CSUSB Student Advising
Mobile Application

Software Project Management Plan

Revision 2.0

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1 Overview

1.1 Project Summary

1.1.1 Purpose

This Software Project Management Plan outlines the management of the CSUSB Advising mobile application development for the second iteration of the project. It contains requirements, development cycle plans, a time line of progress, 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 CSUSB Advising application during the second iteration of the application's development. It outlines improvements made to our plan as well as methods that will be kept from the previous 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 new assumptions:

- An APK will be provided to the QA team for review on Monday, March 18, 2013.
- A demonstration of the application will be made on Thursday, March 21, 2013.
- Team members will attend the demonstration.

Also included are our original 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.

We have the following new constraints:

- A mail server cannot be used for the application.
- The application must work on 2G phone connections.

Also included are those constraints from SPMP 1.0:

- The application must be designed to work on mobile devices
- Short time frame for development
- Prior knowledge of development technologies
- The ability to test programs on iOS and Android devicescontent...

1.1.4 Project Deliverables

For this iteration, we are adding a few additional deliverables

1. About Advising page
2. Tutoring page
3. Forms page

Also to be delivered from the previous iteration:

1. Documentation: SRS, SPMP, SQAP, Usage, Interface, design documents, and repository commitments.
2. The CSUSB Student advising application
   (a) Information pages currently available on the website
   (b) GPA Calculator
   (c) Degree requirements
   (d) Calendar
   (e) Android compatibility

1.1.5 Schedule and Budget Summary

For schedule, see Schedule Allocation section 5.2.2 No budget is given for the project, however the following will be made available:

- Computers suitable for development
- A server to keep a database and server-side code

No changes to the budget have been made for the second iteration of the project.

1.2 Evolution of the Plan

The second iteration is the final evolution of the plan. It will not receive further revision for this quarter.

The preliminary drafts of the SPMP will be submitted to Dr. Arturo Concepcion for approval and will be improved upon and modified depending on progress.

2 References

Software Project Management Plan IEEE 1058-1998 Student Advising Software Project Management Plan CSE 455, Inc. v1.0

3 Definitions, Acronyms, and Abbreviations

API Application Programming Interface
This is a particular set of previously written rules and. specifications that a software program can follow to access and make use of the services and resources provided by another particular software program that implements that API. It serves as an interface between different software programs and facilitates their interaction.

Client
CSUSB Student Advising

CSS Cascading Style Sheet
A language designed for creating the graphical style of a web page.

DB Database
Implies MySQL as the database engine & language

HTML Hyper Text Markup Language
The dominant description language for the frontend display of web pages.

JavaScript
A programming language that allows execution of application logic by the web browser. types of data.

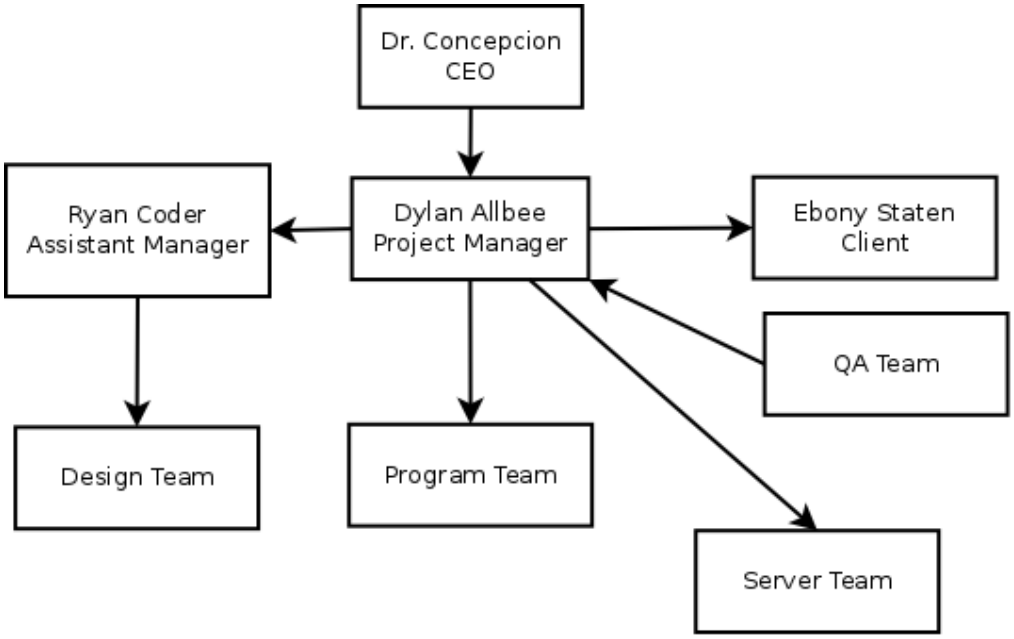
PHP PHP: Hyptertext Preprocessor
A programming language purposed for developing application logic for web sites.

