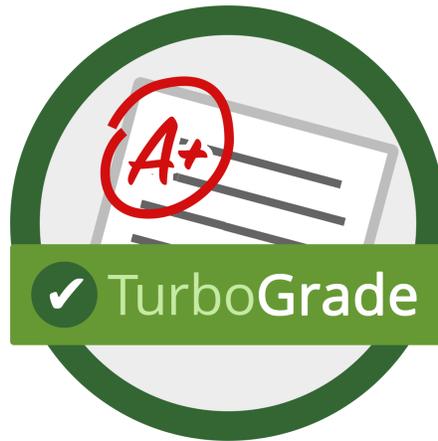


# TurboGrade<sup>TM</sup>



User Manual

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# I. Introduction

Welcome to **TurboGrade™**, the easy to use grading software for Computer Science courses. **TurboGrade™** is a powerful tool that will help you grade assignments easily and intuitively. Using the built-in **TurboGrade™** features, you can achieve a lot. Here is an overview of the features that **TurboGrade™** offers you:

1. **Class management:** Classes are organized by year and semester. You can create sections, assign labs and exercises effortlessly.
2. **Moodle Integration:** Full support of importing student submissions in the format delivered by Moodle.
3. **Visual Rubric Creator:** An integrated rubric creation delivers a “WYSIWYG” experience when creating rubrics, making it intuitive to assign points to different criteria. The Rubric Creator is also flexible, allowing you to grade by penalties / credit points as well as sub-criteria / grading guides.
4. **Integrated Grading Environment:** An IDE-like interface provides everything needed for grading in one comprehensive window: running Processing sketches, capturing terminal output, looking at student code (with full syntax highlighting), adding comments, adjusting grades, all within the same interface.
5. **Automatic comment suggestion:** The software is able to memorize previous comments and suggest them (as well as the penalty accompanying them) just by typing the first few letters.
6. **Synchronization to the cloud:** Submissions and grading progress are automatically backed-up in a configurable remote git server. This allows for use from multiple clients on multiple platforms.
7. **Configurable Interface:** The user interface is adjustable to your needs, you can resize and hide portions of the interface, use the preset skins or change the font size to your likings.

... as well as multiple other features that make grading easier and more efficient.

## II. Getting started

### A. Installing TurboGrade™

Installing TurboGrade™ is very easy: Locate the appropriate installer for your platform, launch it and follow the easy installation steps.

