

09/13: Team Status Reports

The Capstone Experience

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

Team Amazon

Status Report

[1 of 4]

Faia: Fashion Artificial Intelligence Assistant

- Project Overview
 - Virtual Personal Stylist that adapts to shopper preferences
 - Makes clothing suggestions using Machine Learning
 - Text-based communication with user
 - Integrates with Amazon Marketplace services
- Project Plan Document
 - Several sections in progress
 - Completed early sections
 - Still needs images and diagrams
 - Clarified specifications for the project plan with the Amazon clients



Team Amazon

Status Report

[2 of 4]

Faia: Fashion Artificial Intelligence Assistant

- Server Systems / Software
 - Hosting Web Interface on EC2
 - RDS Database System
- Development Systems / Software
 - Web Interface with HTML, Javascript, PHP on Visual Studio
 - Amazon Lex interprets user input for Faia
 - Twilio/Facebook Messenger
 - AWS Machine Learning



Team Amazon

Status Report

[3 of 4]

Faia: Fashion Artificial Intelligence Assistant

- Client Contact
 - Weekly meetings on Tuesdays
 - Draft meeting on Friday
- Team Meetings
 - Weekly meetings on Tuesdays
 - Triage meetings on Thursdays
- Team Organization
 - Client Contact: Danielle
 - Program Manager: David, Machine Learning: Zizhen and Nikhil, Web: Danielle and David, Chatbot: Dominic



Team Amazon

Status Report

[4 of 4]

Faia: Fashion Artificial Intelligence Assistant Risks

- API
 - Description: Integrating all of the APIs together
 - Mitigation: Develop prototype with all APIs
- User Experience
 - Description: Creating a smooth user experience through SMS
 - Mitigation: Utilize embedded HTML over SMS
- Machine Learning
 - Description: Difficult to get good results from machine learning
 - Mitigation: Experiment with multiple machine learning models



Team Auto-Owners

Status Report

[1 of 4]

House of Hazards

- Project Overview
 - Teach employees about home safety
 - Time-based virtual reality game
 - Using an Oculus Rift
 - Various scenarios inside & outside home
- Project Plan Document
 - Project plan skeleton done
 - Finished project plan presentation slides
 - Haven't started writing core of plan
 - Roughly halfway done



Team Auto-Owners

Status Report

[2 of 4]

House of Hazards

- Server Systems / Software
 - Github, repository set up
- Development Systems / Software
 - Unity, installed on all machines, tutorials done
 - Oculus Rift
 - Oculus Rift Touch Controllers
 - Oculus Rift Sensor
 - Oculus & peripherals need to be tested in Unity



Team Auto-Owners

Status Report

[3 of 4]

House of Hazards

- Client Contact
 - Met with client 9/8/17 in person
 - Scheduled meetings for Fridays at 3PM
- Team Meetings
 - Regularly schedule team meetings, whole team meeting at least once a week, Wednesdays after All Hands Meetings or Fridays after Triage Meetings.
 - Met as a team 4 times so far
- Team Organization
 - Brian, Ken, & Kevin assigned to Scripting & Testing
 - Matt & Fred assigned to Modeling & Asset Management



Team Auto-Owners

Status Report

[4 of 4]

House of Hazards

Risks

- Risk 1
 - Lack of HDMI port for Oculus
 - Obtain an adapter
- Risk 2
 - Oculus compatibility with MacOS
 - Use Windows VM
- Risk 3
 - Adapting prefab scripts with current Unity version
 - Code reviews of scripts
- Risk 4
 - No available Unity assets for some objects
 - Model assets



Team Avata

Status Report

[1 of 4]

Security Analytics Suite: Configuration Setup Tool

- Project Overview
 - Create new clients, add/edit roles, modules, and shift information
 - Create campuses, beats, and sub-beats
 - Create client specific crime taxonomy
- Project Plan Document
 - Skeleton has been created, with cover page and table of contents
 - Contains UI mockups and use cases
 - Architecture diagram is done
 - 15% completed



Team Avata

Status Report

[2 of 4]

Security Analytics Suite: Configuration Setup Tool

- Server Systems / Software
 - AWS Server is up and hosting backend
 - Client will be providing a MsSQL server in the future
 - Front-end has no server, looking at doing AWS
- Development Systems / Software
 - Two separate GIT repositories for front and back end
 - Jira board has stories for early project requirements
 - Slack is set up for communication. Jira is linked to Slack and provides logging information for story status updates
 - IntelliJ IDEA being used for development



Team Avata

Status Report

[3 of 4]

Security Analytics Suite: Configuration Setup Tool

- Client Contact
 - Have met thrice with client via Google Hangouts
 - Weekly Meeting: Every Tuesday 5pm-6pm
- Team Meetings
 - Have met in person thrice
 - Weekly Meeting: Every Tuesday 4:30pm-6:30pm for sprint planning
- Team Organization
 - Sean – PM Meenu – Front-end Lead
 - Ashley – Back-end Lead Zack – QA Chantz – SysAd



Team Avata

Status Report

[4 of 4]

