



# Vision and Scope

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# **Vision and Scope Document**

**for**

# **GooGrade**

**Version 1.3**

**Last altered by: Viktor Gerdin**

**BluGoo**

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## Revision History

Name	Date	Reason For Changes	Version
Michael Quan	2009-01-15	First Draft	1.0
Michael Quan	2009-01-19	Revised First Draft	1.1
Nat Welch	2009-01-20	Cleaned First Draft	1.2
Michael Quan	2009-01-26	Edited Revised Version 1.2 Section 1	1.2.1
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Paul Phu	2009-01-26	Edited Revised Version 1.2 Section 3	1.2.3
Hermyn Mendez	2009-01-26	Edited Revised Version 1.2 Section 4	1.2.4
Viktor Gerdin	2009-01-27	Merging and Final Revision	1.3

# **1. Business Requirements**

## **1.1. Background**

Managing, calculating and monitoring grades is a time consuming and tedious task for any teacher, especially if the class is large. Numerous calculations must be carried out to set a grade. If variables such as different assignment weights and dynamic grading scales are to be taken into account these calculations become even worse. Teachers have a stressful schedule as it is and should spend as much time as possible to prepare lectures and to do what they do best, teach!

Students want to be able to monitor their progress through a class. Also they wish to be able to figure out what score they need on their final for a certain grade. Depending on their own attitude towards the class some students wish to have opportunity to compare themselves to the rest of their class to know how well they are doing. Being able to do all of this from home is a requirement for regular use. \*\*

\*\*based on interviewed roommates and friends

## **1.2. Business Opportunity**

We wish to provide a grading tool, GooGrade, which will save time and effort for the teacher by keeping track of and calculating grades for a large number of assignments and students. Our software will automate any calculations involved in setting a grade for a large class. Grades will be presented to both teachers and students in both graphical and tabular format to present an overview as well as a detailed picture of how the student is doing. Analytical features will allow teachers and students to compare a student's grade with the rest of the class.

The teacher will automatically be notified if students' attendance it is getting too low and also if a student's grade is beginning to slip. This will take even more burden of the administrative side of teaching.

Our product would be free of charge and require only freely available software to function properly leaving a departments funds to be spend on other stuff.

GooGrade will be competing with other tools of similar nature, which can cost money or contain little features such as only a grade database. See Appendix A for a comparative feature matrix.

The idea behind GooGrade is to simplify grading and simplify monitoring for free.

### **1.3. Business Objectives and Success Criteria**

- a. The grading tool will simplify grade management for users (based on a questionnaire comparing other grading tools).
- b. The grading tool will quicken grade viewing for users (based on a questionnaire comparing other grading tools)
- c. The grading tool will eliminate the cost of having a web based grade management tool.
- d. The grading tool will increase productivity in time management for grading (based on a questionnaire comparing other grading tools).
- e. The grading tool will increase clarity in grading breakdowns (based on a questionnaire comparing other grading tools).
- f. Success will be measured by user feedback and also through the increase in users over a period of time. Success will come from the functionality and features that allow for ease of use without sacrificing detail. The criteria for a successful tool will be positive customer feedback that outnumbers negative customer feedback.

### **1.4. Customer or Market Needs**

Teachers will need a way to manage and view grades. Teachers will also need to look at various metrics of the class such as the median and mode of assignments. The product will be web based, and thus accessible through a modern web browser such as Internet Explorer, Firefox, or Safari. Because of this, the application will be operating system independent. The web server will need to be reliable and running at any given time requested by the customer.

### **1.5. Business Risks**

Development of a custom grading tool carries some risks. The most typical risk when a development is undertaken includes:

- a. Unexpectedly long development times resulting from the implementation features that higher complexity than expected. This risk is probably low due to the variety of experience our team has with different algorithms and programming languages.
- b. Critical functions may not operate correctly at first delivery. To ensure that this risk is minimized, test cases will be extensive in the development process.
- c. Time constraints of team members will play a big role in the amount of work that gets completed and in return affects the customer. Team members will need to balance out other classes in addition to working on the grader tool. Individual team members will also get busy at times through the quarter and may not complete their respective task on time. Time constraints will be handled by rebalancing the given task.
- d. Features may be cut out due to lack of available time and money.
- e. The grading tool may be unused due to the various grading tools that already exist.

## **2. Vision of the Solution**

### **2.1 Vision Statement**

This grading tool will provide students with the ability to view their grades from the Internet without the need to visit their teachers, and it provides teachers a tool that helps them calculate grades and prevents their time from being wasted by students asking questions about their grades.