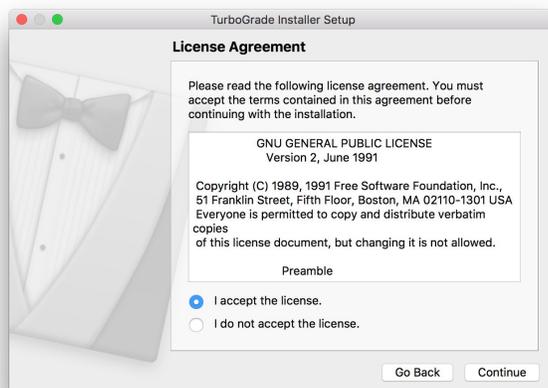
1. Locate the Installer binary



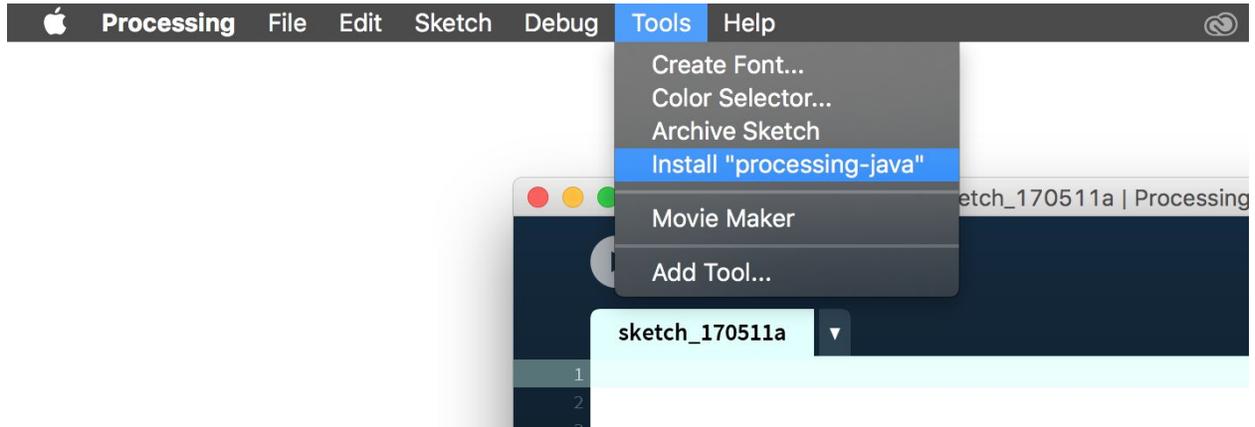
2. Run the Installer



3. Read the License Agreement and proceed with the installation

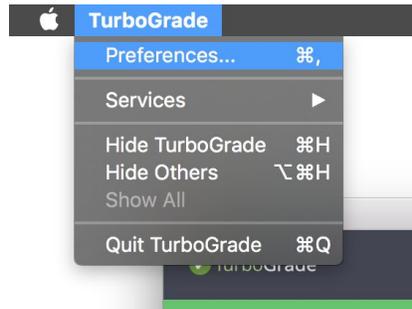


4. Install “git” and “Processing” (the application uses them internally)
5. To **activate the RUN feature** (running processing sketches from TurboGrade™), please don’t forget to activate Processing-Java from Processing > Tools > Install “processing-java”:

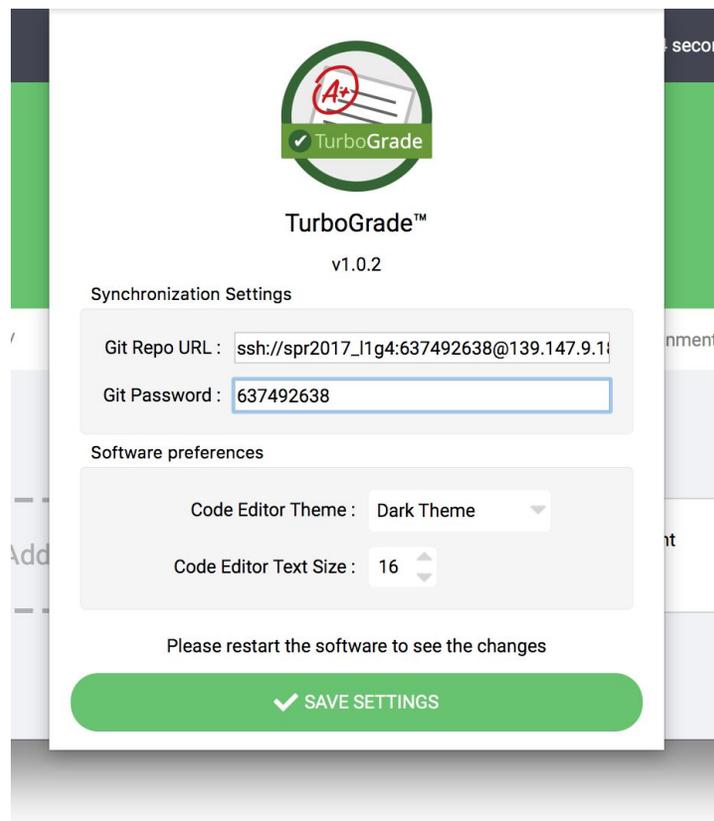


## B. Configuring TurboGrade™

TurboGrade™ provides various configurable options easily accessible by clicking on the “Preferences” menu in the menu bar.



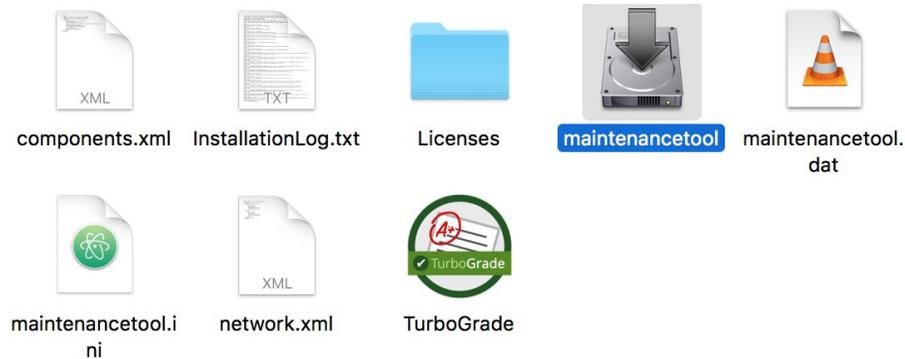
The Preferences dialog provides you with various customization options such as skins, font-size and Git synchronization settings:



## C. Uninstalling TurboGrade™

To remove TurboGrade™, please follow these simple steps:

