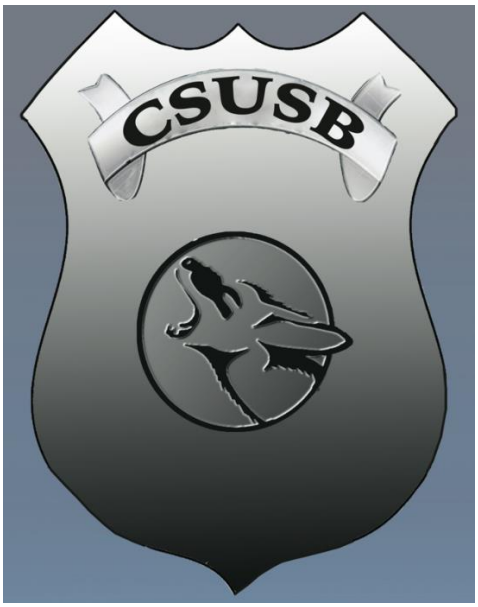

Campus Safety

Mobile Application

Software Project Management Plan

Revision 1.0

February 5, 2015

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Advisor:

Dr. Arturo I. Concepción

Contents

1 Overview

1.1 Project Summary

1.1.1 Purpose

This Software Project Management Plan outlines the management of the Campus Safety mobile application development for the first iteration of the project. It contains requirements, development cycle plans, progress timeline, testing protocols, and maintenance details for the application. Its intended audience is Dr. Concepcion.

1.1.2 Scope of the Project

The scope of this plan encompasses the completion of development for the Campus Safety application during the first iteration of the application's development. It outlines what will be done, who will do what, and the methods that will be adopted for the first iteration. Anything not directly related to application development as specified in the current SRS to be considered outside of project scope. These include:

- Application Development
- Quality Assurance
- Documentation

1.1.3 Assumptions and Constraints

We make the following assumptions:

- The programmers are following the approved SRS.
- The client will be an integral part of the design process and provide timely responses to inquiries.
- Team members will attend lab meetings.
- Team members will dedicate time outside of class towards the development of the project
- A development server will be provided with the necessary technologies available.
- The application must be designed to work on mobile devices
- Short time frame for development
- Prior knowledge of development technologies

1.1.4 Schedule and Budget Summary

No budget is given for the project, however the following will be made available: however, Prototype 1 will be delivered on 25 Feb 2015 and Prototype 2 will be delivered on 25 Mar 2015.

1.1.5 Project Deliverables

1. SRS, SPMP, SQAP, Software Architecture, Detailed Design, Test Plans, Documented Source Code, and Maintenance Manual.
2. Executable App.

1.2 Evolution of the Plan

Joseph Callahan and Raymundo Mejía met with Scott Kovach at the CSUSB Police Department 26 Jan 2015. We discussed the requirements for the app. Scott did not have his notes with him, but stated he was happy with the previous team's app if it worked. At our next lab meeting we all took sections of the SRS and the final editing was done by Joseph Callahan. We all took a function to write and planned at which dates marked progress points or milestones. The project manager and assistant project manager wrote the SPMP and turned it in to Dr. Concepción for approval.

2 References

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.* IEEE Computer Society, 1998.

M. Flowler, "UML Distilled: A Brief Guide to the Standard Object Modeling Language," 3rd Ed, Addison- Wesley, 2004.

Dylan Allbee, *Software Project Management Plan for "CSUSB Advising Mobile App"*.

3 Definitions, Acronyms, and Abbreviations

Android – A Linux-based operating system designed primarily for touchscreen mobile devices, such as, smart phones and tablet computers.

Android Studio – The IDE of choice for our development team.

Apache Web Server - The Apache HTTP Server, colloquially called Apache, is the world's most widely used web server software. Originally based on the NCSA HTTPd server, development of Apache began in early 1995 after work on the NCSA code stalled.

API - Stands for Application Programming Interface, is a source code based specification with intended use as an interface by software components.

App – Short for applet refers to any software or program that runs on mobile devices such as cell phones, tablets, and Smartphone technology. The majority of the code resides on the device as Java Runtime Environment and the smaller portion of code is on a server that can be downloaded to a client quickly.