Security Analytics Suite: Configuration Setup Tool Risks

- ArcGIS API
 - Algorithm for finding center of polygon and preventing collisions
 - Will create prototype using less complicated shapes (lines)
- Separate front and back ends
 - Never hosted front end on different server, normally bundle with back end
 - Research and use AWS server to test
- Data Hierarchy
 - Data structure for graphic campus/beat/sub-beat and crime/group/categories
 - Speak with client about the relationships between data points



Team Ford

Status Report

[1 of 4]

Ford Smart Park App

- Project Overview
 - Send notifications when available spots are in your area
 - Give reward incentives for users to scan open parking spots
- Project Plan Document
 - Some information recorded, not yet documented
 - 10% complete

Team Ford

Status Report

[2 of 4]

Ford Smart Park App

- Server Systems / Software
 - Windows Server 2016 Datacenter, Not Installed
 - SQL Server, Not Installed
- Development Systems / Software
 - Android Studio 2.3.3, Installed
 - Google Tango SDK, Installed
 - Sync 3 Emulator, Installed



Team Ford

Status Report

[3 of 4]

Ford Smart Park App

- Client Contact
 - Weekly Meetings on Fridays, at 1:30pm
 - Met twice via WebEx, in-person meeting today
- Team Meetings
 - Weekly Meetings on Wednesdays at 4:30pm
 - Met seven times in person
- Team Organization
 - Eric, Doug, and Rahul working on Mobile App
 - Helena, and Cheng working on Google Tango



Team Ford

Status Report

[4 of 4]

Ford Smart Park App Risks

- Google Tango Implementation
 - No proof of parking spot identification
 - Using SDK to manipulate Google Tango source code
- Server Installation Process
 - Backend server is not set up
 - Seeking help from faculty and look into alternatives (AWS)



Team GM

Status Report

[1 of 4]

Workplace Safety System

- Project Overview
 - Ensure GM factory workers are using correct Personal Protective Equipment (PPE)
 - Use image/object recognition and machine learning to recognize missing PPEs
 - Alert the area safety manager via SMS when issues arise
 - Provide web reporting of safety incidents to help identify patterns of concern to management
- Project Plan Document
 - Template is laid out
 - 10% completed
 - Expect to complete project plan by the next team meeting



Team GM

Status Report

[2 of 4]

Workplace Safety System

- Server Systems / Software
 - Amazon Web Services (AWS) – plan to train model using AWS
- Development Systems / Software
 - NVidia Deep Learning SDK – Going through Deep Learning Institute lectures and tutorials
 - NVidia Jetson Tx2 – Receiving them today
 - NVidia Deep Learning GPU Training System (DIGITS) – Need to setup on Jetsons



Team GM

Status Report

[3 of 4]

Workplace Safety System

- Client Contact
 - Weekly meetings with client every Wednesday from 9 a.m. – 10 a.m.
 - Plan to meet in person later in September with an on site plant tour
 - Damien Hong will be the student point of contact
- Team Meetings
 - Official team meetings held every Sunday from 3 p.m.
 - Five team meetings have been held
- Team Organization
 - Assigned roles for each part of the project
 - Steve – DIGITS/Web services
 - Michael – AWS
 - Damien – Training models
 - Ike – DIGITS
 - Marc – Web services/Mobile services



Team GM

Status Report

[4 of 4]

Workplace Safety System

Risks

- Training model to accurately recognize PPEs
 - Difficulty: Hard
 - Description: Training the model is straightforward, however we don't know how to effectively train a model with high accuracy.
 - Mitigation: Consult Machine Learning experts at NVidia, consult Deep Learning Institute kit, research tips and tricks online
- Emulating factory environment
 - Difficulty: Medium
 - Description: We don't know whether or not the environment will have an impact on model performance.
 - Mitigation: Model test environment to those shown in images. This includes adjusting lighting, wearing actual PPEs, and or the use of props.
- Choosing the right Deep Learning framework
 - Difficulty: Medium
 - Description: There are many Deep Learning frameworks available that DIGITS can utilize. Choosing the right one may have an impact on how well our model works.
 - Mitigation: Consult NVidia, deep learning experts, look through Deep Learning Institute kit
- Implementing mobile notifications
 - Difficulty: Easy
 - Description: Most developers on the team have never implemented mobile push notifications
 - Mitigation: Research SMS APIs, create prototype to receive notifications



Team Humana

Status Report

[1 of 4]

MyHumanaBot

- Project Overview
 - Automated chat service
 - Quickly responds to member questions
 - Humana information and specific member information
 - Alternative to phone call or emailing customer service
- Project Plan Document
 - Outline made
 - Executive Summary written
 - Draft of function specs written and critiqued by client
 - 20-25% complete



Team Humana

Status Report

[2 of 4]

MyHumanaBot

- Server Systems / Software
 - Microsoft Azure cloud hosting – Set up but need license for bot hosting
 - SQL Server – Architecture plan, but not set up
 - API.ai – Set up and proof of concept experimentation
- Development Systems / Software
 - Bot Emulator – Set up and tested
 - Microsoft Bot Framework – “Hello World” type bot
 - C# / .NET Core – Initial MVC set up



Team Humana

Status Report

[3 of 4]

MyHumanaBot

- Client Contact
 - Call every Tuesday at 3pm
 - In person meeting Wednesday, September 20
- Team Meetings
 - Whole group meeting 5 times so far
 - Plan to meet twice a week for remainder of project
- Team Organization
 - Madeline-Project Manager, Tynan-Backend Lead, Tony-Frontend Lead, Jason-Security Lead, Sharon-API.ai Lead
 - Slack, Trello, CSE GitLab



