

1-ECTS Software Configuration Management – Exercise session I

In the solutions you discuss, you might want to explicitly refer to *concepts and principles* from the first lecture (either from the lecture slides or from the lecture note).

Each group is required to produce a **short summary** of the main results of their discussions. **A few (1-4) lines** for each exercise are sufficient. The summary must be mailed to bendix@cs.lth.se (in a reasonable format) **at the end of the exercise session**. Do **not** spend time on things like “nice formatting or spelling”. If you have figures/drawings you want to include, then remember the 4P-principle (pen, paper, photo, paste). You can answer in English– or Danish/Italian/Norwegian ;-)

Since there are 12 questions to discuss, **you have an average of 7-8 min. per question**. It is OK (in fact wise) to spend a lot less time on some questions (maybe with a one-sentence summary) in order to have more time for other questions.

1. Discuss how the analysis of collaboration problems from the lecture relates to your own personal experience from working in group(s).
2. In your own words how would you characterize Wayne Babich’ “*Shared Data*” problem and what are the root causes of the problem? Why is it impossible to eliminate (even if you are only one person)?
3. In your own words how would you characterize Wayne Babich’ “*Double Maintenance*” problem and what are the root causes of the problem? Why is it impossible to eliminate (even if you are only one person)?
4. Find places where the *web-pages* and the *slides* of this course “suffer” from Wayne Babich’ problems of “*Double Maintenance*” and “*Shared Data*”. Discuss different strategies for handling the problem and their advantages and drawbacks.
5. Discuss whether Dropbox/SkyDrive/iCloud/GoogleDrive (pick **one**) could be a solution for collaboration. Does it suffer from any of Babich’ three co-ordination problems? If so, how should we work to “protect” ourselves? What about Google Docs?
6. What happens if you try to synchronize the calendars on your iPhone and iPad – and you have made different changes to each of them?
7. In your own words how would you characterize Wayne Babich’ “*Simultaneous Update*” problem and what are the root causes of the problem? Why is it impossible to eliminate (even if you are only one person)?
8. List three situations from your past experience where you have had problems that might have been caused by bad or missing SCM. Pick one situation and discuss the root causes for the problem and possible SCM solutions.

9. We created the concept of a *workspace* to protect ourselves from other people's changes. But can the workspace always protect us from other people's changes? Creating the workspaces, we get the "double maintenance" problem. Can we always handle that problem by merging?
10. We use the workspace to protect ourselves from other people's changes, but how can we protect the *repository* from people's bad changes?
11. In a meeting yesterday, your manager told you that he can see no reason why the company should get any value from making an effort to be able to restore an application from a *version control repository*. From his point of view "we can restore from nightly backups of the server – so what is the point". Discuss what are the differences between backup and simple version control – and Configuration Management.
Discuss what you want to tell you manager at the meeting next Friday where he has to make the decision of whether to introduce a version control tool or not.
12. Strict long transactions is a good way to make sure that we do not create un-tested configurations in the repository. However, on a big project like Android with tens of thousands of modules and several thousand people working in parallel it could give some serious problems – what are those? Could we do something to try to manage those problems and still get the benefits from strict long transactions?

After the exercise session you might want to return to the lecture note and re-read and comment the parts that you now find particularly relevant and interesting to you.