DIT045 Assignment 1

Fall 2017

Submission Instructions

Assignments must be handed in through GUL to A1 under Assignments. The final assignment should be submitted in PDF format.

For groups of 2-3, only one member per group should hand in the assignment.
Assignment feedback will be returned to all group members.

Cover Page (3 points)

On the cover page of your assignment include the following information:

- The name of the course
- The date
- Your group name
- Your group members
- Which Problem Domain was selected
- The number of pages in the assignment

Assignment Due Date

Friday November 17th, 18:00

Late Policy

Up to One day late: - 20% of final mark
Up to Two days late: - 40% of final mark
Two or more days late: 0%

Group work

This assignment must be completed in a group of 2-3. Please work in the group you have entered into A0 in GUL. Indicate the group name on your cover page.

All assignments must include a group evaluation form, found in GUL. This must be included as the last page of the assignment and filled out by all group members.

Pre-Work: Select a Problem Domain

In the Problem Domain section of GUL, you have been provided four 1-page descriptions of problem domains. Select one problem domain of your choice. These are the domains for which you will perform requirements analysis and UX design for the remainder of the course. Do not switch between domains between assignments, as the assignments will build upon each other.

Part 1: Requirements Modeling (82 points)

1a: Context Diagram (15 points)

For your chosen case, draw a context diagram. Add the system actor, identify the relevant stakeholder/actor entities, and the relationships between the system and these entities, labelled with high-level inputs and outputs.

Supplement the diagram with text to explain any ambiguous or unclear parts of the model.

1b: Goal Model (30 points)

For your chosen case, draw a goal model. Capture one or more system actors, and relevant stakeholder/actors. For each actor: What are the goals and qualities they want to achieve? How can they be achieved (tasks)? Are there alternatives? What resources are needed? How do the alternatives compare against the qualities? How does each stakeholder depend on other stakeholders to satisfy their goals, qualities, and tasks?

Make sure that this diagram is consistent with the context diagram in terms of actors and relationships. If creating the goal model changes your knowledge of the system and its interactions, update the context diagram to reflect these changes, if applicable. (Total consistency worth 9 points)

Supplement the diagram with text to explain any ambiguous or unclear parts of the model.

1c: Use Case Diagram (20 points)

For your chosen case, draw a use case diagram. Capture the system and other relevant stakeholders. Identify the major use cases and relationships, both between the stakeholders and the use cases, and, if relevant, between use cases.

Make sure that this diagram is consistent with the context diagram and goal model in terms of actors/stakeholders and use cases. If creating the use case model changes your knowledge of the system and its use cases, update the context diagram and goal model to reflect these changes, if applicable. (Total consistency worth 9 points)

Supplement the diagram with text to explain any ambiguous or unclear parts of the model.

1d: Reflection (8 points)

Submit a maximum 400 word reflection on the modeling tasks. In your reflection, answer the following questions:

1. Did making one type of model cause you to update the other model(s)? If so, describe an example update. If not, why not?
2. What difficulties did you find in drawing each of the three model types (context, goal, use case)? What was easy?
3. What are the benefits and drawbacks of each model type according to your experience in this assignment?

Note: there is no “wrong” answer, credit is given for thoughtful, well-written answers that draw on experiences from the assignments.

Part 2: Natural Language Requirements (90 points)

2a: SRS-Style Requirements (34 points)

For your case, capture a minimum of 10 SRS-Style textual requirements. Try to include the most relevant or important requirements which can be derived from the case description. Indicate whether each requirements is a: functional requirement, a quality requirement (NFR), or a constraint. Try to capture at least two requirements of each type (FR, NFR, constraint).

Hint: start by trying to extract all the requirements you can from the models in Section 1.

General Note: The requirements in Section 2 should be consistent with your models in Section 1. Not all aspects of all models must be captured in the textual requirements, and vice versa (this is not possible), BUT there should be a good level of consistency between them. We should be able to make a mapping between most of your requirements and model elements, and vice versa. If writing your requirements changes your knowledge of what the system should do, why, or for whom, update the models accordingly. (Total requirements consistency worth 9 points)

2b: User Stories (27 points)

For your case, capture a minimum of 10 User story textual requirements. These requirements can be the same requirements as in 2a, written in use story form, or can be new. Ensure that none of the requirements written in any form (2a to 2d) provide conflicting information.

2c: Requirements Template (7 points)

Capture two requirements in the Volere requirement template (i.e., you will hand in two filled out versions of the template, one for each requirement). These can be two requirements from above, or new requirements. Be sure to fill the templates with complete information. An editable template and a template guide can be found in the assignment resources in GUL. Use the guide as a reference to look up things you do not understand (you don't have to read it all). This material is provided courtesy of S. and J. Robertson, do not redistribute.

2d: Structured Text (7 points)

Capture four requirements using the EARS structured text method, see Lecture 3 for the EARS patterns. These can be four requirements from above, or new requirements. For each requirement indicate which pattern or patterns were used.

2e: Reflection (8 points)

Submit a maximum 400 word reflection on the textual requirements tasks. In your reflection, answer the following questions:

1. Did capturing the requirements in one format cause you to update requirements in another format? If so, describe an example update. If not, why not? Did capturing the textual requirements cause any updates to the model? If not, why not?
2. What difficulties did you find in writing each of the four types of textual requirements (SRS, user stories, template, and structured text)? What was easy?
3. What are the benefits and drawbacks of each type of textual requirement according to your experience in this assignment?

Note: as above, there is no "wrong" answer, credit is given for thoughtful, well-written answers that draw on experiences from the assignments.

Grading Criteria

Models

Content: Models should contain much of the relevant information, including actors/stakeholders, relationships, dependencies, goals, qualities, tasks, resources, trade-offs, use cases, and use case relationships.

Syntax: Models should follow the syntax rules and conventions of each type of model. See slides and course resources for details.

Style: Models should be well-laid-out and easy to read. The font should be a readable size, lines should avoid cross-over whenever possible. The models should look reasonably neat. The image should be clear and not blurry (avoid low resolution image files).

Requirements

Follow instructions in terms of number and type of requirements. Keep in mind the qualities of good requirements for both SRS requirements and user stories. Use the correct format for user stories. Use the templates and patterns as specified in the lecture notes.

Reflections

Credit is given for answering all the questions. To get full marks, answers must be clear, thoughtful and not obvious (i.e. not something mentioned in the lecture slides). Points are given for writing style, including grammar, punctuality, spelling, and readability.

Total points: 175