

09/11: Teams Status Reports

The Capstone Experience

Department of Computer Science and Engineering
Michigan State University

Fall 2019



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

Team Accenture

Status Report

[1 of 4]

Email Classification using Machine Learning

- Project Overview
 - Downloaded software
 - Tested IDEs
 - Going over machine learning/AI documentation and tutorials
 - Getting access to GIT repository, Jira, MongoDB etc.
- Project Plan Document
 - 20% complete in total
 - Created document skeleton
 - Finished Executive Summary and schedule, started all other sections



Team Accenture

Status Report

[2 of 4]

Email Classification using Machine Learning

- Server Systems / Software
 - MongoDB – waiting for permission to access data
- Development Systems / Software
 - Installed Tensorflow, Python – running properly
 - Installed PyCharm for IDE – running properly
 - Flask and Bootstrap chosen/tested for web development



Team Accenture

Status Report

[3 of 4]

Email Classification using Machine Learning

- Client Contact
 - Met with client last week
 - Set-up weekly call on Wednesday/Friday, twice a month trainings
- Team Meetings
 - Weekly meetings twice a week(Tuesday and Thursday)
 - Met 7+ times already
- Team Organization
 - Varsha Odapally – Client Contact, Front-end, Back-end(clustering)
 - Sofia Colella – Team Lead, Front-end, Back-end(model training)
 - Kevin Wilson – Front-end, Back-end(main)
 - Griffin Carr – Front-end, Back-end(main)
 - Yuyu Su – Front-end(main), Back-end



Team Accenture

Status Report

[4 of 4]

Email Classification using Machine Learning

Risks

- Risk 1 (high priority)
 - Having bad/not enough data
 - Create our own data
- Risk 2 (high priority)
 - Determining a ranking system to list spam emails in terms of harm
 - Discuss with our client to determine important features/data of the emails, compare the pros/cons of each
- Risk 3 (medium priority)
 - Model output interpretation
 - Modify the output to create a clear flow for all
- Risk 4 (medium priority)
 - Risk of having “High Bias”(underfitting) or “High Variance”(overfitting)
 - Do a Train-Test Split of our data (Train model on 70% of data, measure error rate on remaining 30% of data)



Team Amazon

Status Report

[1 of 4]

SPARTI

- Project Overview
 - SPARTI - Selling Partner Application Ready To Integrate
 - SPARTI will include turn-key integration with AWS infrastructure to enable developers to rapidly prototype and launch their applications

Project Plan Document

- Skeleton Document Created
- 30% done with Functional Specifications
- 20% done with Design Specifications
- 15% done with Technical Specifications



Team Amazon

Status Report

[2 of 4]

SPARTI

- Server Systems / Software
 - Permission acquired for AWS services (ie. ECS, S3, DynamoDB)
 - Example web app spun up on ECS
 - Connected to Amazon Selling Partner API (successful requests in Postman)
- Development Systems / Software
 - Example .NET Web application created and stored in Git repo
 - 4 mock web pages created in PowerPoint/AdobeXD
 - Created a data flow diagram for interacting with SPAPI



Team Amazon

Status Report

[3 of 4]

SPARTI

- Client Contact
 - Weekly Conference Call Friday 9:45 am
 - First meeting was 09/06
- Team Meetings
 - Sunday and Tuesday Nights
 - 6 Team Meetings
- Team Organization
 - Front-End Devs: Rose, Noah; Back-End Devs: Jordan, Tyler, Matt
 - Program Manager: Jordan; Amazon Contact: Matt; Designer: Rose; Front-End Dev: Noah; Scrum Master: Tyler



Team Amazon

Status Report

[4 of 4]

SPARTI

Risks

- Risk 1
 - Specific use cases of end users is unclear
 - Clarify with the client and discuss possibility of contacting existing users
- Risk 2
 - We do not know what type of front end would be useful for the end user
 - We will present mockups to our client to receive feedback
- Risk 3
 - We do not fully understand the containerization of .NET core applications within AWS
 - Work through deploying a simple containerized .NET application to ECS
- Risk 4
 - Securely handling end users' AWS credentials and other secrets
 - Research AWS technologies and discuss best practices with client



Team AppDynamics

Status Report

[1 of 4]

BizIQ Flow Map Using Sequential Analytics Data

- Project Overview
 - Create a flow map to quickly identify potential IT problems
 - Ability to track single request, an average of all requests, or all requests from a user
 - Every node of Flow Map may have several child nodes
 - Make use of AppDynamics REST API and APM for analytics
- Project Plan Document
 - Skeleton Document Created
 - Assigned Tasks to each member
 - Initial screen mockup created along with some functional specifications.
 - ~15% done



Team AppDynamics

Status Report

[2 of 4]

BizIQ Flow Map Using Sequential Analytics Data

- Server Systems / Software
 - Capstone Server set up and running
 - Web server available
 - AppDynamics trial controller
- Development Systems / Software
 - Linux based development system
 - Node.js - Simple weather app 100% completed with API calls integrated
 - D3.js - made simple programs (Draw a sample flow)
 - Git Repository on Capstone Server – 100% completed



Team AppDynamics

Status Report

[3 of 4]

BizIQ Flow Map Using Sequential Analytics Data

- Client Contact
 - Have contacted clients 3 times
 - Weekly Conference call on Fridays at 2:00
- Team Meetings
 - Met as a team 3 times
 - Weekly meeting Fridays after conference call for an hour
- Team Organization
 - Ben – Client Contact, Quinton – System Administrator
 - Tom – Project Manager, Carter - Developer, Naifu - Developer



Team AppDynamics

Status Report

[4 of 4]

BizIQ Flow Map Using Sequential Analytics Data

Risks

- Risk 1
 - Unable to create dynamic flow map using D3.js
 - Contact googles team last year. They had similar flow map design and used D3.js.
- Risk 2
 - Proper management of large datasets.
 - Identify key information to store. Make use of proper storage techniques.
- Risk 3
 - Unable to integrate AppDynamics API with Node.js
 - Thoroughly research API documentation and communicate with client.
- Risk 4
 - Optimizing the analytics for multiple different customers of clients
 - Extensive testing of various datasets of different customers



Team Auto-Owners

Status Report

[1 of 4]

“Danger Diner” VR Training

- Project Overview
 - Simulate a restaurant in a Virtual Reality environment
 - Include interactable objects that pose potential safety hazards
 - Let the user find potential hazards and good safety practices
 - Train the user to recognize such hazards/practices in a fun and engaging way
- Project Plan Document
 - Project Plan: 50% complete
 - Functional and design specifications finished, need more for system specs
 - Still considered a rough draft
 - Solidify System Architecture and Mockups
 - Milestone goals



Team Auto-Owners

Status Report

[2 of 4]

“Danger Diner” VR Training

- Development Systems / Software
 - Unity Game Development Software
 - SteamVR
 - C#
 - Oculus Rift Virtual Reality Headset
 - Separate desktop
 - Started development on basic VR environment
 - Object interactions and movement



Team Auto-Owners

Status Report

[3 of 4]

“Danger Diner” VR Training

- Client Contact
 - First meeting with our client was on site
 - Conference calls every Thursday at 1:00 P.M.
 - May visit on-site, client may visit us
- Team Meetings
 - We meet every Thursday at 10:00 A.M.
 - Triage Meeting every Wednesday at 9:20 A.M.
- Team Organization
 - Max DeDona – Mechanical Programmer
 - Max Dudley – System Programmer & Client Contact
 - Jillian Tosolt – Project Manager & Technical Designer
 - Xuexian Xie – UX Designer



