Software Requirements Specification

for

GooGrade

Version 2.1 approved

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BluGoo

02-05-09

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Revision History

Name	Date	Reason For Changes	Version

Paul Phu	01-29-09	First Draft	1.0
Hermyn Mendez	02-02-09	First Major Revision (edited section 1,2, added 3)	2.0
Hermyn Mendez	02-05-09	Added/Revised Section 4 and Appendix C (Kathy, Paul, and Kalvin). Revised sections utilizing the QA document. Synced Section 3 with Use Case List.	2.1
Paul Phu	2-10-09	Edits to all sections excluding section 3	2.2

1.Introduction

1.1 Purpose

This SRS provides specifications for GooGrade v1.0 for complete development.

1.2 Document Conventions

This document states the functionality of GooGrade v1.0. Features for future releases are noted accordingly. All GooGrade v1.0 features have a higher priority than those features noted for follow-up releases. Data items will be made bold clarification.

1.3 Intended Audience and Reading Suggestions

This document is intended for members of the GooGrade development team, the BluGoo team, the customer Lauren Tsung and the user. The SRS contains features and information required for the release of GooGrade v1.0 and possible future releases. It should be read through thoroughly, though the table of contents may be used for immediate references. Sections 1 to 2.2 can give a quick overview of GooGrade while further down this document will give a more detailed specification.

1.4 Project Scope

GooGrade is an open source web based application designed to help teachers track and manage students, and their respective grades in a class. It is also designed to allow students to track their grades and compare their progress to the rest of the class' by means of grade metrics. Because GooGrade is open source, it complies with the Open Standard Requirements (OSR) for Software. The OSR states that the GooGrade must be freely available and royalty-free. GooGrade must not have any dependencies on technology that does not comply with the OSR. The Open Standard Requirements for Software may be found here: http://opensource.org/osr.

For more information regarding the Business Requirements, see section 1 of the GooGrade Vision and Scope (see section 1.5).

1.5 References

All documents referenced pertaining to GooGrade can be found on BluGoo's wiki page: http://wiki.csc.calpoly.edu/BluGoo/ .

2. Overall Description

2.1 Product Perspective

GooGrade's conception is a response to many already available grading tools which do not effectively package commonly desired student/teacher functionality. Popular grading tools, such as Blackboard, are very expensive and do not offer all of the features that GooGrade provides (see

Appendix A in Vision and Scope document). GooGrade not only provides a means of editing and tracking grades and progress, it also provides an environment for teachers and students to exchange electronic documents. Most students turn in their assignments to teachers via physical copies. To bring the submission process to the digital world, Cal Poly's Computer Science Department created a UNIX based program called *handin* to allow students to submit electronic copies of their assignments. Though the process is functional, it can be difficult to use because it requires experience in UNIX. GooGrade offers a web based interface which not only allows students to submit their assignments to teachers, but also allows teachers to upload documents for students to download. For these reasons, we believe GooGrade could replace programs like *handin*.

2.2 Product Features

GooGrade allows students and teachers access to a common grading application. Teachers are able to take attendance, add users, manage assignment grades, post announcements and, in release 2, upload files for students to download. Students are able to view their grades, view grade metrics, upload assignments for submission, and are able to project their grade with the grade predictor.

2.3 User Classes and Characteristics

Teacher	The **Teacher** is the administrator for up to five classes. They manage students, their respective grades, manage **Teacher Assistants** (see below), manage assignments, and have the ability to post announcements and upload documents for the students.
Teacher Assistant	The **Teacher Assistant** is a lower administrator. They are managed and given permissions by the Teacher. If the **Teacher** desires, the **Teacher Assistant** may have all of the functionality that a **Teacher** has.
Student	The **Students** are able to view any grades and announcements posted by the **Teacher** and **Teacher Assistant** . They are also given access to **Metrics** and also have the ability to upload assignments for submission.

2.4 Operating Environment

OE-1: GooGrade will run on all supported web browsers.

OE-2: GooGrade has the ability to run on either Linux or Windows servers.

OE-3: Access to GooGrade is available both on-campus and off-campus.

2.5 Design and Implementation Constraints

CO-1: GooGrade will be web based

CO-2: All HTML shall implement the XHTML 1.1 Standard.

CO-3: GooGrade must work and look the same across all supported web browsers.

CO-4: GooGrade does not display any identifying information

2.6 User Documentation

User Manuals, such as how to use GooGrade, shall be provided online on our website (see section 1.5).

2.7 Assumptions and Dependencies

Assumptions and dependencies may be found in GooGrade Vision and Scope section 2.3 (see section 1.5).

