Aalto University

CS-C2130 / CS-C2140 / CS-E4910
Software Project 1 / 2 / 3

Lecture 2: Scrum Basics

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23.9.2020

Agenda

- Welcome

- Scrum Basics, Prof Casper Lassenius
- Applying Scrum on this course, Jari Vanhanen
- Additional requirements for the course projects

- Next Steps on the course

- Accenture Quality Award, Jarno Hilvenius

Welcome!

Aalto University
School of Science
and Technology

Scrum Basics

23.9.2020

Goals of This Lecture

- Teach you
  - The basics of the Scrum process
    - Roles
    - Process steps
    - Terminology
- After this lecture
  - You know the basics of Scrum and how it can/should be applied in the course project
  - You are able to participate in the Scrum Simulation
- This lecture is based on
  - Scrum Primer (and Scrum Guide)

Scrum

- Iterative and incremental agile software development framework for **managing** product development

Does not cover design, implementation, or concrete testing practices

- Process framework
  - not a process, technique, or definitive method
  - every team must decide the specific tactics for using Scrum

Introduction to Scrum (7 min)

- https://www.youtube.com/watch?v=9TycLR0TqFA&t=226s

Scrum Roles

Product Owner

- Responsible for maximizing return on investment, thus has the final authority
- Identifies product features
- Prioritizes the features
- Interacts regularly with the team
  - e.g. reviews the Sprint results
- May delegate some work to the team, but remains accountable
- One person
- Product Owner ≈ Product Manager ≈ Customer

The Team

- Develops the product and provides ideas to the Product Owner about how to make the product great
- 7 ± 2 people
- Is cross-functional (includes all expertise necessary to deliver a potentially shippable product each sprint)
- Is self-managing: high degree of autonomy and accountability
- Every team member is just a team member, no other roles

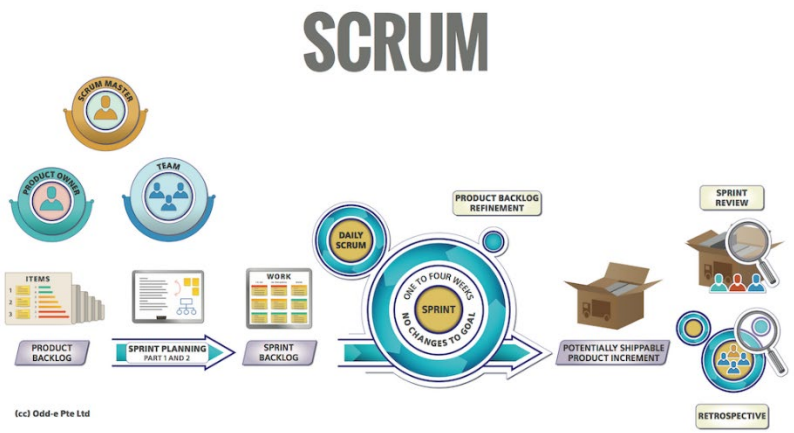
Scrum Master

- Helps the product group learn and apply Scrum to achieve business value
- Is NOT the manager of the team members, NOR a project manager OR team lead
- Serves the team, e.g. helps to remove impediments, protects from outside interference
- Is a coach and teacher, especially Scrum principles and practices

Scrum Process

Sprint

- Time-boxed development cycles of 1-4 weeks
- Never extended: ends exactly when planned, contents give flexibility
- The output of every sprint is: “Potentially Shippable Product Increment”, which means that item chosen for that sprint are “Done” (according to the Definition of Done)
  - System is integrated
  - Fully tested
  - End-user documented
  - Potentially shippable



Sprints (CS-C2130)

- At least six Sprints
  - 225h / 6 = 37.5h
- Plan in the beginning of the project
  - start and end dates of all sprints
  - effort allocation per person per Sprint
- First Sprint (“Sprint 0”) and Last Sprint differ from the normal Sprints

