01/26: Team Status Reports

The Capstone Experience

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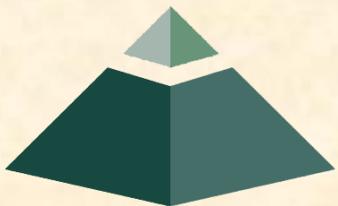
From Students…
…to Professionals

Team Amazon

Status Report

Text Classification of Seller Forums Content

- Project Description
  - Unlock the value of data from Amazon Sellers Forums
    - Breakdown of topics
    - Identify trends
    - Provide a visualization
  - Ability to index and search forum posts

- Project Plan Document
  - Rough draft 75% complete
    - All of technical and part of design specifications missing
  - 11 pages, 1200 words

Team Amazon

Status Report (2 of 4)

Text Classification of Seller Forums Content

- Server Systems / Software
  - Capstone Server - Debian installed for testing purposes
  - AWS – Redshift (large data storage), RDS (relational DB), S3 (general document storage), EC2 (backend instances), Elastic Beanstalk (front end hosting)
  - Converted test data (text files) to SQL Lite database
- Development Systems / Software
  - Testing done with Lucene (indexing and searching forum data)
  - Research started on Python (NLTK) Natural Language Toolkit
  - Installed both Mahout and Carrot^2 for clustering/identifying trending topics

Team Amazon

Text Classification of Seller Forums Content

- Client Contact
  - Only met with our client once
  - Weekly conference calls Wednesdays at 5pm
  - In-person meeting to be determined
- Team Meetings
  - Scheduled for Wednesdays and Sundays (as needed)
  - Met four times so far
- Team Organization
  - Large Team Roles set: PM, System Admin, Client Contact
  - Other roles will develop over time

Team Amazon

Status Report

Text Classification of Seller Forums Content

Risks

- Unfamiliarity with Certain Technologies
  - None of us have used Lucene or NLTK, we are not sure if they will work as we intend them to
  - Set up test environment and use unfamiliar technologies ASAP
- Machine Learning
  - Is a tricky topic, we do not exactly know how it ties into our project
  - Use existing libraries rather than developing our own code
- Feature Creep
  - Ongoing expansion or addition of new features in our project
  - Develop wireframes early to solidify project features and capabilities
- Scalability
  - Our project will have to be scalable
  - Make sure that the technologies we use will be scalable

Team Auto-Owners

Status Report

Claims First Notice of Loss Application

- Project Description
  - Mobile App to file a FNOL
  - File claim for Auto or Home
  - Web App for agents to set notification preferences
  - Mobile App provides information about nearby emergency services
- Project Plan Document
  - Skeleton created with title page, format and table of contents
  - First round of screen mockups complete
  - Each group member assigned a different section
  - 15% complete

Team Auto-Owners

Status Report

Claims First Notice of Loss Application

- Server Systems / Software
  - Ubuntu installed and running on server
  - SSH and FTP services installed
  - Django, Apache and MySQL Installed
- Development Systems / Software
  - Pycharm setup
  - Xcode installed
  - Android Studio installed

Team Auto-Owners

Status Report

Claims First Notice of Loss Application

- Client Contact
  - Weekly meeting Monday at 4:00pm
  - Met in person 1/16 Friday
- Team Meetings
  - Weekly meeting set up for Wednesday 1:00pm
  - Team has met 4 times
- Team Organization
  - David: Client Contact
  - Alex: iOS Lead
  - Anthony: Web lead
  - Si: Android Lead

Team Auto-Owners

Status Report

Claims First Notice of Loss Application

Risks

- Authentication Process
  - People are often very excited after an accident. Need to be able to authenticate with very little information sometimes.
  - Have a meeting on Monday with Auto-Owners to establish the best way to do this.
- Messaging Client
  - Auto-Owners wants a capability to communicate instantly with an agent via messaging through the App
  - Discuss possible solutions with Auto-Owners
- Process for Home and Business Insurance Claims
  - No one on our team has a good understanding of home and business insurance claims.
  - Learn about home and business insurance claims
- iOS Development and Device Testing
  - Building and testing our iOS application
  - Learning Apple's developer process and how to use Xcode

