

Agile



Agile

Birth of Agile:

- Particularly in 1990s, some developers reacted against traditional “heavyweight” software development methodologies
- New approaches were being developed and tested, e.g. XP, FDD
 - Generally termed “light” processes
- “Representatives” from several of these approaches got together in Utah in 2001
 - Settled on term “Agile”
 - Called themselves the “Agile Alliance”
 - Developed a “manifesto” and a statement of “principles”

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Birth of Agile:

- Agile isn't a set of tools or a single methodology, but a philosophy put to paper in 2001 with an initial 17 signatories
- Agile was a significant departure from the heavyweight document-driven software development methodologies
- These new methods attempt a **useful compromise between no process and too much process**, providing **just enough process** to gain a reasonable payoff

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Birth of Agile:

*Agile methods are **adaptive** rather than predictive*

*Agile methods are **people-oriented** rather than process-oriented*

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Agile Manifesto:

- 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.



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Agile Manifesto:

- Individuals and interactions over processes and tools
 - ✓ Team-based approach
 - ✓ Promotes team-member interaction
 - ✓ Focus on team responsibility is critical



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Agile Manifesto:

- Working software over comprehensive documentation
 - ✓ Working & finished product is essential
 - ✓ Produce a product increment
 - ✓ Product might not have all functionality yet for the customers



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Agile Manifesto:

- Customer collaboration over contract negotiation
 - ✓ Promotes and facilitates collaboration
 - ✓ Finding The BEST!



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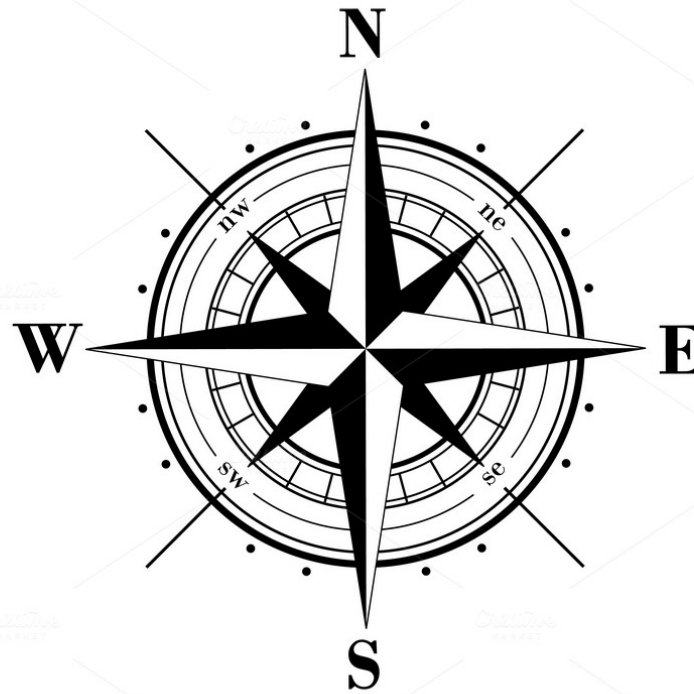
Agile Manifesto:

- Responding to change over following a plan
 - ✓ Frequent plans
 - ✓ Plans help the team and business to take decisions
 - ✓ Goal is to create value and embrace the change
 - ✓ Continuous planning improve the chances of success



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Agile Principles:



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Agile Principles:

1st Principle: Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.



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Agile Principles:

2nd Principle: Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

CHANGE



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Agile Principles:

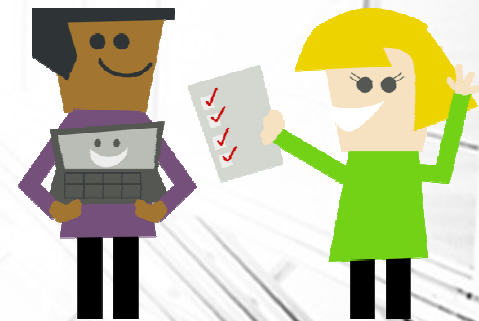
3rd Principle: Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.



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Agile Principles:

4th Principle: Business people and developers must work together daily throughout the project.



