Coursework Specification
Software Architecture, Process and Management

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15 January 2016

The coursework task is to develop supporting materials related to the SAPM course. The process is designed to give you the opportunity to have some formative feedback and for you to provide feedback to your fellow students. The work is organised in groups. Each group is responsible for providing supplementary material for a particular week of the course. The group list will be circulated to the SAPM mailing list. Although the work is organised into groups the assessment is predominantly individual. The assessment scheme is outlined at the end of this document. A fully detailed assessment scheme will be issued shortly.

The goal of this practical is to generate useful supporting material for the class in deepening our understanding of software architecture and its role in process and management of large-scale software systems. We are around 100 people so we need to be disciplined in the way we approach this task. In particular, if everyone generated 2000 words of text we would have 200,000 words which is way too much to be useful without some sort of map. So we need to be reasonably terse, ideally 500-1000 words per person. As course lecturer I will produce the basic material for all topics – the class will develop supplementary material that helps us understand the topics better. We can assume people will not read all of the material in the wiki but that all the material will be read by someone.

Each group will be responsible for organising the Supplementary Material page for one week of the course. Each person in the group will be responsible for a page linked off their group’s Supplementary Material page. I will add Supplementary Material pages to the wiki for each week. That page counts as their contribution (the page can refer to other pages if necessary). Contributions should always be supported by evidence wherever possible so you should make reference to literature or other evidence to support views expressed on a page. Typical types of contribution are:

**Case Studies:** an example of Software Architecture that illustrates aspects of Software Architecture that are relevant to the week’s topics. This could also be an example of a process or activity that uses Software Architecture.

**Worked examples:** Examples of the ideas presented during the week applied in some way e.g. in a slightly different context or extending examples given in the class.

**Supplementary material:** Covering a Software Engineering topic that is related to the topic of the week that provides explicit links to Software Architecture issues.

**Critical Review:** A review of some process or technique that uses Software Architecture. The review should try to present a balanced view of the strengths and weaknesses of the process or technique.

**Literature guide:** A review identifying a small number of useful and relevant literature to the topic together with a brief summary of the content and its relevance to the week’s topic.
**Review process (mandatory):** This is a mandatory contribution every group must have such a page. This should document the decisions taken by the group in terms of who is doing what (that may evolve because people change their mind. It should also specify the review processes to be followed by the group in terms of ensuring the internal consistency of the work of the group (i.e. that the pages generated by the group are coherent and cross refer to one another appropriately) and in terms of ensuring the work of the group makes appropriate reference to the work of other groups and other external resources. This should be written up by an individual but it should record the deliberations of the group in agreeing the processes. This will be used to assess the group component of the final grade. This page should also record who is responsible for which page of the *Supplementary Material*.

**Internal Review (mandatory):** This is a mandatory contribution every group must have such a page. This should be a record of the review process focussing on the internal coherence of the group’s work. This should record issues that were identified and how they were resolved by the group members. The individual responsible for this page is the internal reviewer for the group.

**External Review (mandatory):** This is a mandatory contribution every group must have such a page. This should be a record of the review process focussing on the external linkage of the group’s work to the work of other groups. This should record issues that were identified and how they were resolved by the group members. The individual responsible for this page is the external reviewer for the group.

**Alternative Approaches:** A summary of an alternative approach to a topic relevant to the week’s topic that does not emphasis the use of Software architecture.

**Exam Questions:** A small number of exam style questions on the week’s topic together with outline solutions.

**Topic in Practice:** Examples of the use of the week’s topic in practice.

**Summary and Map of the Supplementary material:** An overall summary and map of the supplementary material generated by the group.

**Experience:** Summarising some experience you have had in developing or maintaining software that either used software architecture or you believe could have been improved by using architecture.

**Other Ideas:** If you have other ideas let me know and I’ll OK them provided they are relevant.

Each group should get together, in week 2, decide on the roughly what each person is going to contribute (e.g. it is not a good idea to have 7 different case studies in one week or two pages that are essentially duplicates. Each group should also decide on their reviewing process and who will do the internal and external review activities for the group.

**Activities**

The main activities to be undertaken during the course:

1. Contribute multiple choice questions via Peerwise (15% of final grade). See my email on how to join Peerwise.

2. Comment on other people’s contributions. Here you should make constructive comments that identify strong points and if there is some weakness you should make an actionable suggestion for improvement (20% of final grade).
3. Participation in your group to work out the overall structure of your Supplementary Material page and to decide on the internal and external review processes (15% of final grade).

4. Making your contribution to the wiki you have agreed to make in discussion with your group (50% of final grade).

You should spend around 25-30 hours developing your contribution and making comments.

Timeline

The timeline for the practical is as follows:

1. **Formative Feedback Deadline: 24 February 1600:** This is the deadline for the first draft of all of your contributions – peerwise questions, comments and contributions to the pages. I will use the final grading scheme to grade your work and make some suggestion on how to improve your work. This intermediate assess is purely formative. It points to how you might improve but does not count towards your score. I will look at everything you have generated on or before Wed 24 Jan.

2. **Final Deadline: 24 March 1600:** At this point I will use the final grading scheme to grade your submissions.

Submitting the coursework takes place when you submit the post to the blog there is no other submission system. Material added to the Wiki after the deadline will be ignored.

Guidelines

Your principal audience is your fellow students. You are aiming to help class members understand and become competent in the use of Software Architecture ideas so: your contributions should be accurate, informative, interesting and relevant; comments should focus on how to improve the material they are commenting on; peerwise questions should help people learn and retain material on Software Architecture Process and Management. To expand a little more on commenting, a comment could:

- relate the piece to something you have done (e.g. in a job, in your System Design Project, in your individual project), or read (in another piece of reading for this course, or anywhere else), or heard in lectures (in any course); and/or

- express surprise or disagreement at something in the piece, and explain carefully what the foundation of your feeling is; and/or

- write about something in the piece that you initially found hard to understand, but managed to work out, perhaps you feel that others would benefit from a discussion of your initial confusion and subsequent realisation; and/or

- discuss something in the piece that you find ambiguous or contentious, explaining carefully what the two (or more) possible readings are and inviting your readers to comment; and/or

- explore consequences of something argued in the piece, explaining carefully why certain things are consequences, and discuss whether these consequences are consistent with what you know.

A fundamental principle is always to be polite, always focus on the content of material, avoid personal comments or anything that might be hurtful to the reader.
Length

For your contributions, the length that you are aiming for is somewhere between 500 and 1000 words — longer is not necessarily better. If you need more words that is OK but there is a law of diminishing returns - the longer the post, the less likely anyone will ever get to the end.

Evaluation and Grading

Contributions, comments and peerwise questions will be evaluated on the basis of four equally weighted factors:

Relevance: how relevant is the contribution, comment or peerwise question to the content of the course?

Understanding: how well you demonstrate good understanding of the topic of the topic your are referring to.

Quality: how well structured is your contribution, comment or peerwise question? How clear is your work?

Impact: how accurate is your contribution, comment or peerwise question, how much bearing does it have on practice.

Overall 25 marks will be awarded for the coursework. The proportions of marks for different aspects of the practical are given above. Detailed guidance on the evaluation approach will be distributed soon. The Wiki will be sufficiently populated so you can start work on Monday 18 January.

Questions

If you have any questions regarding the coursework please post it on the blog and I will respond. The collected questions will be on the clarification tab on the course webpage.