9/8/21

SOFTWARE TESTING CONTENTS

1. Manual Testing
2. Automation Testing < Java / Selenium ---> API TESTING
3. Performance Testing
4. Test Case management Tool
5. Defect Tracking Tool (DTT)
6. Web security Testing.
7. client server architectures.
8. Agile process / Agile model
9. Resume preperation
10. HR interview questions
11. Interview Questions on manual and Automation Testing.

Note:-

Aptitude – fresher

Live projects – Experience

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Note:-

Aptitude – fresher

Live projects – Experience

MANUAL TESTING

Customer --> Google, MS EXCEL/MS WORD

⇓

Requirement --> 1000 pages DOCUMENT

--> gmail (S/W)

⇓

SOFTWARE COMPANY

① BA (Business Analyst)

⇓

Requirement Collection

⇓

② Development Team (Developers)

Developers will look into requirement write the Code and develop the Software/application.

Ex:- 10 lakhs line Code.

⇓

Developers will convert/compress the Code into .exe file / set up file.

gmail.exe => S/W

Server

gmail.exe

⇓

Install gmail S.W

1) Developer will copy, paste

2) Dev will give 'gmail.exe' to 'TE'

TE Will copy, paste

Dev will give url, un & pwd

TE url un & pwd

TEST ENGINEERS (Manual testing) 12/8/21 Mon

1) TE will manually switch on the Computer/mobile

2) TE will manually check Internet Connection

3) TE manually open the browser/playstore

4) TE manually enter the URL (www.gmail.com)

5) Login/welcome page is displayed

6) TE will manually enter UN and pwd and click on 'Login' button

7) Home page is displayed

8) TE manually click on compose and manually enter values for all the fields and click on "send" button

9) TE will manually click on "Sent items"

Mail is not displayed (defect) manual testing fail

Mail is displayed M.T is pass

Chandrakanth

① what is manual Testing?

Testing the Software/application repeatedly or again and again manually inorder to find defects in the Software according to the Customer requirement is Called as "manual Testing"

Example for manual testing (Real time example)

Analyzing the requirements from the ~~soft~~ Customer ~~ware~~ requirement

⇓

Test Engineer will doing work Manually upto Cover the all requirements. (In this way TE will got an defect he will Communicate with developer to solve about defect).

Diagram → 03 page

② what is difference b/w developers and Test engineers.

1)* Developers will look into the Customer requirement then they should write a Code to develop/creating the Software.

(or)

Developer will develop the Software by (building) giving a Code meantime based on the Customer requirement

(or)

Developer will develop the Software/application via writing a Code through based on the Customer requirement.

1)* Test engineer's test the Software manually via based on Customer requirement.

(or)

Test engineer will look into the customer requirement then they test by manually.

2) * Test Engineer's will find the defect by manually.

2) * Developers will fix the defect.

Note:-

Test engineer find the defect and communicate with developer and developer will fix the defect in the code and give new software to test engineers. ~~or then~~ T

TE/DEV will uninstall old software and install new software and test engineer will manually test the defect.

~~Quest~~ ~~Note~~:-

OWN Note:-

ONce the code changed via defect we want to install the new software into server instead of old software. (delete old s/w).

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CONTENTS OF MANUAL TESTING

1) SDLC (Software development life cycle)

1) Waterfall Model

2) Spiral model

3) V & V model (verification & validation)

4) prototype model

5) Derived model

6) Hybrid model

7) Agile Model.

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2) Software Testing / Testing

(WBT) WHITE BOX TESTING
⇓
Developer's

1) path testing
2) Conditional Testing
3) Loop Testing
4) unit Testing
5) Testing the code from memory point view
6) Testing the code from Preformance point view.

Grey Box Testing
(WBT + BBT)

BLACK BOX TESTING
⇓
Test engineers.

1) Functional Testing
2) Integration Testing
3) System Testing
4) Acceptance Testing
5) Smoke Testing
6) Globalization Testing
7) Adhoc Testing
8) Compatibility Testing
9) Exploratory testing
10) Usability testing
11) Regression Testing.

Grey box testing :-

→ Basically it's done by developers.

→ Test engineer's if they have good "programming" Knowledge.

3) TEST CASE

4) Test Plan

5) STLC (Software testing life cycle)

6) Defect life cycle / Defect Tracking.

Crore star

Draw backs of manual testing :-

→ Time taken is more
→ Resource utilization is more
→ It is a Tedious (tough) / montonous Job (we should repeat same thing again & again)
→ There will be no Consistency in Testing.

Advantages of manual testing :-

→ Quality is good
→ Programming knowledge not required.

Note :-

→ In order to overcome draw backs of manual testing Companies will go for automation.

→ Every Company when they get new project first they should test manually and they go for Automation testing.

Q without ~~doing~~ doing manual testing we can go for automation? → NO. "we can't"

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Introduction of Automation Testing :-

Definition (what) :-

TE will write the Code/script/pgm by using tools like Selinium/QTP/Appium and run the programme against the application/sw or pgm/Tool will automatically Test the application and give the result as 'pass' or 'Fail' this is called Automation testing.

Example of Automation Testing (Real time example) :-

① Her Customer gives some requirement
↓ Google ↓ gmail software

② Requirement ⟹ [1000 page document]
⇓
[Size & Complexity]

(We should write requirement in MS EXCEL/MS WORD)

⇓

③ Customer will go (INFOSYS) Company with this requirement.

⇓

④ AND in (INFOSYS) company there should be have Business Analyst (BA) -> He will takes the first Job to known about the Customer requirement and BA will Collect the requirement of the Customer.

⇓

Diagram on next Page ⟹

[INTRODUCTION ON AUTOMATION TESTING]

Customer → Google | MS EXCEL / WORD |
(1000 pages document)

⇓

Requirement → gmail s/w

⇓

Software Company

1) BA - (Business Analyst)
(Requirement Collection)

2) Developers (Development)

Developers will look into the requirement & write a code and develop the sw/application (Lakhs of line Code)

⇓

Developers will compress/convert the Code into .exe file/Set up file

gmail.exe software

1) Dev will copy, paste

Server

gmail.exe

Install the gmail s/w

whatsapp.exe
url, un & pwd is not required

2) Dev will get 'gmail.exe' to 'TE'
TE will copy, paste

Dev will give url, un, pwd

TE
URL
UN
PWD

Test engineers

→ TE will manually switch on the Computer/mobile

→ TE will manually install Test like QTP/Selenium/Appium.

1) TE will write the code/script/pgm by using tool selenium/QTP/Appium.
2) TE will click on 'Run' button in the tool.
3) Tool/pgm will automatically check the internet conn
4) Tool/pgm will automatically open the browser/mobile application
5) Tool/pgm will automatically enter the url (www.google.com)
6) Login/welcome page is displayed
7) Tool/pgm will automatically enter un and pwd and click on 'Login' button.
8) 'Home' page is displayed.
9) Tool/pgm will automatically click on Compose and automatically enter values for all the fields and click on send.
10) Tool/pgm will automatically click on sent items.

mail is not displayed
automation testing is [fail]
↓ defect

mail is displayed
Automation testing is [pass]

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Types of Automation tool Availables in the market :-

Computer Application

1) Selenium → ~~Throughout~~ Thought works ---> Google
→ free Tool / open Source

* Java
* python
* C# / C sharp
* ~~Ruby~~

2) QTP (Quick Test professional) ---> HP → Licenced version

* VB scripting

⇓

UFT (unified functional Test)

* vb scripting

⇓

LFT (Linear functional Test)

~~* Vb scripting~~

* Java.

Note:-
Hp should be licenced versions.

3) Sahi
4) Cannoo
5) Silk functional test
6) Rational Functional test (RFT) → IBM
7) OATS (Oracle functional test)

Mobile Application Testing tools

1) Appium
2) Selendroid
3) Monkey Talk
4) Robotium

Web Service Testing :-

1) Soap UI
2) Postman
3) Rest API

Interview Questions

1 what is manual testing & explain with example?
2. Tell any 6 advantages and 4 advantages of manual testing.
3. what is Automation testing & explain with Example?
4 ~~Explain~~ Tell me about 5 automation tools?

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SDLC (Software development life cycle)

1 Definition (what):-

SDLC (Software development life cycle) is a step by step procedure or standard procedure to develop a new software.

2 when does SDLC starts ?:-

when a person / company want to starts with new project they should follow SDLC (Software development life cycle).✓

3 why we should follow SDLC / what will happen if you dont follow SDLC :-

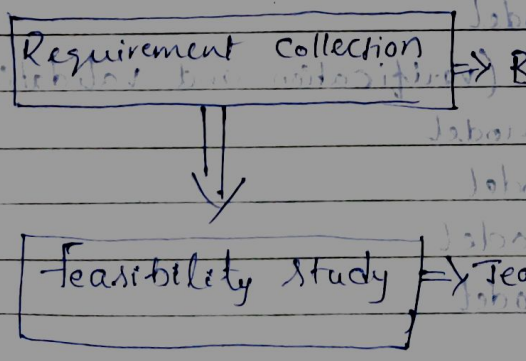
→ We will not get to know how many engineers are required to work on the project.✓

→ We will not get to known how much cost should be invested to work on the project.

→ There might not be proper supporting requirement documents from the Customer.

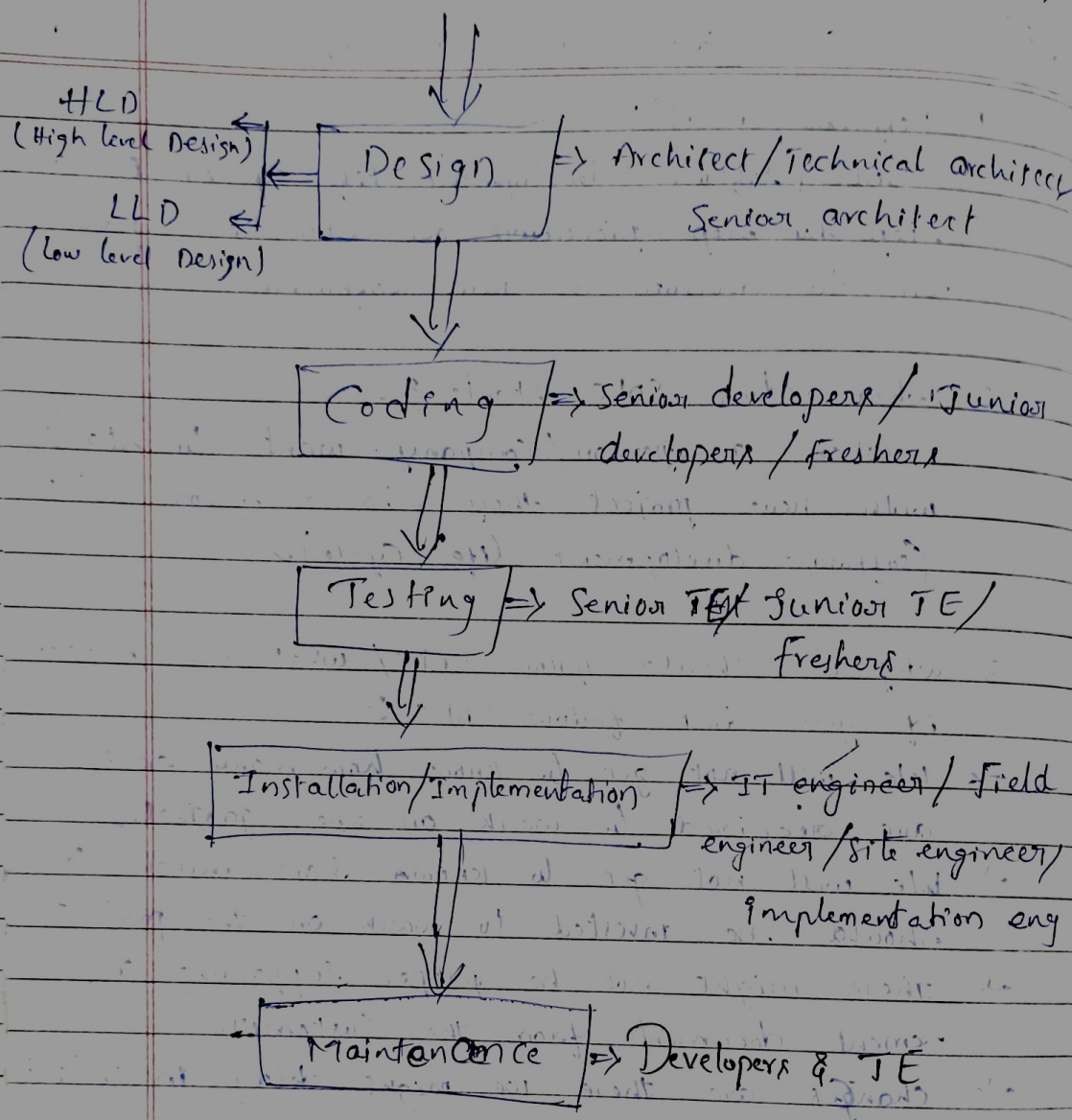
→ changes are there we might delay in relasing Software to the Customer.

(1 crore) 4 Stages of SDLC / Diagram for SDLC :-



⇒ BA (Business Analyst) / PA (product Analyst)

⇒ Team (* PM (project manager),
* Architect / Technical architect / Sensor architect
* BA
* Finance Team ✓
* HR Team)



5 Types of SDLC models :-

1 * Water fall model
2 * Spiral model.
3 * V & V model (verification and validation)
4 * prodotype model
5 * Derived Model
6 * Hybrid Model.
7 * Agile Model

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Interview Question :-

Q what is SDLC ?

Ans:- 1) full form ✓ Software Development Life Cycle

2) what (definition) → It is a step by step procedure or standard procedure to develop a new software

3) when → If a person/company want to take a new project then they will follow the SDLC process

4) why → To get to know how many DE, TE are required, To get to know about the customer requirements, To get to know the time period, To

5) stages

6) Types

— * —

Water fall Model :-

Definition (what) :-

Waterfall model is a step by step procedure or standard procedure to develop a new software.

* Water fall model is also known as basic model / Sequential model / Traditional model.

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Diagram for waterfall model :-

1. Requirement Collection
⇓
2. Feasibility Study
⇓
3. Design
⇓
4. Coding
⇓
5. Testing
⇓
6. Installation/implementation
⇓
7. Maintenance

1. Requirement Collection:-

* It is nothing but Collection of the requirement from the customers place.
* It is done by BA (Business Analyst) or PA (product analyst).

* 'BA' from the Company will travel to customer place and collect the requirement in business language and ~~more~~ come back to Company and convert 'Business language' into 'SW language' and explain to Developers, Test Engineers, PM, Architect, etc.... ~~This~~ pr
This process is called Requirement Collection

* 'BA' will act like bridge between customer and the Company.

Who Can become BA:-

1 * Domain Expert

If a person is having around 15 to 20 years of experience in same domain and has got very good knowledge on the domain is called as domain expert.

2 * Senior Developer

If a person has worked on a same project for around 8 to 10 years and has got very good knowledge on the project.

3 * Senior Test engineer

If a person has worked on a same

chandras

project for around 6 to 8 years and has got very good knowledge on the project.

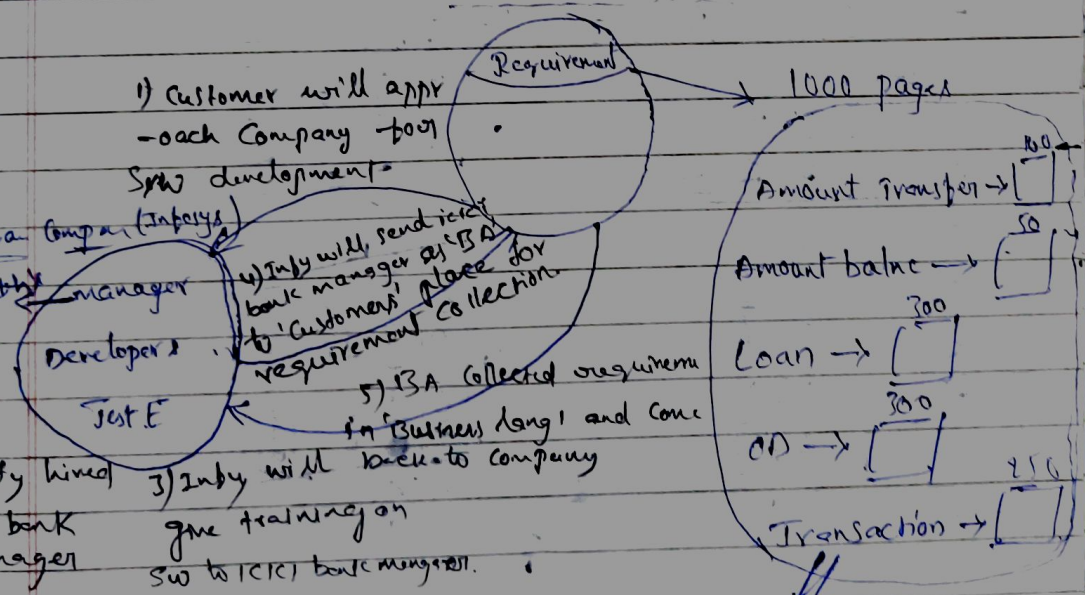
Note:-

* 70 to 80 percent of "Critical and Complex and for big projects" BA will be present.

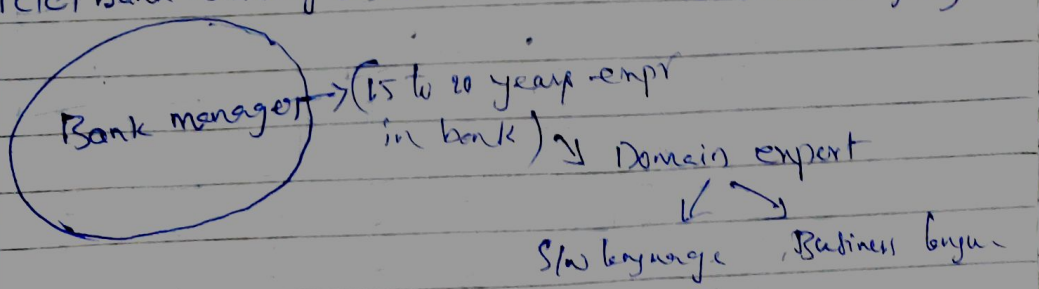
* 20 to 30 percent of small and for simple projects BA might not be present. Senior developer or Senior TE will play the role of 'BA'.

Example for 'Domain Expert' becoming 'BA':-

Ex: Citibank → customer

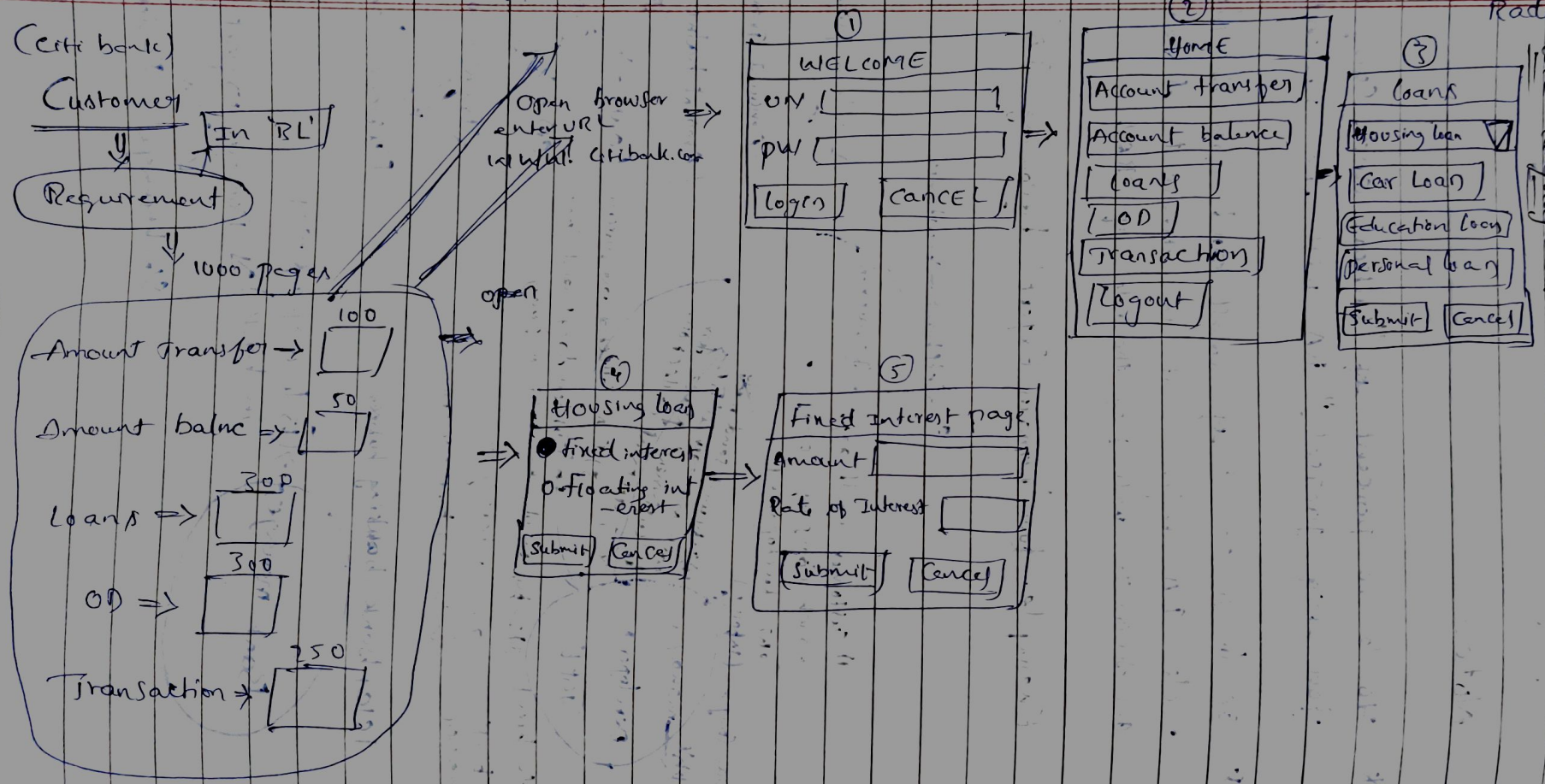


ICICI bank - banking business



Based on Customer requirement ('BL')

BA will convert "BL" to 'SL'. (page, Text field, Button, drop down, check box, Radio button)



How to convert 'business language' into 'software language'?

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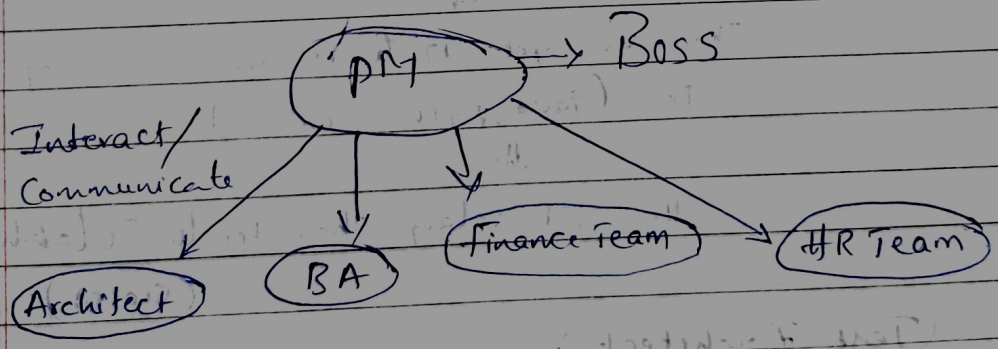
2. Feasibility study :-

(* Once after requirement Collection is Completed then we go for feasibility study stage/phase)

* It is done by a team which Consisting of ~~BA~~ PM, Architect, BA, finance Team and HR Team.

* This is the stage where Company will decide to ~~make~~ take up the project or not, and if we take up the project then Company will check weather they have sufficient resources, sufficient Technologies, sufficient lab setups and this is the stage where Company will get to know if they take up the project do they get profit or not.
This process is called as feasibility study.

