Independent Project

Overview

Some students would like to be extra creative or explore some different ideas in a final project, for example, by implementing some fun data structures. In this project, we allow the student to propose an individual project, get it approved, spec it out, and build it. This option is primarily targeted at students who wish go above and beyond the normal Comp 15 project in a substantial way.

Be aware that this option may be more difficult and time-consuming than the regular project offered. Also, since you are proposing this project, most TAs will be unfamiliar with it. However, illustrious TAs Maxwell Bernstein and Erica Schwartz have volunteered to mentor students who choose the independent project. They will meet with you periodically to provide guidance and support.

We can only support a small number of such projects, unfortunately. We want to give each person who does this project the guidance and support they need.

In Depth

Proposal

- 1-2 paragraphs explaining the following:
  - Why is the project interesting and a good use of your chosen data structures?
  - What's the biggest problem you forsee or question you need to answer to get started?
  - What will your first step be in implementing the project?

- Due Date: Monday, April 4th or Tuesday April 5th (meet with Max and Erica at one of the times specified below):
  - April 4th, 11:45am - 1:00pm
  - April 4th, 6:00pm - 9:00pm
  - April 5th, 3:00pm - 5:00pm
  - April 5th, 9:00pm - 10:30pm

  Please email Max and Erica at comp15final16@bernsteinbear.com to schedule a project proposal review time during one of these blocks. We will meet in Halligan in the upstairs kitchen.

Project specification

- Writing a project specification will help you reason about the architecture and design of your project[1]. The higher the quality of your design document, the easier a time you will have writing code. We recommend a brief reading of Norman Ramsey's excellent guide (PDF) to design documents. His detail of the following points is excellent.

[1] We're not just saying this to make you write a lot. It is much easier to find and fix large architectural flaws in the planning stage than halfway through debugging a particularly nasty problem in your code.

- 1-2 pages detailing the project's expected functionality. Includes:
  - Problem statement / use case
  - Assumptions and constraints
  - Project minimum and stretch goals
  - Architecture, including algorithms, data structures, and file layout
  - Detailed plan for project execution (weekly goals, etc)
  - Test plan
- The specification will be due on Friday, April 8th, at 11:59pm via email to Max and Erica at comp15final16@bernsteinbear.com. Please submit a PDF with your well-formatted specification.

Final Product

- ReadMe / Design Doc
  - Includes explanation of revised algorithms and data structures
  - Explains decisions and layout of project
  - Explains significant changes since the submission of the original spec
  - Number of hours spent doing the project

  - Credit to people who helped
  - Suggestions for improvement of future independent projects
- A working version of the product
- The final project will be due the same day that HW6 is due (Thursday, April 21).

Student presentation

- You will present your work to Mark and some TA's and faculty.