CMPT 276 Class 06: Scrum and Agile Development

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Scrum!

Image credit: https://en.wikipedia.org/wiki/Scrum_(rugby)
Today’s Topics

1. Who does what in a Scrum team?
2. What does a week as a Scrum developer look like?
3. How does a Scrum team estimate work?
“Plans are worthless, but planning is everything.”
-President Eisenhower
Scrum: The Big Picture

• **BDUF** is *plan-driven*: first you create the plan, then development works to the plan.
• **Agile** is *planning driven*: each iteration you are constantly planning for the best path.
• Some Changes in Agile (vs BDUF):
  – Document as you go; only as needed
  – Deliver product early and often
  – Plan as you go: not just at the start of the project
  – Test as you go: not just at the end of project
• **Scrum** is one of many agile processes.
Key Items In Scrum

• **Backlog**: List of feature requests ("User stories")
  – Ex: “As a cashier, I want to be able to apply a dollar amount discount to a single item so that I can accept a coupon.”
  – Highest priority features ("stories") are at the top of the backlog.
  – The team picks stories to complete from the top of the backlog.

• **Iteration**: a week (or 2-3) where team commits to deliver some user stories.
  – At end of iteration, team delivers working software.
  – The customer then tries out software & gives feedback
  – Use their feedback to plan the next iteration.
Scrum Roles: The A(gile)-Team

Image credit: https://en.wikipedia.org/wiki/The_A-Team

“"I pity the fool who [breaks the build]"
I swear this reference was timely once

- There was a remake in 2010.
- It had Liam Neeson and Bradley Cooper and everything.

“I love it when a plan comes together”? Anybody?

Image credit: https://upload.wikimedia.org/wikipedia/en/e/e8/A_team_poster_10.jpg
Scrum Roles

• The scrum team identifies a few roles:
  1. Product Owner
  2. Scrum Master
  3. Team member

• And we’ll add in
  4. Repository Manager
Role: Product Owner

• **Keeper of the Product Vision**
  – Understands needs of the customer
  – Works closely with the stakeholders to determine what needs to be built, and feature priorities

• **Manages Backlog**
  – Adds new feature requests
  – Prioritizes features: directs the team towards most valued work

• **Responsibility**: to maximize value to the business
Role: Scrum Master

• The Coach
  – Guides team towards more cohesion, self-organizing, performance
  – Scrum master's deliverable is the self-organizing team.

• Not the boss: Is a trusted advisor, and team-advocate
  – Pushes decision making back to the team
  – Removes impediments (Ex: getting equipment)
  – Expert on scrum process; facilitates meetings.

• Responsibility: a well-functioning Agile team.
Role: Team Member

• **Teams are collaborative, self-organizing.**
  – Have total authority over how to get work done
  – Estimates work for each feature
  – 7 +/-2 team members

• **Responsibility:** Delivering stories that the team committed to.
  – No singled out "experts"; everyone does what is needed for this iteration.
  – No “silos of knowledge”
Optional Role: Repository Manager

• Not part of normal Scrum, added as part of a GitLab development work-flow.

• **Accepts merge requests when they are ready**
  – Helps resolve Git problems
  – Helps enforce code quality

• **Responsibility:** Ensures team’s process is followed to commit code.
  – It must meet coding style; have unit tests, system pass all unit tests, code reviewed, etc.
Sprint “Ceremonies”

Daily Schedule for a One-Week Sprint

**Monday**
- **Sprint Planning 2 hrs.**
- Plan what features to deliver.

**Tuesday**
- **Stand-up 15 min.**
- Daily meeting discussing progress

**Wednesday**
- **Stand-up 15 min.**
- Estimate feature sizes

**Thursday**
- **Stand-up 15 min.**

**Friday**
- **Stand-up 15 min.**
- Demo working software

- **Sprint review 1/2 hr.**
- How can team improve?

- **Retrospective 90 minutes**
Sprint Planning (2 hours)

- Team pick **what stories to commit to** this iteration
  - **Backlog** must be **well maintained**: Each story has a "size" estimate.

- **Velocity**: Amount of work a team finished last iteration.
  - Team generally picks to do as much work this iteration as they completed last iteration.
  - Self correcting to become accurate at predicting performance.
Stand-Up Meeting (15 minutes)

• Daily. Only team members. Brief.

• Each team member briefly answers:
  1. What I **accomplished** since the last stand-up
  2. What I **expect to accomplish** by next stand-up
  3. What **obstacles** are slowing me down

• **Benefits:**
  – If "accomplished" < yesterday’s "expected", then we know we are slipping.
  – Others jump in with brief, "I can help you with that"; but no long discussions of the details.

• Scrum master facilitates meeting, takes notes.
Sprint Review (30 minutes)

• Demonstrate working software to stakeholders
  – Report on stories that did not get finished.
• Product owner gathers feedback from stakeholders:
  – New feature requests or changes
  – Clarifies priorities
• Make no promises!
Retrospective (1.5 Hours)

• **Goals**
  – Identify one or two specific things to improve in the team.
  – Create an action plan to implement those changes.

• **Team reviews** what happened **during iteration**
  – Generates insights into what happened (**no finger pointing**)
  – Choose 1-2 **specific** improvements.

• **Appreciate** each other's work.
Story Time: Relative, Not Absolute Estimates

• People are better at gauging relative size vs. absolute size:

• Which is easier to answer?
  1. Which is taller, the CN tower or the Surrey's Central City tower?
  2. How tall is the Surrey Central City tower?
For Example, I Thought I Could Fit All Of This Onto One Slide

• Scrum estimates work in terms of relative “story points”
• Start by coding some of the smallest tasks.
  – Ex: a log-in screen, or a config file, etc.
  – Give it one point.
• Each other story's size estimated in terms of points:
  – "This seems like it's about 3 times as much work as the config file, so 3 points"
• Points are not based on hours, as this is hard to give absolute estimates, but based on effort.
Story Time And Estimation Game

• Team meets each week for "Story Time":
  – Assign "story points" to up-coming user stories

• Estimation Game Steps:
  1. Pin up-coming stories to wall, ordering by size. Each team member takes turns doing one of:
     • Put a new story up where they think best
     • Move a story that's up to improve order
     • Pass (if no changes needed)
  2. Team decides how many points each story is.
  3. Done when whole team agrees on the estimates.

• User stories will be pre-chosen in the group project.
Recap – Quick Notes On Being Agile

• **Scrum Team**
  – Product Owner, Scrum Master, Team Member, (extra) Repository Manager.

• **Ceremonies**
  – Sprint planning, Daily standup, Review, Retrospective, Story time

• **Estimation**
  – Story points
  – Estimation game