Team Boeing

Status Report

Electronic Sales Bag

- Project Description
  - Native Windows tablet app
  - Electronic database of Boeing sales documents
  - Easy access to documents for sales meetings
  - Interact with existing Boeing CRM (Salesforce)
- Project Plan Document
  - Early stages
  - Rough Outline
  - Preliminary Design
  - Requirements gathered from client

Team Boeing

Status Report

Electronic Sales Bag

- Server Systems / Software
  - Windows Server 2012 (up and running)
  - Team Foundation Server version control
  - May install SQL Server

Development Systems / Software
  - Windows 8
  - Visual Studio 2013
  - Up and running on both systems

Team Boeing

Status Report

Electronic Sales Bag

- Client Contact
  - Two meetings, one with each client
  - Scheduled weekly conference call
- Team Meetings
  - Scheduled weekly meetings
  - Facebook collaboration
  - Google Drive
- Team Organization
  - Customer liaison

Team Boeing

Status Report

Electronic Sales Bag

Risks

- Risk 1
  - Risk: Incorporate existing CRM
  - Mitigation: Client demo of CRM
- Risk 2
  - Risk: No experience developing for tablet
  - Mitigation: Research
- Risk 3
  - Risk: Ambiguous requirements / Non-technical clients
  - Mitigation: Weekly meetings and rapid prototyping
- Risk 4
  - Risk: Two clients with conflicting/confusing information
  - Mitigation: Establish one point of contact

Team Ford

Status Report

Electric Vehicle Charging Station App

- Project Description
  - Enable the tracking, monitoring, and management of electric charging stations.
  - Users can determine which stations are in use, and reserve stations
  - Enable Ford to minimize the required number of charging stations
  - 2 Applications – Charging station simulation app, end user application
- Project Plan Document
  - Functional Specifications: 100% Complete
  - Design Specifications: 50% (Pending Ford review)
  - Technical Specifications: 10% Complete
  - Project Timeline: 10% Complete

Team Ford

Status Report $\qquad$

Electric Vehicle Charging Station App

- Server Systems / Software

  - Microsoft Server 2012: Installed

  - Microsoft SQL Server 2012: Installed

  - Apache Tomcat: Installed

- Development Systems / Software

  - Xcode for iOS development: Installed on all computers

  - Code Repository on BitBucket, Continuous Integration with Jenkins

  - Eclipse/IntelliJ for Java development, Spring: Installed on personal machines

Team Ford

Status Report

Electric Vehicle Charging Station App

- Client Contact
  - Weekly Meetings scheduled Mondays from 2:00-2:45
  - Have met with client and exchanged frequent emails as to preferences for system components
- Team Meetings
  - Weekly Meetings either Monday or Wednesdays after class
  - We've met 3 times so far
  - Utilize Google hangouts for quick communication with each other
- Team Organization
  - Brian Jurgess – Project Manager; DBA; Sys Admin
  - Kevin Karabon – Web Services backend lead; Sys Admin
  - Justin Grothe – Charging station simulation App Lead; Testing Lead
  - Ryan Switzer – End user app Lead; OpenLDAP Lead

Team Ford

Status Report

Electric Vehicle Charging Station App
Risks

- Limited Objective-C experience and mobile app development
  - Limited experience with iOS app development
  - Mitigation Plan: Spend the previous 2 weeks and the next week learning iOS development
- Lack of experience with LDAP
  - No experience with setting up and integrating an OpenLDAP server
  - Mitigation Plan: Designate one person as lead on integrating OpenLDAP; Sys admins learn how to set up an OpenLDAP server
- Inexperience with physical limitations of iBeacons
  - Readings revealed difficulties in dealing with range and signal interference regarding iBeacons
  - Mitigation Plan: Will need to perform extensive real world testing to understand ranges and signal fluctuations from the iBeacon device.
- Lack of Microsoft SQL Server knowledge
  - No experience utilizing and interacting with Microsoft SQL server or performing
  - Mitigation Plan: DBA will research how to create database and tables; Web app lead will research how to run queries from a web application.