→ **Role of PM (project manager) :-**



PM :- PM will interact with Architect, BA, finance team & HR Team and gather the information and PM will decide to take up the project or not.

HR & finance team Can be optional

⟹ Role of Architect :-

Architect will always think from "Technical point" of view. They will check technically is it possible ~~or not~~ to implement the project or not, if it is possible which technology should be used, this decission should be taken by Architect.
(Java / python / C / main frames)

Two types of architects :-

→ Development Architect
→ Test Architect

Development architect

↳ Fresher joined to Company as developer. He worked for 12 to 15 years. & he worked for different technologies.
⇓
Then we get 12 to 15 years of experience in (Java, python, C....)
⇓
He get salary than 40 to 50 lakhs (crores).

Test Architect

↳ Fresher joined to Company as TE. He will work for a Company 12 to 15 years. on different technologies.
⇓
Then he will get 12 to 15 years experience in (SQL, Manual, Automachine, Selenium, Java etc.) ⇒ 40 to 50 lakh (or) (Crores)

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⇒ **Role of BA:-**

→ BA (Business Analyst) will be involved in "requirement Collection."

⇒ **Role of Finance Team:-**

Finance team will always think from "money point of View." they will check what is the operational cost required to work on the project and if they invest money do they get profit or not.

⇒ **Role of HR Team:-**

HR will think from Hiring / resource point of View. They will check how many experience engineers and how many freshers should be hired to work on the project.

19/8/24 Example stating how team will do feasibility study:-

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Aeronatical domain
Aircraft manufacturing

Boeing
↑
Customer

Requirement
Next to pilot seat [SW]
"BL"

Requirements:
- Speed
- Fuel
- Direction
- Weather or climate
- Condition
- Latitude
- Longitude
- Altitude

Customer will approach infosys for sw development 1 year 2 cr

Infosys → untill now infosys taken projects are (Telecom domain, banking domain, Insurance domain, CRM domain, Finance domain)

PM, BA, HR, Architect, Finance, DEV TE

SDLC process done by
1) BA → Requirement collection
2) Team → Feasibility study

→ suff requirement ✗
→ suff lab setup ✗
→ suff techologies ✗
→ suff Engineers ✗

It will take 2.5 cr based on FS → Reject the project (Loss)

Reject the project (Loss)

Customer will approach WIPRO for sw development 1 year — 2 cr

WIPRO → untill now WIPRO work's on (Health care domain, Banking domain, Educational domain, Finance domain, ERP domain (Enterprise resource planning), Ecommerce domain)

PM, BA, H.R, Architect, Finance, DEV TE

SDL process done by
1) BA → Req collection
2) Team → Feasibility study

→ suff requirement ✗
→ suff lab setup ✗
→ suff technologies ✗
→ Suff Engineers ✗

It will take 2.75 cr base on FS

Reject the project (Loss)

Customer will approach HONEY WELL for sw development 1 year — 2 cr

HONEY WELL → untill now HONEY WELL done → [AERONATICAL DOMAIN]

PM, BA, HR, Architect, Finance, DEV TE

SDLC process done by FS
1) BA → Req collection
2) Team → Feasibility study

→ Suff requirement ✗ ✓
→ Suff lab setup ✗ ✓
→ Suff technologies ✗ ✓
→ Suff Engineers ✗ ✓

I will take 1.5 cr based on F.S

Taken the project

Profit → .5 cr

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3. Design :-

→ ONce after feasibility study is Completed then we go for Design phase/ stage.

→ Design is done by Architect / Technical architect / Senior architect.

There are two types of Design.

a) High level design (HLD) / External design

b) Low level design (LLD) / Internal design.

a) High Level Design (HLD) :-

Designing the architecture of the software/ project is called as HLD / External design.

(OR)

~~Example for High Level~~

If you take any application then designing main modules / features of the application is called as High level Design (HLD) / External design.

Ex: 2 Example on High level Design (HDL) :

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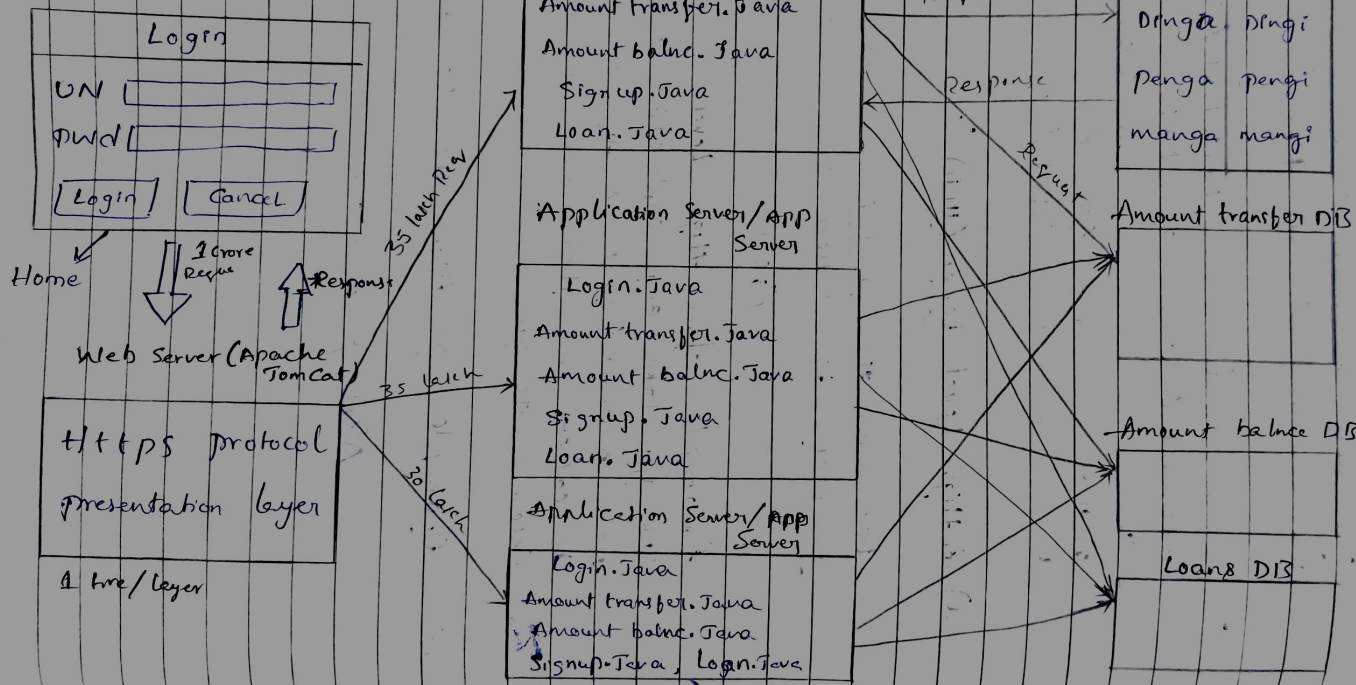
Example:- Citibank Customer

Open the browser and enter URL (www.citibank.com)



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→ Difference between Web Server, app Server and data base Server.

→ Web server will handle https protocol request.

→ Application Server/app Server is used to install pgm written by the developer.

→ Database Server is used to store the data.

→ **why it is Called 3 tier Architecture.**

* Since the Communication happens between 1 web Server, 1 app Server and 1 Data base Server is known as 3 tier architecture.

→ **why it is called 'N' tier Architecture :-**

• Since the Communication happens between 1 web Server, multiple app servers and multiple data base servers is know ~~at~~ as 'N' tier architecture.

Note :-

* when the load is less Company can go for 3 tier architecture.

* when the load is more Company can go for 'N' tier architecture.

Ex:- 3 House Construction example :-

If you take house Construction as an example then designing layout / Blue print of the house is called as High Level design/ External design.

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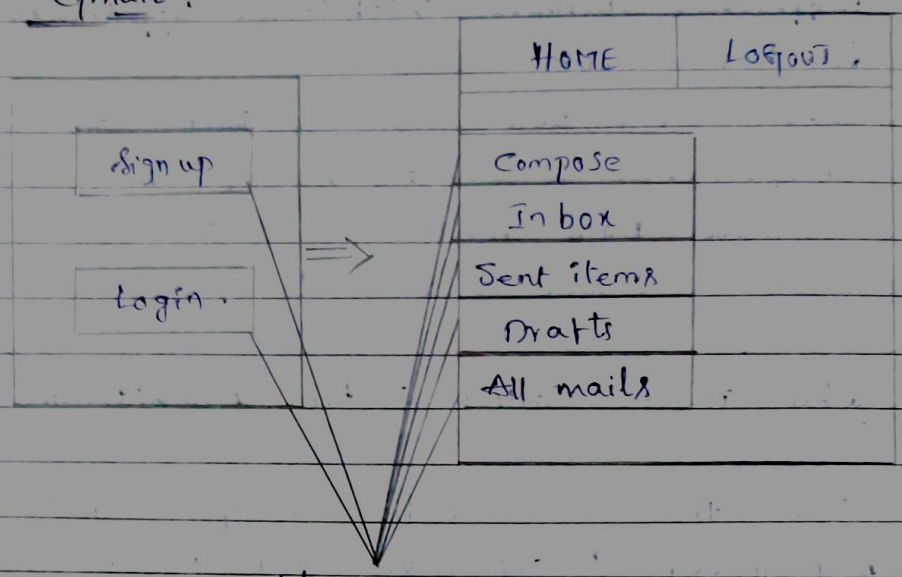
HLD

Gmail :-



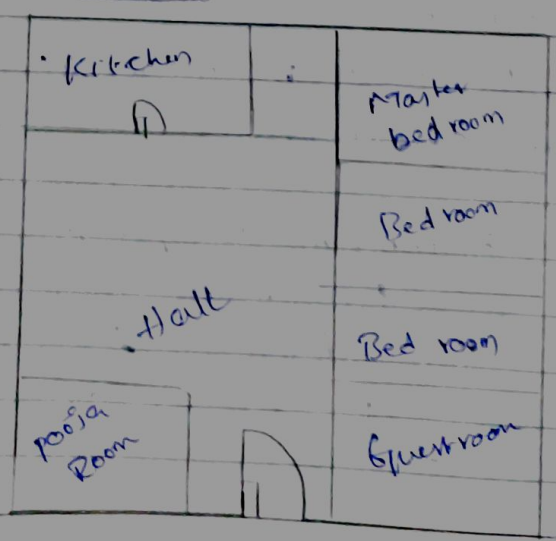
Main modules / Features / functionalities.

Main modules (or) Features (or) Functionalities.

whats app

Chats	Status	calls

Construction: HLD



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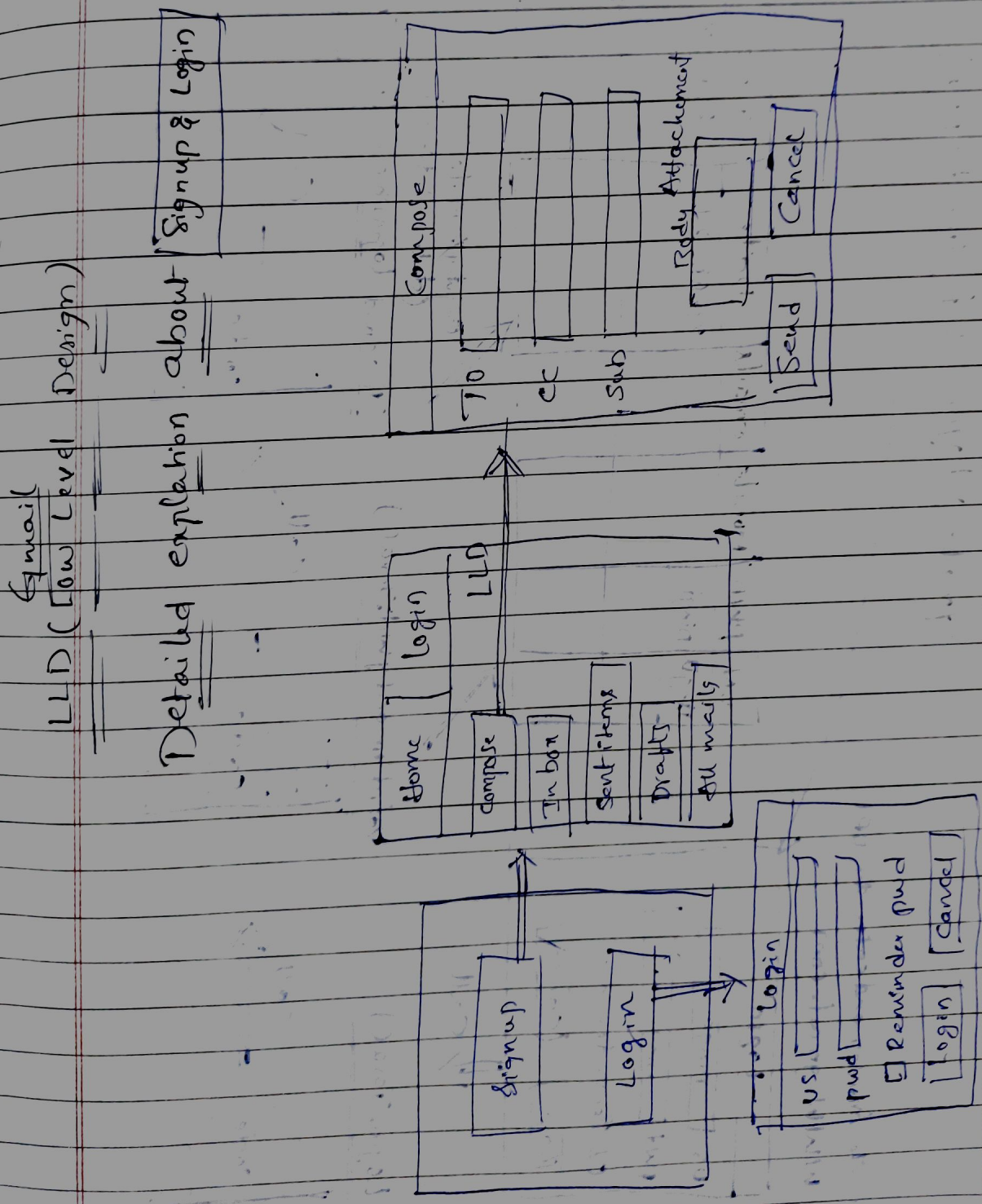
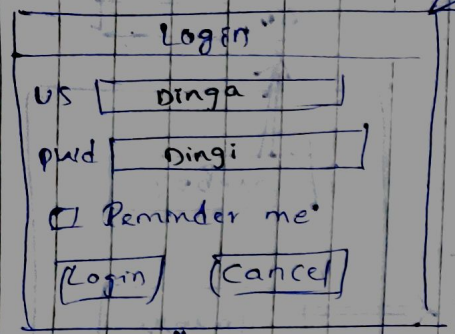
b) Low Level design (LLD) / Internal design :-

If you take any application then designing each and every individual module (or) main module in detailed is called as Low level design / Internal design.



Gmail --> Login --> Featured (LLD)

open the browser and enter the URL
www.gmail.com

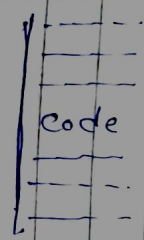


Call

UN	PWD	Mobile	email	Date	Time
Dinga	Dingi			23-08-21	2:45pm

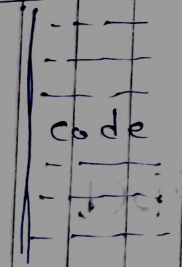
Computer/mobile
(date and time)

Login.Java()



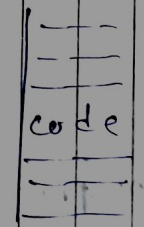
Call

valid un and pwd.Java()



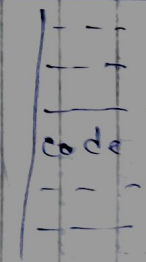
Call

Record LoginTime.Java()



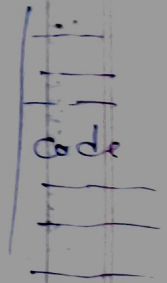
Call

Create session.Java()



Call

Send response.Java()



Gmail

Inbox - feature (LLD)

Inbox

call

UN	pwd	mobile	emails	date	time
pinge	pingi				

Inbox.Java( )

code

Call

Connect to database.Java()

code

call

Getemails.Java( )

code

Call

Send response.Java( )

code

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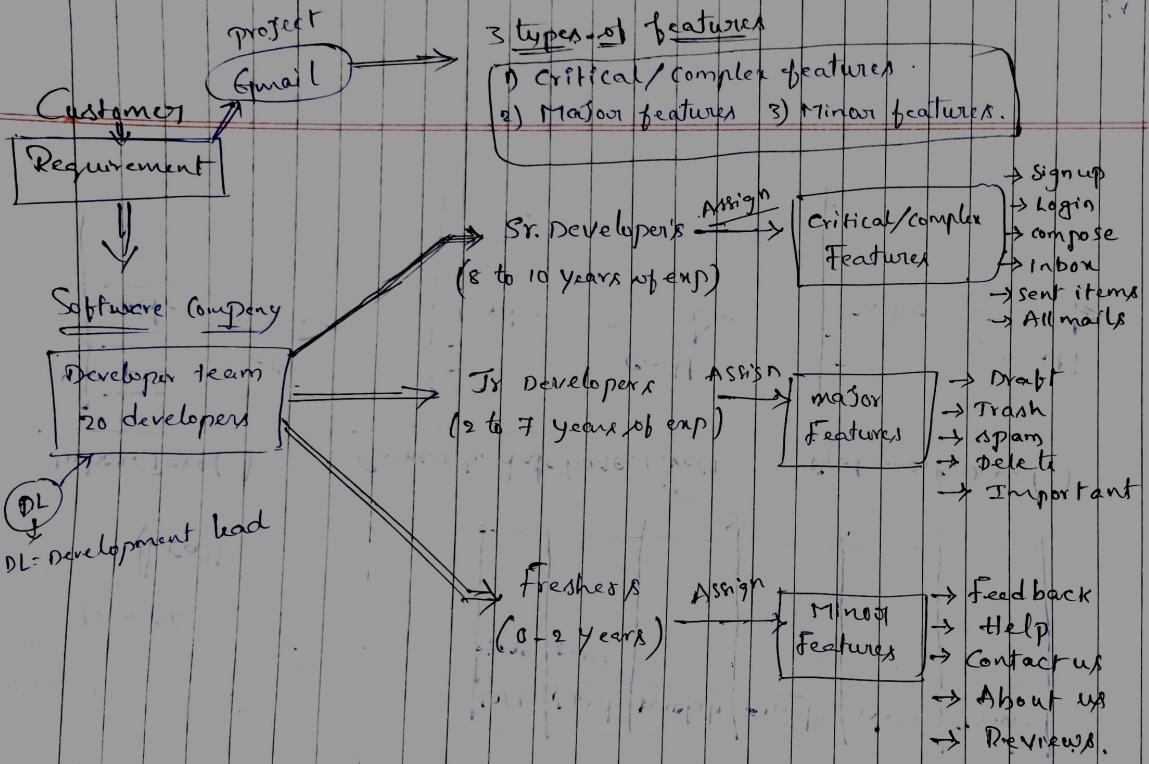
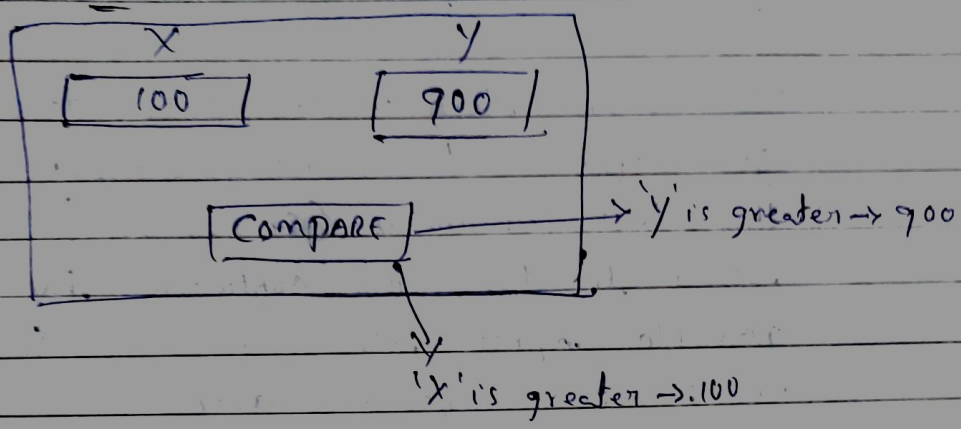
4 Coding :-

→ once after design is completed then we go for Coding phase/stage.

* It is done by Sr developers, Jr developers and freshers by looking into the LLD and the requirement.



Sample Code:



sample code

```
public static void main (String Args[])
{
  int x=90, y=60;
    if (x>y)
  {
   system.out.printIn ("x is greater: " +x);
  }
  else
  {
   System.out.printIn ("y is greater: "+y);
  }
}
```

Customer (Citibank)

⇓

Requirement → 10 page req login → BL

⇓ customer will approach SW company.

SW Company

Infosys

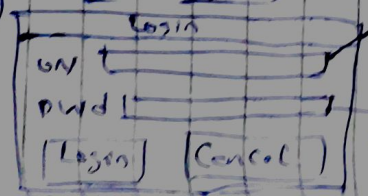
⇓

1) BA (Requirement Collection)

⇓

SW Language

2)



Req

UN text field should accept between 2 to 10 char

Req

PWD text field should accept min 8 char and it should contain atleast 1 special char

② Feasibility Study (Team).

⇓

③ Design (Architect)

→ HLD

→ LLD

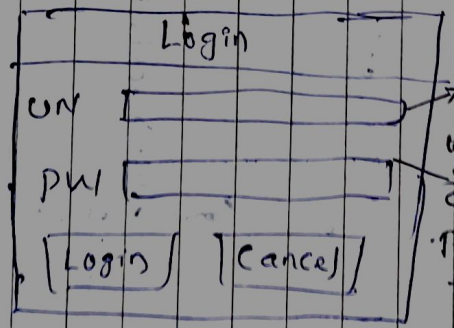
⇓

④ Coading (Developers)

⇓

⑤ Testing (TE)

Step.1:- open the browser & enter url www.citibank.com



checking all possibilities to find defect

checking all possibilities to find defect.

5. Testing :- (Definition)

once after coding is completed developers will give software to Testengineers, where in all the test engineers (SE, TE, JE, fresher) will start to test the software by entering all possible inputs into software to find defec. to in the software according to customer requirement is called as "TESTING".

25-08-21

Note:-

In earlier days in the waterfall model testing was done by Developers.
But now a days you go to any Company and if Company is following waterfall model then testing is done by Test engineer's (TE) only.

1 crore

what are the drawback's of developers involved in testing the software?

(OR)

what are the disadvantage's of developers involved in testing the software?

Ans

→ Chances are there developer will utilize all testing time in Coding.
→ Developers will be more Concerned on developing the Software rather than testing the Software/application.
→ Developer's will be over Confident.
→ Developer's will write the Code and test the Software/application only from positive point of and they will not test from Negative point of View.

Ex:- Chess.

→ while testing software if developers find any defect he will not try to fix defect.
→ Time taken is more.
→ Software/application Quality is not good.

