SDLC Models

-There are various software development life cycle models defined and designed which are followed during software development process. These models are also referred as "Software Development Process Models".

-Process for software development are as below

1. Waterfall Modell / Linear Sequential Model / Traditional Model
2. Spiral Model
3. V Model
4. Prototype Model
5. Agile

V Model (Verification and Validation model)

-V model stands for verification and validation model

-V model is that model in which development and testing stages are mapped parallel.

-In V model, if one stage get completed and second phase is running and changes occurred in 1st phase then we can revert back to the 1st phase by paying some amount.

-This can be used in medium size projects where the projects duration is 3-4 months. But when we use the V model , the Testing is done in parallel with the Development phase .

- V model is an extension of waterfall model with testing involved in each phase

-So as soon as the project development starts , testing also starts

Left hand side will be similar to Waterfall model and in right hand side testing associated.

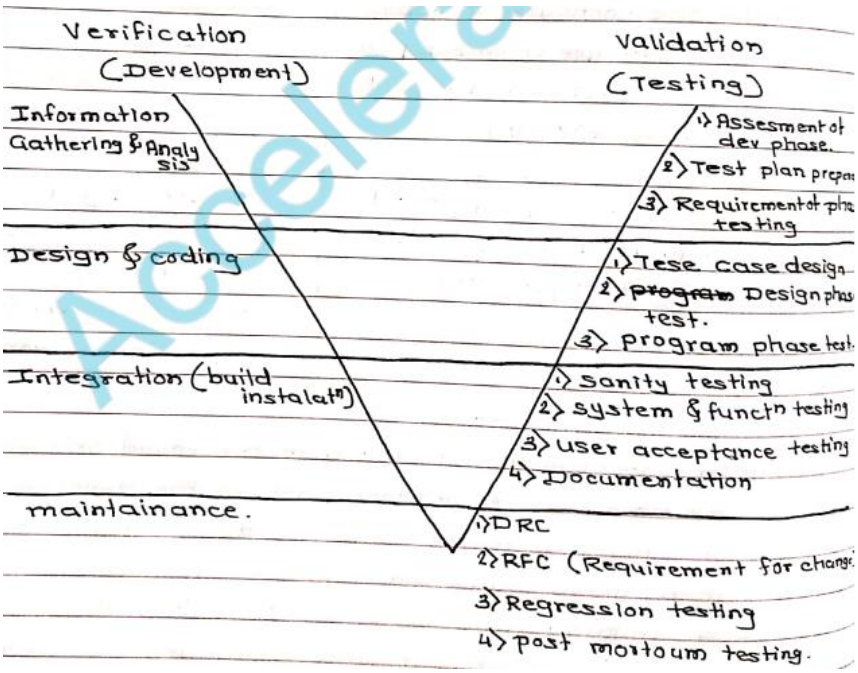
-In the V-Model software development life cycle different steps are followed however here we will taking a most common type of V-model example. The V-model typically consist of the following phases:

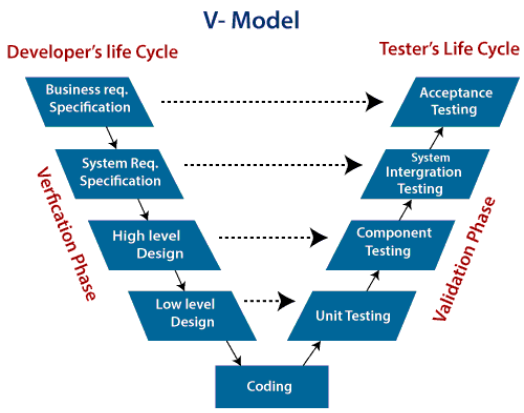
1. Unit Testing: Preparation of Unit Test Cases

2. Integration Testing: Preparation of Integration Test Cases

3. System Testing: Preparation of System test cases

4. Acceptance Testing: Preparation of Acceptance Test Cases





Information Gathering and analysis-

1.Assessment of dev phase-

-In this phase, strategy make for testing

-Planning done for which methodology for test like automation or manual testing is going to use.

-Test Responsibility Matrix(TRM) is get finalized

2.Test Plan preparation-

-Lead or PM implement TRM

-PM prepare test team

-PM/Lead distribute task or work to all team members

-In planning - estimations and resource planning done. Estimation like which resource will work and till when that resources need to work on one requirement is estimation

3.Requirement of phase testing-

-Phase means unit

-In this part estimated requirement for phases are finalized. Example- Paytm continuously introduce new modules like donations. So these are new product so these requirements got estimated.

Design and coding-

1.Program phase and design phase testing-

-Phase means code testing

-This starts from small unit of program

-Developer involved in it

-This is like white box testing

2.Design Test Case-

-Test case design goes in two parts.

-one part is +ve testing and second is -ve testing

-They decide scenario of testing and according to that they will write test case and execute test case.

-Testers are involved in it.

-Here mostly black box testing involved.

-From SRS document testers decide test scenarios and test case.

