CSC301

Scrum, detailed view of an agile process

Today’s Tour - Scrum

- We will take a tour of Scrum
  - An agile process
  - Well... More a framework than a process
  - Extremely popular in the last 5 - 10 years
  - Fairly prescriptive
  - Empirical - Make predictions based on past experience
    “Only what has happened may be used for forward-looking decision-making”

Today’s Tour - Scrum

- The goals of our tour
  - See an example of a modern, agile process
    - The details
    - The level of detail
  - Understand the rationale behind Scrum

Let’s meet the players and some of the basic rules of the game ...

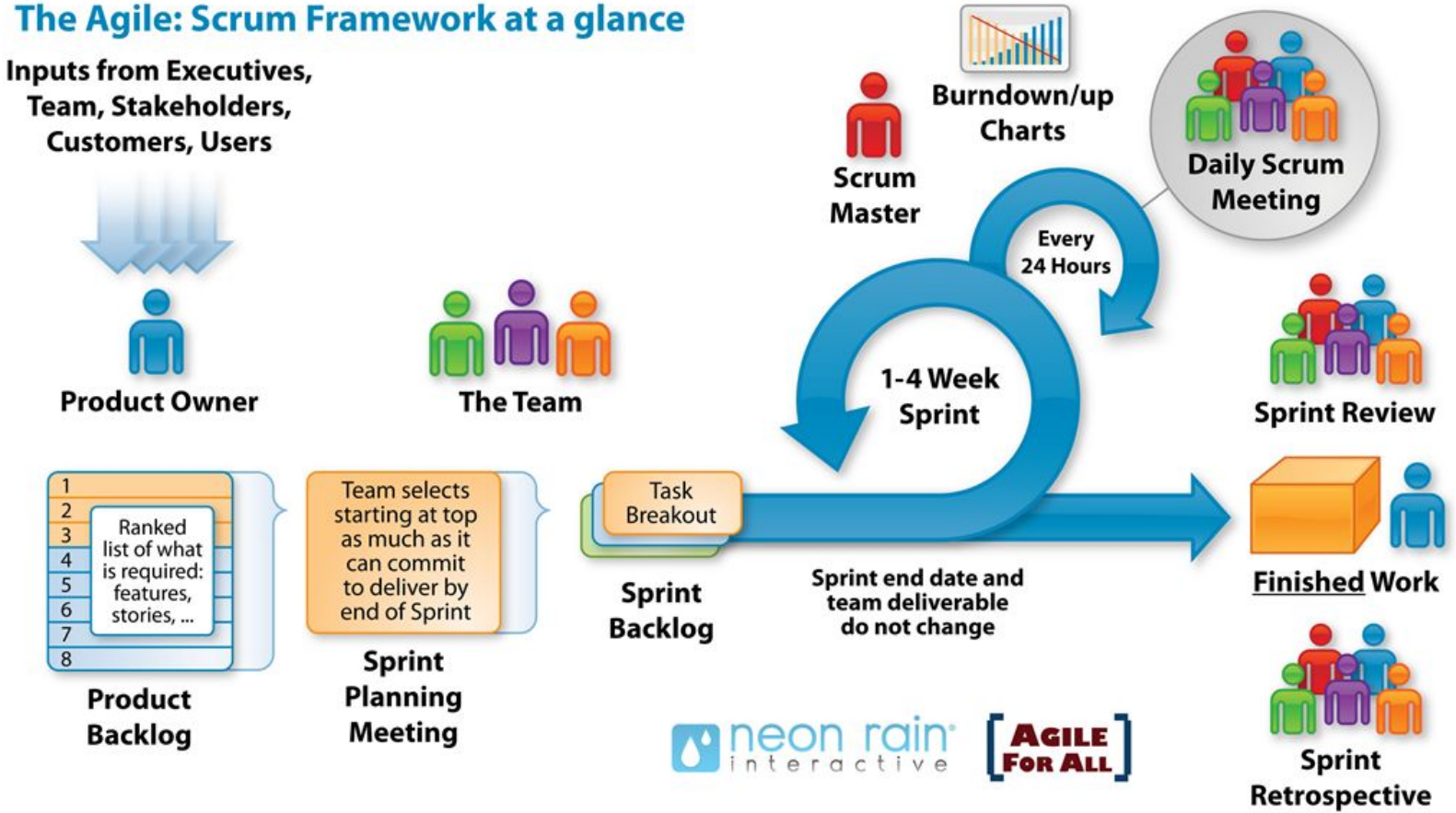
Scrum - Roles

- Product Owner
  - Focused on value to stakeholders
  - Ultimately, responsible for the success of the product
- Scrum Master
  - Facilitator, ensures that everything is running smoothly
- Development Team
  - Gets stuff done!
  - Engineers, designers, creatives, QA, etc.
  - Traditionally, 3 - 9 people

