CS314 Software Engineering Project Management

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Software process movements

- Predictive – 1970
  - Waterfall
- Iterative – 1980s, 1990s
  - Spiral, RAD, RUP
- Adaptive (Agile) – late 1990s
  - XP, Scrum, Crystal, FDD, Lean, DSDM, Kanban, …
- Enterprise Adaptive (Lean & Agile) – late 2000s
  - SAFe, Nexus, …
Plan Driven versus Value Driven

Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

- **Individuals and interactions** over processes and tools
- **Working software** over comprehensive documentation
- **Customer collaboration** over contract negotiation
- **Responding to change** over following a plan

That is, while there is value in the items on the right, we value the items on the left more.
Agile Principles

1. Customer satisfaction by early and continuous delivery of valuable software.
2. Welcome changing requirements, even in late development.
3. Working software is delivered frequently (weeks rather than months).
4. Close, daily cooperation between business people and developers.
5. Projects are build around motivated individuals, who should be trusted.
6. Face-to-face conversation is the best form of communication (co-location).
7. Working software is the principal measure of progress.
8. Sustainable development, able to maintain a constant pace.
9. Continuous attention to technical excellence and good design.
10. Simplicity – the art of maximizing the amount of work not done – is essential.
11. Best architectures, requirements, and designs emerge from self-organizing teams.
12. Team regularly reflects on how to become more effective, and adjusts accordingly.

Scrum Definition

Scrum (n): A framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.
Scrum Team

- Product Owner
- Development Team
- Scrum Master

Scrum Events

- Sprint Planning
- Daily Scrum
- Sprint Review
- Sprint Retrospective
Scrum Artifacts

- Product Backlog
- Sprint Backlog
- Product Increment

Scrum Definition of Done

A shared understanding of what it means for work to be complete.