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Agile Principles:

5th Principle: Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.



TEAMWORK

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Agile Principles:

6th Principle: The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.



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Agile Principles:

7th Principle: Working software is the primary measure of progress.



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Agile Principles:

8th Principle: Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.



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Agile Principles:

9th Principle: Continuous attention to technical excellence and good design enhances agility.



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Agile Principles:

10th Principle: Simplicity--the art of maximizing the amount of work not done--is essential.



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Agile Principles:

11th Principle: The best architectures, requirements, and designs emerge from self-organizing teams.



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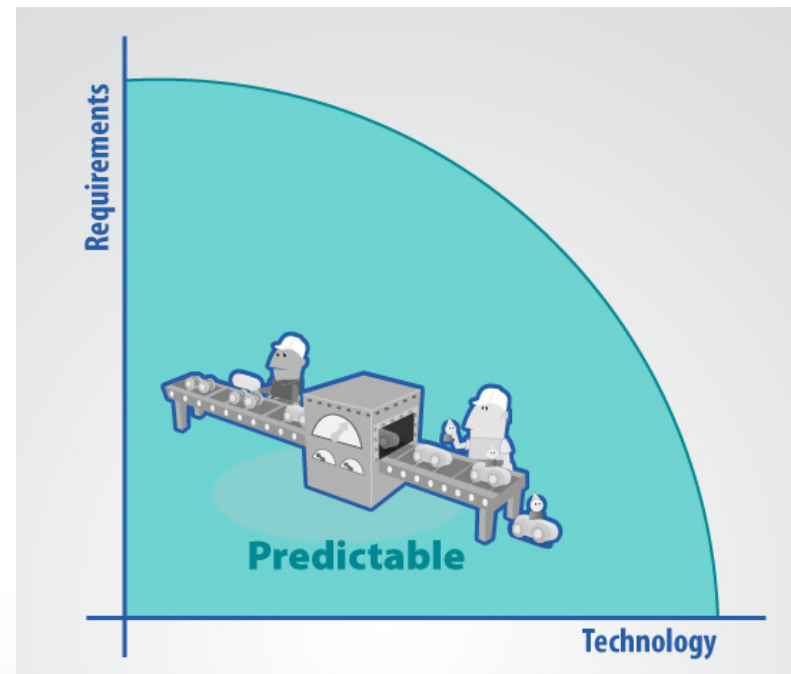
Agile Principles:

12th Principle: At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.



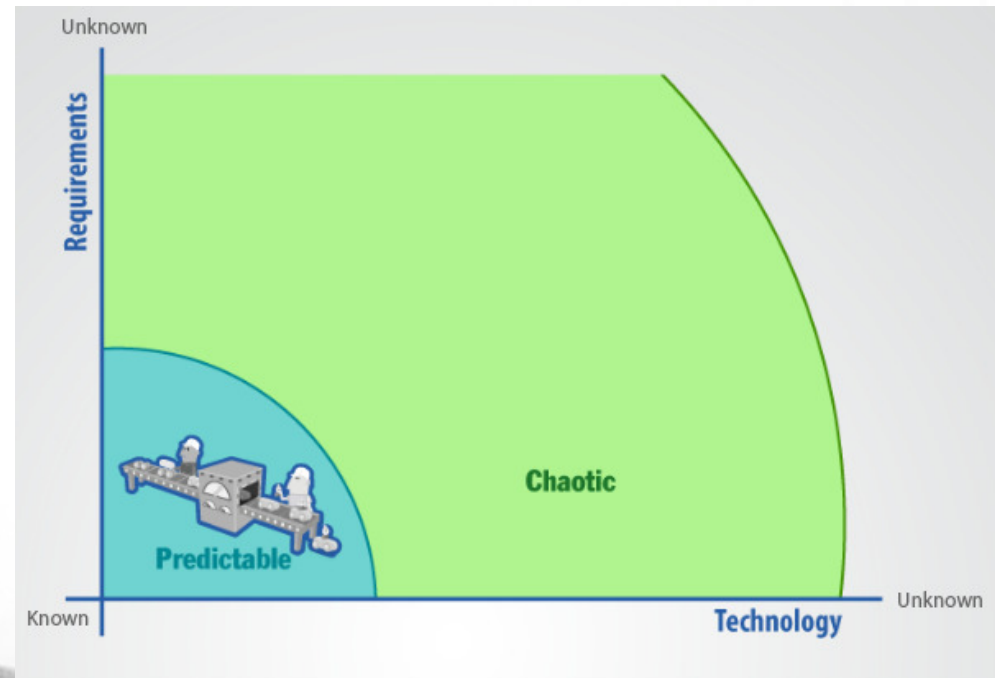
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Need for Agile:



