Agile

-Agile mostly used in company

-In Agile, customer can request for changing in requirement at any point of dev phase.

-These changes not affect the development of another module.

-In Agile requirements break into small small pieces and then team work on it.

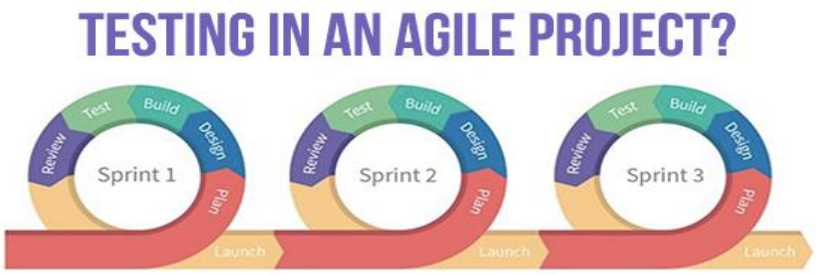
-In V model after requirement get fixed the whole team focus on whole product development but in agile methodology, requirements are changing frequently and more focus on module dependent requirement so it's a module driven methodology.

-Also called as Agile Model (Scrum) / Multi Iterative life cycle

Agile (means – ability to move quickly and easily)

-Multi Iterative life cycle is the way by which the project is broken up in several smaller pieces. Each iteration is called a Sprint

-Agile Methods break the product into small incremental builds. These builds are provided in the iterations



Example-

Let's assume we have to create a large website, and the website has 12 web pages that are going to be a part of whole flow .

In an Agile environment, we will work on one page at a time and the iteration is going to be completed in the period of a month. So, at the end of the month there is always a deliverable product that the end user could use and provide its feedback.

-At the end of the sprints you are getting a product

Scrum is one of the version / way /principle / frameworks of Agile

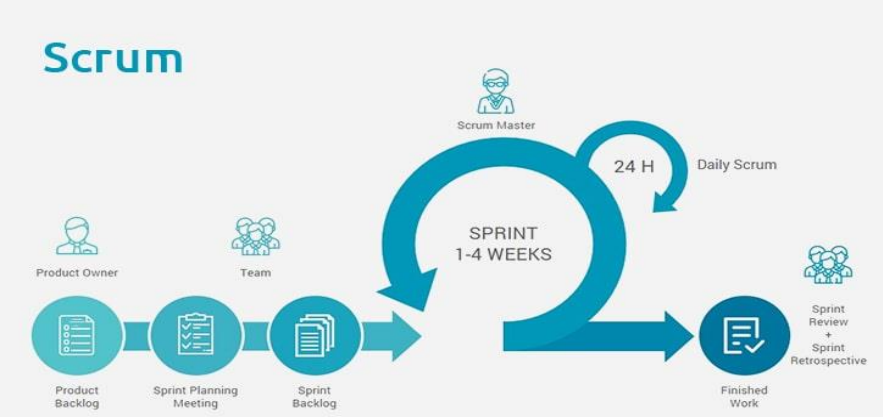
-Around 90 % projects are implemented in Scrum and a popular way to implement agile
-Within Scrum, each iteration is called a Sprint
-After completion of Sprint, software / project that would be delivered to the customer and then customer gives his feedback.
-Customer is always involve in the development method and they give the feedback before the actual end product unlike waterfall model where customer has zero visibility.
-In Agile you have maximum visibility , every 3 weeks , every 4 weeks depending the length of the iteration that the customer chooses , he gets the piece of the software at the end of the sprint

Flow like-
Process is broken into small pieces-

Plan → Build → Test → Review (Sprint 1)

Plan → Build → Test → Review (Sprint 2)

Several increment releases called sprints
Within Scrum each iteration is called as sprint



How do we break the whole thing in?

-In Agile , we write User Stories

-User Stories are the way of which you are going to provide the requirements.

-User Story is contains – what is feature that is going to be developed.

-Each user story is a compact of feature that is going to be develop a piece of a code and at the end project goes live.

