Manual Testing

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* Software Testing -
  - software testing is a process to check completeness and correctness of functionality of application as per client requirement.

* SDLC (Software Development Life cycle)
  - SDLC has 6 stages

1) Information / Requirement collection
2) Analysis
3) Design
4) Coding (Development)
5) Testing
6) Maintainance

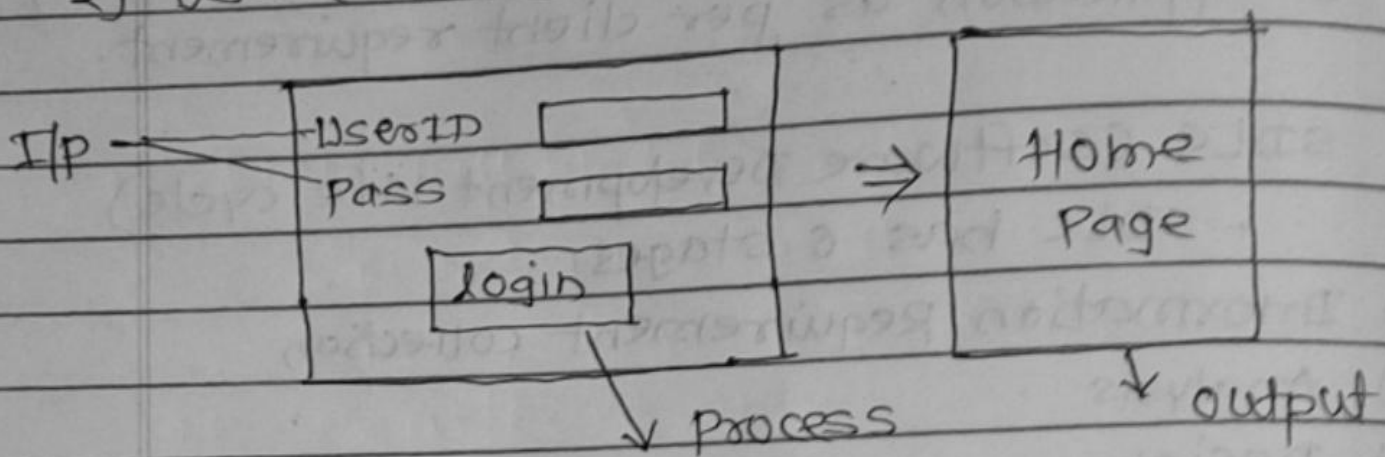
1) Information / Requirement collection →
   - Business Analyst (BA) collects requirement from client for developing software
   - This document is called as Business Requirement specifications (BRS)

2) Analysis - (Software Requirement specification)
   - BA converts BRS into SRS.
   - SRS document defines functional requirements to be developed.

Contents of SRS

1) Functional Requirements

2) Use cases → I/P, process, O/P



3) Snapshots.

3) Design ⇒
- Design team prepares design of application, it is called as Mockup.
- Design prepared by design architect or solution Engineer.

4) Coding / Development ⇒
- Development team is involved in this stage.
- Front End development
- Back End development

5) Testing ⇒

→ White Box Testing [WBT] →
- To check completeness & correctness of program
- Performed by developers.

→ Black Box Testing [BBT] →
- To check completeness & correctness of functionality of software.
- performed by tester
- Here we check positive & negative scenarios.
- This is also called as Functional

→ Gray Box Testing
- Black Box Tester having knowledge of coding.

6) Maintainance ⇒
- After giving application to client, if there is any issue in application, it is fixed under maintainance.