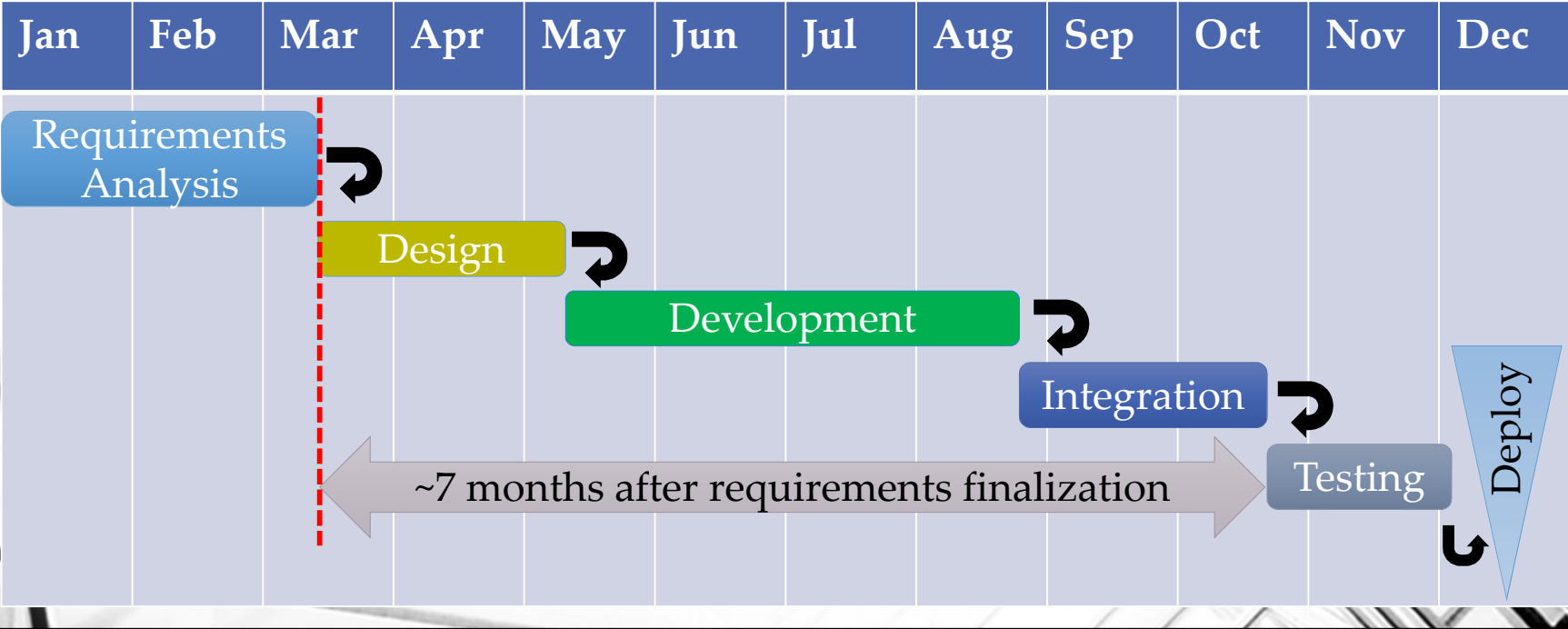
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Need for Agile:



