From Students…
…to Professionals

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
- 02/08: 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
- 05/03: Project Videos
The Capstone Experience

Team Accenture

Department of Computer Science and Engineering
Michigan State University
Spring 2018
accenture
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.
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
    ▪ MongoDB
    ▪ 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

- File Name: 040d71e565120a0786bcs.xls
- File Size: 77824 bytes
- File Mime: application/vnd.ms-excel
- File Type: Composite Document File V2 Document
- MD5: 040d71e565120a0786b
- SHA1: a4jn43kn34mk34kmk343mk3443mk
- Notes:
Team Accenture
Project Plan Presentation
Team Accenture
Project Plan Presentation

Architecture Diagram

AMAP Modules

python™

iDefense
Part of Accenture Security

Malware Database

mongoDB

django

AMAP Dashboard

HTML

JavaScript

CSS

The Capstone Experience
Team Accenture
Project Plan Presentation

Container Status

Malware Processed Per Hour

- Starting Up: 4%
- Running: 18%
- Idle: 2%
# Current Process Status Page

## Analysis Status

<table>
<thead>
<tr>
<th>#</th>
<th>SHA256</th>
<th>NDS</th>
<th>Overall Progress</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>b3d9c8df5c8226c8c80bf1395315eb95b2e94ac879166d6fafa53467f3799</td>
<td>e864b5b4704e20b55966e788321ae5</td>
<td>18-1-27 1:54:24</td>
<td>View</td>
</tr>
<tr>
<td>2</td>
<td>df02aca142c44ccffe7721b93cb3d4e49f56d11e7732bd39baaf2eac8d46d4dd</td>
<td>487124752b67662ac943584024391e</td>
<td>18-2-2 1:19:52</td>
<td>View</td>
</tr>
<tr>
<td>3</td>
<td>dc779f34aabe7ba4c34b8bce9f06d1a62e2de9f964e0eb016d0b37b5fe05</td>
<td>3501b21f21022cb8ad977276d3c97577b5</td>
<td>18-2-3 5:52:45</td>
<td>View</td>
</tr>
<tr>
<td>4</td>
<td>2e121b8f5fa2fa225e8440b24559c07f526477494b474976d105</td>
<td>9490e687041274a68c695731f081907</td>
<td>18-2-3 6:00:23</td>
<td>View</td>
</tr>
<tr>
<td>5</td>
<td>9ac3accd466a7088409b65b2e13534c8781355c2f51f4e870b8b0c5dfabe</td>
<td>68b3299a9893e34099c7d8ad5c19c940</td>
<td>18-2-5 12:32:02</td>
<td>View</td>
</tr>
</tbody>
</table>
Team Accenture

Alpha Presentation

Module Selection Page

Dashboard (2 new updates)

File Upload

Processes

Modules

- Match Modules For all Files

13413701_10209874704294851_7569077515899457902_n.jpg
- File Type
- MD5
- SHA1
- SHA256
- Entropy
- Decoder
- NETDATA
- Submit

19989639_10213842700812284_7767808038276667761_n.jpg
- File Type
- MD5
- SHA1
Team Accenture
Alpha Presentation

Dashboard

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

- Average Processing Time
  - Time: 3.5 minutes

- Malware Processed Per Hour
  - New Malware Samples Per Hour
See VB Module UTL_PresentationSlidesSend2FB.
AMAP Wizard
Team Accenture
Beta Presentation

BetaPresentationSlideTitle
Team Accenture
Beta Presentation

AMAP Dashboard

**Dashboard**
- Todays Processed Files
  - New Malicious Files: 1125
  - New Non-Malicious Files: 500
- Average Processing Time
  - Time: 3.5 minutes

**File Types**
- Windows Executable
- Microsoft Office Documents
- Other

**Malware Processed Per Hour**
- Graph showing malware processed per hour from 9:00AM to 2:00PM.

**New Malware Samples Per Hour**
- Graph showing new malware samples per hour from 9:00AM to 2:00PM.
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
amazon
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
Team Amazon
Project Plan Presentation

Screen Mockup: Web App Dashboard
Team Amazon
Project Plan Presentation
Team Amazon

Project Plan Presentation

Architecture Diagram

Web Application

Request data

JSON response

Retrieve file contents

Store file

Amazon S3

Python Django API
Running on an EC2 Instance

dj

Amazon RDS

Store data

Retrieve data

Update job progress

Add job to respective queue

Lambda Microservices

Transcribe

Comprehend

Product Search

Begin Transcribe

Begin Comprehend

Begin Product Search
Team Amazon Alpha Presentation
The economy, sustained, with stories and surprises. Imagine you could call up a friend and say, "Meet me at the bar and tell me what's going on with the economy." Now imagine that's actually a fun evening. That's what we're going for at Planet Money. People seem to like it.