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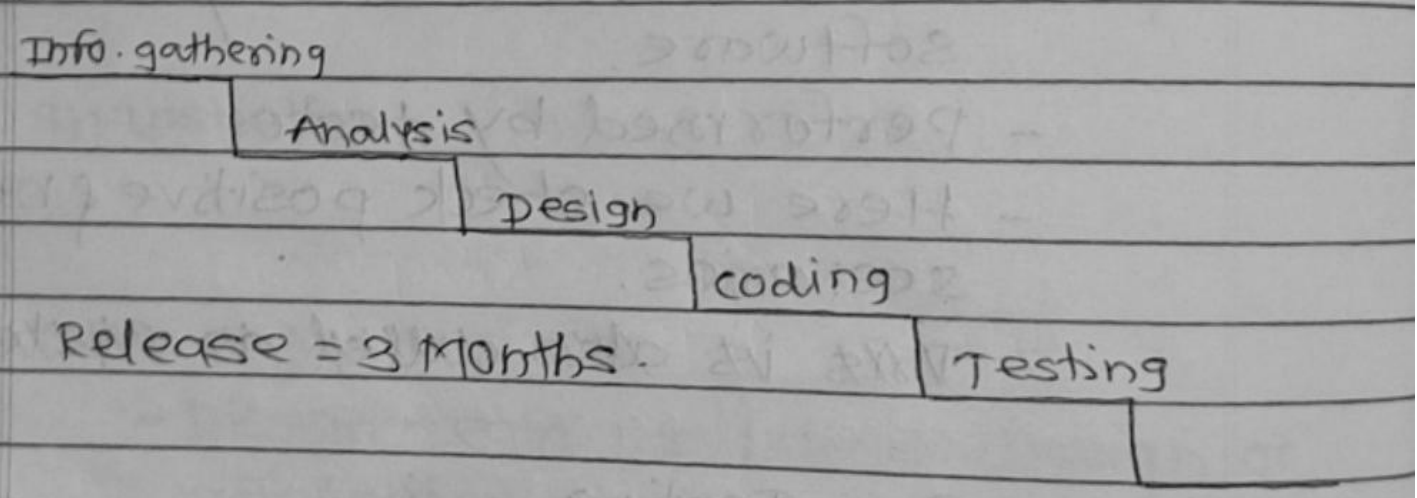
* SDLC Approaches ⇉
1) Waterfall Model
2) Agile Methodology

1) Waterfall Model ⇉
- Waterfall is a step by step process.
- Every stage is performed sequentially i.e. one after another.



- During testing, if any defect is found, it is logged and fixed in next release.

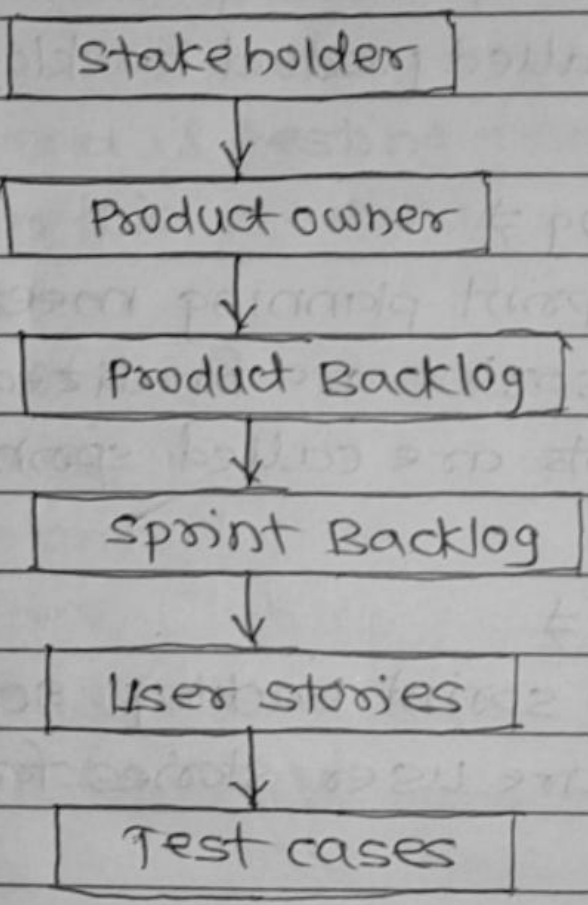
Waterfall is used when -
- Requirements are very well documented and clear.
- There is no change in requirement.

Disadvantage ⇒

→ Unable to see any working software during 3 Months.

→ Difficult to measure progress within stages.

2) Agile Methodology ⇒



BY Estimation Process

- Change in requirement is allowed in Agile but if it doesnot affect on development, testing and production.

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Stakeholder ⇒

- Stakeholder is top most element in agile,
- He has set of all requirement.

Product owner & Product Backlog ⇒

- Product owner collects requirement for project from stakeholder.
- Those complete requirement for project are called product backlog.

Sprint Backlog ⇒

- In sprint planning meeting, requirement for sprint are finalized, those requirements are called sprint backlog.

User stories ⇒

- from sprint backlog, scrum master prepare user stories for that sprint.

Test cases ⇒

- from user stories, we-test engineer prepares test cases.

* Sprint Planning meeting ⇒
  → In this meeting, requirement for sprint are finalized i.e. sprint backlog.
  → Requirement for sprint are finalized depending on
    → Client's priority
    → Efforts required
    → Resources available.
  → Product owner, scrum master, dev. team lead & testing team lead participate in this meeting.