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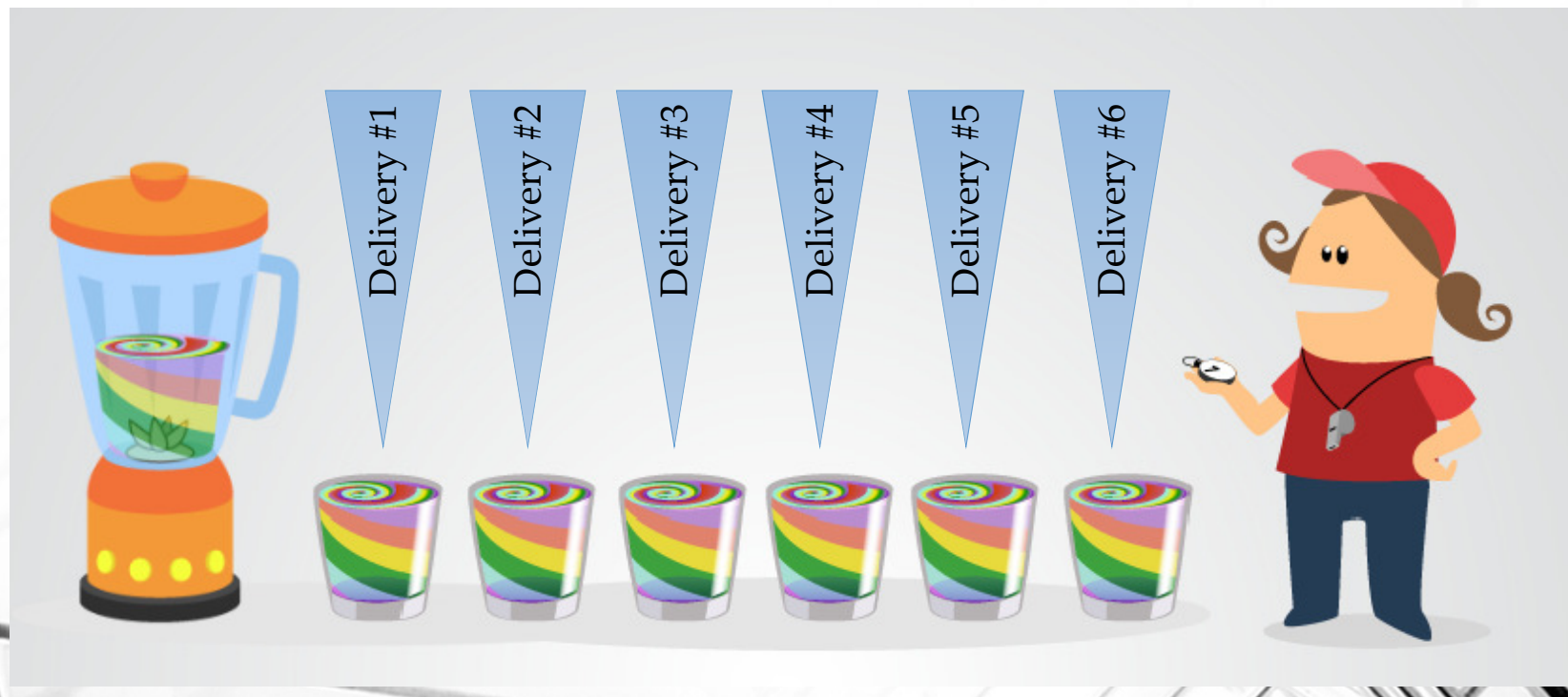
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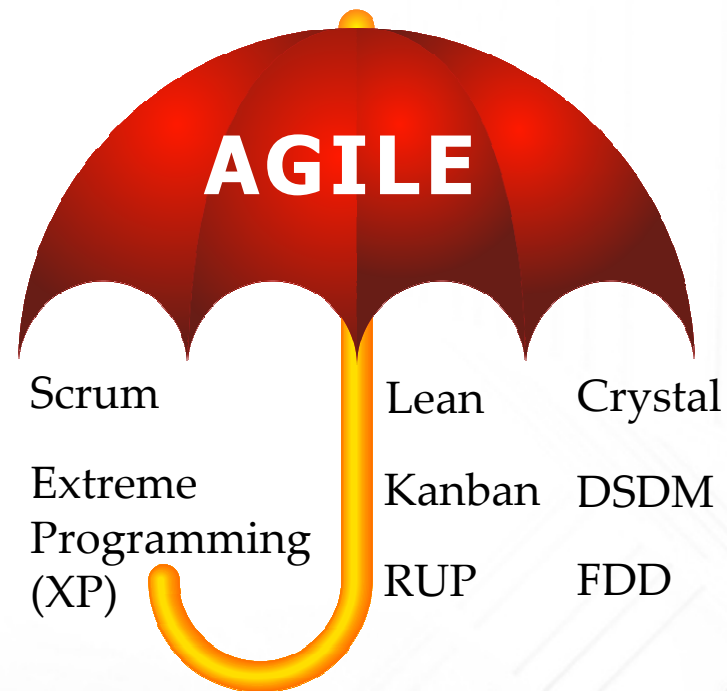
Common Misconceptions About Agile:

- Agile is not
 - ✓ A “Silver Bullet” solution
 - ✓ An excuse for poor requirement definition
 - ✓ About failure to control the scope, it is about managed change
 - ✓ An excuse for poor design
 - ✓ An excuse for reducing quality
 - ✓ Doing more with less resources
 - ✓ Unstructured



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Agile Frameworks and Methodologies:

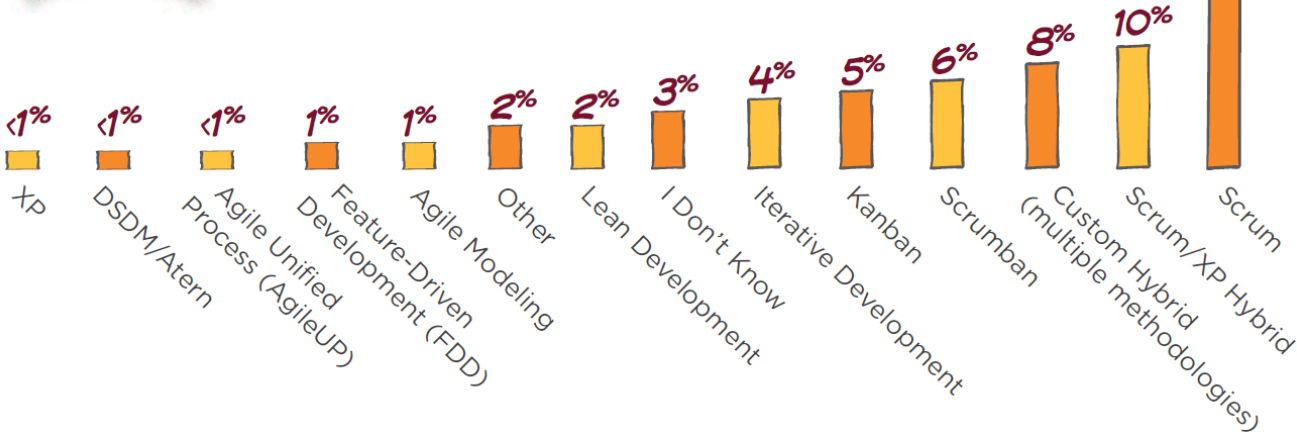


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Agile Frameworks and Methodologies:

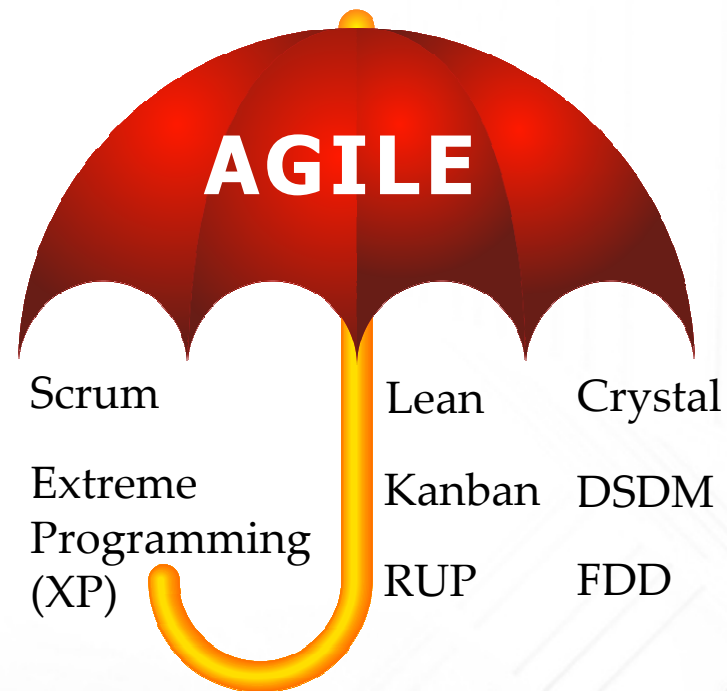


AGILE METHODOLOGY USED



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Agile Frameworks and Methodologies:



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Extreme Programming (XP):

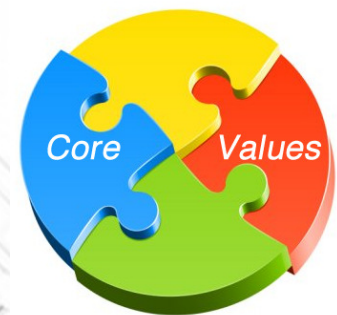
- XP includes some management elements but emphasizes technical practices more and is therefore more of an **agile engineering methodology**
- In XP, the “Customer” works very closely with the development team to define and prioritize granular units of functionality referred to as "User Stories"
- The development team estimates, plans, and delivers user stories in the form of working, tested software on an iteration by iteration basis (typically every 1-3 weeks)

XP
EXTREME PROGRAMMING

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Extreme Programming (XP):

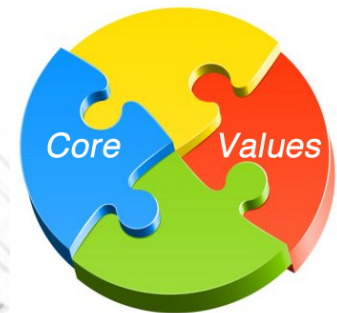
- Values
 - ✓ Simplicity
 - ❖ Do only what is needed
 - ✓ Communication
 - ❖ Everyone is part of the team
 - ❖ Face-to-face and daily communication



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Extreme Programming (XP):

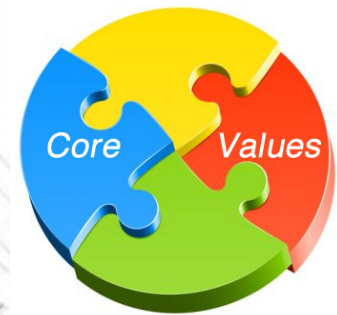
- Values
 - ✓ Feedback
 - ❖ Early delivery
 - ❖ Make any needed changes
 - ✓ Respect
 - ❖ Every team member deserves respect



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Extreme Programming (XP):