Scrum - Events

- Sprint
  - Scrum terminology for iteration
  - Fixed-length: usually, 1 - 4 weeks
- Each sprint has the following events:
  - **Planning meeting**, at the beginning of the sprint
  - **Daily (standup) meetings**, during the sprint
  - **Review** and **retrospective meetings**, at the end of the sprint

Scrum Overview



Scrum - Artifacts

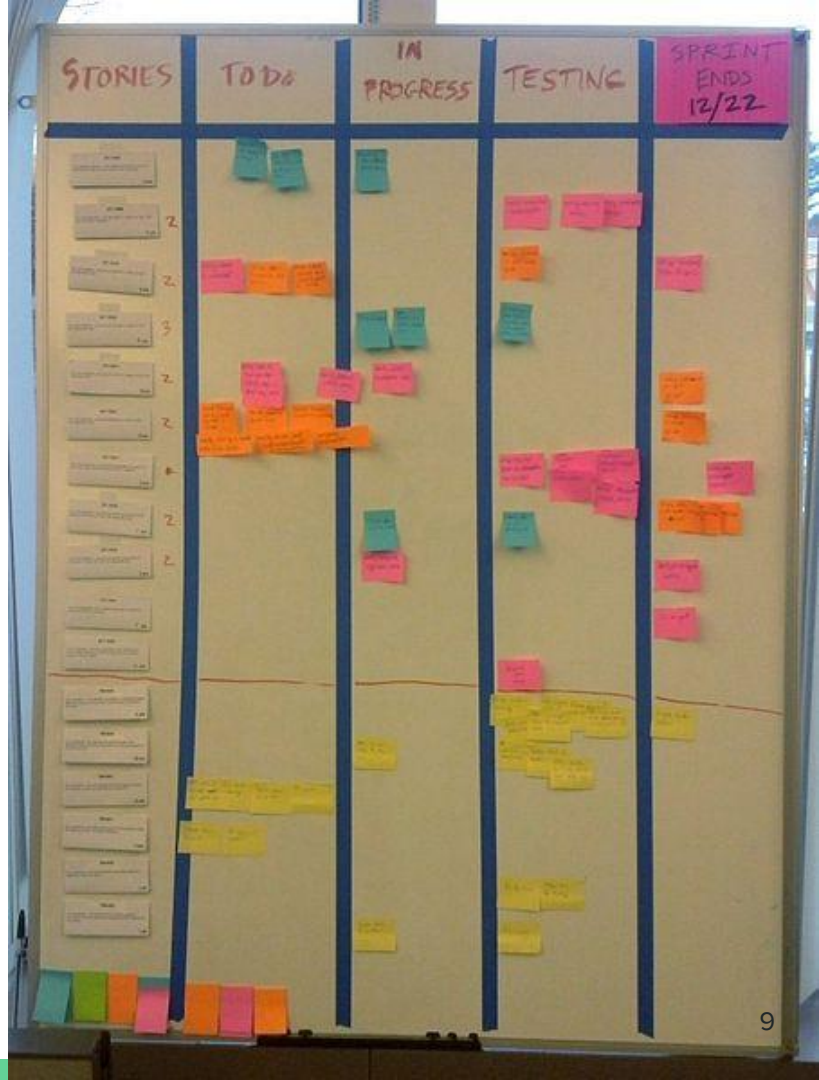
- Product Backlog
  - Ordered list of high-level requirements (e.g., user stories)
  - For each requirement, the business value is assessed product owner and cost is assessed by the development team
- Sprint Backlog
  - Backlog items to be completed during a sprint
  - Broken down to more granular, concrete tasks
- Product Increment
  - Completed product backlog items
  - Commonly visualized by burndown charts
    - In different resolutions, sprint or release

Scrum Artifacts

On the right, you can see an example of how a team might organize their artifacts on a Scrum board

Notice that details may change from one team/project to the other:

- Physical vs. software
- Categorizing the sprint backlog (e.g., To do, In progress, Testing)
- Keeping the product and sprint backlogs on the same board
- Etc.



Let’s see how the game is played ...