Product Backlog

- Is a prioritized list of customer-centric features
- “Everything that could be done by the Team ever in order of priority”
- Includes “items”, e.g. new customer features, major engineering improvement goals, research work, (known defects)
  - User stories, epics
- Includes effort estimates
  - e.g. as story points
- Is detailed appropriately
- Is regularly refined (“grooming”) = splitting, estimating, re-estimating items

User Stories and Epics [1]

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- Describe SW features as user stories

- User story
  - Basic format: “As a [type of user] I [want/can/am able to/need to/etc.] so that [some reason].”
  - Can be in other formats, as long as the above aspects are covered
  - Can be implemented in **one** Sprint
  - Works well for functional requirements, less well for quality attributes

- Epic
  - Basically a “big user story”, i.e. cannot be implemented in a single sprint
  - Usually broad in scope, short on details, and will commonly need to be split into multiple, smaller stories before the team can work on them

[1] https://www.scrumalliance.org/community/spotlight/mike-cohn/march-2014/agile-user-stories-epics-and-themes

Product Vision (CS-C2130)

1. Why?

- explain why the product is being built (the business view)

2. What?

- list the main goals for the product
- include also critical quality attributes that are difficult to include in the Definition of Done

3. For Whom?

- characterize the end users

Created based on the project proposal and further discussions with the PO

Sprint Planning I

- Participants: Product Owner, Team, Scrum Master
- Goal: understanding WHAT the Product Owner wants and WHY they are needed
- Discussion of the sprint goal and which items to include
  - PO explains
  - Team asks questions
  - Team decides how many items can realistically be included!

"WHAT?"

Sprint Planning II

- Participants: Team, Scrum Master (Product Owner reachable for questions)
- Focus on HOW to implement the selected items
- May contain:
  - Overall design
  - Splitting product backlog items into tasks – building sprint backlog!
  - Estimating items/tasks
  - Renegotating scope