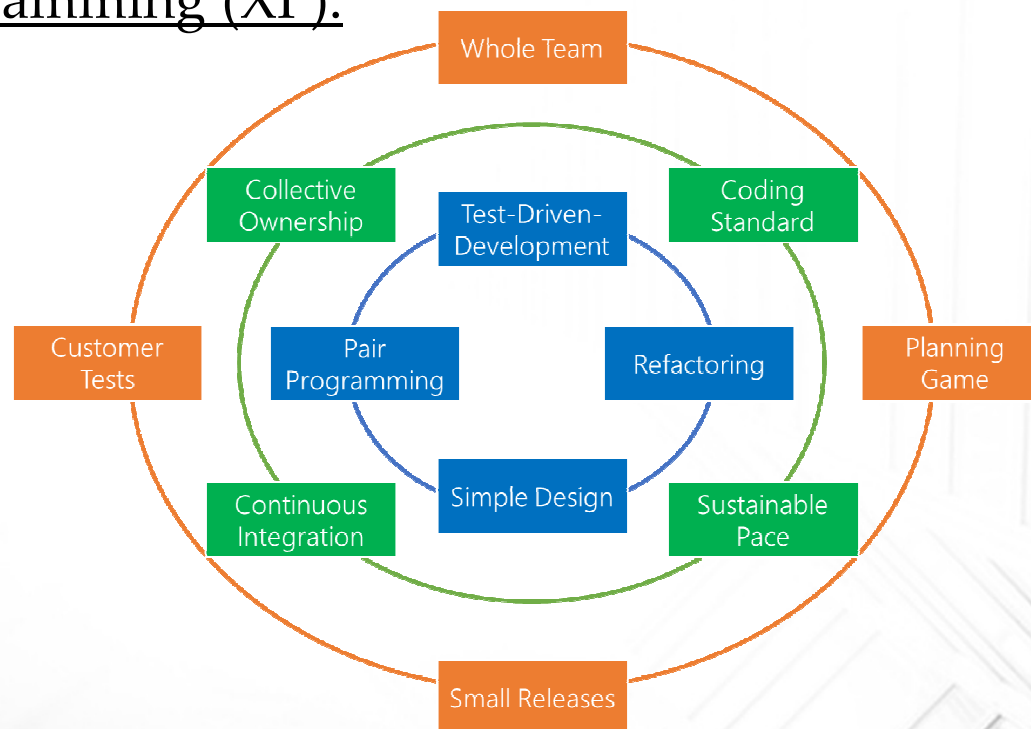
- Values
 - ✓ Courage
 - ❖ Tell the truth
 - ❖ Plan to succeed



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Extreme Programming (XP):

- 12 Practices



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Lean:

- Lean is an iterative **agile methodology** which owes much of its principles and practices to the Lean Manufacturing approach also known as ‘just-in-time production’, and pioneered by Toyota.



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Lean:

- 7 Principles
 1. Eliminating Waste
 2. Amplifying Learning
 3. Deciding as Late as Possible
 4. Delivering as Fast as Possible
 5. Empowering the Team
 6. Building Integrity In
 7. Seeing the Whole



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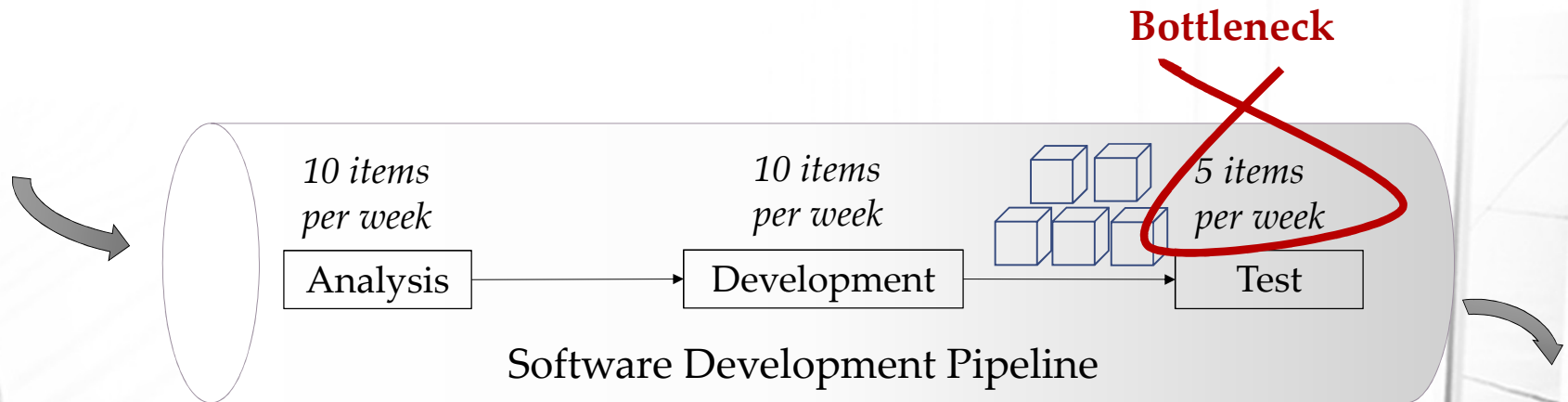
Kanban:

- **Kanban** is an **agile methodology** for managing the creation of products with an emphasis on continual delivery while not overburdening the team.
- Underlying mechanism for managing the production line can be applied on software development.