Team Humana

Status Report

[4 of 4]

MyHumanaBot

Risks

- Microsoft Azure Bot Services
 - Not sure if we will be able to host here for free
 - Emailing to check about student licenses
- Database
 - Unsure about how to host database and access the database tables from the Bot Framework and admin app
 - Research and watch tutorials, contact people with experience working with databases in .NET
- Machine Learning
 - Not sure if built in machine learning will work for our limited amount of data
 - Experiment and make more data if needed



Team Meijer

Status Report

[1 of 4]

Fresh-ipes

- Project Overview

- Simplify shopping experience using Amazon Echo Show or mobile application
- Determine current ingredients based on shopping history
- Integrate with Yummly API to find and suggest recipes
- Create shopping list of missing ingredients

- Project Plan Document

- Skeleton with basic information
- Individual portions complete
- Initial mockups and system architecture started
- Sent to client for review



Team Meijer

Status Report

[2 of 4]

Fresh-ipes

- Server Systems / Software
 - Microsoft Azure – access to the account
 - Microsoft SQL Server – need confirmation
- Development Systems / Software
 - Alexa Skills – access to dev account
 - Yummly API – access to dev account
 - Microsoft .NET (C#, ASP.NET) – VS installed and connected to VSTS



Team Meijer

Status Report

[3 of 4]

Fresh-ipes

- Client Contact
 - Initial call and high-level architecture explained
 - Scheduled calls Wednesdays before class
 - Email each day if questions arise
- Team Meetings
 - Meet almost daily during the week
 - Team meetings Tuesdays after triage
- Team Organization
 - Mobile/Xamarin: Charley
 - Web: Dan and Olive
 - Alexa Skill/Echo: James
 - SQL/Backend: Justin



Team Meijer

Status Report

[4 of 4]

Fresh-ipes

Risks

- Risk 1
 - How to integrate shopping history data
 - Create/gain access to database or parse with regex
- Risk 2
 - Sync state across mobile and Amazon Echo Show
 - Configure web app for mobile and Echo separately then integrate
- Risk 3
 - Integration with mPerks
 - Work closely with Meijer and ask a lot of questions



Team Michigan State University

Status Report

[1 of 4]

Spartan Experience App

- Project Overview
 - Developing the official campus mobile application for Michigan State University
 - Using iOS and Android
 - Target audience is current and prospective MSU students, as well as visitors
- Project Plan Document
 - We have divided sections of the project plan for each team member, and begun writing our project plan document.
 - Functional Specs: 70% done
 - Screen Mockups: 75% done
 - Design Specs: 25% done
 - System Architecture Diagram: 100% done
 - Technical Specs: 30% done
 - Schedule and Testing Plan: 30% done
 - Risks: 90% done



Team Michigan State University

Status Report

[2 of 4]

Spartan Experience App

- Server Systems / Software
 - AWS access is complete
 - Python AWS Lambda environment is running
 - PostgreSQL Database is running
- Development Systems / Software
 - GitLab, Trello, Slack collaboration set up
 - VMware Fusion 8 and Windows 10 VM Set up
 - Android Studio 3.0, Xcode 9 installed and tested
 - Python 3.6 installed and tested



Team Michigan State University

Status Report

[3 of 4]

Spartan Experience App

- Client Contact
 - Met with EJ, Tyler, and Spencer on Tuesday, September 5th
 - Met with Tyler and Spencer on Friday, September 8th
 - Scheduled a weekly in-person meeting every Friday
- Team Meetings
 - Our team has met four times (08/31, 09/05, 09/06, 09/10)
 - We have scheduled team meetings twice a week, every Sunday and Wednesday evenings
- Team Organization
 - Client Contact: Patrick Pale
 - Project Manager: Nayana Kodur
 - Android Lead: Roy Perryman
 - Back-End Lead: Scott Swarthout
 - iOS Lead: Ryan Johnson
 - Organize work and communicate through Slack and Trello



Team Michigan State University

Status Report

[4 of 4]

Spartan Experience App

Risks

- Risk 1
 - Access between separate university services
 - Take an inventory of which services are feasible to use and prioritize them
- Risk 2
 - No well-defined list for context-sensitive information categories.
 - Present a list of possible categories to our client, and prioritize them.
- Risk 3
 - RHS just updated the dining hall website, so we do not know whether or the not the RSS Feeds still exist
 - If RSS feeds to not exist, we will have to implement web-scraping techniques.
- Risk 4
 - No team experience working with beacon push notifications
 - Find example applications and implement a simple proof-of-concept application utilizing the technology.



