**Agile Process & It’s Clarification**

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Agile Model/ Agile Methodology/ Agile Process

Agile is basically Iterative and Incremental approach.

Iterative: Same kind of process we are repeating again and again.

* Requirements Gathering
* Understanding the Requirements
* Design
* Coding
* Testing
* Deployment

Incremental: We will implement some features at the beginning in the application and then keep adding new features in the existing feature/software.

Principle of Agile: The main principle of Agile process is we will deliver the software with piece of feature.

Ex: Customer have 100 features in the software, in this case we will not deliver 100 features in one single software to the customer. At the same time, we don’t want customer to wait for long time to complete the development and testing. In Agile we must follow mainly three principles:

* We develop, test and release piece of software to the customer with few numbers of features. In this case we will develop 4-5 feature and test it and deliver to the customer. Meanwhile customer using the features we will develop another feature and test it and deliver another version of software to the customer.
* Customer no need to wait for long time and the same time we must deliver piece of software which contains some functionality/feature to be implemented and tested.
* We can accommodate/accept the changes from the customer requirements. Suppose initially customer has given 100 requirements and we are already developed some feature and testing it and in the middle of the development customer came back and ask to change some requirement or accommodate some new requirement, we can easily accommodate those requirements.

Communication: In Agile process there will be a good communication between developer, tester, and customer. They are collectively work towards one goal. Here the communication will be good and directly interact with customer, developer, tester, and product owner. Everybody together sits and communicate. Multiple meetings will be conducted.

* Advantages & Disadvantages:

Advantages:

* Requirement changes are allowed in any stage of development (or) we can accept/accommodate requirement changes in the middle of development.
* Release will be very fast
* Customer no need to wait for long time
* Good communication between team
* It is very easy model to adopt

Disadvantages:

* Less focus on design and documentation since we deliver software very faster
* What is Scrum & Scrum Team?

Scrum:

Agile is basically a process model to define the principles and how the process should be and to follow the process/principal scrum is a type of framework which help us to follow the principle of Agile. Scrum is a kind of framework through which we build the software and test it and release the software to the customer by following Agile principles.

Scrum Team:

In the Scrum there are certain people will be involved we call them Agile team/Scrum team.

What are the people involved in the scrum team?

* Product Owner
* Scrum Master
* Design Team
* Development Team
* Tester Team

Scrum Team contains 5-9 members not more than that.

Roles and Responsibilities:

Product Owner:

* Product owner defines the feature of the product. He/she is the actual person who will write the features of the application. He/she is the guy who always contact to the customer and get the inputs/requirements from the customer, and he/she will take care of defining all the feature of the product.
* He/she prioritize features according to the market value. E.g., he/she collected all the feature and functionality from the customer and once

collected he/she will prioritize them so what are the mainly features required for the market/customer.

* Adjust features and priority every iteration as needed. E.g., we have 100 features to be develop for the product. Among those features he/she will decide what are the feature need to be implemented first. What are the features need to be implemented in next cycle? What are the features need to be implemented in third cycle? He/she will adjust the featured according to the priority in every iteration/cycle as needed.
* He/she may accept or reject work results. Suppose he/she assign some of the story to the developers and testers. They have developed and tested and once the piece of software is developed, they must give the demo to the product owner. And if the product owner likes the features, then he/she can accept it and or suppose he/she doesn’t like it, not working something he/she can reject it. So, he/she is the main guys, first point of contact to the customers.

Scrum Master: This is a kind of separate/specific role. There will be a different person and he is not a developer, tester, not any other manager and not in any other management activities

* He is facilitating and drive the Agile process. Scrum master is aware of Agile process, he knows each activity of Agile process and he know how to drive the process. He makes sure rest of the people like developer, tester and everybody who is there in the project team are following the Agile process properly or not. And he will facilitate if somebody is not aware of what is Agile process is, he will make give awareness of the Agile process to that person. He will take care of entire process from the beginning of the software to till deliver the software to the customer.
* Most of the meetings will be conducted by the Scrum master and organized by the scrum master.
* If there are any blocker, there is any miscommunication between team or if there are any other issues, he is responsible guy to solve those issues.

Design Team:

* Design the software with understanding the requirement of the feature.

Developer Team:

* Develop the software including design, unit testing and coding.

Tester Team:

* Test the software including Understanding the requirements, writing the test cases, executing the test cases, bug reporting, static testing, Integration testing, functional and regression testing etc.
* Scrum Terminology:
* User Story: A feature/module in a software.

Normally in a classic model we call them as a functionality or feature but here we don’t use such type of terms here we called this as User Story. Whenever we say User Story that represent a feature or module in a software.

* Epic: Collection of user stories or huge/larger requirement.

