

☑ **IS-402, general information**

Course code: IS-402

Course name: Systemutviklingsprosesser og metoder

Date: 03. October 2019

Duration: 3 hours

Resources allowed: None

Notes:

Please answer all exercises in prose. You may use bullet point lists. Please also feel free to make drawings, diagrams, etc. and refer to them. To support your argumentation and for purposes of illustration, you may also give examples. Please note that some of the exercises require an elaborate answer. Nonetheless, grading will be done based on precision and quality of argumentation and *not* on textual length. As a rough hint for how much time you should spend on each of the exercises (and how long answers in relation should be), their share on the exam's overall grade is given as a percent value.

The professors sometimes ask for exam answers to be used for teaching purposes, but in order for this to take place, the university needs your consent.

Do you grant the University of Agder permission such permission?

Select one alternative

- Yes
- No

Attaching sketches to this question?

Use the following code:

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1 IS-402, Exercise 1

Planning (4%)

Some people claim that *planning is more important than the plan*. Comment on how far this applies to planning software development projects!

Fill in your answer here

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2 IS-402, Exercise 2

Analysis and Definition (18%)

You have a new customer. He is a populist politician and heavily uses social media. However, he is annoyed of what he calls “censorship” when he posts things that are a little lenient when it comes to facts. Therefore, he intends to create his own social network, called *Fakebook*. In order to work with him, you need to explain first how requirements engineering works:

1. Explain why requirements engineering is a very important activity!
2. Which two basic kinds of requirements exist? Explain both and give two examples each!
3. How can you be sure that you have a proper functional specification? Name five of the requirements for assessing the functional specification and explain each requirement!

Fill in your answer here

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3 IS-402, Exercise 3

Design (28%)

You have found out that Fakebook should be similar to existing social media services, but postings will be ranked based on the strangeness of the conspiracy theories they contain. You argue that designing a user interface from scratch would still be a very good idea.

1. Explain to the customer, which three steps will be taken to move from the requirements to a GUI! Provide a sketched example for each step to illustrate the process of generating the user interface for Fakebook!
2. Your customer would like to import his favourite fake news from other social media into Fakebook. These should be handled like postings on Fakebook. For programming Fake-book, it should be irrelevant whether a posting is taken from Fakebook itself, from Insta-gram, from Twitter, or from any other service. This setting asks for the usage of a design pattern. Which pattern do you propose? Explain your decision! Graphically sketch a possible way of usage of the pattern!

Fill in your answer here

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4 IS-402, Exercise 4

Implementation (10%)

Facebook may become a success story. Successively developing it suggests using a Version Control System. Describe the two models of versioning! Support the explanation of each model with a sketch!

Fill in your answer here

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6 IS-402, Exercise 6

Software Development Methodologies (32%)

Your customer is satisfied with your efforts so far. Therefore, he decided to let you implement Fakebook! On the one hand, the customer is a traditionalist and asks you to provide a detailed plan that you should closely follow. On the other hand, he says that he has many ideas and would like to throw in some new thoughts for functions of Fakebook whenever they come to his mind.

Describe how implementing Fakebook using a plan-driven method *and* an agile method of your choice would look like! First, briefly explain the two chosen methods! Then describe how the actual procedure for Fakebook would look like for both methods. Should you think you know too little on Fakebook or any aspects of implementing it, make realistic assumptions for preconditions and propose what should be done.

Considering your description, which approach should be favoured? Explain your decision based on the typical *home grounds* for plan-driven and agile approaches! (Do **not** describe the home grounds in general, only as far as they are applicable here.)

(For extra clarity: this exercise consists of five steps.)

Fill in your answer here

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