# ARYABHATTA IT SCHOOL

Wipro -50Cr //1yr

Cybage-80cr//6 months

TCS-60cr//3 months//FB//

**Client-Mark zuckerberg**

**Business team**-Provide all information to technical team

**Technical team-(20 members)**

- *Project manager*-Manage all activities
- *Architecture team*- Design the application
- *Development team*- Develop the functionality
- ***Testing team*- To test the application**
- *Production team*-Deployment
- *Other members*-Devops

**Maintainanece-(4members)**

**Software Testing:-To check application whether is bug free or error free, and provides expected output.**

**Need of testing-**

- *Delievering the quality product.*
- *Satisfying user requirements.*
- *Avoiding customer dissatisfaction.*
- *We get bug free product.*
- *Making software more secure/reliable.*
- *Reducing maintenance cost.*

*Quality-It is defined as satisfaction or justification of all user's requirements in an application*

**Advantages of testing:-**

- *Quality product.*
- *Bug free/error free product.*
- *Client satisfaction.*
- *More business.*

**What is Good tester?**

- *Analytical skills.*
- *Technical skills(Code writing)*
- *Verbal and written communication.*
- *Patient/ Attitude*
- *Productivity(Time saving), Quality product provide.*

1. Manual Testing
2. Automation Testing(Core JAVA+ Selenium Webdriver)
3. API testing
4. Database Testing
5. 2 realtime project

**Class fee-15,000**

**After placement-1 payment**

**Weekly mock interview**

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**DIT-Development Integration Testing**

**SIT-System and Integration Testing**

**UAT-User Acceptance Testing**

**Deployment.**

## SQA(Software Quality Assurance)

- SQA is communication between customer and BA.
- Business analyst is responsible person.
- For software manufacturing or production whatever requirements are necessary BA and customer discussed on it.

Factors discussed in SQA:-

1. To meet customer requirement:-
   Domain selection, requirement decide.
   - Telecom domain-
   - Banking domain-
   - Pharma/Healthcare-
   - Ecommerce-
2. To meet customer's Expectations:-
   - Whatever be the facilities provides by customer, BA should discuss with company.
   - Performance and security.
3. Costing of project:-
   - Total amount of expenditure required for making the software is include in costing.
   - Minimum time period with minimum cost should be preferable.
4. Time period/Duration:-
   - Time duration plays an important role.
   - Cycles in time period required to manufacture application in fixed time duration.
5. Escalation/Penalty:-
   - If company excceds time period of project then company has to be paid penalty accordingly.

6. Maintenance/Support :-
    - Service  provided by the company after the delievery.
    - Technical or non technical.

## ***SDLC/PDLC(Software/Program Development Life cycle)***

- It is generalized process.
- This  model is used for developing software application.
- Different types of stages available:-

***1. Information Gathering:-***

*-BA is responsible person*

-BA gathered all information from client.

-BA will prepare document called BRS(Business required specification).

-BRS contain overview of project.

Eg-Facebook-Login, homepage, chat, notification, friends, logout.

***2. Analysis:-***

-BA will prepare another document call SRS(Software required specification)/FRS(Functional requirement specification).

-SRS contain detailed information of project.

-SRS is made with reference of BRS.

-Each and every functionality is elaborated.

-SRS contains-

a)**Functional requirement**-Whatever be the requirement and each functionality that present is SRS.

Eg-Login, Logout, Profile upload, etc.

b) **Functional Flowchart-**Step of execution of functionality present in flowchart.

Eg-

1)Open flipkart

2)Login

3)Search product

4)Select and add to cart

5)Provide address

6)Payment

7)Logout.

**c)Graphical representation/Snapshot-**

-Pictures/Screenshot.

-It is a visualization of functionality of application.

-It is an approval taken from clients to proceed further/next.

**3. Design-**

-Architecture focused on design of functionalities and designed with the help SRS document.

Two types of Design-

1)*High level design*-

-Architecture is responsible person.

-Main functionality/Regularly/Main modules used functionality that considered in High level design.

Eg-Homepage, Logo, Search bar, Cart value, etc.

2)*Low level design-*

-UI developer is responsible person.

-Frequently used functionality/Sub modules that includes in low level design .

Eg-Contact us, About us, Policy, Help, etc.

**4. Coding/Development-**

-Developer is responsible person

-Two types of Development.

1)*Front end development*

-UI developer is responsible person.

-Front end like that are functionality mostly visible to client/User.
Eg-Amazon logo, Search bar, Flag, Languages, homepage, etc.

