AGILE SOFTWARE DEVELOPMENT

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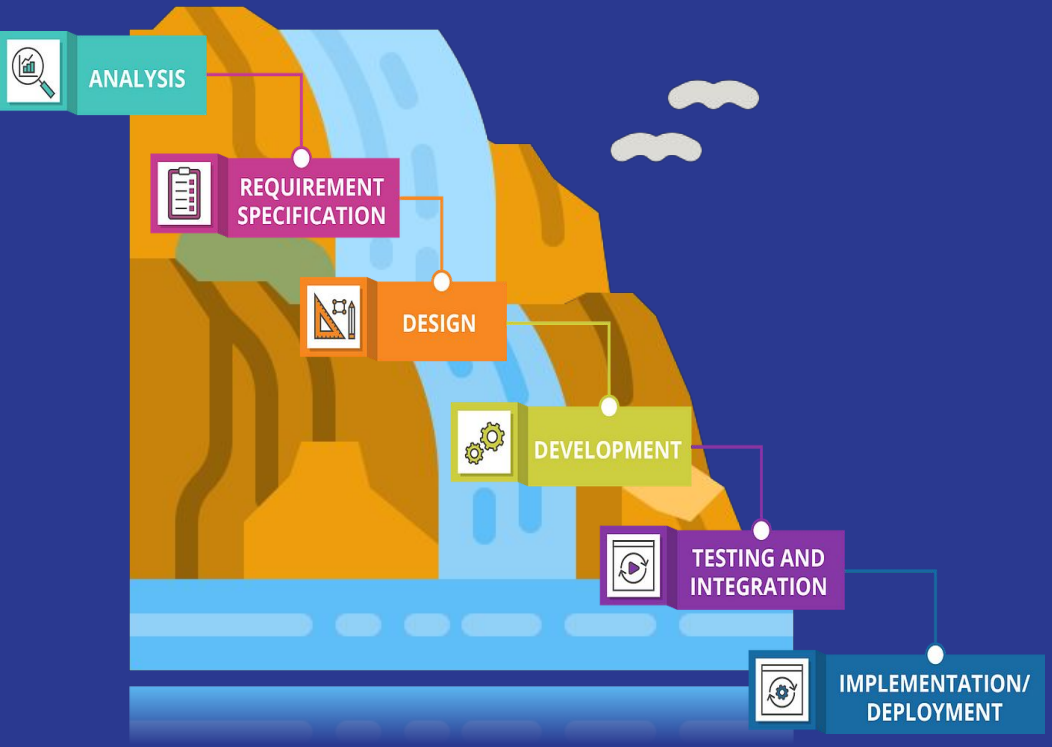
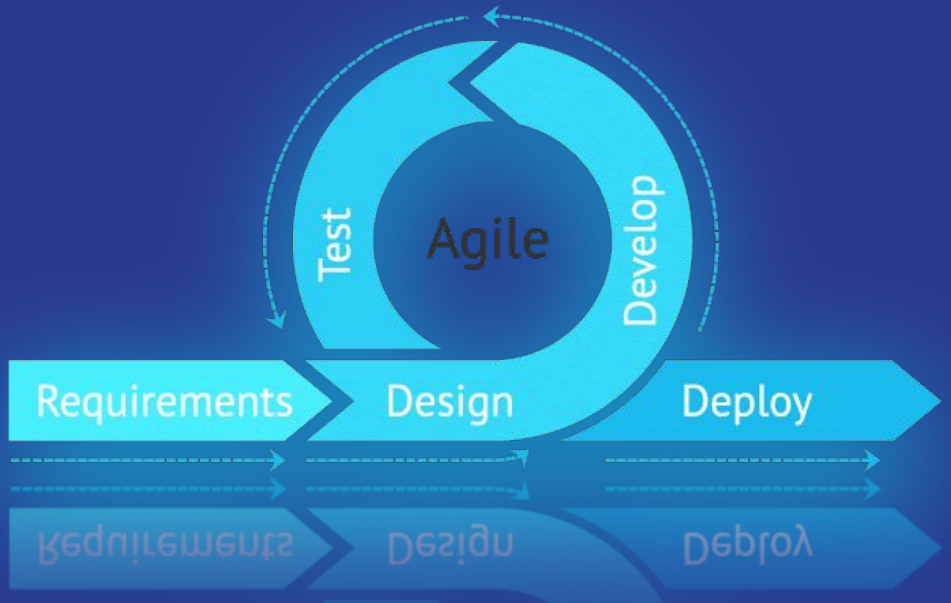
Waterfall Methodology
Limitations