Team Microsoft

Status Report

[1 of 4]

Enhanced Company Portal with Graph

- Project Overview
 - Android App
 - Mobile Device Management
 - Microsoft Graph API
 - Social Integration and IT Help Desk Chat
- Project Plan Document
 - Status: Finishing Touches
 - Risks Identified
 - Specifications identified
 - Mockups made
 - 85% complete



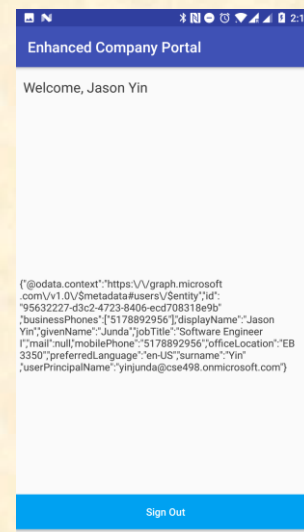
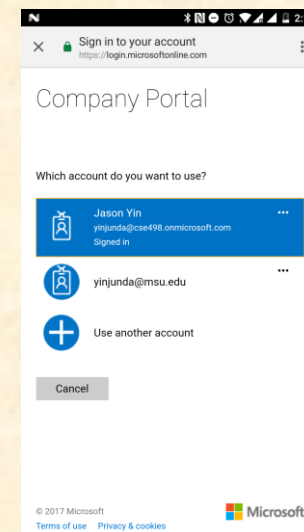
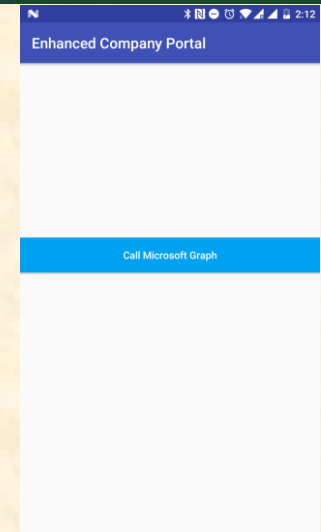
Team Microsoft

Status Report

[2 of 4]

Enhanced Company Portal with Graph

- Server Systems / Software
 - No On Premises Servers, Azure Setup
 - Enrollment with Microsoft Active Directory
 - Accounts with Microsoft Graph and Microsoft Intune
- Development Systems / Software
 - Android Studio installed
 - Physical Android Device tested
 - Skeleton App started
 - In-App MS Account Authentication tested
 - API Request tested



Team Microsoft

Status Report

[3 of 4]

Enhanced Company Portal with Graph

- Client Contact
 - Weekly calls Monday and Wednesdays at 9:45AM
 - 3 Team Calls made
- Team Meetings
 - 6 Team meetings
 - Meetings before all hands
 - Meet briefly on Tuesday/Thursday
- Team Organization
 - Structure
 - 1 Project Manager / Business Logic Developer
 - 2 App Designers
 - 2 Developers
 - OneDrive, Trello, Slack



Team Microsoft

Status Report

[4 of 4]

Enhanced Company Portal with Graph

Risks

- Microsoft Graph API (Hard)
 - Microsoft Graph REST API for all data consumption. Graph contains a vast amount of API's, must identify necessary API's
 - Review Graph API documentation to identify necessary API's. Design data models for JSON.
- Social Integration (Hard)
 - The team will identify features to incorporate in the app to drive application usage.
 - Review Graph API documentation to identify API's to use
- Identify Account Level (Moderate)
 - IT Admins can control/manage all users in domain. Currently no information in API documentation that displays this information.
 - Talk with client, use HTTP status to determine if user has permission
- Microsoft Teams (Easy)
 - Trial accounts cannot enroll with Microsoft Teams. Teams API will facilitate IT support chat.
 - Work with client to get our Azure tenant upgraded



Team Mozilla

Status Report

[1 of 4]

Taking Firefox Screenshot Testing Suite to 11

- Project Overview
 - Better integrate testing suite with Mozilla testing framework
 - Improve functionality and performance of testing suite
 - Increase reliability
 - Add test cases
- Project Plan Document
 - Functional skeleton set up
 - Developing rough draft
 - Communicating with clients to flesh out specifications
 - 10% complete



Team Mozilla

Status Report

[2 of 4]

Taking Firefox Screenshot Testing Suite to 11

- Server Systems / Software
 - Mozilla VC repositories
 - Mozilla Try servers
 - Mozilla automated testing
 - All maintained by Mozilla
- Development Systems / Software
 - Building local Firefox (Windows bug)
 - Connecting to Try
 - Mozilla technologies accessed by us



Team Mozilla

Status Report

[3 of 4]

Taking Firefox Screenshot Testing Suite to 11

- Client Contact
 - 2 meetings, every Friday
 - IRC
 - Weekend hackathon scheduled for Oct 14-15
- Team Meetings
 - 7 meetings, every Friday at least
 - Planning to meet 3-5 times a week
- Team Organization
 - Trello, IRC, GroupMe
 - Communications Director – Rand, Project Status Organization – Mike, Meetings/Scheduling Coordinator – Chris, Technical Specialist – Robin, Quality Control - Jack



Team Mozilla

Status Report

[4 of 4]

Taking Firefox Screenshot Testing Suite to 11 Risks

- Process of moving from Tier 3 to Tier 2
 - The internal process of Mozilla moving the code from Tier 3 to Tier 2 may take time
 - Attempt to leave a reasonable amount of time for bureaucratic processes
- Limited and disorganized documentation
 - Information is dispersed and sometimes nonexistent
 - Communication via IRC with specific developers, personal documentation
- Learning Mozilla specific technologies
 - Mozilla has many in-house technologies: JSM, XUL/XBL, Mach, Try servers, Mercurial
 - Identify the relevant technologies and restrict our focus to those only