### **2.2 Major Features**

#### **2.2.1 System and Rules**

##### **2.2.1.1 End Users**

###### **2.2.1.1.1 Administrators**

Major subcategories of administrators include:

- a. Teacher  
The Teacher will be the major administrator for up to five courses. The Teacher will be able to manage students and their respective grades. A Teacher can create assignments and set as well as edit their grade boundaries for correctly calculated grades. He/She can create and manage the teacher assistant position.
- b. Teacher Assistant (TA)  
The Teacher gives permission to the TA to access required features. The TA will not have access to any other features than allowed by the Teacher. The permissions granted will be at the discretion of the teacher.

###### **2.2.1.1.2 Students**

The Student will be able to view their own grades, both total and per assignment. Students will be able to compare their own grade with the rest of their class.

### **2.2.1.2 Basic Business Rules**

- a. The system must support a maximum cap of 200 students per class. The typical class size is 40 but larger class loads do exist.
- b. A teacher instructs a maximum of five classes. Each class may have one or more Teacher Assistants.
- c. If a student has been absent for the entire first week of class, the teacher is notified by the system through email and has the option to drop the student from the class. If the student is absent for a set percentage of class days, the teacher receives an email. The teacher also has an option to be notified by email when students do not show up the first day.
- d. If a student grade is falling below a set level the teacher is notified by the system through an automatically composed email containing the identity of their student as well as a report card of their results up till that time. This notification will not activate until after the second week to give all students enough time to establish a passing average.

### **2.2.2 Functional Requirements**

- a. There will be two main user interfaces:
  - Administrative (Teachers')
  - Students'
- b. There will be a hierarchy of permissions. Permissions exclude certain system features from users who do not have the permission. The teacher will have the most permissions and the student user will have the fewest.
- c. Permissions
  - Teachers will always be able to:
    - Create a class (up to a maximum of 5)
    - Add and Drop students to any existing class (up to a maximum of 200 per class)
    - Report roll call attendance to the system
    - Create and Edit assignments
    - Report students results to the system, which will calculate a grade accordingly
    - View student and class statistics (mean, median, quartiles and mode)
  - Students will always be able to:
    - View their own grades, both per assignment and final.
    - Calculate what score they need on upcoming assignments for a certain final grade.

### **2.2.3 Non-Functional Requirements**

- A graphical user interface (GUI) that reduces the number of clicks a user must do in order to achieve their goals. There must be an appropriate balance of negative space and information to avoid overwhelming and confusing the eye or otherwise make the user click more to find the information because negative space was inappropriately used.
- The GooGrade software will run on any of the major Operating Systems (Windows and Unix based systems) through a web browser (guaranteed and tested on Firefox). This software should run on any user's computer with an internet connection.

### **2.3 Assumptions and Dependencies**

The system will need to be hosted at an address on the World Wide Web for users to be able to access it. The host site should not contain security exploits that affect how this system runs.

In addition, the system assumes student rosters and student assignment grades input by the teacher and teacher assistant are accurate and up to date.

The system assumes the teacher will not give more permissions than desired to a student or teacher assistant. It assumes that users will not share passwords with each other, and that each user has one and only one account.



## 3. Scope and Limitations

### 3.1 Scope of Initial Release

The initial release will have the following features.

User Type	Features
Teachers	<ul style="list-style-type: none"><li>• Adding, removing, and taking attendance of students</li><li>• Adding/editing students grades</li><li>• Adding, editing assignments (setting deadlines, setting grade boundaries)</li><li>• Viewing statistics (mean, median, quartiles and mode) of all student grades within a class</li><li>• Controlling the extent Teacher's Assistants' access to features</li></ul>
Teacher's Assistants	<ul style="list-style-type: none"><li>• Have access to Teachers' features at the discretion of the Teacher</li></ul>
Students	<ul style="list-style-type: none"><li>c. Viewing their own grades</li><li>d. Comparing their own grades with the rest of their class. No identifying information will be available to other students.</li></ul>
Misc.	<ul style="list-style-type: none"><li>e. System interface that allows communication with</li></ul>

### 3.2 Scope of Subsequent Releases

The following are features that are not guaranteed to appear on the initial release and will therefore be released on either the initial, if timely possible, or a subsequent release.

<b>Release 2 – Extra Features</b>	
Release 2 will focus on adding additional features that were not release during the initial release due to time constraints or level of difficulty.	
<b>User Type</b>	<b>Features</b>
Teachers	<ul style="list-style-type: none"> <li>d. Uploading of files (assignments, keys and reading material)</li> <li>e. Viewing statistics in bar graph, pie graph, and scatter chart form</li> <li>f. Adding students via common file formats such as Comma Separated Value (.csv) and Tab Delimited List (.tdl)</li> <li>g. Sending personal and group E-mails to students</li> <li>h. Sending automatically composed reports to students</li> </ul>
Students	<ul style="list-style-type: none"> <li>• Handing in assignment digitally online</li> <li>• Viewing class statistics in bar graph, pie graph, and scatter chart form</li> <li>• Sending messages through E-mail to teacher and TA</li> </ul>