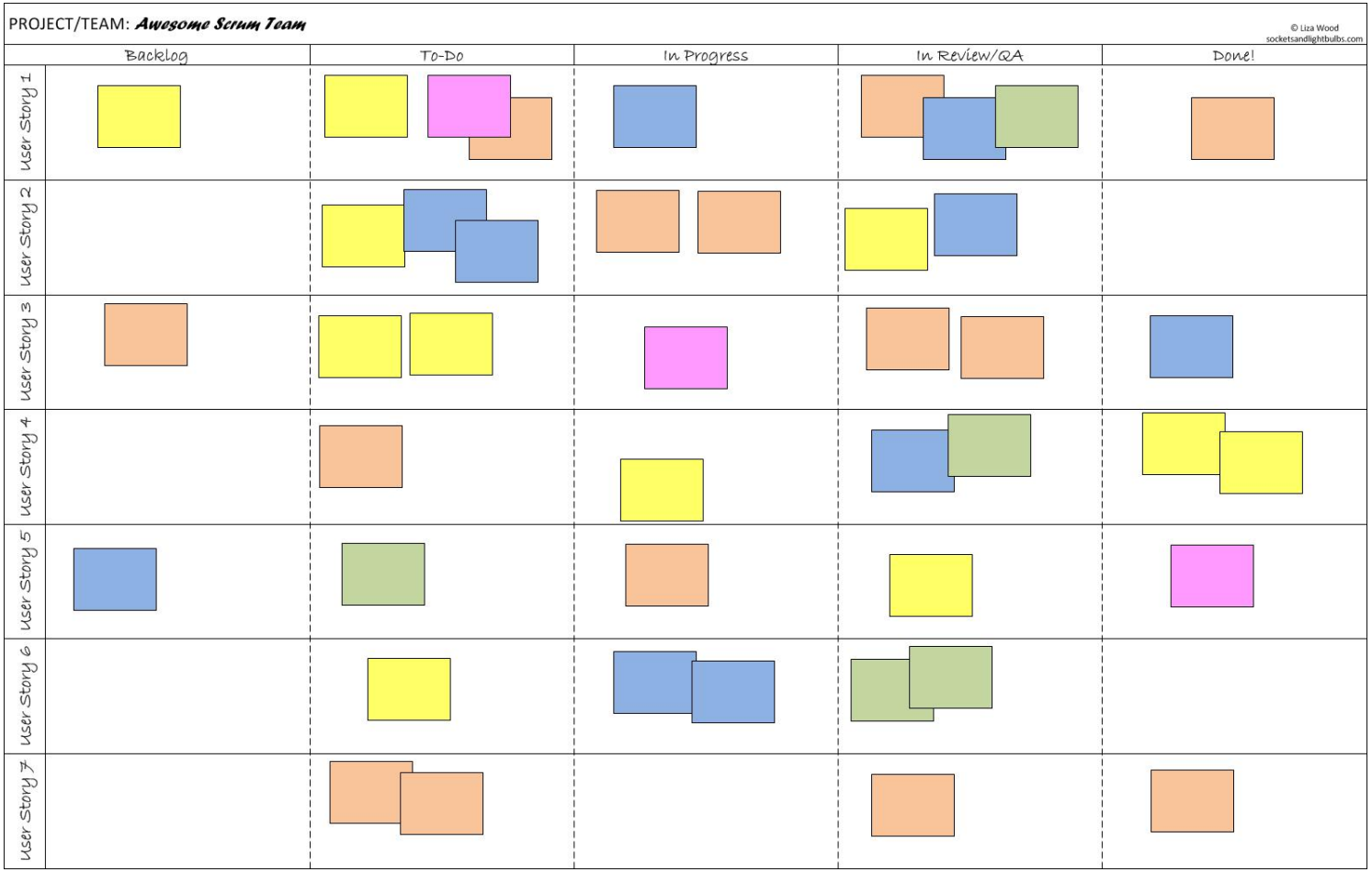
"HOW?"

Sprint Backlog

- Sprint backlog items
  - Some items from the product backlog, and the necessary tasks
  - Name/description, effort estimate
    - Effort estimates as hours or story points

- Product and Sprint backlogs should be in a (real) backlog management tool
  - Jira, Trello, …

Scrum Board


PROJECT/TEAM: Awesome Scrum Team
© Liza Wood
socketsandlightbulbs.com
Backlog
To-Do
In Progress
In Review/QA
Done!
User Story 1
User Story 2
User Story 3
User Story 4
User Story 5
User Story 6
User Story 7

Sprint 0 (CS-C2130)

- Sprint 0 goal
  - "Set up the project so that everything is ready for starting sw development work from the first day of the following Sprint."
- Main tasks
  - product vision and initial Product Backlog
  - prototyping, selecting and **studying technologies**
  - deciding work methods and tools (e.g. how Scrum events will be done)
- Results presented to the PO and **to the Coach**

Last Sprint (CS-C2130)

- Focuses on finalizing the product for the final delivery to the PO

- Some tasks
  - bug fixing and finalization (no more new features)
  - acceptance testing by the Client
  - handover to the Client (both the system and any necessary knowledge)
  - preparing an excellent software demo for the last project review

