Lecture 3 - Scrum
Practical info

• Projects have started
  – Team formation is bit incomplete
    (all students have not formed the 1-member teams)

• Weekly exercises have different place (TC217)
Weekly exercises on the following weeks

• Weekly exercise 3 (Processing) times at workstation classroom TC217:
  – Tue 27.01. at 10-12, 12-14, 18-20
  – Wed 28.01. at 12-14, 18-20
  – Thu 29.01. at 12-14, 15-17, 17-19

• Also next exercises (Agilefant, Git) according to same schedule

• User accounts applications for Lintula today!
About the project

• Status at 13:50 today
  – 17 full groups having 68 students
  – 19 incomplete groups with 30 students
  – This means that 98 has signed up to a project group
  – We have 134 sign-ups is POP => 36 students have not yet signed up
<table>
<thead>
<tr>
<th>Schedule</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Fri 30.1. 16.00</td>
<td>Groups formed in Canvas of this course.</td>
</tr>
<tr>
<td>Mon 9.2. - Sun 1.3.</td>
<td>1st Sprint</td>
</tr>
<tr>
<td>By Fri 20.2. 16.00</td>
<td>Reserved sprint review meeting for Sprint 1</td>
</tr>
<tr>
<td>Mon 23.2. - Fri 27.2.</td>
<td>Sprint review meeting for Sprint 1</td>
</tr>
<tr>
<td>Mon 2.3. - Sun 29.3.</td>
<td>2nd Sprint</td>
</tr>
<tr>
<td>By Fri 20.3. 16.00</td>
<td>Reserved sprint review meeting for Sprint 2</td>
</tr>
<tr>
<td>Mon 23.3. - Fri 27.3.</td>
<td>Sprint review meeting for Sprint 2</td>
</tr>
<tr>
<td>Mon 30.3. - Sun 26.4.</td>
<td>3rd Sprint</td>
</tr>
<tr>
<td>By Fri 17.4. 16.00</td>
<td>Reserved sprint review meeting for Sprint 3</td>
</tr>
<tr>
<td>Mon 20.4. - Fri 24.4.</td>
<td>Sprint review meeting for Sprint 3</td>
</tr>
<tr>
<td>Mon 27.4. - Sun 24.5.</td>
<td>4th Sprint</td>
</tr>
<tr>
<td>Fri 15.5. 16.00</td>
<td>Reserved sprint review meeting for Sprint 4</td>
</tr>
<tr>
<td>Mon 18.5. - Fri 22.5.</td>
<td>Sprint review meeting for Sprint 4</td>
</tr>
<tr>
<td>Fri 15.5.</td>
<td>Presentation of the games</td>
</tr>
</tbody>
</table>
## Five principles of Agile

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer involvement</td>
<td>Through the project. Provide and prioritize requirements, evaluate iterations</td>
</tr>
<tr>
<td>Incremental delivery</td>
<td>Customer specifies the increments</td>
</tr>
<tr>
<td>People not process</td>
<td>Skill recognized and exploited; Team should decide on ways of working</td>
</tr>
<tr>
<td>Embrace change</td>
<td>Plan and design for change</td>
</tr>
<tr>
<td>Maintain simplicity</td>
<td>Both in process and software</td>
</tr>
</tbody>
</table>
But...

- Some things are not covered by agile methods
  - Stakeholders
  - Budget
  - Risks
  - High-level goals
  - Risks

- Some things need to be agreed on
  - Timing of sprints
  - Who participate in sprint review
  - Who takes the roles
    (in Scrum: Scrum master and product owner)
Steering

- Project preparation
  - Project proposal
    - Project decision
      - Project description
        - Project planning
          - Project plan
            - Progress reports
            - Steering
            - Change proposals
            - Updated project plan
            - Results
            - End-report

Steering group

- Approval of project plan
- Follow-up and steering
- Acceptance of the results
- Ending of the project

Execution of the project

Customer

Execution of the project

26.01.2015
TIE-21100/21106/K.Systä
What and why project planning and management

• In a real world start of the project is always a commitment of resources and money.
• Everybody should know what is the commitment and why.
• Agreement of roles and responsibilities.
Table of content of our project plan

1. PROJECT RESOURCES
   1.1 PERSONNEL
   1.2 PROCESS DESCRIPTION
   1.3 TOOLS AND TECHNOLOGIES

2. STUDY DIARY 5
   2.1 SPRINT X (EVERY SPRINT AS A SECTION)
   2.1.1 Subsection

3. RISK MANAGEMENT PLAN
   3.1 [EXAMPLE] PERSONNEL RISKS
   3.1.1 [Example] Risk: Short term absence
Different projects - product

Vendor

specification

research

Plan

Implem. → validation → packaging

Plan & Mgmt

Customer
Iterative, agile

Vendor

research

bid

Spec.

imp

test

SW

deploym.

plan

Mgmt

Customer

Tender call

Bid a.

spec.