1. Locate the Maintenance Tool in the install folder specified in step A



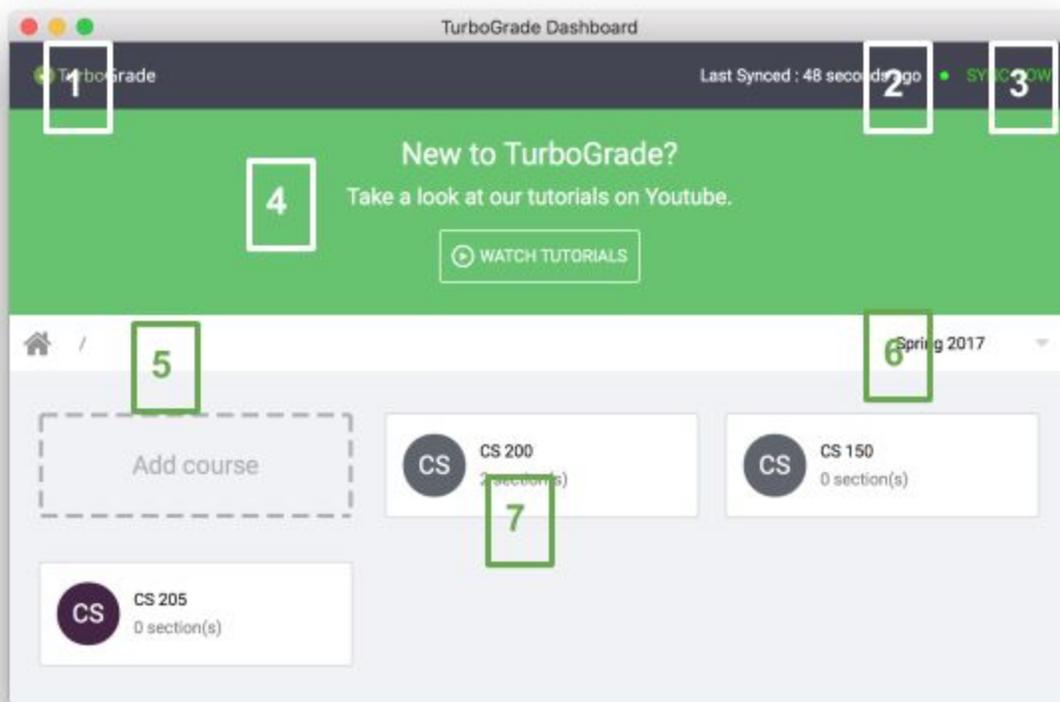
2. In the Maintenance Tool, Choose “Remove all components”



3. Proceed with the uninstallation as directed by the Maintenance Tool

## D. Dashboard Overview

The **TurboGrade™** dashboard is the first screen you see when you open the software. It is also the main user interface for **TurboGrade™**, it provides a comprehensive look at your classes, sections, students and assignments. The **TurboGrade™** dashboard is very easy to understand:



Elements on the dashboard from top to bottom, left to right:

1. The **TurboGrade™** logo always takes you to the course view
2. **Synchronization status** (updated every 15 seconds)
3. **"SYNC NOW"** button: forces a git synchronization (saves to the cloud)
4. **TurboGrade™** Tutorials, takes you to the Youtube page to watch tutorials
5. **Breadcrumb trail**: shows you the course/section/assignment you are browsing
6. **Additional controls** (such as semester drop down, assignment/student switch, etc.)
7. **List view**: lists the content you are looking at (ex. List of courses)

## E. Grading UI Overview

The screenshot displays the Pfaff Corp TurboGrade grading interface. The top navigation bar includes a back button, TurboGrade status, Anonymous Grading selector, Hide name checkbox, and Next Submission button. The right side features Export PDF, Run, and Finalize buttons. The left sidebar shows a file explorer for 'lab5' and a RUBRIC & GRADING panel with the following data:

Category	Score	Max Score	Action
Documentation	2	2	SHOW COMMENTS
Extra-credit	5	5	SHOW COMMENTS
Design	9	10	SHOW COMMENTS
Correctness	19	20	SHOW COMMENTS

The total grade is 94% (35 out of 37). The central code editor shows Java code for a 'Gallery' class. The right sidebar contains a GENERAL COMMENTS box with the text 'Very nice UI, be mindful of documentation' and a COMMENTS ON THIS FILE section with two comments: (-1) On rubric: "Correctness" and (-1) On rubric: "Design". A yellow comment input box is overlaid on the code editor, with a Points field set to 0 and a Rubric dropdown set to 'No criterion selected'.

