Virtual Classroom

Project Management Plan

COP 4331C, Fall, 2015

## **Modification History**

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| --- | --- | --- | --- |
| Version | Date | Who | Comment |
| V0.0 | 09/8/2015 | J. Bender | Initial Draft |
| V0.1 | 09/12/2015 | J. Casserino | Updated Rough Draft  Added;   * Project Overview * Reference Documents * Applicable Standards * Project Team Organization * Deliverables * Technical Progress Metrics |
| V0.2 | 09/12/2015 | J. Bender  J. Casserino | Updated Rough Draft (Casserino)  Added;   * Tools and Computing Environment (Bender) * Configuration Management (Bender) |
| V0.3 | 09/13/2015 | J. Casserino  M. Friedman | Updated Rough Draft (Casserino)  Added;   * Plans for Tracking, Control, and Report of Progress (Friedman) * Table of Work Packages, Time Estimates, and Assignments (Friedman) * Quality Assurance (Friedman) |

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Contents of this Document

Project Overview

Reference Documents

Applicable Standards

Project Team Organization

Deliverables

Tools and Computing Environment

Configuration Management

Quality Assurance

Risk Management

Table of Work Packages, Time Estimates, and Assignments

Requirement Analysis

System/Program Design

Coding

System Testing

Acceptance Testing

PERT Chart

Technical Progress Metrics

Plans for Tracking, Control, and Report of Progress

4

4

4

5

6

6

7

7

8

8

8

8

9

9

9

9

9

10

**Project Overview**

The Virtual Classroom App is an iPhone app that will improve the current learning management system, Canvas. The system’s main goal is to increase the availability of information the students’ have, directly from the instructor’s to improve the data integrity, and to increase the information the instructors’ have, about the current understanding level of the students. The secondary goal is to improve the current system’s ease of use for all users. With a direct line of communication between the instructor and students in real time, the instructor will be able to cover sections more thoroughly. The real time lecture feed will also lessen the damages of out of school emergencies, which will plague everyone, at least once, in their academic career. With these improvements to an already successful system, the Virtual Classroom App will only improve the education of students and increase the proficiency of the instructors.

**Reference Documents**

* *Concept of Operations -* [Virtual Classroom](https://drive.google.com/open?id=0By95Fo5D2Zi8ZU9kcmQ3SmJtMU0)
* *Project Management Plan template* - [Project Management Plan](http://www.cs.ucf.edu/courses/eel5881/ProjectPlanTemplate.html#Overview)

**Applicable Standards**

Coding Standard – [Google Java Style](https://google.github.io/styleguide/javaguide.html)

Documentation Standard – [American Psychological Association (APA) Writing Style](https://owl.english.purdue.edu/owl/section/2/10/)

Artifact Size Metric Standard – Hours taken to complete the listed features in the

[Concept of Operations](https://drive.google.com/open?id=0By95Fo5D2Zi8ZU9kcmQ3SmJtMU0)

**Project Team Organization**

Group 26 is comprised of four University of Central Florida (UCF) Undergraduate students in the COP4331 (Processes for Object-Oriented Software Development) class. The group members are Chad Armstrong, Joseph Bender, Joshua Casserino and Miles Friedman. Currently, all team members share equal responsibility for the design and documentation. All members will work on the code. Joseph Bender will be the lead project manager, Chad Armstrong will take the lead on the database design and management, Miles Friedman will take the lead on quantity assurance and testing, and Joshua Casserino will take the lead on documentation and record keeping. Each aspect of the project will be a product of group effort; no individual will solely create any feature or document.

Communication is key to the design and manufacture of a great product so it was decided as a group to meet at least once a week on Tuesdays and at any time it is required due to issues that may arise. Aside from face to face meetings the group is using a number of communication resources such as, but not limited to; GroupMe (phone app), mobile phones, GitHub, and Google Drive.

**Deliverables**

|  |  |
| --- | --- |
| **Artifact** | **Due Dates** |
| Meeting Minutes | Within 48 hours after meeting |
| Individual Logs | Updated Weekly on Fridays through WebCourses |
| Group Project Management Reports |  |
| Concept of Operation | 09/17/2015 |
| Project Plans | 09/17/2015 |
| SRS | 10/08/2015 |
| High-Level Design | 10/29/2015 |
| Test Plan | 10/29/2015 |
| User’s Manual | 12/03/2015 |
| Final Test Results | 12/03/2015 |
| Source, Executable, Build Instructions | 12/03/2015 |
| Project Legacy |  |

**Tools and Computing Environment**

The mobile application will be developed for the iOS platform. This will require the use of Xcode 6.4 on Mac OS to develop the app. Note: other third party cross-platform development tools such as Xamarin will be used as well (for developers without Xcode). The project will be programmed using the swift (objective-c based) programming language for iOS. Xcode’s standard iOS compiler will be utilized to produce builds for application testing. The project will utilize an open source version of iOS Canvas from Instructure called CanvasKit available on GitHub. This will provide us with necessary libraries and references to Canvas API endpoints. Libraries included are CanvasKit.h and Constants.h. These provide necessary functions useful to integrating with the Canvas web application functionalities.