-These user stories are **kept is a backlog**

The first is the Product backlog . The product backlog practically has all the user stories (not only the first sprint, second sprint …)

-Product backlog are the total requirements for the whole project.

-It includes requirement for all modules.

-Product owner gather requirement from the stakeholder

-Product owner is team member for sprint paling meeting.

-Product owner is responsible for creating product backlog.

Sprint Backlog-

-Created by product Owner

-Sprint backlog contains story means complete detail info for the requirement which are require for module development.

-Only the periodized stories are taken in Sprint backlog after sprint planning.

-Prioritization is basically the way by which we are going to assign a level of importance to each user story. Usually done with Product owner and Customer

- Everyone wants to make sure most important and most relevant user stories get executed in the first sprint itself

-Now, Prioritization is done, and let's say we are in sprint 1

How do we keep a track of for the stories on development

-This can be done with daily status call or meeting with each team members and i.e. **daily scrum calls /stand up meeting/status meeting.**
-It is basically a 15 min meeting where the whole agile team is present there.
-The product owner is also present
-Each individual is responsible to answer **three questions** -
what did you do yesterday,
what are you planning to do today and
are there any road blocks (impediments / problems)

Q-Agenda of daily scrum?
A-What is the progress of Project.

-So it is basically a status update.
-Scum master takes care the track of how many tasks are developed as per plan and he/she try to resolve the blockers if any within the team)

Q-What is Epic?
A-Scrum Epic in Agile Methodology is a large body of work that can be broken down into a number of smaller stories. An Epic can be spread across sprints and even across agile teams.
An Epic can be a high-level description of what the client wants, and accordingly, it has some value attached to it. As we mentioned, an Epic is a high-level requirement, hence its scope can change over the course of time.
Like Modules or main big requirements we can say Epic.
Under Epic multiple User stories linked.

Epics are a helpful way to organize your work and to create a hierarchy. The idea is to break down the work into shippable pieces so that large projects can actually get done on a regular basis

Scrum Master creates a Burn Down Chart
A Burn Down Chart is a graphical representation of what was the work that was required to be executed yesterday , what got completed

<u>Roles</u> –
1. Product owner -
-Product owner gather requirement from the stakeholder
-Product owner is team member for sprint paling meeting.
-Product owner is responsible for creating product backlog.
-Responsible for defining the features in the product

2.Scrum master -
- Protecting the team and a process . Keeps the things glowing and clear the blockers from team members.

3. Team – Developers + Testers + anyone who helps in developing the product .
- Group of professionals who deliver the product (developers, programmers, designers).
- The complete their work within the sprint or cycle.
4.Staleholder-
-Stakeholder is customer.

-In agile methodology customer is the member of top most body.
-At any phase like in dev,testing or at requirement they can change the requirement.
-they have bunch of requirements related to the project

Artifacts / documents-(All details are above)

1.User Stories
2.Product backlog
3.Sprint backlog
4.Burm down chart

Scrum events / Ceremonies / discussion / Meetings -

- **Sprint planning**: Where the entire Scrum team sit together—at the beginning of every Sprint—and decide which story need to be taken on next sprint and discuss with the estimations.
Mostly Product owner, development lead or sr dev and test lead or sr tester do the estimations for any user stories.

- **Daily Scrum:** 15-minute time boxed meeting which held every day of the Sprint, where-
Each individual is responsible to answer three questions -
what did you do yesterday,
what are you planning to do today and
are there any road blocks (impediments / problems)

- **Sprint review:** An informal meeting held at the end of every Sprint where the Scrum team discuss feedback.

- **Sprint retrospective:** A meeting where the Scrum team discuss about the of the previous Sprint like how it went,any positive done,any negative done,any improvements etc and establishes improvements for the next Sprint.