Team Auto-Owners

Status Report

[4 of 4]

“Danger Diner” VR Training

Risks

- **Motion Sickness**
 - VR causes a wide range of reactions, but the majority should be able to play without being sick after the first few minutes
 - Preventative measures in U.I. design and methods of movement
- Recognition of Interactable Objects
 - Users may not be able to tell what can be tagged/interacted with
 - Specific Indicators (i.e. material, glow)
- Differentiation of similar objects that change
 - Some objects are expected to change between rounds/playthroughs
 - Different models, possible interaction-based changes (i.e. fridge light being on/off)
- Knowledge retention from game
 - While it may be fun, will this game teach the practices we hope to teach?
 - Randomizing locations and certain objects, leaderboard of scores



Team Bosch

Status Report

Integration and Testing Suite for ADAS Radar Sensors

- Project Overview
 - Git Pull Request triggers a Jenkins job
 - Jenkins triggers Unit tests
 - Unit Tests Flash Hexcode Onto the Radar
 - Upon Failure of Tests Jenkins and Github Prevent Merging
- Project Plan Document
 - Schedule: 100% (subject to change)
 - Technical Specifications: 50%
 - Design and Basic Formatting: 100%
 - Executive Summary: 50%
 - Risk Assessment: 75%



Team Bosch

Status Report

Integration and Testing Suite for ADAS Radar Sensors

- Server Systems / Software
 - Github Repository: Established
- Development Systems / Software
 - Jenkins: Local host established
 - CANape: Acquiring Friday
 - Hardware: Radar Sensor: Acquiring Friday



Team Bosch

Status Report

Integration and Testing Suite for ADAS Radar Sensors

- Client Contact
 - Weekly Conference Call: Tuesdays at 8 am
 - In Person Meeting: Friday the 13th
- Team Meetings
 - Weekly Team Meetings: Friday 2-4 pm
 - More Scheduled as needed
- Team Organization (subject to change)
 - Client Contact, Testing Developer: Jesse McClay,
 - Jenkins Head Developer: Nick Grenn
 - Project Manager, Testing Developer: Jana Holderbaugh
 - Distributed Computing Developer: Evan Martin
 - Testing Developer: Wei Li



Team Bosch

Status Report

Integration and Testing Suite for ADAS Radar Sensors

Risks

- Risk 1 (Medium)
 - Job Weight Distribution Optimization
 - Will Research Job Distribution in Jenkins
- Risk 2 (High)
 - Flashing Hexcode onto the Radar
 - Radar Testing Simulations Required for the Unit Tests
- Risk 3 (Medium)
 - Radar Hardware and Software Limitations
 - Ask Bosch in Depth Questions about the Technology, because we don't have access to their code
- Risk 4 (High)
 - No Prior Knowledge of CANape
 - Research the Coding Capabilities and How Testing Works With the Radar



Team Dow

Status Report

[1 of 4]

3D Product Showcase Application

- **Project Overview**

- Mobile application
- 3D product catalogue
- Provide ability to move and rotate product models in AR
- Ability to change the color, size, and material of the product in AR
- Highlight detailed product information in AR

- **Project Plan Document**

- Functional spec 70% complete - Written but needs to be reviewed
- Design spec 40% complete - Initial screen mockups complete
- Technical spec 10% complete – Software descriptions complete
- System architecture 40% complete – Initial draft drawn
- Overall 30% - Needs to be fleshed out and cleaned up



Team Dow

Status Report

[2 of 4]

3D Product Showcase Application

- **Server Systems / Software**

- Waiting for confirmation to switch from SharePoint to Microsoft Azure for storing model information

- **Development Systems / Software**

- Unity 2019.2.4f1 set up and working for new application
- Beginning development of simple Unity AR Foundation app
- Unity 2018.2.20f1 set up and working for legacy application
- Git repository and workflows set up and working with Unity



Team Dow

Status Report

[3 of 4]

3D Product Showcase Application

- **Client Contact**

- Have had three conferences with client and communicated through email
- Weekly conference call: Wednesday 2:00pm-2:30pm

- **Team Meetings**

- Met eight times already
- Meet Tuesday, Thursday, and Sunday evenings

- **Team Organization**

- Trello board for task assignment
- Discord for communication
- Client contact / Full-stack – Leith Chatti
- Project Manager / Back-end – Jacob Marcus
- Lead developer / Full-stack– Brandon Garrison
- Tester / Front-end – Jiran Yang



Team Dow

Status Report

[4 of 4]

3D Product Showcase Application

Risks

- **Model Viewing in Unity AR Foundation**
 - **Description:** AR model viewer needs to be built with Unity AR Foundation
 - **Mitigation:** Build simple app with AR foundation
- **Undocumented Legacy Project**
 - **Description:** Legacy project has little to no documentation
 - **Mitigation:** Test and incorporate only code that would be difficult to implement
- **Relational Database in Microsoft Azure**
 - **Description:** Relational data cannot be stored effectively in SharePoint
 - **Mitigation:** Use Microsoft Azure to build a relational SQL database
- **Deploying Application to IOS**
 - **Description:** Application must work on both IOS and Android devices
 - **Mitigation:** Deploy “Hello World” application to IOS



Team Evolutio

Status Report

[1 of 4]

ERP Air Force: Drone Elephant Recognition and Tracking

- Project Overview
 - Distinguish between Rhinos and Elephants
 - Image Recognition of individual Elephants
 - Predictive Elephant GPS Tracking
- Project Plan Document
 - Skeleton made
 - Risks completed
 - Executive summary completed
 - 20% completed



Team Evolutio

Status Report

[2 of 4]

ERP Air Force: Drone Elephant Recognition and Tracking

- Server Systems / Software
 - Requested HPC access
 - Planned Database for GPS data and file paths to stored media files
- Development Systems / Software
 - Repository setup
 - Using Virtual environment to manage python libraries
 - Setup Hello World version of API (Python Flask)
 - Trained initial model (YOLOv3)
 - UI wireframes have been made (Using Vue.js)



Team Evolutio

Status Report

[3 of 4]

ERP Air Force: Drone Elephant Recognition and Tracking

- Client Contact
 - Three calls completed
 - Weekly meetings at Tuesday 8:30 am
 - Slack channel for daily communication
- Team Meetings
 - 7 meetings completed
 - Monday and Wednesday at 4:30 pm
- Team Organization
 - Tyler: Web Dev, Project Manager, and Client Contact
 - Jeremy & Nic: Predictive Tracking
 - Rei, & Kunyu: Elephant Image Recognition



Team Evolutio

Status Report

[4 of 4]

ERP Air Force: Drone Elephant Recognition and Tracking Risks

- Drone Footage not fit for model
 - Resolution limits ability to label and detect elephants
 - Request closer drone footage
- Lack of Verification Data
 - Unable to verify an identified elephant is truly the same elephant
 - Use famous elephants to develop similarity metrics
- Quantity of GPS data
 - Need GPS data from a long period of time to accurately predict movement
 - Use data from other sources
- Elephants Indistinguishable from above
 - Elephant image recognition is not necessarily possible from a drone
 - Focus more on trail cam footage and GPS prediction