U.S. exports include airplanes, education and lots of blood.
Team Amazon
Alpha Presentation

Podcast Library and Product Detail Page

The Capstone Experience
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
Team Amazon
Beta Presentation

Product Display

Check the following products to support your favorite podcast:

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
APTIV
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
    o Threat Analysis and Risk Assessment
    o Vulnerability/Penetration Assessment
    o Mitigation Remediation
    o Incident Response
  ▪ Database Visualizations and Analysis
    o Threats/Risks
    o Vulnerabilities
    o Incidents
    o 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
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
Project Plan Presentation
Team Aptiv
Alpha Presentation

Dashboard

The Capstone Experience
Team Aptiv
Alpha Presentation

Product Dashboard
Team Aptiv
Alpha Presentation
Team Aptiv
Beta Presentation

Product Lines
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
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

Screen Mockup: Web Application

1. "The Smith Home" 324 Maple Street
   Edit - Paragraph
   Anyone Home 1
   Read only - Paragraph
   Anyone Home 2
   Read only - Paragraph

   ADD TO LIST


The information gathered will be used for the sole purpose of providing an insurance rate proposal. Rates are subject to change based on company rate schedules and/or changes to any of the required rating information.
Team Auto-Owners
Project Plan Presentation
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

Select environment and edit object data

Client-Side Applications
- VR Application
  - Provides panoramic view of uploaded environment and object info
  - Displays visual orientation and microphone input

Provides object data and image environments

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

Provides object data and image environments

Web Application
  - Creates environments, allows user to create and edit object and environment data

User uploads omnidirectional images to web portal

Oculus uploads omnidirectional images to web portal
Team Auto-Owners
Project Plan Presentation
Team Auto-Owners
Project Plan Presentation

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

Team Auto-Owners Alpha Presentation
# Team Auto-Owners

## Alpha Presentation

### Web: Inventory List

![Inventory View](image-url)

<table>
<thead>
<tr>
<th>Image</th>
<th>Object</th>
<th>Room</th>
<th>Characteristics</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>sink</td>
<td>bathroom #1</td>
<td>Pedestal</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Shower/Tub</td>
<td>Bathroom #2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mirror</td>
<td>Bathroom #2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Bed</td>
<td>Bedroom #1</td>
<td>Queen</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Drawer</td>
<td>Bedroom #1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

*The Capstone Experience*
Object Detection

Team Auto-Owners

Alpha Presentation
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
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

Stay Up-To-Date
Sign Up For Dow Announcements
Subscribe To DowDuPont Alerts
www.dow.dupont.com
Team Dow
Project Overview

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
    o Non-Certified
    o Certified
  ▪ Handle Various Scenarios
    o Normal Filling
    o Response to Spills
  ▪ Manage Player Points
    o Award for Positive Actions
    o Deduct for Negative Actions
  ▪ Enable Interaction with Game Objects
    o Personal Protective Equipment (PPE)
    o D-Rails
    o 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
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

Architecture Diagram

Software

Ps

3DS MAX

Audacity

C#

Language

SDK

Hardware

Unity

Steam VR

VRTK

Assets

 PROJECT PLAN PRESENTATION

TEAM DOW

SOFTWARE

- Ps
- 3DS MAX
- Audacity
- C#
- Unity

LANGUAGE

- SDK

HARDWARE

- Steam VR
- VRTK

PROJECT PLAN PRESENTATION

TEAM DOW

SOFTWARE

- Ps
- 3DS MAX
- Audacity
- C#
- Unity

LANGUAGE

- SDK

HARDWARE

- Steam VR
- VRTK

The Capstone Experience
System Architecture

- **Software**
  - Ps
  - 3DS MAX
  - Audacity
  - C#
  - Unity

- **Hardware**
  - VRTK
  - VR

- **Languages**
  - SDK

- **Assets**
  - SteamVR

---

**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
Alpha Presentation

Derailer
Team Dow Beta Presentation
Team Dow
Beta Presentation

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

Incoming Railcar
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.
The Capstone Experience

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
Team DRIVEN-4
Project Plan Presentation

Architecture Diagram

- Tecnomatix
- Produce
- THE BOX
- Visualize
- thingworx studio
- Applications
- Particle
- Stream
- Cloud
Team DRIVEN-4
Project Plan Presentation
Team DRIVEN-4
Project Plan Presentation

Screen Mockup: AR Service
Team DRIVEN-4
Alpha Presentation
Team DRIVEN-4
Alpha Presentation
Customer Mobile Application
Team DRIVEN-4
Alpha Presentation
### All Devices