SW

Plan Mgmt

Plan Mgmt

Plan Mgmt

Mgmt

Deploym.
Scrum

• The slides are form [http://www.mountaingoatsoftware.com/agile/scrum/a-reusable-scrum-presentation](http://www.mountaingoatsoftware.com/agile/scrum/a-reusable-scrum-presentation)

• “…This Scrum presentation is available in a variety of formats including Apple Keynote, PowerPoint and OpenOffice. Please acknowledge the source as Mountain Goat Software and Mike Cohn when using this presentation. ”

• Thanks Mike !
Recommended reading


Thus, some information available for lecture audience only
# About our schedule

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Weekly e.</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrum (part 1)</td>
<td>Processing</td>
<td></td>
</tr>
<tr>
<td>Requirements management</td>
<td>Agilefant</td>
<td>Sprint 1 starts</td>
</tr>
<tr>
<td>Version and configuration management</td>
<td>Git</td>
<td></td>
</tr>
<tr>
<td>Scrum (part 2)</td>
<td>Patterns</td>
<td></td>
</tr>
<tr>
<td>Project planning (part 2) – Effort estimation</td>
<td>Effort estimation</td>
<td></td>
</tr>
</tbody>
</table>

Sprint 2 starts
An Introduction to Scrum

Kari Systä
26.1.2015
An Introduction to Scrum

Presented by

Kari Systä
3.2.2014
We’re losing the relay race

“The… ‘relay race’ approach to product development…may conflict with the goals of maximum speed and flexibility. Instead a holistic or ‘rugby’ approach—where a team tries to go the distance as a unit, passing the ball back and forth—may better serve today’s competitive requirements.”

Scrum in 100 words

• Scrum is an agile process that allows us to focus on delivering the highest business value in the shortest time.
• It allows us to rapidly and repeatedly inspect actual working software (every two weeks to one month).
• The business sets the priorities. Teams self-organize to determine the best way to deliver the highest priority features.
• Every two weeks to a month anyone can see real working software and decide to release it as is or continue to enhance it for another sprint.
Scrum origins

- Jeff Sutherland
  - Initial scrums at Easel Corp in 1993
  - IDX and 500+ people doing Scrum
- Ken Schwaber
  - ADM
  - Scrum presented at OOPSLA 96 with Sutherland
  - Author of three books on Scrum
- Mike Beedle
  - Scrum patterns in PLOPD4
- Ken Schwaber and Mike Cohn
  - Co-founded Scrum Alliance in 2002, initially within the Agile Alliance
Scrum has been used by:

- Microsoft
- Yahoo
- Google
- Electronic Arts
- High Moon Studios
- Lockheed Martin
- Philips
- Siemens
- Nokia
- Capital One
- BBC
- Intuit
- Nielsen Media
- First American Real Estate
- BMC Software
- Ipswitch
- John Deere
- Lexis Nexis
- Sabre
- Salesforce.com
- Time Warner
- Turner Broadcasting
- Oce
Scrum has been used for:

- Commercial software
- In-house development
- Contract development
- Fixed-price projects
- Financial applications
- ISO 9001-certified applications
- Embedded systems
- 24x7 systems with 99.999% uptime requirements
- the Joint Strike Fighter
- Video game development
- FDA-approved, life-critical systems
- Satellite-control software
- Websites
- Handheld software
- Mobile phones
- Network switching applications
- ISV applications
- Some of the largest applications in use
Characteristics

• Self-organizing teams
• Product progresses in a series of month-long “sprints”
• Requirements are captured as items in a list of “product backlog”
• No specific engineering practices prescribed
• Uses generative rules to create an agile environment for delivering projects
• One of the “agile processes”
The Agile Manifesto—a statement of values

- Individuals and interactions over Process and tools
- Working software over Comprehensive documentation
- Customer collaboration over Contract negotiation
- Responding to change over Following a plan

Source: www.agilemanifesto.org
Project noise level

Source: Strategic Management and Organizational Dynamics by Ralph Stacey in Agile Software Development with Scrum by Ken Schwaber and Mike Beedle.
Putting it all together

Image available at
www.mountaingoatsoftware.com/scrum
Sprints

• Scrum projects make progress in a series of “sprints”
• Analogous to Extreme Programming iterations
• Typical duration is 2–4 weeks or a calendar month at most
• A constant duration leads to a better rhythm
• Product is designed, coded, and tested during the sprint
Sequential vs. overlapping development

Rather than doing all of one thing at a time...