Scrum - Sprint Planning

- Decide what to do
  - Select items from the product backlog
  - All players participate
- Decide how to do it
  - Prepare the sprint backlog
    - Break product backlog items into concrete tasks
    - Plan how to complete the tasks

      E.g.: Design diagrams, task ordering, etc.
  - Only the development team participates
  - Usually up to 8 hours in length

Scrum - Sprint Planning

- How to decide what to do?
  - Product owner sets goals & priorities
    - Understands the stakeholders and business value
  - Development team decides what can get done
    - Understands the actual required work
    - Has a good sense of the team's ability
    - Knows about any special circumstances

      E.g.: Someone is sick or away for a conference
  - Work together towards the same goal - **Deliver value**!

Scrum - Sprint Planning

- What exactly is the sprint backlog?
  - Product backlog items + a plan how to complete them
  - Product backlog items become concrete tasks / user-stories
    - Ideally short (< day)
    - Clearly define the notion of “done”
    - Estimated size (in hours or points)
    - More immediate task ⇒ More details
      - Gradually add details as the sprint progresses

Scrum - During The Sprint

- Development team members pull tasks
- Daily Scrum meeting
  - Regular time & place
  - Very short (e.g., 15 min), usually standing up
  - Development team members only
    - Scrum master facilitates
  - Synchronize, inspect progress, bring up issues, etc.
  - Everybody is put on the spot

Daily Standup Meeting

- Three questions to ask each development team member:
  1. What did I do yesterday that helped the development team meet the sprint goal?
  2. What will I do today to help the development team meet the sprint goal?
  3. Do I see any impediment that prevents me or the development team from meeting the sprint goal?

Scrum - End Of The Sprint

- Review meeting
  - All players + stakeholders
  - Demo work that was done
  - Mention work that wasn’t done
  - Provoke a discussion
    - Updates to the product backlog
    - Ideas for next sprint
  - Recommended dosage: 1 hour per week of work

Scrum - End Of The Sprint

- Retrospective
  - Usually, immediately after the review meeting
  - All players participate, but no stakeholders
  - The team suggests improvements to its process
  - Based on the review meeting
  - Focused on Process Quality Improvement
    - What worked and what did not
    - Productivity
    - Accuracy of estimations
    - Etc.

Some observations ...

Scrum, Observations

- Division of responsibility
  - **Product owner** focused on business value
  - **Development team** on building
  - **Scrum master** on facilitating
- Collaboration and reality checks
  - Product owner ensures focus on the important tasks
  - Development team ensures realistic expectations

Scrum, Observations

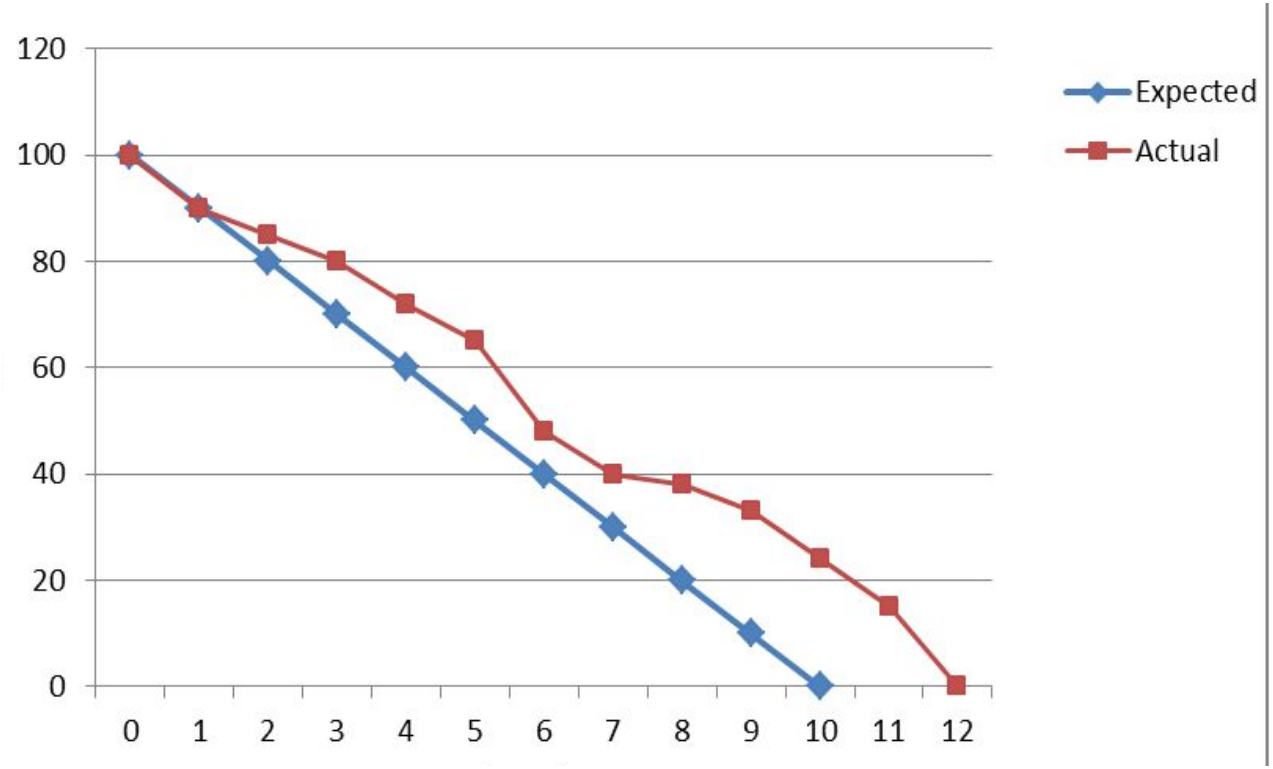
- Accurate estimations are important
  - Product owner’s credibility
    - Deliver on promises to stakeholders
  - Dev team’s credibility
    - By committing to manageable amount of work
  - Everything is easier when your team is predictable
    - Budget, hiring, etc.