3. System Features

3.1 View Announcements

1.1.1 Description and Priority

Description	The system shows all of the **announcements** posted by the **Teacher** sorted with the most recently posted **announcements** at the top of the list. A **Student** can view this list and each **announcement** shows a title, time and date of creation, and the content of the announcement.
Priority	High

3.1.2 Stimulus/Response Sequences

Stimulus	User selects "View Announcements"
Response	System takes user to the "View Announcements" page as described above.

3.1.3 Functional Requirements

REQ-1: If no announcements have been made, then display a "no announcements message."
REQ-2: The announcements have time stamps and are sorted in ascending order.

3.2 View Grade

3.2.1 Description and Priority

Description	The System displays a summary of grades from the **Student**
Priority	High

3.2.2 Stimulus/Response Sequences

Stimulus	User clicks "View Grade"
Response	System takes user to the "View Grade" page. This page displays Student Assignment Grades and Total Grade.

Stimulus	User clicks on a column on the table displayed
Response	System sorts the table with respect to the column clicked.

3.2.3 Functional Requirements

REQ-1: If an **Assignment Grade** has not been graded yet, System displays a table with **Assignment Grade** names but the **Assignment Score** is not displayed.

REQ-2: If no **Assignment Grades** exist yet, System displays the words "No Assignments Yet" instead of the table.

3.3 Check Class Standing

3.3.1 Description and Priority

Description	The System compares **Student Assignment Grades** and **Total Grades** with all **Assignment Grades** and **Total Grades** in **Student** 's **class** and displays the comparison using different metrics.
Priority	Medium High

3.3.2 Stimulus/Response Sequences

Stimulus	User clicks "Check Class Standing"
Response	System takes user to the "View Grade" page. This page displays Student Assignment Grades and Total Grade.

3.3.3 Functional Requirements

REQ-1: If the **Student** is alone in the **class,** the system displays an error message.

REQ-2: If no **Assignment Grades** exist, system displays an error message.

REQ-3: If no **Assignment Grades** have been graded yet, system displays an error message.

3.4 Printer Friendly Page

3.4.1 Description and Priority

Description	The System displays a page that minimizes color usage.
Priority	Low

3.4.2 Stimulus/Response Sequences

Stimulus	
Response	
Stimulus	
Response	

3.4.3 Functional Requirements

3.5 Download File

3.5.1 Description and Priority

Description	
Priority	Low

3.5.2 Stimulus/Response Sequences

Stimulus	
Response	
Stimulus	
Response	

3.5.3 Functional Requirements

REQ-1: If the download fails, the user will be notified.

3.6 Upload Homework

3.6.1 Description and Priority

Description	Our tool will allow Student to upload files for the class and store them on the database for the teacher to view.
Priority	Low

3.6.2 Stimulus/Response Sequences

Stimulus	
Response	
Stimulus	
Response	

3.6.3 Functional Requirements

REQ-1: If the upload fails, the user will be notified.

3.7 TBA

3.7.1 Description and Priority

3.7.2 Stimulus/Response Sequences

3.7.3 Functional Requirements

3.8 Add a Class

3.10.1 Description and Priority

Description	The **Teacher** creates a **Class.**
Priority	High

3.10.2 Stimulus/Response Sequences

Stimulus	User clicks “Add a Class”
Response	System takes user to the “Add a Class” page. This page prompts the User for information about the class
Stimulus	User enters the required information
Response	System displays a confirmation message stating that the class was added.

3.10.3 Functional Requirements

3.9 Delete a Class

3.11.1 Description and Priority

Description	The **Teacher deletes** a **Class.**
Priority	Medium High

3.11.2 Stimulus/Response Sequences

Stimulus	User clicks “Delete a Class”
Response	System takes user to the “Add a Class” page. This page prompts the User to select a class to delete.
Stimulus	User selects a class.
Response	System displays asks the user to confirm their desire to delete the class.
Stimulus	User confirms
Response	System displays a confirmation message stating whether the class was deleted or not

3.11.3 Functional Requirements

3.10 Add User

3.12.1 Description and Priority

Descriptio	The **Teacher** adds a new User to the system.

n	
Priority	High

3.12.2 Stimulus/Response Sequences

Stimulus	User clicks “Add User”
Response	System takes user to the “Add a Class” page. This page prompts the User to information about the user being added.
Stimulus	User inputs information
Response	System displays confirmation page, and emails the new user the log a username and password.

3.12.3 Functional Requirements

REQ-1: If **username** specified already exists or email is already in use, System displays an error and **Teacher** must correct the error to continue.

3.11 Add New Assignment

3.13.1 Description and Priority

Descriptio n	The **Teacher** adds a new **Assignment** to the system.
Priority	High

3.13.2 Stimulus/Response Sequences

Stimulus	User clicks “Add New Assignment”
Response	System takes user to the “Add a Class” page. This page prompts the User to information about the new assignment
Stimulus	User inputs information
Response	System displays confirmation page stating that the assignment was added.

