

28/07/2020

(12:50pm - 3:00pm)

Q. SPIDER

Miss. Ramya

S/W → Test Eng

Subject: MANUAL TESTING

SDLC : SOFTWARE DEVELOPMENT LIFE CYCLE

SDLC is an individual & independent

What is SDLC?

Def :: Step by step "procedure" to develop a software.

STAGES OF SDLC

- * Requirement Collection
- * Feasibility Study / Analysis
- * Design (HLD & LLD) High Level Design / Low Level Design
- * Coding
- * Testing
- * Installation
- * Maintenance.

- D) Waterfall Model
- 2) Spiral Model
- 3) V & v Model (Verification And Validation) 
- 4) Prototype Model
- 5) Hybrid Model
- 6) Derived / Customized Model
- 7) Agile Methodology 

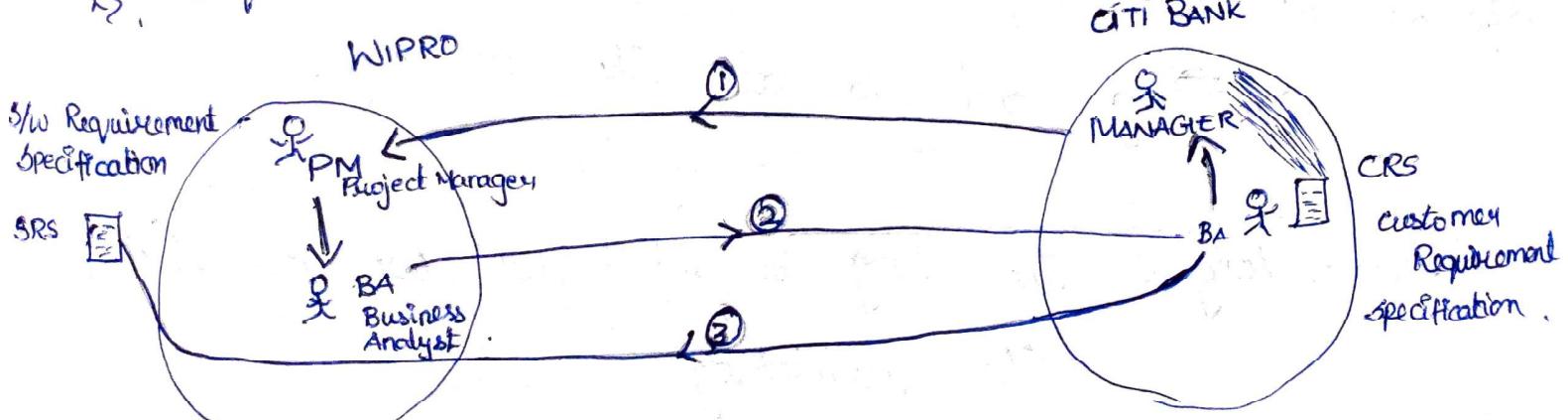
WATERFALL MODEL :-

It is a step by step procedure to develop a

software

REQUIREMENT COLLECTION :

- 1) Requirement collection is the first stage.
- 2) Requirement collection is done by business Analyst / Product Analyst.



BUSINESS ANALYST:

Business Analyst is the one who collects the req from the customer and prepares CRS later he converts CRS into SRS.

Explanation of Diagram:

- Step 1: Manager of citi bank calls project Manager of Wipro
- Step 2: project Manager sends BA to the customer place
- Step 3: BA will approach the citi bank Manager.
- Step 4: Manager will explain his requirements in business lang to the BA
- Step 5: BA creates CRS (Customer Requirement Specification).
- Step 6: One copy of the CRS will be given to manager of citibank.
- Step 7: BA comes back to WIPRO & converts CRS into SRS.
- Step 8: BA will explain the complete req to all the dev eng and to all the test eng.

Software Lang.: The Lang in which we use all the S/w terminologies.

NOTE :-

BUSINESS LANG:-

The Lang in which we use all the business terminologies.

eg.: BANKING DOMAIN :- (saving a/c, interest, recurring deposit, loan....)

HEALTH CARE DOMAIN :- (x-ray, cardiologist, MRI, icu....)

SOFTWARE LANG:-

The Lang in which we use all the s/w terminologies.

eg.: (Text box, Command Button, link, checklist, server,....)

JOB OF BUSINESS ANALYST:-

Understands Customer requirements and Converts the

CRS into SRS.

Who Can become an Business Analyst??

* One Who is Very Good in domain (Business)

* Domain Expert

* A person having Continuous Experience in the particular Domain

In real time 60% of the projects we have business Analyst, 40% of the projects we don't have Business Analyst. ???

for the rest 40% of the project who can become BA??

* Senior Developer

* Senior Test Engineer

How To Convert CRS Into SRS :

CRS

OD, INT And the
Activation fee
should be added
and the Total
amount should
be displayed.

SRS

OVER DRAFT	20,000
INTEREST	200
ACTIVATION FEES	250
TOTAL	20,350

NOTE:-

PRODUCT ANALYST:-

The person who collects the req from the product based company we call them as product analyst.

BUSINESS ANALYST:-

The person who collects the req from the service based company we call them as business Analyst.

ex of service based Company :-

TCS

WIPRO

TECH M

ACCENTURE

ex of product based Company :-

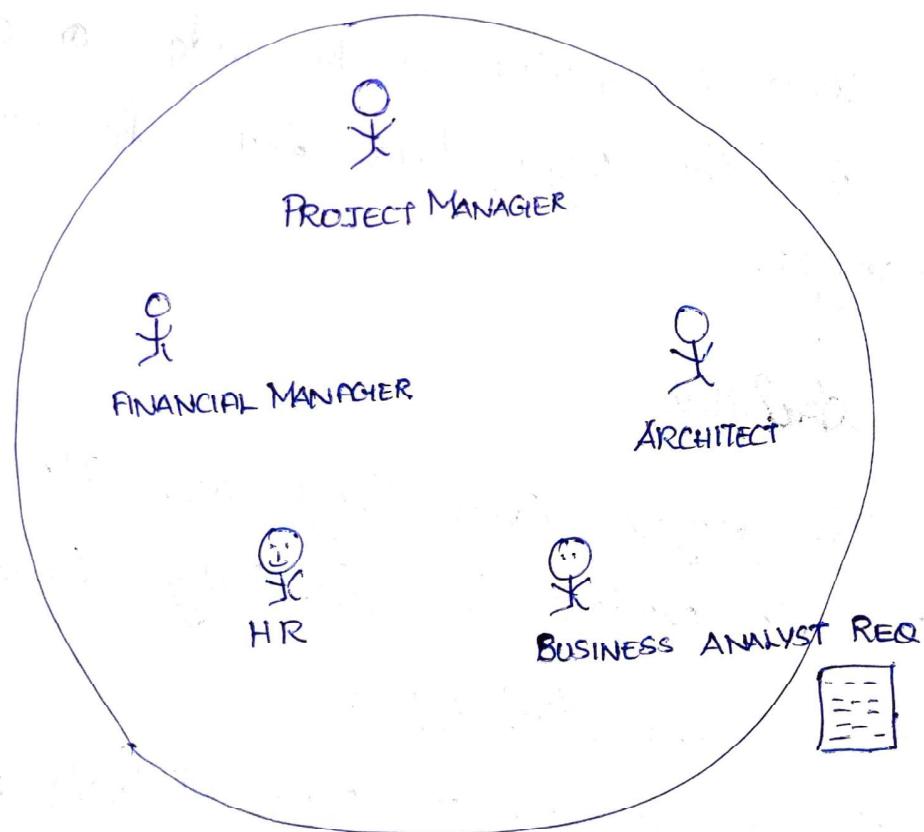
APPLE

MICROSOFT

SAMSUNG

HCL

FEASIBILITY STUDY / ANALYSIS :-



Here they decided whether to accept or to reject the project.

Job of Project Manager:

- 1) Starting from req collection till launching of the product inbetween if any problem occurs he will be held responsible.
- 2) He is the one who decides whether to accept the project or to reject the project.

Who can become an Project Manager?

A person who is having a knowledge on all the designations in the organizations, then he can become a Project Manager.

Job of an Architect

As soon as the project comes they are the one who decides whether the project is technically feasible or not.

Who can become an Architect??

A person who has worked on many Technologies can become an architect.

Job of an HR?

HR is the one who takes care of the resources and decides whether the resources are available or not.

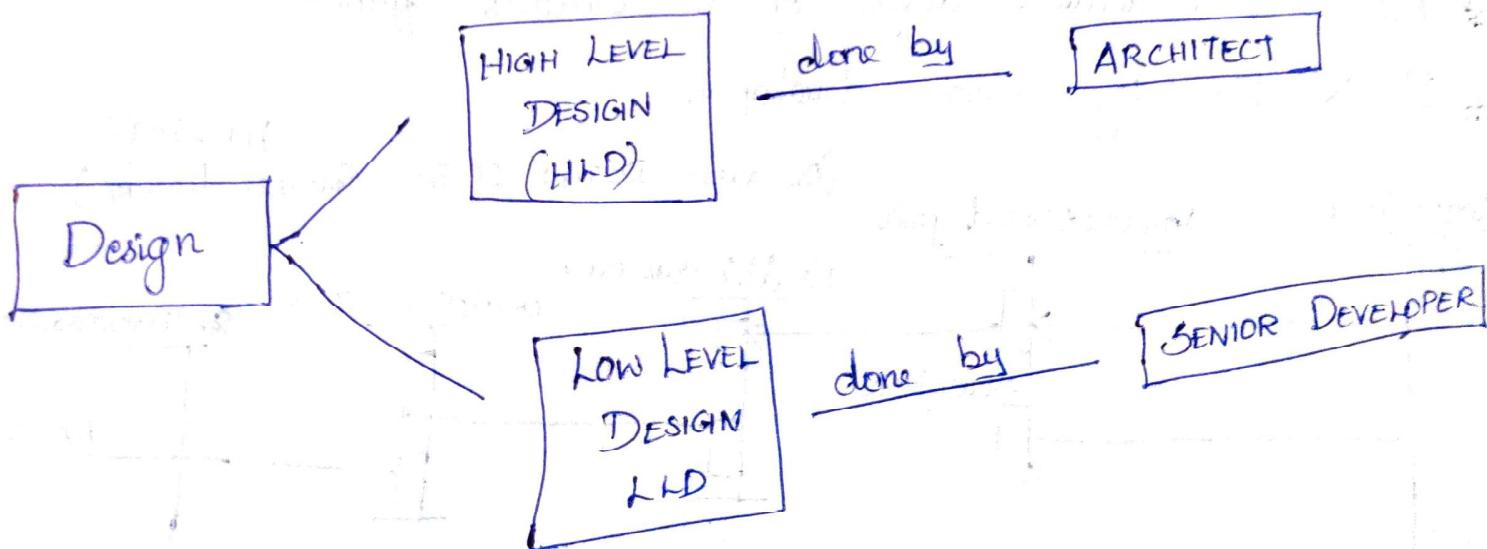
Job of Finance manager?

He is the one who decides whether the project is profitable or not.

29/07/2020 (10:00 am - 12:00 pm)

DESIGN

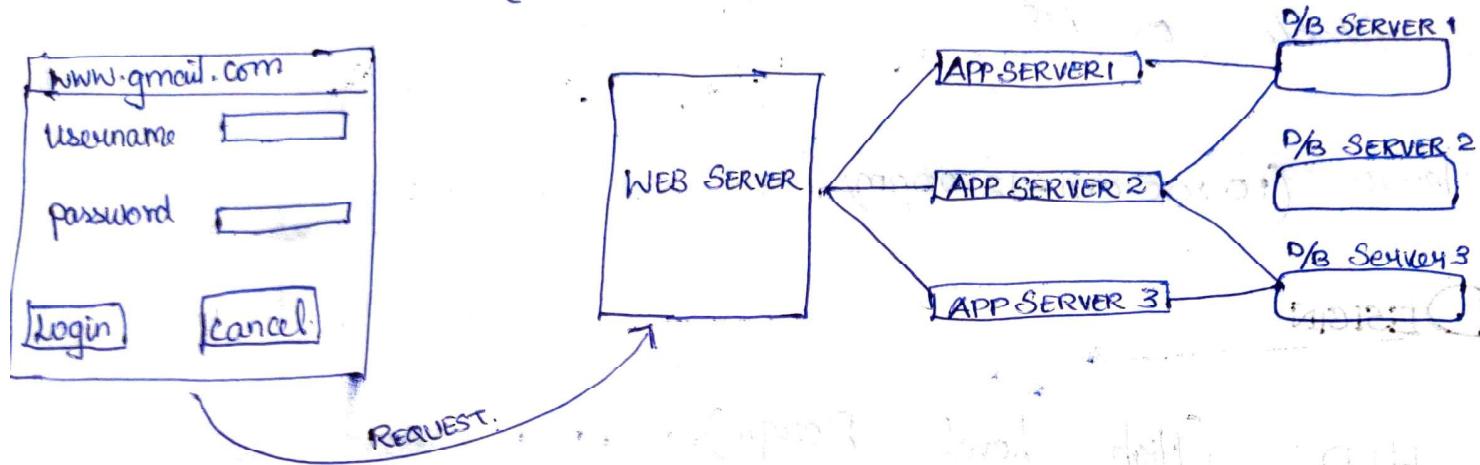
- * HLD (High Level Design)
- * LLD (Low Level Design)



► High level Design :-

- * It is design of architecture of the Software.
- * It is done by architect.