...Scrum teams do a little of everything all the time

No changes during a sprint

- Plan sprint durations around how long you can commit to keeping change out of the sprint.
Scrum framework

Roles
• Product owner
• ScrumMaster
• Team

Ceremonies
• Sprint planning
• Sprint review
• Sprint retrospective
• Daily scrum meeting

Artifacts
• Product backlog
• Sprint backlog
• Burndown charts
Scrum framework

Roles
- Product owner
- ScrumMaster
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Artifacts
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Product owner

• Define the features of the product
• Decide on release date and content
• Be responsible for the profitability of the product (ROI)
• Prioritize features according to market value
• Adjust features and priority every iteration, as needed
• Accept or reject work results
The ScrumMaster

• Represents management to the project
• Responsible for enacting Scrum values and practices
• Removes impediments
• Ensure that the team is fully functional and productive
• Enable close cooperation across all roles and functions
• Shield the team from external interferences
The team

• Typically 5-9 people

• Cross-functional:
  • Programmers, testers, user experience designers, etc.

• Members should be full-time
  • May be exceptions (e.g., database administrator)
The team

• Teams are self-organizing
  • Ideally, no titles but rarely a possibility
• Membership should change only between sprints
Some Notes

• "Manager" doesn’t exist
• Scrum-master is just a facilitator
• Organization need management, but the project should not
• "Product owner" is different from "Project manager"
• Change from old mode is not easy
Scrum framework

Roles
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Artifacts
- Product backlog
- Sprint backlog
- Burndown charts
Sprint planning meeting

Sprint prioritization
- Analyze and evaluate product backlog
- Select sprint goal

Sprint planning
- Decide how to achieve sprint goal (design)
- Create sprint backlog (tasks) from product backlog items (user stories / features)
- Estimate sprint backlog in hours
Sprint planning

- Team selects items from the product backlog they can commit to completing
- Sprint backlog is created
  - Tasks are identified and each is estimated (1-16 hours)
  - Collaboratively, not done alone by the ScrumMaster
- High-level design is considered

As a vacation planner, I want to see photos of the hotels.

Code the middle tier (8 hours)
Code the user interface (4)
Write test fixtures (4)
Code the foo class (6)
Update performance tests (4)
The daily scrum

- Parameters
  - Daily
  - 15-minutes
  - Stand-up

- Not for problem solving
  - Whole world is invited
  - Only team members, ScrumMaster, product owner, can talk

- Helps avoid other unnecessary meetings
Everyone answers 3 questions

1. What did you do yesterday?
2. What will you do today?
3. Is anything in your way?

• These are *not* status for the ScrumMaster
• They are commitments in front of peers
The sprint review

• Team presents what it accomplished during the sprint
• Typically takes the form of a demo of new features or underlying architecture
• Informal
  • 2-hour prep time rule
  • No slides
• Whole team participates
• Invite the world
Sprint retrospective

• Periodically take a look at what is and is not working
• Typically 15–30 minutes
• Done after every sprint
• Whole team participates
  • ScrumMaster
  • Product owner
  • Team
  • Possibly customers and others
Start / Stop / Continue

- Whole team gathers and discusses what they’d like to:
  - Start doing
  - Stop doing
  - Continue doing

This is just one of many ways to do a sprint retrospective.
Some Notes

- Sprint planning
  - Product owner decides on priorities
  - Selection of items is not always obvious
  - Effort estimation requires skills and experience

- Daily Scrum
  - Sounds a bit crazy but works

- Sprint review
  - Get customer feedback if possible
Scrum framework

Roles
- Product owner
- ScrumMaster
- Team

Ceremonies
- Sprint planning
- Sprint review
- Sprint retrospective
- Daily scrum meeting

Artifacts
- Product backlog
- Sprint backlog
- Burndown charts
Product backlog

- The requirements
- A list of all desired work on the project
- Ideally expressed such that each item has value to the users or customers of the product
- Prioritized by the product owner
- Reprioritized at the start of each sprint

This is the product backlog
A sample product backlog

<table>
<thead>
<tr>
<th>Backlog item</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow a guest to make a reservation</td>
<td>3</td>
</tr>
<tr>
<td>As a guest, I want to cancel a reservation.</td>
<td>5</td>
</tr>
<tr>
<td>As a guest, I want to change the dates of a reservation.</td>
<td>3</td>
</tr>
<tr>
<td>As a hotel employee, I can run RevPAR reports (revenue-per-available-room)</td>
<td>8</td>
</tr>
<tr>
<td>Improve exception handling</td>
<td>8</td>
</tr>
<tr>
<td>...</td>
<td>30</td>
</tr>
<tr>
<td>...</td>
<td>50</td>
</tr>
</tbody>
</table>
The sprint goal

- A short statement of what the work will be focused on during the sprint

**Database Application**

Make the application run on SQL Server in addition to Oracle.

**Life Sciences**

Support features necessary for population genetics studies.

**Financial services**

Support more technical indicators than company ABC with real-time, streaming data.
Lecture 26.01.2015 stopped here