DCIT 419
AGILE METHODS

Session 02 – How to Be Agile?

Department of Computer Science

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Session Overview

Understanding the philosophy, principles, and practices of Agile development.

Learning Outcomes

By the end of this session, students will be able to:

- Explain what it means to "be agile" and the role of the Agile philosophy.
- Understand the 4 values and 12 principles of the Agile Manifesto.
- Recognize the importance of using established Agile methods like XP or Scrum.
- Identify the steps to master Agile development and the role of mentorship.

Introduction

What does it mean to "be agile"?

- Agile development isn’t a specific process or method but a philosophy—a way of thinking about software development.
- To “be agile,” teams must embrace the Agile Manifesto:
  - 4 core values.
  - 12 guiding principles.

Agile Methods:

- Defined as processes that support the Agile philosophy.
- Examples include Extreme Programming (XP) and Scrum.
- These methods combine:
  - Established practices (e.g., version control, coding standards).
  - New ideas that reinforce Agile thinking.

The Agile Manifesto

The 4 Core Values:

1. ***Individuals and interactions*** over ***processes and tools***.
2. ***Working software*** over ***comprehensive documentation***.
3. ***Customer collaboration*** over ***contract negotiation***.
4. ***Responding to change*** over ***following a plan***.

The Agile Manifesto

The 12 Agile Principles:

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
4. Businesspeople and developers must work together daily throughout the project.
5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

The Agile Manifesto - continues

The 12 Agile Principles:

7. Working software is the primary measure of progress.
8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. Continuous attention to technical excellence and good design enhances agility.
10. Simplicity, the art of maximizing the amount of work not done, is essential.
11. The best architectures, requirements, and designs emerge from self-organizing teams.
12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly

Agile Methods

Definition:

- Agile methods are processes designed to implement Agile philosophy and principles.

Key Agile Methods:

- Extreme Programming (XP):
  - A comprehensive method focusing on both technical and structural practices.
  - Self-reinforcing practices like test-driven development, continuous integration, and pair programming.
- **Scrum:**
  - Emphasizes iterative development and collaboration in small teams.

Creating Custom Methods:

- Avoid starting from scratch without prior Agile experience:
  - Practices embody Agile principles and solve multiple development problems simultaneously.
- Instead, start with a proven method (e.g., XP) and iteratively refine it for your team's needs.

Mastering Agile Development

Steps to Master Agile Development:

1. Define why Agile is right for your team and how it will improve success.
2. Start with a proven Agile method (e.g., XP) and adopt all its practices.
3. Apply practices rigorously and consistently for several months.
4. Only customize methods after mastering them:
   - Experiment with changes.
   - Observe results and refine.
5. Continuously reflect and improve practices to suit your evolving needs.

Key Advice:

- Expect 2–3 months to feel comfortable with practices and 2–6 months for them to become second nature..

Mentorship in Agile

Why Mentorship Matters:

- Helps teams address challenges unique to their situations.
- Provides tailored guidance for troubleshooting and improvement.

Finding a Mentor:

- Look for experienced Agile practitioners through:
  - Internal teams or local Agile user groups.
  - External consultants or coaches.
- Even expert teams benefit from an outside perspective.

Practical Benefits of Agile

Advantages of Using Agile Methods:

- ***Flexibility***: Welcomes change at any stage of development.
- ***Collaboration***: Builds strong ties between business and technical teams.
- ***Efficiency***: Focuses on working software rather than unnecessary tasks.
- ***Sustainability:*** Promotes a balanced, long-term pace for teams.
- ***Technical Excellence:*** Ensures high-quality, maintainable software.

Conclusion

- Agile development is a mindset built on values and principles, not just a set of tools or processes.
- Proven methods like XP provide a strong foundation for learning and mastering Agile.
- **Mentorship and continuous improvement** are key to success in Agile.
- Teams that embrace Agile consistently deliver value and adapt to changing requirements effectively..

Questions