DIT045/DAT355 Assignment 1

Fall 2020

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Submission Instructions

Assignments must be handed in through Canvas to A1 under Assignments. The final assignment should be submitted in PDF format. One submission per group.

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 assignment case was selected
- The number of pages in the assignment

Assignment Due Date
Friday November 20th, 23:59

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%

Groupwork
This assignment must be completed in your course group. Please work in the group you have submitted in A0 in Canvas. Indicate the group name on your cover page.

All team members must fill out a peer evaluation form, found in Canvas under quizzes.

Assignment Case
You have been provided with four assignment cases. The description of the case has been provided in Canvas under Files > Assignments. Pick one case to use in all your assignments. All three assignments in the course will work on producing an RE and UX solution for the case you pick. The RE part develops models and requirements for a system which will solve part of the problem described in the case, while the UX part designs and evaluates user interfaces for these requirements.

Question 1: Select Case and Justify Selection (5 points)
State which of the four cases you have selected. Give a brief justification (max 0.5 pages) of why you have chosen that case. Do you have expertise in that area? Find it interesting? Challenging? There are no right or wrong answers, but your answer will be judged on clarity and quality.

Question 2: Apply Creativity Techniques (10 points)
Divergent Creativity (6 points): First, conduct a general brainstorming session with your group (see http://becreative.city.ac.uk/details.php?id=5) coming up with ideas for a solution to your case. Remember, there are no bad ideas (yet). Try not to focus on detailed design ideas. Then, pick two more of the creativity techniques from the lecture and/or from the BeCreative site. Conduct these techniques within your group. Each technique should take at least 20 minutes. Collect ideas for each technique on post-its (or equivalent). Ideas can be cumulative (i.e. build on ideas from the previous creativity session). When conducting the activities, you can either perform the activity manually (e.g., assumption busting is done manually) or can use a creativity tool (e.g., Bright Sparks, Creativity Triggers, or any of the creativity techniques in Creative Leaf). Submit a list of new ideas for each of the three activities (either write them out or take readable picture of the post-its). Try to generate at least five ideas from each technique (you could come up with many more). Expectation: three lists (or pictures) of ideas indicating from which of the three activities the ideas were derived.

Convergent Creativity (2 points): Consider all the ideas from the previous step. Pick the five best ideas. Keep these ideas in mind in the rest of your assignment when you create models. Expectation: List of five best ideas.

Reflect (2 points): Do you find creativity techniques useful? Which of the three creativity activities did you like the most? The least? Why? Write a max 0.5 page answer. Again, there is no right or wrong answer, points are given for how well-thought-out and well-written your answer is.

Question 3: Context Diagram (10 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. Focus on actors which are core to your problem, but also include some actors which may be affected by your system. Not all actors may have inputs and outputs. For now, you do not need to add the concentric circles to indicate what actors are in and out of scope. This comes later.

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

Question 4: iStar (Goal Model) Strategic Dependency (SD) Model (5 points)

For your chosen case, draw an iStar SD goal model. Capture one or more system actors, and relevant stakeholder/actors. For each actor: what does the actor depend on other actors for? Think of resources, goals, quality goals and tasks.

The goal model and context diagram will overlap. Make sure that this diagram is consistent with the context diagram in terms of actors and resources. However, context diagrams do not cover goals, quality goals, and tasks. If creating the goal model changes your knowledge of the system and its interactions, update the context diagram to reflect these changes, if applicable.

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

Question 5: Use Case Model (10 points)

For your chosen case, draw a use case diagram. Capture the system and other relevant stakeholders. Identify the 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. (Hint: actors can be nearly the same, and goal model tasks are similar to 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.

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

Question 6: Scoping (5 points)

What you have come up with in your creativity sessions, and the previous three models may be too large for your assignment. Perform a scoping exercise. Identify the key actors, use cases, and goals for the system. Think about a minimal viable product. In order to release a first version of the product that is successful, what needs to be in it?

Use the models you have created so far to show the scope (3 points):

- For the context diagram, add the concentric circles to show the core actors, affected actors, and those outside the scope. Submit a new diagram which shows these circles.
- For the i* SD model, indicate which actors and dependencies are out of your scope (e.g., cross them out). Submit a new diagram which shows the scope.
- For the Use Case model, indicate which actors and use cases are out of your scope (e.g., cross them out). Submit a new diagram which shows the scope.

The scope reflected in your three models should be consistent.

Justify (2 points): Give a brief description of why you decided to include or exclude certain actors, use cases, or goals (max 0.5 pages).

Question 7: iStar Strategic Rationale (SR) Model (10 points)

For your reduced scope, turn your iStar SD model into an SR model. For each actor in the reduced model: 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? The SR model should be roughly consistent with the SD model (e.g., same actors and dependencies).

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

Question 8: Mappings between Models (10 points)

You have now drawn three types of models (including two types of goal models). Create a table which describes the mappings between the context diagram, the use case diagram, and the iStar SR diagram (the SD diagram is a subset of the SR diagram). Focus on the smaller version of your diagrams after scoping. By mapping, we mean to show which element or actor or link matches or maps to which other element actor or link in another diagram. Not all elements and links need to be mapped, but there should be some significant overlap between the three types of models.

Here is a suggestion for what you table should look like:

	Context Diagram	Use Case Diagram	iStar SR Model
Actors	Actor X	Actor X	Actor X
	Actor Y	Actor Y	Actor Y
	…		
Relationships/Resources	Data X	N/A	Data X
	Data Y	N/A	Data Y
	…		
Use Cases/Tasks	N/A	Use Case X	Task X
	N/A	Use Case Y	Task Y
	…		
Any other mappings	…		

Supplement the table with text to explain any ambiguous or unclear mappings.

Question 9: Personas (10 points)

For your chosen scope of your case, create two personas who represent target users of your system. Fill out the details of the personas as per the lecture.

Question 10: Customer Journey Map (10 points)

For the scope of your case, draw a customer journey map for your two personas from question 9. This can be done in two models, or with two timelines on the same model. Include channels, touchpoints and a timeline for each persona. Try to think of several channels. Think of the full user journey before and after using the system. Add emotion to the touchpoints if you think it is useful. Be clear which timeline belongs to which persona.

Question 11: Modeling Reflection (5 points)

Submit a maximum 0.5 page reflection on the modeling tasks. In your reflection, answer the following questions:

1. What difficulties did you find in drawing each of the model types (context, goal, use case, journey maps)? What was easy?
2. 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.

Question 12: Use Case Templates (Scenarios) (10 points)

Pick two use cases from your reduced scope. For each, fill out Cockburn's Use Case template. Flesh out the details of the process, including exception cases, and error cases. Consider prerequisites.

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).

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.