Daily Scrum Meeting

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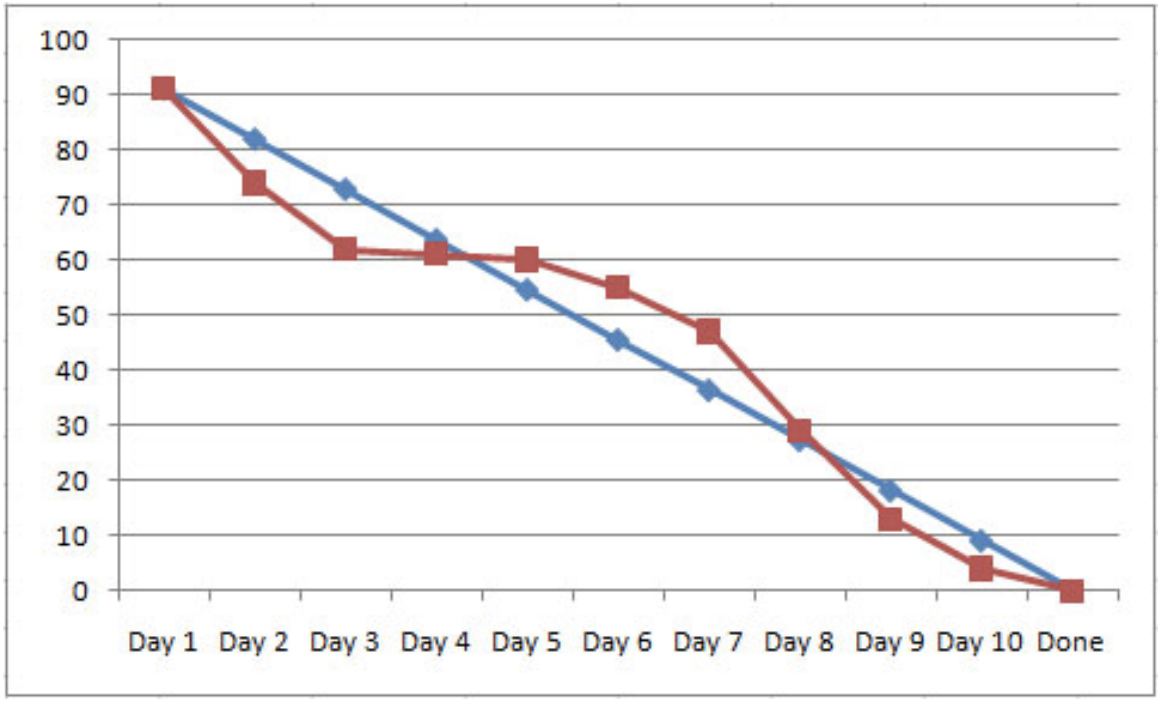
- At least once per week

- Participants: Team, Scrum Master (Product Owner optional)
- Update and coordination between team members – not a status reporting to anybody else
- Max 15 min
- Each member report to the other team members:
  - What have I accomplished since the last meeting?
  - What will I do before the next meeting?
  - What obstacles are in the way?
- If discussion needed: follow-up meetings agreed and held afterwards

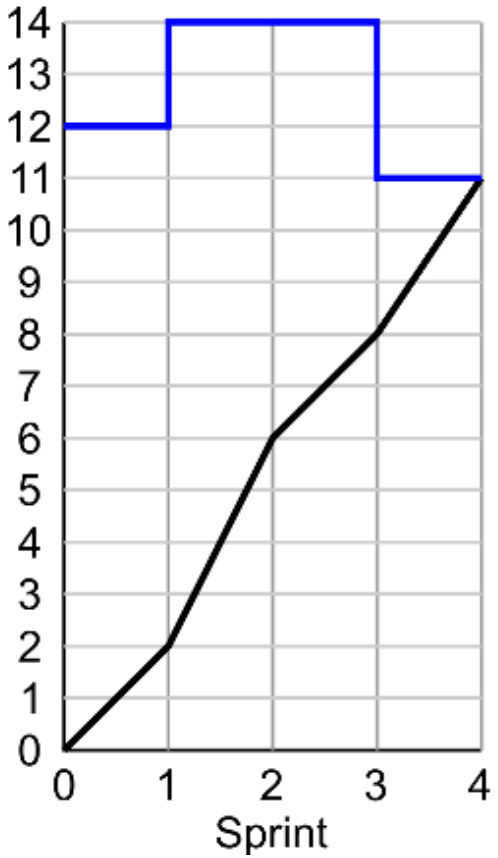
15 min

3 Questions

Tracking Progress



Sprint burn-down



Release burn-up

Definition of Done (DoD)