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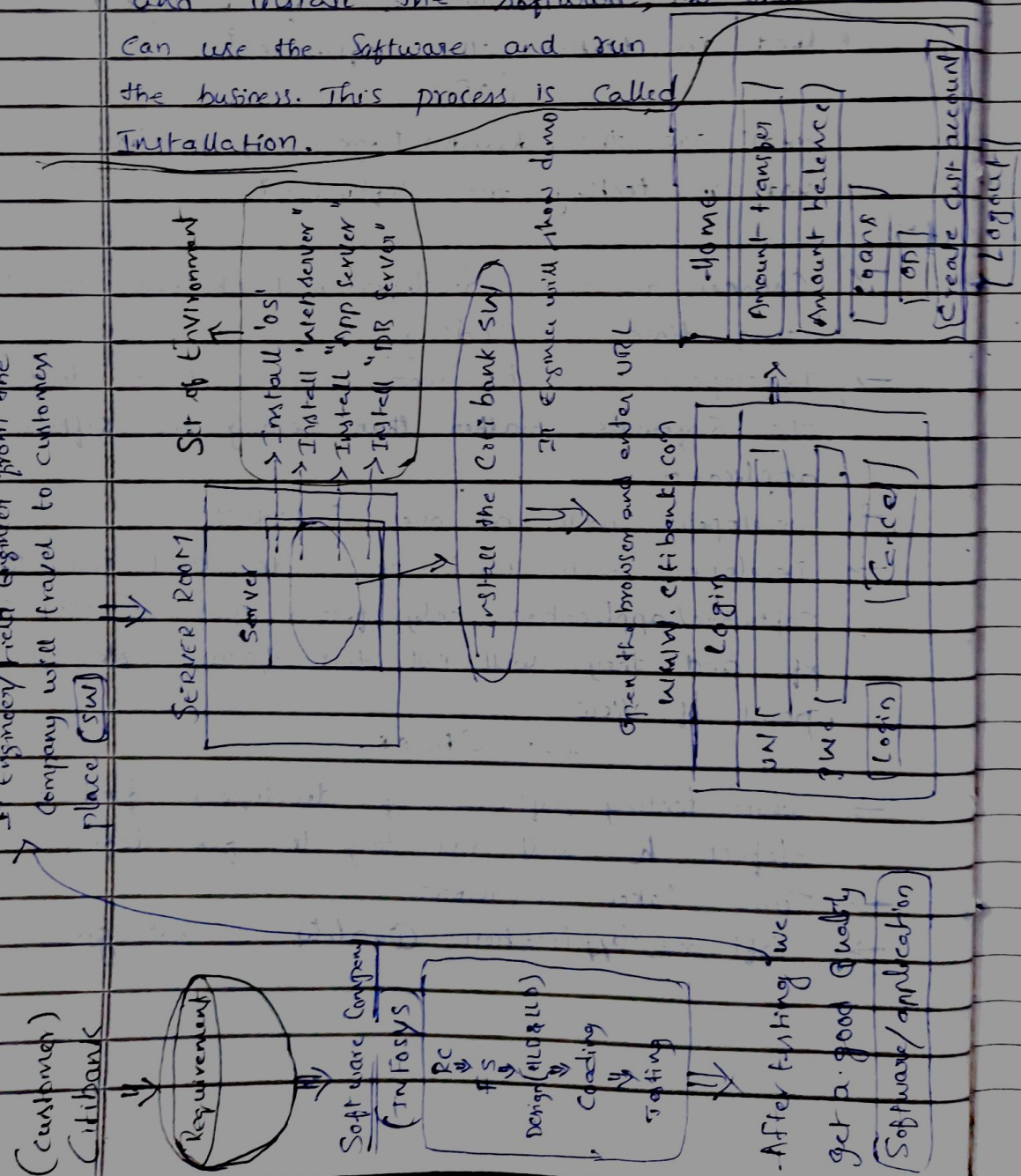
6 Installation / Implementation :-

→ Once after testing is Completed software quality is good then we go installation stage/phase. It is done by IT engineer/ field engineer/ site engineer/ Implementation engineer/ Installation engineer.

IT engineer from the Company will go to Customer place and set up the environment and install the software, So that Customer can use the Software and run the business. This process is called Installation.



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Normal Note:-

In earlier days, Sr. Dev was involved in installation

⇓

Sr developer is not present in company --> Company will miss the project by chances.

[Huge loss]

Today if we go to any Company --->
Separate engineers --> IT engineers

⇓

Sr. developer will give training on install the SML, to IT engineers, once training is completed Company will send IT engineers for Installation

Page 07

7 Maintenance :-

Once after installation is Completed then we go for maintenance phase/stage.

Customer while using software and running business, if customer face any problem/defects then Company will provide a free service (fix and test given new SW) for the customer for a period of 6months to 1 year depending upon the agreement between customer and the Company this period is Called as "maintenance period."

once after maintenance period is Completed and if customer face any problem or if Customer wants any Changes (Adding/deleting/Modification features) then Company will charge for the Customer.

Maintenance is done by Developers and Test Engineers (TE).

INTERVIEW QUESTION'S (WATER FALL MODEL)

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→ why the model is called Water-fall model.

Here Backtracking is not possible,
It means once after feasibility study is Completed, requirements will be freezed, We Cannot go back and change the requirement. So the model is called Water fall Model.

→ what happens if requirement Changes?

If Customer → Changes Requirement
⇓
Req collection changes
⇓
Feasibility study changes
⇓
Design will changes (HLD & LLD changes)
⇓
Code change's
⇓
Testing we will find lot of defects.

27/8/21
→ why customer keep's on changing requirement/ why requirements keep on changing.

→ Because of competetion in the market.
→ when the business changes Corresponding the software should changes. So that's the reason requirement change's.
→ Customer always wants to operate on New technologies, that's the reason requirement change's.

Ex:-

Old technologies	New technologies
Win xp	Win 10
Win mobile	Android and IOS
mainframes	Java
SQL	oracle
IE	Chrome.

(1 mark)

Drawbacks of Waterfall model:-

1 → Requirement changes are not allowed. (Back tracking is not possible)

2 → Total Time taken is more (customer should wait for long time just to see the software).

3 → Developers were involved in testing.

4 → If there is defect in the requirement it will flow till end of the coding and this leads to lot of reworking and time consuming.

5 → Total investment is high (If there is defect in the requirement it will flow till coding, so cost of fixing defect is more/downward flow of defect is more)

6 → Requirement collection and design is not tested

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7 -> It is not flexible model to adopt because requirement changes are not allowed.

Advantages of Water fall model :-

-> Since the requirement changes are not allowed while testing no of defects will be less.

-> product will be robust.
(SW quality is good)

-> Advantage / Convenience for Developer (Less recoding).

-> It is a simple model to follow.

-> Initial investment is less (Because testing is done only after coding and initial stages testing team was not present).

-> For what kind of project / Application we can go for water fall model ?

* For small and short term or simple project.

* when customer don't do requirement changes then we can go for waterfall model.

Ex:- Machine critical application :-
ECG machine, Scanning machine, X-ray machine
MRI machine.

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SPIRAL MODEL

Definition (what) :-

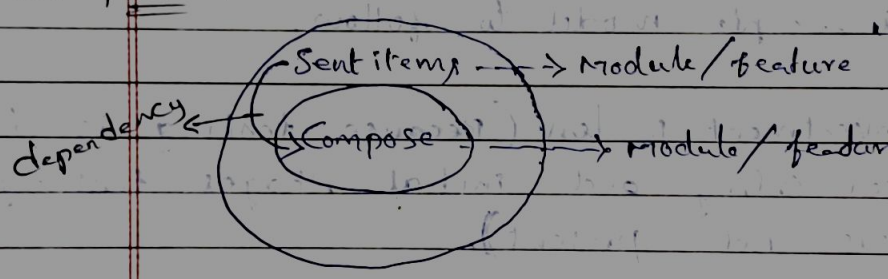
Spiral model is a step by step procedure) standard procedure to develop a new software.

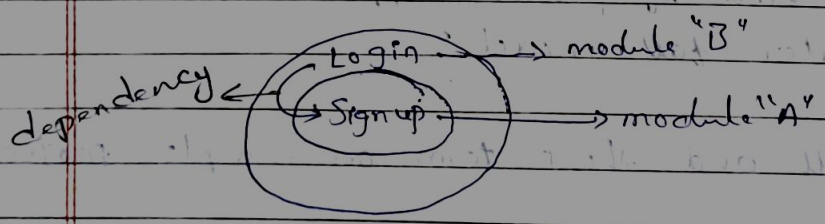
→ In order to overcome drawbacks of waterfall model we go for spiral model.

→ Spiral model is mainly used when there is dependency between the modules / features.

Example of dependency :-

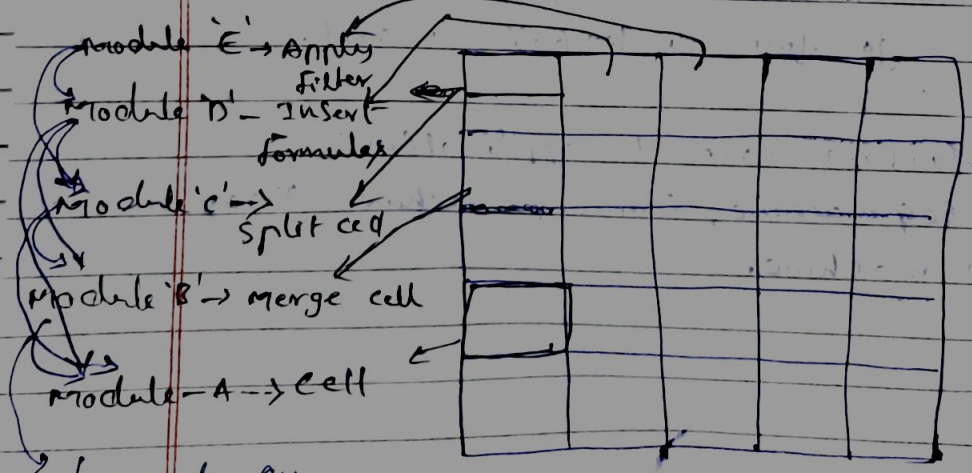
Ex:- Gmail :-





Ex:- 2

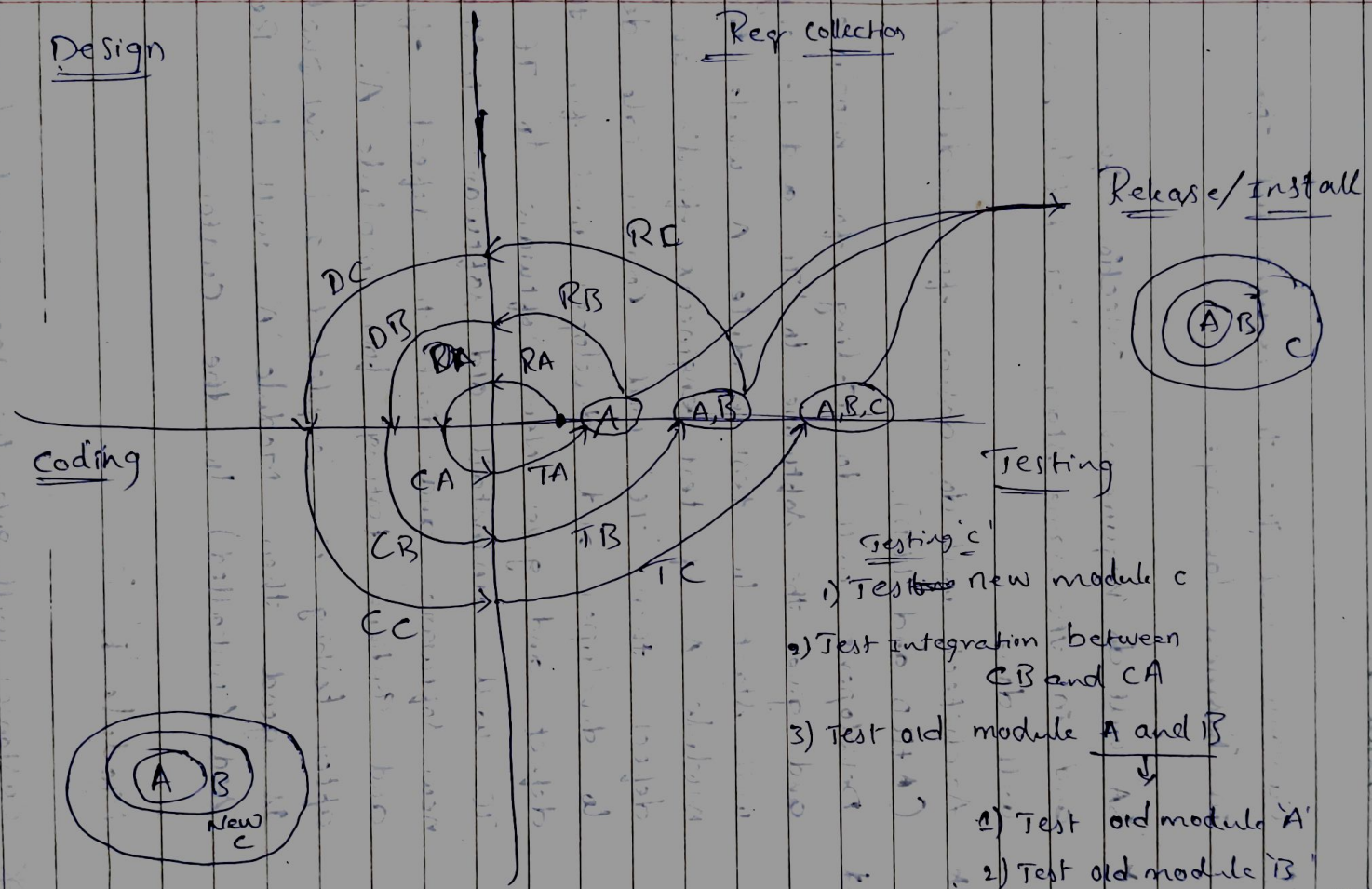
MS Excel (Micro soft Excel)



SPIRAL MODEL / Itterative model / Incremental model

Customer

Requirement
⇓
Business language



Testing 'c'

1) Test new module c
2) Test integration between CB and CA
3) Test old module A and B
⇓
1) Test old module 'A'
2) Test old module 'B'
3) Test integration b/w B

Diagram of Spiral model

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Module A :-

* Customer will give the requirement for module 'A' in Business language.

* 'BA' will do Requirement Collection for module 'A' and in the same stage 'Feasibility Study' will done.

* Architect will do design for module 'A' (HLD and LLD).

* Developers will do Coding for module 'A' and give the software to 'TE' and test engineers will start to test module 'A' while testing module 'A' if test engineers find's any defect then 'TE' will Communicate defect to developer and developer will fix the defect and give New software to TE and TE will uninstall old software → install a new software and test the defect first and Continue testing for module 'A'. once after testing is Completed and SW Quality is good then Module 'A' will be Released (Installed) to the Customer.

Module 'B' :-

* Customer will give the requirement for module 'B' in business language and Customer will tell 'B' depends on 'A'.

* 'BA' will do requirement collection for module 'B' and it's dependency and in the same stage feasibility study will be done.

chandra's Dt. Pg.

* Architects will do Design for module 'B'.
(HLD (High level design) and LLD (Low level design))

* Developer will do coding for module 'B'.
(It means first developer will take copy of Code of 'A' and developer will write Code for 'B' and developer will write integration Code for 'B' and 'A').

* Developer will give software/application to 'TE' and 'TE' will start to test the software.

Here Test engineer first
1) Test New module 'B'.
2) Test the Integration between 'B' and 'A'.
3) Test old module 'A'.

Once after testing is Completed quality is good then we release 'A' and 'B' to the Customer.

Interview Questions

→ why the model is called Itterative model?
~~In eve~~
In every cycle same process is repeated so the model is called as Itterative model.
Process → (Requirement collection, feasibility study, Coading, testing ----).

→ why the model is called Incremental model?

In every cycle we keep on adding new module/feature. So the model is called as "Incremental model".

11/09/21

1 Crore story

→ How to handel requirement changes in Spiral model!

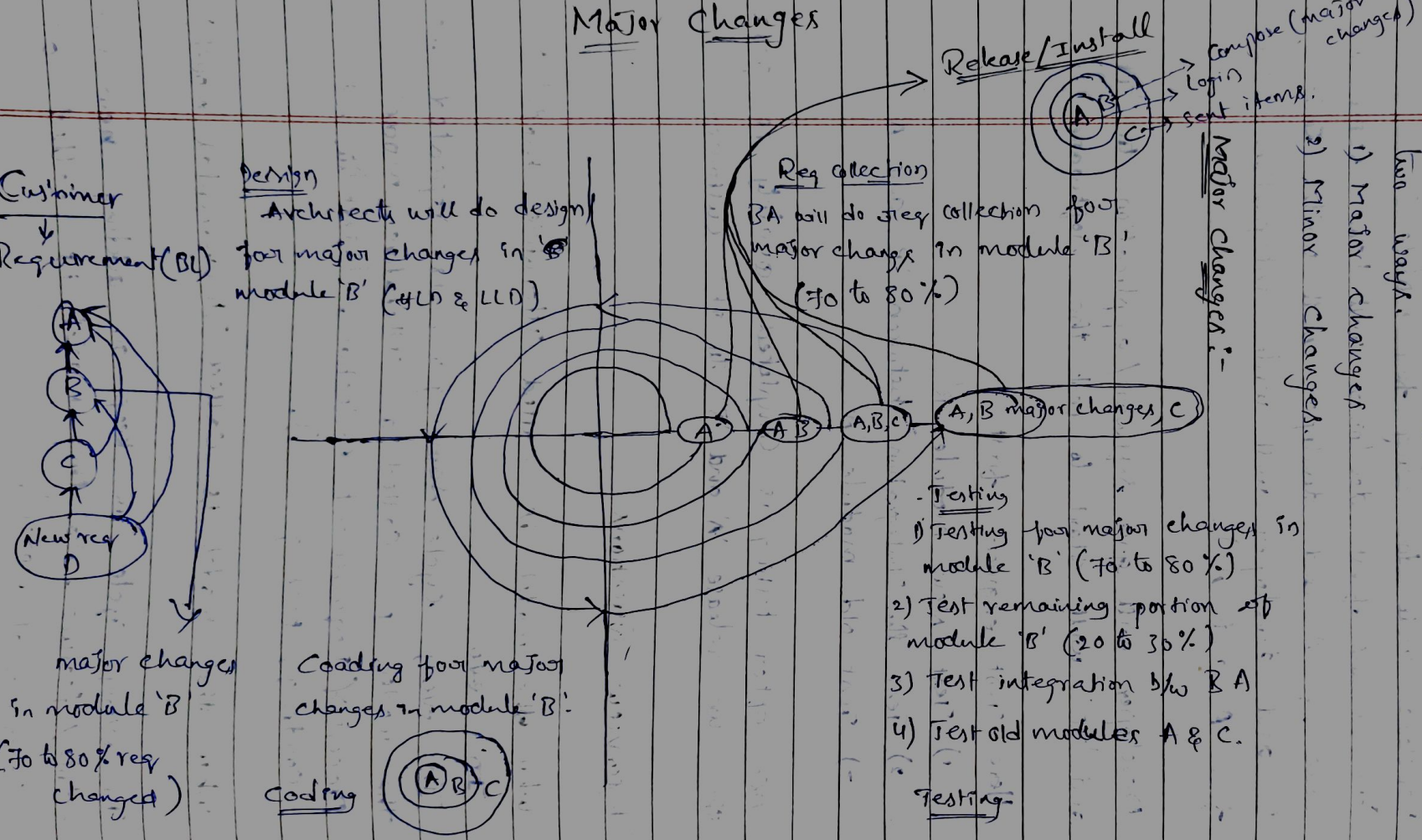
Requirement changes can be handled in two ways.

1) Major changes

2) Minor changes.

Major changes :-

Major Changes



chandras

* If Customer gives requirement for major changes and new requirement, in this Case we will handle major changes first as a part of New cycle.

--> BA will do requirement Collection for major changes in 'B'.

Note:- (Remaining point is in diagram See and write in Home note).

Minor Changes :-

If Customer gives requirement for min changes in 'B' and New requirements for 'D' and customer is facing 2 minor defects in module 'C'. In this Case we will handle all these changes as part of one New cycle.

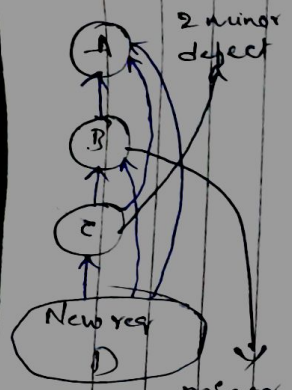
-> BA will do Req Collection for new module 'D' and minor changes in 'B'.

Note: Remaining points is in diagram See and write in Home book.

Minor changes

Customer

Req :- 'BL'

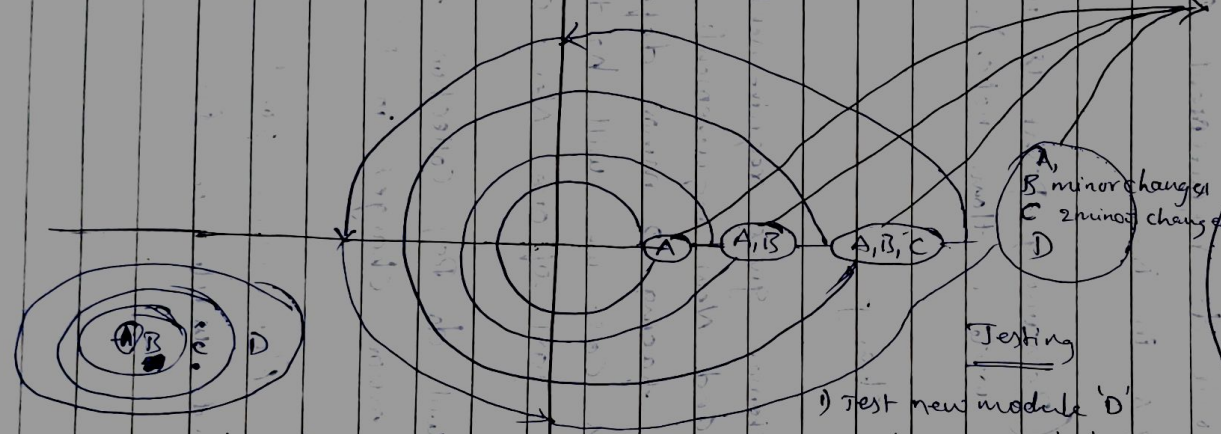


Design

Architects will do design for New module 'D' + minor changes in 'B'.

Req collection

BA will do Req collect for New module 'D' + minor changes in 'B'.



Dev will do coding for new module 'D' + minor changes in 'B' + fix '2' minor defects in module 'C'.

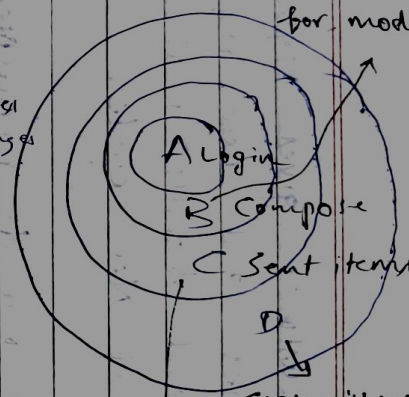
Coding

Testing

1) Test new module 'D'
2) Test minor changes in 'B'.
3) Test integration between DC, DB and DA
4) Retest/test '2 minor defects in C'
5) Test old modules A, B and C.

Testing

Release/Install



Cust will use SW and run business

Cust is facing 2 minor defects in module 'C'.

2/9/21

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Advantages of Spiral model :-

1 → Requirement changes can be done by After every cycle.

2 → Customer will get opportunity to see the software after every cycle / for every module.

3 → Testing is done in each and every cycle ~~be~~ before going to next cycle.

4 → Software Quality is good.

5 → Spiral model is Called as Controlled model. (Here we take requirement for one module ~~are~~ and develop the module, test the module and if the Quality is good then only we give software to Customer and take the requirement for next module).

Drawbacks of Spiral Module :-

1 → Requirement changes are not allowed in between the Cycle

2 → Requirement Collection and Design is not tested.

3 → In this model also developers were involved in testing.

4 → Every cycle of Spiral model looks like water fall model.

→ For what kind of project's / Applications we will go for spiral model:-

* when there is a "dependency" between the modules

* when the customer gives requirements in stage's.

In how many stages requirement's will be given (or) what are the stages of the requirement :-

Customer → Requirement → Business language

1st stage

CRS
(customer requirement specification)

2nd stage

BA → Software language

SRS
(Software requirement Specification)

3rd stage

BA

FS
(Functional Specification)

It is detailed document which explains how each and every feature/functionalities should work

BRD → Business Requirement documentation

BS → Business Specification

MRD → Market Research Documentation

BRS → Business Requirement Specification.

