SEOC2 Coursework 2

ordered by submission date: I know you haven't had Coursework 1 yet!

Motivation

- To do some independent thinking about quality and what affects it;
- To find and use resources on the Web;
- To write clear, interesting prose.

Draconian submission rules

The deadline for submission of this work is **10:00 on Monday March 13th**, and you should submit a paper copy of your essay, please, to my mail tray near my office, 1614. *You should also submit paper copies of your two major sources, unless your essay can give URLs for them in which case just do that.* Given the very long time you have to do this work, no late submission will be permitted except in truly exceptional circumstances. Your marked work will be available for collection from the ITO by the beginning of the summer term.

The problem

Your task is to write an essay on some part of the broad subject

Quality and Quality Assurance of Software

in which you discuss issues raised by at least two articles, by different authors, each on some aspect(s) of quality and/or quality assurance in software. These should not include articles I've handed out in the course,[1] though you may refer to those in addition if you like. I encourage you to use other sources, e.g. short news items from *Computer Weekly* etc., in addition to the two articles, if it's appropriate to your topic. You need not submit copies of these, but you should give full referencing information. Of course you may also discuss your own experience.

You should pick articles which you think are interesting and in which you understand the author's point of view, but you need not agree with the author's point of view: in fact, you may find it easier to write an interesting essay if you disagree, especially if you can find evidence that you're not alone!

You choose the title and the particular area and resources you want to consider. **If you are in any doubt as to whether your title, subject or resource is something I'll consider relevant to the broad area, ask.**

To get you started, there are some links to sources of articles from the course home page. You should feel free to use any source you can find, though, with the proviso that you must give me access to the articles either by giving a URL in the essay, or by handing in a paper copy of the article along with your essay.

Some of the questions you might like to address (you will certainly not want to address all of them!) are:

[1] The web page gives titles of the papers I expect to hand out: I may change my mind but obviously if I later decide to hand something out and you'd already chosen it that's OK

- What is quality in software?
- What is quality assurance? How does it differ from quality?
- What is the role of a quality management system? Of Total Quality Management? Of quality standards such as ISO9001 and TickIt? Is there any conflict between these?
- Should quality always be as high as possible, or are there circumstances in which a lower quality product is better? If it's better, does it still make sense to call it lower quality?
- How can quality be achieved?
- How does the choice of software development methodology affect quality?
- Can tools affect software quality? How?
- What should the ideal organisation's attitude to quality and quality assurance be? Is this different depending on whether the organisation is ideal for its employees or ideal for its customers?
- Are the companies that succeed usually the ones with high quality, or not? Why? Do you know any exceptions? Why?
- Can formal methods contribute to high quality? Can they work to the detriment of quality?
- Have your own experiences so far (either as customer or as provider) taught you anything about quality?
- Do you think that it is now well-understood how to achieve high quality in software? If so, why is so much software still low quality? If not, what questions do you think remain unanswered?

This piece of work is intentionally open-ended. I will assess it on the basis of:

- evidence that you've read and thought hard about the sources that you've cited; such evidence might be, for example, that you give concise summaries which emphasise the writers' main arguments.
- evidence that you see and understand some of the controversies that surround the topic of quality in software: for example, you might criticise some arguments made by your authors, giving sensible arguments that could be used against them. Especially, if you find that there are implied contradictions in what you've read, you should point these out.
- how well you express yourself: your essay should be interesting and readable.

Length is up to you: as a very rough guide, I have in previous years given As to very high-quality essays which covered 3 to 4 pages in a4wide 11pt type, like this, but these were written exceptionally concisely; 5 to 6 pages was more typical of the length of an A-standard essay.

You are encouraged to talk about the task, tell others about good sources of articles you may find, etc., but of course your essay must be your own original work.