- Everyone must understand what “done” means
  - e.g. for tasks, user stories, sprints
- Sometimes people say it is ”done-done” to mean it meets the criteria for DoD
- Scrum Team must define their own DoD (and follow it!)
  - … and improve it when needed
- Often at several levels
  - Task, User story, Sprint
- Typically things like
  - Code is implemented, commented, integrated
  - Automated unit tests have been written, and pass when executed

CS-C2130, minimum DoD:
- unit testing
- functional system testing
- coding standard

More Quality Assurance (CS-C2130)

- Quality attributes (non-functional requirements)
  - e.g. usability, security, performance, compatibility
  - identify the most relevant quality attributes (at least one, but not too many), and consider them appropriately
    - DoD / Product vision / technical design

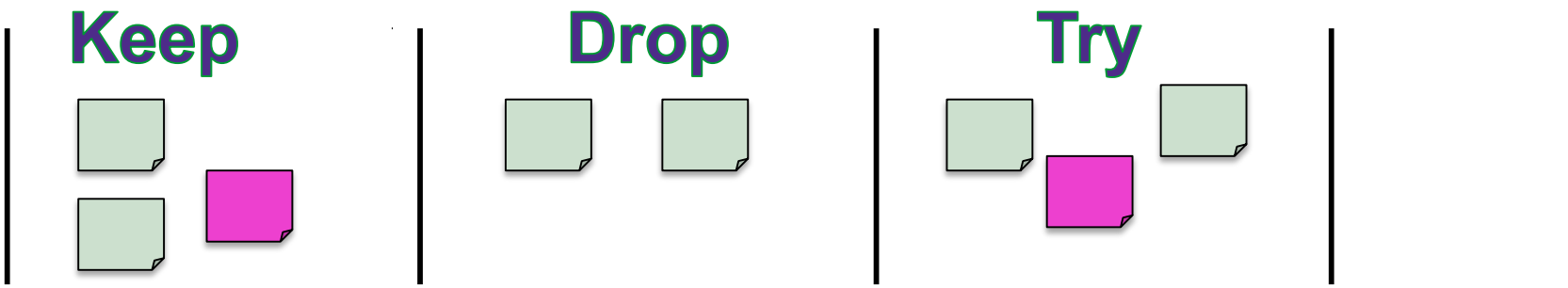
- Peer testing
  - by some other team on the course
  - at least 8 man hours per team
  - using Session-based exploratory testing
    - you must plan how to best utilize the other team (when & what)

Sprint Review

- Participants: Team, Product Owner, Scrum Master, other stakeholders invited by the Product Owner
- Inspection of the increment and adaption of the product backlog, if needed
  - What is going on with the product and team
  - What is going on with the Product Owner and the market
  - In-depth conversation
  - Hands-on inspection of the real software running live

Sprint Retrospective

- Inspection and adaption related to the *process and environment*
- Participants: Team, Scrum Master, Product Owner (optional)
  - Team discusses **what's working** and **what's not working** and agree on **changes to try**
  - Usually the Scrum Master facilitates
  - Different techniques, try different ones!



Being Efficient: Doing a Sprint Change

- In one sitting
  - Sprint Review
  - Sprint Retrospective
  - Sprint Planning
- Requires access to Product Owner

Want to Know More?

- Google
  - Scrum Guide
  - Scrum Primer

Read the CS-C2130 Project Manual

1. Summarizes briefly the requirements set in the Scrum Guide,
2. Describes the modified/additional requirements set by the course.

You must read Scrum Guide / Scrum Primer in order to understand why and how to follow the Project Manual.

