

Scrum

What is Scrum?

- Iterative agile software development framework
 - While used most often in software development, it can be applied to nearly any domain
- Encourages project visibility and communication
- Strong focus on Empiricism
 - Knowledge and decision making comes from observation
- Small self-organizing team

Pillars of Scrum

- Transparency
 - The process and work must be visible to those doing and receiving the work
 - Enables inspection
- Inspection
 - All artifacts and progress toward agreed goals must be inspected for variance or problems.
 - Enables adaptation
- Adaptation
 - If the process or artifacts deviate outside acceptable limits or the product is unacceptable adjustments must be made ASAP
 - Requires an empowered and self-managing team
 - Adaptation begins the moment new information comes from inspection

Scrum Team

- Small Team of people (≤ 10)
 - No sub-teams or hierarchies
- Cohesive unit working towards a single objective at any time
- Members have all the skills necessary to create value (or they acquire them)
- Responsible for all project-related activities
- Self-managing
 - Who does what, when, and how?
- Three specific accountability roles

Developers

- Create any aspect of the **Increment** each **Sprint**
- Wide variety of skills depended on the domain
- Accountable for:
 - Creating a plan for the **Sprint** and the **Sprint Backlog**
 - Assuring quality work by adhering to a **Definition of Done**
 - Adapt the plan each day toward the **Sprint Goal**
 - Hold each other accountable as professionals

Product Owner

- One person, not a committee
- NOT the customer, but a representative that ensures the product has maximum value for the stakeholders
- Manages the **Product Backlog** including
 - Developing and communicating the **Product Goal**
 - Creating and clearly communicating the **Product Backlog** items
 - Ordering **Product Backlog** items
 - Ensuring the **Product Backlog** is transparent, visible, and understood
- These responsibilities may be delegated, but the **Product Owner** is accountable

Scrum Master

- Ensures that everyone understands the Scrum process (within and outside of the team)
- Accountable for Scrum Team effectiveness, but NOT a supervisor
- Helps the Scrum Team by:
 - Coaching members in self-management and cross-functionality
 - Helping the Scrum Team focus on the quality of their work and meeting the **Definition of Done**
 - Removing impediments to the Scrum Team
 - Ensuring all **Scrum Events** take place and are positive, productive, and within the **timebox**

Scrum Events

- Formal opportunities to inspect and adapt the scrum artifacts
- Events are not to be skipped
- Events are to ensure transparency
- Designed for consistency and the reduction excess meetings
- Best to have all events at the time and place

The Sprint

- The container event for all other events
 - five in total according to the Scrum Guide, but a sixth has been added in practice
- A Sprint is a fixed length period of work (one month or less)
 - Always finishes on time
- No changes that endanger the Sprint Goal
 - Scope can be clarified/renegotiated with the Product Owner
- When one sprint ends another begins immediately
- Can be cancelled if the Sprint Goal becomes obsolete
 - ONLY THE PRODUCT OWNER HAS THE AUTHORITY TO DO THIS

Sprint Planning

- Why is this Sprint valuable?
 - Produces a **Sprint Goal** (MUST BE FINALIZED BEFORE SPRINT PLANNING ENDS)
- What can be done this Sprint?
 - Developers coordinate with product owner to select **Product Backlog** items for the sprint (may also refine items)
- How will the selected work get done?
 - Create smaller work items (one day or less)
 - Sole discretion of the developers...no one else determines how to turn **Product Backlog** items into Increments of value.
- Max 8 hours for a one-month sprint
- Produces the **Sprint Backlog**

Daily Scrum

- Inspect the progress toward the sprint goal and adapt as necessary
- 15-minute event for developers
 - If product owner or scrum master are working on items, they attend as well
- Same time, same place, every day of the sprint
- Flexible structure, but requires and actionable plan for the day's work
- Other adjustments/re-planning of the Sprint's work can be made throughout the day

Sprint Review

- Inspect the outcome from the sprint and determine future adaptations (from the perspective of the increment)
- Work is presented to key stakeholders and progress toward the **Product Goal** is discussed
- Review accomplishments and environmental changes
- Attendees collaborate on what to do next
 - Adjustments to the **Product Backlog** can be made
- Still a working session and is not limited to a “presentation”
- Second to last event in the Sprint
 - Maximum 4 hours for a one-month sprint.