**Configuration Management**

The group will utilize GitHub as a version control management system. This will help allow the tracking of code updates. It will also help to provide metric data on our progress as in terms of features completed (lines of code). Joe Bender is responsible for the master repository which can be accessed by all of the group members to support collaborative development. When the team is to do development, or needs to add files they will be pushed to Joe Bender’s repository under the directory [VirtualClassroom](https://github.com/bender-joe/VirtualClassroom) on GitHub. The location will contain all code files, database files, libraries, readme documents, implementation documentation, and software documentation. Team members can follow the simple guidelines to push and pull code to and from the repository without the need for approval. The [VirtualClassroom](https://github.com/bender-joe/VirtualClassroom) directory is shared to the team members’ accounts for push and pull rights.

**Quality Assurance**

During our planning phase we will use UML diagrams to divide our mobile application in to a set of core functionalities. After any of these core functionalities is completed, we will be testing the feature to make sure it works as we expect it too. For each additionally added feature, we plan to both test that feature, and all of the already added features that interact with it. It is our hope that this way, we may catch bugs early and keep the development process as smooth and seamless as possible. Once the app is complete, we will go through a final phase where we will test the core functionalities of the application before submitting the final version.

The Project Manager: Joe Bender, will be responsible for making sure that we are all doing our share of testing. Since our phone will run on iOS and not android, testing will be done using the iPhones of Joe Bender and Miles Friedman, which means that Miles and Joe will most likely be responsible for most of the QA. We are currently trying to get our hands on an IPad as well which would be used as an additional test device.

When testing a feature we will write up a list of things that should happen based on a certain action, and then confirm that the desired behavior occurs. This will likely be done using third party issue tracking software which we will also be using for bug tracking. If there is an issue, we will report the bug and decide whether or not it needs to be fixed at the moment, or can be fixed at a later time.

Risk Mgmt – Chad

**Table of Work Packages, Time Estimates, and Assignments**

Requirement Analysis

In one week, all team members will have analyzed the requirements and will be aware of the required process we must follow throughout this Project. During this package we will address the following questions: How will we report our activity throughout this process? How will we handle version control, bug tracking etc? What does our application need to accomplish from a user perspective?

System/Program Design

This package should take us two weeks. Joe Bender, as our project manager will be in charge of ensuring that the system design is completed. But all members of the group will participate in the design of the application in terms of layout and how it should be coded. Questions we will address during this package: Do we need to use a server? (and how?) Do we need to use a database? (and how?) What do we need to accomplish from a coding perspective to accomplish our desired goal?

Coding

All members will be responsible for the completion of the coding portion of our project. More specifically, areas of coding will be divvied up by our Project Manager during the System/Program Design phase and those assigned to a specific task will be responsible for the accompanying section of code. We estimate four weeks of coding.

System Testing

This will be performed by each member of the group. By our estimations, about two weeks of testing will be needed to ensure that everything works appropriately.

Acceptance Testing

As of now, Joe Bender and Miles Friedman will be largely responsible for the acceptance testing as they are the only members of the group with IPhones. If we are able to gain access to an IPad or an additional phone, more members will be able to contribute here. This should take us two weeks and will be the final step.

PERT Chart – Chad

**Technical Progress Metrics**

|  |  |  |  |
| --- | --- | --- | --- |
| Work Package | Metrics | Estimate | Actuals |
| Meetings | Hrs. | 16 | 2 |
| Individual Logs | Hrs. | 8 | 1 |
| Deliverable I Documents | Days  Required Sections | 1  14 | 4  11 |
| Deliverable II Documents | Days  Required Sections | 2 | 0 |
| Deliverable III Documents | Days  Required Sections | 2 | 0 |
| Creating user accounts and profiles | Hrs.  Percentage |  | 0 |
| Creating course(s) | Hrs.  Percentage |  | 0 |
| Enrolling users in course(s) | Hrs.  Percentage |  | 0 |
| Users being able to log in | Hrs.  Percentage |  | 0 |
| Users being able to upload/access course files (within profile limits) | Hrs.  Percentage |  | 0 |
| Privacy of grading, and personal data | Hrs.  Percentage |  | 0 |
| Data validation, stream | Hrs.  Percentage |  | 0 |
| Instructor being able to make/grade assignments | Hrs.  Percentage |  | 0 |
| Course discussion section | Hrs.  Percentage |  | 0 |
| Instructor being able to create an interactive poll | Hrs.  Percentage |  | 0 |
| Data validation, stream | Hrs.  Percentage |  | 0 |
| Students being able to create an interactive notebook (Private and Public) | Hrs.  Percentage |  | 0 |
| Final Deliverable Documents | Days  Required Sections |  | 0 |

**Plans for Tracking, Control, and Report of Progress**

At a minimum, each member of the team will post the following weekly: An individual activity log, Individual status information and weekly goal status. Using an as needed basis, bug/issue tracking and test plans (QA) will be recorded through a third party issue tracking software called LeanTesting. Version control and weekly reporting will be handled using GitHub.

Each week, all members will get together and set weekly goals. These may include coding goals, bug fixes, or anything else relevant to the project. During our weekly meeting we will also review each member’s weekly report and discuss progress towards goals from the prior week.