2)*Back end development*-

-DBA(Database administrator) is responsible person.
-Data like, User accounts, Credentials saved.

**5. Testing-**

-To check application whether it is bug-free or error free and provides expected output.

-Tester responsible person.

-3 types of testing

a)**WBT-White Box Testing**

-Developer is responsible person

-Unit level testing.

-Coding knowledge is required.

-Developer will focused on positive scenarios.

b)**BBT-Black Box testing**

**-**Tester is responsible person.

-System and functional testing.

-Coding knowledge is not required.

-Both +ve and –ve scenarios focused.

-All types of testing has been performed.

-To check internal functionalities depends upon external functionalities.

Eg-MS word operate by externally, If we mute video call by clicking externally on mute button.

-If we get bug we will report to developer.

c)**GBT-Gray Box testing**.

-It is combination of WBT+BBT.

-Tester is responsible person.

- Both +ve and –ve scenarios focused.

-Coding knowledge is required.

-If we found any defect, then GBT tester will fix it at its level.

**6. Maintenance/Support-**

- Service  provided by the company after the delievery.
- Technical or non technical.

## Waterfall methodology

-It is step by step implementation of SDLC.

-Duration -3 months.

-It can not revert back to previous stage.

-each stage depends upon previous stage.

-If we found bug in testing, it will resolve after the cycle/duration.

-Mostly used in Product based company.

There are 6 stages involved in SDLC-

**1-Information Gathering**

**2-Analysis**

**3-Design**

**4-COding/Development**

**5-Testing**

**6-Maintainance**

# Agile Methodology

1-Kanban(5% company)

2-**Scrum agile**(95%company)

3-xp(Extreme programming)

4-Crystal

5-DSDM(Dynamic system Development Method)

**Agile Scrum:-**

- Sprint/Duration 1-4weeks.
- RFC/CR we can implement at any stage of project without any cost.
- Productivity increased because time duration decreased.
- It is used in product as well as service based companies.
- It can revert back to previous stage and we can contact to anyone in organization.
    - ❖ Stakeholder –Client
    - ❖ Product/Project owner(PO)-Business analyst
    - ❖ Scrum master-Project manager
    - ❖ Product backlog-BRS
    - ❖ Sprint backlog-SRS
    - ❖ Sprint-Duration
    - ❖ User stories-Functional requirement

# Architecture of Agile Methodology

**Stakeholder**

**Product owner**

**Product backlog**

**Estimation**

**Sprint backlog (User stories)**

**Test case design**

- **Stakeholder-(Client/Customer):-**

  -He is main member of organization and top most body of organization.

  -Provides bunch of requirement to Product owner.

  -At any phase  stakeholder can contact and requested for change.

- **Product owner(Business analyst):-**

  -Gathers all requirement from stakeholder.

  -PO is the host of Estimation/Sprint planning meeting.

  -After getting all req product owner prepare Product backlog.

- **Product/Project backlog:-**

  -Product backlog contains overview of total requirement.

- **Estimation(Sprint planning meeting):-**

  **-PO** and **Scrum master** are host of Estimation.

  **-**Held before every sprint.

  -Choose specific requirements among all requirements for specific module.

  -**PO, Scrum master, Development team, Testing team**, other team member.

  -Estimation is a sorting of requirements to development of module.

  -Estimation is process of how to deal with problems when obstacle comes.

  -Estimation contains 3 factors-

  1) **Knowledge:-**After team formation, each member should have knowledge about domain.

  2) **Efforts:-** 160hrs per months, no of requirements completed in how much efforts.

  3) **Complexion/Complexity:-** less knowledge, time**,** any queries.

- **Sprint Backlog:-**

  -Sprint backlog made by Product owner.

  -Sprint backlog contains user stories.

  -Sprint backlog contains detailed information of requirement which are required for development of module.

  -Collection of user stories.

- **User stories:-**

  -User stories are nothing but functional requirements.
  -User stories are get decided into Estimation.
  -User stories are nothing but description of s/w features.
  -These are type of users and what they want.
  -Description and acceptance criteria.

- **Test case design:-**

  **-**Test case are designed by Tester.
  -Test cases are prepared a/c to user stories.
  -Testing strategies has been finalized.

***Ceremonies/Meetings of Agile.***

**1) Estimation:-**

**-**Time duration-2-4hrs

**-PO** and **Scrum master** are host of Estimation.
**-**Held before every sprint.
-Choose specific requirements among all requirements for specific module.
-**PO, Scrum master, Development team, Testing team**, other team member.

