Experiment on the Applicability of Refactoring on Embedded System Software Engineering

Task

During this thesis, you will have to do a case study which examines the applicability of agile development techniques. The focus will be those techniques which change lightweight software-development as well as its development by individual developers (test-driven development, refactoring, pattern-oriented design, fast iterations, techniques from the PSP).

Goals to be achieved are

- Evaluation of the applicability of the techniques
- Prioritization of the techniques
- Developing an optimal set of development techniques (as a bottom-line)
- Gathering of qualitative data (questionnaire before, during and after the application)
- Gathering of quantitative data (time effort, frequency of using a certain technique, irregularity of the technique)

The following goals consider individual specializations:

- Evaluation of the applicability of the techniques
- Cost/Profit evaluation considering being familiarized into a technique and additional overhead
- Gathering of qualitative data (questionnaire before, during and after use)
- Gathering of quantitative data (time effort, frequency of using a certain technique, irregularity of the technique)

The thesis will be arranged with voluntary participants of other courses or assistants. The basic procedure will be observation of the work through 'looking over one's shoulders'.

Update

This thesis can be carried out with the following specializations:

- Refactoring
- Pair programming
- Test first programming
- Simple design
- Planning game

- Common code ownership

This means that each specialization represents a discrete topic.

Student

- Assigned to Umar Sherwani (Refactoring)
- More topics are possible.

Fields of Study

- Computer science and comparable studies
- In case of interest, please send an email to the tutor.

Tutor

- Dr.rer.nat. Dirk Wilking

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