CSUSB - California State University, San Bernardino. This is the university at which the application is being developed.

FTPS - (also known as FTP-ES, FTP-SSL and FTP Secure) is an extension to the commonly used File Transfer Protocol (FTP) that adds support for the Transport Layer Security (TLS) and the Secure Sockets Layer (SSL) cryptographic protocols.

IDE - Is an Acronym for Integrated Development Environment. An IDE assists the programmer writing and debugging software.

IEEE - The Institute of Electrical and Electronics Engineers is a professional association with its corporate office in New York City and its operations center in Piscataway, New Jersey. The organization helps make standards for all industries affected by what their title implies.

iOS - is an acronym for the iPad, iPod, iPhone operation system that is used on Apple devices.

Java – Object Oriented Programming Language used in many mobile applications.

Java Development Kit (JDK) – Tools needed for programming in Java.

Javascript - is the programming language of the Web.

JSON - (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. It is based on a subset of the JavaScript Programming Language, Standard ECMA-262 3rd Edition - December 1999.

MySQL – is the program we will use for database design.

PHP - is a server-side scripting language designed for web development but also used as a general-purpose programming language.

SDK - Stands for Software Development Kit. This tool allows for the creation of applications for certain software platforms.

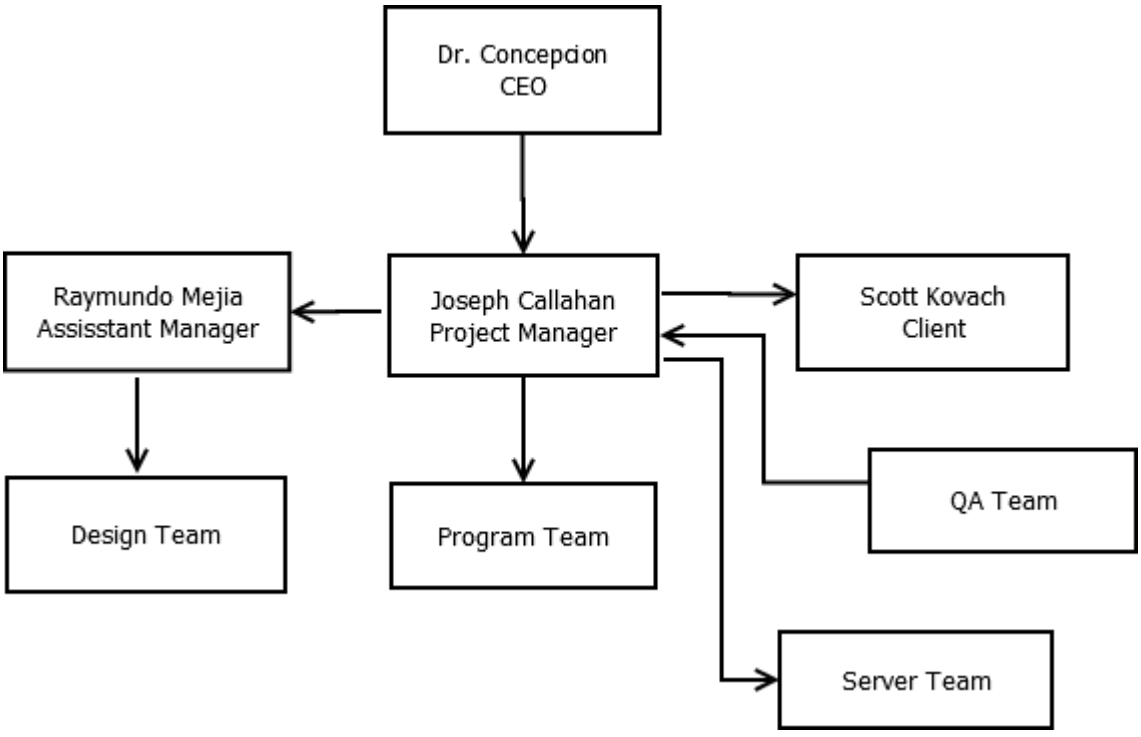
SRS - Software Requirements Specification. A description of the requirements specifications needed for the Campus Safety application.