QA Quality Insurance
The team responsible for verifying that the application produced by the software team meets its requirements.

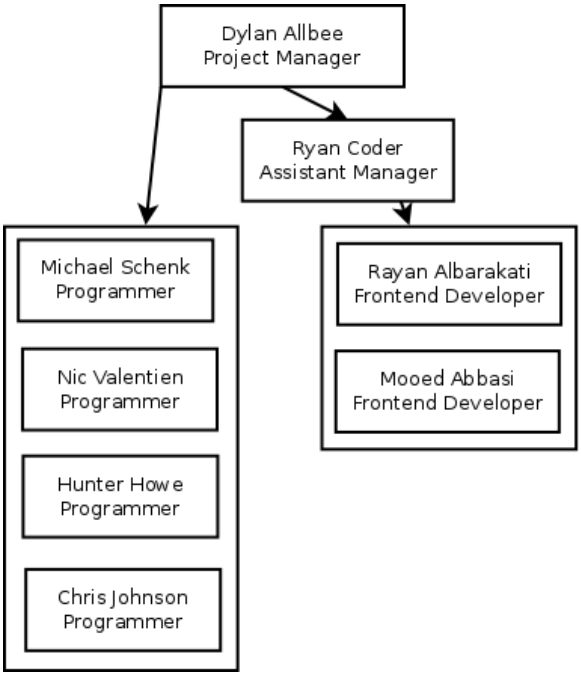
SDK Software Development Kit
An environment designed for the purpose of developing a specific type of application, containing tools and code libraries that facilitate development.

4 Project Organization

4.1 External Interfaces



4.2 Internal Interfaces



Chris Johnson has had his role changed from documentation to Programmer. The rest of the project members have not received role changes for the second iteration.

Name	Role	Responsibility
Dylan Allbee	Project Manager	Conducts meetings Communicates with client Oversees programming team Verifies program security Reviews all aspects of the project
Ryan Coder	Assistant Project Manager	Maintains time line Oversees design team Assists project manager Verifies application accessibility Reviews design
Nic Valentine Michael Schenk Hunter Howe Chris Johnson	Programmer	Develops either PHP or JavaScript Implements features of the SRS Adheres to security standards
Moeed Abbasi Rayan Albarakati	Frontend Developer	Develops in HTML and CSS Designs elements of the application Adheres to accessibility standards
Michael Schenk	Researcher	Determines feasibility metrics

4.3 Roles and Responsibilities

5 Managerial Process Plans

5.1 Start-up Plan

Our start up plan was a multi-branch process, all of which will be carried out simultaneously. This start up plan has already been carried out in the first iteration.

- Client specification
- Technology research
- Environment set up
- Resource acquisition
- Design overview

5.1.1 Staffing Plan

See Roles and Responsibilities section 4.3

5.1.2 Resource Acquisition Plan

Our resource acquisition plan has not changed for the second iteration.

Resources will need to be obtained from CSUSB Logo, Server Team, Student Advising, and potentially Academic Scheduling. Resource requests will be written by Dylan Allbee, Ryan Coder, or Michael Schenk. All requests will be sent out in a timely manner to assure quick turnaround.

5.1.3 Project Staff Training Plan

All staff is expected to learn the required technologies independently, with the exception of version control. Dylan Allbee will host a version control workshop at the start of the project.

Additionally, training will be given in JavaScript as it has become clear that there is a lack of JavaScript knowledge on the team. Training will be given on a person-by-person basis.