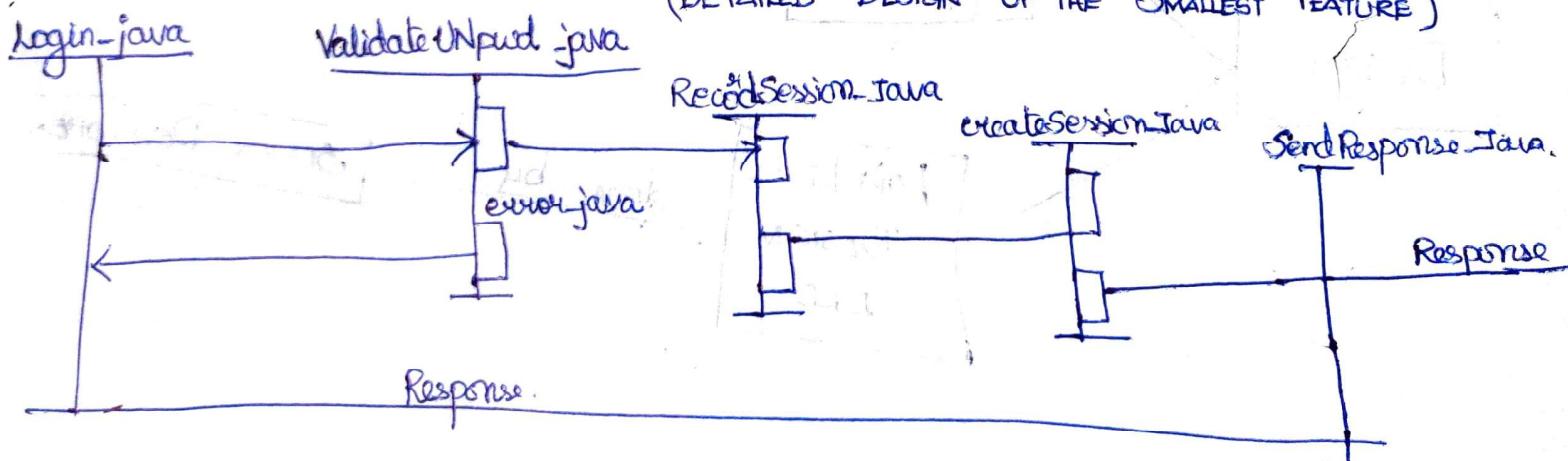
High Level Design (ARCHITECTURE OF THE SOFTWARE)



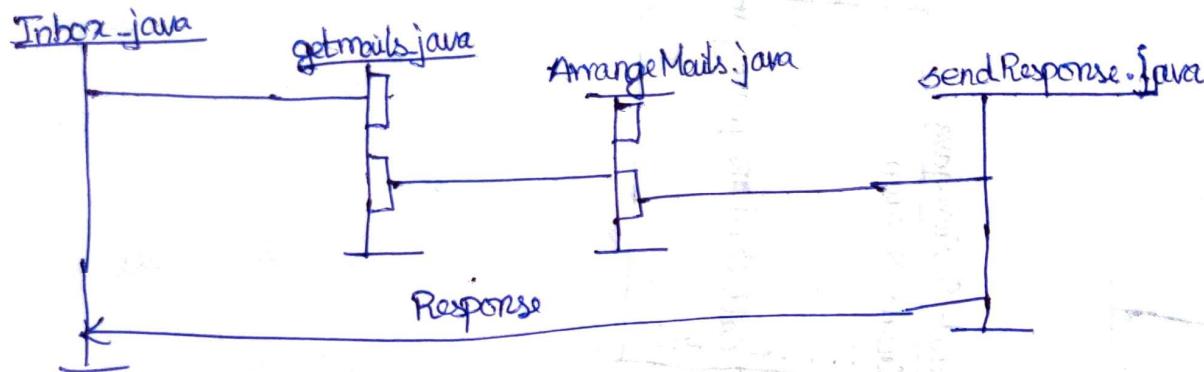
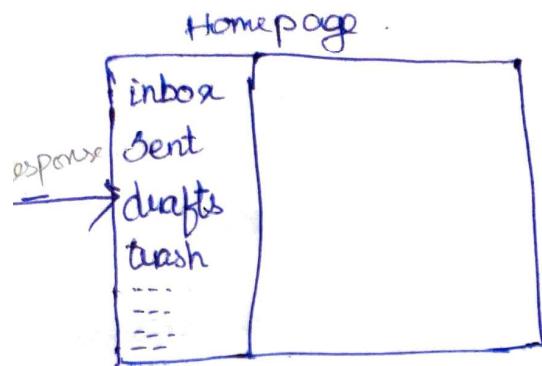
LLD Low LEVEL DESIGN

- * LLD is the detailed design of the smallest feature.
- * It is done by senior developer.

(DETAILED DESIGN OF THE SMALLEST FEATURE) LLD - Login.



In LLD they are just designing the code not writing

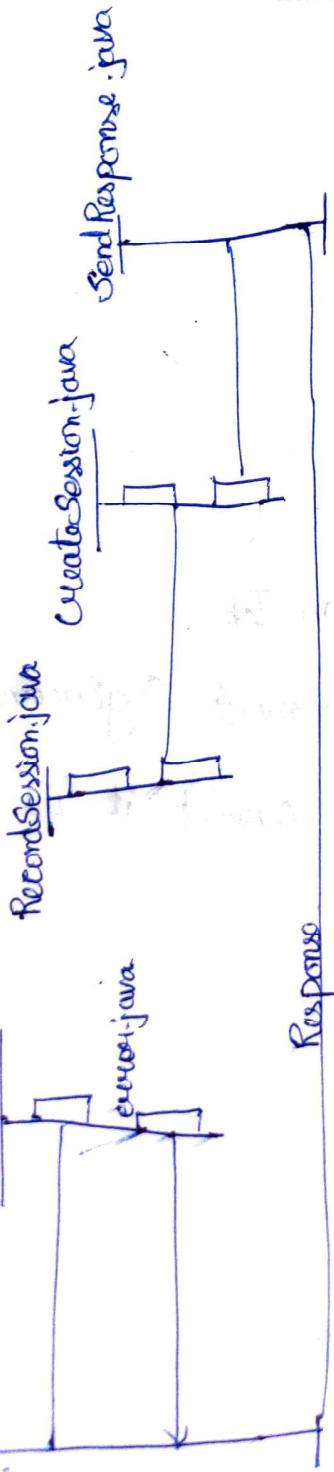


CODING :-

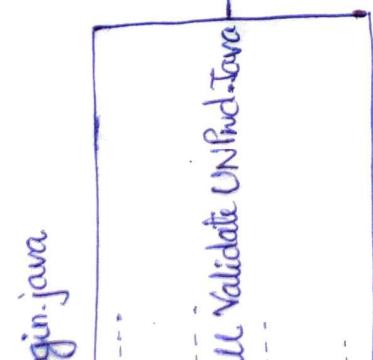
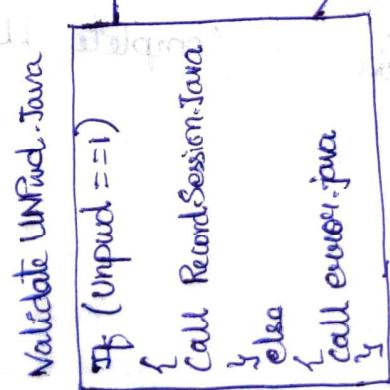
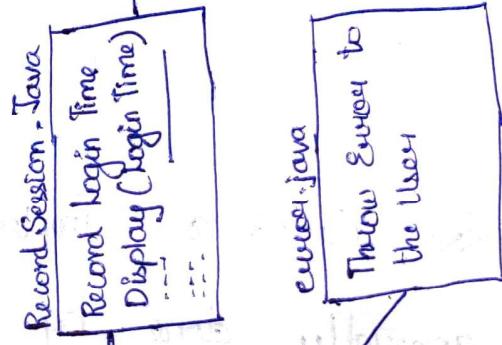
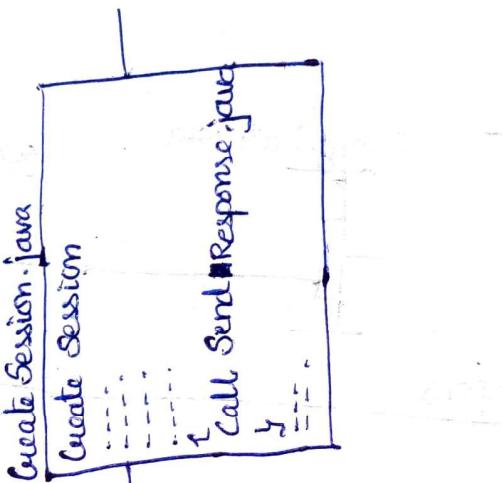
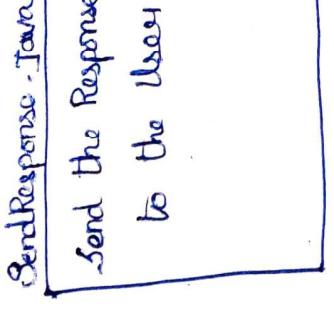
- ▶ Coding is also called as Implementation Job.
- ▶ Coding is generally done by development Engineers.
- ▶ Here we take a complete UML & convert it into Coding.

Login.java

Input-Login



login.java



TESTING :

In 1970 there was no concept of test Engineers, so development engineer were only involved in testing the product.

What are the disadvantages if developers are involved in testing?

- 1) They Utilize testing time to develop the S/w.
- 2) They always see the product in a positive point of view.
- 3) They wont see the product in a negative point of view.
- 4) They will never try to break the product (finding the bugs).
- 5) They have lot of over confidence about their product.

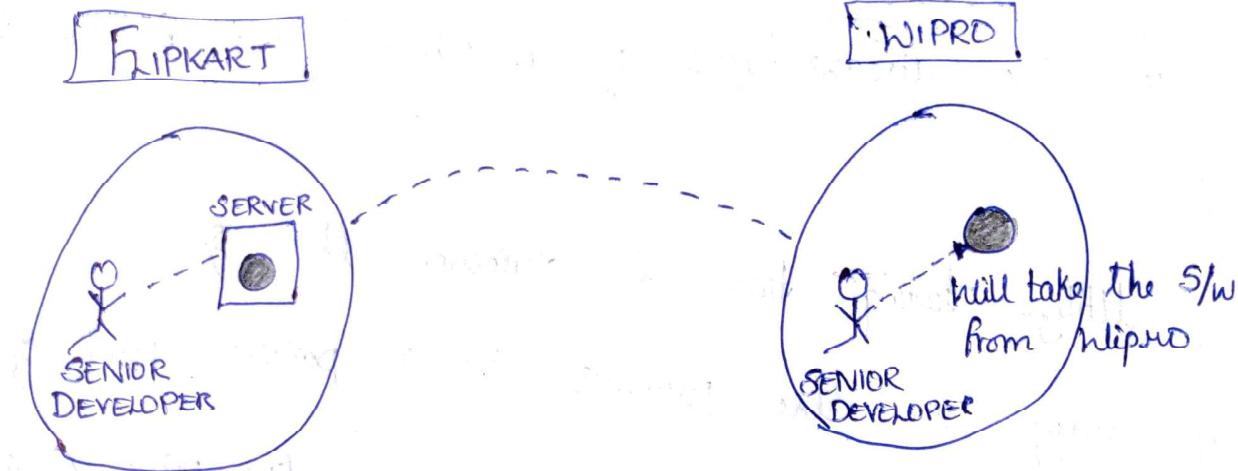
30/07/2020 (10:00 - 12pm) & (12:30pm - 2:30pm)

INSTALLATION :

- Once When the complete application is working properly, then we install the product in the customer's server.
- Installation is done in 3 different cases.