The Integrated Grading Environment offers you multiple sophisticated tools in a simple interface. The top bar contains multiple controls:

1. **Progress bar** (far top) shows you how many submissions are left to be graded in a section
2. **Back button** gets you back to the dashboard to browse submissions and manage courses
3. **Submission selector** (defaults to hidden student names) lets you choose another student to grade
4. **Next submission button** (only activated when the current grade is finalized) takes you to a randomly selected submission that wasn't graded yet

5. **Export PDF** lets you save the current submission's student report in a folder that you specify.
6. **Run**, automatically detects the language the submission is written in and runs it (either through java in the console or in Processing).
7. **Finalize** locks the grade and changes the submission's graded status to "finalized"

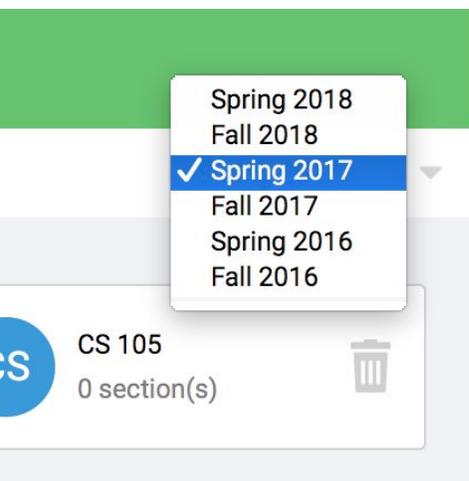
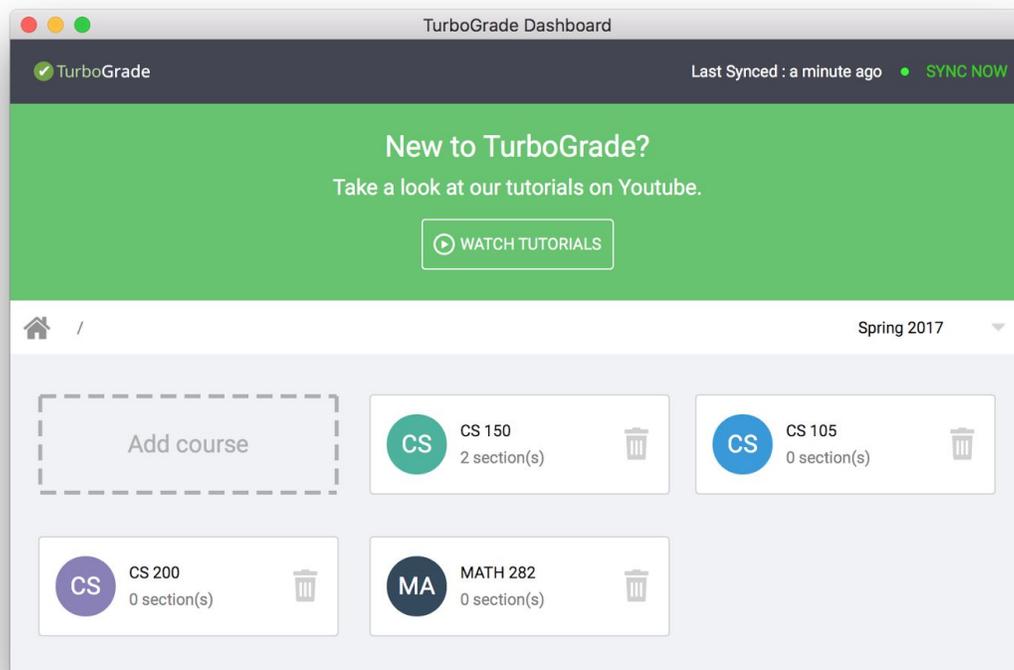
The Interface is made up of various "widgets", each of them equally important in the grading process:

1. **File tree view** (top left), shows you the files that belong to the current submission and allows you to switch between them
2. **Grading view** (middle left), shows you the rubric and lets you adjust grades for each criterion (also shows comments associated with a criterion when they exist)
3. **Code view** (center), shows you the code for the selected file with syntax highlighting. Selecting code in this view opens up a prompt to add a comment.
4. **Comment view** (right), lists all comments on the current file as well as general comments on the submission as a whole. Hovering the mouse over a comment highlights it in the code.
5. **Terminal** (bottom) displays output from Processing/Java when the program is ran (also displays compile errors and any standard error output).