Status Report

GM Employee Companion Mobile App

- Project Description
  - Manage IT Service Center Appointments for GM Employees
  - Provide Directions to IT Centers
  - Dynamic FAQ Section
  - Company Directory

Must not have used Windows PowerPoint

- Project Plan Document
  - Sample app with hyperlinks created - 75% completed
  - App screen flow-chart created - 100% completed
  - Project plan document started - 10% completed

Status Report

GM Employee Companion Mobile App

- Server Systems / Software
  - Ubuntu 14.04 LTS w/ LAMP - partially running
  - SMTP server installed - not configured
  - SSH server installed - not configured
- Development Systems / Software
  - Xcode 6.1 - installed
  - Swift programming language
  - JSON - data interchange format
  - mySQL - database

Status Report

GM Employee Companion Mobile App

- Client Contact
  - ೞMultiple Conference calls
  - ೞEmails every other day
- Team Meetings
  - ೞMonday's/Wednesday's - Constructive Meeting
  - ೞFridays's - Triage/Conference Calls/Constructive Meeting
  - ೞNo in-person meeting scheduled at this point
- Team Organization
  - ೞRyan - Project Manager
  - ೞYutaka - Project Facilitator
  - ೞNathan - Customer Liaison
  - ೞDerrick - System Administrator
  - ೞJacob - Lead iOS Developer

Status Report

GM Employee Companion Mobile App

Risks

- Website Emails
  - ᘒWebsite must send/manage confirmation emails
  - ᘒOnline mySQL tutorials
- Changing requirements
  - ᘒRequirements changing weekly
  - ᘒSet clearly defined priorities, focus on static top priorities first
- App usability for target user
  - ᘒApp might seem useful to us and client, but may be hard to use for target users
  - ᘒAllocate time for testing and changes; confirm and reconfirm requirements
- FAQ's Overload
  - ᘒHow to manage users asking repetitive questions
  - ᘒResearch how other sites/apps manage FAQ sections.

Team Meijer

Status Report

Product Availability Check using Glassware

- Project Description
  - Look Up Product Via Barcode Using Google Glass
  - Determine Product Availability At
    - Local Store (Other shelves, back room, truck)
    - Nearby Stores
    - Distribution Centers
  - Provide Visual Feedback to Meijer Associate
  - Generate Aggregated Analytics on Usage
- Project Plan Document
  - Skeleton Created
  - Fleshing Out Details
  - 65% complete
  - Rough Draft to Client (via Github) by January 28
    - Includes requirements, risks, deadlines

Team Meijer

Status Report

Product Availability Check using Glassware

- Server Systems / Software
  - Client provided Windows Azure Mobile Services Account
  - Researching setting up database on Azure
  - Remote Github repository initialized, accounts added
- Development Systems / Software
  - Visual Studio, Android Studio installed on lab machines
  - Android SDK installed
  - Google GDK is on its way

Product Availability Check using Glassware

- Client Contact
  - Client main point of contact: Scott Rucinski
  - Two conference calls on January 16th and 21st
  - Weekly conference call with client Wednesdays @ 4PM
- Team Meetings
  - Weekly meetings scheduled for 4pm every Monday
  - Have met 4 times
- Team Organization
  - Regular contact through phone and email
  - Google Drive used for sharing documents
  - Google Hangout used for team communication

Team Meijer

Status Report

Product Availability Check using Glassware
Risks

- **Google Glass Software Development Kit (GDK)**
  - No prior experience developing for Glass. Extent of compatibility with other services unknown.
  - Mitigation: Research and early testing.
- **Microsoft Azure Mobile Services**
  - Azure not managed locally, no control over physical server. No prior experience with Azure Mobile Services.
  - Mitigation: Research and interact with Azure via Glass as soon as possible to explore capabilities and limitations.
- **Android Studio or Xamarin**
  - The team's prior experience with both is limited.
  - Decision will have significant implications with application development.
  - Mitigation: Apply previous experience on Android app development using Eclipse. Research into pros and cons of both.
- **Testing Environment**
  - Testing requires physical set up in order to test barcode scanning for Glass. Need to simulate a store environment.
  - Mitigation: Interact with Meijer team to inquire about the best methods to simulate as real of an environment as possible.

