Gradebook2

Scope
This page lays out some basic information about the Sakai Gradebook2 tool, including #instructions for installation, the original #motivation, some #specifics of the new tool, links to additional #resources, and a high-level #roadmap of development.

Communication

- Aug 02, 2013 : we have released gradebook2 v1.9.0
- Nov 15, 2012 : we have released gradebook2 v1.8.1
- Jun 22, 2012 : we have released gradebook2 v1.8.0
- Apr 11, 2012 : we have released gradebook2 v1.7.1
- Dec 15, 2011 : we have released gradebook2 v1.7.0
- Aug 29, 2011 : we have released gradebook2 v1.6.1
- Aug 12, 2011 : we have released gradebook2 v1.6.0
- Jun 20, 2011 : we have released gradebook2 v1.5.0
- Apr 26, 2011 : Gradebook2 will require Java 6 after version 1.5.0 has been released
- Mar 04, 2011 : we highly recommend that everybody who is running and older version than 1.4.1 to upgrade to this latest version
- Mar 04, 2011 : we have released gradebook2 v1.4.1
- Feb 18, 2011 : we have released gradebook2 v1.4.0
- Dec 22, 2010 : If anybody is using v1.3.0, we strongly recommend to upgrade to v1.4.0. GRBK-721, which is fixed since v1.3.1, can cause incorrect course grade lookups.
- Oct 15, 2010 : we have released gradebook2 v1.3.1
- Sep 15, 2010 : Institutions Using Gradebook2
- Apr 27, 2010 : we have a dedicated gradebook2 developers mailing list:
  - http://collab.sakaiproject.org/mailman/listinfo/gradebook2-dev

Links to Additional Resources

- Mailing list: http://collab.sakaiproject.org/mailman/listinfo/gradebook2-dev
- JIRA Space: https://jira.sakaiproject.org/browse/GRBK
- Subversion: https://source.sakaiproject.org/contrib/gradebook2
- Some documentation on grade calculations can be found on the UCDavis Confluence site.

Help Documentation

If you use UC Davis' gradebook2 help documentation in its original and or modified form, please add the following reference:

"Based on original documentation provided at UCDavis. UC Davis takes no responsibility as to the accuracy or currency of the content within."

UC Davis Gradebook2 Help Documentation

(Note: this help documentation is out of date as of November 1, 2011 and is no longer being maintained.)

rSmart's Gradebook2 Help Documentation will be available soon

Description

A new Gradebook User Interface ("Gradebook2")

UC Davis has been successfully running the new gradebook user interface in production since June 2009. This user interface was built using the Google Web Toolkit and GXT Ext GWT SDK. This new tool leverages the existing Gradebook1 data model objects, with some slight modifications (the addition of several new properties to certain java classes and database tables).

There are many other institutions who have contributed work to the project and who are now evaluating Gradebook2 for use in their Sakai installations, including Georgia Tech, Rutgers, Texas State University, and University of Michigan.
The philosophy of this new interface is to provide a spreadsheet-like experience for graders, with a listing of all learners in a site and all of their grades by grade item. This will make it easy for instructors to grade multiple students for multiple items, just as they often do by using one of the existing off-the-shelf Spreadsheet tools (e.g. Microsoft Excel). Course grades are calculated on the fly based on weightings at the grade item and category level.

**Instructions for Installation**

The latest release builds against Sakai trunk OOTB, but includes patches for use against the 2.5.x, 2.6.x, 2.7.x, 2.8.x, and 2.9.x versions.

Version-specific instructions and patches can be found under the gradebook2/sakai directory in the trunk source code.

There are several steps required to get Gradebook2 running against Sakai 2.5.x and 2.6.x because the data model that is shared with the older Gradebook requires some modifications to handle the additional functionality of the new tool. This means:

1. Running a patch against the old gradebook module
2. Running a patch against the gradebook2 module itself (to account for maven dependency changes between Sakai versions)
3. Running a patch against the sam module
4. Running a sql script against the database, or turning on auto.ddl to bring the Sakai database up to date

The sql scripts are also available under the gradebook2/sakai directory in the sql subdirectory. They are provided for Oracle and now also MySQL (thanks to Amy Boyd at Texas State).

**Source Code README and InstitutionalAdvisor**

This page contains macros or features from a plugin which requires a valid license.
You will need to contact your administrator.

Additionally, institutions may choose to implement the InstitutionalAdvisor bean to customize final grade submission behavior. This bean can be injected via Spring as a Sakai component and will be found and injected by the Gradebook2 service.


**Technical Details on Gradebook2 Releases**

- As of 1.7.0, Gardebook2 uses GWT 2.4.0 and GXT 2.2.5
- As of 1.5.0, Gradebook2 uses GWT 2.3.0 and GXT 2.2.4
- Prior to 1.2.0, Gradebook2 uses GWT 1.5.3 and GXT 1.2.4
- As of 1.2.0, Gradebook2 uses GWT 2.0.3 and GXT 2.1.1
- As of 1.3.0, Gradebook2 uses GWT 2.0.4 and GXT 2.1.1

**Motivation**

Various institutions (UC Davis, Indiana, and Georgia Tech, among others) made a decision to take another look at the Sakai Gradebook in order to reevaluate some of the assumptions that went into building the current user interface and services.