Talk Back - Talk Back is an Accessibility Service that helps blind and vision-impaired users interact with their devices. Talkback adds spoken, audible, and vibration feedback to your device. It is a system application that was pre-installed on most devices and is updated when the accessibility service is improved.

XML - Stands for Extensible Markup Language. XML is a markup language that defines a set of rules for encoding documents that are both machine and human read-able.

4 Project Organization

4.1 External Interfaces



Dr. Concepcion (CEO) – Monitors performance of all the development teams. Gives guidance to the project manager, comments on the team's documents, and heads all board meetings where progress reports are given.

Joseph Callahan (Project Manager) – Liaison between the team and CEO and the client. Produces a work environment where everyone on the team has what they need to do their part as efficiently as possible.

Scott Kovach (Client) – Conveys to project managers what the requirements of the app are, and gives feedback when prototypes are demonstrated.

Raymundo Mejía (Assistant Project Manager) – Closely monitors the team's progress, is an integral part in all document preparation, attends board meetings, client meetings, and knows everything about the project so he can replace the project manager in the event the project manager cannot perform his duties.

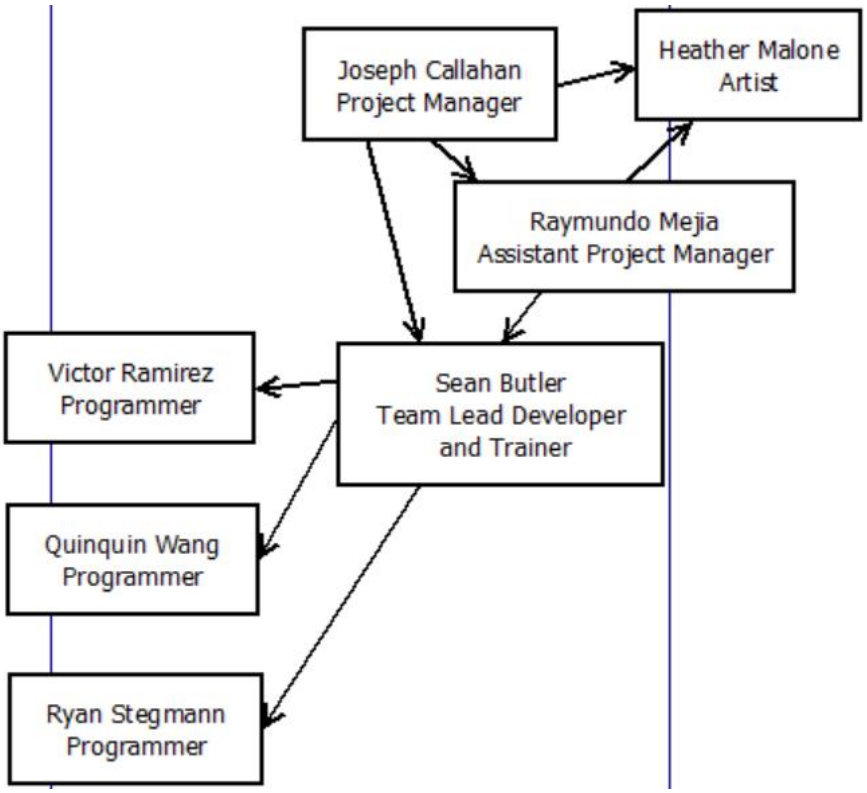
Design Team – Plans the layout and functions of the app. Reports to assistant project manager.

Program Team – Codes the objects in the app. Reports to the project manager.

Server Team – Receives requirements from development team for presentations to the client. Issues communication ports, provides server and database software on a machine, and maintains a stable environment to host the application.

QA Team – Tests the product for any flaws and gives the results to the development team for debugging or gives their approval.

4.2 Internal Interfaces



4.3 Roles and Responsibilities

Joseph Callahan (Project Manager) – Liaison between the team and CEO and the client. Produces a work environment where everyone on the team has what they need to do their part as efficiently as possible. Programmer for About Us.