(citibank)

Customer

↓

(CRS)

- Registration
- Login
- Transfer
- Amount balance
- Loans
- OD

Registration ⇒

SRS

Registration

FN [ ]

LN [ ]

UN [ ]

pwd [ ]

Mob No [ ]

Address [ ]

Gender ○ male ○ female

[Submit] [Cancel]

FS

→ 'FN' text field should accep between 2 to 8 characters

→ 'LN' text field should accept up to 30 alphabets.

⇒ "UN" text field should accept max 15 characters

Todo CV start

V&V Model (~~Validation~~ Verification & Validation model)

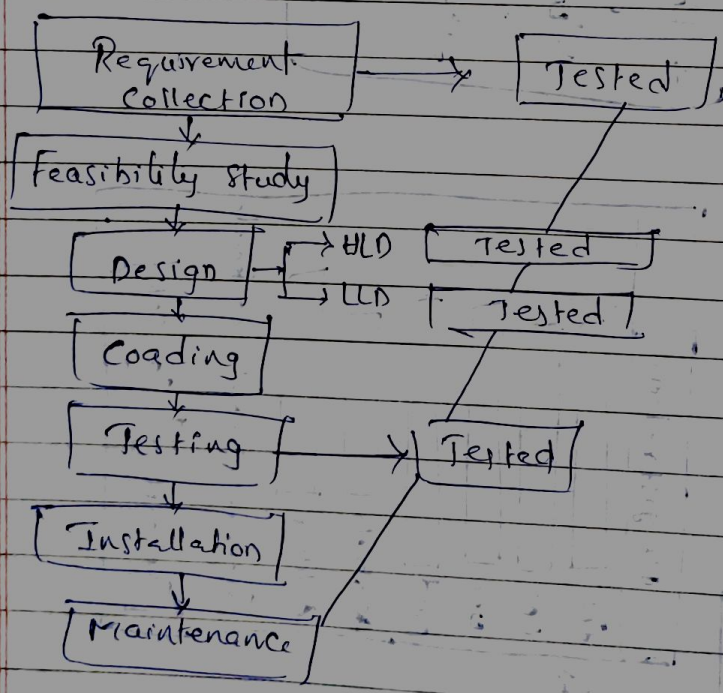
Definition (what):-

Verification and Validation model is a step by step procedure or a standard procedure to develop a New Software.

Beauty of V&V model:-

In the V&V model all the stages are tested.

Ex (Diagram)



→ why V model? (or) why yo want to go for V and V model?

In order to over come drawbacks of both water fall model and spiral model we go for V and V model.

In water fall model Requirement changes are not allowed and both in water fall and Spiral model "requirement Collection and design" is not tested.

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Dt: Pg:

In order to overcome this drawbacks we go four V and V model

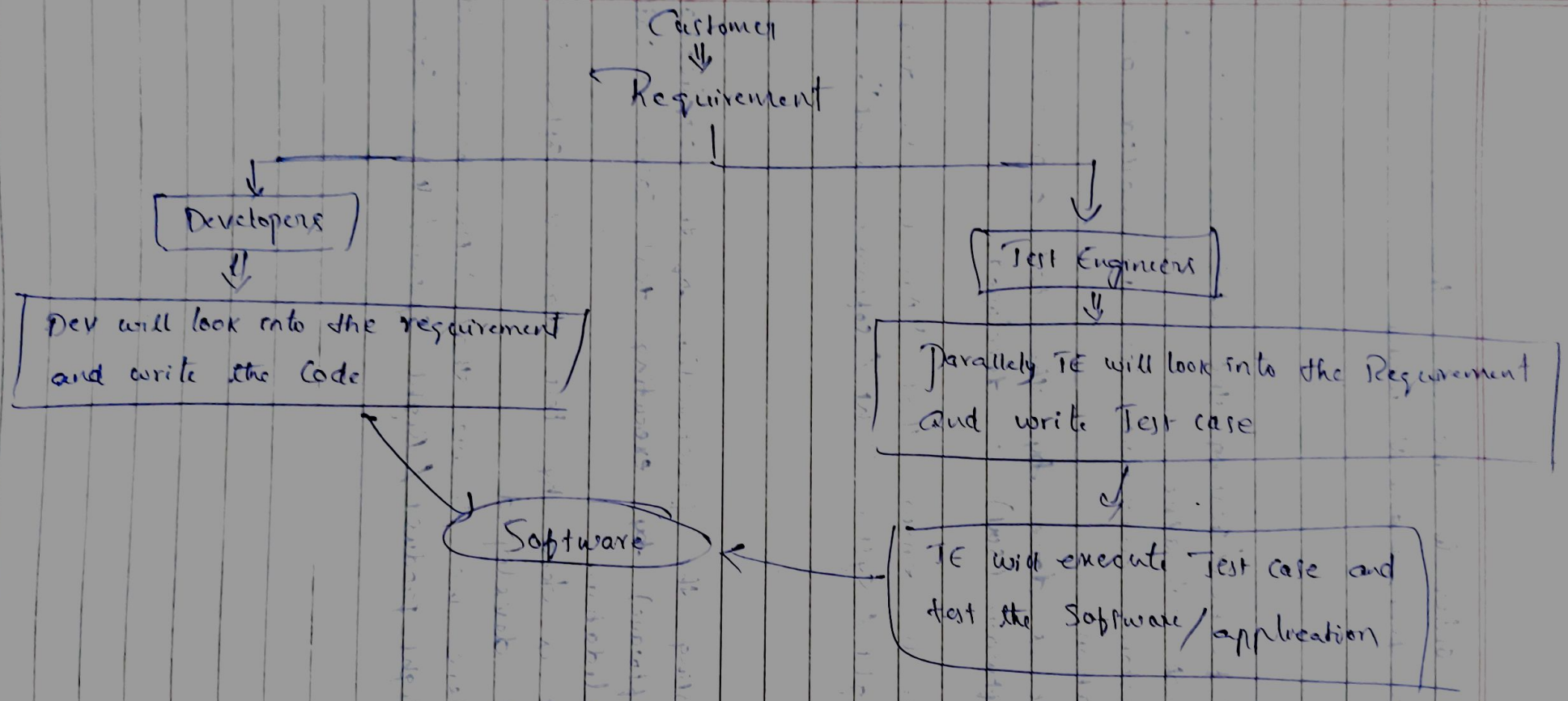
Verification :-

* Verification/Testing the CRS, SRS, HLD, LLD and check wheather it is according to the customer requirements is called as Verification.
* It is done by the test engineers before Software (SW) is developed.
* Here we ensure that "Are we building product Right / System Right / Software Right".

Validation :-

Testing the functionality of the application / SW (software) by executing test cases is called as Validation.

* It is done by test engineers after SW (software) is developed.
* Here we ensure that "Are we building a Right product / Right System / Right Software".


Customer
Requirement
Developers
Dev will look into the requirement and write the Code
Test Engineers
Parallely TE will look into the Requirement and write Test case
TE will execute Test case and test the Software/application
Software

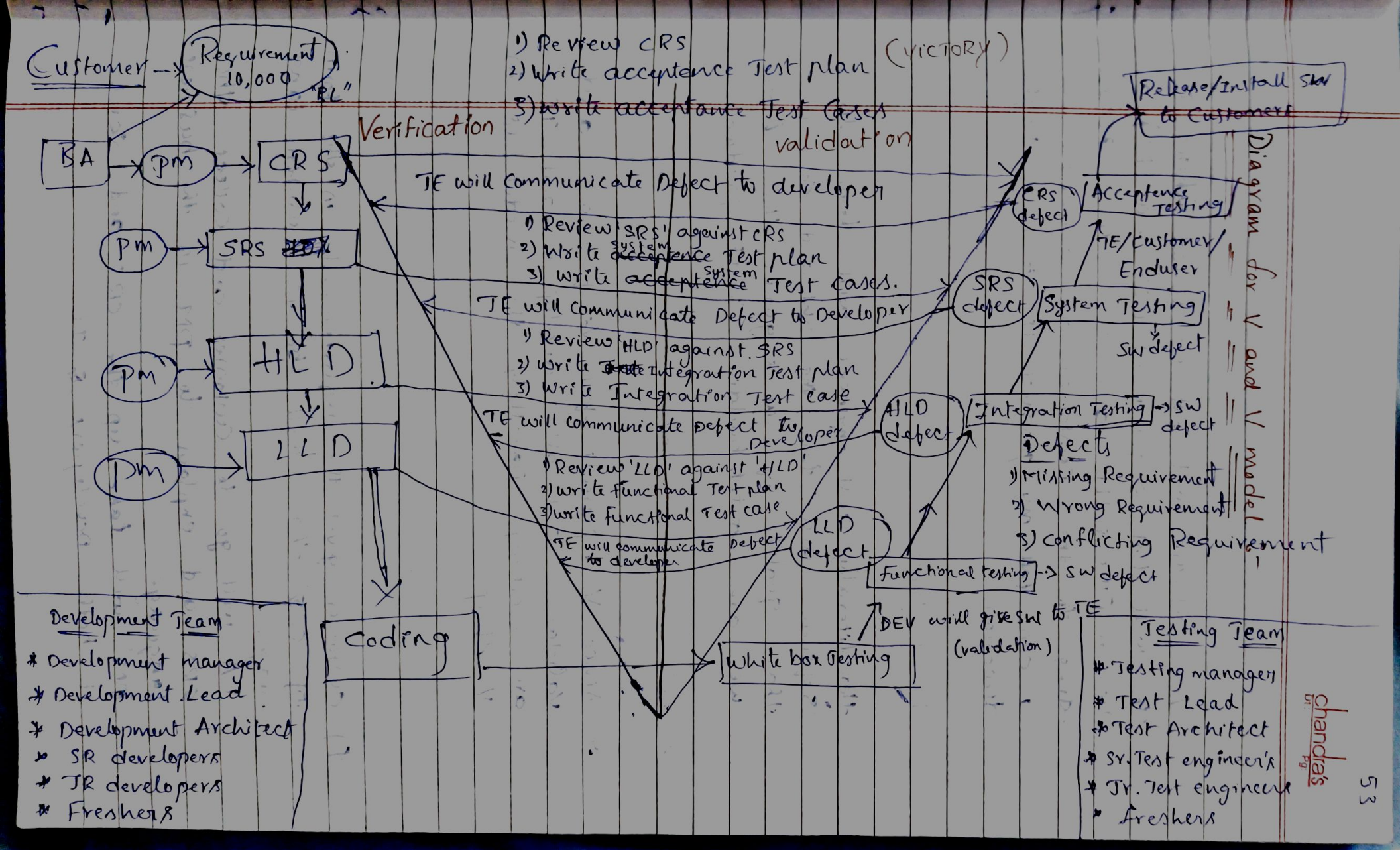


Diagram for V and V model

6-09-21

Product right:-

Here software will not be tested where in TE will test requirement (CRS and SRS) and Design (HLD & LLD) and check it is according to the customer requirement.
I can tell my product is going in Right direction.

Right product:-

Here literally Test engineer will login to software and test the SW and confirm that quality of SW is good. then here we are ~~bulit~~ building Right product.

→ why the model is in 'V' shape why not be in 'U' & 'W' shape?
→ Since V represents for Verification and validation and also developers and TE are working parallely the model is in 'V' shape.

Explanation for the model:-

1) Customer gives the requirement in the form of 'CRS' that will be in business language.
BA will go to customer and collect the CRS and explain to PM in the business language.
'PM' will take up the CRS and send it both Developers & TE.

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Dt: Pg:

2) TE will Review CRS
Write Acceptence Test pland and
write Acceptance Test cases parallely
/simultaneously / meantime developers will be
Converting 'CRS' to 'SRS'.
while reviewing CRS if test engineers finds
any defect like (Missing Requirement
Wrong Requirement
Conflicting Requirement) then
TE will Communicate to developer and developer
will cross check 'CRS' and Confirm the
defect and developer will Communicate defect
to 'Customer' and Customer will update 'CRS'
and Send updated 'CRS' to both TE and
Developers.
TE will review updated CRS and also update
Corresponding Acceptence Test plan and Test
cases, parallely developer will update defe
ct in 'SRS' and Continue Converting 'CRS'
to 'SRS' once both developers and TE compl
eted the work 'SRS' will be ready.

3) 'PM' will take up 'SRS' and Send it both
developers and TE.
TE will Review 'SRS' against 'CRS', write
system Test plan and Test cases parallely
developer will be Converting 'SRS' to 'HLD'
once both developers and TE complete the
work 'HLD' will be ready.

4) Like this way flow Continues till the
Coding.

Once after Coding is Completed Developers will do WBT (Testing each and every line of the code), while doing WBT if developers find any defect in the Code developers will fix the defect and do WBT.
Once after WBT is Completed developer will give SW to 'TE' and 'TE' will start with Validation activities; where in first TE will do functional Testing by executing functional Test cases. while doing functional testing if TE finds any defect in the SW then TE will Communicate defect to Developer and developer will fix the defect and do WBT and give new SW to TE and TE will uninstall old SW, and install new SW and test the defect first and continue doing 'functional Testing' after functional testing is Completed TE will do 'Integration testing', 'System Testing' by executing test Cases after System testing is Completed TE/ Customer / Enduser will do acceptence Testing by executing test cases one after Acceptence Testing is Completed SW Quality is good the SW will released to the customer where in customer will use SW and run the business.

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Dr Pg

Drawback's / Disadvantage's :-

1 * Initial Investment is High.

2 * Documentation is more (In every stage we should write Test plan. and Test Cases)

3 * Manging Interaction between Developers and Test engineers will be Very tough.

Advantages :-

1 * Total Time taken is less since testing starts from early stage itself.

2 * All the stages are Tested (CRS, SRS, HLD, LLD, Coding).

3 * Since testing is done in. everystage the download flow of defect is less because of this less reworking and less time Consuming.

4 * Requirement changes Can be done in any stage.

5 * Total investment is less (Since every stage is tested downward flow of defect is less because of this cost of fixing defect less)

6 * Software Quality is good.

7 * Deliverables are parallel. (It means when developer is Converting CRS to SRS parallely 'TE' will review CRS, write Test plan & Test case).

→ for what kind of projects/Application we go for V&V model?

* for long term and Big projects.
* for Complex and critical projects.
* when customer wants quality software with short span of time.

→ what types of defects TE will find while Reviewing CRS?

I * Conflicting requirement

(Citibank)
Customer
↓
CRS → 'BL'

Amount Transfer → 2
Amount blnc → 140
Loans → 500
OD → 800
Insurence → 1000
Transactions → 1200
ledger amount → 1500

Loans
Loans should consist of 4 types
1) personal loan → 502
2) Car loans → 550
3) Housing loan → 700
4) Education loan → 750
- - -

Personal Loan - 502
- - -
10. personal loan should be approved by Branch manger
defect → line 50 is conflicting with line 20 in page No - 502
50. personal loans should not be approved by Branch manager

2 * Missing Requirement.

Gmail (Signup)

* FN should be present and it should accept between 2 to 10 characters.
* LN should ~~con~~ present and it should accept 30 char.
* UN should be present
* pwd should be present and it should accept min 6 char and it should contain atleast 1 upper case

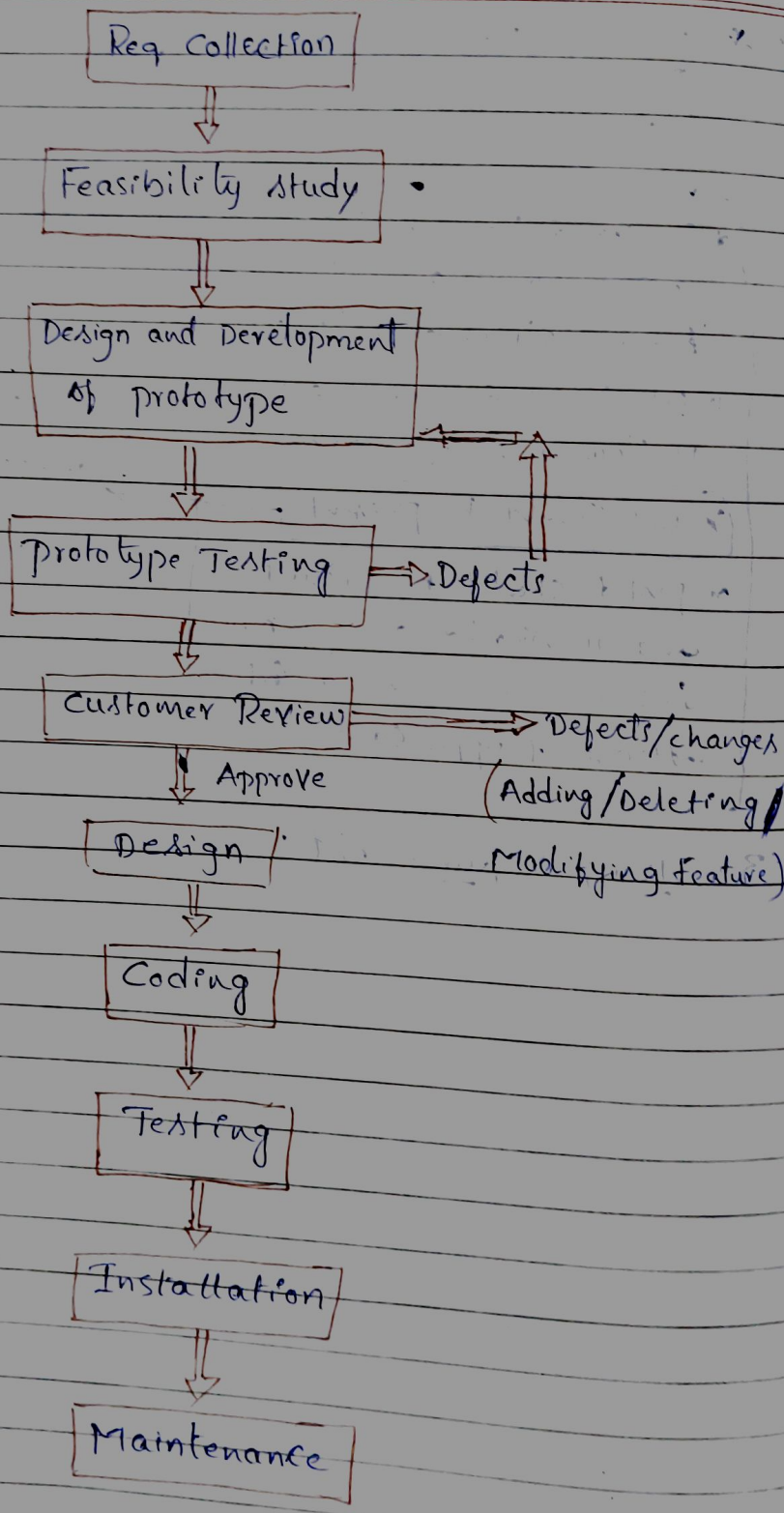
Defect
Missing requirement

3 Wrong requirement.

7/9/21

PROTO TYPE MODEL / DUMMY MODEL

Diagram



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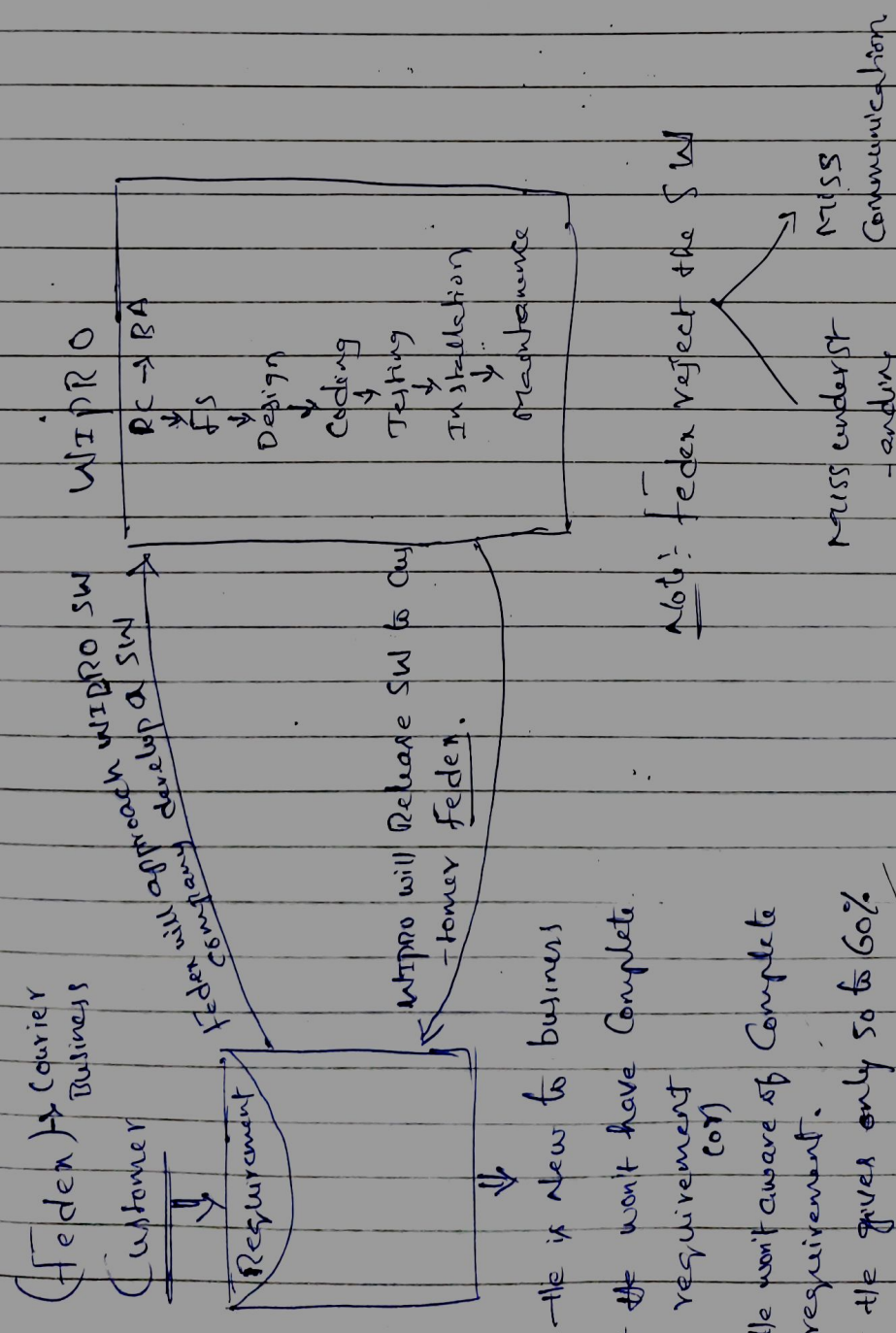
Dt Pg.

Example stating why / when we go for prototype model :-

According to below example Customer Feder rejected the SW because of Miss understanding and Miss Communication.
In order to overcome this kind of problem Company should go for prototype model.



what is prototype Model? (Definition)

Prototype model is a dummy model prepared by the Web Designers/ Developers/ content developers ~~which~~ where in they Convert 'Text format' into 'Image format' by using tools like Adobe photoshop, paint, picassa or Web Html.

Customer → Fedex.

⇓ (CRS - 'BL')

Requirement

⇓

Login (50 to 60 % req)

* If any user tries to access Fedex application first login should be displayed.
* UN should be present
* PWD should be present.
* Login and Cancel should be present

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Explanation:

* Customer will give req (60 to 70%)

* BA will do Req Collection (60 to 70%)

* Team will do 'feasibility study'

* Web designers / Content developers they will design and develop prototype and give it to ~~test~~ Test engineers.

* TE will test prototype while testing if you find any defect (some of the text format might not been converted into image format) Communicate to developer and Developer will fix the defect in prototype and again send it to TE and TE will do prototype testing, if there are no defects, then prototype will be sent to Customer review.

* If Customer is happy (Satisfied) with the prototype then Customer will approve the prototype.