* contents of User stories ⇒
  - summary
  - Acceptance criteria
  - Assignee
  - Test Engineer
  - story point

* Advantages of ~~Sprint~~ Agile ⇒
  - Change in requirement is allowed
  - Sprintwise delivery

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* Test cases ⇒ [How to test?]
  - We are creating test cases in excel sheet.
  -

Sr. No.	User story	Module	Test case	Test steps	Test Data	Expected Result	Actual Result	status

* Smoke Testing (Build verification Testing)
  - This is first testing performed on application
  - Here we are checking
    - Basic core functionalities
    - Tab navigation
    - Link validation
    - Page validation
  - If smoke testing is passed, we will continue further testing.
  - If smoke ~~test~~ testing is failed, we will reject build.

* Functional Testing (System Testing) ⇒
- Here we are use to check all functionalities with respect to client requirement.
- Functional testing is also called as system testing.
- Functional testing is major part of testing. During this testing, we verify completeness and correctness of functionality with respect to customers requirements.
- In functional testing, we are ~~verifying~~ checking few coverages.

1) Behavior coverage ⇒
- Here we check behavior of each element.

Element	Behavior
Text BOX	focus / unfocus
Radio Button	ON / Off
Drop down	List should be displayed
Check Box	Check / Uncheck
Button	Enabled / Disable

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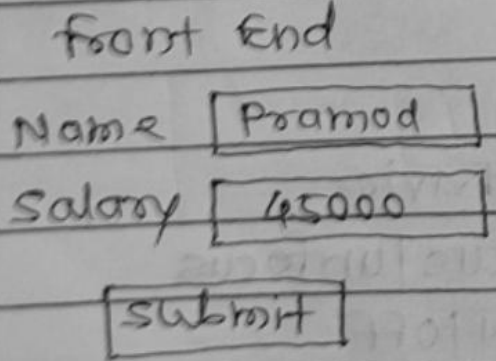
2) Input Domain coverage ⇒
- Here we check size & datatype of I/p.
i.e. BVA and ECP
BVA - Boundary value Analysis
ECP - Equivalance class Partition

3) Backend coverage ⇒
- Here we check front end information is saved database or not [using SQL]
- Here validate impact of database on front end operation.



4) Error Handling coverage ⇒
- Here we are checking error message is displayed or not.
- This is for checking prevention of negative navigation.
- Tested for valid & invalid data.

5) Calculation Based coverage ⇒
- Here we check arithmatic calculation.
eg.

Price	10
Qty	02
Total	20

6)

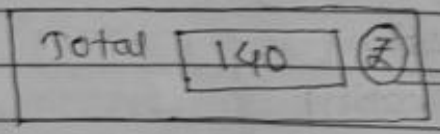
* Non-functional Testing ⇒
- After completion of functional testing we are going for non-functional testing.
- Different Non-functional testings are
1) Recovery Testing
2) compatability Testing
3) sanitation Testing
4) Responsive Testing
5) Performance Testing

1) Recovery Testing
- During this testing we check wheather application recovers from abnormal situation to normal situation or not.
eg- Downloading PDF
- Banking application

2) Compatability Testing ⇒
- Here we check wheather application works as expected on customer expected platforms or not.
- Here we are checking application on diff browsers, so it is called browser compatability testing.
eg. firefox, chrome, Edge

3) Sanitation Testing ∃ (Garbage Testing) ⇒
- Here we check ~~wheather~~ or find out extra features which are not part of requirement.

eg.



→ Not mentioned in required, but added by developer

4) Responsive Testing ∃
Here we check responsiveness of application at diff. zoom levels
eg. 75, 80, 90, 100, 110, 125%.

5) Performance Testing ⇒

- In Performance testing, we are giving load on application & checking its performance.
- Here load & stress testing is done.

Loading Testing ⇒

Load Testing ⇒

- Here we are applying load in terms of users (eg. 100 users) and checking performance of application.
- This is performed on JMeter tool.

Stress Testing

- Here we are applying load on system and checking performance of application.

eg.

* Retesting and Regression Testing:

- After fixing defect, we get modified build for testing.

- "To check that the bug is fixed or not on modified build is called Retesting."

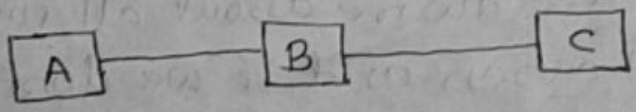
* Regression Testing ⇒

- "Regression testing means testing on modified build to ensure bug fix and to ensure side effects of bug fix."

Regression Testing occurs twice

- During functional Testing
- After functional testing / Before UAT

- During functional Testing ⇒



If we find defect in module B, then we have to perform regression on modified build to check bug fix on module B and also check side effect on module A & C.

- After functional Testing / Before UAT ⇒

- We are going to start final regression before build goes to UAT.

- In regression testing

1) All failed test cases are tested again
2) All high priority test cases are tested
3) All medium priority test cases are tested
4) Testing team do not require to create test cases for regression testing.