## III. Managing a class

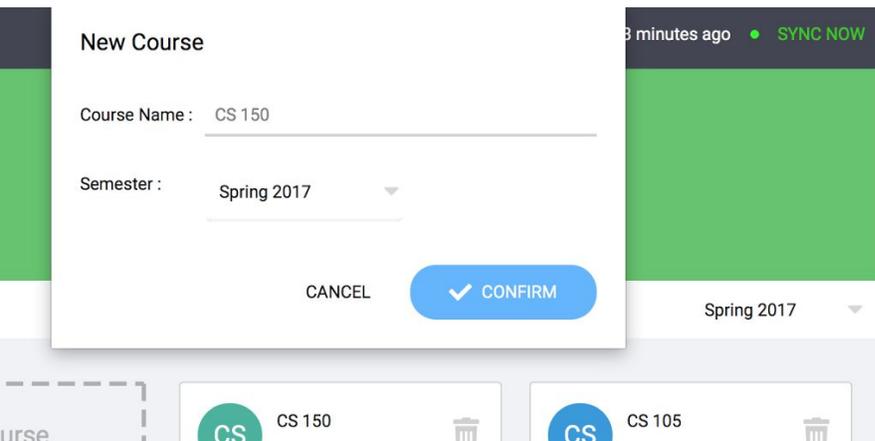
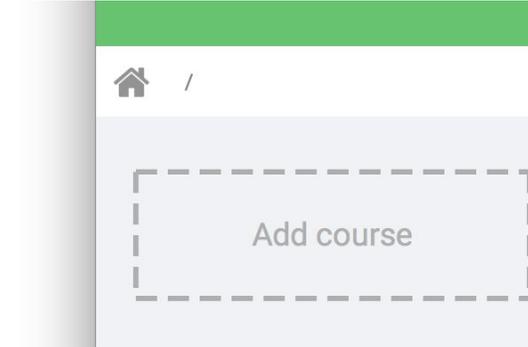
### A. Managing courses

On the Dashboard, the first screen that comes up is the “Course View”. This screen displays all the previously created courses (that are also synced to the git repository).



To the right of the breadcrumb trail, a semester dropdown allows you to choose the semester/year for which courses will be displayed. This defaults to the current semester (based on the current month and year).

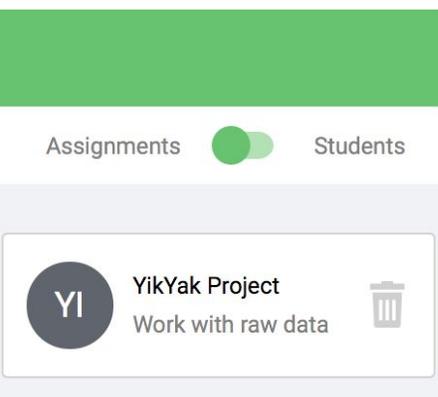
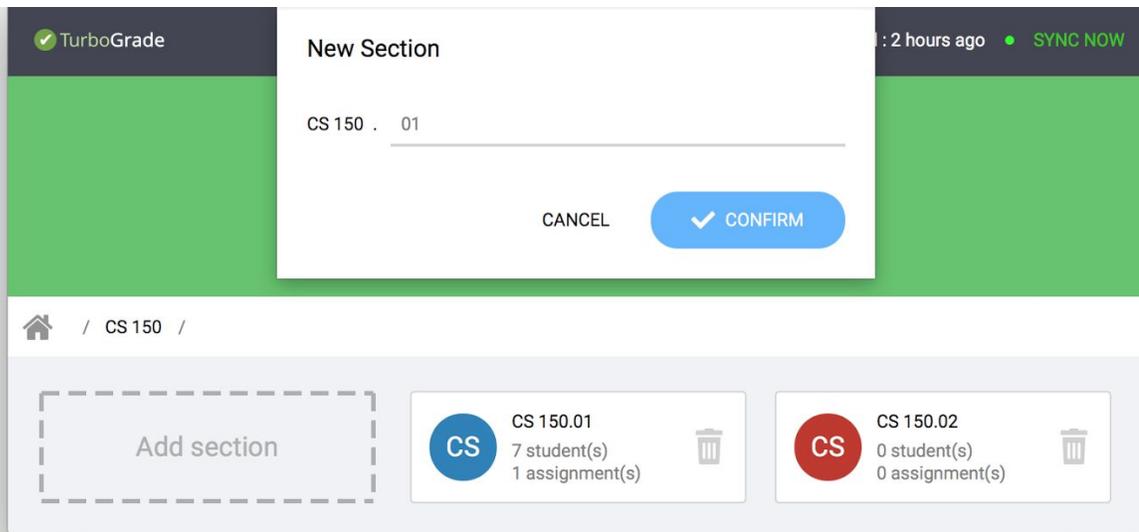
To add course, click on the “Add course” button, which will open the dialog shown below, allowing you to specify the new course’s name and semester (the current semester will be selected automatically).



After filling out the course name and semester, clicking the “Confirm” button will create the course and display it on the dashboard.

