Assignments in joint course on SE

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The Role of Assignments

- *N* assignments given to students during the course. Every assignment takes *f*(*N*) points.
- Students are organized into teams (3-5 members)
- Every assignment is to be solved until the designated time
- Teaching assistants help students on demand or during the regular exercise classes
- The number and quality of solved fulfilled assignments influences the final mark

How influences?

- HU, Berlin
  - If student fulfilled more than half of $f(N)$, she is allowed to take part inj oral exam (or final test)
- DMI, Novi Sad
  - According to $f(N)$, student is given the mark that directly influences her final mark, given after the oral exam.

Possible problems

- DMI, Novi Sad
  - The exam is officially practical + oral, meaning that student can demand to take the practical part of the exam directly 'on site' (not during the year)
  - How to avoid cheating?

Assignments at HU, Berlin (shortened version) - 1

- 6 points, deadline: ...
  - Critical analysis of seminar organization requirements specification. Make review-report.
- 4 points, deadline: ...
  - Make a requirement specification for a compiler. The big customer purchased Eiffel (Java,Pascal,...) compiler. What problems should be addressed and cleared. Remark: just a list is needed.
- 8 points, deadline: ...
  - Using the function-point method, determine costs of seminar organization software product and optimal number of developomers.
- 8 points, deadline: ...
  - Make a product model based on a seminar organization requirements specification using structured analysis.
- 10 points, deadline: ...
  - The problem of students and their diploma theses, available themes, supervisors, ... is described. Describe solution using use-case diagram and the tool Together. Build a class diagram. Make a formal protocol.

Assignments at HU, Berlin (shortened version) - 2

- 12 points, deadline: ...
  - 6 points: Make a review and produce a review protocol of manual adjustment behavioural specification.
  - 6 points: Suggest the definition of class Drive, based on manual adjustment behavioural specification. Use the Together tool.
- 12 points, deadline: ...
  - Build test cases and devise a functional testing protocoll based on manual adjustment behavioural specification. Use CTE tool.
- 10 points, deadline: ...
  - Describe abstract data type Queue algebraically (6 points) and in Z (4 points).
- 9 points, deadline: ...
  - Apply McCabe tool to given C sources, to establish the following metrics: battlemap (1 point), cyclomatic and essentail complexity (5 points), Halstead and LOC meterics (3 points).

Assignments at HU, remarks

- Maintenance assignment should be added
- Of 9 assignments, 4 do not use course case studies (XCTL and seminar organization)
- Are A1 and A2 similar?
- Can sources in A9 be replaced with course case studies sources?
- Is structured analysis obsolete (A4)?
- Can other testing methods be applied?
- Inclusion of source code review of seminar organization?

Assignments suggested by Braude

- To every team, a separate project is given. Then, every team should:
    - Form teams, Agree on team communication. Choose leader, the way of exchanging documents, standards, meetings.
    - Make a configuration management plan.
    - Make the 'validity and verification' plan.
    - Make a software project management plan.
    - Make a software quality assurance plan.
    - Write a customer specification for a software project.
    - Write a detailed software specification for the project.
    - Develop a software architecture (product model) for the project.
    - Develop a detailed design of the project.
    - Implement key parts of your project to form a prototype.
    - Perform full unit tests on two methods of your application.

Braude's assignments - remarks

- To much documents produced (boring?)
- The much time spent on pre-activities and team/project organization (first 5, just about half of all assignments)
- Is implementation necessary?
- Because every team has its own project, organization of the course can be too complicated ('customer' is also needed).

Conclusions?

- If we improve disadvantages of both assignment sets, we shall get nearly equivalent sets.
- Some specific documents should be perhaps produced and given to students (instead of require them from students).