Scrum, Observations

- Further into the future ⇒ Use less details
  - Avoid “science fiction” by being less precise
    - Tomorrow’s plan is more precise than next week’s, which is more precise than next month’s
  - Don’t plan too far into the future:
    - Requirements may change
    - Your understanding of the problem may change
    - Harder to predict

One more important artifact ...

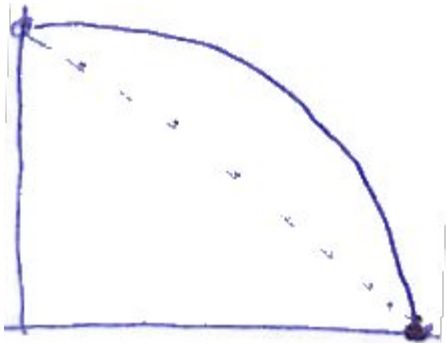
Burndown Chart



Sprint Burndown Chart

- The basics:
  - X-axis: Timeline, granularity is days
  - Y-axis: Remaining work, in hours/points
  - On day zero, all work is remaining
  - On the last day, all work should be done
- The information:
  - Team’s productivity and/or
  - Ability to accurately estimate effort
- Let’s see a few examples ...

What Does It Say About Your Team?



- Took a little while before tasks started to get done
- Could be many reasons:
  - Spent the first half of the sprint learning new technologies.
  - Didn’t have granular enough tasks, and progress was only noticed towards the end of the sprint
  - Our team only works well under the pressure of a deadline

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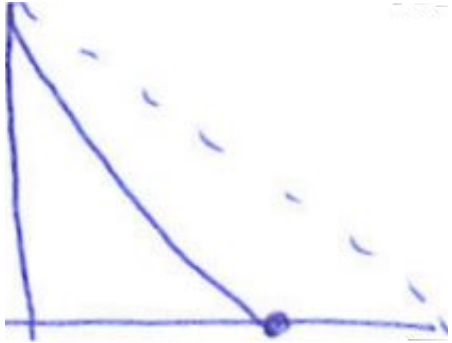

- You finished the work halfway through the sprint.
- Could be many reasons:
  - The team had a superstar sprint
  - The team's initial estimation was off
  - You intended to finish early. Maybe there's a holiday vacation, so you wrapped up the sprint early
  - Unexpected extra help became available

What's The Point?

- Data Visualization reveals information
- Improved traceability
  - Keep historical data of the team's performance
    - Velocity is a common metric for a given team
  - Easier to notice trends
  - Easier to evaluate decisions
    - E.g.: Did switching programming languages make our team more productive?

Scrum, Summary

- Scrum gives our team some structure
  - Roles, events and artifacts
  - In order to benefit, everybody has to play by the rules
- Aims to promote
  - High productivity
  - Transparency & traceability
  - Professional responsibility
  - Collaborative culture