Integration (Build installation)-

1.System and functionality testing-

-After sanity testing, this testing happens.

-Black box tester is responsible for it.

-Here all the functionality checked as per SRS

-Testing done with +ve and -ve testing.

-Small defects to large defect get documented

2.User Acceptance Testing [UAT]

-After removing defects in system and functionality, product now move to UAT.

-In functionality testing product get validated

-In UAT product deployed on UAT server or we can say on stage server where client can review the requirement.

-Tester and client/user both involve in testing

-When user validate it as correct then only product send to the production server.

3.Test Documentation-

-Test documentation is report of testing.

-Once the testing completed then tester make document for testing i.e. report also we can say.

-Tester send this document to the team leader or sometimes to complete team.

-Team leader send this document to PM and PM send to customer.

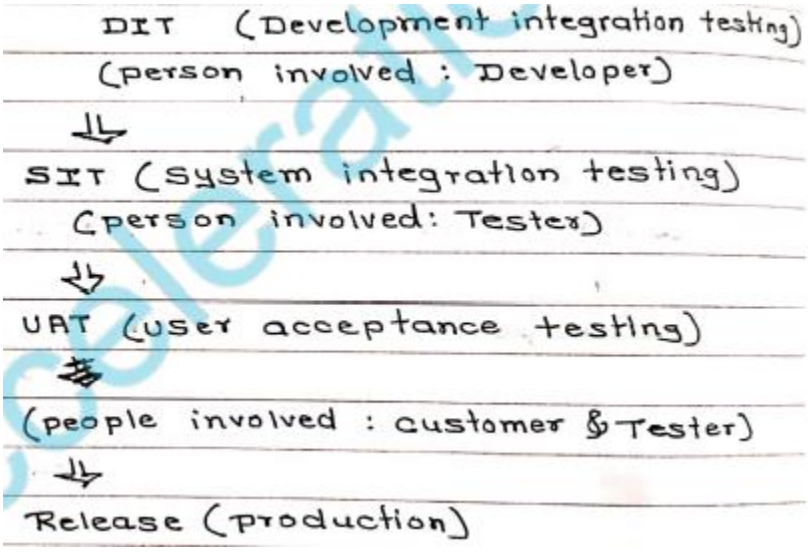
-This document includes-

Name of module.	Execution	pass	fail

Maintenance

1.Defect Removal Efficiency-

We have 4 phases of testing environment-



-In DRE we get to know at which level tester did the testing

-There are 2 phase on DRE-

A-Defect found by tester

B-Defect found during UAT

-When tester found bugs then some bugs can be cancelled/rejected so only solved bugs get into the consideration-

-Example-

Suppose There are 100 bugs and only 90 bugs get solved then 10 bugs get cancelled / rejected.

In UAT,customer found 10 bugs.

Now DRE Formula,

DRE = A / (A+B)

= 90 / 90+10

=.9

DRE	Remark
0.8 to 1	Good testing
0.5 to 0.8	Avg testing
below 0.5	below Avg

Request for change

-If customer want some changes in his product at release time then we can say it's a change or improvement or enhancement.

-The changes are marked in SRS with RED color and mentioned as change request "CR"

-Customer need to pay extra amount for this.

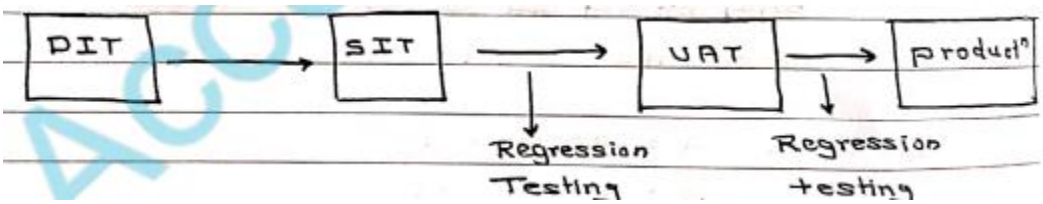
Regression testing

-Testing of the complete functionality of an application is regression testing

-Here we do the basic functionality check.

-Testers performed the regression testing.

-We have 4 environments/servers so we do regression once the code move from 1 server to other to make sure everything works well.



Post Mortem Testing

-It’s a work of white box tester

-When whole testing is done and product ready for production and if product does not produce desired output then white box tester should have to check all the modules in details.

-Example-

Suppose we order something from online site and then we get an order ID but some problems happens like we get order id but order fails. So there is problem in system then tester have to test all the functionality again

Advantages of V Model:

1.Requirements changes can be easily handled
2.Cost of rework after fixing a bug is greatly reduced because testing activity starts simultaneously
3.Easy to Understand.
4.Phases do not overlap

Disadvantages of V Model :

1. Testing team is needed initially so company needs more resources
2.If any changes happen midway, then the test documents along with requirement documents have to be updated.

When to use VV Model :

The V-shaped model should be used for small to medium sized projects