Team MSUFCU

Status Report

[1 of 4]

Digital Banking with Chatbots

- Project Overview
 - Automate support with the ability to still transfer to live chat if needed
 - Leverage natural language processing
 - Integrate with Alexa, Mobile App, Website
 - Support SMS and iMessage
- Project Plan Document
 - Functional and Design Specs(50% done)
 - Mockups(75% done)



Team MSUFCU

Status Report

[2 of 4]

Digital Banking with Chatbots

- Server Systems / Software
 - MSUFCU API to access sample bank data (requested, not obtained yet)
 - Twilio API to integrate SMS messaging (have tested, working)
 - API.AI, Amazon Lex (have played with a bit)
- Development Systems / Software
 - Android Studio for Mobile App is running
 - API.AI, Amazon Lex (have played with a bit)
 - Node.JS/Express (not setup yet)
 - Webstorm (have tested, working)



Team MSUFCU

Status Report

[3 of 4]

Digital Banking with Chatbots

- Client Contact
 - Met with twice(1 conference call, 1 in person)
 - Weekly in person meetings on Wednesdays @ 5pm
- Team Meetings
 - Weekly client meetings on Wed., met once and called once
 - Weekly team meetings before class on Wed., met 5 times
- Team Organization
 - Project Managing: Josh and Cori
 - Gus: iOS/Android, Chuanyun: Web App/Database, Cori: NLP/Android, Josh: Google Action/API, Syed: Alexa/API



Team MSUFCU

Status Report

[4 of 4]

Digital Banking with Chatbots

Risks

- Risk 1
 - Potential vulnerability of intercepting confidential data from database
 - Integrate SSL to create an encrypted tunnel between client and server
- Risk 2
 - Gaining access to an unauthorized bank account
 - Implement robust user access control to provide access to authorized users only
- Risk 3
 - Client wants apps on a variety of different platforms
 - Determined Google's API.AI is the best fit as it has integrations for multiple platforms. Prioritizing which platforms to focus on through user usage statistics
- Risk 4
 - Google and Amazon's NLP understanding inputs like bank account #'s
 - Testing recognition percentages of complex numbers and inputs on devices



Team Phoenix Group

Status Report

[1 of 4]

OPEN v2.0: Smart Order Picking

- Project Overview
 - Goal is to improve warehouse operations
 - Plan is to use BLE devices for micro-location services based on a digital map of the warehouse
 - Workers will be given an optimized/quickest route to traverse the warehouse and fulfill their pick ticket
 - Inventory Control, things like shelf quantities and other changes to bin locations will be tracked as well
- Project Plan Document
 - Project Plan is coming along well, everyone is contributing to their portion of the document.
 - It has been started, should be finished soon so we can practice our parts for the presentation.
 - Percentage complete is about 85%



Team Phoenix Group

Status Report

[2 of 4]

OPEN v2.0: Smart Order Picking

- Server Systems / Software
 - Amazon Web Service (AWS) Server has been set up
 - Amazon R2 Server is up
 - Ubuntu Server installed on our server in capstone lab
- Development Systems / Software
 - Source code has been received and compiled in Visual Studio 2015. Runs well
 - BLE Devices, both short and long range have been ordered
 - VM has been configured along with needed IDE's on capstone lab computers, "Hello World!" test in C# WPF .



Team Phoenix Group

Status Report

[3 of 4]

OPEN v2.0: Smart Order Picking

- Client Contact
 - We have had multiple Zoom meetings with our client and one Face to Face meeting (cut short) along with various Emails
 - We will be in contact to schedule a weekly Zoom meeting to talk about the week's goals and progress of the project. Every Tuesday/Thursday.
- Team Meetings
 - We have met almost every weekday since the project was assigned, much more progress due to in person meetings
 - We have two scheduled team meetings per week, as well as impromptu meetings throughout based on availability.
- Team Organization
 - We have divided what work we think needs to be done throughout the semester. (Eg. Server Side, Client Side, SQL and Fastest Path Algorithm)
 - We have a git repo, Slack Messaging, a Trello Board, Outlook Calendar, Zoom Web Conferencing to help us stay organized and on task!



Team Phoenix Group

Status Report

[4 of 4]

OPEN v2.0: Smart Order Picking

Risks

- BLE Beacon Integration
 - Working with BLE devices, worried about the range as well as the fluxuation in power of the signals that they emit. Staying connected and triangulating a current location of the user.
 - Research different software (3 types) to use along side the devices. Test beacons in several rooms with different types of obstacles and environments.
- Intense calculations on the tablet
 - Power consumption on Windows Surface Pro due to intense calculations. We will have to calculate shortest/most effective path, along with making calls to SQL server for Inventory Control
 - Look into doing the calculations on the backend. Constant critiquing of code to ensure a minimal loss of efficiency.
- Best Absolute Path Algorithm
 - Finding the absolute path for our picker in real time. This algorithm will have to be fast/efficient.
 - Research fastest path algorithms to either find a library that will provide an efficient solution, or create our own.
- Distributed System
 - Working on making the app have a distributed system. Multiple pieces running in different places can work, but we must be careful when connecting them.
 - Make sure that our servers are setup correctly, research efficient ways to connect them.