<table>
<thead>
<tr>
<th>name</th>
<th>lastMovement/Magnitude</th>
<th>current/freq</th>
</tr>
</thead>
<tbody>
<tr>
<td>device-1</td>
<td>11878.47</td>
<td>73</td>
</tr>
<tr>
<td>device-2</td>
<td>12090</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>30200</td>
<td>0</td>
</tr>
<tr>
<td>Or/Discocks</td>
<td>27500</td>
<td>0</td>
</tr>
<tr>
<td>name</td>
<td>23</td>
<td>0</td>
</tr>
</tbody>
</table>

### Customers - Lansing Area

![Map of Lansing Area](map.png)

### Current Device Magnitudes

![Bar Chart of Current Device Magnitudes](chart.png)
Team DRIVEN-4
Beta Presentation

Customer View
Team DRIVEN-4
Beta Presentation

Device Simulator and AR

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Running</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Bedroom</td>
<td>Matress</td>
<td></td>
</tr>
<tr>
<td>Main Laundry</td>
<td>Washer</td>
<td></td>
</tr>
<tr>
<td>Bad Device 1</td>
<td>Broken Accelerometer</td>
<td>✓</td>
</tr>
<tr>
<td>Bad Device 2</td>
<td>Dying Batteries</td>
<td>✓</td>
</tr>
<tr>
<td>Hacker</td>
<td>Malicious Device</td>
<td></td>
</tr>
<tr>
<td>Second Bedro...</td>
<td>Matress</td>
<td></td>
</tr>
</tbody>
</table>
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

Detroit, Michigan
Team GM
Alex Lepird, Tao Tao, Simeon Goolsby, Matthew Eaton, Colin Coppersmith
Team GM
Project Plan Presentation

Screen Mockup: VM Creation
Team GM
Project Plan Presentation
Team GM
Alpha Presentation

VM Creation Through Bot
Team GM
Alpha Presentation

Virtual Machines Dashboard
Do not delete this textbox. It's used as a marker in VB code.

See VB Module UTL_PresentationSlidesSend2FB.
Team GM
Alpha Presentation

Information on Clicked Test
Team GM
Beta Presentation
Team GM  
Beta Presentation  
Virtual Machines Dashboard
Team GM
Beta Presentation

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

<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
</table>

Tests Dashboard
Team GM
Beta Presentation
Team GM
Beta Presentation
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

- Collapse all

*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
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 → Vuforia matches model target to camera input → Camera Input

Vuforia matches model target to camera input → Unity displays appropriate interactive 3D model → iOS

Builds → Xcode

Builds → Android
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
Team Herman Miller
Alpha Presentation

Interactive Model
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.
Do not delete this textbox. It's used as a marker in VB code. See VB Module UTL_PresentationSlidesSend2FB.
Team Herman Miller
Alpha Presentation

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.
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

Chair Detection Interface
Team Herman Miller
Beta Presentation

Interactive Adjustment Interface
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
Team Meijer
Project Overview

Thrifty: Personal Shopping Assistant

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

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

• Technologies
  ▪ Microsoft
    o .NET Framework (C# / ASP.NET)
    o Bot Framework
    o Language Understanding Intelligent Service (LUIS)
    o Azure
    o Application Insights
    o Visual Studio
  ▪ Xamarin
  ▪ Meijer Web Services
  ▪ SQL Server / MongoDB

Grand Rapids, Michigan
Team Meijer
Emerson Chen, Zach Richardson, Megan Lippert, Jacob Bonesteel, Aaron Carlso
Team Meijer
Project Plan Presentation

Screen Mockup: Chat Interface
Team Meijer
Project Plan Presentation
Team Meijer
Project Plan Presentation

Architecture Diagram

- IOS
- Apple Speech
- Android
- Google Speech

LUIS

Competitor Pricing

Azure

mpерks

SQL

BLUEBIRD
Team Meijer
Project Plan Presentation
Team Meijer

Project Plan Presentation

Screen Mockup: Functionality

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

- Out-Of-Stock
  - Click here to alert a Meijer Team Member

- Coupon Available

- Competitor Prices

- Ask Thrifty
  - nPerks
  - Help
Team Meijer
Alpha Presentation

Home Screen
Team Meijer
Alpha Presentation
Team Meijer
Alpha Presentation

Product Page and Conversations
Team Meijer
Beta Presentation
Team Meijer  
Beta Presentation  

Chat Interface
Team Meijer
Beta Presentation
Team Meijer
Beta Presentation

mPerks

Your Coupons
1. Buy 4 Get 1 Free
   expires on 4/12/2018 12:00:00 AM

Hi, I'm Thrifty, your personal shopping assistant! Feel free to ask me anything, or tap "Help" for some suggestions.