## B. Managing semesters

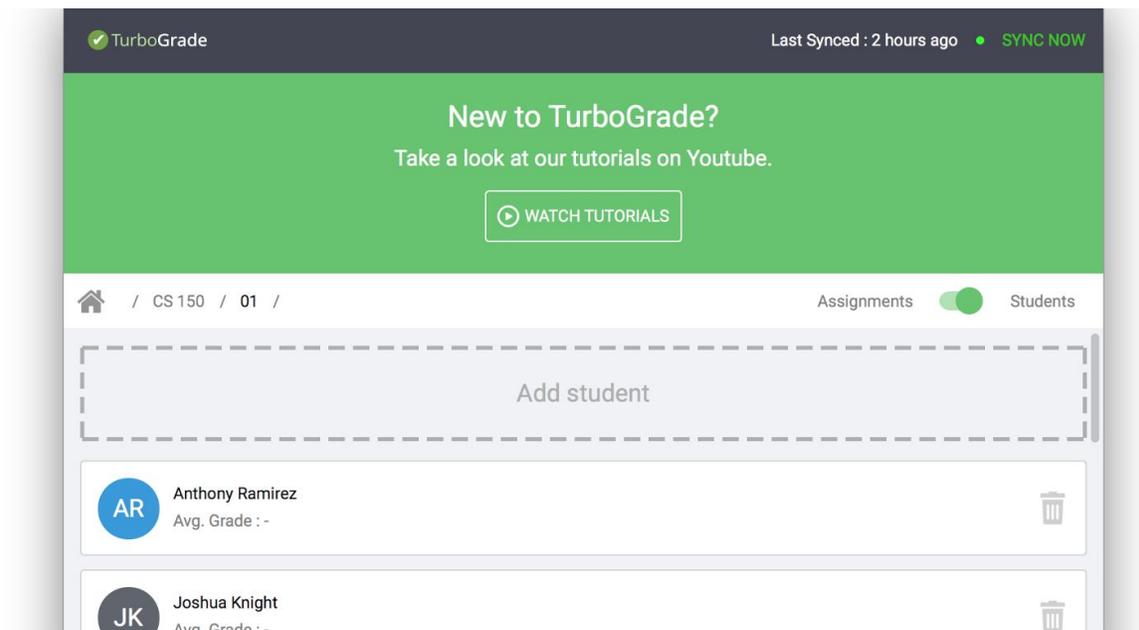
Managing submissions is very similar to managing courses. Using the same buttons you can create, delete and manage sections within a course :



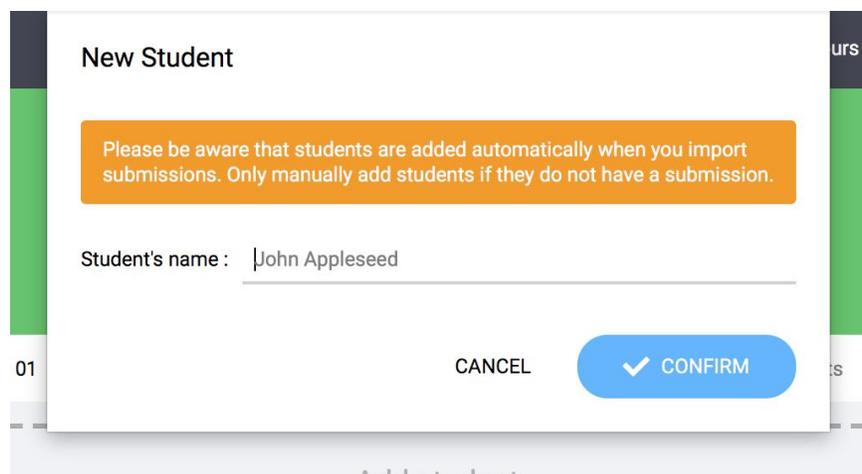
Within the semester view, you can switch between the student view and the assignments view to either look at the list of assignments linked to this section or the list of students that belong to this section.

## C. Managing students

The students view list all students within a section and gives you insight on their grade in the course:



**Students are not supposed to be manually created in the software.** Importing the first assignment submissions to a section will automatically detect and create students if they don't exist. Subsequent assignments will use the existing student objects (matching by name). Only manage students manually if a student registered late to the class, dropped out or did not submit the first assignment.



## IV. Managing assignments

### A. Anatomy of an assignment

Before you start grading submissions, you should create an assignment in the section view. An assignment should be given a title, and objective, and an associated rubric, which you will create in the software.