Team Ford

Status Report

[1 of 4]

Ford Mobility Product Metrics

- Project Overview
 - Measure Ford API: Traffic and latency
 - embed pixel tracker in Ford API and update database
 - Create a chatbot engine for WebEx Teams and Slack
 - For example: /bot [command]
 - Create dashboard and interface for api data
- Project Plan Document
 - Title, Cover, Table of Contents, & Schedule are finished. The other pages have a paragraph or more
 - data flow diagram for design
 - 15% complete



Team Ford

Status Report

[2 of 4]

Ford Mobility Product Metrics

- Server Systems / Software
 - Linux: Set up server & deployed a test web page
 - Kusto: Have ran queries on sample data
 - Postman: Have tested sample APIs
- Development Systems / Software
 - Grafana: Visualizing mock data
 - Github: Set up private repository
 - WebEx Teams API: Communicated with WebEx Teams chatbot



Team Ford

Status Report

[3 of 4]

Ford Mobility Product Metrics

- Client Contact
 - We have had 3 conference calls
 - Scheduled weekly meetings on Wednesdays at 10:30 AM
- Team Meetings
 - We have met 2 times
 - Scheduled weekly meetings on Mondays at 10:30 AM
- Team Organization
 - Yangkai He: Chatbot, QA tester
 - Romi Yun: Chatbot, DBA
 - Weilin Liang: Pixel tracker, Integration
 - Samuel Wakeman: Pixel tracker, Grafana



Team Ford

Status Report

[4 of 4]

Ford Mobility Product Metrics

Risks

- Risk 1
 - How do we make a chatbot engine?
 - Make a less-complicated sample chatbot
- Risk 2
 - The chatbot might not be able to recognize questions asked by users
 - Do a lot of chatbot training and testing
- Risk 3
 - Collecting bad pixel tracking data (ex. Web crawler)
 - Create a filter to detect the metadata (ex. timestamps, IP addresses)
- Risk 4
 - How can we handle missing data from the pixel tracker when it is uploaded to the database?
 - Set up mock database to make sure all the data is being sent



Team GM

Status Report

[1 of 4]

Profiling Plant Computer Network Traffic

- Project Overview

- Use machine learning to analyze manufacturing network traffic data for:
 - Malicious activity
 - Abnormal traffic flows
- In near real-time

- Project Plan Document

- Project Plan Document Skeleton – 100%
- Project Plan Document Written – 0%
- Screen Mock-Ups – 0%
- System Architecture – 0%



Team GM

Status Report

[2 of 4]

Profiling Plant Computer Network Traffic

- Server Systems / Software
 - Cisco StealthWatch – GM Datasource, Awaiting Licensing
- Development Systems / Software
 - ELK Stack – 100% Running, 100% through tutorial
 - Xpack Extension – 100% downloaded, Awaiting Licensing for use
 - Wireshark – 100% Running, Prior Experience
 - Trello – 100% Set Up, Prior Experience



Team GM

Status Report

[3 of 4]

Profiling Plant Computer Network Traffic

- Client Contact
 - First Meeting
 - Garrett Weekly Meeting
- Team Meetings
 - 7 meetings
 - Meetings formally scheduled Tuesday and Friday mornings
- Team Organization
 - Client Contact: Ignacio, Project Manager: Logan, Developer: Joseph
 - Machine Learning Lead: Bella, Solution Architect: Ben



Team GM

Status Report

[4 of 4]

Profiling Plant Computer Network Traffic

Risks

- StealthWatch
 - What will our project do that StealthWatch doesn't already do?
 - Understand where StealthWatch's pain points are
- Data
 - Will large amounts of training data from a single plant wrongfully bias the model?
 - Ask for smaller sets of data from multiple plants
- ELK Stack's Machine Learning Model
 - Is the ELK stack machine learning model effective to analyze this type of data?
 - Create prototypes using small training sets with the ELK stack for a proof-of-concept.
- Data Visualization
 - What method of data visualization is most useful for our client?
 - Develop screen mock-ups and get feedback from client



Team Harvard Law School

Status Report

[1 of 4]

“StackLife” Library Search and Display Tool

- Create an easy interactive site to access Islam Law Text
 - Store information about Islam Law texts from Harvard Library
 - Create a website to view and search information about materials
 - Allow researchers to customize searches and record search history
 - Display analytic information about searches
- Project Plan Document
 - Skeleton finished
 - Final plan 40% completed
 - Design specifications 80% completed
 - Wireframes done



Team Harvard Law School

Status Report

[2 of 4]

“StackLife” Library Search and Display Tool

- Azure MySQL instance
 - Relational Database to store data hosted in the cloud
 - Testing configurations on free instance has started
 - Basic entity relationship diagram(ERD) has been created
- Flask
 - Python Framework to build website
 - Installed and basic “Hello World” app
 - First design iteration created with wireframes



Team Harvard Law School

Status Report

[3 of 4]

“StackLife” Library Search and Display Tool

- Client Contact
 - Scheduled weekly meeting Friday 2:30pm
 - Met twice
- Team Meetings
 - Scheduled weekly meeting Thursday 6:30pm
 - We have met as a team 5 times including team meetings
- Team Organization
 - Andrew Vo – Web Design, Developer, Client Contact
 - Ze Liu – Web Development Team, Program Manager
 - Sean Wright – Database Design, Architect
 - Jaimee Beckett – Database Design, Developer, Tester
 - Ethan Dunnum – Database Design, Developer, Product Manager



Team Harvard Law School

Status Report

[4 of 4]

“StackLife” Library Search and Display Tool Risks

- Azure Instance Type
 - Purchase wrong size of instance leads to slow site or unnecessary costs
 - Appropriate testing of multiple versions
- Migrating Harvard Data
 - Loss of Data or unnecessary data added into our relational database
 - Research best practices for migrating mass data
- Allow advance search for researches
 - Inaccurate search results lead to frustrated customers
 - Look into common predictive search algorithms



Team Herman Miller

Status Report

[1 of 4]

Computer Vision for Furniture Manufacturing

- Project Overview
 - Automate verification of fabric color using deep learning
 - Install Raspberry Pi, camera, and lights on assembly line
- Project Plan Document
 - 40% done
 - Skeleton finished
 - Functional specifications
 - Design specifications
 - System architecture
 - Risk analysis



Team Herman Miller

Status Report

[2 of 4]

Computer Vision for Furniture Manufacturing

- Server Systems / Software
 - AWS – no access yet, using student accounts for now
 - Herman Miller Fabric Database – extracted needed info
- Development Systems / Software
 - Git – repo setup
 - Raspberry Pi – setup, scans barcode, takes image



Team Herman Miller

Status Report

[3 of 4]

Computer Vision for Furniture Manufacturing

- Client Contact
 - In-person whiteboard meeting on Friday, 9/6
 - Weekly calls scheduled on Fridays at 1:00 PM
- Team Meetings
 - 7 meetings
 - Team meetings on Mondays, Wednesdays from 10:00 – 12:00
 - Triage meetings on Tuesdays from 9:00 – 9:20
- Team Organization
 - Trello board setup
 - Jacob – Client Contact / Systems Engineer
 - Steven – Machine Learning Engineer
 - David – Project Manager / Front-end Developer
 - Phillip – Database Developer
 - Tao – AWS Developer



Team Herman Miller

Status Report

[4 of 4]