Please scan the barcode at checkout to apply your mPerks

Logout  Dismiss

mPerks
Help
Location

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

Team Michigan State University
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
    o Create Questions, Surveys and Quizzes
    o Open Questions and Quizzes at Specific Times
    o View and Save Results in Real Time
      ➢ Class Results with Charts and Graphs
      ➢ Individual Results
    o Push Content to Student Devices
    o View Student Questions and Comments
    o Track and View Class Attendance
  ▪ Provide Mobile App for Students
    o Answer Survey and Quiz Questions During Class
    o View Instructor-Posted Content
    o 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

Information Technology Services
East Lansing, Michigan
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

Student Engagement App

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

- Estimote Beacons
- ID
- Mobile Student Client
- Sockets
- Instructor Web Client
- API Gateway
- Elastic Beanstalk
- EC2
- SNS
- RDS
- Amazon Web Services
Team Michigan State University
Project Plan Presentation
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(1)
- O(\log N)
- O(N)
- O(N^2)

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

- $O(n)$
- Constant
- $O(n^2)$
- $O(\log N)$
Team Michigan State University
Beta Presentation

Mobile - Forum

Study Group
Would anyone want to meet tonight to study for the quiz?

RE: Study Group
From: [email] Subject: I'm trying to study because 232 is being off the screen.

RE: Study Group
From: [email] Subject: Got it! Thank you for the insight.

Interesting from Pixar!
Has anyone seen Pixar's Coco yet?

Regarding Homework 2
Make sure you are using OpenGL 3.1

Study Group
Would anyone want to meet tonight to study for the quiz?

Welcome Class!
The first class is on Monday, January 9th. I'm excited to meet all of you. We will not be using laptops today to enhance your learning experience.

Friday's Quiz has been moved
The quiz has been moved to next Wednesday, the 24th.
Team Michigan State University
Beta Presentation
Web Question View – Short Answer
Do not delete this textbox. It's used as a marker in VB code.

See VB Module UTL_PresentationSlidesSend2FB.

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
    o Menus
    o Sidebars
    o In-Product Pages
  ▪ Apply CSS Custom Variables and JavaScript
  ▪ Leverage Inter-Process Communication
    o Pass Messages
    o 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
  ▪ IRCCloud
  ▪ Bugzilla
  ▪ Review Board
  ▪ Microsoft Windows
  ▪ Apple macOS
  ▪ Linux
Team Mozilla
Vivek Dhingra, Connor Masini, Dyl Stokes, Bogdan Pozderca, Zhengyi Lian
Team Mozilla
Project Plan Presentation

Architecture Diagram

API

Firefox Theme

Chrome Theme

CSS

Team Mozilla
Team Mozilla
Project Plan Presentation

Screen Mockup: Menus
Team Mozilla
Alpha Presentation

Auto-Complete Styling
Team Mozilla
Alpha Presentation

Popup Styling
Team Mozilla
Alpha Presentation
Team Mozilla
Alpha Presentation

Find Bar and Menu Styling
Do not delete this textbox. It's used as a marker in VB code. See VB Module UTL_PresentationSlidesSend2FB.
Team Mozilla
Beta Presentation
Address Bar Auto-Complete Styling
Sidebar Styling
Team Mozilla Beta Presentation
Team Mozilla
Beta Presentation

In-Product Page Styling
Team Mozilla @ Design Day
Vivek Dhingra, Zhengyi Lian, Connor Masini, Dyl Stokes, Bogdan Pozderca
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

Digital Assistant and Financial Coach
Login

Email or account number

Password

LOG IN
Team MSUFCU

Project Plan Presentation
Team MSUFCU
Project Plan Presentation
Team MSUFCU
Project Plan Presentation

Screen Mockup: Web Admin Portal
System Architecture

Team MSUFCU
Alpha Presentation
Team MSUFCU
Alpha Presentation

Amazon Alexa

Welcome, Kathryn. How may I help you?

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

Please confirm transferring $500 from your checking account.

Alexa, transfer $500 from my checking account to another checking account.

6000.
Team MSUFCU
Alpha Presentation

Android App

MSUFCU Chatbot

Avengers

Thanks! You are now logged in.

add expense

Which expense would you like to add?

rent

How much is your new expense?

120

Successfully added expense.

Enter message SEND
Team MSUFCU
Alpha Presentation

Facebook Messenger

![Facebook Messenger Chat](image-url)
Team MSUFCU
Beta Presentation

Android and iOS Chatbots

MSUFCU Chatbot

Hello Beverly Crusher! How can I help you today?

what do people like me spend on groceries?

Edgar

Would you filter by age or income, Beverly?

Income

Members in your income demographic spent an average of $613.34 last month on Groceries, Beverly. Is there anything else I can help you with?

Edgar

Hello Kathryn Janeway! How can I help you today?