Epic can be derived into multiple stories or one Epic we can split into multiple stories. That means a user story is a feature or module in a software and collection of user stories we can call it as an Epic. User stories derived from Epics which is prepared by Product owner while interactive with customers.

* Product Backlog: It is a list of user stories prepared by the product owner at the beginning of the process. It is a kind of document which contains all the stories defined by the product owner.
* Sprint/Iteration: It is a period or span of time to complete the user stories, decided by the product owner and team. Usually 2-4 weeks of time. It includes whole process from starting to end like:

Requirements Gathering

Understanding the Requirements

Design

Coding

Testing

Deployment

At the end of the sprint, we will deliver the piece of product to the customer.

* Sprint planning meeting: It is a meeting conducts with the team to define what can be delivered in the sprint and duration. Most of the time it will be one day meeting. First day itself we should have sprint planning meeting.

There three things which need to be focused:

* How many stories we have in the backlog?
* How many stories we are going to develop and test during the sprint.
* What will be the duration of the sprint?
* Sprint Backlog: Sprint backlog is the list of committed stories by Dev/QA for specific sprint. For each sprint the sprint backlog will change.
* Scrum Meeting: Meeting conducted by Scrum Master everyday 15mins that also called Stand-up meeting. Within the 15min everybody should say:
* what is the task completed yesterday?
* what is the task completed today?
* what is the task planned for tomorrow?
* Are there any impediments/blockers/problem in your way?
* Sprint Retrospective Meeting: This meeting will conduct once after completion of every sprint. Here we exactly discuss about these things:
* What went well?
* What went wrong?
* Improvement areas: Which can do in next sprint.
* Story Point: Rough estimation of user stories given by Design, Dev & QA team in the terms of Fibonacci series format. During the sprint planning meeting itself story will be estimated by Design, Dev & QA team. Based on the Story Point we will choose the story and plan the story for the Sprint.

Fibonacci Series Format: 0 1 1 2 3 5 8 and so on

1 story point = 1 hour or for some company one day(6-8hrs)

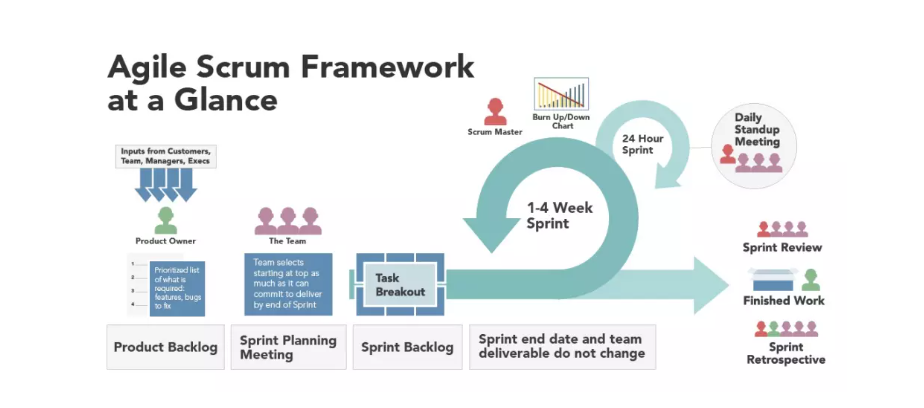
Suppose we have Login Functionality to develop in the Sprint, so Dev team give their estimation story point 5 i.e., 5hour or 5days and QA team give their estimation story point 3 i.e., 3hour or 3days. So total story point is 8hour or 8days for the story.

* Burndown Chat: This will be designed by Scrum Master because he is the guy who is taking care of whole agile process and getting the status from the team and all going well or not.

Here the Chart shows how much work remaining in the sprint. After taking the status from team in Scrum Meeting at the same time he will also calculate the story point, how much story point given to Story and how much they are exactly spending. Suppose Dev team gave their story point 5hour or 5days to complete the story but to complete the story it takes more than the given story point then automatically sprint cycle is affective. Then Scrum Master should ask why this is taking so much of time, why you are taking extra hours then team should give the proper reason to justify that.

How will the scrum master know how much work is completed and how much is pending?

Scrum Master must make burndown chat to check how much work completed and how much work is remaining.

