Agile

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.

Agile Methodology, as the name suggests, is a set of methods and practices where software development and project management take place to deliver customer-centric products in a short development cycle known as sprints. It is an iterative approach and each iteration is specially designed to be small and manageable so that it can be delivered in a specific given period of time. Agile methodologies are open to changing requirements over time and encourage constant feedback from end-users. It is the most popular approach because, in this process, customers are also involved so that they can get updates regarding their product and also make sure whether or not they are meeting their requirements.

What are the different types of Agile Methodologies?

There are several types of agile development methodology. Scrum is one of the most popular and widely used agile methods. Other types of agile development methodology are; development like Crystal Methodology, DSDM(Dynamic Software Development Method), Feature-driven development(FDD), Lean software development and Extreme Programming(XP).

Name the agile frameworks.

Some of the agile frameworks are:

- Scrum
- Kanban
- Feature Driven Development
- Test Driven Development

Scrum Events in Agile Methodology

Scrum is simple to understand but extra effort is needed to implement the methodologies. Scrum events in Agile methodology are Sprint, Sprint planning, Daily Scrum, Print Review and Sprint Retrospective.

- Sprint: It is a time-box of 1 month or less consistent duration, new sprint starts immediately after the conclusion of previous sprint. No changes are to be made once the sprint starts and scope of the project can be re-negotiated with Product owner and development team.

- Sprint Planning: It is time-box of maximum 8 hours for a month sprint, it gives an overview of what are the requirements which are to be delivered in sprint.

- Daily Scrum: It is a 15 min time box event for the development team to discuss and create a plan for the next 24 hours to reduce complexity.

- Sprint Review: It is held at the end of each sprint to inspect Increment and adapt Product Backlog.

- Sprint Retrospective: It occurs after sprint review and before sprint planning to get to know what went well in the previous sprint and what could be improved.

What do you understand about Scrum?

Scrum is a framework that helps agile teams work together to develop, deliver, and sustain the complex product in the shortest time. The product provides by scrum team in this shortest period is known as a **sprint**.

User Stories

- These are the product features/ functionalities that the user wants to use in their final product which are also known as requirements. The success of a development project lies in understanding the customer requirements and implementing them in final product/ software.

- In Scrum projects, product backlog consists of list of user stories and is narrated from user perspective as what he/ she wants. These user stories are prioritized and taken into sprint backlog in sprint planning meeting.

This requirement should satisfy acceptance criterion defined by customer/ business.

Advantages of Agile Development

- It promotes teamwork and cross functional training.

- Functionalities can be developed and demonstrated in a shorted period.

- It is a realistic approach to develop software.

- Requirement of Resources is minimal.

- Suitable for changing requirements.

- Early delivery of working software at least partially.

- Easy to manage and gives flexibility to developers.

What do you understand by Daily Stand-Up?

The daily stand-up is the day-to-day meeting (mostly in the morning) in which the whole team meets around 15 minutes to find the answer for the following three questions:

- What was done yesterday?

- What is your plan for today?

- Is there any obstacle that restricts you to complete your task?

What are burndown and burn-up charts in agile methodology?

To track the progress of an ongoing project, these charts are used. Burn-up charts indicate the work that has been completed while Burn-down chart shows the amount of remaining work in a project

- They should be capable of understanding the requirements quickly.
- An agile tester should be aware of all the agile principles and concepts and values as listed down in an agile manifesto.
- They should be able to prioritize the work based on the requirements.
- They should have excellent communication skills as continuous communication between business associates, developers and tester is a backbone of the agile development process.

Can you list some responsibilities that a scrum team have to undertake?

- Breaking down the requirements, creating tasks, estimating and distributing the created tasks. To put simply they are in charge of creating sprint backlogs.
- They have to arrange daily sprint meeting.
- It is a responsibility of the team to ensure that every functional feature is delivered on time. They have to create a sprint burndown diagram to know to get the exact estimate of work done and the work that needs to be done.

principles of Agile testing.

