

# A Simple PDF

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## Abstract

Submittity is an open source programming assignment submission system from the Rensselaer Center for Open Source Software (RCOS) at Rensselaer Polytechnic Institute (RPI). Students can submit their code by drag-and-drop, zip upload, or version control, where it is then tested with a highly configurable and customizable automated grader. Students receive immediate feedback from the grader, and can resubmit to correct errors as needed. Through an online interface, TAs can access detailed grading results and supplement the automated scores with manual grading (numeric and written feedback) of overall program structure, good use of comments, reasonable error checking, etc. and any non-programming components of the assignment. The instructor can also configure the system to allow for a configurable late day policy on a per assignment and per student basis. We currently use Submittity in eight different courses (spanning from introductory through advanced topics) serving over 1500 students and 35+ instructors and TAs each week. We will present a range of “case study” assignment configurations, from simple through complex, using a variety of different automated grading methods including per-character and per-line output difference checkers, external unit testing frameworks (such as JUnit), memory debugging tools (Valgrind and DrMemory), code coverage (e.g., Emma), static analysis tools, and custom graders. Submittity can be customized per test case as appropriate to apply resource limits (running time, number of processes, output file size, etc.) and to display or hide from students the program output, autograding results, and testing logs.