Computer Vision for Furniture Manufacturing

Risks

- Lighting
 - Importance: High
 - Difficulty: Moderate
 - Getting lighting consistent on factory images to correctly detect color
 - Research lights for computer vision system and buy them
- Training Data
 - Importance: High
 - Difficulty: Low
 - Not a lot of real images to train on
 - Ask client for images and take images of fabric samples
- Verification Speed
 - Importance: Low
 - Difficulty: Low
 - How long a fabric image takes to get verified
 - Optimize machine learning model



Team Learning A-Z

Status Report

[1 of 4]

Robot Builder Word Guessing Game

- Project Overview
 - Educational game for vocabulary learning
 - Aimed at grades K through 5
 - Uses hangman game concept with robot parts
 - Able to generate statistics for each user
- Project Plan Document
 - Skeleton doc completed
 - Risk Analysis completed
 - Executive Summary completed
 - Schedule and Design Specifications started



Team Learning A-Z

Status Report

[2 of 4]

Robot Builder Word Guessing Game

- Server Systems / Software
 - Server up and running with Ubuntu
 - MySQL database running and contains client data
 - Php connections ready, need to be connected to front end
- Development Systems / Software
 - Github repo created with Angular front end project files uploaded
 - PhpStorm and MySQL bench up and running
 - Xcode running for iOS dev



Team Learning A-Z

Status Report

[3 of 4]

Robot Builder Word Guessing Game

- Client Contact
 - 2 conference calls with client so far
 - Every Thursday morning
- Team Meetings
 - 3 stand-alone meetings so far
 - Meet every week Fridays & Sundays
- Team Organization
 - Project Manager: Jerod
 - Technical Lead/Front-End: Peyton
 - Mobile Dev: Renee
 - Back-End: Namhee
 - QA: Chris



Team Learning A-Z

Status Report

[4 of 4]

Robot Builder Word Guessing Game

Risks

- Connecting MySQL server to Angular
 - Pull data from database with Php and Angular, no one in group knows this
 - Dedicate a person to figure out how to setup a library for easy communication to the MySQL server
- Setting up a test server
 - No one on our group has set up a php server from scratch
 - The same person setting up the MySQL server will make sure the php server goes up as well. Doing this early on will make sure it gets done.
- iOS Development
 - No one in group has experience with iOS development
 - We dedicate a team member who has experience in Android development to learn IOS and Swift from day one.
- Potential issues with Angular
 - Angular is newer and Client currently uses AngularJS (looking to upgrade)
 - Keep ahead of schedule incase of conflicts



Team Meijer

Status Report

[1 of 4]

Creating Picking and Fulfillment Efficiency

- Project Overview
 - Create App to improve Shipt Shopper's fulfillment ability
 - Produce an optimized in store shopping routes for professional shoppers
 - Decrease the time professional shoppers need to fulfill their customers orders thus increasing profit for both Meijer and professional shopper
 - Provide a list like method to assist in organizing shoppers' items
- Project Plan Document
 - Overall status at 10% complete
 - The skeleton document is now being added on to everyday
 - Figures and Reference Images at 70% complete
 - In contact with client to nail down the final desired outcomes



Team Meijer

Status Report

[2 of 4]

Creating Picking and Fulfillment Efficiency

- Server Systems / Software
 - Client is preparing test SQL databases via Azure DevOps.
 - All members have access to Meijer's Azure DevOps with Git
 - Some members are not proficient with GIT but will be proficient soon.
- Development Systems / Software
 - Xamarin Forms are up and running on all team members' systems.
 - Test applications are finished, onto the real application now.
 - A Use Case Diagram has been made and will be reviewed by the team this week before programming starts for the app.
 - A Backend UML has been made and will be programmed this week.



Team Meijer

Status Report

[3 of 4]

Creating Picking and Fulfillment Efficiency

- Client Contact
 - Two client meetings so far.
 - Scheduled every week Friday 10:30am.
- Team Meetings
 - Three official team meetings.
 - Scheduled every week Monday 5:00pm.
 - Schedule allowing, we extend other meetings into Team Meetings
- Team Organization
 - Aslan Tashtanov: Technology Expert, Backend Developer
 - Dylan Iseler: Assistant Project Manager, SQL Database Admin
 - Mitchell Setsma: Project Manager, Client Contact, Backend App Developer
 - Sarah Mostofizadeh: Client Contact Assistant, App Designer, & Frontend Developer
 - Yingbao Wang: Backend Developer, Tester



Team Meijer

Status Report

[4 of 4]

Creating Picking and Fulfillment Efficiency

Risks

- **Risk 1:** Establishing database communication.
 - Description: The mobile app must communicate with Azure Databases to gather product information, that is dependent on each store.
 - Mitigation: Create a test app to pull data from Azure. Gain insight from the developers at Meijer.
- **Risk 2:** Applying machine learning.
 - Description: The client mentioned that they would possibly like us to use Machine Learning. We have yet to find an appropriate place to include this technology.
 - Mitigation: Research uses of this technology. Discuss if Machine Learning is necessary with client.
- **Risk 3:** Unique store layouts and future layout changes.
 - Description: Some stores may have odd layouts with slanted Isles and gaps down the isles. This will affect our algorithm and how we suggest the consumer move around the store.
 - Mitigation: Team Meijer will contact the client and inquire how the store solves similar issues. While modifying the algorithm with unique edge cases
- **Risk 4:** Unable to find items.
 - Description: There will be times when items in the store cannot be found via the algorithm.
 - Mitigation: Emphasize the importance of keeping databases up to date. As well, creating a product demo that handles unlocated items in a specific way.



Team Michael Sadler Foundation

Status Report

[1 of 4]

Gamechang3rs Learning Management System

- Project Overview
 - Wrangle client's data flow
 - Digitize learning materials for students (focusing on 6 pillars)
 - Allow room for person-to-person interaction to shine
 - Be scalable and sustainable
- Project Plan Document
 - Skeleton has been created
 - Working on screen mockups 20-25%
 - System flow draft is complete
 - Working on finalizing system architecture 50%



Team Michael Sadler Foundation

Status Report

[2 of 4]

Gamechang3rs Learning Management System

- Server Systems / Software
 - Client desires AWS server
 - We can sign up for free version for our testing purposes
 - Will transition server to client at end of semester
- Development Systems / Software
 - PHP Storm - all have experience
 - GitLab - has been set up
 - MySQL - working through database architecture



Team Michael Sadler Foundation

Status Report

[3 of 4]

Gamechang3rs Learning Management System

- Client Contact
 - Met with client, sat in on training session
 - Weekly meetings on Friday at 3PM
- Team Meetings
 - We have met 5 times now (as of Tuesday 9/10)
 - Meetings after each class at least
- Team Organization
 - Cody - client contact, program manager; Sam - project manager
 - Hannah - front-end developer; Ahmad - back-end developer



Team Michael Sadler Foundation

Status Report

[4 of 4]

Gamechang3rs Learning Management System

Risks

- Risk 1
 - Need project-wide mobile browsing support
 - Carefully test all pages with wide variety of devices, browsers, aspect ratios
- Risk 2
 - No experience using Amazon servers
 - Follow tutorials, practice developing with Amazon servers, use 1-year free server
- Risk 3
 - Integration of Google Sites, Forms, Slides (what the teachers are familiar with) into our solution, ensuring their proprietary content is as paywall-secured as possible
 - Follow Google API tutorials, practice embedding and URL obfuscation
- Risk 4
 - Client wants project to be scalable to other districts and even non-profits
 - Thoroughly plan out system architecture with scalability in mind, regularly check that status