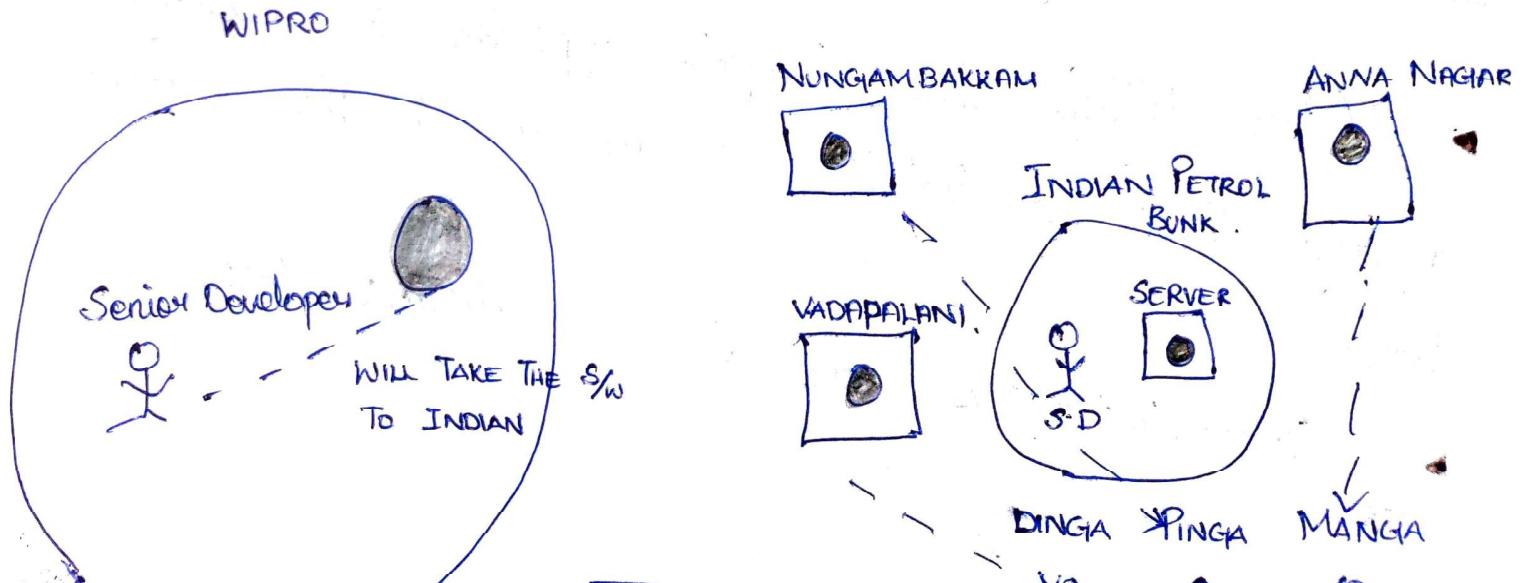
CASE 1 :-

- Here senior developer is the person who is involved in installing the product in the Customer's Server.

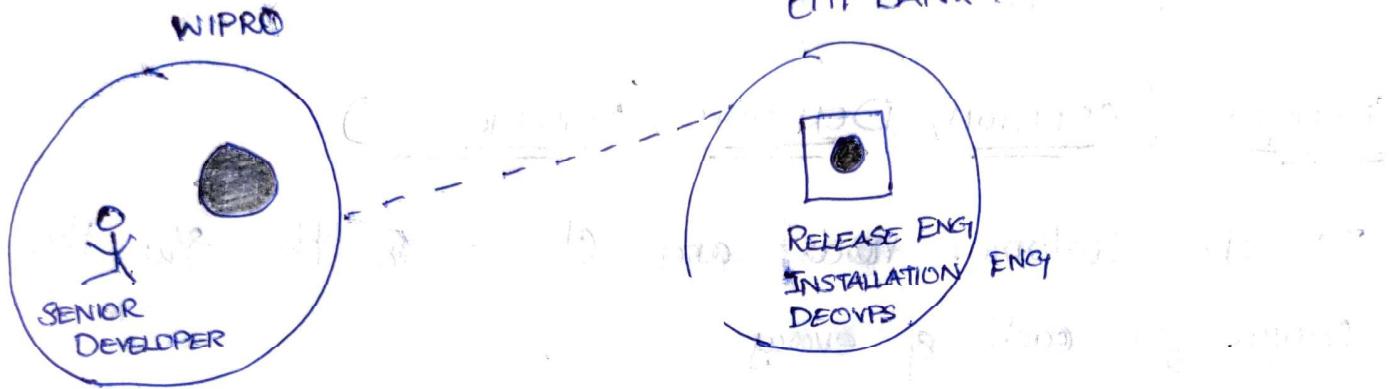


CASE 2 :-

- Here Senior developer call each & every installation Eng and ask them to learn how to install the product.
- Later all the trained Installation Eng will go to the different places & install the S/w.

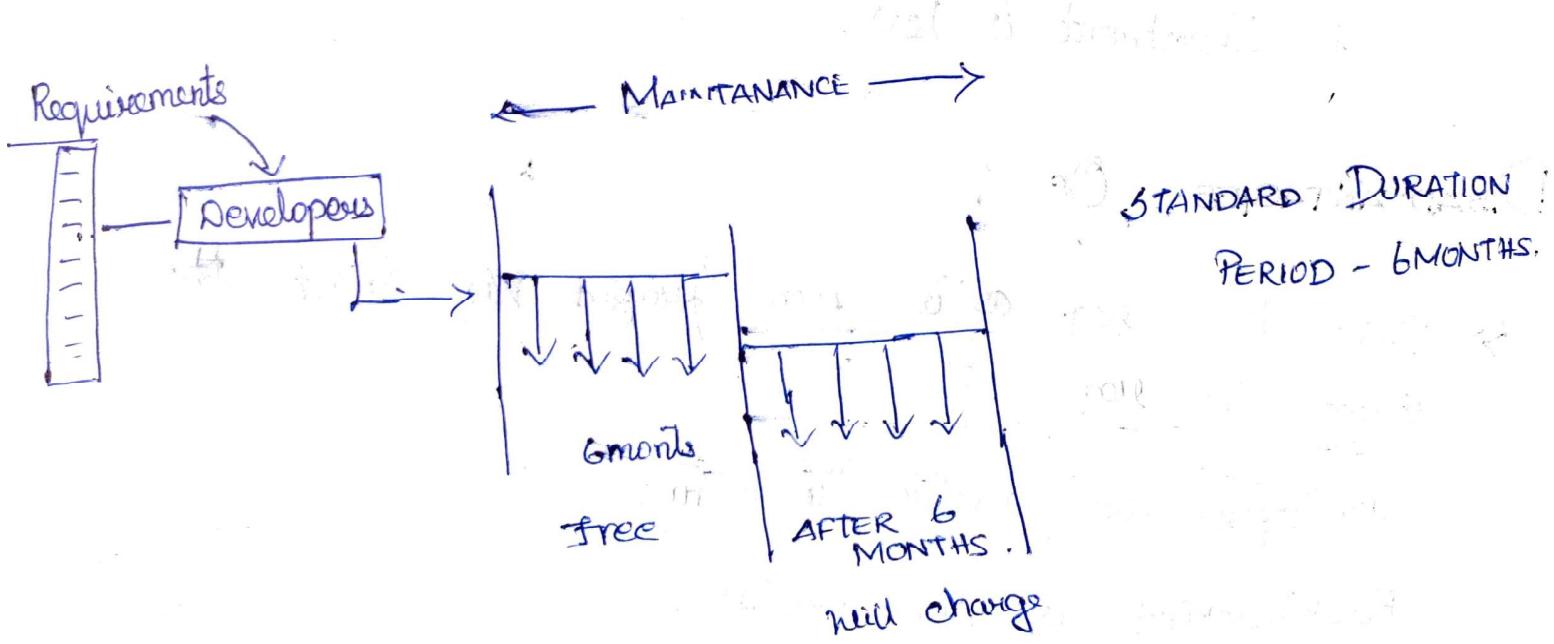


- CASE 3:-**
- Here in Citi Bank itself we have Release Eng, Devops, Installation Eng ... these Eng's will only install the product in their server.
 - So here there is no role of Senior Development Eng.



MAINTANANCE :-

- * After launching the product to the customer, the S/w company will give some period of time as maintenance period.



- * In this maintenance period (6 months) if the customer identifies any defects then the defects / bugs are fixed for free.
- * After the maintenance period (After 6 months) if the customer identifies any bugs then we charge for each & every bug.

CHANGES (ADDITION, DELETION, MODIFICATION)

- * If the customer needs any changes in the s/w then we charge for each & every change.

ADVANTAGES OF WATERFALL MODEL:-

- ↳ Since the reqt are frozen, number of changes are less.
- ↳ Very less cost and by the end we get the quality product.
- ↳ Simple to adopt.
- ↳ Initial Investment is less.

DISADVANTAGES OF WATERFALL MODEL:-

- ↳ Since the reqt is been frozen we cannot ~~not~~ change the reqt.
- ↳ Developers are involved in testing
- ↳ Backtracking is not possible.

- Total investment is more because of increased scope.
- Req. design is not tested, if there is any defect in the req. it flows downwards and it leads to lot of rework.

APPLICATION OF WATERFALL MODEL.

Whenever there is a small project or short term projects we go for waterfall model. Whenever we are sure that steps are not going to be changed, then we go for waterfall model.

INTERVIEW QUESTIONS :

1. WHAT IS SDLC?

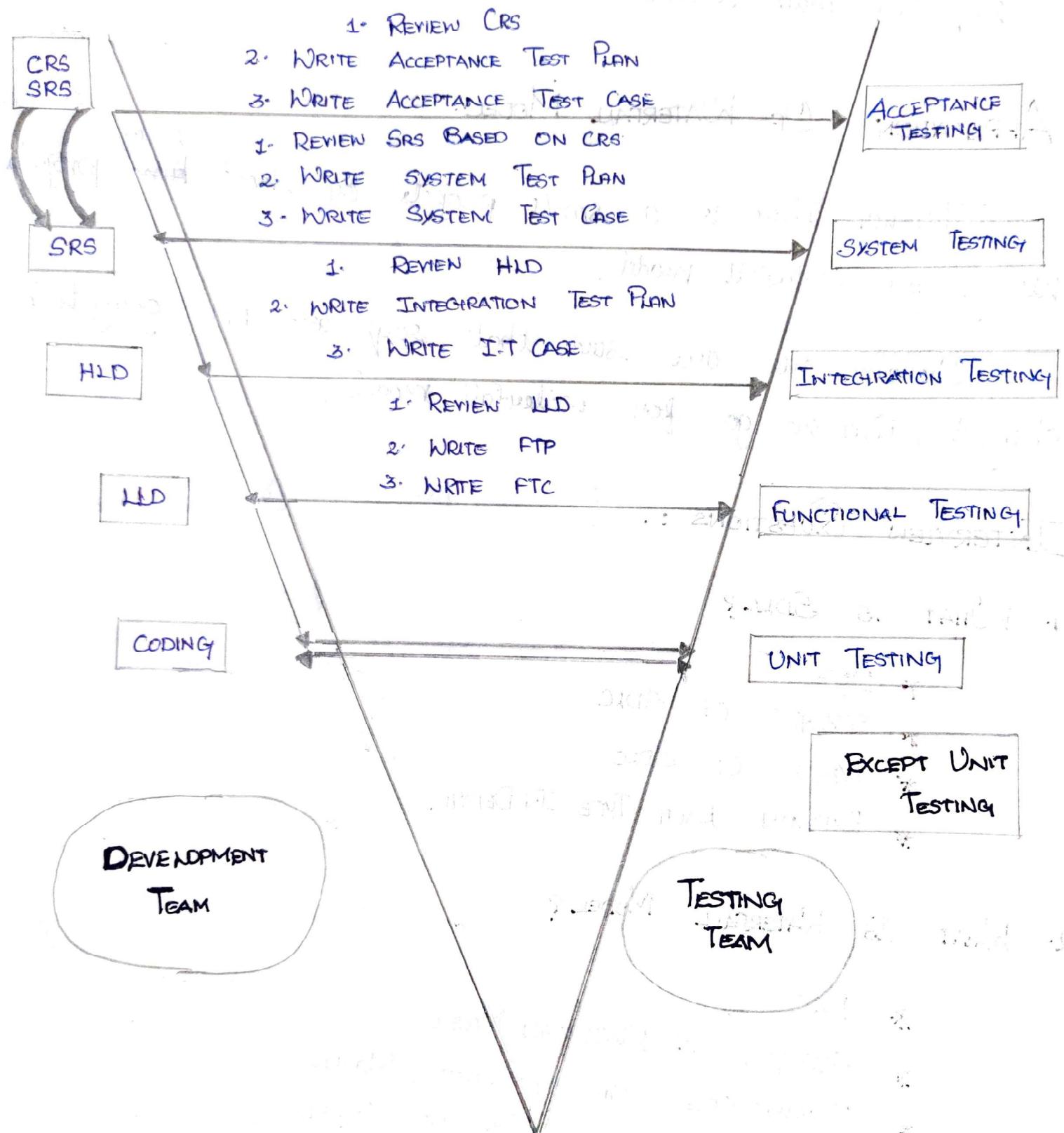
- * DEF
- * STAGES OF SDLC
- * TYPES OF SDLC
- * EXPLAIN EACH TYPE IN DEPTH.

