Extra Credit: Your Idea

Up to 10 extra-credit points on a homework. This is an individual assignment, with some competition between students. Work on it by yourself.

During this course, you have learned a very wide variety of techniques for use in software engineering. *Many of these techniques have limitations.* For example, XP is really only appropriate if a customer representative is available. So if you have a project where the customer isn't really responsible or friendly, then XP isn't an appropriate technique. This is a limitation of XP. As another example, the textbook's section on cost estimation treats all 3GL Components as equally difficult (as 10 application points). Obviously, however, some components are harder to implement than others, so this assumption in the textbook is going to lead to somewhat inaccurate estimates. So while the textbook is fine for teaching the general concept, real life involves situations calling for a more accurate cost estimation technique.

Here's your assignment: *Come up with an idea to improve one technique that was covered in this class.*

Specifically, write an essay that covers the following points:

1. Give a brief summary of one technique covered in this course—what it is for and how to use it
2. Describe one limitation of the technique—that is, one thing about the technique that isn't perfect
3. Explain why this limitation matters—for example, perhaps the limitation will result in inaccurate cost estimates, or perhaps the limitation prevents you from using the technique in certain contexts
4. Explain your idea for improving the technique in order to fix this limitation
5. Explain why you think your idea will work, or how you would go about making the idea work

You will get extra credit based on thoroughness and clarity, not length. That said, sections 1–4 will probably be around half a page each (at 12pt, single-spaced with 1" margins), and section 5 will probably be a full page.

As an example, one essay might be the following:

1. The first half page would describe the cost estimation technique that we covered in class.
2. The next half page would point out that the technique assumes that all 3GL components are equally difficult to implement. It would give a few examples of components that have different sizes. This section would note that screens and reports have different difficulty levels in the technique, so why don't 3GL components?
3. The next half page would explain why this limitation matters. For example, if components are estimated to be too easy to create, then the project will go over budget. Conversely, if estimates are too high, then the software will appear to be more expensive than it really is, and people might erroneously decide that the software is too expensive to create.
4. One idea for improving on this is to create three categories of component (just like screens and reports). This would fill in the technique's table cells where only hyphens currently appear.

5. The last section would explain how it might be possible to make this idea work. For example, it might propose to collect lots of data about how long different SourceForge components to be created. This data could be collected by doing a survey of SourceForge programmers. The average amount of effort would then be converted to application points, and the average application points would be computed for each size of component.

You will upload your essay as a PDF to Dropbox by the end of Thursday 8 December.

Grading: You will get 1–10 points based on the thoroughness and clarity of your essay.