- Continuous testing – This ensures the continuous progress of the product. An interesting aspect of the Agile testing process is that unlike the traditional methodologies where only the testing team is focused on product testing, it requires the entire team to participate equally in the testing process.

- Continuous feedback – With every test, the client feedback is encouraged to ensure that the product meets the business requirements of the client.

- Simple and clean code – Whatever errors and defects arise during the testing phase are fixed within the same iteration by the Agile team. This allows for simple, concise, and clean code.

- Less documentation – Agile teams use a reusable checklist. Here, they are more focused on the testing process rather than the incidental details.

Differentiate between Agile and Scrum.

Scrum is a part of the Agile Methodology, both of them promote the completion of projects incrementally in small fragments. Also, both methodologies are iterative in nature.

However, the main difference between Agile and Scrum is that the former has a broader spectrum. While Agile Methodology is used for project management, Scrum is ideal for projects where the requirements change rapidly. In the Agile Methodology, leadership holds the most pivotal position, whereas Scrum encourages the creation of a self-organizing and cross-functional team.

What is the difference between the agile & traditional way of working?

The traditional way of development is that which follow the sequential where design -> development -> testing etc. is performed whereas, in agile development, all of this is done in every iteration/sprint.

What is the ideal duration of a Scrum Sprint?

The duration of a Scrum Sprint or the Scrum Cycle primarily depends on the project size and the team working on it. A Scrum team may consist of 3-9 members, and it takes about 3-4 weeks to draft and complete a Scrum script. Going by this calculation, the average duration of a Scrum Sprint is four weeks.

Explain the role of the Scrum Master.

The Scrum Master is the leader and supervisor of the Scrum team. The main job of the Scrum Master is to ensure that the team abides by the Agile values and principles and follows the agreed-upon processes and practices. Some of the most crucial responsibilities of the Scrum Master are:

- To eliminate all the obstacles that could hamper the productivity of the Scrum team.
- To establish a productive and collaborative work environment for the Scrum team.
- To protect the team from the interruptions and distractions of the outside world.
- To maintain a good relationship between the team, clients, and all the other stakeholders involved in a project.

- To supervise the operations of the Scrum team and motivating them as and when needed.

Differentiate between "Sprint Planning Meeting" and "Sprint Retrospective Meeting."

Although the two terms may sound similar, Sprint Planning Meeting and Sprint Retrospective Meeting are quite different from one another. A Sprint Planning Meeting involves all the Scrum roles – product owner, scrum team, and scrum master – coming together to discuss the project priorities and backlog items. Usually, the Sprint Planning Meeting is a weekly event that lasts for about an hour. A Sprint Retrospective Meeting, on the other hand, is one where all the Scrum roles (product owner, scrum team, and scrum master) come together to discuss the good and bad elements of the sprint and the sprint improvements.

What are advantages and disadvantages of Agile Process.
- Adapt well with changing requirements
- Face-to-face conversation with team members and customers
- Focuses on technical excellence and good design
- Fast and continuous development
- Enables collaboration and interaction between client and project team
- Ensure and promote customer satisfaction
- Faster feedback from customers or end-users
- Quick identification and elimination of errors found in the code
- Division of agile project into sprints or iterations i.e., short and repeatable phases typically 1-4 weeks long
- Quick delivery of products

- Easy to manage with more flexibility
- The end goal can be unknown: Agile is beneficial for projects where the goal is not defined and as the project progresses, the goal becomes more evident.

Disadvantages

There are several disadvantages of using Agile Process as given below:

- Lack of formal documentation and designing
- Difficult to estimate resource requirement and effort
- Not good for small development projects
- Costly as compared to other development methodologies
- Requires more time and energy from everyone
- Risk of ever-lasting project
- Difficult to scale large projects
- Difficulty in testing and test construction

What's the difference between sprint backlog and product backlog?

Sprint Backlog: It is generally owned by the development team. It only contains those features and requirements that are related to the specific sprint only. It is considered a subset of the product backlog. It is compiled of everything that must be done to complete a particular sprint. It only includes items that can be completed during each agile sprint. It is specific to the sprint goal only in a particular sprint.