Sprint Retrospective

- Inspects all aspects of the process (people, interactions, tools, process, **Definition of Done**)
- Plan for ways to increase quality and effectiveness (from the perspective of the process)
- Assumptions and their origins
- What went well?
- How problems were (or were not) solved
- Improvements might be added to the next sprint backlog
- Concludes the sprint (3 hours max for a one-month sprint)

A Hidden Scrum Event – Story Time

- **NOT** documented in the Scrum Guide
- Product Owner introduces upcoming Product Backlog items
 - Includes context, explanation, and acceptance criteria
- Developers discuss the items and ask clarification questions
 - Answers to questions or unanswered questions are recorded
- Developers assign measure of relative effort to each item
 - Backlog items with effort estimates are considered "Sprint Ready"
- This continues for as long as the meeting has time remaining
 - Duration and number of meetings per week is decided by the Scrum Team

Scrum Artifacts

- Represent work or value for the product
- Three artifacts
- Each artifact has a commitment in order to measure progress
 - Product Backlog => Product Goal
 - Sprint Backlog => Sprint Goal
 - Increment => Definition of Done
- Reinforces empiricism

Product Backlog

- Emergent list of what is needed to improve the product
- Single source of work undertaken by the Scrum Team
- Product backlog items deemed ready can be selected during a Sprint Planning event.
- Refinement is the act of breaking down a Product Backlog items into more precise items
 - On going to add details (description, order, size, etc.)
 - Developers determine size but can be assisted by the Product Owner

Product Backlog Commitment

- Product Goal
- Describes the future state of the product
 - Target for the Scrum Team
- The product goal is **INSIDE** the product backlog
 - Every other product backlog item defines what will serve the goal
- The product goal must be fulfilled or abandoned before taking on the next

Sprint Backlog

- Contains the sprint goal (why), product backlog items (what), and an actionable plan to deliver the Increment (how)
- By and for the developers
- Real-time picture of the work that will be accomplished
 - Updated throughout the sprint
 - Required enough detail to inspect progress during daily scrum

Sprint Backlog Commitment

- The Sprint Goal
 - The single objective for the Sprint
- Does provide flexibility regarding the exact work needed to achieve the goal
- Created during Sprint Planning and contained within the Sprint Backlog
- If there are changes regarding the work expectations negotiations must be made with the product owner regarding the scope of the Sprint Backlog without affecting the Sprint Goal.

Product and Sprint Goal Examples

- **Product Goal 1** - Launch a website that allows sales to customers inside London.
 - **Sprint Goal 1** - Create basic website structure
 - **Sprint Goal 2** - Build capability to list & purchase products using a credit card.
 - ...
 - **Sprint Goal X** - Launch the website and fulfil the first orders.
Product Goal 1 has now been fulfilled.
- **Product Goal 2** - Expand online presence via the Apple and Google Play app stores.
 - **Sprint Goal 1** - Build basic iOS app.
 - **Sprint Goal 2** - Build capability to list products.
 - ...
 - **Sprint Goal X** - Launch the app via the Apple App Store.

Increment

- Concrete progress toward the Product Goal
 - A completed Product Backlog item
 - The sum of all increments are presented at the Sprint Review
- Additive to all previous increments and verified that each increment works together
- Can be delivered to stakeholders before the end of the Sprint if the Definition of Done is met
- Work is not part of an increment until it meets the Definition of Done

Increment Commitment

- Definition of Done
 - Formal description of the state of the increment when it meets a given quality standard for the product
- When a Product Backlog item meets the Definition of Done, and increment is created
- If Definition of Done is not met, the work cannot be released or presented at the Sprint Review.
 - It is returned to the Product Backlog for future Sprints
- May be a part of the organizations standards or defined by the Scrum Team

Acceptance Criteria vs. Definition of Done

- Acceptance criteria is specific to your product/sprint backlog
- Example: Reset the password for the Birdy Account
 - Login page must have a reset password link
 - Users must provide the email address associated with their account
 - Users receive a password reset via email
 - Password reset must be a reset link and NOT a generated password
 - Email confirmation must be sent to the account email when the password has been reset successfully
 - Password reset form fields must be sanitized and input validated
 - Password security rules must be enforced on the reset password page

Acceptance Criteria vs. Definition of Done

- A definition of done is common to **ALL** your work
- For Example:
 - Tests written and passing
 - Continuous Integration build passing
 - Cross-browser testing done on current top 5 browsers according to analytics
 - Mobile testing done on current top 3 mobile devices according to analytics
 - Accessibility checks passed
 - Code peer-reviewed
 - Documentation updated
 - Acceptance criteria met