Team MSUFCU

Status Report

Financial 4.0 Interactive Financial Education

- Project Description
  - Interactive budget tracking with financial analysis
  - Expense and savings breakdown
  - Financial education and tips
  - Expense and savings challenges

- Project Plan Document
  - Executive Summary Draft complete
  - Design and Functional Specifications Draft complete
  - Technical Specifications and Risks Draft complete
  - 75% Complete – awaiting response from client

Team MSUFCU

Status Report

Financial 4.0 Interactive Financial Education

- Familiarization with Technologies (All)

- Server Systems / Software

  - LAMP stack installed

  - DB = MySQL (ERD created)

  - Middleware (what connects DB to back-end):
    - PHP (Josh, Vinny) ← MySQL (Ashlee)

- Development Systems / Software
  - Mobile
    - Android – Java, Android Studio (Matt)
    - iOS Objective-C, Xcode (James)
  - Desktop
    - HTML, jQuery, CSS, Javascript (Josh, Vinny)

Team MSUFCU

Status Report

Financial 4.0 Interactive Financial Education

- Client Contact
  - Weekly client meetings on Tuesdays at noon
  - Initial client conference call on January 14th
  - First in-person meeting on January 20th
- Team Meetings
  - Weekly team meetings on Tuesday and Thursdays
  - 5 team meetings conducted as of today
- Team Organization
  - Ashlee Deline - Project Manager
  - Matt Labrenz – Client Contact

Team MSUFCU

Status Report (4 of 4)

Financial 4.0 Interactive Financial Education

Risks

- Creating applications for 3 platforms
  - Web, Android, and iOS applications required
  - Distribute work evenly and avoid feature creep
- Project Flexibility
  - Autonomy could lead to unmet expectations
  - Frequent client contact and updates
- New Technologies
  - Learning new technologies and software to complete project
  - Dividing research evenly and beginning research early
- Aesthetics
  - Generating graphs and charts that seamlessly integrate in the application
  - Early identification of potential issues

Team Quicken Loans

Status Report

Parking Allocation and Expense Reconciliation

- Project Description
  - Develop a dashboard to allocate parking spaces to employees
  - Spots are leased/owned in 19 different garages in Detroit
  - Read billing invoices and badge swipe-in data from garages
  - Easily review and recover lost expenses due to overbilling

- Project Plan Document
  - Finished Executive Summary: 100% complete
  - Functional Specifications: 50% complete
  - Design Specifications: 25% complete
  - Technical Specifications and Risks: outlined

Team Quicken Loans

Status Report

Parking Allocation and Expense Reconciliation

- Server Systems / Software
  - Installed Windows 2012 R2 and .NET framework
  - Installed SQL Server 2012 Standard
  - Installed GitHub for Windows

- Development Systems / Software
  - Installed Visual Studio 2013
  - Installed .NET framework, using C#
  - Installed SQL Server 2012 Express
  - Installed GitHub for Windows

Team Quicken Loans

Status Report

Parking Allocation and Expense Reconciliation

- Client Contact
  - Weekly Conference Calls every Thursday 10 - 11 AM
  - Initial Conference Call 1/15, traveled to Headquarters 1/22
- Team Meetings
  - Met 3 times a week for the past two weeks
  - Weekly Team Meetings: Monday & Wednesdays 4 - 5 PM
- Team Organization
  - Chelsea – Project Manager, Tim – Client Contact & Development Manager
  - Matt – Lead Designer, Liz –Beta Tester