Can I afford to buy a laptop

A 'laptop' costs about $539.99 according to Google Shopping. You should probably not be spending $539.99 anytime soon, Kathryn.
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?
Team MSUFCU
Beta Presentation
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
Welcome to The Phoenix Group

Rising to New Levels in POS Deployment

Browse Products  Our Services
Team Phoenix Group
Project Overview

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)
    - Ingest by Photo or PDF
    - Determine Keywords via OCR
    - Search via Text and Voice
    - Display Like E-Book
  - Provide Companion Administrative App
  - Implement Chatbot on Corporate Website
    - Product Inventory
    - Available QRCs
    - 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
James Finch, Sarah Fillwock, Dan Shumaker, Fatema Alsaleh, Aman Goshu
Team Phoenix Group
Project Plan Presentation

Screen Mockup: QRG Home Screen
Team Phoenix Group
Project Plan Presentation

Architecture Diagram

Chatbot

Microsoft Bot Framework

LUIS NLP

MongoDB Server

Windows ASR

Windows App

Windows OCR

Tablet

Desktop
Team Phoenix Group

Project Plan Presentation

Screen Mockup: QRG Edit Screen

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
Team Phoenix Group
Alpha Presentation

QRG Viewer Home Screen
Team Phoenix Group
Alpha Presentation
The Capstone Experience

Team Phoenix Group
Alpha Presentation

Customer Service Chatbot
Team Phoenix Group
Beta Presentation
Team Phoenix Group
Beta Presentation

QRG Manager Application: Home Screen
Team Phoenix Group
Beta Presentation

QRG Manager Application: Administration Screen

User | Add QRG | Edit QRG | Admin
--- | --- | --- | ---
James Abbot | | | 
Fatera Alsahleh | | | 
Lauren Anderson | + | | 
Jackson Avery | + | | 
Olivia Baker | | | 
Dan Bell | | | 
Mary Bunch | | | 
Jonny Dowdall | | | 
Bob Dyksen | + | | 
Wayne Dyksen | + | | 
Emily Enbody | | | 
Charles Erickson | | | 
Sarah Filliwick | | | 
James Finch | | | 
James Mariani | + | | 
Erin Owen | | | 

Search user...

Lauren Anderson

- Administrator
- Add QRG
- Modify/Remove QRG

Delete User
Team Phoenix Group
Beta Presentation

Customer Service Chatbot
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
    ▪ Provide Drill Down Capability
    ▪ 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

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>C6A13AFC5831096B0CCB54FBB2B3D14E4BA06E9C7A363C884B1383C5EE81FAA</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>48678EC33D22C571774ACE303C4C771B46C8121FBE46AFA807E54787671DE13</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**

**Filtered Results for Table**
In Depth Analysis of a File

File Statistics and Information

<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>330.0 KB (330752 bytes)</td>
</tr>
<tr>
<td>Total Analysis Time</td>
<td>0:00:00.296</td>
</tr>
<tr>
<td>Static Analysis Time</td>
<td>0:00:00.296</td>
</tr>
<tr>
<td>Dynamic Analysis Time</td>
<td>0:00:00</td>
</tr>
</tbody>
</table>

File Hashes

<table>
<thead>
<tr>
<th>Hash Types</th>
<th>File Hash</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE Hash</td>
<td>3N9KxqO7TEe3HO9Qc8uu9wW9Iu9n9RVR9+Rg9v4Wv4NN7E99b3G435x199999999f</td>
</tr>
<tr>
<td>SHA256</td>
<td>6BDE693CE8EB45445C0B38E3DE3AF97E0D21C8D33DE8408B52E711EA67ABFD27</td>
</tr>
<tr>
<td>SHA1</td>
<td>02O5F5PC0AB973192DEB43AE70C9CA141AAAAAAAAAAAAA</td>
</tr>
<tr>
<td>MD5</td>
<td>0BC662A6095A3D316F9C006E33CDB3</td>
</tr>
</tbody>
</table>

Similar Malware

<table>
<thead>
<tr>
<th>File Name</th>
<th>PE Hash</th>
</tr>
</thead>
<tbody>
<tr>
<td>317BE99D6B8B59AF690E3263E216C904B10982D8F2808C164DE35ABB913167</td>
<td>3N9KxqO7TEe3HO9Qc8uu9wW9Iu9n9RVR9+Rg9v4Wv4NN7E99b3G435x199999999f</td>
</tr>
<tr>
<td>4E33D223B0CC5DCCADB3E652559A3A96972D0232CFC9359F27424D20C37893B364</td>
<td>3N9KxqO7TEe3HO9Qc8uu9wW9Iu9n9RVR9+Rg9v4Wv4NN7E99b3G435x199999999f</td>
</tr>
<tr>
<td>695C7B2DEB97388B573C780869ED031CD4A4CE5F777CA9F933737A042177B</td>
<td>3N9KxqO7TEe3HO9Qc8uu9wW9Iu9n9RVR9+Rg9v4Wv4NN7E99b3G435x199999999f</td>
</tr>
</tbody>
</table>
Team Proofpoint
Alpha Presentation
Network Analysis