**Assign an existing lab/project**

Existing assignment : No assignment selected ▼

---

**Add new assignment**

Assignment Name : Binary Search Tree

Assignment Objective : This project will help you get familiar with data structures

Initialize submissions with full grades (grade by penalties)

CANCEL

## B. Rubric Maker

The screenshot shows a web interface for creating a rubric. The title is "Rubric : Final Project". At the top right, it says "Total Pts.: 0" with a double-headed arrow and an "ADD" button. Below this is a list of criteria:

- Design (out of 10)
- Documentation (out of 2)
- Correctness (out of 20)

Each criterion has a blue plus icon, a red trash icon, and a black icon representing a document or code. Below the criteria is a "Suggestions" section with five yellow buttons: "Design", "Documentation", "Correctness", "Compiles", and "Extra-credit". At the bottom is a large blue button with a white checkmark and the text "DONE".

Rubrics are customizable through the rubric maker and allow you to have a transparent grading policy with the students. They also allow you to speed up the grading process by associating grade-adjusted comments with rubric criteria.

**TurboGrade™** views rubrics as collection of criteria, each potentially having sub-criteria. We have a few criteria suggestions to help you get started. In general, you can create a rubric criterion by naming it, typing the point allocation, and hitting ADD.

To add a sub-criterion, simply hit the + underneath a pre-existing criterion. The creation process for a sub-criterion is similar to a plain criterion. It should be noted that once a sub-criterion is added to a criterion, the software will grade the parent rubric by summing up all of the parent's sub-criteria.

In addition, to accommodate for a variety of grading styles, graders can choose for each assignment to be based on an additive or negative point system, where:

**Additive** point systems have all assignments start with a score of 0 in every category, where accomplishments by students are rewarded with points, totalling to the highest possible score, while

**Negative** point systems assume a full score for each student at the beginning of every grading session. When the student doesn't meet the standards of the grader, he/she may deduct points for insufficient work.

### C. Assignments for multiple sections

Once you have created an assignment, we provide the option to import that rubric over to another section. To do this, simply add an assignment from the corresponding section and select the assignment from the "Existing assignment" drop down menu.

## V. Grading a submission

### A. Commenting

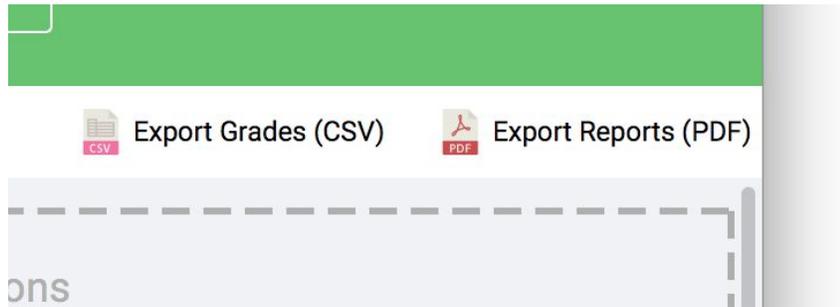
**TurboGrade**<sup>TM</sup> is designed for the commenting process to contribute directly to the final score given to the student's submission. In order to write a comment, simply highlight a portion of code you'd like to comment on, and type in your comment in the appearing window. When each comment is created, the user will be prompted to associate a point value, as well as a rubric category to the comment. As each comment is added, any point addition/deduction that has been assigned to it will be automatically factored into the the grade view on the left hand side of the the code grading user interface.

### B. Manual Alteration

Independent of the commenting process, grades for any category can be changed at any time. By selecting the up or down arrow on any present criterion, that criterion's score can be set from 0 to the maximum allotted score for that category. This allows for a bit more flexibility for the user, where any additional alteration to a student's grade, that may not necessarily align with a line of code.

## VI. Student Deliverables & Gradebook

### A. User Interface



There are two ways to export the student's output PDF, which contains all relevant information for a submission, including all comments, how they alter the student's grade, as well as the final grades the student received. From the grading page of any student's submission, the user can select "Export PDF" option, in the top right hand corner of the screen. Once a destination is selected, a PDF version of the student's results will be saved to that directory. Alternatively, from any assignment's dashboard screen, all reports from that assignment can be exported to any directory. This is meant to save the user some time, so they can focus on grading, and then get all of their results after the fact.

## B. Example Student Report



Student  
Wassim Gharbi

TOTAL GRADE

87 %

### Assignment: YikYak Project

**Objective:**

This project will help you work with raw data

#### GENERAL COMMENTS

You did well on this assignment, beware of commenting and documentation.