Team Michigan State University ITS

Status Report

[1 of 4]

Spotlight: Discovering Clubs and Organizations

- Project Overview
 - Assist students in discovering MSU clubs/organizations based on their personal interests, major, etc.
 - Simplify the registration process for prospective members
 - Allow club admins to post information and schedule events
 - Club members can get up-to-date information from their clubs
- Project Plan Document
 - Skeleton is done
 - Very general outline with beginnings of executive summary and functional specifications
 - ~30% Completed



Team Michigan State University ITS

Status Report

[2 of 4]

Spotlight: Discovering Clubs and Organizations

- Server Systems / Software
 - Amazon Web Services
 - Serverless architecture using Lambda functions
 - Successfully getting responses from the API after uploading functions
 - Successfully connecting & getting data from DynamoDB
 - Golang
- Development Systems / Software
 - Vue for web application
 - Swift for native iOS application
 - Kotlin for native Android application
 - All 3 have “Hello World” apps and have connected to our API



Team Michigan State University ITS

Status Report

[3 of 4]

Spotlight: Discovering Clubs and Organizations

- Client Contact
 - Met with clients twice
 - Scheduled weekly in-person meetings for Wednesday @ 9:00 am
- Team Meetings
 - Met with team 7 times
 - Scheduled weekly team meetings for Sunday @ 4:00 pm
- Team Organization
 - Responsibilities: Brendan - AWS, Collin - Android app, Koshiro - Web app, Noah - iOS App
 - Brendan - Project Manager, Noah - Client Contact



Team Michigan State University ITS

Status Report

[4 of 4]

Spotlight: Discovering Clubs and Organizations Risks

- Risk 1 (Hard)
 - Authenticating users and maintaining their roles
 - Mitigation: Implement Amazon Cognito across Kotlin, Swift, and Vue
- Risk 2 (Easy)
 - Allow “loose” integration so non-MSU students can use the app
 - Mitigation: Assume user needs to be asked for all information
- Risk 3 (Medium)
 - Determining useful features without bloating app
 - Mitigation: Sharing an interest survey to various groups we are a part of
- Risk 4 (Hard)
 - Keeping consistent design/experience between Android/iOS/Web
 - Mitigation: Weekly check-ins and thorough mock-ups



Team Microsoft

Status Report

[1 of 4]

ITPro Company Portal

- Project Overview

- Extend upon spring semesters project.
- Add full support for IOS, Android, and windows
- Enable ITPros to set/modify Intune settings via mobile device Scale to support millions.
- Modify current UI and features requested by client.

- Project Plan Document

- Status: In-Progress
- Complete Template. 10% Complete
- Executive Summary complete.
- System Architecture Diagram prototype in progress.



Team Microsoft

Status Report

[2 of 4]

ITPro Company Portal

- Server Systems / Software
 - Microsoft Graph & Azure
 - Team will only be working on a client application.
 - Obtained a Microsoft Azure portal with access to Intune
- Development Systems / Software
 - C#, .NET Standard, and Xamarin
 - Project will be split into platform-specific front ends for iOS, Android, and UWP.
 - Business logic is in development and will be shared across platforms.



Team Microsoft

Status Report

[3 of 4]

ITPro Company Portal

- Client Contact
 - No in person meetings due to location. 4 meetings to date.
 - Scheduled two weekly conference calls from 2:30 to 3:00pm every Tuesday and Thursday
- Team Meetings
 - The team has met 5 times so far
 - We have scheduled team meetings twice a week
- Team Organization
 - Bryce: IOS/ Project Manager/ Main client contact
 - Reid: Lead developer/ back-end
 - Sam: Windows developer
 - Jingwei: Android developer



Team Microsoft

Status Report

[4 of 4]

ITPro Company Portal

Risks

- Modify current UI to recommended principles for Android/iOS/Windows.
 - Client described the current look does not apply to normal principles for each platform.
 - **Mitigation:** Research current principles. Analyze the design for each platform. Incorporate them to current design.
- Creating more efficient algorithm for deployments to different groups
 - Client mentioned that they would like a better way to distribute deployments to different groups
 - **Mitigation:** Research current process. Analyze different possibilities. Research possible open source code.
- Recreating current project
 - Client spoke about the current status of the project and granted the team permission to completely overhaul the project.
 - **Mitigation:** Analyze last semester's project. Look for ways to enable better efficiency among users. Find "Dead Code" if possible. Figure out what is being used and what is not.
- New Technologies
 - The use of Xamarin, Azure DevOps, C#, are technologies that most team members have never used.
 - **Mitigation:** Research, learn, and do our homework. Look for tutorials if necessary. Utilize those who know these resources already.



Team Mozilla

Status Report

[1 of 4]

Splitting the Atom. Again.

- Project Overview

- The Why – Fission aims to harden the browser against the Spectre, Meltdown, and similar future vulnerabilities
- The Fix – Give each frame its own process so it can never access data it doesn't own
- The How– Help make advancements in project Fission by amending Firefox source code

- Project Plan Document

- Skeleton Document 100% complete
- Executive Summary 55% complete
- Meeting Schedule 100% complete



Team Mozilla

Status Report

[2 of 4]

Splitting the Atom. Again.

- Server Systems / Software
 - Self-hosted IRC client to communicate with Mozilla
 - Server is set up to host test websites
- Development Systems / Software
 - All team members can build Firefox from source
 - 4 / 5 team members have confirmed commit access
 - Working with Mozilla to troubleshoot
 - Each team member has a specific bug assigned to them



Team Mozilla

Status Report

[3 of 4]

Splitting the Atom. Again.

- Client Contact
 - Client Zoom meetings each Friday at 11
 - In person weekend event (9/14 – 9/15)
- Team Meetings
 - 3 meetings so far
 - Weekly: meet after class on Wednesday before triage
- Team Organization
 - Each team member is assigned a specific bug by Mozilla
 - Carson liaises with Mozilla as client contact



Team Mozilla

Status Report

[4 of 4]

Splitting the Atom. Again.

Risks

- Lack of controlled demo websites
 - Demo websites need to be created to exhibit proper implementation of Fission
 - Mitigated by developing demo sites with input from Firefox developers
- Scope of bugs is unknown
 - Fission is a large project so bugs could be much more complex than anticipated
 - Mitigated by having bugs assigned by Firefox developers and maintaining constant contact
- Writing professional code
 - Code must be written to be the most performant while fitting to community standards
 - Mitigated by making frequent small commits so problems can be spotted earlier
- Fission is in-progress
 - Minimal documentation exists and no current functional version since the project in active development
 - Mitigated by careful design of demo sites and close comparison with Nightly and Release builds to prevent regression



Team MSUFCU

Status Report

[1 of 4]

Building Hopes and Dreams

- Project Overview
 - Hyper-personalized banking experience
 - Uses quiz and analysis of spending to provide user advice/offers
 - iOS and Android Application, Alexa Skills Kit, Facebook Messenger, Employee facing CRM (web)
- Project Plan Document
 - Skeleton created
 - Cover page and table of contents written
 - <5% completed
 - System Architecture Diagram



Team MSUFCU

Status Report

[2 of 4]