GET → 200 http://www.msfncsi.com/ncsi.txt

REQUEST

: GET /ncsi.txt HTTP/1.1
Connection: Close
User-Agent: Microsoft NCSI
Host: www.msfncsi.com

BODY

request response plaintext hex 16 bytes 32 bytes 48 bytes 64 bytes

抟 withholding: 4065 6372 6f75 666f 7420 4043 5343
Team Proofpoint Beta Presentation

Main Page On Dashboard
Team Proofpoint
Beta Presentation

Top 25 Yara Rules Matched Graph
See VB Module UTL_PresentationSlidesSend2FB.
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
Providing Affordable Mortgages and Award-Winning Client Service for More than 30 Years

Start

Type of Loan
Select One
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
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

Architecture Diagram

Web App
- React JS
- .NET Core
- Service Layer
- Database Layer

Hyperledger
- Fabric
  - Blockchain
  - Chaincode
  - Blockchain State Storage
- Composer
  - Business Network Model
  - Transactions
  - Access Control
  - Identities
  - REST Server

REST API

SQL Server

SQL Database

Azure
System Architecture

Web App
Hyperledger

SQL Database

System Architecture

Web App
Hyperledger

SQL Database

Team Quicken Loans
Project Plan Presentation
Team Quicken Loans Alpha Presentation
Team Quicken Loans
Alpha Presentation
Team Quicken Loans
Alpha Presentation

Dashboard
Team Quicken Loans Alpha Presentation
Team Quicken Loans
Alpha Presentation

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

Dashboard
The Capstone Experience

Team Quicken Loans

Beta Presentation

Progress
Team Quicken Loans
Beta Presentation
Team Quicken Loans
Beta Presentation

Image Upload
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 HealthChecks 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
Team Rook
Project Plan Presentation

Architecture Diagram

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

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

Force Platform
Team Rook
Alpha Presentation

Force Platform
Team Rook
Alpha Presentation
Team Rook
Alpha Presentation

Storage System
Team Rook
Beta Presentation

Agent Management Console
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

- LeaderBoard
- Timeline/Newsfeed
- Username
- Name
- Feed
- Lorem ipsum dolor sit amet et delectus
Team SpartanNash
Project Plan Presentation
Team SpartanNash
Project Plan Presentation

Architecture Diagram

- MySQL
- SpartanNash APIs
- Mobile Applications
  - React-Native
  - Android App
  - IOS App
- Websites
  - HTML/PHP
  - Web Form
  - Admin Panel
System Architecture

Mobile Applications
- Android App
- iOS App

Websites
- Web Form
- Article Bank

Team SpartanNash Project Plan Presentation
Team SpartanNash
Project Plan Presentation

Screen Mockup

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 ➔
Team SpartanNash
Alpha Presentation

Website Admin Panel

Dashboard Control Panel

- 150 Total volunteer hours
- 53 people participate
- 2.89 volunteer hours per person
- $500 Money value created

Department Commitment

Yearly Chart
Team SpartanNash
Alpha Presentation

Newsfeed and Profile
Volunteer Tracking Form

Team SpartanNash
Alpha Presentation

Volunteer Hour Form

- Organization Name
- Volunteer Activity or Event Name
- Area of Support: Advocacy
- Commitment Type: One Time
- Date Start of Event
- Length of Volunteer Time (hours)
- Please Describe Your Experience

Submit
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

Commitment Type

Date Start of Event

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
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
Screen Mockup: Web App

SpectrumGO LOBBY Waypoint

Paths

- To Operating Room
  - Directions: Turn left. Walk forward until
  - Angle: -90
  - Update

- To Nursing Ward
  - Update

- To Cardiology
  - Directions: Turn right. Walk forward an
  - Angle: 90
  - Update

- To Pharmacy
  - Directions: Take the first
  - Angle: 180
  - Update

- Directions: Take the staircase on your
  - Angle: 45
  - 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 HEALTH
Select Facility:
MSU
Select Destination:
Select Destination

waypoint 1
waypoint 2
waypoint 3

Turn Left
Stop
Team Spectrum Health
Alpha Presentation

Android Application
Team Spectrum Health Beta Presentation
Waypoints At Engineering Building

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Name</th>
<th>QR Code</th>
<th>Edit</th>
<th>Manage Connections</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Building</td>
<td>Capstoned Lab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Building</td>
<td>Room 3353</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Building</td>
<td>Room 3355 (Pantry)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Building</td>
<td>Drinkin' Fountain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Home  Create New
Team Spectrum Health
Beta Presentation

iOS Application

Select Facility:
MSU

Select Destination:
Select Destination

waypoint 1
waypoint 2
waypoint 3

Turn Left
Stop
Do not delete this textbox. It's used as a marker in VB code.