Team Rook

Status Report

[1 of 4]

Cloud Security Event Processing and Alerting Platform

- Project Overview
 - Build a web application used by security analysts.
 - Manage Correlation Rules
 - Edit existing rules.
 - Examine performance of new rules.
 - Upgrade and migrate current rule engine.
 - Notify support and stakeholders when rule is triggered.
 - Integrate into Rook's Force Platform.
- Project Plan Document
 - 25% complete
 - Rough draft of executive summary complete.
 - Rough draft of functional specifications complete.
 - Risk section complete



Team Rook

Status Report

[2 of 4]

Cloud Security Event Processing and Alerting Platform

- **Server Systems / Software**

- **Ubuntu Server with Nginx + Django (Amazon Web Services EC2)**
 - Serving front end application
 - RESTful API to reach backend
- **Amazon Web Services**
 - S3, Athena, Simple Email Services, Lambda, and Elastic Search
 - Python, SQL, and JSON
- **Front End**
 - HTML, CSS, and Javascript (React/Redux)

- **Development Systems / Software**

- Visual Studio Code and PyCharm for IDEs
- Git (Bitbucket) for version control
- Jira (Atlassian) for sprint planning



Team Rook

Status Report

[3 of 4]

Cloud Security Event Processing and Alerting Platform

- Client Contact
 - Met with client in person twice last week. Daily communication via hipchat and gmail.
 - Weekly conference call scheduled for Wednesday mornings at 9:10.
- Team Meetings
 - To date we have met 5 times.
 - We plan to meet on Tuesdays, Thursday, and Fridays.
- Team Organization
 - Team Roles
 - Front End – Jake, Brad
 - Back End – Brian, Alex
 - Full Stack - Kaushik



Team Rook

Status Report

[4 of 4]

Cloud Security Event Processing and Alerting Platform

Risks

- Risk 1 - Integrating Django w/ AWS Authentication. Where do we store AWS credentials?
 - Will figure out mitigation strategy out as soon as we get our teams AWS credentials.
- Risk 2 - How will we notify people of alerts? Needs to be configurable from frontend.
 - Build a “hello world” using Amazon Simple Email Services.
- Risk 3 - Migrate the existing log processing engine to serverless lambda functions.
 - Lots of redundancy; Refactor? Doing so could constitute project scope creep.
 - Continue dialogue on the topic with client. Further explore the possibility by reviewing existing source code.
- Risk 4 - Cannot Start UI until backend is functional.
 - We will attempt to use “storybook” to build front end components without a functioning backend.
- Risk 5 – Everything must be within the Rook network.
 - Use existing vpn client provided by Rook.



Team Spectrum Health

Status Report

[1 of 4]

Symptom Checker

- Project Overview
 - Users input symptoms.
 - From there, the app determines what type of care they need (urgent care, ER, etc.).
 - The app can then schedule an appointment for the user if necessary.
- Project Plan Document
 - Plan document skeleton has been created with names filled in.
 - Executive Summary also written.
 - Functional, technical, and design specifications still need to be written.



Team Spectrum Health

Status Report

[2 of 4]

Symptom Checker

- Server Systems / Software
 - Azure server set up with Microsoft SQL Server configured.
- Development Systems / Software
 - Android Studio installed and starter project created.
 - Xcode installed and starter project created.
 - Github repositories set up with projects committed.
 - Zenhub agile development cards set up for Github repos.
 - Visual Studio with .NET Core 2.0 is set up with a starter project and sample models.



Team Spectrum Health

Status Report

[3 of 4]

Symptom Checker

- Client Contact
 - Met on Friday, 9/8, in Grand Rapids
 - Scheduled weekly conference calls, as well as team lead check-in.
- Team Meetings
 - Scheduled weekly meeting with GVSU team.
 - Have met 4 times so far.
- Team Organization
 - Appointed client contact/team lead, Chris McGrath.
 - Other members have decided on development focuses, but have yet to be assigned strict roles.



Team Spectrum Health

Status Report

[4 of 4]

Symptom Checker

Risks

- Risk 1
 - We are working out of a shared codebase/architecture with a capstone team from GVSU.
 - To mitigate this, we are planning on using our previous mobile development experience to establish the architecture as quickly as possible.
- Risk 2
 - We need to determine and implement a machine learning algorithm for matching user input to clinical symptoms.
 - One of our group members has experience in algorithms, as well as contact with professors in this field.
- Risk 3
 - We have to handle/potentially secure a portion of the app for paying bills.
 - We will look into their current web platform for bill payment, as well as discussing this feature further with the client.