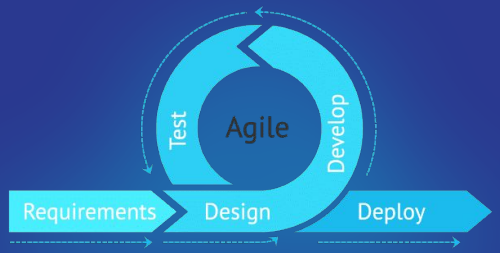
- Rigidity and Inflexibility
- Limited Customer Involvement
- Late Detection of Defects
- Customer Satisfaction
- Not Suitable for Complex Projects
- Long Time to Deliver Value

What is Agile?

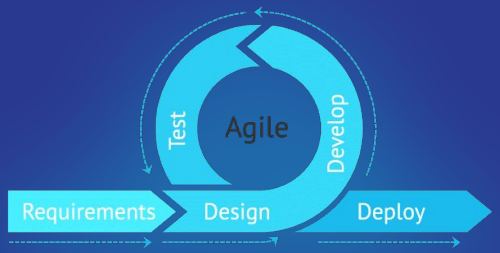
Agile refers to an iterative and flexible approach to project management and product development. It emphasizes collaboration, adaptability, and customer satisfaction.



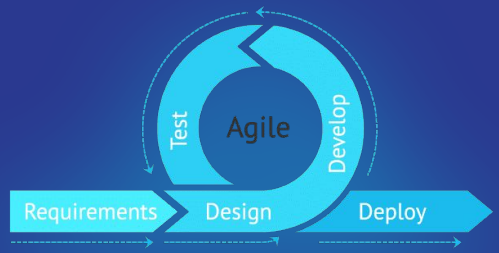
An **Agile iteration** is a short period of time during which a section of work is developed and tested.



Iteration 1



Iteration 2



Iteration 3

EXAMPLE

Team A
(Using Waterfall Model)

Requirement analysis– 1 Month

Design of System – 2 Months

Coding phase – 2 Months

Testing – 1 Month

Deployment – 1 Month

✗ No Feedback Allowed

✗ Customer Satisfaction

Team B
(Using Agile Model)

The project was broken up into several iterations

Each Iteration = 2 Months

✓ Feedback Allowed

✓ Customer Satisfaction

Values of Agile Model

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

12 Principles of Agile Model

1. Customer Satisfaction through Early and Continuous Software Delivery.

2. Welcome Changing Requirements, Even Late in Development.

3. Deliver Working Software Frequently, with a Preference for the Shortest Timescale.

4. Collaboration between Business Stakeholders and Developers.

5. Build Projects around Motivated Individuals.

6. Use Face-to-Face Communication Whenever Possible.

7. Working Software is the Primary Measure of Progress.

8. Sustainable Development Pace Promotes Agility.

9. Continuous Attention to Technical Excellence and Good Design.

10. Simplicity: The Art of Maximizing the Amount of Work Not Done.

11. Self-Organizing Teams Make the Best Decisions.

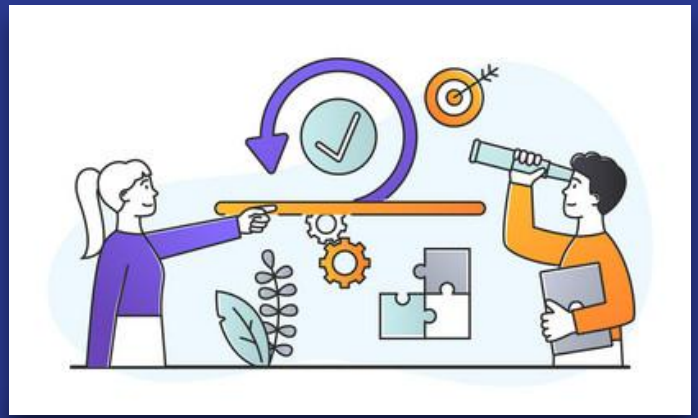
12. Regular Reflection and Adaptation for Continuous Improvement.