What if Scrum Does Not Work for Us? (CS-C2130)

- Try it (for real) first
- If you really need to change it
  - Make a motivated proposal to your coach
  - Try the changed version

Tips for Working as a Remote Team

- Plan joint working sessions – just like you would if you were collocated
- Use e.g. Zoom and keep the session open for the whole day / length of your coworking time
- Always use video when you are communicating in a meeting
- Have a Slack channel for the team, always on
- Try to do something informal together via video, e.g. pizza night, coffee breaks, games…

End of Scrum Basics

Additional requirements for the course projects (CS-C2130)

- Project Reviews
- Process Overview Document
- Technical Overview Document
- Time Tracking

Project Review (CS-C2130)

- December, February and April
- Participants
  - student team, coach, teacher, PO, and possibly other people (Accenture, guests)

- Team presents data on the project status
  - status of Sprint Goals and selected Product Backlog items
  - main findings from Sprint retros
  - software quality
  - effort usage per person

See the Progress report template (slideshow)

- Team presents the results (mainly a software demo)
  - plan and rehearse

- After each project review, PO and coach evaluate the project

Document – Process Overview (CS-C2130)

- Document briefly the *currently* used work practices and tools so that all stakeholders can understand how the team works
- Minimum content
  - project schedule and effort
    - Sprints
    - other main events (Project Reviews, team work sessions)
  - recurring events of the Sprints (how and when)
    - Sprint Planning, Daily Scrums, team work sessions, Sprint Review, Sprint Retros
  - other main practices and tools
    - backlogs, time tracking, communication etc.
    - version control, testing etc.

See the template

Producing a document is not the main purpose. The most important thing is to adopt good work practices that can be realistically used.

Document – Technical Overview (CS-C2130)

- Very project specific

- General goals
  - **Helping the Scrum Team during the project**
    - e.g., in communicating about the design or in dividing responsibilities
  - **Meeting the Client's needs after the project**
    - e.g., helping some new developers fix bugs or develop new features

- Minimum content
  - Document briefly the **most important architectural design decisions**
  - Document **one or more relevant views** of your architecture design
    - see e.g. 4+1 architectural view model.

Time Tracking (CS-C2130)

- Total effort spent per student per each Sprint
  - must be visible to the Coach
  - must be updated at least weekly
    - impossible to remember what you did last week
  - if someone falls behind or works extra in one Sprint, update the coming Sprints accordingly

	M1	M2	M3	M4	M5	M6	M7	SUM
Sprint 0	40	35	35	20	20	35	35	Xxx
Sprint 1	20	40	40	55	55	40	40	Xxx
...	..	..	..	..	..	..	..	..
Sprint N	20	40	40	25	25	40	40	xx
Total	100	225	225	225	225	225	225	xxxx

(realized hours and remaining hours)

- Some backlog management tools support time tracking

- Spreadsheet can work too
  - if you are not interested in task level tracking

See the course's Google Sheet example

Summary of the required artifacts (CS-C2130)

- Product vision (see Template)
- Product Backlog
- Sprint Goals of the current and completed Sprints
- Sprint Backlog of the current Sprint
- Definition of Done
- Test session charter(s) for peer testing (see Template)
- Allocated and spent effort per person per Sprint
- Process overview (see Template)
- Technical overview
- Progress report / Final report slides (see Template)

Send a link to the materials to the teacher, coach and PO
  – 24 hours before each project review

Next Steps

- Scrum Simulation sessions
  - Register now
    - you will get further info by e-mail a couple of days before the session
  - Zoom, Miro and GoogleSlides will be the tools used
- We 30.9. 16:15-18 Lecture for Scrum Masters only
  - Scrum Master's role in the course project & Tips for Scrum Masters
  - Instructions for being the Scrum Master in the Scrum Simulation
- Prepare a Team "CV" and send it to 2-5 Clients 8.-12.10.
  - Keep the team’s list of favorite topics on the Team Info sheet up-to-date
- We 14.10. Meetings with the Clients