Difference between V and Agile model

V model	Agile model
Customer	Stakeholder
Business Analyst	Product Owner
Business Requirement Specification	Product Backlog
Software Requirement Specification	Sprint Backlog
Functional Requirement Specification	User Stories
Release	Sprint

Advantages of Agile model:

- High amount of visibility to the customer.
- Customers, developers and testers constantly interact with each other.
- Working software is delivered frequently (weeks rather than months).
- Face-to-face conversation is the best form of communication.
- Close daily cooperation between business people and developers.
- Continuous attention to technical excellence and good design.
- Regular adaptation to changing circumstances.
- Even late changes in requirements are welcomed.

Disadvantages of Agile model:

- In case of some software deliverables, especially the large ones, it is difficult to assess the estimations for requirement at the beginning of the software development life cycle.
- lack of documentation.
- The project can easily get taken off track if the customer representative is not clear about the requirement.
- Maximum times senior programmers are capable of taking the kind of decisions required during the development process

When to use Agile Model:

- When new changes are needed to be implemented.
- Both system developers and stakeholders alike, find they also get more freedom of time and options than if the software was developed

Popular Frameworks of Agile Methods/types of agile methodology:

- Scrum
- eXtreme Programming (XP)
- Dynamic Systems Development Method (DDSM)
- Feature Driven Development (FDD)
- Adaptive Software Development (ASD)
- The Crystal Method
- Lean Software Development (LSD)
- Disciplined Agile (DA)
- Scaled Agile Framework (SAFe)
- Rapid Application Development (RAD)

Product and Project-

The “product” is the deliverable result produced by a project. A “project” is the effort required to produce a “product”.

You start a Project to deliver the Product. So, in software project management, you start the project to build the software. Software as a product is the result of the project.

Project is a sequence of concrete and organized effort with some boundaries such as Time project must have a start and end date this project aims to deliver something unique it maybe service , process or even a product

so the product is a result of a project

What is the definition of Backlog Grooming/Backlog Refinement, Story Time?

Backlog grooming, also referred to as backlog refinement or story time, is a recurring event for agile product development teams. The primary purpose of a backlog grooming session is to ensure the next few sprints worth of user stories in the product backlog are prepared for sprint planning.

Backlog refinement sessions present an opportunity for product managers and product owners to explain the strategic purposes behind prioritized items in the backlog. These conversations can help improve alignment across the cross-functional team.

There are also several tactical objectives of backlog grooming sessions:

Break down large user stories into smaller tasks.
Discuss user stories with the team.

What is the ideal outcome of a backlog grooming session?

At the end of a backlog refinement session, you should have a prioritized list of user stories.

Someone to facilitate the session: It could be a product owner, product manager, scrum master, project manager, or even an agile coach or consultant.
Product owner and/or other product team representatives.
Delivery team. (if the team is too large to include, you can consider inviting management representatives.)

QA and dev (If required)

Spike- In Software Development when we are creating Spike in Sprint in Agile it means we need to do some RnD work with reference to that requirement to come up with the best possible solution to develop that Feature/Requirement.

Zero Sprint-Officially there are no such sprint as Zero Sprint in Scrum but some organization are using it to set up the Project,Team and streamline their Organizational and Project related activities which are not going to give any productive product at the end of the sprint which can be demoed.

Spike is a name given to all the research items you want to carry on to understand their feasibility and to be able to estimate these items for implementation, if they are feasible enough to be implemented.
The team can decide how much effort they want to spend on investigating this research item, in their Sprint, and accordingly give story points to it.

If at the end of the Sprint, the result in not achieved you might want to replan and reprioritize it in the next Sprint as needed. You might end up totally discarding this research item as well if it is not feasible to implement for technical or business or any other reasons.

Zero Sprint is used by some organizations to enable the teams start working on, let's say, a basic infrastructure or a basic foundation. Not everything can be developed on a fly even in agile way of working and some foundation needs to be in place to start delivering a working system or working features. So, the minimum infrastructure, minimum code and minimum design and architecture that is needed to be able to start delivering working system is generally what's developed in Zero Sprint and then we build on top of it, working iteratively.