Types of Agile Methodologies

There are basically 3 types of Agile methodologies –

- Scrum Methodology
- Kanban Methodology
- Extreme Programming (XP)

Now, we will look into them one by one

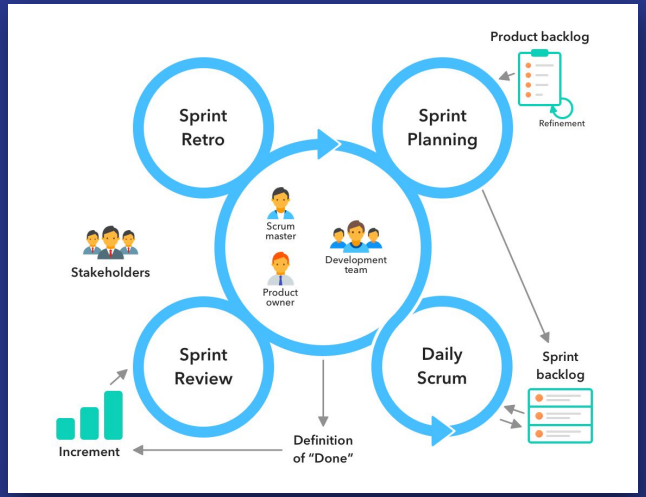


Scrum Methodology

Scrum is an agile methodology which is most widely used in the world of software development. It focuses on developing new software capabilities through 2-4 week sprints.

Features -

- Faster developments in quality products
- Increased return of investments and lower costs
- Increased customer satisfaction
- Decreased time to market



Kanban Methodology

In Kanban Methodology, it continuously improves the process and way to manage the work flow rather than managing team members and their work. The team behaves as self organised as a whole. The team can handle the work and focus on customer getting the best quality products.

Features –

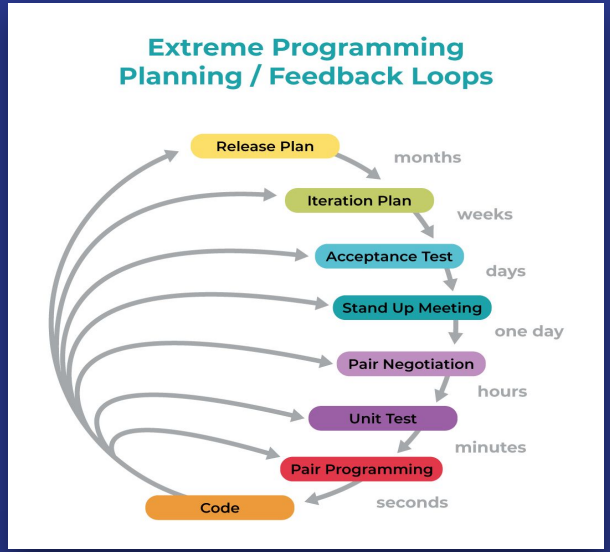
- Increases team productivity
- Provides flexible and sustainable development
- Focuses on one task at a time
- Improves the work flow and reduces the cycles
- Shows project status on kanban board

Extreme Programming (XP)

XP is used to improve the software quality and responsiveness to the customer's requirements. It recommends taking the best practices that have worked well in past to the extreme levels. It also works on iteration model.

Features –

- Timely delivery is ensured through doable Development cycles.
- Constant contact and communication is ensured with client
- Changes are accepted anytime since they are Seen to inevitable
- Strong focus is on the quality



THANK YOU!