<b>Release 3 – Multiple Class System</b>	
Release 3 will focus on allowing several systems to communicate with each other thereby making up to an entire school's classes work as a single system.	
<b>User Type</b>	<b>Features</b>
Teachers	<ul style="list-style-type: none"> <li>i. Having a excel extension to help export class rosters and grades to the system</li> <li>j. Complete access to all classes via a common login</li> </ul>
Students	<ul style="list-style-type: none"> <li>• Accessing all class grades and statistics via a common login</li> </ul>
<b>Misc.</b>	<ul style="list-style-type: none"> <li>• Provide support for connecting several systems together and have them sharing information, thereby allowing users (Teachers, TAs and Students) to log into one system and accessing all of their classes.</li> </ul>

### 3.3 Limitations and Exclusions

<i>Limitations and Exclusions</i>	<i>Reasons</i>
Possible incompatibilities with schools' computers	Some schools may have old computer equipment, which can lead to incompatibilities with newer internet tools.
Time limitations	Due to programmers being full time students, time will be limited meaning possible exclusions of other features.
Differences in schools' administration routines	The GooGrade system is designed after CPSU routines. If a school's routines differ from those of CPSU there might be difficulty in using the system.
Exclusions of features from release 2 and 3	Time limitations may delay features in release 2 and 3 from the initial release.

## 4. Business Context

Teachers will use the GooGrade software for monitoring attendance, grading and class statistics. These statistics include class averages, maximums, minimums, medians, quartiles and modes. For students, these statistics will be available so that they can track their progress with respect to their peers.

### 4.1 Stakeholder Profiles

<i>Stakeholder</i>	<i>Stakeholder Profile</i>	<i>Major Benefits</i>	<i>Likely Attitudes Towards the Product</i>	<i>Key Product Features of Interest</i>
<i>Teacher</i>	Teachers will create classes, and manage students and their grades.	Reduction of time spent calculating student grades and statistics.	<p>The teacher may be skeptical because blackboard is already a reliable and widely used tool.</p> <p>Although GooGrade will provide graphical and statistical features superior to those of blackboard.</p>	The statistics features give the teacher an incentive to upload grades. It contains warnings for low grades and lack of attendance from students. Accessible from any computer with access to the Internet and a browser.
<i>Student</i>	Students will be able to view their grades and see detailed assignment breakdowns.	Access to their grades and class metrics from any web browser.	The student will embrace whatever the teacher uses.	The students will be able to view their grades. They will also know how they match up against the class average for each assignment.

## 4.2 Project Priorities

<i>Dimension</i>	<i>Driver (state objective)</i>	<i>Constraint (state limits)</i>	<i>Degree of Freedom (state allowable range)</i>
<i>Schedule</i>	To have a successful release before end of CPE309		Preferably a 2 <sup>nd</sup> release by the designated deadline but due to unforeseen consequences a patched 1 <sup>st</sup> release would be satisfactory.
<i>Features</i>			70-80% of high priority features must be included in 1 <sup>st</sup> release
<i>Quality</i>			>90% of user acceptance tests must pass for 1 <sup>st</sup> release, >95% for 1 <sup>st</sup> patch
<i>Staff</i>		maximum team size is 7	By 309 team size may change
<i>Cost</i>	No cost	All software used will be freely available or open source	

## 4.3 Operating Environment

The GooGrade software will have a web based graphical user interface. This will allow operation at both personal computers at a home environment as well as from a local terminal in a computer laboratory. As long as the computer can use an up to date standard web browser (guaranteed functionality on Firefox which is freely available to all major operating systems) and has access to the internet it will be able to work with GooGrade interface. The GooGrade software will only be required on the teachers computer and will thereby limit any further systems requirements to only that computer.

Providing a web based interface allows for students taking classes at a long distance to communicate with their teachers without traveling to campus. Although we expect most users to be localized close to their school.

Grading Tool Reviewer	GooGrade	Blackboard	Class Mate	Moodle	eGrader	RealGrade
User Types						
Student	Yes	Yes	No	Yes	No	No
Teacher's Assistant	Yes	Yes	No	Yes	No	No
Teacher	Yes	Yes	Yes	Yes	Yes	Yes
Additional Admin	No	Yes	No	Yes	No	No
Features						
Class Statistics	Yes	Yes	Yes	Yes	Yes	Yes
Student Statistics	Yes	Yes	Yes	Yes	No	Yes
Desired Grade Calculator	Yes	No	No	No	No	No
Attendance Record Keeping	Yes	No	No	No	No	Yes
Uploadable Assignment Key	Yes	Yes	No	Yes	No	Yes
Automated E-mail Notifications	Yes	No	No	No	No	Yes
Class News Bulliten	Yes	Yes	No	Yes	No	No
Forums	No	Yes	No	Yes	No	No
Webbased?	Yes	Yes	No	Yes	No	No
Cost	Free	\$259,000	\$300	Free	\$8	Free