Building Hopes and Dreams

- Server Systems / Software
 - Created the User Table in MySQL
 - Set up user creation and login in PHP
 - Successfully deployed the server and installed the dependency
- Development Systems / Software
 - Created "Hello World" Alexa skill
 - Created iOS and Android draft of homepage
 - Tested Alexa skill and mobile apps



Team MSUFCU

Status Report

[3 of 4]

Building Hopes and Dreams

- Client Contact
 - Have met twice
 - in-person meetings – Mondays @ 9 AM
- Team Meetings
 - Team Meetings once a week – Wednesdays
 - Have met twice
- Team Organization
 - Julia – Client Contact & Mobile Developer
 - Jenny – Program Manager & Alexa Skills Kit
 - Billy – Backend & Web
 - Isaac – Backend & Web



Team MSUFCU

Status Report

[4 of 4]

Building Hopes and Dreams

Risks

- Machine Learning
 - Unfamiliar with machine learning concepts
 - Seek out assistance from CSE staff members with ML expertise
- Backend Development
 - Lack of experience in designing backend architecture
 - Put two members in charge of backend development in order to have more people working on it
- iOS Development
 - Members are inexperienced in iOS Development
 - Dedicated one member with Android Development experience to iOS Development
- Alexa Skills Kit
 - This technology is new to all members of the team
 - Dedicated one member to learn and develop Alexa skills



Team Proofpoint

Status Report

[1 of 4]

Detecting State Sponsored Computer Security Terrorists

- Project Overview
 - Creation of Honeynets and Honeypots (Lures)
 - Lure deployment (Non-Indexed methods)
 - APT and State-Sponsored Cyber Terrorist monitoring and action recording
 - Data analysis, event packaging, & automation of summary reports
 - Dashboard / Web Hub development providing a platform to reproduce methods
- Project Plan Document
 - Completed the Cover page
 - Completed a high-level outline of project requirements, technologies, and deployment phases
 - Completed Project Plan Skeleton



Team Proofpoint

Status Report

[2 of 4]

Detecting State Sponsored Computer Security Terrorists

- Server Systems / Software

- Our team has been provided a dedicated server at Proofpoint allowing us to simulate our own attacks
- Tested the installation of Nmap and Wireshark - tools for network discovery and security auditing
- Successfully installed Anaconda, which contains the ML models/libraries we need for crafting fake research web pages

- Development Systems / Software

- Successfully installed Suricata, a high-performance Network IDS, IPS and Network Security Monitoring engine
- Successfully installed HTTrack (website cloner): testing done by cloning the whole Capstone website in < 2 minutes
- Researched textgenrnn - open source software capable of producing grammatically correct text



Team Proofpoint

Status Report

[3 of 4]

Detecting State Sponsored Computer Security Terrorists

- Client Contact
 - Set up weekly conference calls – Mondays 5 PM
 - Completed two ad-hoc Zoom meetings with client - (08/30/19 and 09/06/19)
 - Set up in-person meeting on Wednesday, 09/18/19
- Team Meetings
 - Set up weekly team meetings every Friday, 2:10pm
 - Met 4 times so far and communicate daily
- Team Organization
 - Currently set up GitLab and OneDrive for our slides and documents
 - Communicated personal strengths and established team roles:

Chris – Client Contact / Project Manager

John – Support / Server / Back-End

Josue – Machine Learning Specialist / Lure Deployment

Nick – Web Application Development

Zhehan – Machine Learning Specialist



Team Proofpoint

Status Report

[4 of 4]

Detecting State Sponsored Computer Security Terrorists

Risks

- Risk 1
 - Inability to lure an APT or State Sponsored Attacker
 - Lower the quality of attackers we're luring
- Risk 2
 - Manufacturing realistic documents using ML to imitate legitimate research
 - Prepare to use alternative methods to create required documents (possibly in conjunction)
- Risk 3
 - Unfamiliarity with Honeynet deployment tactics
 - Leverage Proofpoint contacts with professional experience utilizing Honeynet
- Risk 4
 - Inability to develop analysis tools to meaningfully analyze data
 - Analyze logs manually and draw meaningful conclusions



Team Technology Services Group

Status Report

[1 of 4]

Document Management at Google Scale

- Project Overview
 - Transferring TSG's clients documents to GCP BigTable
 - Adapting the frontend to be compatible with GCP
 - Using machine learning to classify types of documents
 - Increasing document import past 20,000/sec
- Project Plan Document
 - Project Plan Skeleton Created (100%)
 - Executive Summary Completed (100%)
 - Functional Specification (0%)
 - Design/ Technical Specifications (20%)
 - Risk Analysis (80%)



Team Technology Services Group

Status Report

[2 of 4]

Document Management at Google Scale

- Server Systems / Software
 - Apache Solr is up and running
 - Apache Tomcat is up and running
 - GCP instance will be available at client's discretion
- Development Systems / Software
 - Java JDK 8 is setup and configured
 - Gradle 5.6 is setup and configured
 - TortoiseSVN is setup and configured



Team Technology Services Group

Status Report

[3 of 4]

Document Management at Google Scale

- Client Contact
 - Two conference calls completed
 - Weekly Tuesday 11am conference call
 - Slack channel established
- Team Meetings
 - Weekly meeting after triage
 - 5 meetings completed
- Team Organization
 - Luke – Project manager
 - Joe – Tech lead
 - Rohit – Front end lead
 - Justin – Testing
 - Ali – Back end lead



Team Technology Services Group

Status Report

[4 of 4]

Document Management at Google Scale

Risks

- Machine learning algorithm accuracy
 - Description: Using a machine learning algorithm that has sufficient accuracy in classifying documents
 - Mitigation: Training various types of models/algorithms on the dataset
- Limited GCP resource
 - Description: Undetermined/limited access to GCP provided by clients
 - Mitigation: Setup our own GCP instance to be able to test without client's instance running
- Efficient Google BigTable schema
 - Description: Efficiency will decrease without an optimized schema
 - Mitigation: Continued research with Google's BigTable documentation and practice schema's on our own instances
- Small sample size of testing
 - Description: Small sample size of testing may result in inaccurate quality assurance
 - Mitigation: Use real data instead of using dummy testing data



Team TechSmith

Status Report

[1 of 4]

Smart Automatic Video Creation

- Project Overview
 - Web application that automatically generates videos from a script
 - Users can login to create/manage their individual projects
 - Users can review and edit generated videos
 - Handle multiple languages as input for video generation
- Project Plan Document
 - Executive summary: 100% complete
 - Functional specifications: 100% complete
 - Design specifications: 0% complete
 - Technical specifications: 0% complete
 - System architecture: 50% complete
 - Risks: 40% complete (defined but not added to project plan document)



Team TechSmith

Status Report

[2 of 4]

Smart Automatic Video Creation

- Server Systems / Software
 - PHP server application is setup and running, serving some initial web pages.
 - MySQL database is connected to PHP application, but database structure is not fully designed.
 - Basic NodeJS server app created with one endpoint for file conversion using ffmpeg (has not been tested from PHP server).
- Development Systems / Software
 - All team member Azure accounts are created and sent to TechSmith to be setup.
 - Bare bones docker instance holding NodeJS and ffmpeg application has been created.
 - Reviewed docs and brainstormed on how to utilize something like Redis to handle possible intensive file conversion tasks.