* Architects will do actual design (HLD and LLD), Developers will do actual Coding and give SW to "TE" and TE will do actual / final Testing, if there are no defects and SW quality is good, then SW will be released to the Customer. So customer Can use SW and run the business. So that maintenance starts.

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Dt: Pg:

→ what is the difference between prototype and Actual/Final testing?

Prototype Testing:-

Testing done to check wheather Customer given requirement is present in the prototype or dummy page is called prototype Testing.

(or)

Testing done to check wheather all the text format is Converted into image format is called as prototype testing.

Actual/Final testing:-

Testing the functionality of an SW/application by enterning all possibility inputs into the SW to find defects in the SW according to the customer req is called as Actual/final testing.

Drawbacks:-

1 * Total time taken is more.

2 * Total investment is high

3 * There will be delay in releasing SW to the Customer.

Advantages:-

1 * Customer will get to know how the software looks in the early stage itself.

2 * Requirement changes are allowed.

3 * We can set high expectation for the cus-tomer.

4 * There will be very good communication b/w customers and developers, so that develop-ers can develop the SW according to the customer needs and necessity.

5 * It is very easy to handle requirement changes.

6 * SW quality will be good.

→ For what kind of projects / Application we go for proto type model.

* when customer is New to business

* when customer is not aware of complete requirement.

* when developers are new to the domain.

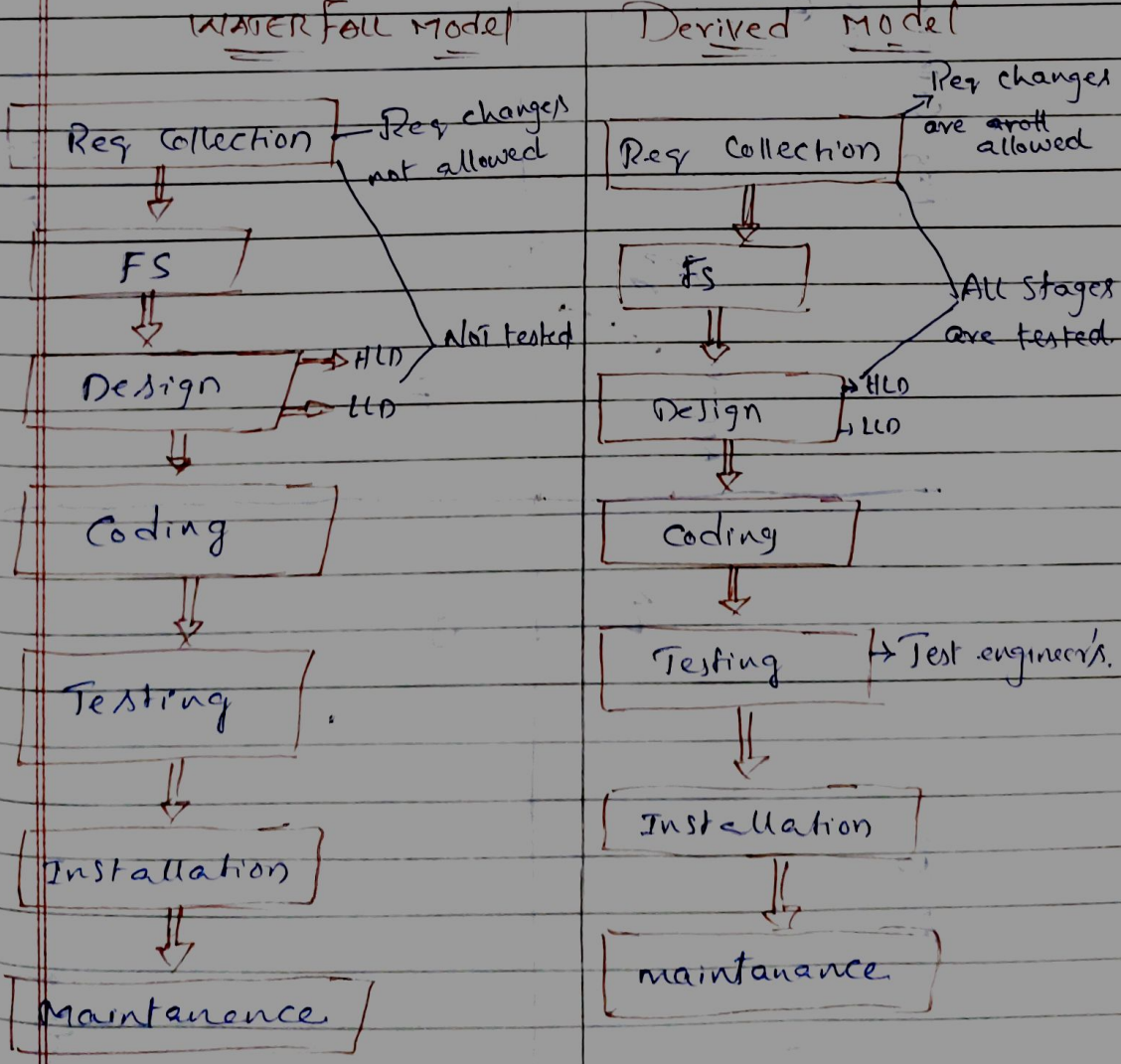
DERIVED MODEL / CUSTOMIZED

Definition:-

Here we take a basic model or one single model and we change the model as per the Customer ~~requireme~~ business requirements or Company standars this type of model is called Derived model.

Derived Model is also known as Customized model.

Example:-

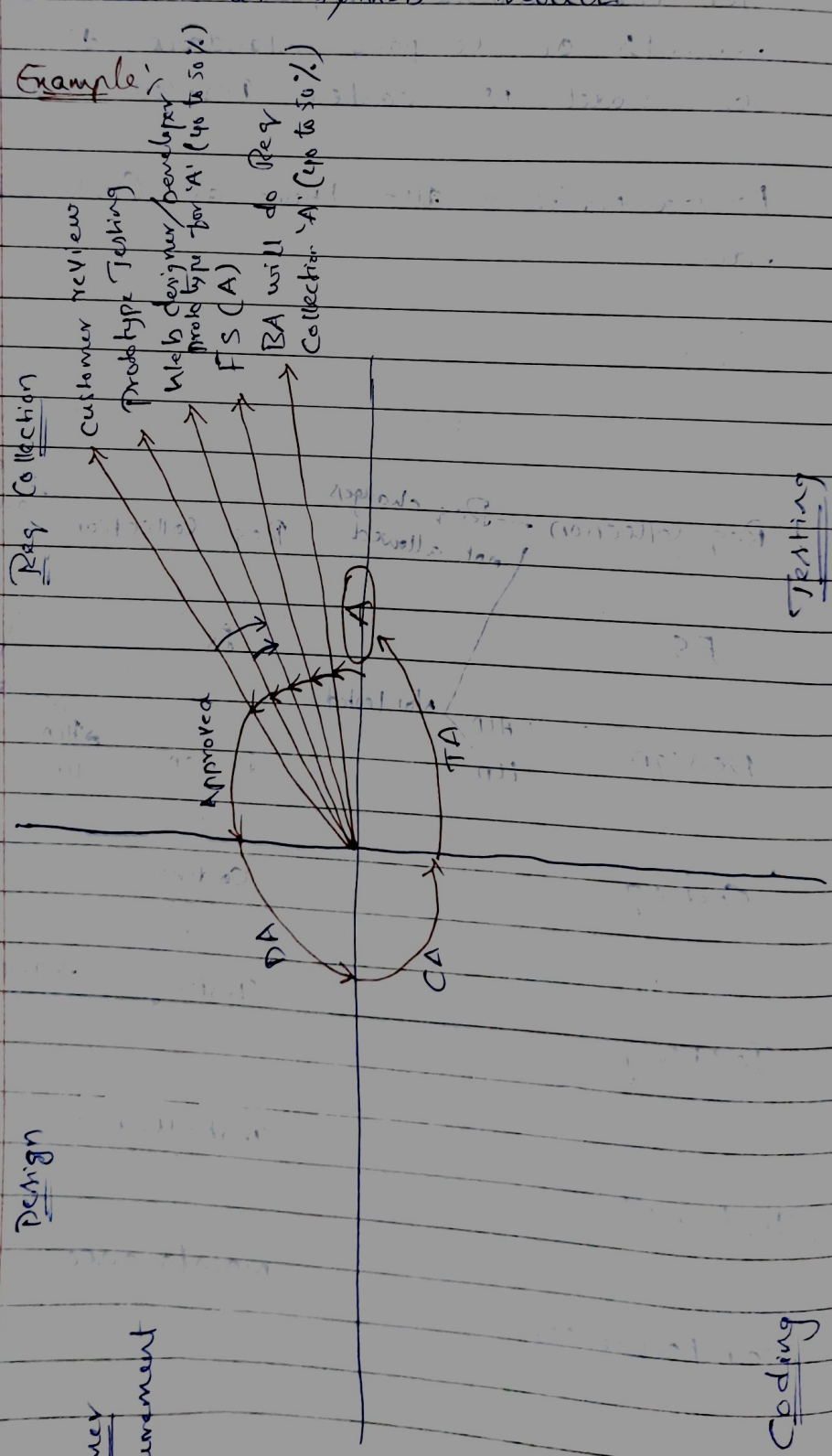


HYBRID MODEL / SANDWITCH MODEL

(Definition) :-

This process of Combining or merging more than one model into a Single model is known as "HYBRID" model.

1. Example :-



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example (A) (explanation) :-

* Customer will give req for module A (40 to 50% Req)

* BA will do 'RC' for A (40 to 50%)

* Team will do "feasibility study"

* Developers / web Developers will do design for the module 'A'.

* Test engineer's will do "prototype Testing" for 'A'.

* And prototype is good then prototype will send to for the Customer review, If the Customer is satisfied with the prototype model then he will approve for the original model (or) Actual model. of 'A'.

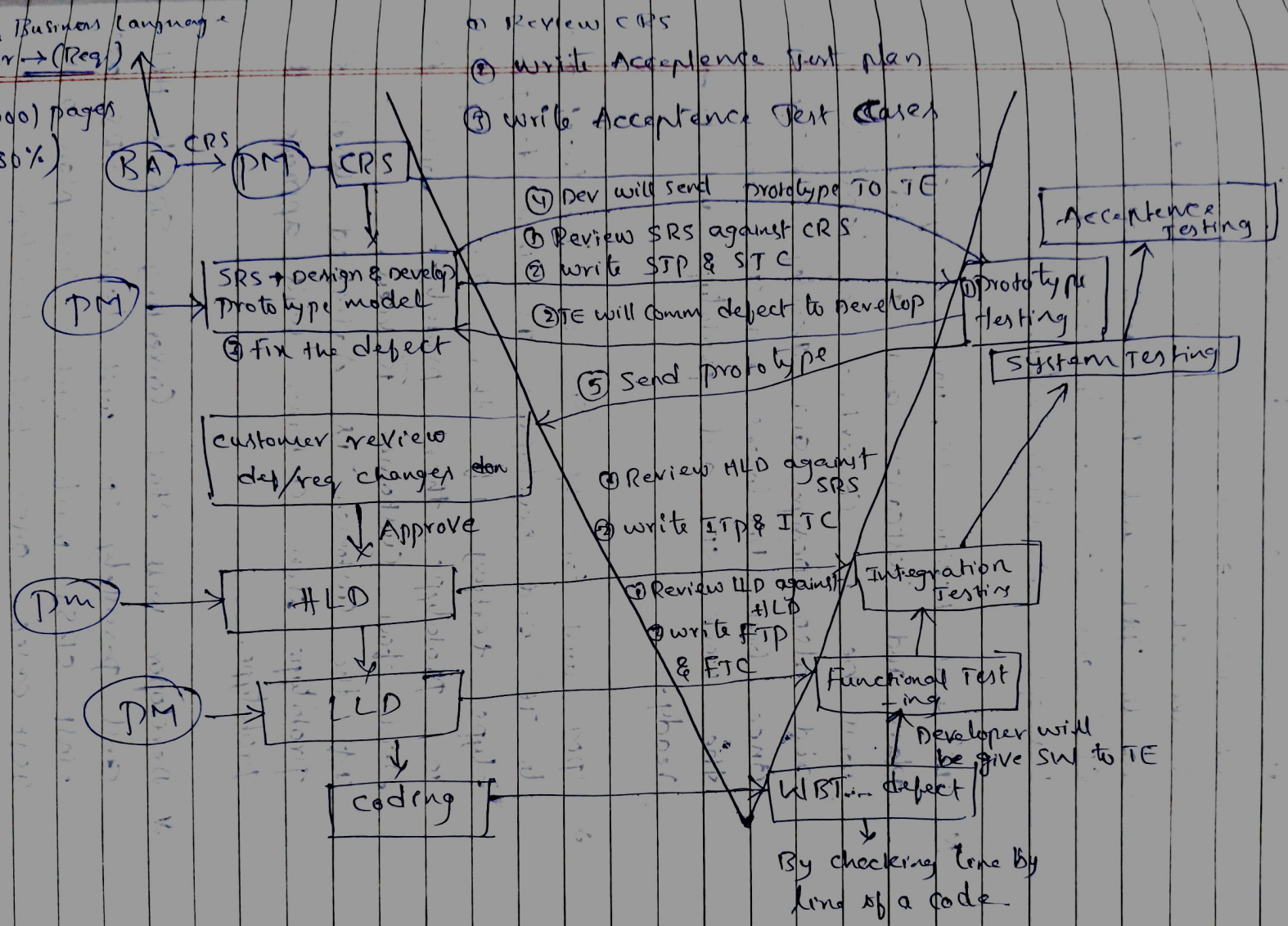
* Here Architects will do the actual design for 'A' (HLD & LLD)

* Developer will write the Code for 'A' and give SW to TE and TE will test module 'A' if there are no defects and the quality is good then module 'A' will be released to the Customer.

→ For what kind of application we can go for Spiral model with prototype 'Hybrid model':

* when there is dependency between the modules
* when the requirements are given in Stages.
* when the Customer is new to business
* when Customer is not aware of complete requirement.

Example 2:- V&V with prototype Hybrid model:



explanation:-

* Customer give the To to 80% of the requirement in business language i.e, called 'CRS'. then BA' will go to Customer place and collect the 'CRS' in business language and explain to 'PM' and 'PM' will take up the 'CRS' and send it to both 'TE' and Developers simultaneously.

* TE will Review CRS, write Acceptance Test plan and Testcases and parallely Developer will be in Converting of 'CRS' to 'SRS' and also Design and Develop the prototype. Once both Developers and TE Complete the work SRS and prototype will be ready.

* 'PM' will take up 'SRS' and 'prototype' give to 'TE' and Developers. TE will do prototype testing. If there are no defects in prototype then prototype will be sent for Customer Review.
If the customer is satisfied with the prototype then customer will approve the prototype.

* Developer will start Converting SRS to HLD and parallely TE will Review SRS against CRS, write System Test plan and Test cases. Once both Developer and TE Complete the work 'HLD' will be ready.

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'PM' will take up HLD and send it to both developers and Test engineers.
(Remaining is same as V and V model verification).

→ For what kind of projects we can go for V&V with prototype Hybrid model:-

* Complex projects
* Longterm projects
* when customer is new to business
* when customer is not aware of complete requirement.

INTERVIEW QUESTION'S ON 1st Chapter:-

① what is SDLC explain briefly?
what
when
why
Stages
Types.

② Explain Waterfall model and also advantages and drawbacks and why the model is called water fall model?

③

4. what is Spiral model explain spiral model with advantages and drawbacks?

5 How to handle requirement changes in Iterative model?

6. what is difference between Verification and validation?

7. Explain 'V' model with advantages and why the model is in 'V' model?

8. what is prototype model and explain proto-type model with example and also tell advantages and drawbacks of prototype model?

9 what is the difference between prototype Tes-ting & and final Testing?

10. what is derived model give one example?

11. what is Hybrid explain with example?

12 what is manual testing? explain with exa-mple? tell 4 drawbacks & 4 advantages

13 what is Automation Testing? explain with example? tell any 5 Automation tools?

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Assignments (Write in sheet and file it and Keep it with you)

Subject :- name, mobile number, Assignment (1st chapter assignments).

1) what is Difference between Water fall model and spiral model (5 points answer)

2) what is difference between Water fall model and V & V model (5 points)

3) which phase is 'mute' phase in sdlc models?

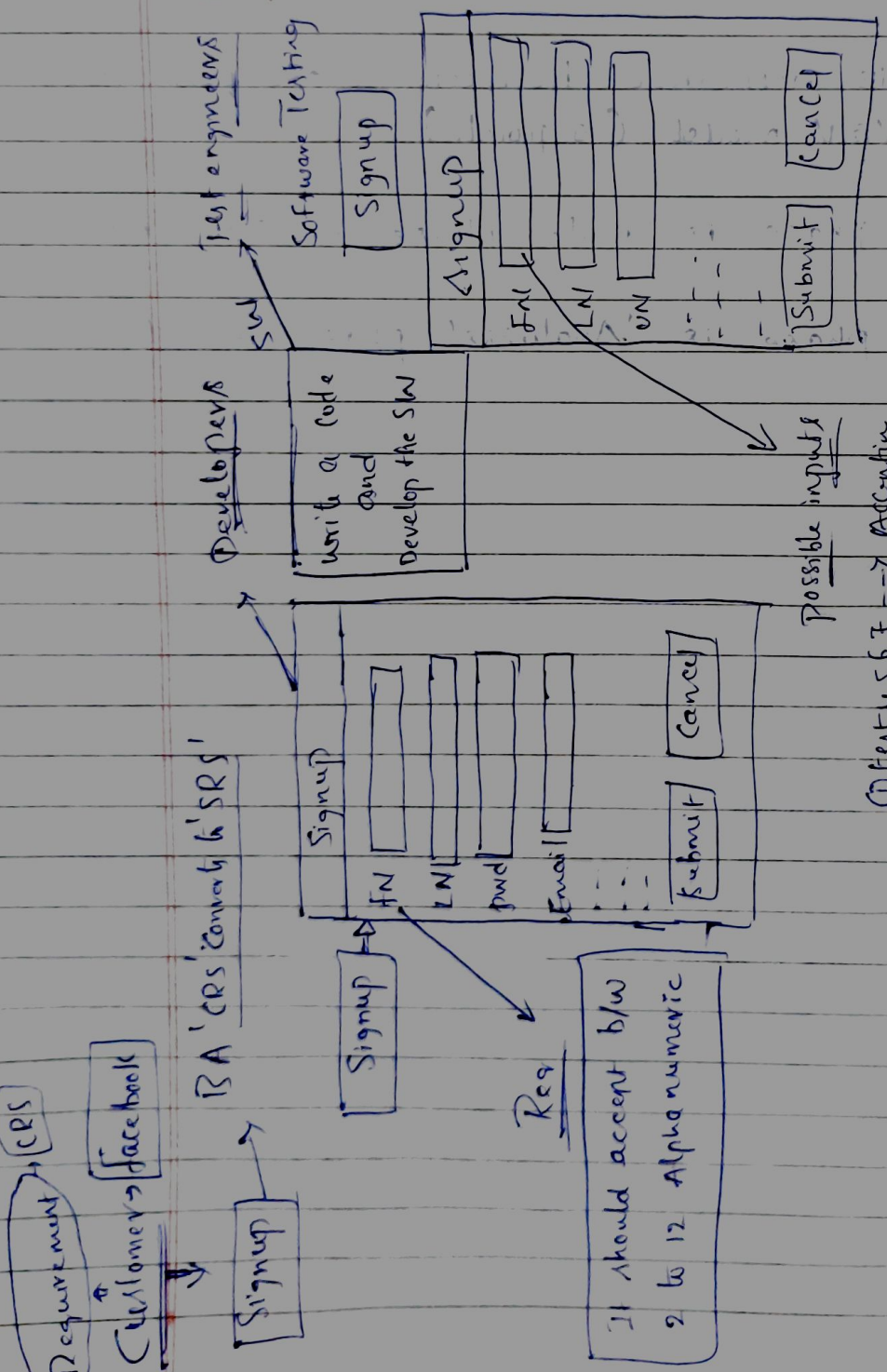
4) which phase is 'Analysis' phase in sdlc models?

NEW CHAPTER (SOFTWARE TESTING) #6

Definition:- (what)

The process of identifying or catching the defects in the software is called as S/w (software) Testing.

Example:- (Real time example)



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→ what are the types of Software Testing?

Ans: There are Two types of Software Testing
(* white box testing
* Black box Testing)... Grey box Testing.

→ what are the ways of Software Testing?
(or)
In how many ways SW Can be Tested?

Ans: There are two ways in SW Testing.
* Manual testing
* Automation testing.

→ what will happens if Test engineer tries to fix the defect?

Ans
* chances are there TE fixing one defect might lead to n number of defects.

* Chances are there TE will utilize all testing time in fixing the defect.

* chances are there time taken to fix one defe-ct will be more when Compared to developers.

11/9/21

WHITE BOX TESTING

Alternative Names of WHITE BOX TESTING

1. OPEN BOX TESTING
2. TRANSPARENT TESTING
3. GLASS BOX TESTING
4. STRUCTURAL TESTING
5. MUTATION TESTING
6. UNIT TESTING
7. CLEAR BOX TESTING

} WHITE BOX TESTING

Definition (what) :-

Testing each and every line of the code is called white Box testing.

[OR]

Looking into the source code check wheather each and every line of the code is working as expected or not is called as WHITE BOX TESTING.

→ who will DO WHITE BOX TESTING?

Ans Developer will do WHITE BOX TESTING.

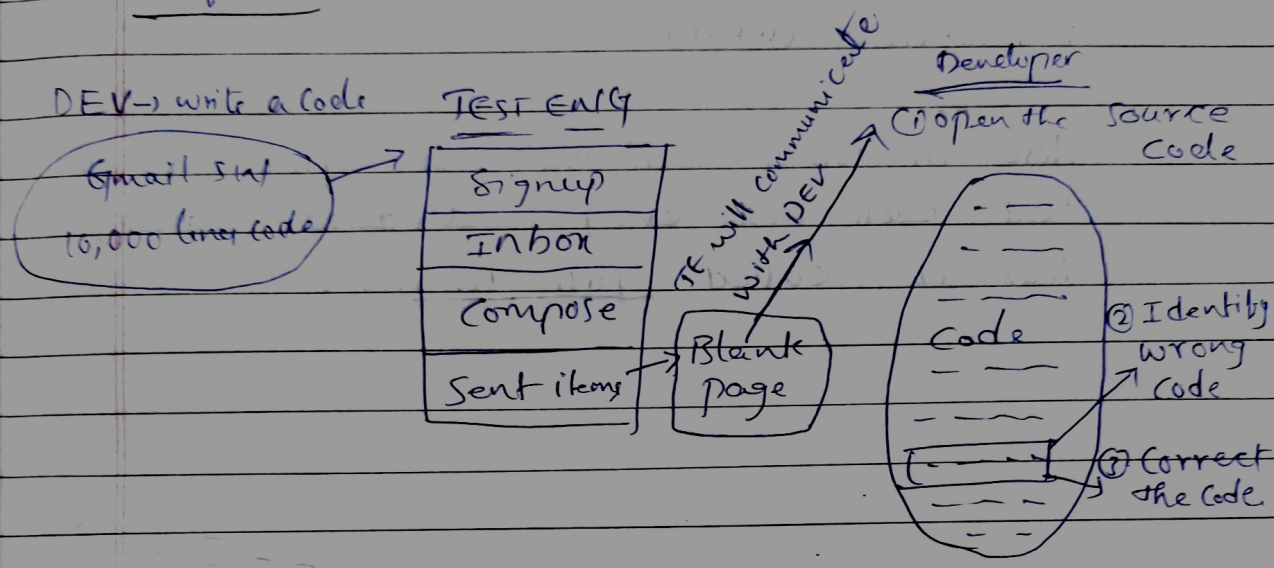
→ why it is called WBT / OPEN BOX TESTING / Transparent Testing ?

Ans Since the Code is Visible it is called as WHITE BOX TESTING.