Raymundo Mejía (Assistant Project Manager) – Closely monitors the team's progress, is an integral part in all document preparation, attends board meetings, client meetings, and knows everything about the project so he can replace the project manager in the event the project manager cannot perform his duties. Programmer for Menu.

Sean Butler – Leads the team of programmers. Integrates all of the objects of the program into one executable. Trains all of the programmers in Android Studio. Programmer for Anonymous Tips.

Heather Malone – Artist for the User Interface. Designs the background and icons.

Victor Ramirez – Programmer for Resources.

Quinquin Wang – Programmer for Services.

Jorge Gamez – Liaison for Server Team.

Raul Diaz – Liaison for QA Team.

5 Managerial Process Plans

5.1 Start-up plan

- Client specification
    - Client has specified desired work units
- Technology research
    - Research in Development environments, test servers, security protocols
- Environment set up
    - Development environment have been installed and are running every team members workstation
- Design Overview
    - Each team member's work unit has gone through specified requirements

5.1.1 Staffing Plan

Members working on this application were all selected through the screening survey taken during the first week of the course.

5.1.2 Resource Acquisition Plan

The team will be working jack brown hall workstations on campus and their own personal computers. All work environments have been successfully installed in each members station. Testing for the application will be done with virtual emulators from Android Studio.

The resource plan will include services from the server team to obtain a test server during the development stages for certain work units in the application which include a get or post request to a database. We will also continue Student Advising with Cory Brown. During the development members will be encouraged to attend one additional meeting outside of class hours. All requests will be handled by project managers.

5.1.3 Project Staff Training Plan

All staff will undergo training with android development environment during the programming stages of the application. For this reason, all members are encouraged to attend weekly meetings.

Team members up to date have been participating in training session in the bi-weekly meetings. Additionally key links to Android development have been provided to member regarding their assigned work units.

5.2 Work Plan

5.2.1 Work Activities

Work Units:

Graphic Design: Icons, styles, layout

Assigned: Heather Malone

Prototype: Early working build version of Application

Services page: Qianqian Wang

About Us page: Alan Callahan

Resources page: Victor Enriquez

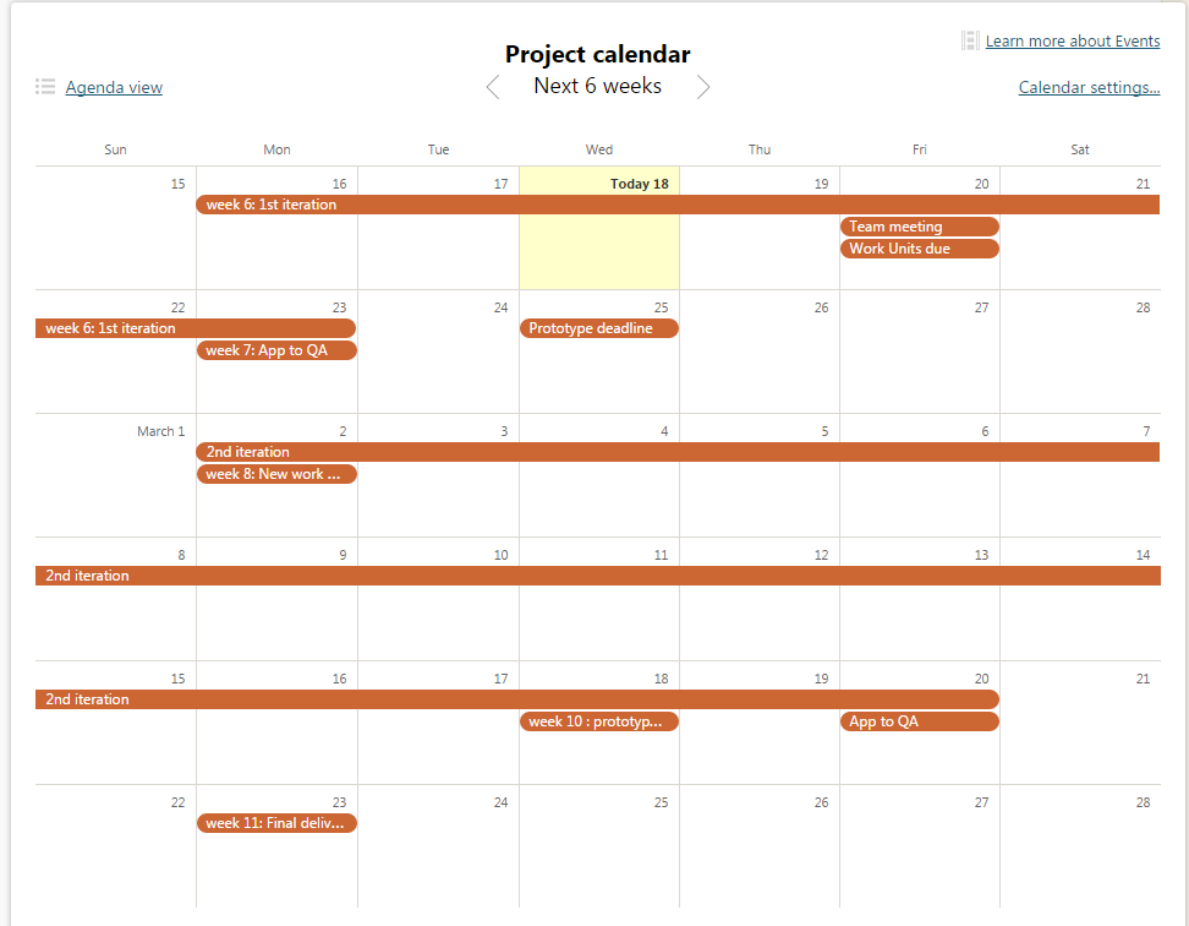
Menu Page: Raymundo Mejia

Anonymous Tips page: Sean Butler

Documentation: Work on code document for future references

Assigned: All Team members will work on documentation with respect to their assigned work units.

5.2.2 Schedule Allocation



5.3 Control Plan

5.3.1 Requirements

Team members will meet two days of the week to comment on the status of their assigned work unit. The client will be updated on the applications prototype on a bi-weekly basis. New unimplemented requirements requested by the client will be assessed between Managers. The Managers will establish a plan on how each requirement will be inserted into the prototype in progress.

5.3.2 Schedule

Weekly meetings will be held with Dr. Concepcion to conduct the direction of development process. Any changes in the schedule will be managed accordingly by the managers. Managers will keep constant communication with team members to discuss any changes affecting development of the prototype.

5.3.3 Quality

Quality of the project will be conducted continuously on team meetings by project managers and team leader.

The team will also follow a quality metric of:

- # of faults/K Loc
- Where we will report team members development process with log record.

5.3.4 Reporting

Dr. Concepcion will hold weekly meetings to conduct the status of the project. Team members will report b-weekly during class hours and keep constant communication through email.

5.3.5 Metrics Collection

No metrics have been collected or been analyzed to determine a coding standard at this time.

Metric will be collected on 2/20/2015 at the team meeting held in PFAU Library at 12:00 pm.

5.4 Risk Management Plan

Development:

- Additional meetings will be encouraged to work out difficulties during development process.
- Project managers will need updates by team members to obtain a direction of project.

Server failure:

- Server team will be emailed accordingly

5.5 Closeout Plan

1. Presentation of app to Client
2. Store all deliverable to repository
3. Submit Maintenance manual

6 Technical Process Plan

6.1 Process Model

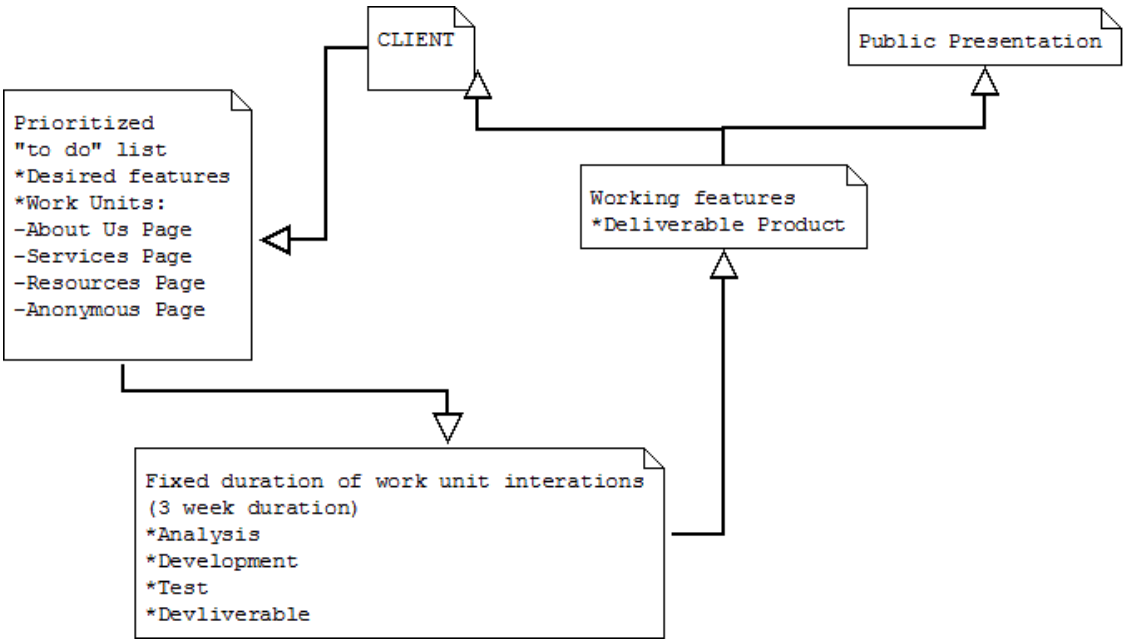
The team will adapt Scrum software development with three core roles committed to producing the desired product. The three core roles are the product owner, scrum master and the development team.

Product Owner: Scott Kovach

Scrum Master: Alan Callahan

Development Team: Alan Callahan, Raymundo Mejia, Sean Butler, Victor Enriquez, Ryan Stegmann , Raul Diaz, Jorge Gamez, Qiangian Wang

The key to the Scrum development process is that each member will be assigned to work on a specific feature. During the development process is essential that team members attend team meetings so the product owner and scrum master can assess the current status of the project. It is during these meeting that the team can reassess the direction of the project and reallocate resources to meet deadlines. Team leaders will keep constant communication with team members to determine if meeting after class hours will be required.



6.2 Methods, Tools, and Techniques

Methods:

- Scrum software development

  Techniques:

  - Planning Meeting
  - Bi-weekly scrum meeting with individual updates
  - End Meeting
  - Backlog Refinement

Tools:

- Android Studio
- Dia
- Basecamp
- Github

6.3 Infrastructure Plan

The Server Team will provide an Apache Webserver with PHP and MySQL in a Linux container, and SFTP access to upload code and documents. They will also provide access to a Gitlab service.

After deliverables have been made, continued maintenance and development will be assed at the end of the course.

6.4 Product Acceptance Plan

The acceptance will be conducted by to entities. The client and the quality assurance team will test the final product.

- Security Vulnerabilities
- Functional completeness
- Accessibility
- Response Time

7 Supporting Process Plans

7.1 Configuration Management

The Gitlab service provided by the server team includes a git revision control system.

All project deliverables will be considered as configuration items.

7.2 Documentation

Documentation for SRS, SQMP, SPMP will be prepared by the manager and assistant manager.

Documentation for Detailed Design and Architecture will be prepared by development team members.

Documentation will be written in Latex as the last step of the project. Documentation will be reviewed by team leaders.

7.3 Quality Assurance

The team will submit the final project before the final deliverable date.

7.4 Reviews and Audits

Every team member will be part of the review process to maximize the test sample size before the final deliverable date. Additionally design and code reviews will be submitted.

7.5 Problem Resolution

Team members are expected to have an open communication regarding the project to address any difficulties during the development and deadlines.

7.6 Process Improvement

There are features that require more resources in time and training that can be implemented in the next stage of development.

The biggest factor to Scrum development is communication and team members need to focus on reporting their updates on a daily basis. Team member will be reminded daily.