See VB Module UTL_PresentationSlidesSend2FB.

Team Spectrum Health Beta Presentation
Team Spectrum Health
Beta Presentation

Android Application

Select a Facility
Engineering Building

Enter A Destination
1279

Scan Your Current Waypoint

Spectrum GO

Waypoint 21
Main Lobby
Cat 2600
Ave 1
Lobby

Scan here to receive directions to this location.
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
    o Number of Authentications Per Time Unit
    o Successful vs Failed Authentications
    o Unique Users Per Time Unit
    o Distribution of Risk Reasons
  ▪ Create Security Dashboard and Alerting
    o Trends of Failed Authentications
    o Find Risky Users
    o 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
Robert Novak, Abby Urbanski, Stephen Alfa, Keerthana Kolisetty, Echo Wu
The Capstone Experience

Team Symantec
Project Plan Presentation

Screen Mockup: Dashboard in Splunk

Operational Trends
Panels that display basic statistics of VAP authentications

Authentications Across Different Device Types

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile App</td>
<td>10,000</td>
</tr>
<tr>
<td>Phone Call</td>
<td>5,000</td>
</tr>
<tr>
<td>Text</td>
<td>2,000</td>
</tr>
<tr>
<td>Key Fob</td>
<td>1,000</td>
</tr>
</tbody>
</table>

Total Number of Authentications: 19,809

Success vs. Failure Authentications

Number of Authentications Over Last Seven Days

Success vs Fall Attempts For Each Device Type

Day

2018-01-18
2018-01-19
2018-01-20
2018-01-21
2018-01-22
2018-01-23
2018-01-24
2018-01-25

Count

200
100
0

Device Type

Key Fob
Mobile App
Phone Call
Text
Team Symantec
Project Plan Presentation
Team Symantec
Project Plan Presentation
Team Symantec
Project Plan Presentation

Screen Mockup: Dashboard in ELK
Team Symantec
Alpha Presentation
Team Symantec
Alpha Presentation

ELK Dashboard

Dashboard / Operational Dashboard

- Record Count: 6,226
- Number of Users: 477

Authentication Status:
- Success
- User does not have a...

Authentications per Hour

Users Created Over Time

Uses Lucene query syntax
Team Symantec
Alpha Presentation
The Capstone Experience
Team Symantec
Alpha Presentation

ELK Alerting on Slack
Do not delete this textbox. It's used as a marker in VB code. See VB Module UTL_PresentationSlidesSend2FB.
Team Symantec
Beta Presentation

Splunk: Operation Trends Dashboard
Team Symantec
Beta Presentation

Splunk: Geolocation Dashboard
Team Symantec
Beta Presentation
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>GLDCSI</td>
<td>15</td>
</tr>
<tr>
<td>GOB068</td>
<td>15</td>
</tr>
<tr>
<td>6HQ9R</td>
<td>14</td>
</tr>
<tr>
<td>751LYA</td>
<td>14</td>
</tr>
<tr>
<td>F8U6GF</td>
<td>14</td>
</tr>
<tr>
<td>407PLU</td>
<td>13</td>
</tr>
<tr>
<td>1BT7XV</td>
<td>12</td>
</tr>
<tr>
<td>ADZ4CH</td>
<td>12</td>
</tr>
<tr>
<td>1T7APMA</td>
<td>11</td>
</tr>
</tbody>
</table>

Search: (e.g. status:200 AND extension:PHP)
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.

Shop Now
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

Architecture Diagram

TechSmith Desktop Applications

TechSmith Extensibility Framework

Windows Desktop

Snagit
Camtasia
WISTIA
TechSmith Video Review
imgur

Test Harness

Media Hosting APIs
Team TechSmith
Project Plan Presentation
Screen Mockup: Test Harness

Team TechSmith
Project Plan Presentation

Test Harness

Choose File...

Input To:

TechSmith Video Review

Output To:

Wistia

Imgur

XXX Media Thumbnail XXX

C:\Users\Capstone\Images\...
Team TechSmith
Alpha Presentation

SnagIt Share Menu
Team TechSmith
Alpha Presentation

TechSmith Video Review

[Image of TechSmith Video Review interface with details and options]

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

Upload Cancel

https://videoreview.techsmith.com/dashboard
Team TechSmith
Alpha Presentation
Team TechSmith
Alpha Presentation

Test Harness
Team TechSmith
Beta Presentation
Team TechSmith
Beta Presentation

Updated Imgur Options
Team TechSmith
Beta Presentation

Updated Wistia Options

Wistia Output Options

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

Select a Project

- Project: Wistia Beta Project
- Created: Monday, February 26, 2018 5:08 PM
- Updated: Sunday, April 1, 2018 10:38 PM
- Media Count: 1
- Name: Wistia Beta Project
- Description: Storage for Wistia Beta media.