→ what do you mean by fixing the defect ?

Developers will open the source code, iden-tify the worng code and correcting the

code this Concept is known as "fixing the defect"



How to do WBT (or) Give example for WBT (or) Types of WBT :-

There are 6 types :-

1) PATH TESTING

2) CONDITIONAL TESTING

3) LOOP TESTING

4) UNIT TESTING

5) TESTING the Code from memory point of View.

6) TESTING the code from performance point of View.

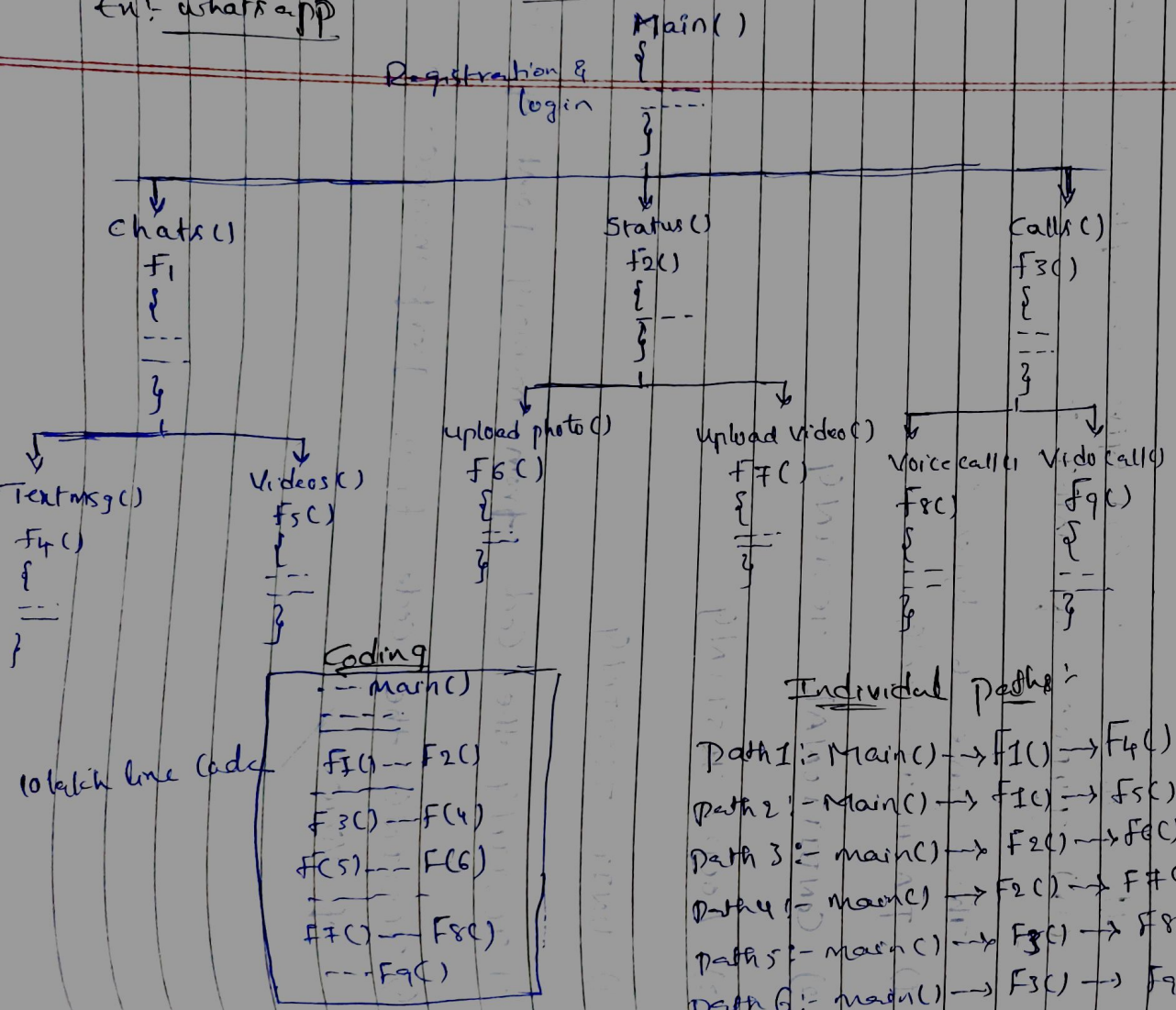
1 → Path Testing (or) (Cyclomatic Complexity) :-

Definition :- (what)

there Developers will write the flowchart and test each and every individual paths, this is called 'path testing'.

Ex :- whats app

Sheet / MS WORD / MS PPT / MS paint



Coding

10 lakh line code

```
-- main()
-----
F1() --- F2()
F3() --- F(4)
F(5) --- F(6)
F7() --- F8()
--- F9()
```

Individual paths :-

Path 1 :- Main() → F1() → F4()
Path 2 :- Main() → F1() → F5()
Path 3 :- main() → F2() → F6()
Path 4 :- main() → F2() → F7()
Path 5 :- main() → F3() → F8()
Path 6 :- main() → F3() → F9()

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Dt: Pg:

Advantages :-

* Developers can find defect in the early stage itself.

* Developers can ensure that each and every individual paths are thoroughly tested.

* Developers can ensure that there are no duplicate ~~de~~ paths.

2. Conditional Testing (predicate Testing):-

Definition :- (what)

Here developers will test the code for logical conditions that is for both 'TRUE' and 'FALSE' conditions. This is called as Conditional Testing.

→ **Why we should do Conditional Testing ?**

Chances are there some times code might work for 'TRUE' condition and code might not work for 'FALSE' condition and vice versa.
So inorder to make sure that code is working for Both 'TRUE' and 'FALSE' condition developer will do Conditional Testing.

Syntax

Sul → signup

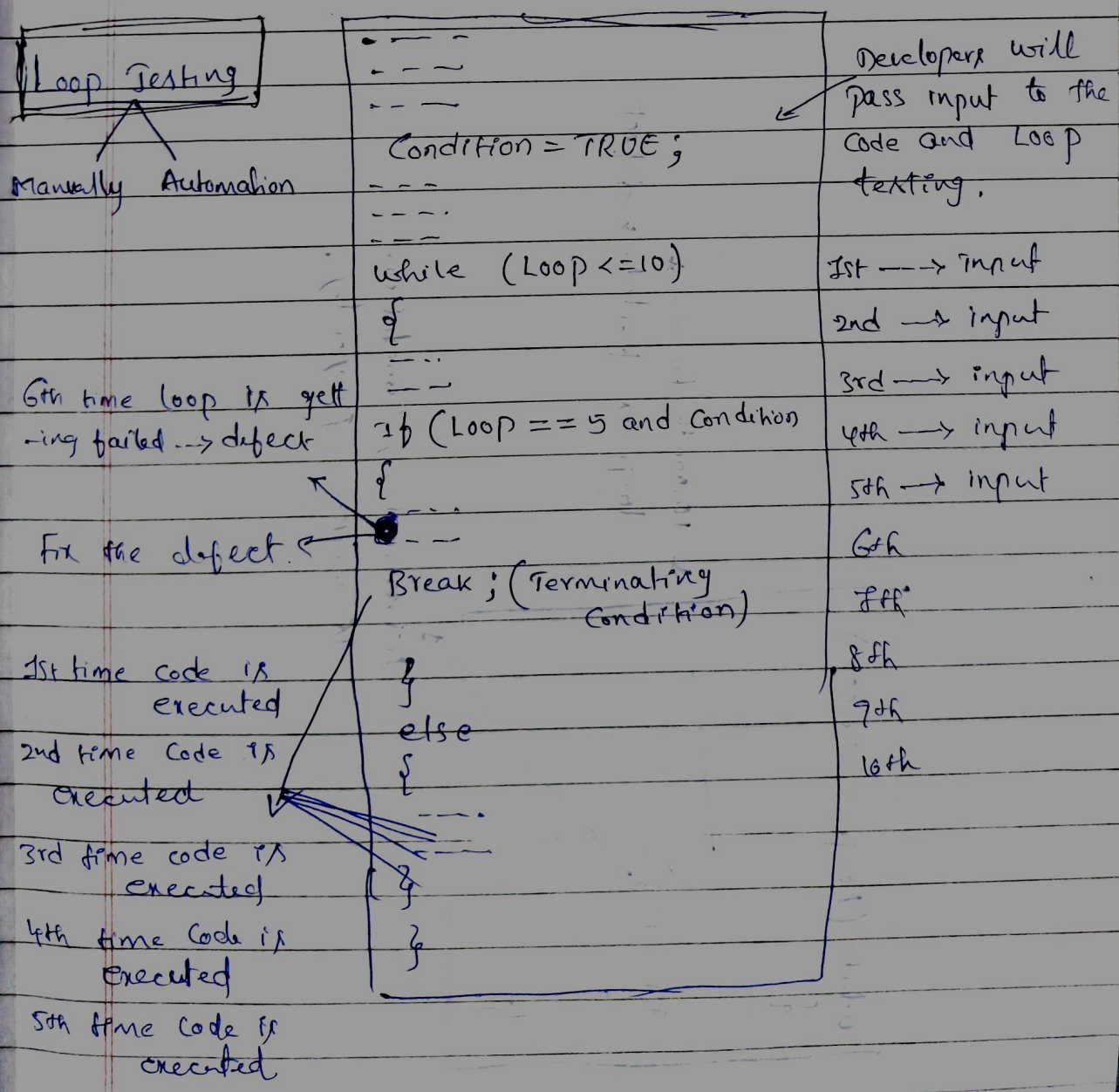
Gender
- Male
- Female

```
If (condition)
{
---
---
True condition;
}
else
---
---
False condition;
}
```

3. Loop Testing :-

Here developer will test the loop and ensure that loop is repeating for all the defined number of cycles this is called loop testing and also developers sure that "terminating Condition" is working properly or not.
(while, do while, for)

Example:-



Developers will manually pass the input and start doing loop testing, suppose if loop is faild for the 6th time then it is called defect and developer will fix the defect and again manually test the loop from the begining and ensure that loop is working for 10 times, this is how developers will do loop testing.

Example:-2

```
while (Loop <= 50,000)
{
  - - - - -
  - - - - -
  - - - - -
  break;
  - - - - -
  - - - - -
}
```

10,000th time → loop is faild → defect

Terminating condition is working properly.

Loop Testing / WBT

Two ways

Manually

Dev will write the code and test each and every line of the code manually

Automation

4) Unit Testing (Automation)

4 UNIT Testing :-

Customer will give the requirement, Developers will write main programm for the requir-ement and write the Corresponding test programm in the same language and run the test programm against main programm where in test programm will automatically test the main programm and give the result as "pass" or "Fail" this is called as "UNIT TESTING".

Collection of Test programmes is called as "unit test suite".

Next page →

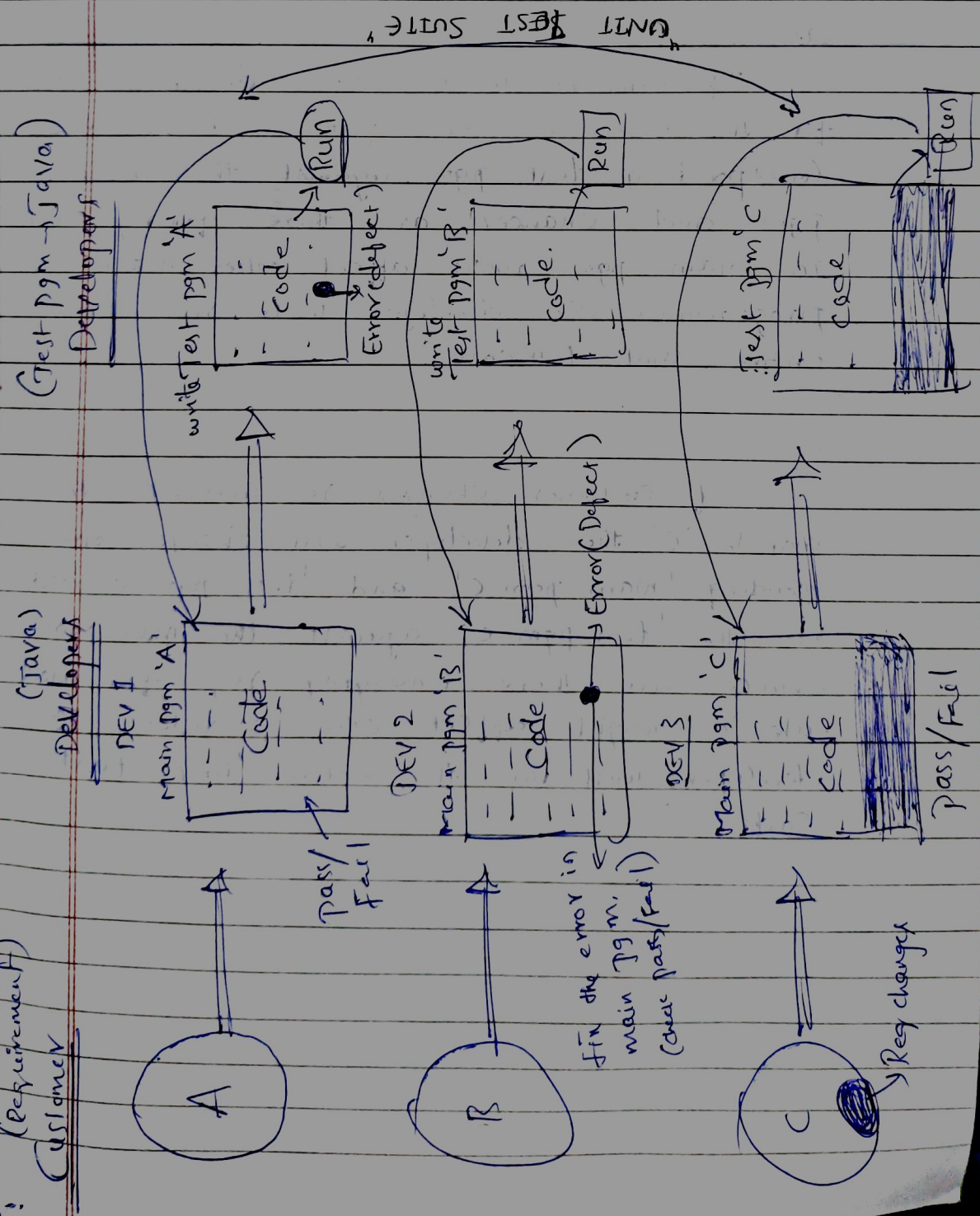
chandra's
Dt: Pg:

3 condition/case :-

Case 1 :- Suppose if [error is in test pgm]

Case 2 :- Suppose if [error is in main pgm]

Case 3 :- Suppose if [Cust changes req in module C]



* while doing unit testing developers will come across 3 different cases :-

Case 1 :-

If error is in 'test pgm' developer will fix the error in test pgm and run the test pgm againt the main pgm.

Case 2 :-

If error is in 'main pgm' developer will fix the error in main pgm and run the corresponding test pgm against the main pgm and chances are there fixing error in main pgm might affect other main programmes. So developer will run the entire unit test case.

Case 3 :-

If customer changes requirement in module 'c' then developer will change corresponding 'main pgm c' and 'test pgm c' and run the 'test pgm c' against the 'main pgm c'. Chances are there changing req for module 'c' might affect other modules. So developer will run the entire 'unit test suite'.

(Requirement)
Customer

Calculator

- Addition
- Substraction
- Division
- Multiplication
- Exchange Rate

[redacted] modules / features / funcationalities.

Developers

Main pgm

Add.Java

```
my add(a,b) 2,5
{
 c= a+b; 2+5
 return c; 7
}
```

Developers

Test pgm

testadd.Java

```
X= call Add. my add (10,20)
if (x ==30)
{
 Sop ("pass");
}
else
{
 Sop ("Fail")
}
```

```
Y= call Add. my add (2,5)
if (y==7)
{
 Sop ("pass");
}
else
{
 Sop ("Fail")
}
```

```
Z= call Add. my add (-10,4)
if (z==-6)
{
 Sop ("pass");
}
else
{
 Sop ("Fail");
}
```

```
N= call Add. my add (0.75,0.25)
if (N==1)
{
 Sop ("pass");
}
else
{
 Sop ("Fail")
}
```

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chandra's Dt: Pg: 8

J-unit :-

Tool is used to unit testing for 'java' pgm language.

Junit --> It is a package which consist of many inbuilt functions.

--> using this tool Junit will help us to reduce no of lines of Code.

Google

Free Download Junit

Install Junit

Open Junit

This will display all the built in functions

```
import Junit;

x = call Add.my add (10,20)
Assert (x,30);

y = call Add. my add (2,5)
Assert (y,7);
```

```
x = call Add. my add (10,20)
if (x == 30)
{
Sop("pass");
}
else
{
Sop ("fail");
}
```

∴ Assert will compare and give the result as 'pass' or 'fail'.

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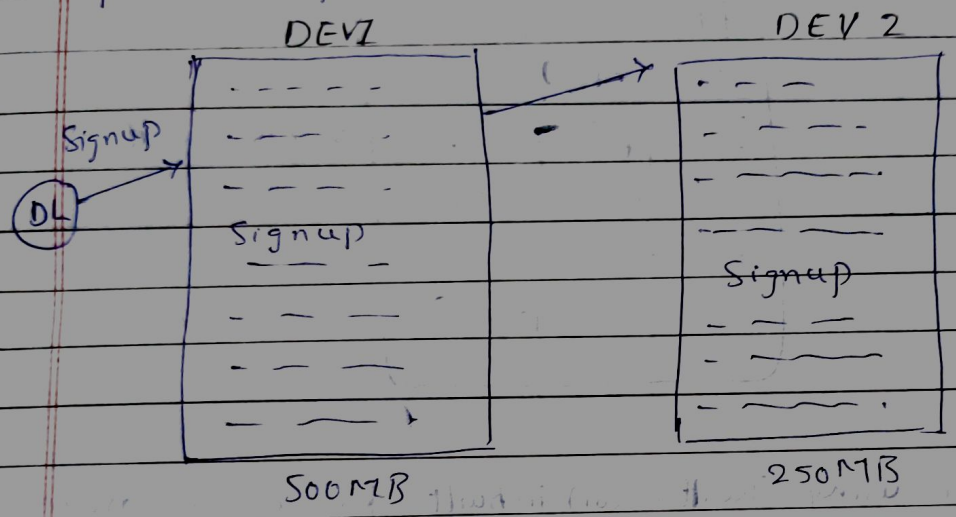
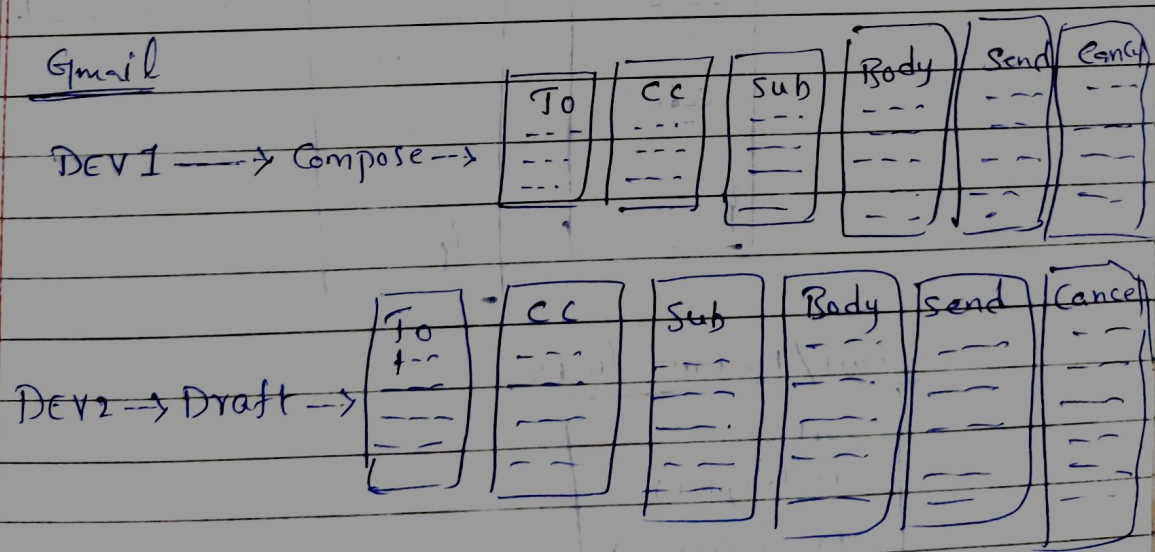
5. Testing the Code from Memory point of View :-

1 → By changing the "Logic of the Code" memory can be improved because writing logic varies from person to person.



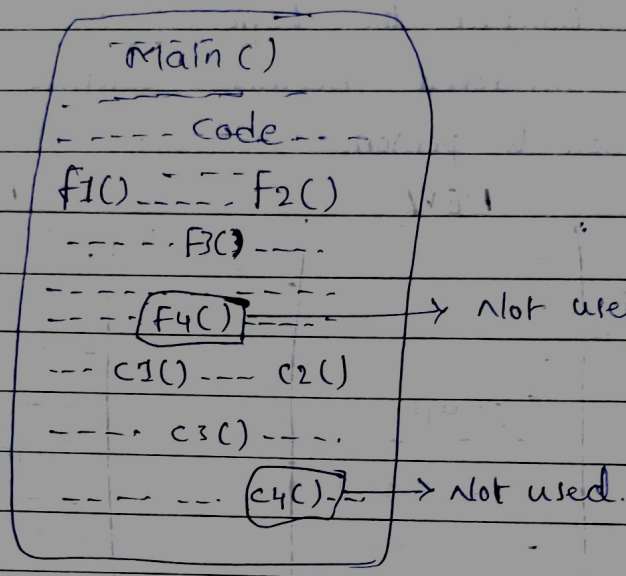
2 → If there are "duplicates code and Repetation of Same Code" then we can convert into "Generic function/ user Defined function".



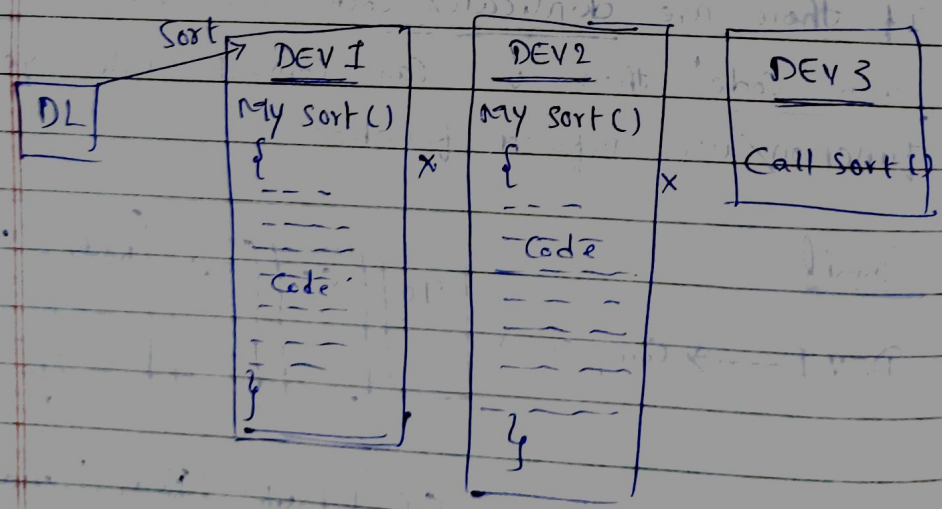
Note :-

Ist Dev will write code for [To]
2nd Dev will write code for [To]
} duplicate code or repetation code for [To]

3 → By Removing unwanted functions and ~~unwanted~~ unused commands memory can be improved.



4 → By using Builtin (or) inbuilt functions memory can be improved.