2. WHAT IS WATERFALL MODEL?

- * DEF
- * STAGES OF WATERFALL MODEL
- * ADVANTAGES OF WATERFALL MODEL
- * DISADVANTAGES OF WATERFALL MODEL
- * APPLICATIONS OF WATERFALL MODEL.

V & V M O D E L

VERIFICATION AND VALIDATION



CONFLICT REQUIREMENT:-

In Conflict requirement we are confused about the requirements.

- e.g.: Pg 10:- Loan Should not be approved by loan manager
Pg 15:- amount $\leq 10,000$ can be approved by loan manager

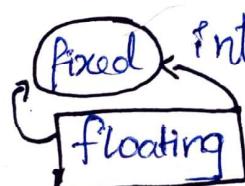
MISSING REQUIREMENT:-

- 1) end user can apply for home loans.
- 2) end user can apply for mortgage loans.
- 3) end user can apply for personal loans.

WRONG REQUIREMENT:-

Loan can be applied through
loan can be applied through

fixed interest.

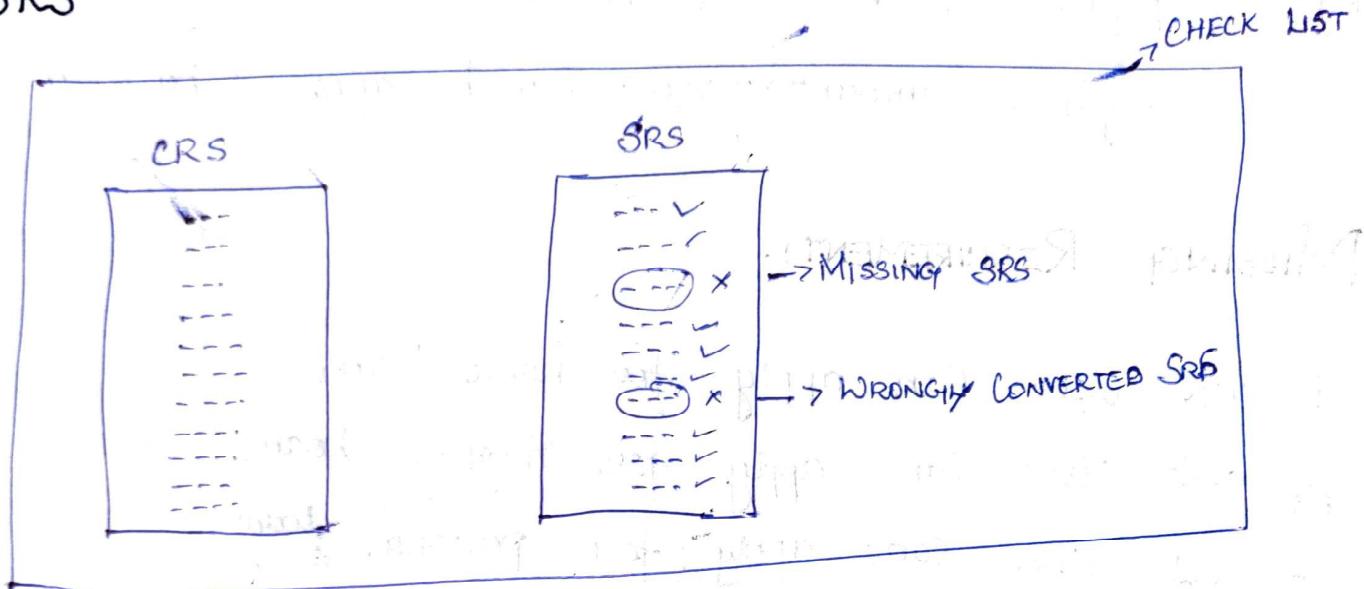


Whenever the testing team finds any mistakes in the CRS, they will send it to BA and the development team.

Now BA goes to Customer and gets an clarity about the req., and they will modify the CRS. The modified CRS is given to both Testing team and development team.

Now the modified CRS will be reviewed and tested, Once the CRS is been Reviewed then we write Acceptance test plan and Acceptance Test Cases.

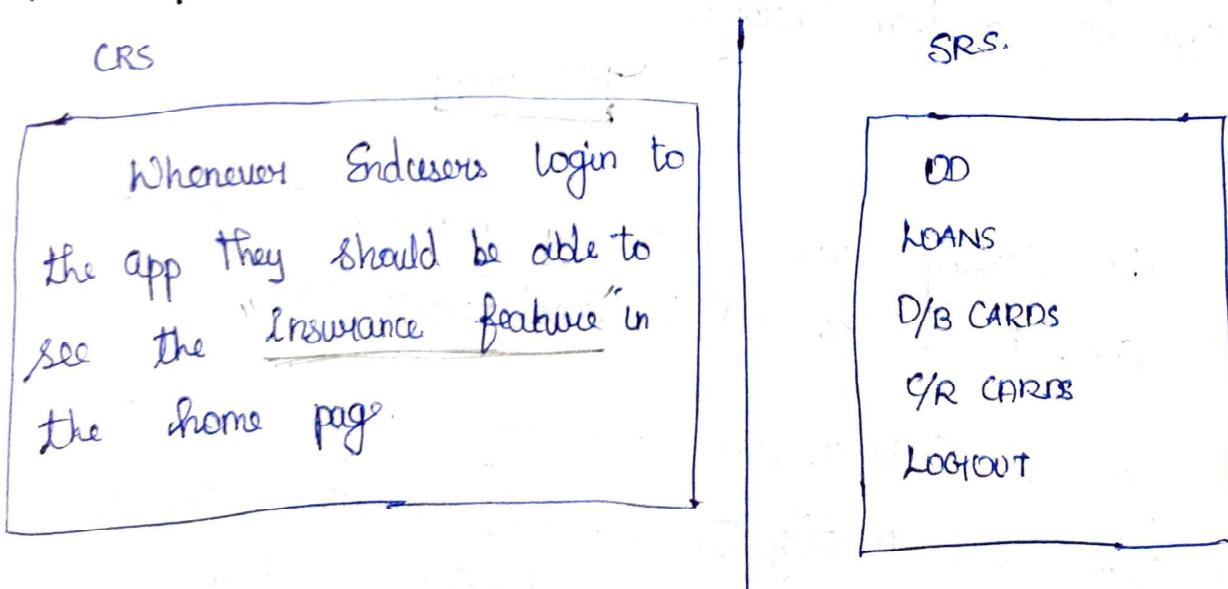
SRS



SRS will be reviewed in 2 different ways.

- 1) Wrongly Converted SRS .
- 2) Missing SRS

MISSING SRS :



WRONGLY CONVERTED SRS:

CRS

End user should be able to select either Male or female in the Registration Page.

SRS

NAME	<input type="text"/>
PHONE NO	<input type="text"/>
E MAIL	<input type="text"/>
GENDER	<input checked="" type="checkbox"/> MALE <input type="checkbox"/> FEMALE
SUBMIT	<input type="button" value="SUBMIT"/>
CANCEL	

Here in the Checklist they will be checking Each & Every CRS with the SRS whether it is matching or not. If it is found mismatch like (Missing SRS or Wrongly Converted SRS) they will notify it immediately. Now ^{SRS} will be reviewed and tested. System test plan & system test case.

31/07/2020 (12:30pm - 2:30pm)

HLD:

Meanwhile the development team will get ready with the HLD & the testing team will be doing the Review HLD. Once the review HLD is done he will write Integration test plan & write Integration Test case.

LLD:-

The testing team will review the LLD & find errors like. wrongly converted SRS & Missing SRS. & it will get ready to write functional Testing Plan & Write functional Testing Case.

CODING:-

The development team will do the Coding and the Unit testing will be done by the coding development team. Where they will be checking each & every line we can call it as "White Box testing".

ADVANTAGES:-

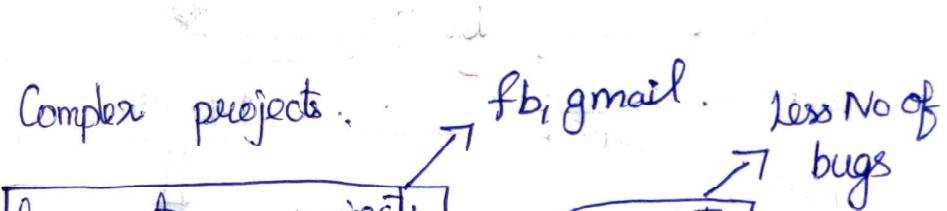
- Testing starts at an very early stage of the project development. i.e. at the requirement collection stage itself.
- All the stages are tested because of that it avoids downward flow of defect, which intern reduces a lot of rework.
- Output is given simultaneously because of this project get completed very fast.
- Investment is less.

DISADVANTAGES:-

- Documentation is more.
- Initial Investment is more.

03/08/2020 (12:30pm - 3:10pm)

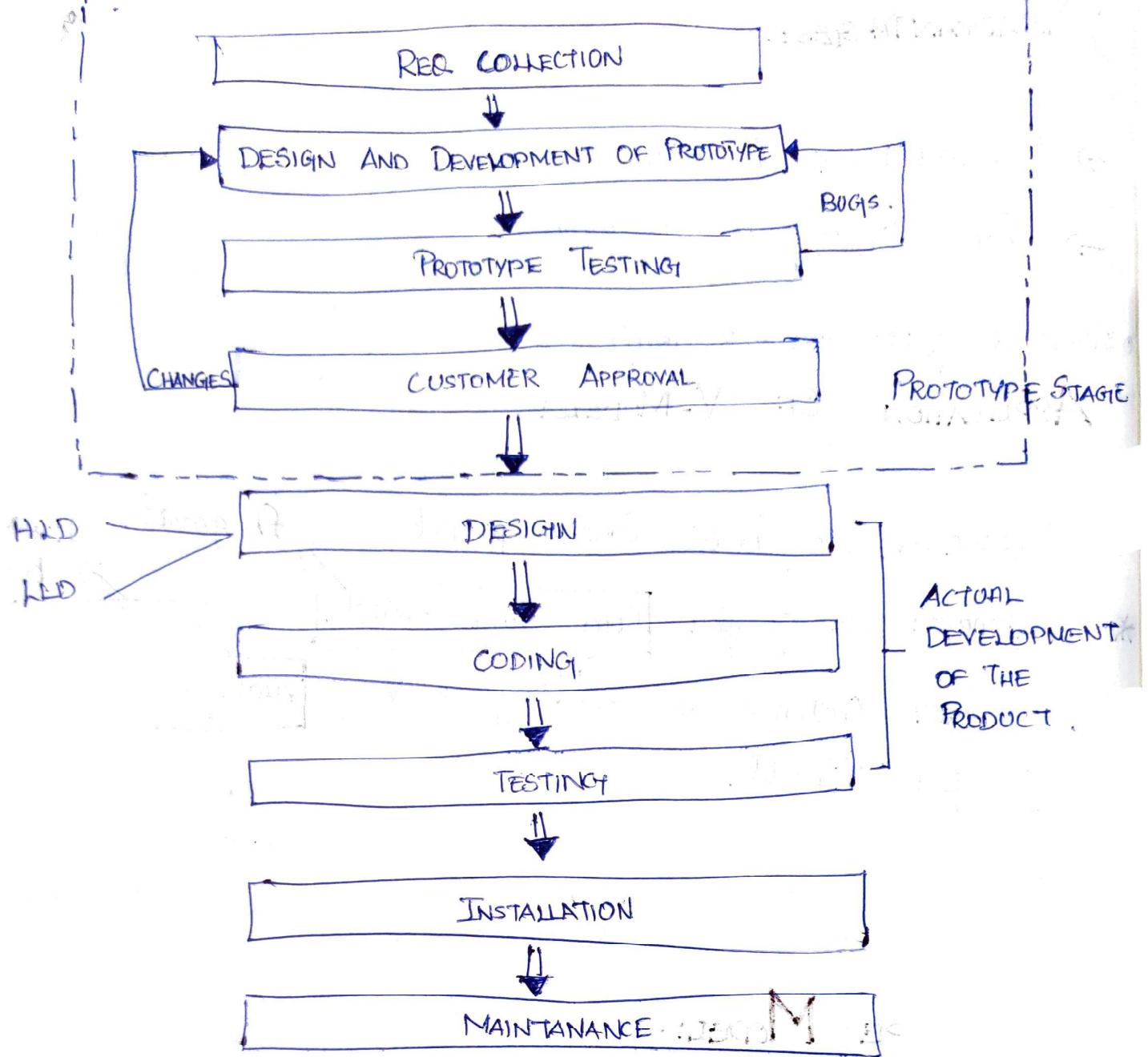
APPLICATION OF V-MODEL:-

- * Whenever we build Complex projects. 
- * Whenever we go for long term projects. 
- * Whenever Customer is ~~expecting~~^{pec} a very high product we go for V-model.
since we do testing at each & every stage we will have less no of bugs.

