Group Assignment - Req Eng course 2010

The following assignment is mandatory in the course Requirements Engineering, DAT230/DIT276, held at Chalmers. The reports shall be submitted in the Fire system in PDF format. Please note that we present only maximum page limits. If you are able to write shorter with retained quality, we welcome and encourage this. References may extend to one or more pages in addition to the presented maximum number of pages.

Assignment: Group assignment
Description: This is a graded and mandatory assignment that shall be solved and reported together with your assigned group.
Outcomes: Two reports should be submitted per group:
1. SRS - Written report
2. Postmortem - Written report

Max page limits: 80 pages (SRS), 7 pages (Postmortem)
Report format:
- Any standard single-column document format with normal fonts and font sizes (Times New Roman etc from 11-12pts size) should be used for the SRS report. Do NOT use the IEEE format for the SRS of this assignment. For the Post mortem you should use the IEEE format.
- Proper and complete references to all supporting books/papers/info!
- Plagiarism will yield an immediate FAIL on the course and be reported to the university disciplinary board

Submission: Upload the two reports as PDF files in the Fire system linked to on course home page
Grading: Based on rubrics available on course home page

1. Description of assignment and tasks

You are developers at a software development company. You have been contacted by a company active in the food and restaurant industry with the following email:

“Our company needs a GPS-based mobile application to find the closest restaurants based on the user’s position. The user should be able to search based on a specific restaurant, price, position range and so on. We would like to give you the chance to develop this application with us. We have contacted several companies like yours and we will “pit” you against each other based on how well you can find out the requirements on this system.”

You have decided to participate. Your requirements document and results are to be presented on a workshop with the customers and your competitors.

This assignment has six main tasks that are all to be performed in your assigned group of five to eight students. We estimate the total size of these assignments to take a total of circa 65 hours per person.

The purposes of the tasks are to give some practice in requirements elicitation, specification, and prioritisation. We also require you to do a postmortem analysis of the techniques you used and to evaluate your work and processes. Below, each of the tasks are further described.

Task 0 - Logging

During all of the work you do on this project you must log how much time you spend on each activity and which person(s) in your group does what. Your log should be added as an appendix to your post mortem report described below.

Task 1 - Elicitation
During a meeting with a customer you shall acquire information about which system the customer wants, and what requirements that the customer poses on this system. You shall plan the customer meeting to ensure you get the essential information from the customer in the available time (max 1 hour). You shall conduct the meeting in a professional manner. You shall bring a printed paper to the meeting where the names and p-numbers of all group participants are listed. One of the group members should be marked as the contact person of the group. If you have introduced other roles please indicate which persons have which role.

You can discuss the possibility of further elicitation meetings with the customer at the first meeting as you see fit.

Task 2 - Specification
You shall document the elicited requirements in a requirements specification. You are to make use of a number of different requirements specification techniques. Which particular techniques that you use depends on your group number as listed on the course page. Find your group number and then see which techniques you should use from this table:

Groups with numbers	Required specification techniques
1, 4, 6, 8, 18	NatLangFR, I*, UseCases, NatLangQR
5, 7, 9, 16, 20, 21	NatLangFR, I*, BDDC, NatLangQR
3, 12, 13, 17, 19	NatLangFR, I*, UseCases, PLanguage
2, 10, 11, 14, 15	NatLangFR, I*, BDDC, PLanguage

The specification techniques are referred to in the table with a short tag which are described here:

NatLangFR = Functional requirement written in natural language
NatLangQR = Non-Functional/Quality requirement written in natural language
I* = Istar technique as described in lectures and exercise 2 on 20100915
UseCases = Use cases written according to the Alistair Cockburn “Basic use case template” as linked to in exercise 2 on 20100915
BDDC = Cucumber scripts for BDD as presented in exercise 3 on 20100916
PLanguage = PLanguage as described in the lecture on 20100914

For each natural language requirement, you shall at least include the following: Identifier, Title, Requirement, Rationale, Dependencies. Other attributes should be included as you deem necessary depending on the requirement.

Each group has several different specification techniques to choose from for specifying inidividual requirements. However, all listed techniques must be used. The choice of

technique should not be done lightly but should be based on which requirements are more or less suitable for the different techniques. However, at least five (5) instances of each technique. Your grade will be severly punished (i.e. lowered) if you refrain from using a particular technique (UseCases, BDDC) even if it can be considered suitable. You will be required to motivate your choice of technique.

In addition to the required specification techniques listed in the table above you can use general diagrams as you see fit to best describe the requirements, system and its environment etc. However, you cannot use any of the techniques listed for the other groups (if it is not also listed for your group).

Your SRS needs to clearly specify at least five (5) quality/non-functional requirements (QR). More QRs should be documented if you elicit them in the meeting(s).

This is a group activity performed within your group only. No exchange of information or discussion of the assignment should take place between groups. Your grade will partly depend on how good and unique your requirements document is compared to other groups. Thus by discussing your work with other groups you risk giving them information that you might use to your advantage. At the workshop your groups result will be pitted in a head-to-head battle with another group; creative and unique information may be of great value in gaining the development contract of the customer (and thus give you a bonus "cushion" for the written exam). Don't share information with other groups.