### Grade Breakdown

---

Design 8 /10

---

Correctness 5 /20

— Visualizations : 5 out of 5

---

Documentation 1 /1

---

**TOTAL GRADE : 14 /16 (87% )**

---

Design 9 / 10

**Remarks:**

On "lab5/Gallery.java" for "Design"

```
1  throwError("Failed to add Painting, price can't be negative.");
2  else if (year<0)
3  throwError("Failed to add Painting, year can't be negative.");
4  else if (title.equals(""))
5  throwError("Failed to add Painting, name can't be empty.");
6  else if (painter.equals(""))
7  throwError("Failed to add Painting, painter can't be empty.");
8  else {
9  boolean unique=true;
```

-1 Input control should be in painting

---

Documentation 2 / 2

**Remarks:**

On "lab5/Painting.java" for "Comments"

```
1  public Painting(String painter, String title, int year, double price, String file)
   {
```

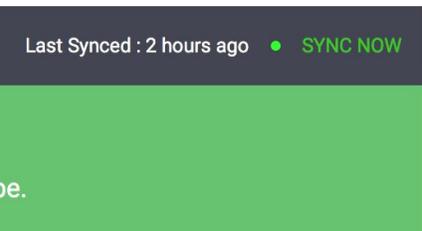
## C. CSV Gradebook

	A	B	C	D	E	F	G	H
1	Student	Design (10)	Documentation - <a href="#">JavaDoc</a> (1)	Documentation - Comments (1)	Documentation (2)	Correctness (20)	Total	Instructor Comments
2	Anthony Ramirez	10	1	1	2	20	32	
3	Barbara Gardner	10	1	1	2	20	32	
4	Joshua Knight	10	1	1	2	20	32	
5	Lao Cai	10	1	1	2	20	32	
6	Paul Castillo	10	1	1	2	20	32	
7	Thomas Day	10	1	1	2	20	32	
8	Wassim Gharbi	10	1	1	2	20	32	
9	William Kim	10	1	0	1	20	31	Poor comments

In addition to the reports, which are primarily meant for the students use, **TurboGrade™** gives the professor the ability to keep a record as well. So we've built virtual gradebooks, that can be exported to any directory from the assignment dashboard. By selecting "Export CSV", and providing a directory to save in, **TurboGrade™** will export a CSV file of all students' grades for that assignment, including the points earned per criterion of the assignment's rubric, in addition to list all comments given to the student. This allows for a fast and easy way to keep track of an entire classes performance on an assignment.

## VII. Archiving & Git Synchronization

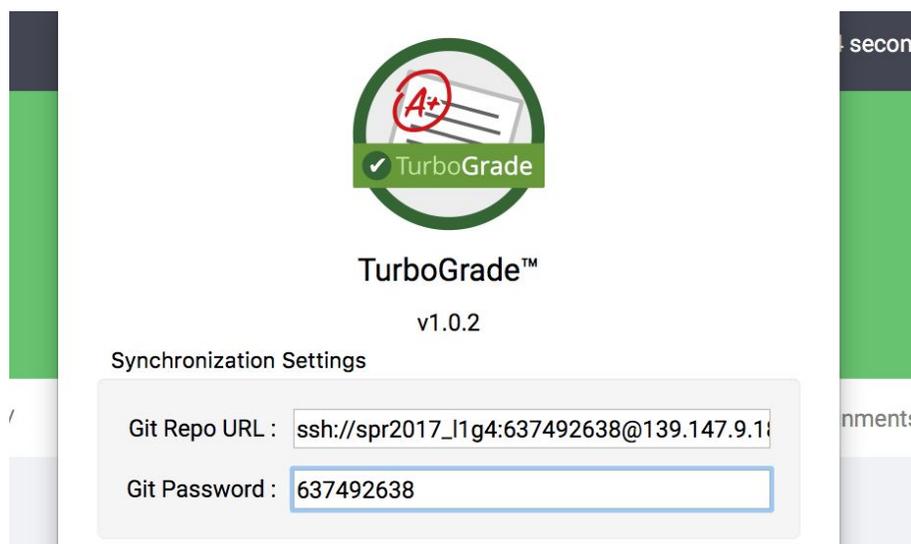
By default, the software links to a repository hosted at <http://github.com/turbograde/sync>.



Last Synced : 2 hours ago • SYNC NOW

Every time the software is ran, it performs a synchronization cycle by pulling the database changes as well as student submissions from the Cloud. At the end of every session (or when “SYNC NOW” is clicked), the software pushes local changes and backs up the database and the submission files to the git repository.

Clients that are setup to use the same Git repository will be synchronized. The software favors local changes over remote changes by default. This will be changed in future releases allowing the user to choose which version to keep through the user interface.





TurboGrade™  
v1.0.2

Synchronization Settings

Git Repo URL :

Git Password :

The Git repository and the password can be changed in the configuration panel. However, we currently only support synchronization through HTTPS and HTTP (no official multi-platform SSH support yet, although SSH works on Mac OS clients).