PROTOTYPE MODEL:-

Job of Test Engineers in Prototype Model.

- * All the features are present or not
 - * All the features are present in the right position or not.
 - * Look & feel of the product is good or not.
 - * Here Test Engineer might also identify few bugs.
- REMEMBER PWD, FORGOT PWD.



ADVANTAGES:

- 1) Improved Communication between the Customer & the Company.
- 2) In the begining itself the Customer will be knowing what product he will get it by the end.
- 3) Customers will get opportunity to ask for the changes. in the early stage itself.

DISADVANTAGES:

- 1) Investment is more C because of the prototype
- 2) There will be a delay in starting the actual development of the project.

APPLICATIONS:

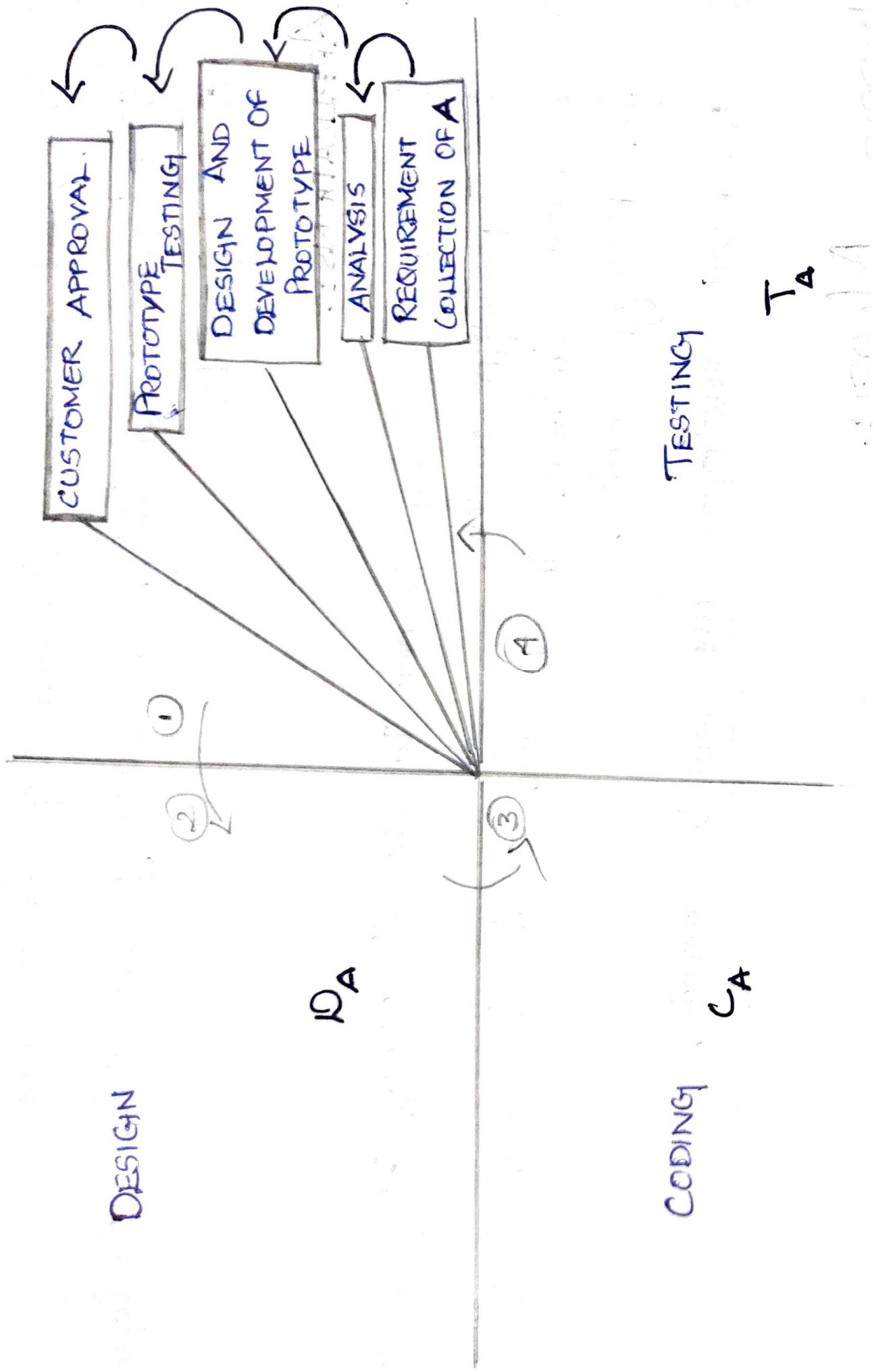
- 1) Whenever Customer is new to the IT industry they go for the prototype model.
- 2) Whenever Customer is not sure about his own req we go for prototype model.
- 3) Whenever developers are new to domain.

HYBRID MODEL:

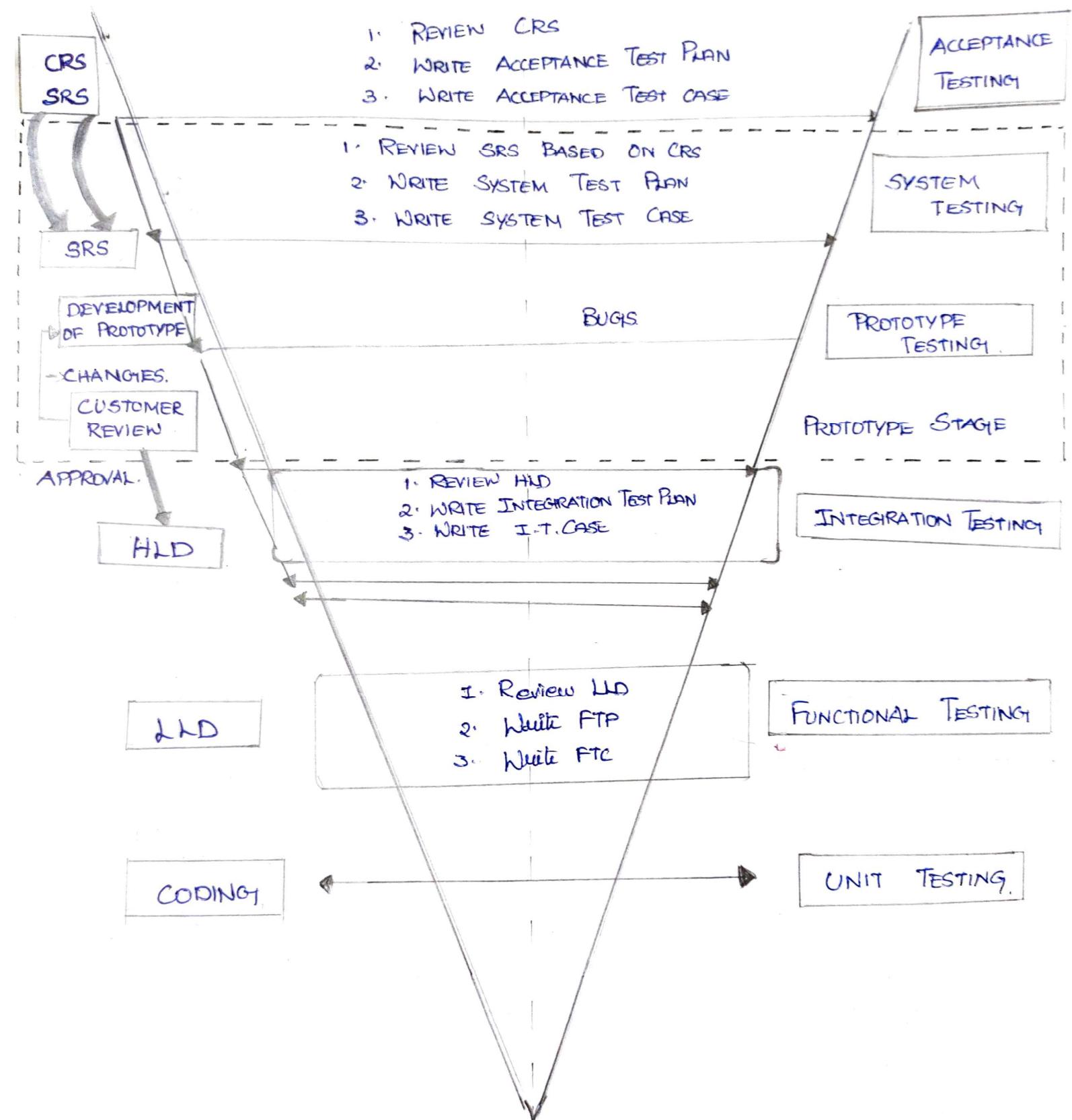
Combination of two models or merging of two models. we call it as Hybrid model.

1. Prototype & Spiral.
2. Prototype & V.

SPIRAL AND PROTOTYPING



PROTOTYPE AND V



DERIVED / CUSTOMIZED MODELS:

Def: It is a Combination of different models.

example: PROJECT NEEDS:-

- 1) Not changing Req ----- WATERFALL MODEL
- 2) Req in Stages ----- SPIRAL MODEL.
- 3) High quality product ----- V MODEL

INTERVIEW QUESTIONS:-

1) What is V model???

--> Def

--> Stages

--> Advantages

--> Disadvantages

--> Applications.

2) What is prototype model?
① step by step (before)
--> Def ② (dummy or blue print model)
--> Advantages
--> Disadvantages
--> Applications
--> STAGES (IN BRIEF)

② What is hybrid model??

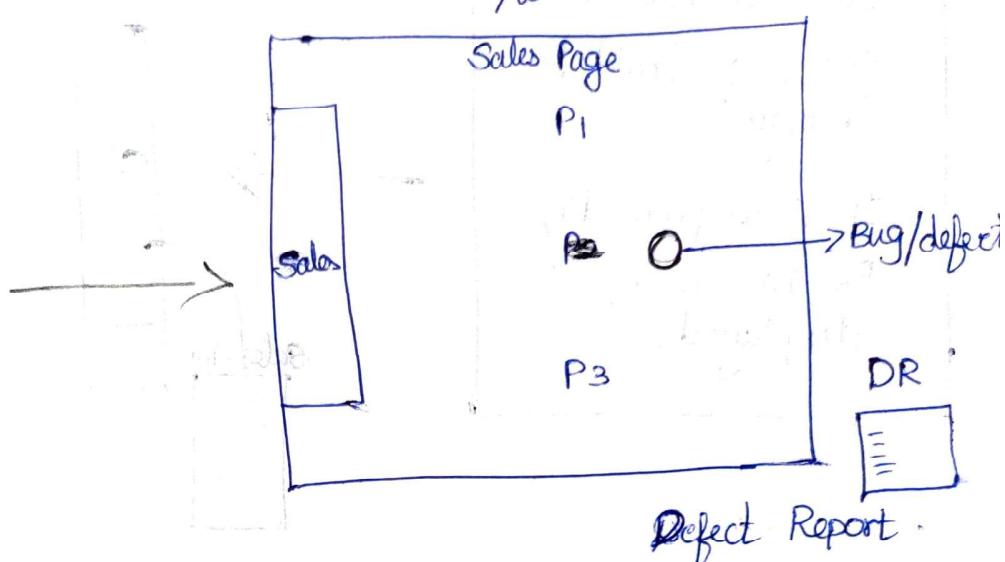
- Def
- Types
- Advantages
- Disadvantages
- Applications

MANUAL TESTING

Def 1: The process of finding the defects / bugs in a Software is called as software testing.

Eg: use case

click on sales link
Sales page should be displayed. In Sales page P1, P2, P3 should be displayed.

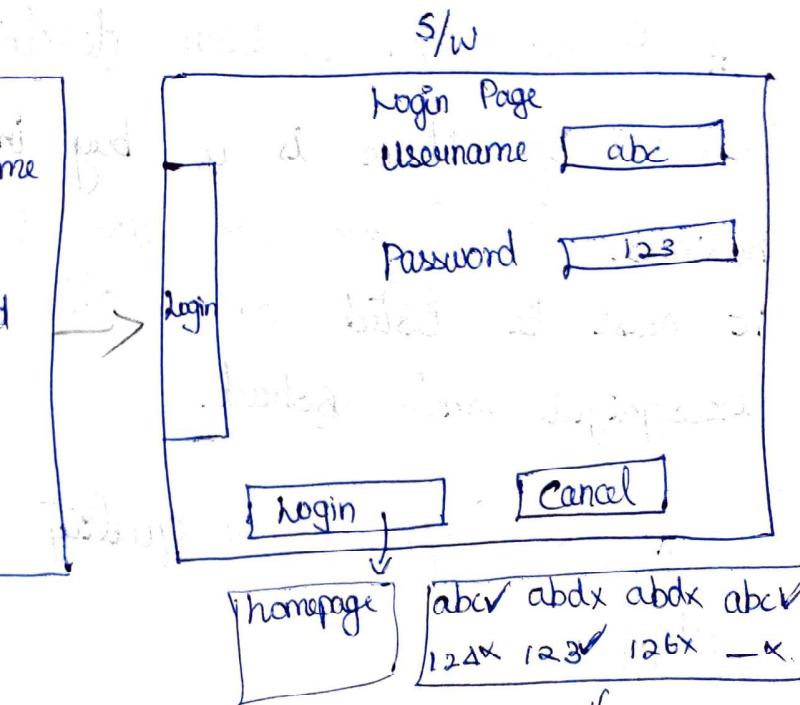


Def 2: Verifying the functionality of an application against specification is called as software testing.