5.2 Work Plan

5.2.1 Work Activies

Prototype Early working build

Graphic Design Icons, styles, layout, and various graphics

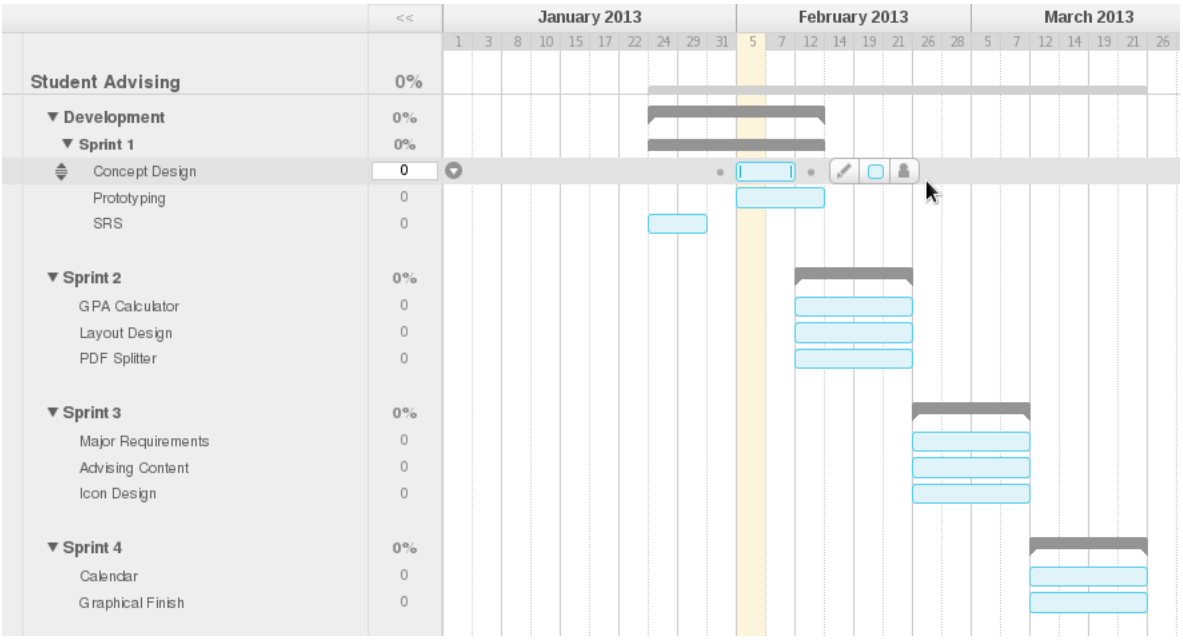
Programming Source code development

Testing Verify application reliability

Documentation Keep application maintainable

5.2.2 Schedule Allocation

No changes have been made to our schedule, and we are on task.



5.3 Control Plan

5.3.1 Requirements

Bi-weekly meetings will be conducted with our team.The client will be updated on prototypes as they roll out.

5.3.2 Schedule

Dr. Concepcion will conduct bi-weekly meetings with Dylan Allbee and Ryan Coder. Progress will be continuously evaluated.

5.3.3 Quality

Ryan Coder will continuously evaluate the quality of the graphical design elements of the application. Dylan Allbee will review all other revisions made to the application. Major iterations will be reviewed by the client and Dr. Concepcion.

5.3.4 Reporting

Dr. Concepcion will hold bi-weekly meetings where the status of the project is reported in detail.

5.3.5 Metrics Collection

The following metrics have been collected:

- No. Lines of code per week: 600
- No. Man-hours per week: 50
- Current progress percentage: 90%
- Lines of code per man-hour: 10

5.4 Risk Management Plan

Several procedures will be used to manage risks. These have not changed in this iteration. Human resource loss:

- Project management will pick up slack
- Members from other projects may be utilized

Equipment Loss

- Students are held individually liable for equipment loss, as per normal CSUSB policy.

Server Unavailability

- The application will be designed to handle a loss of connection gracefully, having most of the data cached locally
- An email will be send to the server team

