IN5140

Smart processes and agile methods in Software Engineering

Group session 1

Slides based on material from last years TAs:
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Agenda

First hour:

- Practical information

- Do group exercises

Second hour:

- Continue doing exercises

- Discuss answers from group exercises

Teaching Assistants

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- Two group sessions per week, Thursday, Friday 12.15 - 14.00
- Slides will be published after the group session

Let's get to know each other!

Teams

- Teams will be used as forum where you can ask questions
- Teams code: **0dseggo**

Project milestones throughout IN5140

What	Due date	% of total score
Group-form must be submitted	Before 5th September	
Deliverable 1 – Process Model	21th of September, 23:59	passed/not passed
Project Presentations	October (date TBA)	-
Deliverable 2 – Project Report	9th of November, 23:59	30
Final exam	28th November, 9:00	

- Your project group will get a shared score
- Submit deliverables here (PDF): https://devilry.ifi.uio.no/

Project is 30% of the grade!

About forming groups for project

- Size of groups: 3-5 students.

- Either you want us to put you in a group, or you want to form group yourselves, you need to submit it using a form .

- Try submitting this form before 5th September https://nettskjema.no/a/279815

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Group Exercises

1. Define the concepts as follows and describe attributes and/or aspects of them:
   a. Software system quality
   b. Software development process
   c. Software process improvement
   d. Software project
2. Discuss how to develop software systems.
3. Discuss the different types of software maintenance and which type is the most important according to your group?
4. What are the characteristics of successful, challenged and failed software according to your group?
5. Discuss the important roles involved in the process of a system development
6. Discuss the important tools involved in the process of a system development

15 minute ☕ break

Possible solutions

1. Define the concepts as follows and describe the attributes and/or aspects of them:

    a) Software system quality

Could for example be:

- Correctness
- Maintainability
- Reliability
- Robustness

More attributes: http://www.qasigma.com/2008/12/software-quality-attributes.html

1. Define the concepts as follows and describe the attributes and/or aspects of them:

b) Software development process

The activities that are performed to develop a software system and the way they are performed. For example:

- Specification of requirements
- Design (architecture)
- Coding
- Testing
- Validation that the system satisfies the needs of the customer or user

1. Define the concepts as follows and describe the attributes and/or aspects of them:

c) Software process improvement

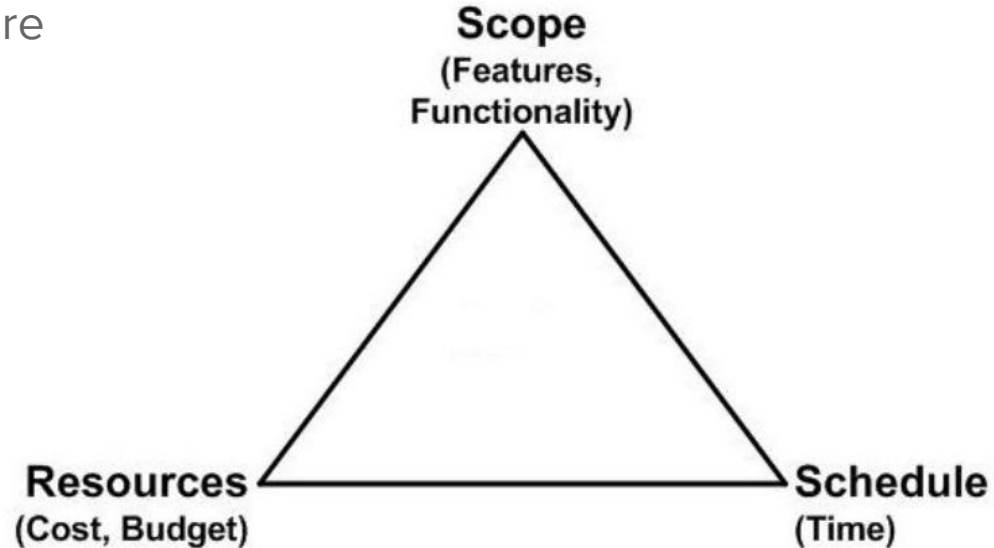The process of improving an existing process.
For example:

- Improve an activity within a process

- Improve a method/technique used in an activity

1. Define the concepts as follows and describe the attributes and/or aspects of them:
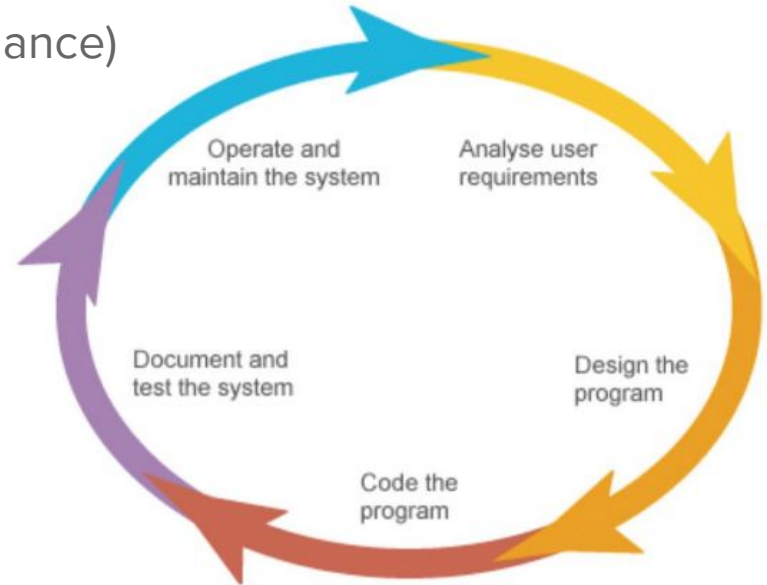## d) Software project

- The activities and processes that are involved in order to produce an observable and measurable result based on some requirements.
- "Magic Triangle" ➜ tradeoffs

Scope
(Features, Functionality)

Resources
(Cost, Budget)

Schedule
(Time)

2. Discuss how to develop software systems

- Every SW produced is unique
- Includes all activities from the conception of a product to the final manifestation of it
- Can be anything (e.g. prototyping to maintenance)
  - new development
  - prototyping
  - modification
  - maintenance
  - ...and any other activities

Operate and maintain the system

Analyse user requirements

Document and test the system

Design the program

Code the program

3. Discuss the different types of software maintenance and which type is the most important according to your group?

- Corrective maintenance - Fixing bugs

- Preventive maintenance - Improving structure (re-engineering refactoring)

- Adaptive maintenance - Adapt to changing environments

- Perfective maintenance - New functionality

4. What are the characteristics of successful, challenged and failed software according to your group?

- Successful ➡ Completed on schedule, budget.

- Challenged ➡ Completed with shortcomings, delays etc.

- Failed ➡ Canceled, not implemented.

5. Discuss the important roles involved in the process of a system development

- Developer

- Maintainer

- Architect or System designer

- Graphics designer

- UX designer

- Tester

- Project Manager

- Business consultant

- User or customer representative

6. Discuss the important tools involved in the process of a system development

- Development (IDE) ➡ [Eclipse, Webstorm, IntelliJ]

- Configuration or change management ➡ [Git, Subversion, Github]

- Testing ➡ [Sanitizer, Selenium, SwaggerIO]

- Diagram construction ➡ [draw.io, Eclipse, Lucidchart]

- Project management ➡ [Jira, Azure DevOps, Kanban board]

- Bug and issue tracking ➡ [Jira, Azure DevOps]

Next Week:

BPMN