Agile Model / Scrum Methology / framework :

what is Agile ?

-------------------

: it is an Itearative and Incremental approach.

: Agile is an Iterative(repeatative) and incremental(adding new features) development process.

Advantages of Agile-

----------------------------

: customer no need to wait for long time. he can get product every 2-4 weeks.

: can make the changes to the product any time at any stage.

: it is a collaborative work, it means a cummunication between Product Owner, scum master, business people, development team, QA team, and all other team members.

: a piece of software will be ready in every sprint.

DisAdvantage

-------------------

less focus on design and documentation compare to other model since we deliver very fast.

**Agile principles-**

**----------------------**

: customer satisfaction- customer should not wait for long time.

: any update/changes to the requirement are allowed anytime.

: good cummunication between team members.. Product Owner, scum master, business people, development team, QA team, and all other team members.

: we can develop, test and release a piece of software to the customer with a few numbers of software features in every 2-4 weeks sprint.

**Scrum Team- Roles and responsibilities…**

**--------------------------------------------------------------------------------------------------------------------------------------**

: Scrum is a framework to develop and to test a software product by following agile process.

: Scrum team includes 5-9 members-

**Product Owner**- is a important designation/role in IT industry.

: he is responsible to communicate with clients, stake-holders.

: he will get input/collect data, user requirements, and define/write the features.

: he prioritize the list of features, user stories and adjust them as needed.

: he can accept a work/developed product or reject, if it is not satisfied.

**project manager**- is important role for a project

: he create project plans, allocate resources, manage risks & timelines, and monitor progress.

**scrum master**(a special designation/role)- not from dev or qa team.

: he will facilitate and drive the agile principles/process.

: he will make every people understand the process and make everybody to follow the process.

: he will take care the entire process from the begining to end.

**dev team**- development team will design and develop the software, will do unit testing, integration testing...

**QA team**- QA team test the Software.

**Scrum terminologies-**

**------------------------------**

: "feature" is a high-level description of a functionality, like "online shopping cart,"

: "user story" is a description of user activities on a feature, like "As a customer, I want to add items to my shopping cart."

: epic- A collection of user strories. (product owner prepare user stories and epic).

: product back-log- A list of all user stories for the product. (product owner prepare product back log at the begining stage of agile process. he collects the input from clients then converts them into user stories, then put them as a list in an Excel or any other document, it is called product backlog).

: sprint back-log- List of committed stories by Dev/QA for a specific sprint. (will be decided in sprint planning meeting through out the whole day for all the sprints of the project).

: sprint/Iteration- sprint is a set period of time to complete some particular user stories / tasks. (decided by the productuct owner as well as team).

: sprint planning meeting- a meeting to plan what are user the stories / requirements have to be developed, tested and delivered in the sprint and what will be duration of the sprint.(decided by the whole team Mainly Scrum master, also includes product owner, dev, QA).

: scrum meeting- it is a daily stand-up meeting for 15 minutes. discuss about what we did yesterday, what we gonna do today and what problems/challenges we are facing. conducted and take cared by Scrum Master only.

: sprint review- is a collaborative meeting that is typically held at the end of every sprint to review/inspect the outcome of the Sprint, to review what are the stories we planned, what we completed,all the test cases are executed or not, all bugs are fixed and closed or not !

A sprint review ensures that stakeholders are up to date, and it enables them to provide feedback.

: sprint retrospective meeting- after copletion of the sprint to discuss what went well and what went wrong, what the improvements are needed. only one time after completion of sprint. the entire team including Scrum master and Product owner both. (within team members).

: story point- A rough eastimation of a specific amount of time for specific user stories will be given by dev/qa. (in the sprint planning meeting QA guy say\_ I need this much time to test this much user stories. will be always in fibonacci series(0 1 1 2 3 5 8...).

1 story point = 1 hour or 1 day(6 hours) depends on the company.

example: for user story Login -> dev says I need 5 story points, QA says I need 3 story points.

if 1 point = 1 hour then 5+3 = 8 hours.

