Agile

-Dhiraj Deore
-Prathmesh Dalve

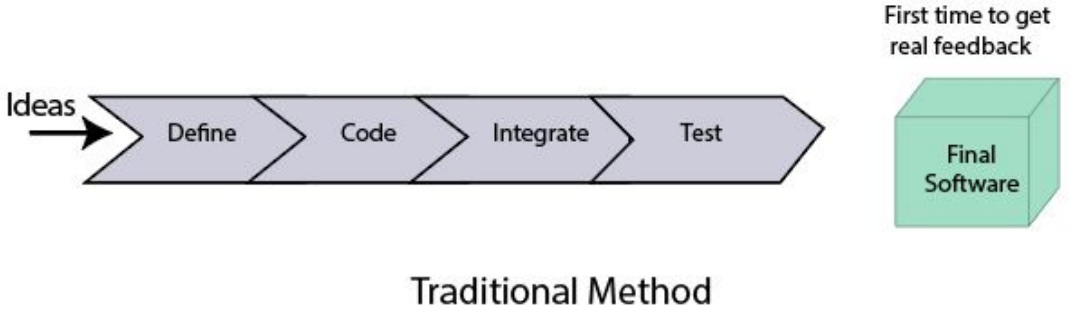
What is Agile Methodology?

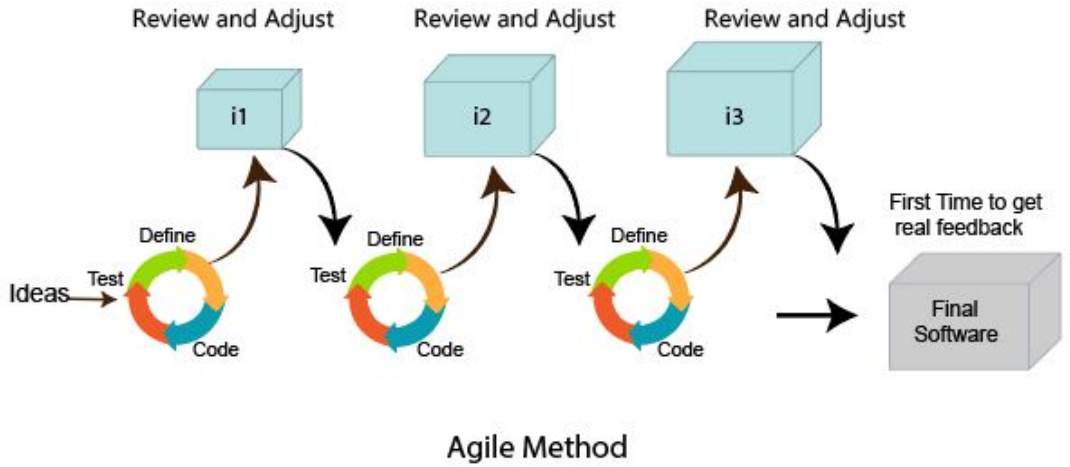
An agile methodology is an iterative approach to software development. Each iteration of agile methodology takes a short time interval of 1 to 4 weeks. The agile development process is aligned to deliver the changing business requirement. It distributes the software with faster and fewer changes.

The single-phase software development takes 6 to 18 months. In single-phase development, all the requirement gathering and risks management factors are predicted initially.

The agile software development process frequently takes the feedback of workable product. The workable product is delivered within 1 to 4 weeks of iteration.

Agile Method





Roles in Agile

1. Scrum Master

The Scrum Master is a team leader and facility provider who helps the team member to follow agile practices, so that the team member meets their commitments and customers requirements.

2. Product Owner

The Product Owner is one who runs the product from a business perspective.

Advantages of Agile Methodology

1. Customer satisfaction is rapid, continuous development and delivery of useful software.
2. Customer, Developer, and Product Owner interact regularly to emphasize rather than processes and tools.
3. Product is developed fast and frequently delivered (weeks rather than months.)

