AGILE/SCRUM

- **Wikipedia**: Scrum is an agile framework for developing, delivering, and sustaining complex products,[1] with an initial emphasis on software development, although it has been used in other fields including research, sales, marketing and advanced technologies.[2] It is designed for teams of ten or fewer members, who break their work into goals that can be completed within timeboxed iterations, called sprints, no longer than one month and most commonly two weeks. The Scrum Team track progress in 15-minute time-boxed daily meetings, called daily scrums. At the end of the sprint, the team holds sprint review, to demonstrate the work done, and sprint retrospective to continuously improve.
- **Goals**
    a. iterative development
    b. self-organizing cross-functional teams
    c. frequent inspection and adaptation
    d. rapid development with regular results
    e. priority-led development
- **Roles**
    a. **Scrum Team (development team)**
        - Typically <=10 developers, engineers, and other content specialists who do work together
        - Collectively responsible to ensure all work is completed
        - Contain a hierarchy of senior and junior developers who do code reviews together
        - May or may not include testers who are responsible for black box testing
    b. **Product Owner (PO)**
        - Voice of the stakeholders to Scrum Team
        - Representative of Scrum Team to stakeholders
        - responsible to:
            - Negotiate timelines
            - Negotiate acceptable minimum value product
            - Clarify any questions by scrum team about requirements
            - Share **RIDAs** (risks, impediments, dependencies, and assumptions) with stakeholders
            - Ensure their product backlog is thoroughly documented
    c. **Scrum Master (SCM)**
        - Run daily standup meetings and lead everyone through answering questions
        - Coordinate with POs and team members to keep on track
        - Often are also Business Analysts who conduct analysis and reporting
        - Coordinate with other teams and may join multiple daily scrum meetings
        - Scrum Masters are NOT Project Managers
            - no authority to tell their team what to do
            - only *facilitate* team fulfilling obligations
- **Timeline/Ceremonies**
    1. **Requirements Document**
        - Company negotiates **Requirements Documentation** either internally or with client(s)
    2. **Projects->Epics**
        - Requirements Documentation broken down into **Projects containing Epics**
        - Projects are entire products which may be subsections of parent projects
        - Epics are major functionality categories (functional requirements)

3. Roles assigned

- Scrum teams with SCM and PO assigned, attached to Project/Epic(s)

4. User Story backlog

- PO with team defines User Stories, which constitute the scrum team's **backlog**
- User stories (non-functional requirements)
  - User stories are the work backlog for a scrum team, defining requirements
  - "As a [user type], I want to [user action] [for a reason]."
  - User stories must have clear and well defined acceptance criteria
  - Acceptance criteria may include or be called "Minimum Value Product" which defines what is acceptable or not for the sprint review

5. Sprint Planning

- Team meets and assigns **points** to stories by evaluating the complexity/workload cost
- Team collectively enumerates **tasks** within the story and designates skill-related constraints
  - Tasks target constraints over the course of Test Driven Development (TDD)
  - Some tasks may be coordinating with other scrum teams to collaborate
  - Some tasks may be non-coding goals
- **Sprint Backlog**
  - Team collectively decides which stories to take on for the upcoming sprint based on capability history (like **velocity** - amt of work team can complete in a sprint), and priorities required by stakeholders
  - A pointed/tasked story is allowed be assigned in a sprint for the team to accomplish
  - Team members volunteer to take on tasks individually
  - Anyone can ask to change the sprint backlog
  - Sometimes work commences while some details are still unknown, must be updated

6. Sprint

- Sprints are often 2-4 week periods in which scrum teams complete user stories
- Every day (usually) team conducts a **Daily Scrum** or Standup
  - On time, same place every day, max 15 minutes
  - Scrum Master leads meeting, documents progress
  - Only scrum team members may contribute
  - Everyone answers:
    - What did you do yesterday
    - What will you do today
    - Any blockers?
  - Implicitly, the team can learn
    - Is progress proceeding as expected?
    - Any new risks?
- POs and Scrum Masters communicate upwards if not expecting to complete

7. Sprint Review

- Long session with clients to discuss the sprint and demo completed work
- Discuss what should happen next sprint
- Cannot present any incomplete work

8. Sprint retrospective

- Typically replaces last Scrum meeting of the sprint
- Reflect on successes/opportunities for growth from sprint
- Often encouraged that every team member shares their perspective
- Scrum Master leads event