: Burndown chart- shows how much work remaining in the sprint. maintained in the graph by scrum master based on the discussion in daily standup.

: scrum board- which contains and tracks the user stories in a board. how many user stories are in TO DO, in Progress, in Testing and how many done. it will be updated on daily basis.

Agile Methodology Process-

: first Product Owner will collect the input(features, user stories) from the clients / stake-holders / customers / end-users.

: then Product Owner will prepare the product back-log(a complete list of user stories).

: then team will conduct sprint planning meeting, in that meeting we will choose the user stories/requirements from the Product back-log.

: then prepare a sprint back-log(a list of committed user stories only prepared by product owner).

: then the sprint will start. in every 24 hours a scrum meeting/daily standup will be in the sprint conducted by scrum master, and scrum master will ask every individual person(what you did yesterday, what you are doing today, what the issues are there)

: based on the discuss/feedback scrum master will prepare Burndown chart in a form of graph. It shows how much work remaining in the sprint.

: once a sprint is complete then we conduct a sprint review meeting to review the outcome of the sprint and we have to show our work/ demo product to the product owner, then product owner might accept or reject our work.

: after that we conduct sprint retrospective meeting and discuss what went well and what went wrong, what the improvements are needed.

\* DoR (Definition of Ready)

: user story is defined

: user story is clear

: user story is testable.

\* DoD (Definition of Done)

: coding is complete for all stories

: all tests are done

: all bugs are closed

\*\* what are the roles and responsibilities in QA\*\*

**Role is a Position and responsibility is a task assigned with the position.**

Software tester/QA Enginner (1-3 years of Experience)

: Understand the requirements

: Deriving test scenarios

: Documenting test cases

: Updating Traceability Matrix Document

: Collecting/Preparing test data

: Creating Test Batches/Test Suites

: Executing Test Cases

: Reporting Defects and Tracking Defects

: Collecting Test Metrics

: Selecting Test Cases for Regression Test

: Executing Regression Tests

: Modifying Test Casess (if required)

Software Test Lead/QA Lead(3-6 years of Experience)

: Understand and Analyzing Test Requirements

: Risk Analysis

: Test Strategy Implementation

: Test Estimations

: Test Team Formation

: Test Plan Documentation

: Configuration Management Planning

: Traceability Document Preparation

: Defining Test Environment Setup/Test Lab Setup

: Guidence to Team Members

: Test Monitoring

: Interacting with Client side people

: Evaluating Exit Criteria

: Preparing Test Summary Report

: Sending Test Deliverables to Customer

Selenium Automation Tester (1-3 years of Experience)

: Selecting Testing Cases for Automation

: Environment Setup for automation

: Inspect Elements/Objects

: Creating Test Cases using Element Locators and WebDriver Commands

: Enhancing Test Cases using programming features

: Grouping Test Cases, Prioritizing Test Cases,

Executing Tests and generating Test Reports using TestNG/JUnit

: Data Driven Testing, Cross Browser Tesing & Database Testing

: Analyzing Test Reslts and Reporting Defects

: Tracking Defects and Select Test Cases for Regression

: Regression Testing on Modified Builds

: Final Regression before sending to the Production

: Maintenance of Automation Resources

: Any other tasks allocated by Test Lead

Selenium Automation Lead(3-6 years of Experience)

Above responsibility + below...

: Design and implement Automation Frameworks

: Involvement in Continuous Integration & Delivery Process

: Closely work with Dev & Product teams to discuss Requirements and solve the issues

: Prepare Automation Metrics and Test Automation Code Coverage

: Suggest improvements on Automation.

QA responsibilities (manual+automation)

**Examples of Agile stakeholders:**

**Internal stakeholders:**

Project manager

Product owner

Business analysts

Development team

Quality assurance team

Senior management

**External stakeholders:**

Investors

Vendors and suppliers

Customers

End users

Sales and marketing teams

Regulatory bodies

**Note :** a customer can buy a product for someone else to use, making that person the end user. Custome also can be the end user.