The requirements specification shall be structured according to the IEEE 830-1998 standard for Requirements Documents. All sections in the document shall contain relevant information or an explanation of why that particular section is not applicable.

Task 3 - Prioritization

You shall select ten (10) important requirements from your SRS in task 2 and prioritise them with the cost-value approach by Karlsson and Ryan as described in the lecture on 20100917. At least three of the requirements should be quality/non-functional requirements and at least three should be functional requirements.

The rest of your requirements you can prioritize based on some other prioritisation method. Describe which such technique you have used and what the results were.

You shall divide all the requirements, according to your prioritisation, into three releases, and develop a release plan. This release plan shall contain a schedule for the deliveries as well as a schedule and a plan for the development of the system (i.e. when each requirement shall be developed and in what order, and which requirements that are included in each of the releases). You should assume a development team corresponding to your own size and experience level for the development of the system.

Your prioritization (including the chosen eight + rest of the requirements, intermediate results as well as the final prioritization/rank of all requirements) and release plan should be reported as part of the SRS written for task 2. The release plan shall contain motivations for all your decisions.

Task 4 - Post mortem

You should conduct a post mortem analysis of the requirements engineering activities and whole project of this/your group assignment. The post mortem should be reported in a separate document from your SRS. It should, in detail, answer the following questions:

1. Which process did you use for your requirements activities in tasks 1-3 of this assignment? Show all the steps in time, describe what they constituted and the motivation for why you chose this technique/step at that point of your overall process.

2. Based on the process description from question 1 and the detailed logging information you should summarize how much time was spent (in total and by each group member) on the steps/activities involved as well as for the project as a whole? Note that this information will in no way be used for any grading; you do not even know if we think being more efficient (doing more in less time) is better or worse than being more effective (having a better resulting SRS).

3. For each of the requirements specification techniques you should answer all the questions:

3.1 What was the advantage of this technique based on your experience in this assignment?

3.2 What was the disadvantage of this technique based on your experience in this assignment?

3.3 How efficient was the technique, i.e. how good reuquirements did it uncover given the time it took to use?

3.4 In which situations would you use this technique in a future project?

3.5 In which situations would you not use this technique in a future project?

4. For your next project which set of techniques (that you used here or that you have not used here but know from theory or other projects) would you use for specifying requirements? Why? Clearly motivate your selected set of techniques and discuss how they complement each other. Consider both the quality of requirements it helps create and how much time is needed to effectively use the technique.

5. What (other than the specification techniques) worked well in how you worked in this project?

6. What (other than the specification techniques) did not work well in how you worked in this project?

7. How did you work together as a group in the project? What worked and not in your interaction(s)?

8. What would you do differently in a future but similar project?

Task 5 - Workshop

You are to present your proposed requirements in a workshop together with the customers and your competitors. You will have 10-15 minutes to give an overview of the requirements you have found and the system you want to build. After your competitors present their solution there will be questions from the customers. They will then take a decision on a winning team.

In the course each member of the winning team will get an extra 3 bonus “cushion” on the written exam to be used if you are close to the limit for a higher grade (cannot be used to get “up” to a PASS/3 grade only higher grades). A rubric for the workshop will be presented later.

2. Rules of conduct

This assignment is to be performed by and within your group. Be advised that any form of plagiarism will render an immediate fail on the course, and the matter will be reported to the university disciplinary board. Everything you hand in must be written by your group or properly quoted. Please note that you are responsible for everything that bears your name - no matter if it is a group assignment or an individual assignment.

2.1 Excuses we have already heard

The following is a list of excuses for not referencing material properly that we have already heard, and will not accept. This is not a complete list of excuses - you may very well come up with a new and innovative excuse that we have not heard but is equally invalid.

Excuse 1: “I did not know that I had to add a reference.”
Answer. Anything that you have not written or thought up yourself must be referenced.

Excuse 2: “I added the reference at the end of the paragraph that I copied.”
Answer. Your fault here is that you copied a sentence, paragraph or a whole section word by word from another source. This is called a quote, which you surround by quotation marks (a “ and a ”). You should try to avoid using quotes. We are much more interested to see your interpretation of what you have read and/or heard (with proper referencing to the inventors of the ideas that you present).

Excuse 3: “The reference [to the copied paragraph] is in the section heading.”
Answer. This is not only as wrong as the aforementioned, it is also ugly.

Excuse 4: “The reference [to the copied paragraph] is in the reference list.”
Answer. This is basically another variant of excuses 2 and 3. As soon as you use the text or ideas of someone else in your work, you provide a reference so that the readers can understand that they are no longer reading your ideas, your thoughts, your labour.

Excuse 5: “In my home country, the teachers do not check this.”
Answer: Welcome to Sweden. The teachers in Sweden are by law required to both check for and report suspected cheating to the disciplinary board. Improper referencing is cheating, since it is an attempt to take credit for what someone else has thought or written.

Excuse 6: “I interpreted it as an exercise in forming a report, not actually writing it.”
Answer. When we read an assignment we do so in order to provide the best possible feedback to you as a student so that you may learn something. To hand in text that you have not written yourself is not only depriving yourself a valuable opportunity for feedback and personal improvement, it is also nonchalant towards your fellow students that could have made better use of the teacher resources.