Disadvantages of Agile

1. It is not useful for small development projects.
2. It requires an expert project member to take crucial decisions in the meeting.
3. Cost of Agile development methodology is slightly more as compared to other development methodology.
4. The project can quickly go out off track if the project manager is not clear about requirements and what outcome he/she wants.

Waterfall model

This model has five phases: Requirements analysis and specification, design, implementation, and unit testing, integration and system testing, and operation and maintenance. The steps always follow in this order and do not overlap.

The developer must complete every phase before the next phase begins. This model is named "**Waterfall Model**".

Agile methodology	Waterfall model
It follows the incremental approach.	It is a sequential design process.
It divides the project development lifecycle into a sprint.	The software development process is divided into distinct phases.
Agile methodology is a flexible methodology.	The Waterfall is a structured software development methodology.
Agile is the collection of many different projects.	It is completed as one single project.
The test plan is reviewed after each sprint	Test plan is reviewed after complete development.
Testing team can take part in the requirements change phase without problems.	It is difficult for the test to initiate any change in needs.

What is Scrum?

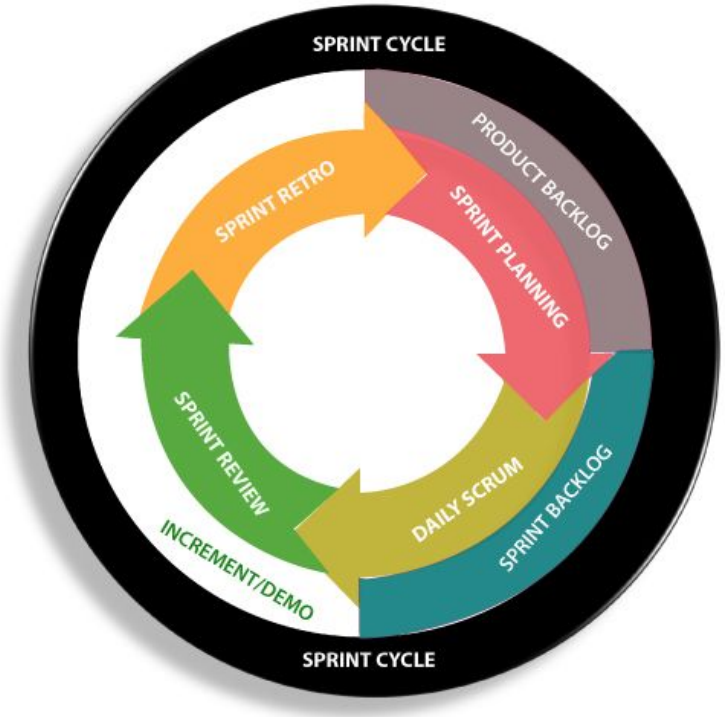
Scrum is a framework that helps agile teams to work together. Using it, the team members can deliver and sustain the complex product. It encourages the team to learn through practice, self-organize while working on the problem. Scum is a work done through the framework and continuously shipping values to customers.

It is the most frequent software that is used by the development team. Its principle and lessons can be applied to all kinds of teamwork. Its policy and experiences is a reason of popularity of Scrum framework. The Scrum describes a set of tools, meetings, and roles that help the teams structure. It also manages the work done by the team

What are sprints?

With scrum, a product is built in a series of repetition called **sprints**. It breaks down big complex projects into bite-size pieces. It makes projects more manageable, allows teams to ship high quality, work faster, and more frequently. The sprints give them more flexibility to adapt to the changes.

Sprints are a short, time-boxed period for Scrum team that works to complete a set amount of work. Sprints are the core component of Scrum and agile methodology. The right sprints will help our agile team to ship better software.


SPRINT CYCLE
PRODUCT BACKLOG
SPRINT PLANNING
SPRINT BACKLOG
DAILY SCRUM
SPRINT REVIEW
INCREMENT/DEMO
SPRINT RETRO
SPRINT CYCLE

Difference between Agile and Scrum (Agile vs Scrum)

Agile is an iterative approach of software development methodology using short iterations of 1 to 4 weeks. Due to the agile methodology, the development process is aligned to deliver the changing business requirement.