Eg:

Eg:

1. Click on login link, if in login link you should have Username and pwd field text field
2. Enter the correct Username and correct pwd and click on login.
3. Homepage should be displayed

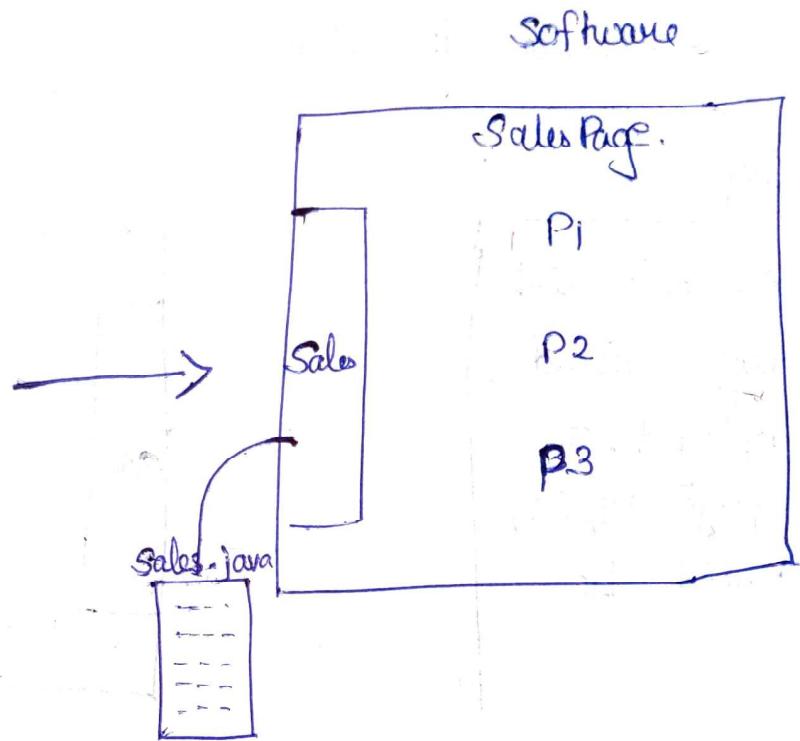


DEF 3:- Execution of a program with the intent of finding defects in a s/w is called as s/w testing.

eg:-

req

clicks on sale link
Sale page should be displayed.
In sales page P₁, P₂, P₃ should be displayed.

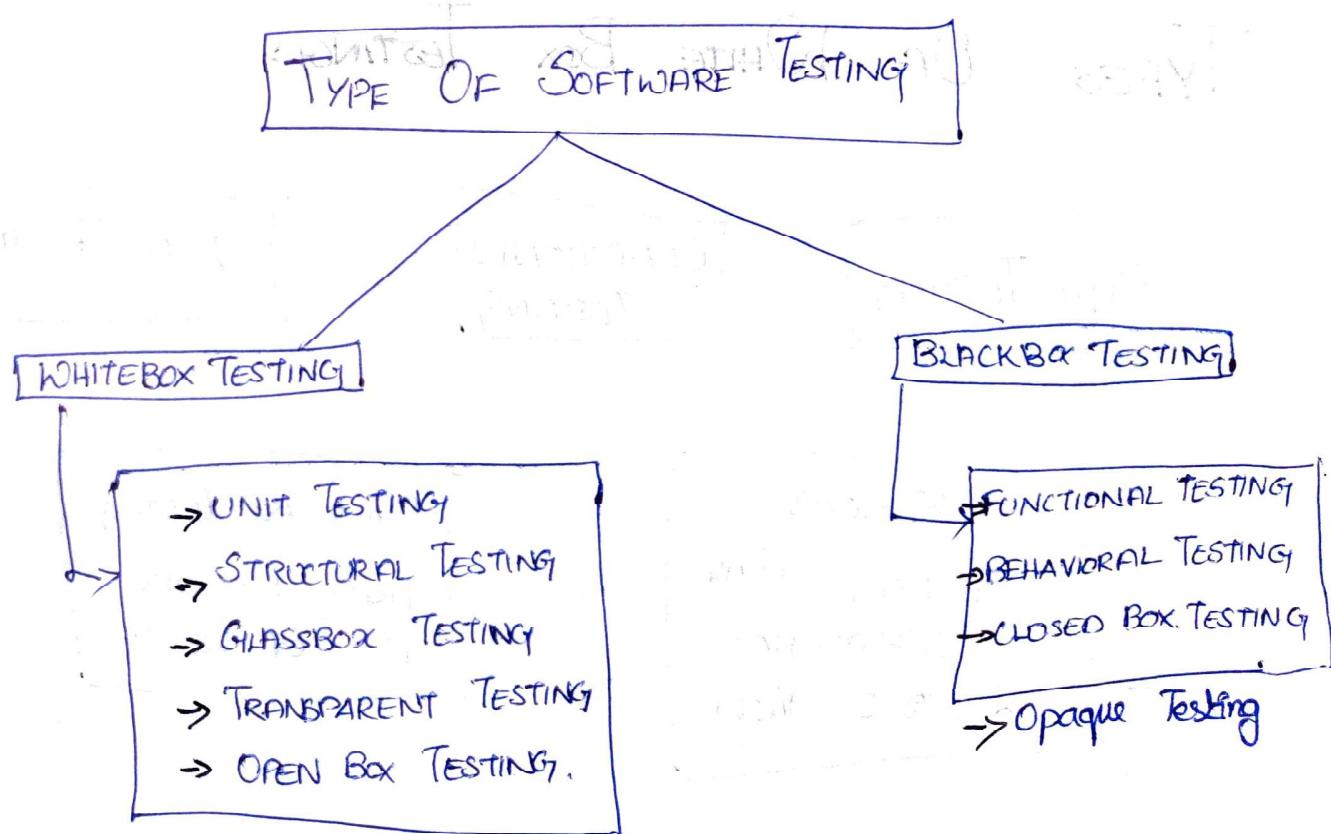
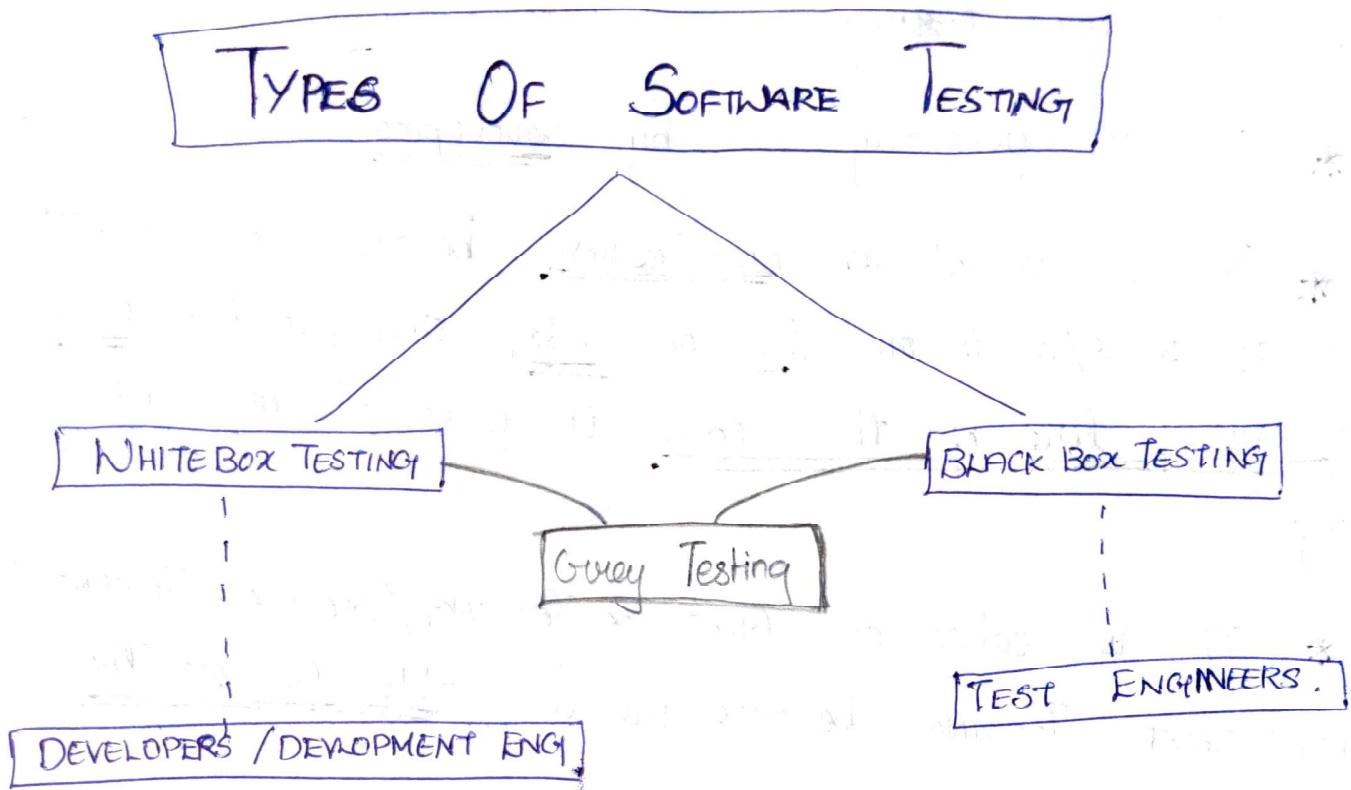


05/08/2000 (12:30pm - 2:50pm)

Why do we do Software testing???

- * Every s/w is been developed to support a business, if there is a bug in the s/w it affects the business. so before we use the s/w for the business it must be tested and all the bugs should be recognized and solved.
- * To improve the quality of the s/w we do s/w testing.

* To check whether the SW works according to the customer's requirement.



WHITE Box TESTING:

- * TESTING Each & Every line of the code. is called as White box testing.
- * It is generally done by developers.
- * It is called as UNIT TESTING because the smallest unit of a s/w is one line of Code, since we test each and every line of the code it is called as Unit testing.
- * It is called as GlassBox TESTING / OPEN Box TESTING / TRANSPARENT TESTING because we are able to see the source code.

TYPES OF WHITE Box TESTING:

PATH TESTING

CONDITIONAL
TESTING

LOOP TESTING

WHITEBOX
TESTING FROM
PERFORMANCE
POINT OF VIEW

WHITE BOX TESTING
FROM MEMORY
POINT OF VIEW.

- ① path Testing
- ② ③ Conditional Testing ↗
- ④ ⑤ Loop Testing ↘
- ⑥ ⑦ White box Testing from Performance point of view ↘
- ⑧ ⑨ White box Testing from memory point of view ↘

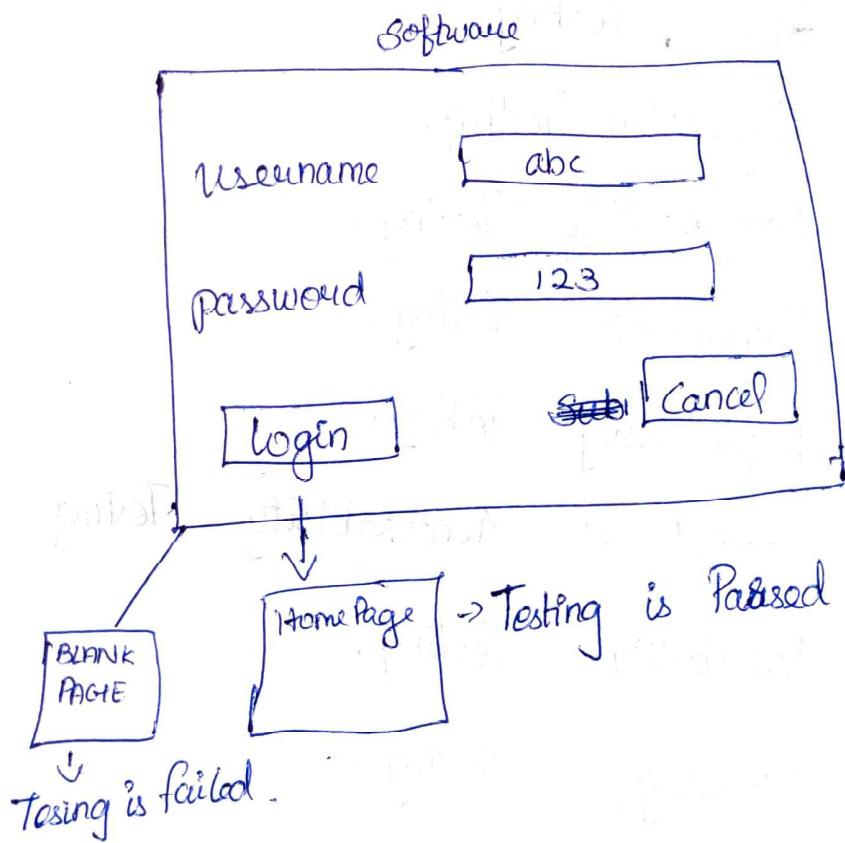
Black Box Testing:

* Verifying the functionality of an application against req specification is called as black box testing

e.g.: req

enter Correct UN
and Pwd and Click
on login

Home page should be
displayed



- * Black box testing is done by test Engineers.
- * Black box testing is also called as functional testing, behavioural testing

* Black box testing is also called as closed box testing or opaque testing because we are not able to see the source code.