Team TechSmith

Status Report

[3 of 4]

Smart Automatic Video Creation

- Client Contact
 - We had a conference with TechSmith team in person on 9/3.
 - We talked about setting up regular meeting time (every Thursday at 4:30pm) and created accounts for GitHub, Azure and TechSmith.
 - We have access to the Asset Subscription Service (<https://library.techsmith.com>) and development site Swagger page that documents the API to query for assets.
- Team Meetings
 - 1st Meeting: Set up our contact tool (GroupMe) and introduced ourselves.
 - 2nd Meeting: Chose php as our primary language and distributed tasks for each team member.
- Team Organization
 - Scott: System manager
 - James: Client contact, Programmer
 - Patrick: Web developer
 - Jiaqi: Web developer
 - Mingzhu: Programmer



Team TechSmith

Status Report

[4 of 4]

Smart Automatic Video Creation

Risks

- Risk 1
 - Efficient storage of videos for each user.
 - Study different methods of storing videos with a website and determine which one would be the best to use with MySQL.
- Risk 2
 - Connecting an API to our application.
 - Research how the APIs we need function and if they can be connected using PHP.
- Risk 3
 - Determine length of videos based on given text.
 - Create criteria to make sure videos are not too long or short.
- Risk 4
 - Decide how to modify assets that are found using the text.
 - Experiment with the videos and pictures that are found using the program to decide what parts to use or how many pictures to use in the final video.



Team Union Pacific

Status Report

[1 of 4]

Railroad Physics Data Visualization

- Project Overview
 - Import CSV data from PST physics simulation using a web UI
 - Back end processes and compiles data into visual output
 - Visual output displayed on the web UI
 - Ability to export visualized data to a downloadable excel file
- Project Plan Document
 - 20% complete
 - Executive summary is complete
 - Rough drafts of timeline and functional overview
 - Project plan is still mostly a skeleton



Team Union Pacific

Status Report

[2 of 4]

Railroad Physics Data Visualization

- Server Systems / Software
 - Tomcat Server running on Linux – Up and running
 - Oracle SQL Command database - Researched installation
- Development Systems / Software
 - Visual Studio Code with Angular - Learned basics
 - Eclipse with Java and Apache POI (For excel) - Learned basics
 - Excel - Tested converting .csv to .xlsx using only Java



Team Union Pacific

Status Report

[3 of 4]

Railroad Physics Data Visualization

- Client Contact
 - Weekly meetings on Tuesday at 4:30 PM
 - Discussed overview of project, showed UI mockup and prototype system architecture
- Team Meetings
 - Weekly meetings on Thursday at 1:30 PM to discuss weekly plans
 - Meet other days as needed
- Team Organization
 - Program Manager, Front end – Jackson
 - Client Contact, Back end – Duale
 - Developer & Tester – Laura
 - Systems Administrator, Back end - Colin



Team Union Pacific

Status Report

[4 of 4]

Railroad Physics Data Visualization

Risks

- Can we understand the graphs? (High)
 - We need to understand the graphs and what they show before we can write code that generates the graphs
 - Set up a meeting with client to specifically go over each graph
- Excel to Web UI translation (High)
 - Can we translate the graphs with the same precision from the excel file to the web UI
 - Use the exact graphs from the excel file in the web UI
- Input data could be wrong (Medium)
 - Valid CSV data could be hard to differentiate from physics data
 - Create an API for data validation
- Client contact move (Low)
 - Client contact is moving out of state in mid October
 - Discuss with client at next meeting about re-scheduling times



Team United Airlines

Status Report

[1 of 4]

Training Scheduling and Optimization System II

- Project Overview
 - Finish the course scheduling system and fix any bugs
 - Create functionality to track instructor time
 - Develop an optimizer to provide recommendations for the optimal schedule and classroom assignments
 - Improve the security for both the web app and iOS application
- Project Plan Document
 - Created a skeleton for the document
 - Wrote the executive summary
 - ~50% done with the schedule
 - Drew an initial system architecture diagram



Team United Airlines

Status Report

[2 of 4]

Training Scheduling and Optimization System II

- Server Systems / Software
 - Azure was setup and will be used for hosting the MS SQL database and the web app
 - The web app will be hosted locally for testing purposes
- Development Systems / Software
 - XCode and Visual Studio have been installed on both machines, and the existing application has been compiled/run
 - Frameworks/languages: Angular, Node.js, HTML, CSS, Swift, MS SQL, Entity, ASP.net core, C#



Team United Airlines

Status Report

[3 of 4]

Training Scheduling and Optimization System II

- Client Contact
 - Held Conference Call with client on Friday, Aug. 30 and Thursday, Sept. 5
 - Scheduled weekly conference calls with client on Thursdays at 3:30 PM
 - Scheduled to meet in person with client on Sept. 19 and 20
- Team Meetings
 - Scheduled bi-weekly meetings on Mondays and Thursdays
 - The team has met 5 times so far
- Team Organization
 - Front end web app: Josh, Laura
 - iOS App: Andrew, Jack
 - Back end: Jack, Andrew
 - Web Services: Laura, Josh



Team United Airlines

Status Report

[4 of 4]

Training Scheduling and Optimization System II

Risks

- Handoff of Final Code Between the Team and the Client
 - Last semester this was a big problem at the end of the project
 - We are trying to use more cloud based solutions from the beginning, which will allow for easy transfer of ownership
- iOS Security
 - iOS requires that the server it communicates with has SSL authentication
 - By using Azure as a server, it automatically has SSL authentication whereas local servers do not
- Oracle Access Manager (OAM)
 - We are unsure if it is possible to implement the Azure database security with United's OAM
 - We are going to research if Azure can be integrated with OAM or if it will replace it, while also working with our client to better understand how they use OAM
- Familiarity with Calendars
 - We need to use a calendar on the website and mobile app that can drag and drop events between different dates and automatically send out emails after changes occur
 - Researching different calendar tools and creating an application (on web and mobile) that tests those features



Team Urban Science

Status Report

[1 of 4]

AutoHook Creative Tool

- Project Overview
 - Easy to customize web overlays
 - Import & export AutoHook templates
 - User-friendly and modern interface
 - Save changes to a relational database
- Project Plan Document
 - System architecture accomplished (100%)
 - First six weeks' schedule has been determined (100%)
 - Functional specification was currently discussing (50%)
 - Design specification was under construction (40%)



Team Urban Science

Status Report

[2 of 4]

AutoHook Creative Tool

- Server Systems / Software
 - Microsoft SQL Server (running, database empty)
 - Ubuntu(installed and tested)
- Development Systems / Software
 - Microsoft Visual Studio with ASP.NET web development kit (already set up)
 - Adobe Photoshop (already set up)
 - Windows 10 VM (already set up)
 - PuTTY & WinSCP (already set up)



Team Urban Science

Status Report

[3 of 4]

AutoHook Creative Tool

- Client Contact
 - Every Tuesday 10am
 - Phone Conference once
 - Visited Client once
- Team Meetings
 - Every Tuesday/Thursday
 - Met five times since 2019
- Team Organization
 - Jon – frontend and client contact (Photoshop, PowerPoint, ASP.NET)
 - Ben – server/database (MySQL, Ubuntu)
 - Jeff – Backend Developer (C#, Model)
 - Zach – Frontend Developer (CSS, HTML, View, Angular)
 - Daiwei – Frontend Developer (Controller, JavaScript)



Team Urban Science

Status Report

[4 of 4]

AutoHook Creative Tool

Risks

- Need a Way to Display HTML inside Web App with Live Dynamic Updates
 - We are unsure how to have a work area within web app that displays the HTML that another area is displaying
 - Research how other sites (w3 school) perform this function.
- Need a Good Front End for Web App
 - Our client wants a way to generate new templates either as a default skeleton or by copying existing templates.
 - Need to explore database driven architecture with options for table row insertions, deletions, etc wrapped in user friendly buttons.
- Difficult Undo Functionality
 - We need to have an intuitive interface, including undoing actions.
 - We will either store each change and allow a restore of previous version of website by either saving some sort of state information as well as previous copies of HTML.
- Moving HTML to and from a relational database
 - Importing and exporting web page templates will require our project to move HTML to and from a relational database on our server. We need to figure out how to implement this feature in an effective and efficient way.
 - Once we get our database to contain actual useful data, we will be experimenting with various SQL transactions. We can then figure out how much of the code is necessary to select and insert, allowing us to minimize the need for storage on our server, and making importing/exporting web templates faster and more efficient.