Scrum is a framework of agile that helps agile teams to work together. Using it, the team members development, deliver and sustain the complex product. It encourages the team to learn through practice, self-organize while working on the problem. Scum is a work done through the framework and continuously shipping values to customers.

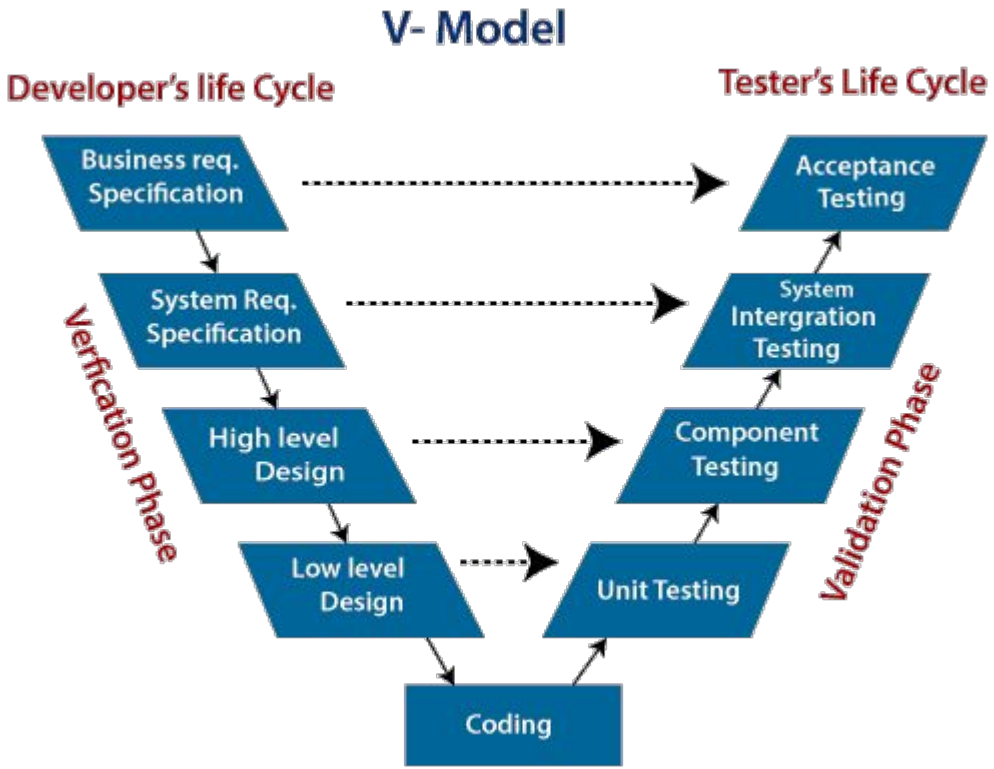
V-Model

V-Model also referred to as the Verification and Validation Model. In this, each phase of SDLC must complete before the next phase starts. It follows a sequential design process same as the waterfall model. Testing of the device is planned in parallel with a corresponding stage of development.

Verification: It involves a static analysis method (review) done without executing code. It is the process of evaluation of the product development process to find whether specified requirements meet.

Validation: It involves dynamic analysis method (functional, non-functional), testing is done by executing code. Validation is the process to classify the software after the completion of the development process to determine whether the software meets the customer expectations and requirements.

So V-Model contains Verification phases on one side of the Validation phases on the other side. Verification and Validation process is joined by coding phase in V-shape. Thus it is known as V-Model.


V- Model
Developer's life Cycle
Tester's Life Cycle
Business req. Specification
Acceptance Testing
System Req. Specification
System Intergration Testing
High level Design
Component Testing
Low level Design
Unit Testing
Coding
Verification Phase
Validation Phase

Thank you !