TYPES OF BLACK BOX TESTING:-

- 1) Functionality Testing / Component Testing / Field Level.
 - 2) Integration Testing.
 - 3) System Testing.
 - 4) Acceptance Testing.
 - 5) Smoke Testing / Sanity Testing. ✓
 - 6) Adhoc Testing. ✓
 - 7) Regression Testing.
 - 8) Compatibility Testing.
 - 9) Performance Testing. ✓
 - 10) Exploratory Testing. ✓
 - 11) Acceptance Accessibility Testing. ✓
 - 12) Reliability Testing.
 - 13) Usability Testing. ✓
- Pillars Of Testing

06/08/2020 (12:30pm - 2:40pm)

Why Test Engineers should not be involved in fixing the bugs? ??



- * Chances are there fixing One bug might introduce lot of other bugs.
- * If you spend time in fixing One bug then you may loose time to test the remaining features.
- * If you spend time in fixing One bug then you may loose time to catch other bugs.

Fix THE Bug!:

Changing the Wrong Code and Writing the Correct Code.

RETEST THE Bug!:

Check Whether the feature is working or not.

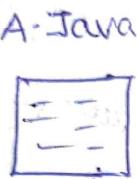
WHITE Box TESTING :-

at low level and Test developer designed.

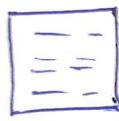
- Testing Each & Every line of the Code
- It is done by developers.

MANUALLY

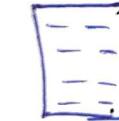
Java



A-Java



B-Java



C-Java

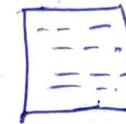


D-Java

AUTOMATION

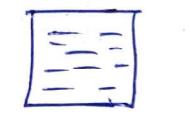


TEST A-Java



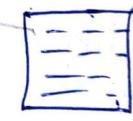
Java

Pass/fail



TEST B-Java

pass/fail



TEST C-Java

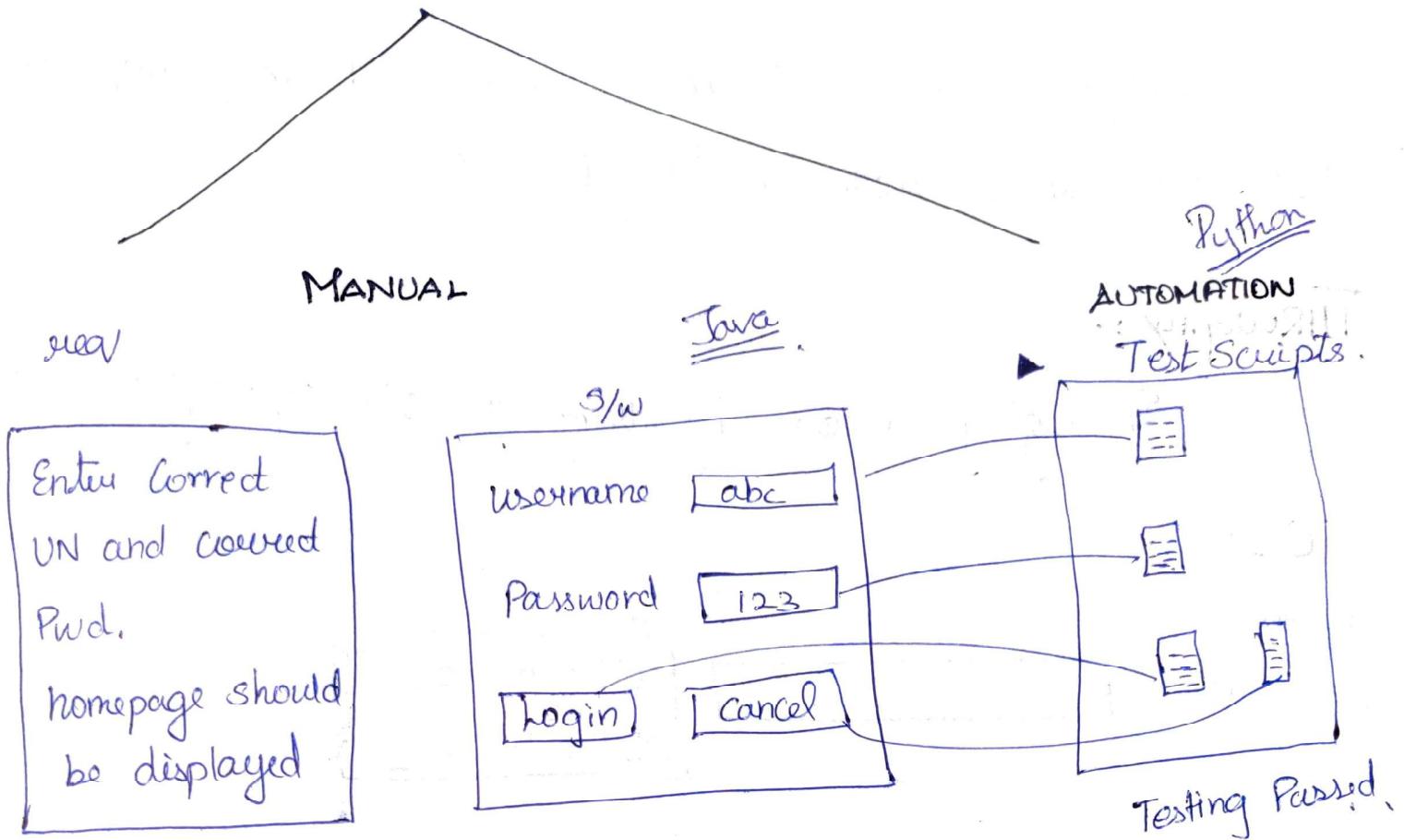
Pass/fail



TEST D-Java

Pass/fail

WEEK 10 TESTING:



07/08/2020 (12:30pm - 2:40pm)

TYPES OF BLACK BOX TESTING

FUNCTIONALITY TESTING / COMPONENT TESTING / FIELD LEVEL TESTING

Testing each and every Component thoroughly against requirement specification is called as functionality testing / Component testing / field level testing.

COMPONENTS:

Component means textbox, Command button, dropdown list, check boxes, radio button, link etc.

THOROUGHLY:

Thoroughly means by using all the inputs / scenarios

Cases:

Components:

User name

5
6 [a b c e f i] ✓
32 [a b - - -] ✓

33 X

1 2 3 4 5 6 X

1 2 3 4 ab X

1 2 3 4 - bx
abc d @ # X

1 2 3 4 5 X

a b c X

Blank X.

Password

[5] abcde ✓

[8] .

REQUIREMENTS

Add User Link :

- 1 click on add user link add user page
- 2 should be displayed
- 3 username : should accept 6-32 Characters
- 4 password : should accept 5- 8 characters & special characters are allowed.
- 5 Designation : dropdown its mandatory.
- 6 Email id : should accept a valid mail id.
- 7 Mobile Number : Should accept 10 digit integer
- 8 Gender Radio : Its mandatory
- 9 Date of Birth : DOB should be in DD/MM/YYYY format
- 10 Submit Button : When clicked on submit button, It should Create an User
- 11 Cancel Button : When you click on Cancel button, it should take you to home page

ADD USER

USERNAME :	<input type="text"/>			
PASSWORD :	<input type="password"/>			
DESIGNATION :	<input type="text"/> <table border="1"><tr><td>MANAGER</td></tr><tr><td>HR</td></tr><tr><td>TEST LEAD</td></tr></table>	MANAGER	HR	TEST LEAD
MANAGER				
HR				
TEST LEAD				
EMAIL-ID :	<input type="text"/>			
MOBILE NUMBER :	<input type="text"/>			
GENDER :	<input type="radio"/> FEMALE <input type="radio"/> MALE			
DOB :	DD <input type="text"/> MM <input type="text"/> YYYY			
<input type="button" value="SUBMIT"/> <input type="button" value="CANCEL"/>				

Email - id



abc.123@gmail.com

abc.123@.comx

abc# gmail.com x

abc@gmail.com x

Blank x

@ gmail.comx

abc @ gy.comx

abc @ gmail x

Characters : A - z
a - z

Special characters : " , . , (,) , % , \$, - , + , *

digit : 1, 2, 3

08/08/2020 (12:30pm - 2:45pm)

Why Should we Number the Requirement.

- * It gives clarity in the req.
- * Communication b/w test eng & development Eng and the customer becomes easy.
- * It becomes easy to understand the req.
- * It becomes traceable.
- * It becomes measurable.

1. WELCOME PAGE

1.1 LOGIN PAGE :-

1.1.1 USER NAME :- Should accept 5-8 chars.

1.1.2 PASSWORD :- Should accept 4-7 chars.

1.1.3 REMEMBER PASSWORD :- -----

1.1.4 FORGOT PASSWORD :- -----

2. LOANS :-

2.1 HOME LOANS

2.1.1 FIXED INTEREST :- 9%.

2.1.2 FLOATING INTEREST :- -----.

2.2 PERSONAL LOANS:-

2.2.1 FIXED INTEREST 10%.

2.3 VEHICLE LOANS :-

2.3.1 FIXED INTEREST :- 11%.

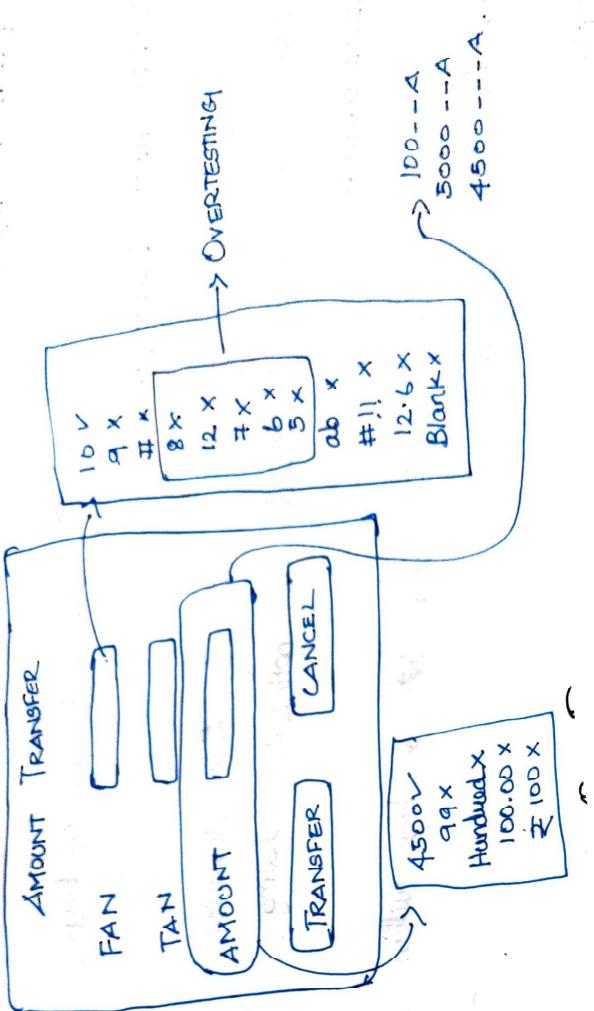
2.3.2 FLOATING INTEREST -----

3. INSURANCE :-

REQ

1. AMOUNT TRANSFER PAGE
- 1.1 FAN :: Should accept 10 digits
- 1.2 TAN :: Should accept 10 digits
- 1.3 AMOUNT TRANSFER: transfer between 100-5000
- 1.4 TRANSFER :: amount should be transferred to TAN account number
- 1.5 CANCEL :: Should take back to home page

Application



3 WAYS OF PERFORMING TESTING:-

OVER TESTING:-

Testing the applications with same scenarios in different ways we call it as over testing.
(Or)

Testing the application with those scenarios which doesn't make sense is called Over testing.

DISADVANTAGES:-

If you do this then you will waste lot of time.

UNDER TESTING:-

Testing the application with insufficient set of scenarios is called as Under testing.

DISADVANTAGES:-

If you do this then you will miss lots of bugs.