Team Vectorform

Status Report

[1 of 4]

Project Rumble

- Project Overview
 - Create an application that notifies a user if their washer is running
 - Uses accelerometer data
 - Uses machine learning algorithm to predict washer status (On/Off)
 - Data and algorithm predictions displayed in a web app
- Project Plan Document
 - We have created the shared skeleton document
 - 15% Completed
 - Rough version of Risks and Mitigations Written
 - Project Schedule Written



Team Vectorform

Status Report

[2 of 4]

Project Rumble

- Server Systems / Software
 - Dell R210 running Ubuntu Server 18.04
 - MySQL for database management/parsing
 - Python script to read csv data into MySQL database
- Development Systems / Software
 - Have basic neural net built in C++ that needs to be trained
 - Set up Arduino IDE with connection to the ESP32
 - Connection between ESP32 and internet at 20%
 - Mockup of front-end design and graph display completed



Team Vectorform

Status Report

[3 of 4]

Project Rumble

- Client Contact
 - Weekly conference calls set to Thursdays 10am
 - 1 Conference call last week
 - In person meeting last week Wednesday to drop off supplies
- Team Meetings
 - Weekly Meetings set Thursdays 11am
 - Met twice in weekly meetings and 2 more times outside of meetings
- Team Organization
 - George is working on the data analysis/neural net.
 - Danny is working on the web app.
 - Charles is working on the server.
 - Tyler is working on Arduino communication and is lead contact.



Team Vectorform

Status Report

[4 of 4]

Project Rumble

Risks

- Accessing Server Data
 - Server data will need to be accessible outside MSU campus (e.g. by Vectorform employees)
 - Will need to lease a VPS to use as main data server
- Sufficient Data
 - Uncertain if there's enough accelerometer data to train a neural network
 - Obtain more datasets from a sensor setup on a real washer
- ESP32 Capacity
 - Uncertain if the ESP32 onboard flash memory will be able to fit a trained neural net
 - Will have to consider doing onboard signal processing another way (likely without any machine learning but instead via efficient algorithms)
- Accelerometer Readings
 - Will need a way to handle both different accelerometer placement and accelerometer drift over time
 - Could 'reset' the gravitational constant acceleration any time the washing machine is confirmed off



Team Volkswagen

Status Report

[1 of 4]

VW Car-Net Smart Hub Web Apps

- Project Overview
 - Web app for use in VW cars' head units
 - Goal: reduce driver distraction by automating location based tasks
 - Major use case: automatically open/close garage door based on car's location
 - Stretch goals: use similar approach to trigger actions on other smart home services (Nest)
- Project Plan Document
 - Functional specifications and testing plan section is complete
 - The rest of the document is outlined
 - Sent an initial version to our clients
 - Began sketching out some mockups



Team Volkswagen

Status Report

[2 of 4]

VW Car-Net Smart Hub Web Apps

- Server Systems / Software
 - Volkswagen SDK server
 - Acquiring access via email
 - Sign NDAs and visit VW office Friday for access
- Development Systems / Software
 - Visual Studio Code and Chromium
 - Angular starter app created with a “Hello World” script running
 - All extensions and plugins needed installed



Team Volkswagen

Status Report

[3 of 4]

VW Car-Net Smart Hub Web Apps

- Client Contact
 - 3 conference calls with VW team so far
 - Weekly meeting scheduled for Tuesday 9am-10am
- Team Meetings
 - 4 team meetings
 - Weekly meeting scheduled for Tuesdays at 4:30pm
- Team Organization
 - Anjali – Project Manager
 - Bryce – Developer
 - Fan – Tester
 - Jason – Client Contact
 - Jonathon - Developer



Team Volkswagen

Status Report

[4 of 4]

VW Car-Net Smart Hub Web Apps

Risks

- Risk 1
 - Access issues and development outside of VW firewall
 - Request remote access Volkswagen environment
- Risk 2
 - Accessibility and integration with Chamberlain APIs
 - Request access to using and testing the API
- Risk 3
 - Missing devices for testing (garage door/opener, test bench)
 - Ask around to find someone with access to a garage door
- Risk 4
 - Timeline issues and not having access to designs in time
 - Requesting access early to accommodate for unexpected delays



Team Yello

Status Report

[1 of 4]

Intelligent and Adaptive Data Mapping

- Project Overview
 - Match synonymous data given at career fairs
 - Create sleek UI that is easy to use and interfaces with existing products
 - Make use of real-time matching while data is entered
- Project Plan Document
 - Technical Specifications – 20%
 - Screen Concept – 45%
 - Functional Specs – 15%
 - System Architecture – 15%



Team Yello

Status Report

[2 of 4]

Intelligent and Adaptive Data Mapping

- Server Systems / Software
 - Firebase – Online Realtime database
- Development Systems / Software
 - Javascript(Front-end) – Tested, UI group familiar with
 - Firebase packages(Back-end) – Tested with basic UI
 - Python – Used for test algorithms



Team Yello

Status Report

[3 of 4]

Intelligent and Adaptive Data Mapping

- Client Contact
 - Weekly conference calls on Friday.
 - In-person meeting planned on 9/27
- Team Meetings
 - One Weekly meeting with all members on Thursday at least. Two smaller meetings on Monday/Wednesday.
 - Weekly tasks organized through Trello, reviewed on Sunday.
- Team Organization
 - Ed Watson - Project Manager and Algorithm programming
 - Danielle Kelley- Client Contact, marketing, UI design, and testing
 - Chang Ge – UI design and Database
 - Nichols Xiong - Algorithm Design and Database
 - Chenjie Zhang - Backend Integration and UI design



Team Yello

Status Report

[4 of 4]

Intelligent and Adaptive Data Mapping

Risks

- Scalability - *Medium*
 - Desire to scale project would require cloud hosted storage.
 - Work with Firebase, which is a cloud-hosted database.
- Instantaneous Autofill - *Medium*
 - Desire to implement near-instantaneous querying from extremely large fields
 - Opensource packages or plugin studying
- Connection Reliability - *Low*
 - Due to being hosted on a website, there is a chance that this project is not robust enough to endure a poor connection.
 - Creating a simple offline splash page, possible backup app
- Resume integration - *Low*
 - Possible desire to integrate Resume scanning would require scraping algorithms
 - OCR and opensource programs

