

Mines CSCI Auto-grader 2.0

**Client:**

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Project:

Data Structures at Mines (CSCI 262) currently uses an auto-grading system for C++ labs. The core function of the auto-grader is a web interface that allows students to upload a file containing C++ source for functions or other code solving a designated lab problem. The response page varies depending on whether or not various errors occurred (e.g., compilation error, floating point exception, etc.) If there are no errors in compilation or execution, the response page shows a graph of green and red bars representing tests which passed or failed (similar to the output of jUnit or similar), together with a brief explanation of the tests which failed. The current system can be seen (and experienced) at <http://eecs.mines.edu/Courses/csci262/labs.shtml>.

The goal of the Auto-grader 2.0 project is to rewrite this system more or less from the ground up. (The current system code will be made available to the team; this may help some with development of the back end.) Some of the new features in the 2.0 system will include:

- On the front end:
 - Ability to write/paste code directly in the web interface
 - Single page, responsive design
 - Integration with shibboleth authentication (MultiPass)
- On the back end:
 - Cleaner test abstraction
 - Improved security
 - Submission/grading system (so students don't have to do a separate submit to Blackboard)

Platform:

- linux
- Framework/stack TBD by team with input from CPW – possibilities include:
 - MEAN
 - Ruby on Rails
 - Grails
 - Django
 - Spring Boot

Team size:

4-5

Skills:

Web application development (experience with any modern framework would be considered relevant)

Location:

Mines campus