Team Quicken Loans

Status Report

Parking Allocation and Expense Reconciliation
Risks

- Ingesting invoice data – multiple formats for 19 garages
  - Pulling data from these will be tricky, and formatting could change
  - Mitigation: use regular expressions to identify key words
- Ingesting parking garage swipe-in data for team members
  - Different formatting for different garages, only received/month basis
  - Mitigation: Use example invoices, request garages send more frequently
- Linking into Human Resources database
  - Pull information such as Employee badge numbers and ID's
  - Mitigation: Set up a test database using SQL Server 2012
- Not selecting a small enough subset of features to implement
  - Selecting features than we could implement in our time frame
  - Mitigation: Determine importance and difficulty of each feature, planning

Team Spectrum Health

Status Report

Mobile Appointment Check-In and Payment

- Project Description

  - Alert patient they may check in upon arrival using iBeacon

  - Have patient verify and/or update personal information

  - Pay copay using mobile device

  - Provide map for patient to find appointment location

- Project Plan Document

  - 75% Complete

  - Completed Sections: Overview, Functional/Design Specifications, Screen Mockups, System Architecture, Risks

Team Spectrum Health

Status Report

Mobile Appointment Check-In and Payment

- Server Systems / Software
  - Installed and tested Windows Server 2008
  - Configured Internet Information Services (IIS)
  - Team Foundation Server is installed and running
- Development Systems / Software
  - Visual Studio installed on lab machines and personal computers
  - Visual Studio Unit Testing and SpecFlow Integration testing configured
  - Gimp installed for image editing purposes

Team Spectrum Health

Status Report

Mobile Appointment Check-In and Payment

- Client Contact
  - Two on site meetings with Spectrum Health development team
  - Weekly conference call on Wednesday
- Team Meetings
  - 6 team meetings to date
  - Weekly meetings on Wednesdays and Sundays
- Team Organization
  - Utilize Google Docs for group documents and presentations
  - Group text message and Facebook group for regular communication

Team Spectrum Health

Status Report

Mobile Appointment Check-In and Payment

Risks

- Payment
  - Accept payment using a variety of payment services
  - Research how payment works within mobile applications
- Security
  - Protect sensitive medical/personal information and also provide secure payment for the user
  - Test different security methods and contact Spectrum Health about their existing application security
- iBeacon
  - Sense when a user has entered a Spectrum Health facility and check if the user has a relevant appointment to determine whether a check in notification should be sent
  - Research iBeacon uses in other applications and confirm with Spectrum Health that appointment data can be gathered without the application being opened and authenticated

Team TechSmith

Status Report

Enterprise Learning Activity Capture

- Project Description
  - Allow users to store the information that they've been learning into an online database
  - Allow employees to search this database quickly to find the right person for a specific task
  - Give access to each user to view what their colleagues have been learning about
- Project Plan Document
  - Currently Document Outlined
  - PPT Slides Complete

Team TechSmith

Status Report

Enterprise Learning Activity Capture

- Server Systems / Software
  - Ubuntu
    - Running
  - ADL LRS
    - Figuring it out
- Development Systems / Software
  - Visual Studio 2012 (IDE)
    - Running
  - Microsoft Office 365
    - Running

Team TechSmith

Status Report

Enterprise Learning Activity Capture

- Client Contact
  - Met with clients at TechSmith on Friday January 16th
  - First Phone Meeting Thursday January 22, occurring each Thursday from 1:30 – 2:30
- Team Meetings
  - To meet before and after each conference call
  - Team has met four times
- Team Organization
  - Client Contact – Ben Blazy
  - Project Manager – Stephan Hutecker

Team TechSmith

Status Report

Enterprise Learning Activity Capture

- Risks
- Tin Can API
  - High Risk
  - Poor documentation and brand new to all of us
  - Read up on it and try and get examples from the previous capstone group that used the Tin Can API
- ADL LRS
  - High Risk
  - Database Structure that runs on a obsolete version of Ubuntu
  - Attempt to acquire the old version of Ubuntu and install the ADL LRS, otherwise use a different version of the ADL LRS
- Database Queries
  - Low Risk
  - None of us have a database background
  - Read up on databases and find example code to figure it out
- Web coding
  - Low Risk
  - One of us has a background in web development, the other three do not
  - Read up on web development and how to do it properly
- RESTful Practices
  - Low Risk
  - Unfamiliarity with RESTful practices
  - Read up and look through and understand the theory and guidelines of RESTful practices