Team Symantec

Status Report

[1 of 4]

Secure Application Layer API Proxy

- Project Overview
 - Modernize web interface to Symantec's VIP System
 - Acts as a secure intermediate layer for pre-existing interface
- Project Plan Document
 - Project Plan is 30% done
 - Primitive architecture design has been created
 - Development systems agreed upon



Team Symantec

Status Report

[2 of 4]

Secure Application Layer API Proxy

- Server Systems / Software
 - VIP Manager account created
 - Access to VIP's SOAP API granted
- Development Systems / Software
 - Windows 10 VM installed and working
 - Using C# and Visual Studio 2017
 - Version control using Gitlab
 - "Hello World" API setup and working



Team Symantec

Status Report

[3 of 4]

Secure Application Layer API Proxy

- Client Contact
 - Conference called with Shantanu on 9/7
 - Recurring call with Shantanu on Thursdays @ 4:30 PM
- Team Meetings
 - Team has met 6 times (Triage meetings, Conf. calls, etc.)
 - Team will be meeting on Monday-Thursday after 4:30pm.
- Team Organization
 - Jacob Carl – Client Contact, Security Engineer
 - TJ Kelly – Software Design & Test Engineer
 - Steven Kneiser – Software Design & Test Engineer
 - Lauren Allswede – Project Manager, Security Engineer
 - Yili Luo – Security & Test Engineer



Team Symantec

Status Report

[4 of 4]

Secure Application Layer API Proxy Risks

- Load testing abilities are slim
 - Cannot test multiple calls for requests at once
 - Talk with client about multiple mock accounts
- VIP API documentation
 - Documentation may be incomplete
 - Work with client to clarify misunderstandings
- No Access to Symantec's VIP API
 - Do not have admin access to work with existing SOAP API
 - Contact Dr. D if not resolved by Thursday



Team TechSmith

Status Report

[1 of 4]

TechSmith Director

- Project Overview
 - Creating video content is a challenge
 - Enable a friendly interface to stage a video
 - User will speak into a microphone
 - Application will return scene for video based on user request
- Project Plan Document
 - 90% Done
 - Still need to finalize Database Schema
 - Proofread



Team TechSmith

Status Report

[2 of 4]

TechSmith Director

- Server Systems / Software
 - Microsoft Azure – Account Activated by Client
 - SQL Server – Test DB Setup and Connected to Visual Studio
- Development Systems / Software
 - .NET “Hello World” Web Application Setup In Visual Studio and published to Azure
 - Microsoft Cognitive Services API – Tested, but Not Yet Setup
 - SoundCloud API – Not Yet Setup
 - Bing Image Search API – Not Yet Setup



Team TechSmith

Status Report

[3 of 4]

TechSmith Director

- Client Contact
 - Initial Client Meeting On-Site last week Tuesday
 - Weekly Conference Call Set for Tuesdays at 4 PM over Google Hangouts
- Team Meetings
 - Weekly Meeting after class Monday and Wednesday
 - Set Tuesdays at 3 PM in Capstone Lab
 - Have Met 6 Times Already
 - Meeting As Available Other Times – Organizing Over Slack
- Team Organization
 - Pranay – Client Contact
 - Jake – Project Manager
 - Planning to split up frontend and backend work



Team TechSmith

Status Report

[4 of 4]

TechSmith Director Risks

- Microsoft Azure Computing Resources
 - Video playback needs a lot of computing power
 - Limit the number of API Calls outside of Azure
 - Research each Azure tier and consult with Client to determine optimal resource allocation
- Video Animation and Playback in .NET
 - We don't know how we will animate the videos and play them back
 - Determine capabilities of Microsoft Media Foundation SDK to determine if it will suit the needs of the application
 - Find another SDK to enable video animation and playback in our application
- Storing Video Project State
 - Users can have multiple projects and our application must be able to store and retrieve the progress they have made on each one
 - Research how to store and retrieve the state of assets in the video using JSON or XML
- Microsoft Cognitive Services Speech API
 - We do not know the extent of the capabilities of the API
 - Run "stress tests" by making long, outrageous requests and record the accuracy of the results



Team Two Men and a Truck

Status Report

[1 of 4]

Online Moving Estimator

- Project Overview
 - Online moving quote estimator
 - Text and video chat with Customer Service Representative (CSR)
 - Mobile app with image recognition
 - Appointment scheduling feature
- Project Plan Document
 - Early stages - 10% complete
 - Assigned team members to specific sections

Team Two Men and a Truck

Status Report

[2 of 4]

Online Moving Estimator

- Server Systems / Software
 - Already have chat prototype running on Arctic
 - Will set up AWS instance this week for signaling server
- Development Systems / Software
 - webRTC for video and text chat
 - PHP/Javascript, PHPStorm
 - openCV (Python) for image processing
 - PHP Ratchet for signaling server
 - PHPMyAdmin for SQL database



Team Two Men and a Truck

Status Report

[3 of 4]

Online Moving Estimator

- Client Contact
 - Scheduled weekly conference calls
 - Initial prototype meeting
 - Currently coordinating an in person meeting
- Team Meetings
 - Weekly meeting Wednesday after class
 - Met several times already
- Team Organization
 - Clay - Program Manager, Daria - Image recognition SME, James - webRTC SME, Kevin - Database SME, Liyang - UX SME



Team Two Men and a Truck

Status Report

[4 of 4]

Online Moving Estimator

Risks

- Video Conferencing
 - No team member has experience with webRTC or video conferencing
 - Figured out text chat, already sourced useful tutorials
- Recognizing volume based on image classification
 - Don't know if estimate will be accurate
 - Sourced examples of a similar process with food density on a plate
- Writing a signaling server
 - No team member has experience with this
 - Sourced libraries and tutorials, also can use existing services as backup



Team Union Pacific

Status Report

[1 of 4]