OPTIMIZATION TESTING:-

Testing the application with only those scenarios which make sense is called as optimization testing.

ADVANTAGE:-

Here we are going to find lots of bugs within less time or optimized time.

Note:-

1. Test Engineer should not assume the req or purpose of the req.
2. If you have any query or question regarding the req try to communicate with the development team or the customer.

LESSONS LEARNED:-

1. Always start testing the application with the Valid data, if it works for the Valid data then only test the application for invalid data.
2. If the application is not working for any one of the invalid data you can still continue testing for some more invalid values.

POSITIVE TESTING :-

Enter Valid data or expected data and test the application.

NEGATIVE TESTING :-

Enter Invalid data and test the application.

INTERVIEW QUESTIONS:-

1) What is Software testing?

---> def (3 def)

---> Why do we do S/w testing.

---> Types of S/w testing.

2) What is White box testing?

---> def

---> types of white box testing.

---> explain each type in depth.

3) What is Black Box testing???

---> def

---> Types of Black box testing.

- 4) Why test before fixing the bug ???
- 5) What is functionality testing / Component testing / field level testing ??
- > def
- > 3 ways of performing testing
- 6) What is positive testing? ---> Overtesting (def)
- 7) What is negative testing? ---> UNDER TESTING (def)
- > Disadvantage
- > Optimization
- TESTING (def)
- > Advantage.

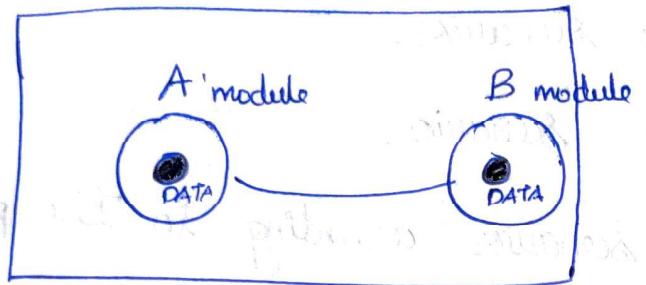
10/08/2020

(12:30pm - 3:00pm)

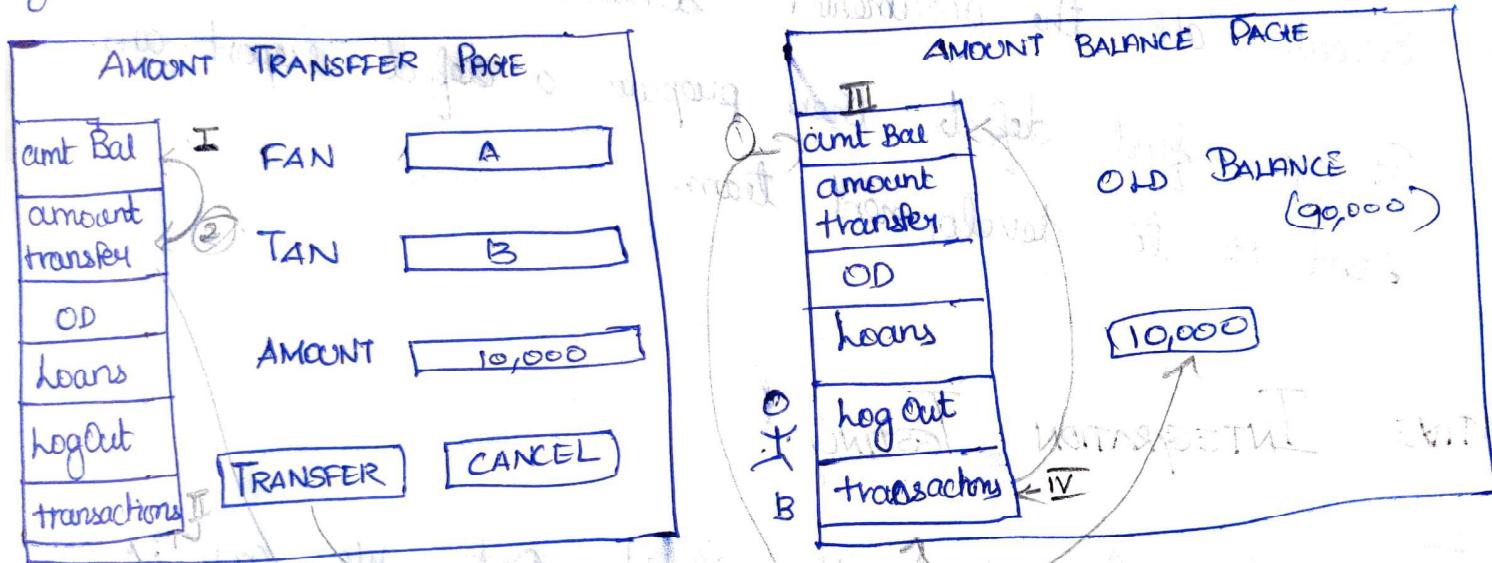
INTEGRATION TESTING

Testing the data flow/interface between modules we call it as integration testing.

Eg:



Eg:

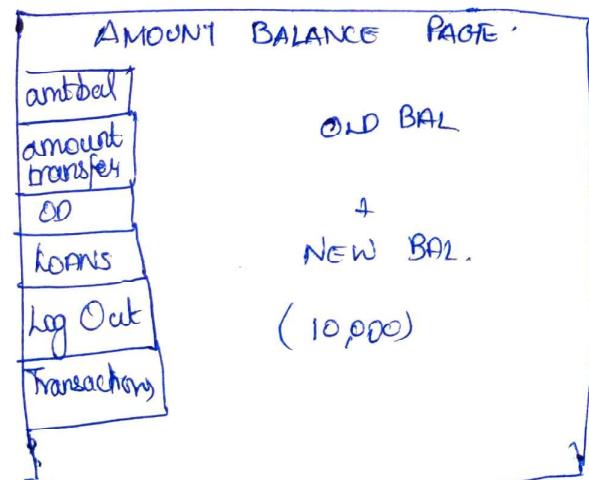
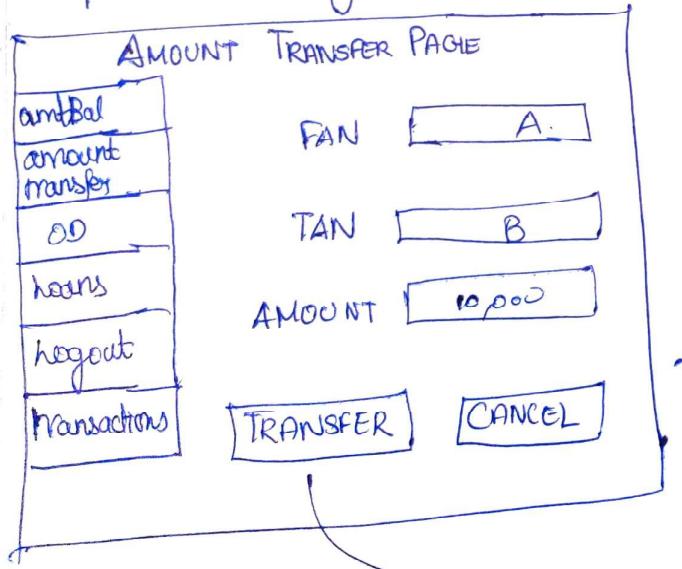


How to do Integration testing ???

- 1) Understanding the application / app is very important.
 - a) * You should understand each & every module in depth.
 - b) * understand how modules are related to each other.
- 2) Identify all the possible scenarios.
- 3) prioritize the identified scenarios.
- 4) Document all the scenarios according to the priority.
- 5) Execute all the documented scenarios.
- 6) If you find defects then prepare a defect report and send it to development team.

Positive INTEGRATION TESTING :-

Testing the Application with Valid Data we call it as Positive Integration Testing.



REQUIREMENT

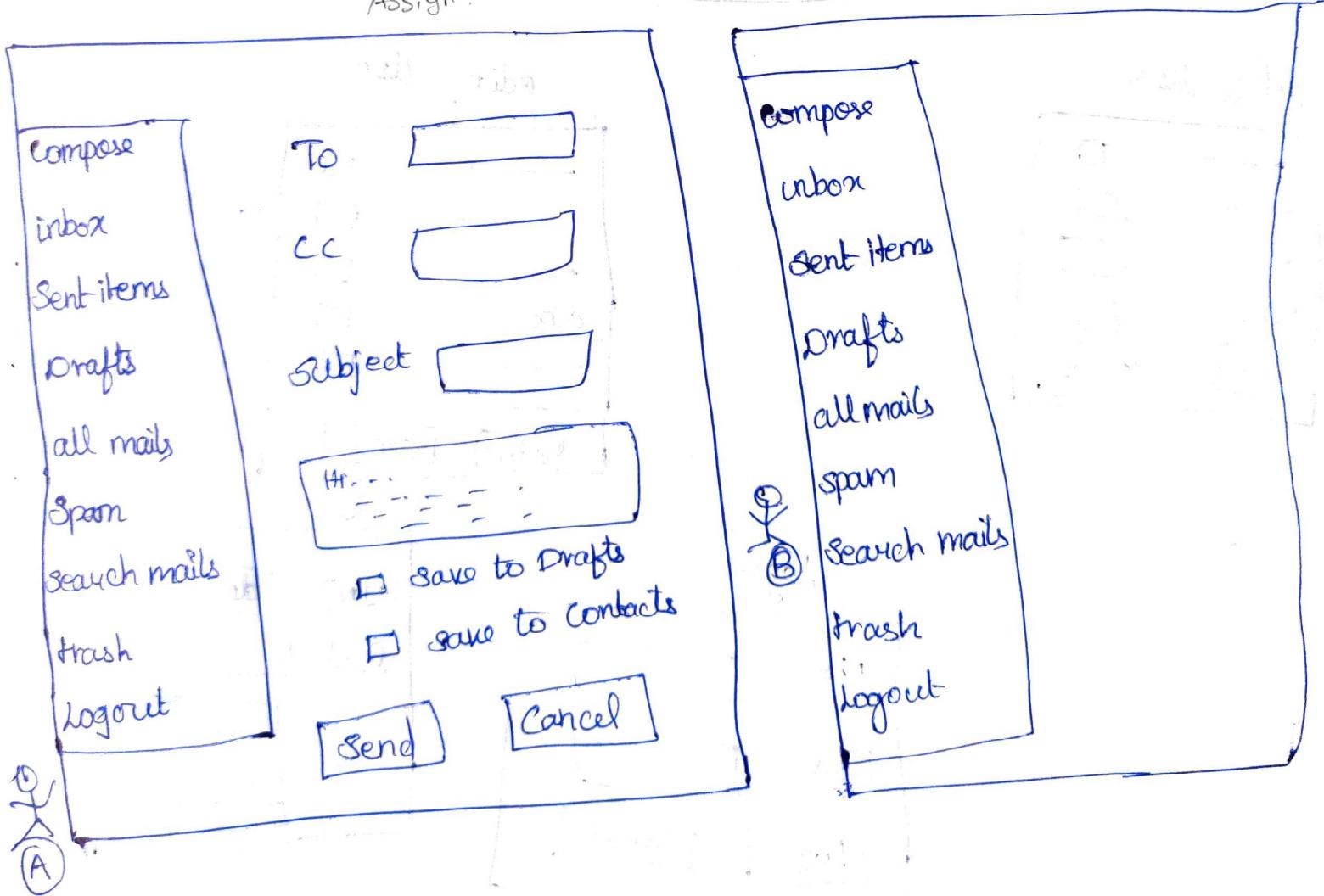
- 1) FAN - Should Accept 10 digits
- 2) TAN - Should Accept 10 digits
- 3) AMOUNT TRANSFER - Should accept 100 - 50000
CONDITION - should not be able to transfer more than the balance.

11/08/2020 (1:45pm-2:30pm)

NEGATIVE INTEGRATION TESTING::

Negative Integration Testing is nothing but Enter Invalid data & test the application.

Assign:



PRIORITY OF SCENARIOS:

List User

Search Users

add User list User delete User edit User product sales purchase logout	username <input type="text"/> password <input type="text"/> MOBILE NUMBER <input type="text"/> EMAIL ID <input type="text"/> ADDRESS <input type="text"/> <input type="button" value="SUBMIT"/> <input type="button" value="CANCEL"/>
---	--

debts user

edit Users

A hand-drawn diagram of a user interface. On the left, there is a vertical list of five items, each preceded by a dashed box for a checkbox. To the right of the list is a column of five checkboxes, some of which have checkmarks. At the bottom, there is a horizontal row containing two rectangular buttons labeled "edit" and "cancel".

log in

A hand-drawn diagram consisting of four rectangular boxes arranged vertically. The top-left box contains the text "UN". To its right is another empty box. The middle-left box contains the text "Pwd". To its right is another empty box. The bottom-left box contains the text "Logout". To its right is another box containing the text "Cancel".

[UN)	def
Pwd	