Requirements that came up included the following:

1. To redesign around user goals
   - For teachers, to give them more intuitive ways to add data and calculate from it, but also to annotate in more freeform ways for their own purposes. Current pain points include:
     - Complexity of setting up a new grade book, and
     - Complexity of assigning evaluations for multiple students at once
   - For learners, to get clearer and better information about their performance
2. To reduce American-centric assumptions (which tend to be rigorously numerical, and involve large classes with only the simplest assessment workflows)
3. To make it easier to handle large numbers of markable/gradeable items
4. To make it easier to handle large numbers of students
5. To make it possible to grade or 'mark' any Sakai entity without duplicating the score data
   - That is, to make the Gradebook an appealing repository for mark/grade/score/evaluation data inside Sakai
   - To build in an audit trail that other services/tools can take advantage of
6. To expand what it means to grade or score something in Sakai
7. To make the structure of markable entities more rigorously hierarchical
   - This is based on a view of the current gradebook structure as a tree with the gradebook itself as the root, with 'final course grade' branches for each student. These branches then have sub-branches for each weighted category, and the leaves are the assignment grades themselves. Making this relationship explicit would eliminate the need for a 'Category' object.
8. To allow more flexible roll-up rule sets to work on those hierarchies
9. To make it possible for institutions or even faculty to easily plug in alternative methods of score calculation or define custom rubrics
10. To allow for arbitrary forms of feedback to also be stored as evaluation data (e.g. Post 'Em use cases)
   - These might include comments or non-numeric/non-letter grade marks
11. To allow for ranked or multiple graders on a single entity
   - That is, so two or more instructors' evaluations could be averaged or summed (or using some other formula) to arrive at a final score, or
   - So an 'instructor' mark could override a 'teaching assistant' mark, for example.
12. To provide histograms or other reporting for both teachers and learners

Specifics

We have begun this effort by implementing a new tool that closely mimics the current tool's basic functionality (support for numeric grades including points and percentages) with some significant new functionality (extra credit items and categories, drop lowest grade item, grade item weighting, excuse individual grade record, etc.) and ease of use improvements and a more flexible and extensible UI strategy. This tool currently shares data model objects with the old tool, which should largely address compatibility issues with other existing tools that make use of the original Gradebook1 to aggregate grades.

At the moment, this new tool runs side-by-side with the existing Gradebook1 project on a Sakai instance, in order to facilitate pilot rollout of the new tool to a select number of sites.

This tool (Gradebook2) is currently compatible with Sakai 2.5.x, 2.6.x, and 2.7.x.

Screenshots

Development Road Map (as of Dec 2, 2009)
We've broken the effort up into a series of development milestones. Here's a quick summary:

**Milestone 1 (M1) completed Dec 15, 2008**
- Basic multigrade/spreadsheet screen functionality
- Implement category type Weighted Categories by default
- Basic individual student/all grade records entry screen
  - include ability to edit/view/create comments from single student view
  - include grade log
- Basic individual student/all grade records view screen
- Basic setup screen to update categories, grade items, gradebook general settings
- New grade item dialog
- New category dialog

**Milestone 2 (M2) completed Jan 15, 2009**
- Add additional category types: No Categories, Unweighted Categories
- Modify service calls to use REST/CRUD entity structure
- Fully log all user create and update actions
  - expand beyond Gradebook1 grade logging to log all user modifications
  - Show a full history log of all user actions - *currently disabled pending further design work*
- Add ability to edit/view/create comments from multigrade screen
- Add ability to view grade log from multigrade screen

**Milestone 3 (M3) completed June 1, 2009**
- Export/Import capability
  - ability to download a csv file, edit grades in Excel, and upload to modify grades in bulk
- Final grade submission capability
- Bring categories and items together into a tree table interface
- Move column selection drop-down menu out of the multigrade column header and into a collapsible left-hand navigation pane
- Replace column selection drop-down with a menu to edit item properties (name, points, weight, etc)

**Milestone 4 (M4) completed September 1, 2009**
- Letter grade item input with roll up to final grade calculations
- Statistics on learner performance within a gradebook or item
  - Mean
  - Median
  - Standard Deviation
- Reordering of items within a category or a gradebook
- Section and category based permissions to control view/grade access for Teaching Assistants and other Graders/Affiliates

**Milestone 5 (M5) in QA, to be released April, 2010**
- Full history view of final grade submissions and all other user actions
- Expansion of student view
- GXT 2.1.0
- GWT 1.7.1
- GWT-RPC replaced with REST calls

**Milestone 6 (M6) and beyond**

**Longer term goal - Interfaces for the new Grade Repository API, a new Data Model**

Once the new tool is fully functional, we would like to go back to the community and discuss the potential for modularizing the back-end services and data model for grades in Sakai. The idea would be to produce an independent module/component/project from GB2, tentatively called "Grade Repository", which would allow arbitrary tagging/marking of any entity, with hierarchical organization (gradebook, category, item, sub-item, sub-sub-item, etc.), support for multiple graders/grades per student per item, and multiple gradebooks per site, that could then be leveraged by the various gradebook projects to store grade data.

**Arbitrary data input, a la "Post 'Em"**

For the gb2 tool itself, another possibility would be to extend the import functionality to provide 'post-em' style upload of arbitrary content, which could then be marked up through the tool and/or simply delivered to the students directly with or without including it in the final grade calculation.

**Rubric Grading**

We are also considering the addition of more non-traditional grade styles, such as allowing instructors to grade using custom rubrics.