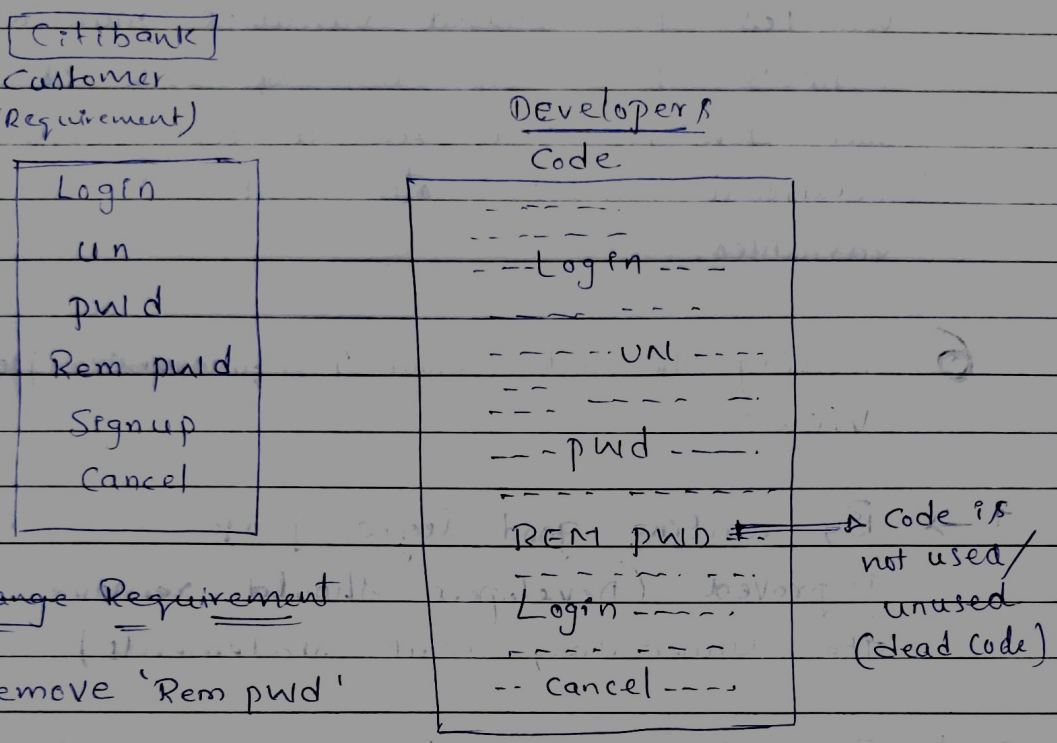


Inbuit/buit in functions

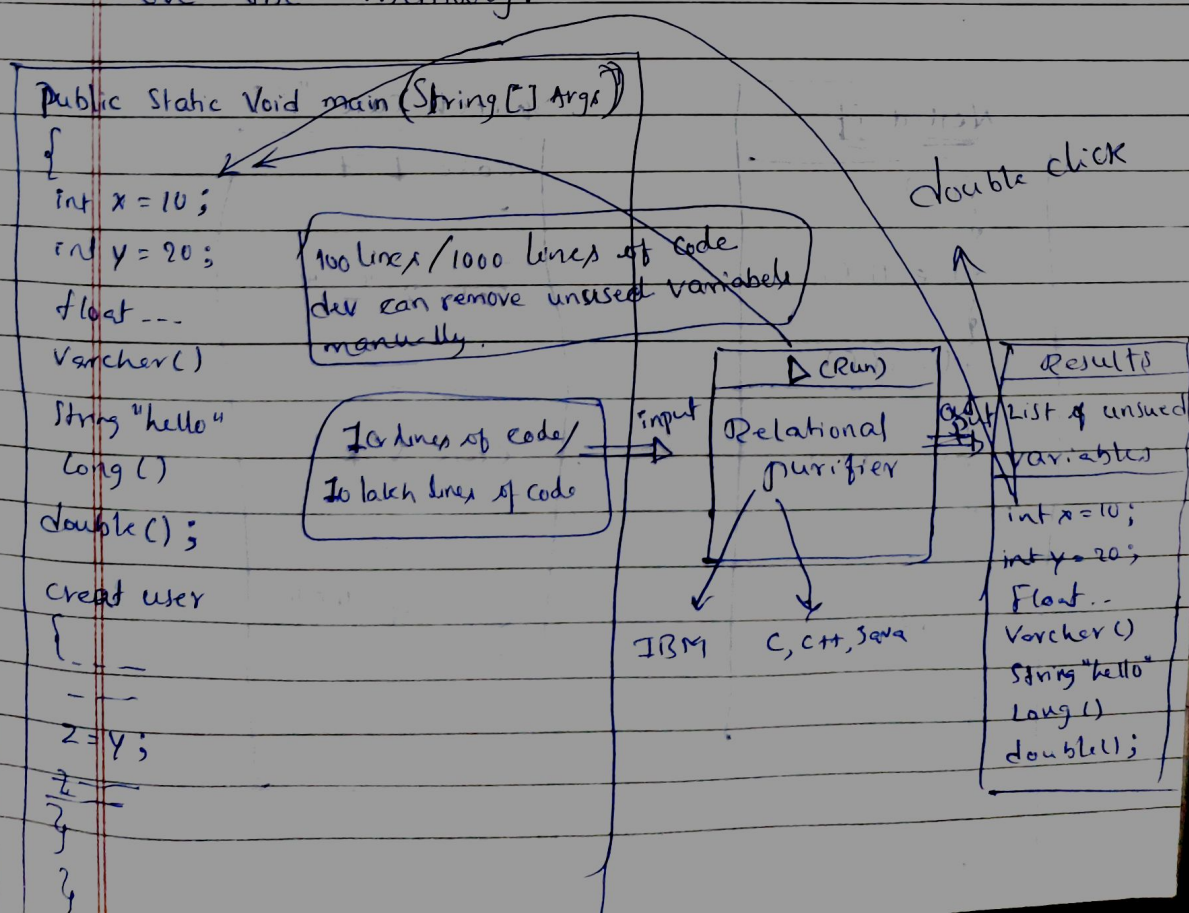
- Sort ()
- Str length ()
- Str Revers ()
- date & time ()

chandra's
Dt: Pg:

5→ By Removing dead code we can improve the memory (code which is not used).



6→ By ~~used~~ Removing unused variables we can improve the memory.



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Note:-

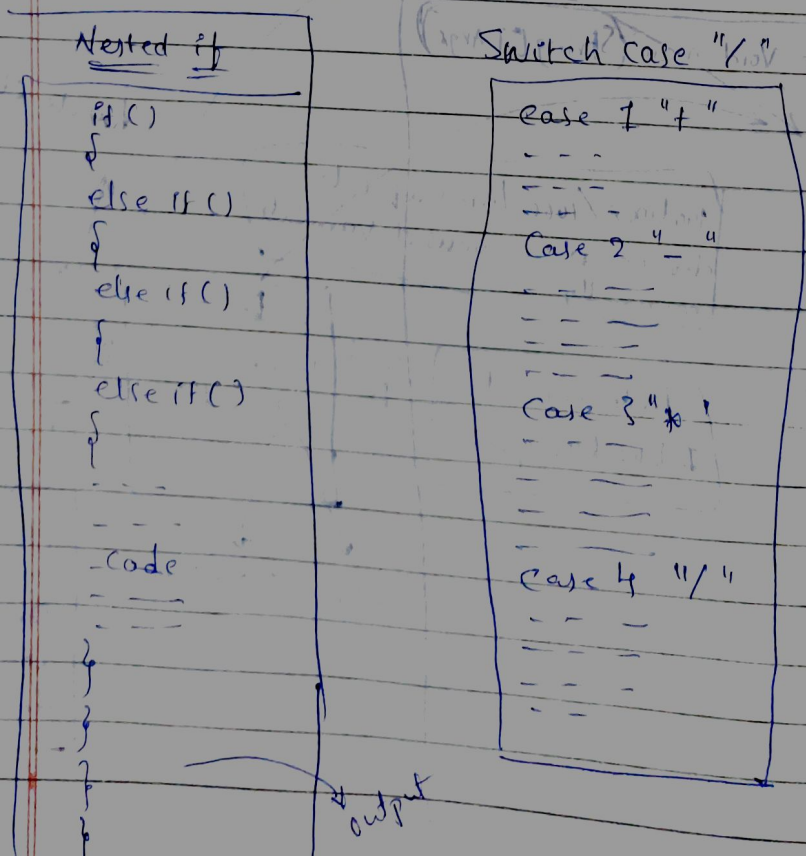
If no of lines code is less then developer will test for unused variables manually suppose, if no of lines of code is more then developer will use a tool called "Relational purifier" to test for unused variables.

6 Testing the Code from Performance Point of View:-

1 → By writing good logic performance can be improved (Developers should remove all the unnecessary wait statements)

2 → Instead of using 'Nested if' developers can go for 'switch cases/statements'.

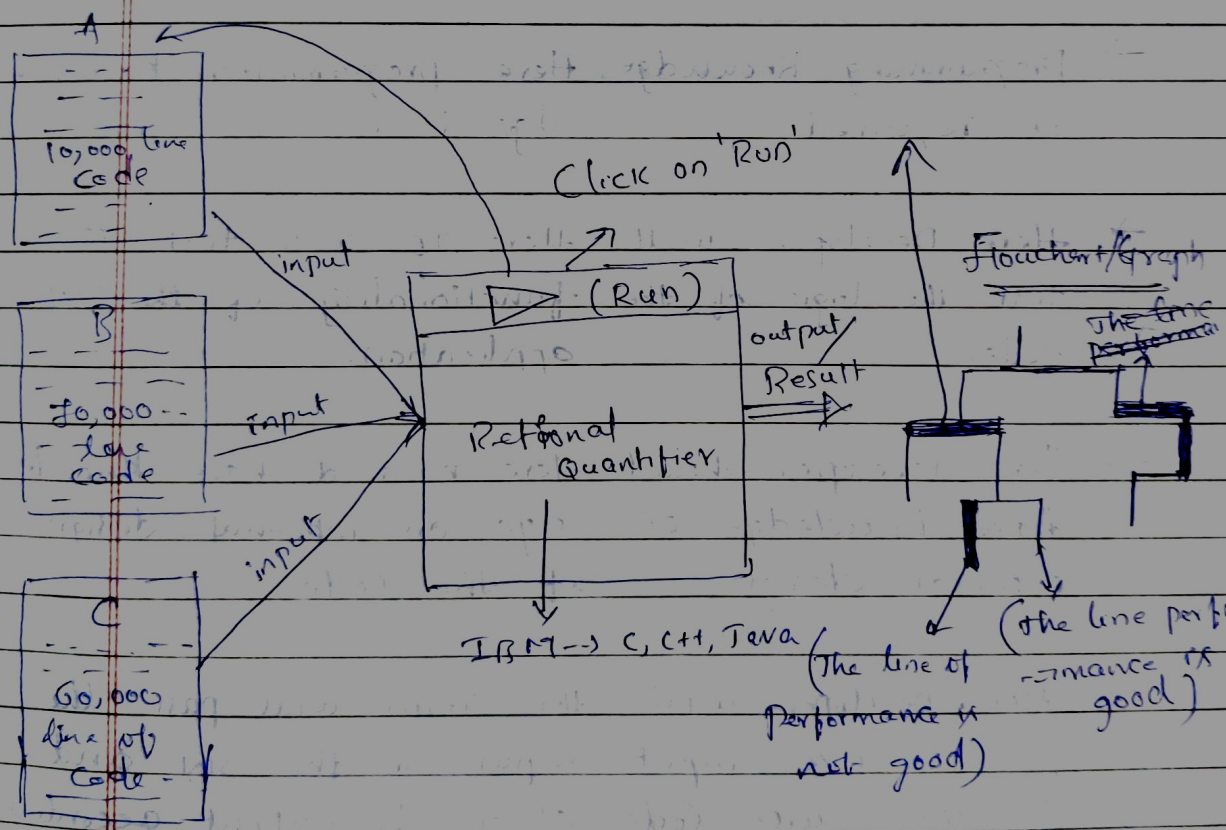
Ex:- Diagram



3 → 'AND' and 'OR' operators should be properly used while writing conditional cases.

4 → 1

DEV Coding



→ what is WBT ?

what (definition)

who will do

why it is called WBT

Types / How to do WBT / Example.

→ what is the Difference between WBT & BBT?

WBT	BBT
→ Developer will do WBT	TE will do BBT
→ Code is visible	Here code is not visible
→ Here testing is done Before the SW is developed	Here Testing is done after the SW is developed.
→ Programming Knowledge is required	Here Programming Knowledge is not required.
→ Here Developer will test the logic of the code.	Here TE will test the functionality of the SW application.
→ Here developer should have knowledge on internal design	Here no need have Knowledge on internal design of the Code.
→ Here Developer will pass or give input to the Source Code and the output according to the req Specification	Here Tester will pass the input to the SW and check the output according to the Customer requirement
own point → Here Developers will write a Code and check the output is according to the CRS or not	→ Here TE will pass the data and they will check whether it is according to the CRS or not.

CHAPTER - 3

Black Box Testing

CLOSED BOX TESTING
FUNCTIONALITY TESTING
BEHAVIOURAL TESTING
} BBT

Definition : (what)

Testing or Verifying the functionality or behaviour of an application / SW against customer requirement specification is called as "BLACK BOX TESTING".

→ **who will do BBT ?**

Test Engineer's.

→ **why it is called BBT / closed box testing ?**

Since the code is not visible, it is called as BBT

→ **How to do BBT ? Give example for BBT ?**

Here TE will not look into the source code where in TE will open the application / SW and test the functionality of an application against customer requirement specification.

Customer → OLA

Requirement → BA

→ If any users tries to login to OLA then it should go to 'OLA Home' page.

→ In 'OLA' Home' page in the left corner there should be a dropdown which consists of 3 options.

→ 1 Book my Ride → Book my Ride

→ 2 My Rides → My Rides: All Rides | Schedule Rides | Cancelled Rides

→ 3 Invite friends → Invite friends
- → whatsapp
- → Messenger
- → Mail

DEV

Write the code + WBT → software → Test Engineers (Black Box Testing)

Step 1 :- Install the OLA app

Step 2 :- Login to 'OLA app'

OLA HOME

Features/modules Functionalities:
- Book my Ride
- My Ride
- Invite friends

Book my Ride → Book my Ride. → 'BBT is pass'

My Rides: All Rides | Schedule Rides | Cancelled Rides → 'BBT' is pass

Invite friends
- → whatsapp
- → ~~Text message~~
- → Mail

Messenger is not there (Defect) "BBT is Fail"

16/9/21
I Cycle

Types of BBT (Black Box Testing) :-

1) Functional Testing / Component Testing :-

Definition :- (what)

Testing each and every "Components" of an applic-ation "Rigorously / Thoroughly" against Customer requirements specification is called as 'Functional Testing' / component Testing.

Components :-

- Text field,
- Text Area field,
- Button,
- Link,
- Radio Button,
- Dropdown,
- Check Box,
- Scroll Bar,
- Major Tabs,
- Minor Tabs,
- Grid (rows and columns), ~~widget~~,
- Right Arrow Button,
- Icon etc...
- Widget
- pop up Box

Rigorously / Thoroughly :-

- Thoroughly / Thoroughly Testing (Definition) :-

Here Test Engineer will take each and every individual fields / components and enter all possible scenarios / inputs (+ve and -ve) against Customer requirement specification is called as thoroughly or thorough Testing.

How To do Functional Testing / Real time example for functional Testing :-

Google → Customer

⇓

Req → G-mail → Create Account feature → BA

→ If any user opens the browser and enter the URL then 'welcome' page should be displayed.

→ In 'welcome' page there should be 'create Account' Button. If user click on 'create Account Button', Create your account page should be displayed with following fields ~~and~~ Components.

→ 'First Name' text field should Accept 2 to 12 characters.

→ 'Last Name' text field should Accept upto 12 Alphanumeric.

→ 'UN' text field should accept between 2 to 18 characters.

→ 'pwd' text field should accept min 6 char and contains atleast one special char.

→ 'country' dropdown should be present and it's mandatory field.

→ 'Address' text area field should accept upto 10,000 char.

→ 'Terms and Conditions' check box should be present.

→ 'Gender should be radio button (male and Female).

→ 'Submit' button and Cancel link should be present.

DEV

Defect

[Create Account]

⇓

Create your Account

FN

LN

Last Name

UN

PWd

country

defect

Address

Terms and Conditions

Gender ○ male ○ Female

[Submit] Cancel

TE

→ A×4 → Accept

Rester → Not accepting → defect

$G789 54 → Accept

% A + 24 5 → Not accepting → defect

testyui %45 → Accepting

Positive inputs

x → Not accepting

2 → Accepting → defect

* → Not accepting

$A*245 6 a b c e y i → Accepting → defect

Negative inputs

Citibank → Customer (citibank online application) How SRS looks

Requirement → CRS → "Business Language" (500 page)

↓

BA Convert ("CRS to SRS") → MS WORD/MS EXCEL

17/9/21

CBO-SRS

Example :- 2 (citibank)

1. Welcome :-

1.1: Login: 3

1.1.1: "UN" Text field should accept b/w 2 to 15 char.

1.1.2: 'pwd' Text field should accept minimum 6 char and it should contains atleast '1' upper case.

1.1.3: "Login" Button

1.1.4: "Cancel" Button

Scrol Bar

1.2: Registration: 7

1.1.1: "FN" Text field

1.1.2: "LN" Text field

1.1.3: "UN"

1.2.10: "Cancel"

2. Loans 40

2.1: "Housing Loans"

2.1.1: "Floating Interest"

2.1.1.1:

2.1.1.2:

2.1.2: "Fixed Interest"

2.1.2.1:

2.1.2.2:

2.1.2.3:

2.2: "Car Loans"

Scrol Bar

2.2.1:

2.3: "Education Loans"

3. OD: 120

4. Transactions: 300

5. Insurance: 350

6. Amount balnce: 4,20

30. Amount Transfer: 470

30.1: "FAN Textfield"

30.1.1: It should accept only 10 digit valid acc no.

30.1.2: Account should be created by bank manager

30.2: "TAN Textfield"

30.2.1: It should accept only 10 digit valid acc no

3.2.2: Account should be created by bank manager

30.3: "Amount Textfield"

30.3.1: It should accept only positive intigers

30.3.2: It should not accept more than balence amount.

30.4: "Transfer" Button.

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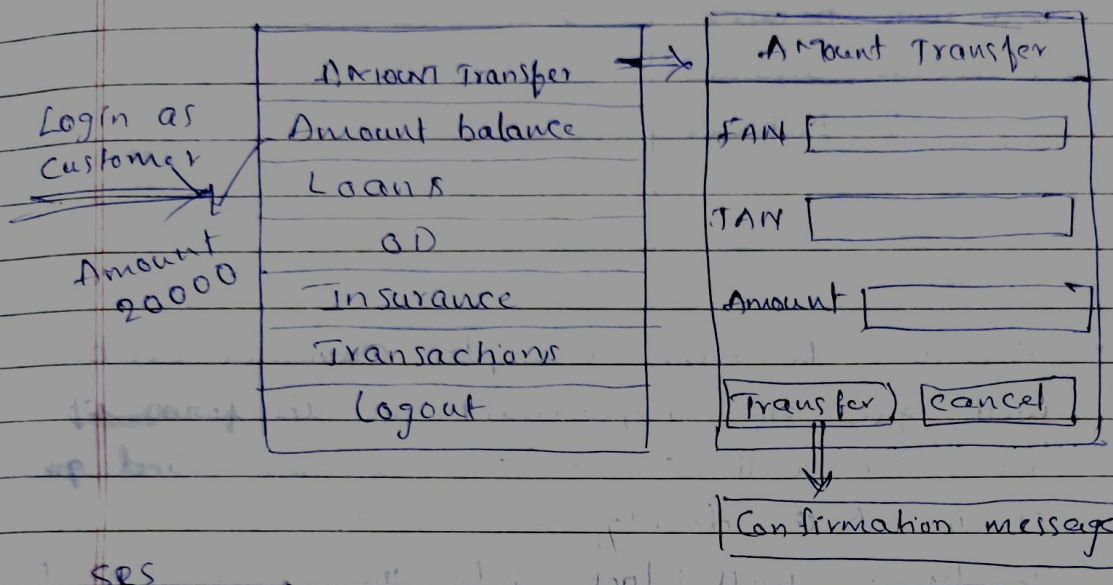
→ How the Software looks?



SRS

30.3.1: It should accept only positive integers

30.3.2: It should not accept more than balance amount

Positive Inputs
Negative Inputs

Optimized Testing

Positive inputs (scenarios)	Negative inputs (scenarios)
1	-4.5
30.3.1 4578	2.5 4
00245	2.21 + 0
0912345821	Hundered
100	0 (confusion) → Talk to 'BA' (or) Senior DEV (or) SYTE
22	1,000
	25 %
	25/5
	x + y
	50 = 500
	500;

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30.3.9

* Enter the amount less than balance * Enter the amount Equal to balance	* Enter the amount more than balance.

→ According to above example customer Citibank will give the requirement in the form of 'CRS' BA will convert 'CRS' to 'SRS' and give it to both developers and test engineers. Developers will look into the requirement write the code do WBT and develop the SW and give to Test engineers.

→ TEST Engineers will start to test each and every components by doing functional testing.

→ while doing functional testing we should follow below mentioned rules / principles:-

Rule 1:-

First always we should do positive functional testing and then only we should do negative functional testing.

Rule 2:-

→ Always test the SW for valid (+ve) data, if the application is working for valid data then only test for invalid data (-ve) suppose if the application is not working for valid data then don't test for invalid data

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Rule: 3

If the application is not working for one of the invalid data then dont stop testing, Continue and test for some more invalid data and try to find more defects.

Rule: 4

As a test engineer you not suppose to assume or propose any requirements, if you have any doubts or confusions or clarifications talk to BA or seniors and get your doubts clarified.

Rule: 5

→ Always we should optimized testing (No duplicates).

Types of functional testing:-

There are 3 types of functional Testing :-

1 Over Testing / Exhaustive Testing :-

Testing each and every Components of an application by entering data / inputs which doesn't make any sense is called "Over Testing".

(or)

Testing each and every Components of an application by entering same input / data in a different way is called as "over Testing / Exhaustive Testing".

Requirement

Ex:

Amount [ ]

Inputs
890.678 ✓
Over Testing
8.968
2.542
254.0
222.22

Inputs
100 ✓
Over testing
999
301
455
201
210
525

Drawbacks/Disadvantage:-
Time taken is more.
(Waste of time)

2. Under Testing:-

Testing each and every Components of an application by entering insufficient set of data is called as under testing.

example:-

Amount [ ]

inputs

100
9
5.24
+24

limited inputs

12567
25.67890
Hundered
$100
100rs

TE has missed lot of scenarios and defects too

Drawbacks:-
TE will miss lot of Scenarios
TE will miss lot of defects
SW Quality will not be good.

3) Optimized Testing:-

Testing each and every Components of an application by entering data which make Sense is called "Optimized Testing".

Advantages:-

→ TE will not miss any Scenarios

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→ TE will not miss any defects
→ SW quality will be good.
→ There will be no duplicates.
→ Time will be not wasted
(Time taken is less)

There are two types of optimized testing.