Product Backlog: It is generally owned and maintained by the project owner. It usually contains each and every feature of the product as well as the requirements of the product. It is compiled to everything that must be done to complete the whole process. It

just breaks down every item into a series of steps. It is more specific to the end goal of the product.

What is Incremental and Iterative Development?

Iterative Development: It is basically a software development process where software development cycles (sprint and releases) are repeated until the final product is obtained. On the basis of feedback from customers or users, the product is again developed in cycles or releases and sprints i.e., adding new functionality in a repetitive manner.

Incremental Development: It is basically a software development process where development works are sliced into increments or pieces or portions. In this, the software is developed and delivered in pieces or increments and each piece has a complete set of functionalities. The increment can either be small or large, and each increment is coded and tested fully. After testing each increment, they all are integrated so that they work as a whole.

What is a Product Roadmap?

A product roadmap, as the name suggests, is a powerful tool that describes how a product is likely to grow over time. It is a holistic view of product features that create the product vision. It also indicates what development is building, business goals that the new product will achieve, problems that the product will solve, etc. A product roadmap is owned by the product manager. It also encourages the development team to work together to achieve the desired goal for the successful delivery of the product.

What is a Sprint Planning Meeting, Sprint Review Meeting and Sprint Retrospective Meeting?

- Sprint Planning Meeting: In this meeting, the discussion takes place about features and product backlog items (user stories) that are important to the team.

This meeting is usually attended by the product owner, Scrum Master and Scrum Team. It is a weekly meeting and usually lasts for about an hour.

- Sprint Review Meeting: In this meeting, the Scrum team gives a demonstration of the product. After this, the product owner determines which items completed and which are not completed. He also adds some additional items to the product backlog on the basis of feedback from customers or stakeholders. Its main aim is to inspect the product being created in the sprint and modify it if required.

- Sprint Retrospective Meeting: This meeting takes place after the Sprint planning meeting. In this meeting, the Scrum team meets again to inspect itself and discuss the past mistakes, potential issues and methods to resolve them. Main aim of this meeting is to improve the development process. This meeting lasts for about 2-3 hours.

which are the types of agile methodology?
1) Xtreme programming
2) LEAN
3) Kamban
4) Scrum
5) Dynamic system development method.
6) Future-driven development method.

which tool you are using for agility?
"JIRA" is the project management tool.we are using for agile testing.

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who is the chair person of scrum meeting?
Scrum master is the chair person for scrum meeting.

what is the delivery duration in Agile.
    1 release (~~serum~~ sprint) = 1 month
    1 month = 1 to 2 module
    1 year = 12 release (sprint)

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User Stories

1) User stories are the requirements.

2) Whenever stake holder gives requirements (us.) to product owner, those requirements are for whole product.

3) In Estimation, ~~te~~ sprint planning meeting members decide which module to develop & those modules requirements.

4) Those ~~modules~~ sorted requirements are included in the sprint backlog.

5) Those user stories are functional requirements for module to be dev. in 1 month.

6) User stories consist of two parts:

Description   Acceptance Criteria.

7) Description :- it is the description about what user want to do (process) & what is his desired o/p.

8) Acceptance criteria : ~~This~~ These are the scenarios when these scenarios are true then system generate correct o/p otherwise system show failure.

9) Template for description:

As a <user type>, I wan to (process) So that <benifit>

customer   what they   benifit
purchaser   want to do

As a customer, I want to insert debit card in ATM so that it can open my accounts

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10) ID of user stories started with US001.

Example:

Name of User Story : Credit Card payment.

ID : US001

i.e., US001 : Credit Card Payment.

Description: As a customer, I want ability to pay with credit card so that it can it can confirm my order.

Acceptance Criteria:

.) Discover Card
  ↳ when we enter card number, it should display name of company of card i.e. Rupy master card.

2) Validate Credit Card information.

3) Then validate expiry date & cvv.

4) Validate adress.

5) Generate Success or failure result.