

Grading Criteria For Student Projects

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The overall grade for each project is 40pts. The project submission requires a final report, an implementation package, and a project presentation at the end of the semester. The project grading is separated into the following components.

1. (10pts) Technical strength. The goal of the project is for you to practice developing various program analysis techniques or applying them to automate various aspects of software development. Specifically, what do you try to accomplish? What algorithm/methodology did you adopt? What is the strength of your algorithm/methodology?

To attain the 10pts in technical strength, you need to describe your technical approach explicitly and in detail in your project report. The project report is required to present a systematic methodology for achieving a specific goal. You must justify your methodology with reasonable argument and support it through evaluation.

2. (15pts) Implementation. By implementing your technical approaches via software development or experimentation (if you are using existing tools without building your own), you will gain experiences and appreciation in building or using tools to automate the software development process.

To attain the 15pts for implementation, your project must be in working order and produce expected results. If the project is implemented via software development, a package of working code must be submitted together with necessary documentation, which must include instructions on how to build and run the project. If the project is implemented via experimentation (using existing tools), details of the experimental evaluation must be submitted, including testing files or whatever proof that you can present on having actually used the various tools for experimentation.

3. (10pts) Evaluation. This includes methodology for evaluating your project and whatever results/insight you have gained from the evaluation. Present your experimental results in your final report and project presentation.

To attain the 10pts for evaluation, your results need to include not only test cases to prove that your implementation works but also additional results that provide technical insights. Use your project to do something useful and present your result.

4. (5pts) Innovation. Does your project include any innovative ideas or approaches? If your project is not just a duplication of existing work, you could gain additional credit. Explicitly describe any innovative component in your project report.

A reasonable challenging level is expected to have 40pts as the overall grade; that is, if your project is almost trivial to implement, you may have 30pts instead of 40pts as the overall grade (i.e., at most you will get 30pts for the project). A *reasonable* challenging level either involves some non-trivial software development effort (for projects that target at building tools) or must compare and evaluate at least three existing tools (for projects that use existing tools only). A *non-trivial* software development effort should require about one week's intensive coding effort.

When submitted, each project is expected to be relatively stand-alone and in working order. Points will be deducted for non-working code or experiments. A conclusion section is expected from each project report. This section should summarize the working status of the project, any conclusion you have reached from the evaluations, and why you think your project deserves the best grade (if you don't think your project deserves the best grade, also let me know).

Each project is expected to cover all the four components. However, as some projects may be fundamentally stronger in some aspects but weaker in others, doing exceedingly well on some components can make up the lost points for others. For example, if your project requires challenging implementation work but does not include much innovation, and if your implementation work is done very well, you may attain 20pts for implementation and thus make up whatever points you lose in the other grading components.