-Estimation is a sorting of requirements to development of module.
-Estimation is process of how to deal with problems when obstacle comes.
-Estimation contains 3 factors-
1) **Knowledge:-**After team formation, each member should have knowledge about domain.
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**2)Daily standup call:-(DSM)**
**-**Duration -15 minutes.
**-**Scrum master is the host of daily standup call.
-Scrum master, Development team, Testing team, and other team member(Optional).
-Daily updates has been shared.
-Tracking and progression project has discussed.
**i)What we did yesterday?**
**ii)What should we do today?**
**iii)Any blockers?**

**3)Sprint Review:-(Demo meeting)**

**-**Duration-30-60 minutes.

**-**Stakeholder**,** Product owner, Scrum master, Development team, Testing team, and other members.

**-**Sprint review done at the end of the sprint by achieving the milestone.

**-**This is the time for team members to celebrate this accomplishments, demonstrate their work and get immediate feedback from stakeholder.

**-**Overall description has been by scrum master.

4)**Retrospective meeting:-**

**-**Duration-60 minutes.

**-**Held at the end of sprint.

**-**Product owner, Scrum master, Development team, Testing team, other team members.

**-**Agile is getting rapid feedback to make product well and good.

**-**Retrospective helps to understand what worked well, what were queries and obstacles are come in project.

**-**Retrospective are not just a time for complaint Without actions**.**

-Continue development/Improvement is what to sustain and drive development within agile.

**5) Project Kick off meeting:- 30 minutes.**

**6) Sprint health check meeting:- 30-60 min**

***Advantages of Agile:-***

1-**Daily standup call:-**

-Duration-15 minutes

-Scrum master, Development team, Testing team, other team member

-i)What we did yesterday?

ii)What should we do today?

iii)Any blockers?

-Project progression, Tracking of project.

2-**Check points:-**

-After some block of code, checkpoints are added for easy resolution and testing.

3-**Implementation in Automation:-**

-Minimum time,Less resource

-More accuracy, Effective

4-**Sprint-wise delievery-**

-In agile, sprint=1-4 weeks.

-So if module completes within sprint, it can directly deploy to production.

-it is also called as module-wise delievery.

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## Sanity Testing:-

- Build verification testing.
- Zero level testing.
- Tester acceptance testing.
- It is one day activity.
- QA will check build is stable or not
- Without sanity we can not proceed for next.
- We check Showstoppers. Rather than defect.
- Eg-error 404, page not found, service unavailable.
- Tester focus on validations:-

**1-*Basic core functionalities***

- Eg-Logo, tabs, icons, buttons.

**2-*Tab validation***

- Whether tab are interlinked or connected with each other.

- Eg-In Amazon mobile tab shows result for mobile, fashion shows result for fashion.

***3-Link validation***

- linking of functionalities.
- We check flows.
- Eg-During recharge, flow should be slect perepaid/postpaid-Mob no-Operator-Plan-Payment

***4-Page validation***

- Navigation testing.
- Eg-in online exam if we can navigate from 1st question to 5th questions.

***5-GUI validation(Graphical user interface)***

- We test interface which we interact directly;
- Verify logo, fonts, spelling , images, etc.

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## System and Functional Testing(BBT):-

- Responsible person-Tester.
- We check on SIT environment. We verify and validate the functionalities.
- After sanity we perform BBT.
- Both positive and negative scenarios will be focused

- All types of defects we logged here.
- Coding knowledge is not required.
- To check internal functionalities depend upon external functionalities.
- After Integration testing and Sanity testing we perform BBT.
- 1-Functional testing
- 2-Usability testing

### *i. Functional Testing:-*

1-Functional coverage:-

- We verify and validate the functionalities whether it is bug free.
- To check internal functionalities depend upon external functionalities.
- We check on SIT environment.

**1) Behavioral coverage:-**

-We check behavior and properties of functionalities, whether clickable or not.

Eg-If few insert textbox into MS word it should be clickable and editable.

2) Input domain coverage

**3) Back end coverage**

-whatever information we provide on front end that will stored in back end

-We check entered information on UI or front end that stored in back end correct or not/Verify.

-For every software there is a database.

-Eg-While creating/ Sign up for FB, we provide information like, FN, LN, DOB, etc, that will stored in back end.

**4) Error handling coverage**

**5) Service level coverage**

**6) Calculation based coverage**

2-Non functional coverage:-