3.13.3 Functional Requirements

REQ-1: If **Assignment** name already exists, The system displays an error and the **Teacher** must correct the error to continue.

REQ-2: If the **DueDate** or **assignment** type is missing, throw an error and the **Teacher** must correct the error to continue.

3.12 Add Announcements

3.14.1 Description and Priority

Description	The Teacher is able to add a new announcement for one or more classes.
Priority	Medium High

3.14.2 Stimulus/Response Sequences

Stimulus	User clicks "Add Announcement"
Response	System takes user to the "Add Announcement" page. This page prompts the User to information about the new announcement
Stimulus	User inputs information
Response	System displays confirmation page stating that the announcement was added.

3.14.3 Functional Requirements

3.13 Send Email

3.15.1 Description and Priority

Description	Teacher or Teacher Assistant can send an Email out to a student by student user name or email address or to the entire class or classes.
Priority	Medium Low

3.15.2 Stimulus/Response Sequences

Stimulus	User clicks "Send Email"
Response	System takes user to the "Send Email" page. This page prompts the User to information about the email.
Stimulus	User inputs information
Response	System displays confirmation page stating that the email was sent.

3.15.3 Functional Requirements

REQ-1: An error occurs if the **Teacher** enters nothing, an invalid **username**, an invalid **class name** or invalid **email address** in the address line and the email is not sent. If the **Teacher** enters nothing for the **email title,** an error is displayed. If the **Teacher** sends an **email** with no body, a dialog box informing the **Teacher** is displayed.

3.14 Grade Students

3.16.1 Description and Priority

Description	The **Teacher** will choose a **class** to grade and will then be given a list of students and assignments
Priority	High

3.16.2 Stimulus/Response Sequences

Stimulus	User clicks "Grade Students"
Response	System takes user to the "Grade Students" page. This page prompts the User to select a class.
Stimulus	User selects a class.
Response	System displays the table with the students and assignments for that class.
Stimulus	User chooses a student and assignment to grade and enters an Assignment Score.
Response	System stores information.

3.16.3 Functional Requirements

REQ-1: If the Teacher doesn't have a class, students, or assignments to grade, System will throw an error message.

3.15 View Roster

3.17.1 Description and Priority

Description	The **Teacher** selects a **class** and will receive a roster of the **class.**
Priority	Medium High

3.17.2 Stimulus/Response Sequences

Stimulus	User clicks "View Roster"
Response	System takes user to the "View Roster" page. This page prompts the User to select a class.
Stimulus	User selects a class
Response	System displays a roster for the class.

3.17.3 Functional Requirements

REQ-1: If there are no **student**s enrolled in the class, the System displays an error.

3.16 Take Attendance

3.18.1 Description and Priority

Description	The **Teacher** marks **student**s either absent or present.
Priority	Low

3.18.2 Stimulus/Response Sequences

Stimulus	User clicks "Take Attendance"
Response	System takes user to the "Take Attendance" page. This page prompts the

	User to select a class.
Stimulus	User selects a class
Response	System displays a roster for the class. It displays the current date by default, but the User has the option to change dates.
Stimulus	User selects a date
Response	System displays a roster for the class.
Stimulus	User selects student and modifies their attendance record
Response	System saves the information.

3.18.3 Functional Requirements

REQ-1: If there are no **student**s enrolled in the class, the System displays an error.

3.17 Curve Adjustment

3.19.1 Description and Priority

Description	Our tool will have the ability to adjust the grading curve for each class. Five text boxes with plus and minus buttons will let the Teacher increment or decrement the curve. Above graphs (described in output) will display the new curve. The new curve will not go into effect until the teacher clicks the apply button at the bottom of the page.
Priority	

3.19.2 Stimulus/Response Sequences

Stimulus	User clicks “Curve Adjustment”
Response	System takes user to the “Curve Adjustment” page.
Stimulus	User selects a class
Response	System displays the current curve for that class as described above.
Stimulus	User adjusts curve.
Response	System will redraw graphs to show the adjustment
Stimulus	User clicks apply
Response	System saves the information.

3.19.3 Functional Requirements

3.18 Import Data

3.20.1 Description and Priority

Description	The Teacher imports a file containing data from rosters, students, or assignments.
Priority	Medium

3.20.2 Stimulus/Response Sequences

Stimulus	User clicks “Import Data”

Response	System takes user to the “Import Data” page.
Stimulus	User selects either class, student, or assignment.
Response	System prompts user to locate data file.
Stimulus	User locates file.
Response	System parses data file and saves the information.