Upload Cancel

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

JavaScript
Team Union Pacific
Project Plan Presentation
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

Hello Team Union Pacific, welcome to PSTechnologies 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 PSTechnologies 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 PSTechnologies 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.
Team Union Pacific
Alpha Presentation

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

Team Union Pacific
Alpha Presentation
Team Union Pacific
Alpha Presentation

Web App Reporting Page
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?
Team Union Pacific
Beta Presentation

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
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.
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
Team Urban Science
Project Plan Presentation

Screen Mockup: Home Screen

Level  Standby
Voice  Lock
Raise  Lower
Team Urban Science
Project Plan Presentation
Team Urban Science
Project Plan Presentation

Architecture Diagram

- Azure
- Internet
- SQL
- Bluetooth

Commands

The Capstone Experience
Team Urban Science
Project Plan Presentation
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

No Buttons Active
Team Urban Science
Alpha Presentation

Up and Lock Active
Do not delete this textbox. It's used as a marker in VB code.

See VB Module UTL_PresentationSlidesSend2FB.

Team Urban Science
Alpha Presentation
Team Urban Science
Beta Presentation

Main Page – No Buttons Active
Team Urban Science
Beta Presentation

Main Page – Up and Lock Active
Team Urban Science
Beta Presentation
Team Urban Science
Beta Presentation

Auto Leveling Setup
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.

WHO WE SERVE
Team USAA
Project Overview

LIMElight: Life Insurance Made Easy

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

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

Get a Term Life Insurance Quote

Age: 37
Weight: 180
Height: 6' 1"
Do you smoke? Y N
Do you exercise? ✓ ○
Team USAA
Project Plan Presentation
Team USAA
Project Plan Presentation
Team USAA
Project Plan Presentation

Screen Mockup: Patient Login

We know what it means to serve?
Get a Quote Manage Health Records Admin

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

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 Authorized Practitioners
Authorize A Practitioner

Welcome Bob Jones
Your Authorized Practitioners
Authorize A Practitioner

Welcome Bob Jones
Your Authorized Practitioners
Authorize A Practitioner

Team USAA
Alpha Presentation
Welcome Bob Jones
Your ID: bob@gmail.com

Your Authorized Practitioners

dr.kelly@sparrow.org
Revoke Access

Authorize A Practitioner
Here is a list of practitioners you may authorize

Dr. Ted Seuss
Authorize
Get A Life Insurance Quote

1. Age
2. Height
3. Coverage Amount
4. Recent Car Accidents
5. Recreational Flying

Get a Quote
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
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
yello
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
Team Yello
Project Plan Presentation
Team Yello
Project Plan Presentation

Architecture Diagram

- PostgreSQL: Database
- HEROKU
- open.tok: Video Capture
- Video Analysis
- Analysis Results
- Web Application
- Server
- 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
Team Yello
Alpha Presentation
Team Yello
Alpha Presentation

Candidate Video Response
Team Yello
Alpha Presentation

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

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?
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
Team Yello
Beta Presentation

Live Interview Page
Team Yello
Beta Presentation
Team Yello
Beta Presentation

Analysis Results Page

Summary:
Emotion Score: 😊 Joy
Sentiment Score: 0.7 (Positive)
Sentiment Variance: 0.07

Question 1:
Are you excited about working here?

Transcript Sentiment:
0.95 (Positive)
Transcript:
I am so excited about the work at yellow. I love learning day by day working on rakes. I love Elasticsearch. I love Keith. 😊😊😊

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

Design Day Award Winners

April 28, 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

December 8, 2017
Auto-Owners Exhibition Award
Team Amazon, Fall 2017
Faia: Fashion Artificial Intelligence Assistant
David He, Dominic Zottolo, Zizhen Wang, Danielle Schugars, Nikhil Ramu
Presented by Ross Hacker and Scott Lake of Auto-Owners Insurance
MSU Federal Credit Union Praxis Award
Team Yello, Fall 2017
Automatic Resume Verification
Brandon Burt, Ryan Nagy, Giorgio Maroki, Nathaniel Hagan, Wan Kim
Presented by April Clobes of MSU Federal Credit Union
TechSmith Screencast Award

Team Union Pacific, Fall 2017

RailBuilder: The Great Race to Promontory

Declan McClintock, Jacob Young, Zachary Brenz, Kyle Bush, Trever Daniels

Presented by Matt Dupuis of TechSmith
Urban Science Sigma Award
Team Michigan State University, Fall 2017
SEA: Spartan Experience App
Nayana Kodur, Patrick Pale, Roy Perryman, Ryan Johnson, Scott Swarthout
Presented by Elizabeth Klee of Urban Science
The Capstone Experience

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