RailBuilder: The Great Race to Promontory

- Project Overview
 - Generate 3D terrain using information from USGS
 - Populate and texture the terrain based on land classification
 - Build a game to showcase the above functionality
- Project Plan Document
 - Approximately 85% completed
 - Working on generating graphics and concept images
 - ~22 pages in length



Team Union Pacific

Status Report

[2 of 4]

RailBuilder: The Great Race to Promontory

- Server Systems / Software
 - Currently working on pulling data from USGS
 - All files for this project will be stored locally
- Development Systems / Software
 - Unity 2017 has been set up on our personal and lab machines
 - Visual Studio 2017 will be used to support the newest .NET framework within unity
 - Looking into using external libraries for unzipping USGS compressed files
 - All 3D models and assets have been provided by Union Pacific



Team Union Pacific

Status Report

[3 of 4]

RailBuilder: The Great Race to Promontory

- Client Contact
 - First in person client meeting was Thursday the 7th
 - Weekly meetings will occur on Thursdays at 3pm
- Team Meetings
 - Team Meetings are scheduled for Tuesdays and Thursdays at 2pm, and Wednesdays before and after class
- Team Organization
 - Team lead – Trever Daniels
 - Client Contact - Jacob Young
 - Front End Systems – Zach Brenz, Kyle Bush, Trever Daniels
 - Back End Systems – Jacob Young, Declan McClintock



Team Union Pacific

Status Report

[4 of 4]

RailBuilder: The Great Race to Promontory

Risks

- Retrieving and Interpreting Terrain Data From USGS
 - Pulling zip files from the USGS site and translating them into numbers for our system
 - Mitigation: Working with our contacts from Union Pacific to see how they get the data
- Creating Terrain Using Height Values
 - Applying the height values from USGS maps into a 3D visualization
 - Mitigation: Generating terrain with random heights
- Texturing Terrain Based on Land Classification
 - The 3D terrain should look like its real world counterpart
 - Mitigation: Using basic colors to classify specific parts of the terrain
- Intelligently Place Environment Assets on the Terrain
 - Place trees, roads, and buildings onto the terrain at different heights
 - Mitigation: Placing assets randomly based on terrain and asset height



Team Urban Science

Status Report

[1 of 4]

KPI Kruncherz

- Project Overview
 - Create responsive web application
 - User Base: Car Dealership Employees
 - Recommend actions based on user's questions and current performance
- Project Plan Document
 - Skeleton Document
 - Analyzed Risks
 - Technical Specifications Outline



Team Urban Science

Status Report

[2 of 4]

KPI Kruncherz

- Server Systems / Software
 - Localhost set up for initial deployments
 - Microsoft MySQL Server Management Studio
 - Populated table with created data
- Development Systems / Software
 - ASP.NET
 - Simple app running
 - .NET Core 2.0
 - Azure – MS Cognitive Services
 - Keyword Finder integrated
 - Other APIs in works

Team Urban Science

Status Report

[3 of 4]

KPI Kruncherz

- Client Contact
 - Weekly meetings every Wednesday afternoon
 - On-site meeting last Friday - discussed business practices
- Team Meetings
 - Weekly meetings Monday and Wednesday
 - Three meetings completed
- Team Organization
 - Will Renius - Project Manager
 - James Grenfell - Client Contact
 - Development tasks divided



Team Urban Science

Status Report

[4 of 4]

KPI Kruncherz

Risks

- Web app vs native app
 - May want to create native mobile app to best serve client
 - Develop responsiveness early to determine if web-app serves goals well
- Keyword/KPI mapping
 - Accurate guesses to KPIs from user input
 - Test other NLP Api
- Dataset
 - We are not provided with any real data and are creating dummy data
 - Use NLP methods that won't require training on questions and results



Team Yello

Status Report

[1 of 4]

Automatic Resume Verification

- Project Overview
 - Verifying work and school credentials.
 - Submit credentials to web application.
 - Uses blockchain technologies.
 - Protects user data through one-way hashing.
- Project Plan Document
 - Underway
 - Outline finished
 - 15% done
 - Sections assigned



Team Yello

Status Report

[2 of 4]

Automatic Resume Verification

- Server Systems / Software
 - AWS Server Instance
 - Python 3.6
 - Blockchain
- Development Systems / Software
 - Ruby on Rails
 - Web App
 - RESTful API



Team Yello

Status Report

[3 of 4]

Automatic Resume Verification

- Client Contact
 - Weekly conference calls scheduled
 - Client point of contact assigned
- Team Meetings
 - Triage Meeting Wednesdays
 - Group Meetings Fridays
- Team Organization
 - Ryan is point of contact
 - Nathaniel is in charge of the blockchain
 - Brandon has the most web development experience



Team Yello

Status Report

[4 of 4]

Automatic Resume Verification

Risks

- Scalability and Security
 - Might not meet client specifications, proof of source issues
 - Explain problems to client and re-structure the specifications
- Custom Blockchain
 - Client requested Ethereum although a custom one would work better
 - Explain to client the benefits of a custom blockchain
- Unfamiliar Web Framework
 - Group is not familiar with web application development
 - We will take time to learn it together as a team, pdfs sent out (books).
- Unfamiliar with RESTful APIs
 - In addition, group has not worked with the creation of RESTful APIs.
 - Documentation and research on how to create a RESTful API.