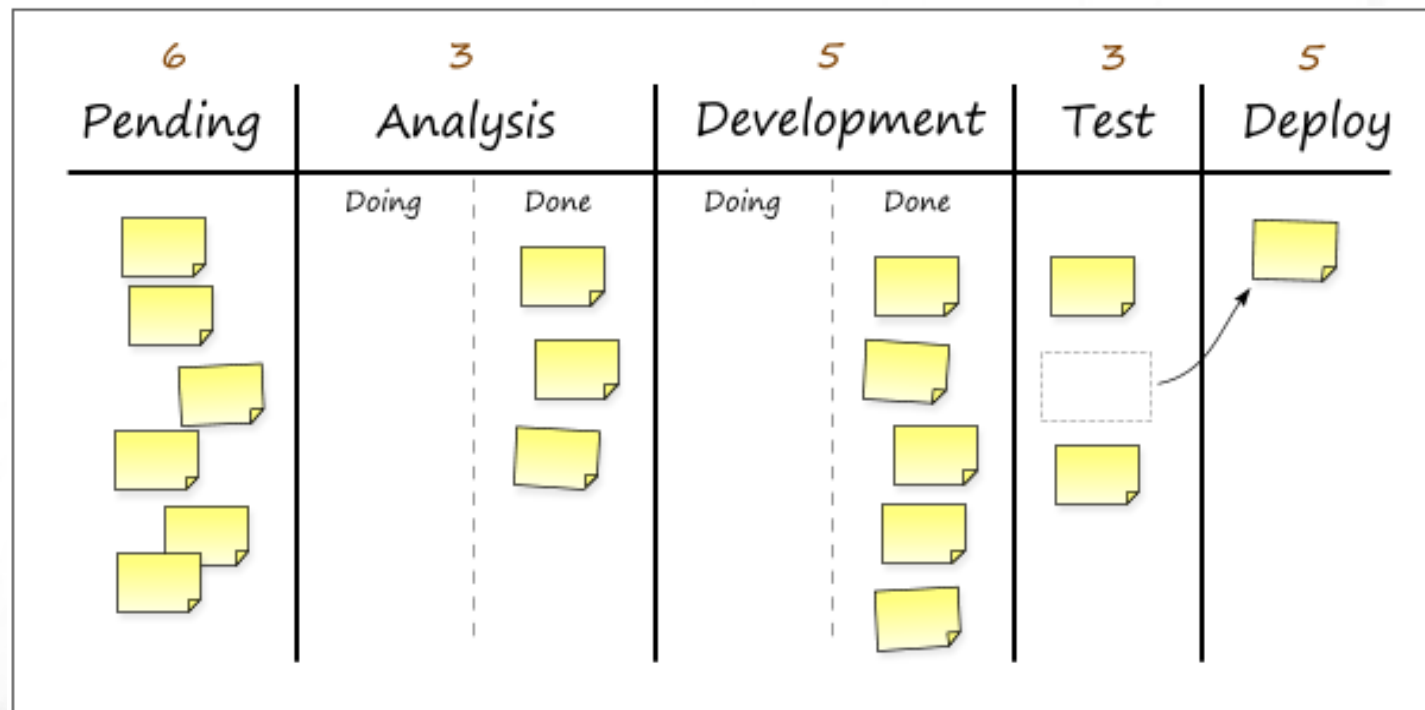
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Kanban:



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Kanban:



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Kanban:

- 3 basic practices:
 - **Visualize what you do today (workflow):** seeing all the items in context of each other can be very informative
 - **Limit the amount of work in progress (WIP):** this helps balancing the flow-based approach so teams don't start and commit to too much work at once
 - **Enhance flow:** when something is finished, the next highest thing from the backlog is pulled into play

