusener, Kangjie Mi, Nick Summers, Jon Wild
Presented by Liam Petraska of MSU-Federal Credit Union
TechSmith Screencast Award
Team Amazon, Spring 2017
ACRA: Amazon Customer Review Analyzer
Jie Wan, Jason Liu, Ian Whalen, Ankit Luthra, Tess Huelskamp
Presented by Wendy Hamilton of TechSmith
Urban Science Sigma Award
Team Michigan State University, Spring 2017
CATAlyst: Mapping CATA Buses in Real-Time
Charlie Ward, Cathy Dinsmoor, Tom Beaver, Jimmy Mkude, James Dodge
Presented by Linda Koepppe and Luke Mercier of Urban Science
The Capstone Experience

Design Day Award Winners

April 27, 2018
Auto-Owners Exhibition Award
Team Phoenix Group, Spring 2018
Customer Service System with Chatbot
Aman Goshu, James Finch, Sarah Fillwock, Dan Shumaker, Fatema Alsaleh
Presented by Ross Hacker and Scott Lake of Auto-Owners Insurance
MSU Federal Credit Union Praxis Award
Team Amazon, Spring 2018
AMPED: Amazon Marketplace Podcast Earnings Detection
Zach Whitener, Cam Korzecke, Chess Luo, Dillon Stock, Hansheng Zhao, Hanzhong
Presented by Ben Maxim of MSU Federal Credit Union
TechSmith Screencast Award
Team Quicken Loans, Spring 2018
Fundamenta: Trust in New Home Construction
Riley Annis, Jaiwant Bhushan, Vishal Adusumilli, Turner Anderson, Erin O'Hara
Presented by Wendy Hamilton of TechSmith
Urban Science Sigma Award
Team Herman Miller, Spring 2018
Adjust: Augmented Reality Chair Adjustment Assistant
Kyle Kinsey, Han Huang, Jacob Weber, Kevin Gaban, Mike Bremiller
Presented by Elizabeth Klee, Nik Steel and Andrea Michaud of Urban Science
The Capstone Experience

Dr. Wayne Dyksen

Department of Computer Science and Engineering
Michigan State University
Spring 2018
accenture
Auto-Owners Insurance
Life • Home • Car • Business
Michigan State University Federal Credit Union

Building Dreams Together
Quicken Loans
Engineered to Amaze℠
yello