3.20.3 Functional Requirements

REQ-1: If the **Assignment Grade** to be updated has a grade already in place, the System displays an error.

1.2 Export Data

3.21.1 Description and Priority

Description	The Teacher may need to export Class information, an otherwise time consuming task. The page will include a table of all Classes as well as links to each Class page. Each Class has its name, number of students, time, and export button listed in the table. The export button for each Class will prompt the System to generate a .csv or .tdl file and begin a download.
Priority	

3.21.2 Stimulus/Response Sequences

Stimulus	User clicks “Export Data”
Response	System takes user to the “Import Data” page.
Stimulus	User selects a class and clicks export
Response	System redirects user to data file.

3.21.3 Functional Requirements

REQ-1: If exporting fails then an error message is displayed. Exporting can fail due to an inconsistency with the database or network error.

1.3 Upload Files

3.22.1 Description and Priority

Description	The Teacher may need to upload files for distribution. Each individual assignment page will include an upload button. Clicking it will open a prompt for a file from the Teacher's local computer. Once the Teacher selects a file, the transfer will begin. Once stored, the file will be displayed as a downloadable file on the assignment page.
Priority	

3.22.2 Stimulus/Response Sequences

Stimulus	
Response	
Stimulus	
Response	

3.22.3 Functional Requirements

REQ-1: If the upload fails, an error message is displayed. Upload can fail due to network error. If a file with the same name already exists, the newly uploaded file's name is modified with a number.

1.4 Download Files

3.23.1 Description and Priority

Description	The Teacher may need to download files that have been previously uploaded. Each individual assignment page will list available files and their attributes: name, type, time uploaded, and uploaded by. A download button will begin the download. A download all button will begin a download for all listed files packaged in zip format.
Priority	

3.23.2 Stimulus/Response Sequences

Stimulus	
Response	
Stimulus	
Response	

3.23.3 Functional Requirements

REQ-1: If the download fails then an error message is displayed. Failure can be a result of database inconsistency or network error.

4. External Interface Requirements

4.1 User Interfaces

UI-1: The system conforms to the *Web Content Accessibility Guidelines (WCAG) 2.0*

UI-2: The system provides a help link for every page that requires user input to explain how to use the page.
UI-3: The user should navigate to any page they are permitted to view in fewer than four intermediate pages.
UI-4: The system doesn't use any design elements that force a page to take more then 15 seconds to download.
UI-5: The system doesn't use more than two fonts or font colors to display text paragraphs.
UI-6: The system layout doesn't become unnavigable if the window is resized or font size is changed.
UI-7: The system labels all hyperlinks with text. If the hyperlink is in a sentence, the system underlines it. The system only underlines hyperlinks.

4.2 Hardware Interfaces

GooGrade runs on a web server accessible via the **User**'s computer. The **User** interacts using a mouse and keyboard.

4.3 Software Interfaces

GooGrade server-side interface consists of an Linux or Window OS with an Apache web server. An storage server is needed to store the information. The User is able to interact with GooGrade using the any of the supported web browsers.

4.4 Communications Interfaces

The main communication interface is HTTP as the GooGrade is web based. Any supported web browser is able to interact with GooGrade. Email is also utilized for release 2(see section 3.12). Transport Layer Security (TLS) is implemented to allow safe usage of GooGrade over the internet. All information stored in the system is encrypted to ensure privacy.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

PE-1: GooGrade accommodates 200 users during any given time to allow all Students, Teacher's Aids, and Teachers access to it.
PE-2: Pages are able to display in 15 seconds or less.

5.2 Safety Requirements

No safety requirements are required at this time.

5.3 Security Requirements

SE-1: **User** must be valid (**Account** exists) in order to use GooGrade.

SE-2: GooGrade complies with Family Educational Rights and Privacy Act (FERPA)

SE-3: After 5 failed log in attempts, the **User** is required to wait 10 minutes in order to attempt to log in again.

SE-4: **User** passwords must contain at least 6 characters and must include the following: at least 1 number, at least 1 capital character and the password may not be the same as the username.

SE-5: **User** will be able to reset password by answering identifying question that will prove that the **User** is the **Account** owner.

5.4 Software Quality Attributes

QA-1: GooGrade is easy enough for first time computer users to adapt quickly

Appendix A: Glossary

Any terms used here are as defined in our glossary:
http://wiki.csc.calpoly.edu/blugoo/wiki/Glossary

Appendix B: Analysis Models

No Diagrams are available at this time.

Appendix C: Issues List

Issue-1: File-size limitations on uploads
Issue-2: File format support
Issue-3: Use case document format
Issue-4: Review nonfunctional requirements
Issue-5: Phantom use case #7