* The AGILE: Scrum Framework:

**Duration: 15minute  
Status 24hours last/next/blockers if any**

**What went well?  
What went wrong?  
Improvement areas?**

**Ranked list of what is required, features, stories**

**Input from Executives, Team, Stakeholders, Customer, Users**

1. Here product owner is the first guys who is interactive with customer and stakeholder, user, and team. He/she will take the inputs from executives, customers, stakeholders, and users. Once he/she gets all the requirement from all of them he/she will prepare document called Product Backlog. Product backlog prepared by the product owner. He/she will list out all the stories and requirements in the document.
2. Once Product backlog is ready then Sprint planning meeting will be happened (this is the first meeting). During this meeting everybody in the team will be involved. They will review all the stories from the product backlog, and they will choose to pick some stories for the story. After sprint
3. planning meeting their will be another backlog called Sprint Backlog. Sprint backlog is list out some story which are committed by the team what are the stories can be developed and tested in the sprint.
4. Once Sprint backlog is ready and Sprint is planned then sprint will start. Sprint is a period of time, and this is a one cycle and during the sprint whatever stories we have committed in the sprint planning meeting which are they’re in the sprint backlog, Designer, Developers and testers will work on the stories during the sprint cycle. During the cycle every day or every 24hours there is a 15min call i.e., Scrum Meeting or we say Standup meeting. Scrum Master will conduct the meeting. Rest of the team will participate in the meeting, and they will update what they did yesterday, what they did today, what they have planned for tomorrow and if any blockers they have. By taking all the status Scrum Master will prepare burndown/up chat (how much work completed, how much work planned and how much work is still pending).
5. After sprint cycle is completed, we will finish the work. That means we will have a piece of software which contains some features some working functionality. After finishing the work, we will do a Sprint Review (this is nothing but what are the stories we have planned, how much work completed, how much work still pending, is there any bugs are available and all bugs are closed or not). This is not Sprint retrospective both are different. Also, we will provide demo to the Product Owner. If the demo is accepted by Product Owner, then we will deliver the piece of software to the customer.
6. After finishing the demo and delivering the software to the customer we will do the Sprint Retrospective meeting. End of every sprint we will do this meeting. Here we will discuss the required things like: What went well, what went wrong and improvement areas.

* Throughout the process what we need to understand?

Diagram

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* What are the type of people involved?

Roles:

1. Product Owner: He/she will define the requirements and writing the stories.
2. Scrum Master: Will organize the meetings and drive the process.
3. Team: Will perform the task design, development, and QA activities.

Artifacts:

1. Product Backlog: Contains all the stories written by the product owner.
2. Sprint Backlog: Contains specific number of stories or committed stories.
3. Burndown Chart: Manages by the scrum master which says how much work planned, how much work completed and how much work pending.

Ceremonies:

1. Sprint Planning: Conducts with the team to define what can be delivered in the sprint and duration.
2. Daily Scrum: Meeting conducted by Scrum Master to discuss what is the task completed yesterday? what is the task completed today? what is the task planned for tomorrow? Are there any impediments/blockers/problem in your way?
3. Sprint Review: W are the stories we have planned, how much work completed, how much work still pending, is there any bugs are available and all bugs are closed or not
4. Sprint Retrospective: To discuss the required things like: What went well, what went wrong and improvement areas.

* What is Scrum board?

Graphical user interface, website

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Scrum board is nothing, but which contains the stories. Let’s say we have number of stories in particular sprint. We will track the stories by giving their status like how many stories are there in To Do section, how many stories are in-progress, how many stories are in testing phase and how many stories are done. We will maintain the scrum board and in day-to-day basis the scrum board will be updated.

What are the Scrum Board?

Main Scrum Board: Sub Scrum Board:

To Do Bug

Design In-Progress Invalid Bug

Design Review Duplicate Bug

Ready for Development Bug Fixes In-Progress

Development In-Progress Bug Ready for QA

Ready for QA Retesting In-Progress

QA In-Progress Bug Fixed/Closed

Ready to Deploy

Deployment In-Progress

Done/Ready for Demo

All these processes and to track the status we use a tool which is called Agile Management Tool. There are many agile management tools available in the market example: Jira, ClickUp, Proof Hub, Write, Smartsheet, Active Collab, Asana, Agilean, Version One, BinFire, LeanKitKanban, DailyScrum, Axosoft, Pivotal Tracker, MeisterTask, Taiga, Kantree, Notion, Hitask, Basecamp, and many more.

* Definition of Ready (DoR) & Definition of Done (DoD):

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Definition of Ready (DoR):

Suppose when we start a task then we need some inputs, for example I want to write test case, to write the test cases Story should be ready then only I can start writing the test cases. Now how can we define the story is ready? The story should be clear, testable, feasible, clearly define, acceptance criteria defined and all the criteria which is mentioned in the image is full filling all the steps then we say the story is ready and ready to develop as well as test.

Definition of Done (DoD):

When designer complete the design as per the requirements, developer develop the feature, Unit testing is completed, Integration testing is completed, test cases are created, testing is done (Sanity, Regression everything), all bugs are fixed and there is no bug for the story, it is ready for demo and demo is also completed then only we can say Story is completed/done. All the development and testing activities are done then story is completed/done.

If story is created but anyone from team like developer or tester are not able to understand and some information is lacking in the story, then it is not ready. Until unless we get that information we have to wait, if it is ready then we start our task and complete. If all the parameters are satisfying, then the story is ready/done else the story is not ready/done.