Team Urban Science

Status Report (1 of 4)

Market Share Viewer

- Project Description
  - Display global auto dealership and market share data
  - Drill down capabilities by region and country
  - Administrative web interface
  - Push notifications for newly uploaded data

- Project Plan Document
  - Started and assigned individual sections
  - Specs and screen mockups completed
  - Final draft expected completion Jan. 28th; send to client
  - Dedicated doc for incremental deadlines

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Team Urban Science

Status Report

Market Share Viewer

- Server Systems / Software

  - Windows Server 2012 running but needs to be configured

  - SQL Server 2012 not running and needs to be configured

  - Team Foundation Server running but needs to be configured

- Development Systems / Software

  - Windows Virtual Machines running and configured

  - Visual Studio 2013 running and configured

  - Android Studio 1.02 running and configured

  - Xcode 6.1.1 running and configured

Team Urban Science

Status Report

Market Share Viewer

- Client Contact
  - Weekly scheduled conference call, Wednesday afternoons
  - In-person meeting Jan. 23rd
- Team Meetings
  - Daily meetings, on average
  - Biweekly scheduled status updates
- Team Organization
  - Web application: David P.
  - iOS: Abdulla A., Dhruv R.
  - Android: David W., Lucas M.
  - Backend/Sys Admin: David W.
  - Design/UI: Dhruv R., David P.

Team Urban Science

Status Report

Market Share Viewer

Risks

- Authentication
  - Role-based, hierarchal system
  - Start with one user type (admin), extend functionality to others
- Google Maps API
  - Identified by client to be biggest problem point historically
  - Start early, implement basic functionality
- Push Notifications
  - Another problem noted by client; traditionally a stretch goal
  - Start researching early
- Database
  - Structuring complex queries for drill-down capabilities
  - Focus on understanding database schema early

Team Whirlpool

Status Report

Laundry Room Tablet Payment System

- Application managing laundry machine payments and use
  - Show available washers and dryers
  - Handle payments for individual wash cycles
  - Offer notifications on wash cycles
  - Provide management with details on all machines
- Project Plan Document
  - Sections assigned on 1/16
  - UI Mockups completed 1/23
  - Rough Draft Completed 1/25

Team Whirlpool

Status Report

Laundry Room Tablet Payment System

- Ubuntu 12.04 Server
  - Apache2 webserver installed
  - MySQL and PHP tested

- Xamarin/Visual Studio
  - Xamarin cross-platform development

- Operating Systems
  - Windows 7/8 on lab computers

Team Whirlpool

Status Report

Laundry Room Tablet Payment System

- Client Contact
  - Scheduled weekly conference calls with clients, Wednesdays at 9am
  - Scheduled an in-person meeting, 1/30
- Team Meetings
  - Scheduled Triage meetings, Friday 10am
  - Five official team meeting held, weekly meetings on Friday at 10:20am
- Team Organization
  - Client Contact
  - Task assignment system in place

Laundry Room Tablet Payment System

Risks

- Cross-Platform Development
  - Designing multiple applications simultaneously for different operating systems
  - Mitigation: Use Xamarin IDE to develop for multiple platforms at once
- Payment Information Security
  - Handling user's banking information implies a need for strict security
  - Mitigation: Research security measures, or make use of an established payment system with verified security protocols in place
- Backend API
  - Designing an interface between Whirlpool Smart Appliances and LRTPS could become complicated
  - Mitigation: Research and document Smart Appliance methods
- Testing on Machines
  - Without access to all available Smart Appliances and tablet hardware, thorough testing will be impossible
  - Mitigation: Test on available devices and emulate others if possible