5.5 Closeout Plan

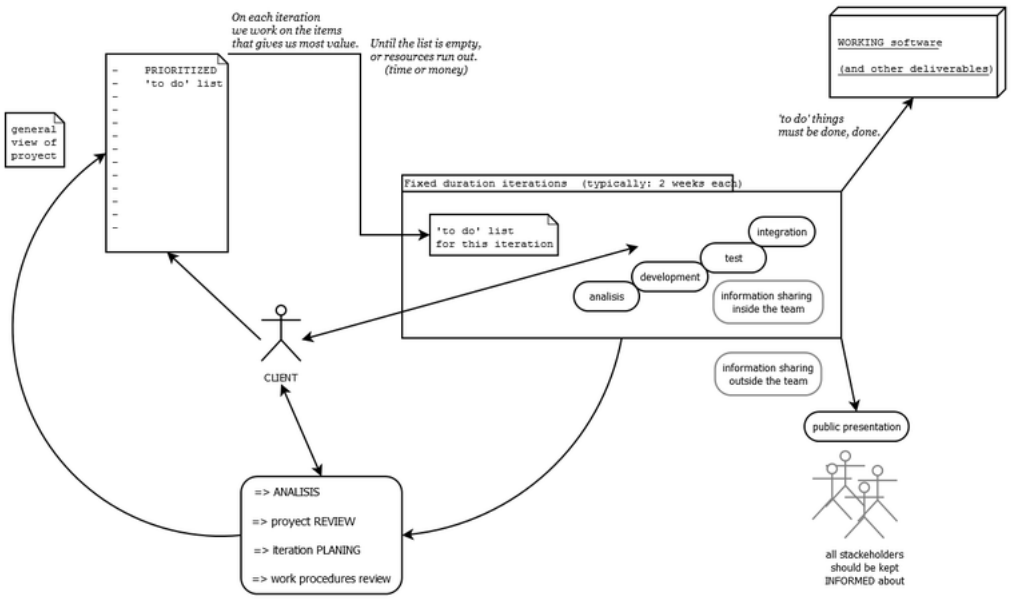
1. Presentation of deliverables to Dr. Concepcion
2. Presentation of deliverables to Client
3. Review of documentation
4. Audit of equipment
5. Transfer of assets to Dr. Concepcion

6 Technical Process Plans

6.1 Process Model

In addition to the process model outlined below, several changes will be made in this iteration. First of all, several of the programmers in the group will be doing a modified extreme programming in an effort to complete the project before end of quarter. Programmers not doing extreme programming will be moved to reviewing and debugging various parts of the application. With those modifications mentioned, the following process will still be followed:

The Agile software development model will be utilized for the development of this application. Development will take place in multiple iterations throughout the quarter, two more than required by the course syllabus. A current working version will be kept with nightly builds and tested for stability on a weekly basis. Once stability testing has passed, an iteration will be pushed to the main development branch in the repository. At the end of each iteration, a review will be held between the project managers and the development team to assess the status of the application and to verify that we are on goal. Work that was planned for an iteration but was not completed will be carried over to the next iteration. Only the semi major iteration and the final iteration will be released to Dr. Concepcion and the Client, at which time a demonstration will take place.



6.2 Methods, Tools, and Techniques

Methods:

- Agile programming
- Extreme programming

Tools:

- Android SDK

- PhoneGap
- Jq.Mobi
- HTML5 Boilerplate
- Laravel Framework
- Subversion
- LaTeX

Techniques:

- PSR-2 Coding standard for PHP

6.3 Infrastructure Plan

Continued maintenance and development of the application will be carried out by the CSUSB Mobile student interns. Further development plans for the application will be assessed at the end of the course. Devices necessary for development will be provided by Dr. Concepcion.

No changes have been made to our infrastructure plan for the second iteration.

6.4 Product Acceptance Plan

Dr. Concepcion and the Client will test the final product for acceptance. The following major issues will be assessed:

- Security Vulnerabilities
- Memory Leaks
- Functionality Completeness
- Accessibility
- Response Time

7 Supporting Process Plans

7.1 Configuration Management

All of the project deliverables will be considered as configuration items. They will be named after the document (SRS, SPMP, SQAP) followed by a version number. Each code revision will be submitted to SVN and then reviewed and tested by Dylan Allbee before being put into production.

7.2 Documentation

Documentation will be written in LaTeX and maintained by Chris Johnson. Submitted documentation will be reviewed by Dylan Allbee.

7.3 Quality Assurance

The team will submit its code to the quality assurance team for assessment.

7.4 Reviews and Audits

Dylan Allbee will review and audit all code submitted to the repository before being put into production.

7.5 Problem Resolution

Problems will be resolved between the development team. If a problem can not be resolved internally, Dr. Concepcion will be consulted.

7.6 Process Improvement

For the second iteration, we are implementing a modified extreme programming in addition to agile in an effort to increase our lines of code per hour and to decrease our number of bugs.

Documentation and coding standards, as well as performance metrics will be defined by the QA team. On each iteration the software team will attempt to meet such benchmarks.