① Positive testing:-

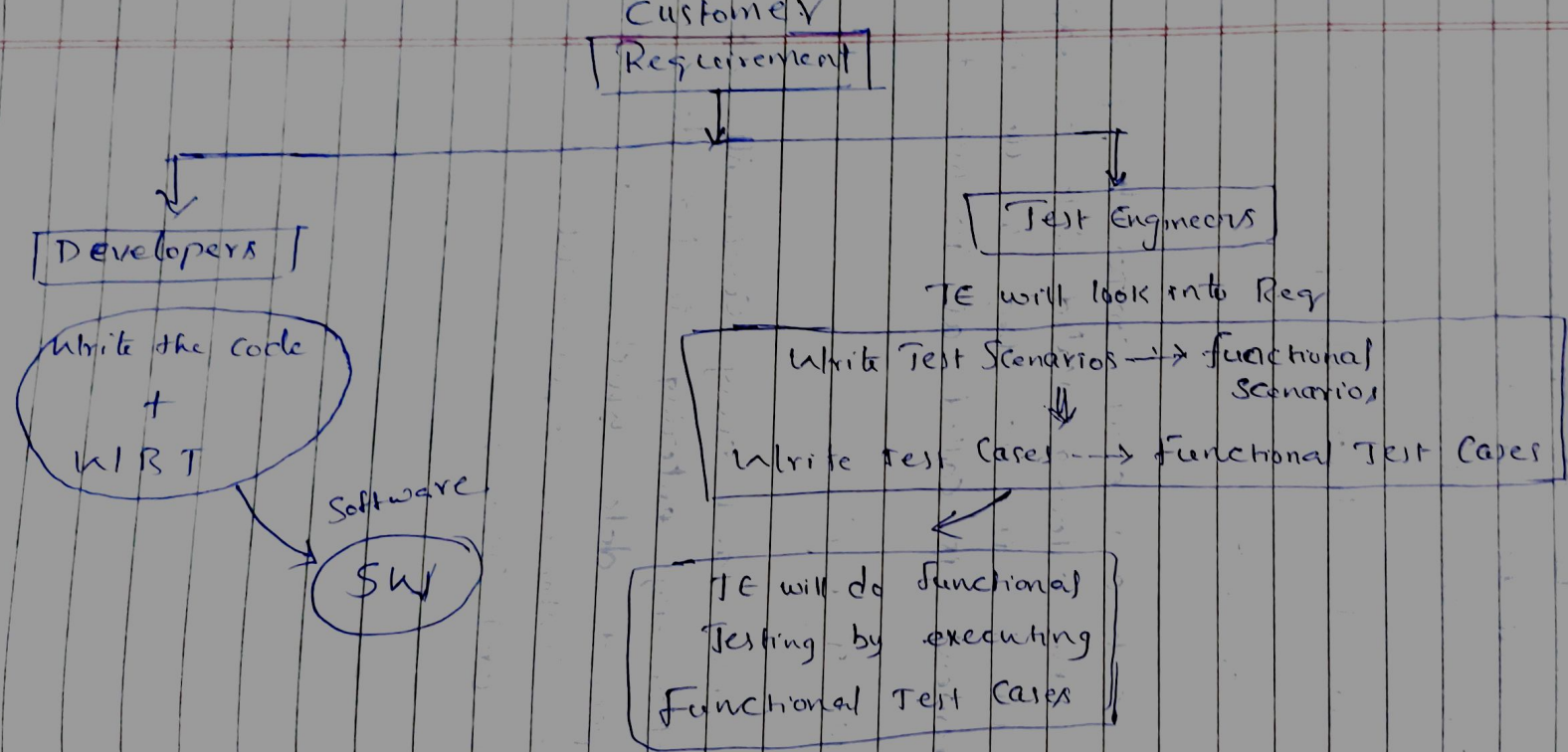
Testing each and every components of an application by entering valid data or expected data which is according to the customer requirement is called as Positive testing.

② Negative Testing:-

Testing each and every Components of an application by entering invalid data or un expected data which is not according to the Customer requirement is called as Negative (-ve) Testing.

Lec Error SW

How to write Test Scenarios / Testcases for functional Testing :-



Real time example :- (Naukri.com)

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Component Name :- "Register for free" Button

Test Scenario :-

To check / Test / verify that when user clicks on 'Register for free' button then 'Tell us your work status' page should be displayed.

Test Case :-

Component Name	Input	Expected Result
"Register for free"	NA (Not Applicable)	'Tell us your work status' page should be displayed with the following fields / components 'I am Experienced' Button should be present 'I am fresher' Button should be present Close Icon should be present

Component name :- "I am a fresher" Button

Test Scenario :-
To check that when user clicks on 'I am a fresher' button then 'personal' page should be displayed.

Test Case :-

Component Name	Input	Expected Result
"I am a fresher"	NA (Not applicable)	'personal' page should be displayed with following fields/components. 'Name' Text field should be present. 'E-mail ID' Text field should be present and it is mandatory 'Create pwd' Text field should be present & mandatory 'Mob No' Text field should be present & it is mandatory 'current city' ~~Text~~ dropdown should be present and it is mandatory 'outside India' check box should be present 'Upload Resume' button should be ~~displayed~~ present and cop---

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Component name: Name [ ]

Requirements:-

→ Alphabets is allowed
→ Space, dot and Single quote allowed
→ It is not mandatory field
→ It should accept maximum 35 alphabets
→ place holder "Enter your Name" should be displayed.

Test Scenarios:-

1 → To check that 'Name' Text field should accept only Alphabets
2 → To check that 'Name' Text field should accept Space, dot and single quote.
3 → To check that 'Name' Text field Should accept Blank.
4 → To check that 'Name' Text field should accept Alphabets with space.
5 → To check that 'Name' Text field should accepts only dot.
6 → To check that 'Name' Text field Should accepts only 35 alphabets or max 35 Alphabets.
7 → To check that 'Name' Text field should not accept "@" special character.
8 → To check that "Name" text field should accept single quote with Alphabet.
9 → To check that 'Name' text field should accept Alphabet with Dot.
10 → To check that 'Name' Text field should display place holder stating "Enter your full name".
11 → To check that 'Name' text field should not accept the Number.
12 → To check that 'Name' text field should not accept number with dot.

13 → To check that 'Name' text field should not accept more than 35 Alphabets.

Component Name	INPUT	Expected Result.
"Name"	Vishnu	should be accepted
"Name"	.	should be accepted
"Name"	NA	should be accepted
"Name"	Vi sh nu	should be accepted
"Name"	.....	should be accepted
"Name"	Vishnu pavan chowdary gangineni lingam	should be accepted
"Name"	@	should not be accepted
"Name"	'Vishnu	should be accepted
"Name"	Vish.nu	should be accepted
"Name"	NA	Place holder stating "Enter your full name" should be displayed.

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Component Name :- "Email ID"

E-Mail [ ]

Test Scenario's :-

1) To check that when user enters Valid E-mail ID format into "Email ID" text field it should be accepted

2 To check that when user enters valid Email ID format consisting of only numbers into 'Email ID' text field should be accepted.

3 To check that 'Email ID' text field should accept valid 'Email ID' format consisting of alphabets with underscore

4 To check that 'Email ID' text field should accept valid 'Email ID' format consisting of only Alphabets.

5 To check that 'Email ID' text field should not accept 'Blank'.

6 To check that 'Email ID' text field should display Asterisk symbol.

7 To check that 'Email ID' text field should not accepting existing Email ID.

8 To check that 'Email ID' text field should valid email ID format with different Domains

9 To check that 'Email ID' text field should not accept multiple ID's

10. To check that 'Email ID' text field should accept valid email ID format with the combination of upper case & lower case.

11 To check that Email ID text field should accept valid Email ID format with numbers and dots

12 To check that 'Email ID' text field should

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not accept only alphabets.

13 To check that 'Email ID' text field should not accept invalid email ID format

14 To check that when user's enters invalid 'email ID' into 'Email ID' text field then proper error message should be displayed.

15 To check "Email-ID" text field should not accepting other languages

16 To check 'Email ID' text field should accept Valid email ID format ending with .co.in

17 To check 'Email ID' text field should accept valid valid email ID format Consisting on Combination of alphabets, numbers and special characters like . and -

18 To Check that 'email ID' text field should accept Valid email ID format Consisting of 100 Alphabets

Component name :- 'Create password'.

Create password [ ]

Test Scenarios :-

1 To check that "Create password" text fields should accept to Alphabets with Combination of one upper case and lower case.

2 To check that 'Create password" text field should accept 12 digits.

3 To check that 'Create password' text field should accept date of birth format.

4 To check that 'Create password' text field should accept maximum 40 alphabets & numbers.

5 To check that 'Create password' text field should accept 2 uppercase and 2 lowercase and 4 numbers with 1 special character.

6 To check that 'Create password' text field should not accept space b/w Alphabets.

7. To check that when user clicks on show button then it should be displayed as title

8 To check that when user clicks on show button then password

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Component Name :- "Current City" Drop down

Current city * [ ]

Test Scenarious:

→ To check that "current City" dropdown should accept "New Delhi".
→ To check that "current City" dropdown should accept "Gurgaon".
→ To check that "Current city" dropdown should accept "Noida".
→ To check that "Current City" dropdown should accept "Bangalore".
→ To check that "Current City" dropdown should accept "Mumbai".
→ To check that "Current City" dropdown should display place holder stating "Tell us about your current City".
→ To check that "Current City" dropdown should not accept more than one City.
→ To check that "Current City" dropdown should display scrool bar in the dropdown.
→ To check that "Current City" dropdown should not accept Blank.
→ To check that "Current City" dropdown should display asterisk symbol.
→ To check that when user enters valid City name into "current city" dropdown then respective city should be displayed.
→ To check that "Current City" dropdown should not accept numbers.
→ To check that "Current city" dropdown should not accept Combination of numbers & Alphabets.

→ To check that "current city" dropdown should not accept country name.

→ To check that when user points the cursor on the city name that respective city should be highlighted in blue colour.

→ To check the "Current city" dropdown should not accept any other languages.

→ To check that when user enters invalid data into "Current City" dropdown then proper message should be displayed.

→ To check that "current city" drop down should accept dot, hyphen, comma.

*

Component name: "outside ~~box~~ India" check Box

☐ outside India

Test Scenarios:-

→ To check that when user ~~click~~ check "outside India" check box then check box should be checked and select city dropdown should be displayed and current city field should be highlighted with red colour and display proper error message.

→ To check that when user uncheck "outside india" check box then check box should be unchecked and select country dropdown should not be displayed and current city field should not be highlighted in red colour.

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Component name: "upload resume" Button.

upload resume

Test Scenarios:-

→ To check that "upload Resume" button should be enabled

→ To check that when user clicks on "upload resume" button 'open' popup should be displayed.

→ To check that user should be able to upload resume with doc format.

→ To check that user should be able to upload resume with docx format.

→ To check that user should be able to upload resume with rtf format.

→ To check that user should be able to upload resume which is less than 2MB.

→ To check that user should be able to upload resume which is equal to 2MB.

→ To check that user should not be able to upload resume which is more than 2MB.

→ To check that user should not be able to upload resume with Jpg format.

→ To check that when user points cursor on "upload Resume" "No files choose" tool tip should be displayed.

Component Name :- "Register Now" Button.

Register Now

Test Scenarions :-

→ To check that "Register Now" button should be enabled.

→ To check that when user enters value for all the fields and clicks on "Register Now" Button "Eduction" page should be displayed.

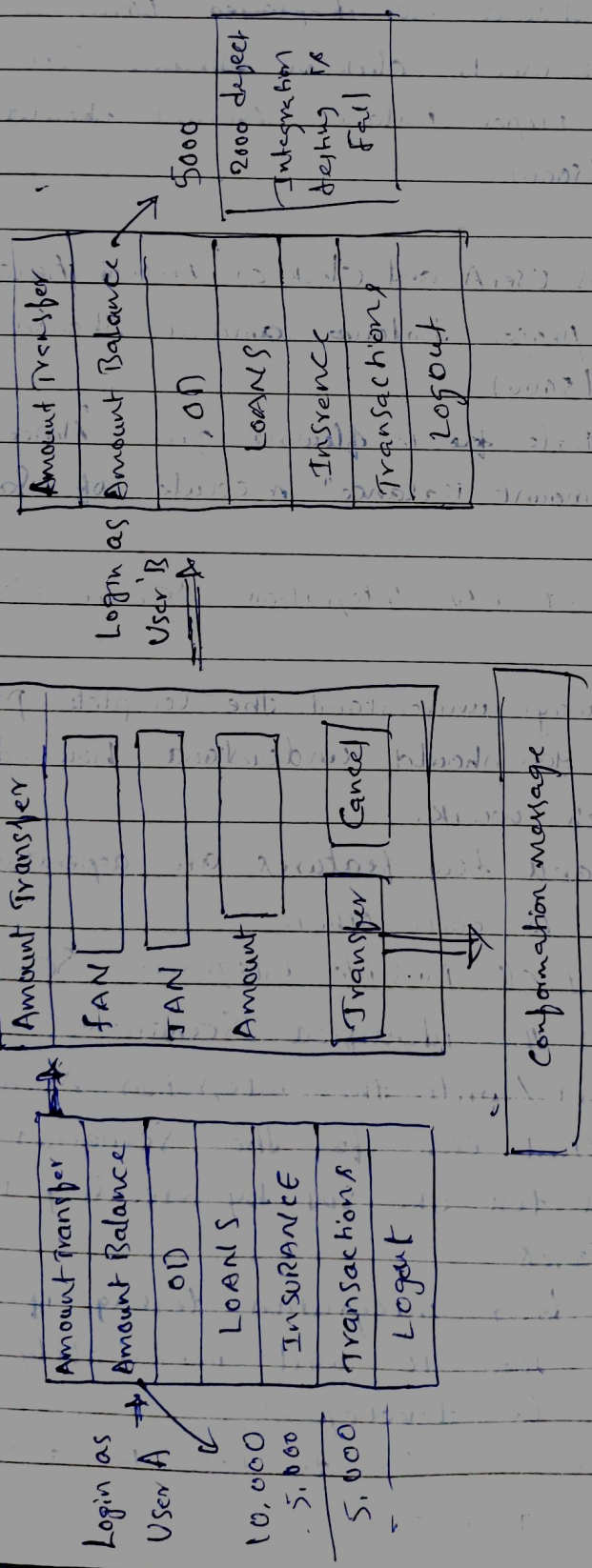
→ To check that when user don't enter values for all the fields and click on "Register Now" button proper error message should be displayed.

INTEGRATION TESTING

Definition :- (what) :

Testing the data flow or Interface between two or more module's is called as Integration Testing.

Example :- Citibank Customer --> Citibank online Application :



→ How to write Integration Scenario's :-

Scenario 1 Login as user A click on Amount Transfer and Enter Values for FAN (USER A), TAN (USER B) and Amount (5000) and clicks on Transfer Confirmation mess-age should be displayed Logut as User A and Login as User B click on Amount Balance and checks proper Balance Amount should be displa-yed (5000).

Scenario 2) Login as User A and click on "Amount Balance" and Check proper balance amount should be displa-yed (5000)

Note :- Data ~~flo~~ is flowing from "Amount Transfer" to "Amount Balance" module of Same user

→ How to identify Integration Scenario's :-

1 → First always understand the Complete project it means you should understand how each and every feature's work.

2 → understand how features are dependent / linked / Related to each other.

3 → Identify all possible integration Scenario's.

4 → prioritize the identified Scenarios.

5 → Document / write the integration Scenario's

6 → write Test case for the Scenario's.

7 → TE will test the SW by executing integration test Cases.

8 → while doing Integration testing if you find defects then TE will immediately Communicate defect to developers.

9 → Here we should do both +ve and -ve Integ-ration Testing.

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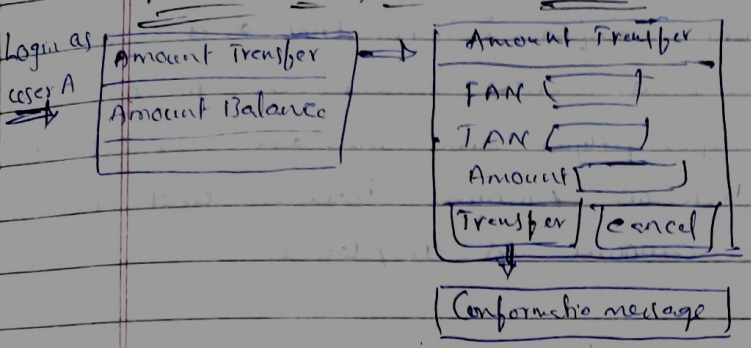
Positive integration Scenarios:-



1) Login as "User A" and click on "Amount Balance" (1000) and click on "Amount Transfer" enter "FAN" as "user A", "TAN" as "user B", Amount as "500" and click on "Transfer" button Confirmation message should be displayed.
logout as "User A" and login as "User B" and click on "Amount balance" check wheather proper balance amount is displayed.

Note:-

If "500" is displayed then we can tell +ve integration testing is "pass". Suppose if 300 is displayed then its a defect +ve Integration Testing is "fail".

-Ve Integration Testing:-

1) Login as "user A" click on Amount balance (10,000) --> click on Amount Transfer and Enter FAN as 'User A', TAN as 'user B' and Amount as '12,000' and click on transfer proper error message should be displayed and click on Amount balance and checks wheather proper Balance is displayed.

Note:-

If 10,000 is displayed then we can say that -ve Integration Testing is pass. If the amount is not displaying the 10,000 the -ve Integration Testing is "fail".

2) Login as user A → click on Amount Balance (20,000) → Click on Amount Transfer → Enter "FAN" and invalid and TAN as 'user B' and enter Amount as "10,000" click on Transfer proper error message should be displayed click on Amount balance and check proper balance amount is displayed.

3) Login as 'user A' → click on Amount balance (20,000) → Click on "Amount transfer" → Enter FAN as "user A", TAN as 'user B' and amount as 10,000 and switch of the internet connection and click on Transfer Proper error message should be displayed. Switch on the Internet Connection and click on "Amount Balance" and check proper Amount balance

4) Login as 'user A' → click on Amount balance (20000) → Click on "Amount Transfer" → Enter FAN as user A and amount as 10,000 and ~~switch of~~ click on Transfer Button → Conformation should be displayed. Logout as user A → Login as user C and click on Amount Balance and check proper balance amount is displayed

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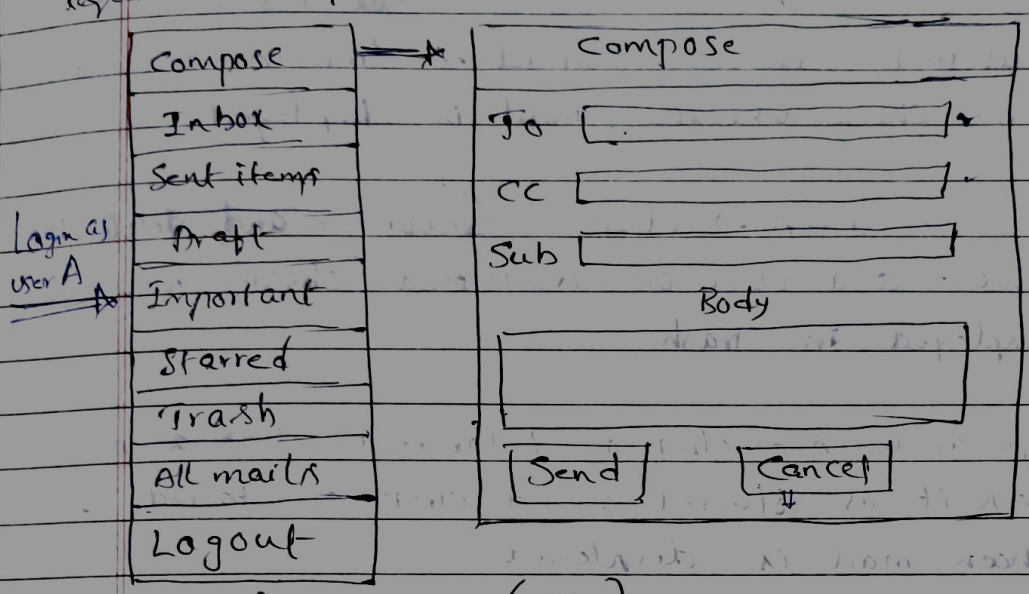
Requirement → Gmail



Test Scenarios :- (+ve)

→ Login as "USER A" → click on Compose → and enter values all the fields and send a mail to "USER B". and logout as "USER A". Login as "USER B" and click on Inbox and check wheather mail is displayed.

→ Login as "USER A" → click on Compose → enter values all the fields and send a mail to "USER B" → and come back to Homepage → click on sent items → and check mail is sent.

→ Login as "user A" → click on Compose → enter values all the fields and click on cancel button → and click on Draft → and check wheather mail is displayed

→ Login as "user A" → click on Compose → enter values all the fields and send a mail to "user B" → and come back to home page → and click on All mails and check the mail is displayed

→ Login as "User A" → click on Inbox → select the mail and mark it important → click on Important and check whether mail is displayed.

→ Login as "User A" → click on ~~Inbox~~ All mails → and delete the mail → and click on Trash and check mail is displayed in Trash

→ Login as 'User A' → click on Inbox and select a mail mark it as Starred → and click on starred and check mail is displayed

→ Login as 'User A' → Click on Compose and enter "User B" mail ID for To text field and "User C" mail ID for cc text field and enter values for all the fields and send a mail and logout as "User A" and login as "User C" and click on Inbox checkor mail is displayed.

→ Login as "User A" → click on Compose and enter "User B" mail ID in To text field and enter 0123456789 in the subject text field and enter values for all the fields → and logout as "User A" → login as "User B" check the

→ Login as 'User A' → click on Trash and select a mail → and mark as important → and check mail is displayed

→ Login as 'User A' → click on Compose → enter all the values for the field & send a mail to User B and logout as User A. login as User B click on all mails check mail is displayed

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→ Login as "user A" → click on Inbox → open the mail reply for the mail & Send a mail → click on Sent items → ~~check~~ ~~mail~~ click on All mails

→ Login as 'user A' → click on Compose → enter value for all the fields → click on Cancel → click on All mails check wheather mail is displayed and select the Same mail mark it Starred → click on Starred and check weather mail is displayed.

→ Login as "user A" → click on Sent items → Select the mail forward the mail to "user B" → logout as user 'A'. login as "user B" → click on Inbox check weather mail is displayed

Test Scenario's :- (-ve)

→ Login as "user A" → click on Compose → enter values for all the fields → switch of the internet Connection → click on Send → switch on the internet Connection → click on Sent items → check mail is displayed.

→ Login as user A → Click on Inbox Select a mail & mark it as Starred → click on important check weather mail is displayed

→ Login as 'user A' → click on Compose enter the Values for all the field & click on Send and click on trash check the mail is displayed.

→ Login as "user A" → click on Compose and enter Same "user A" in TO text field & enter ~~all~~ the Values for another fields & click on Draft check mail is displayed.

→ Login as user A click on Inbox and select a mail and delete the mail & click on important and check the mail is displayed

Three positive & Two negative

→ Login as "USER A"

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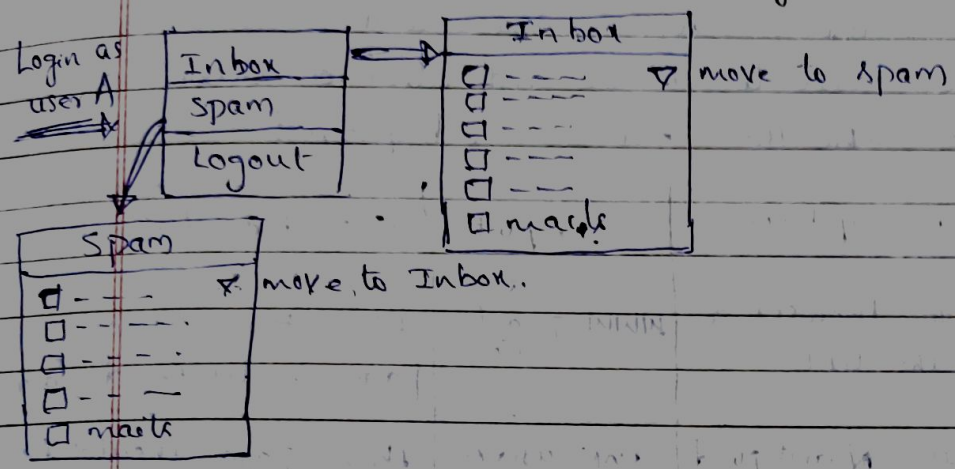
Example 3:- Requirement for gmail



Scenario 1:-

→ Login as user A → click on 'Inbox' select a mail and click on 'Move to spam' and click on 'spam' check wheather mail is displayed.

Test Case:-

Step no	Action/Description	INPUT	Expected Result
1	open the browser and enter the URL	www.gmail.com	'Login/Welcome' page should be displayed.
2	Enter the ~~URL~~ US and pwd & click on 'Login' Button	UN: User A pwd: User A	'Home' page should be displayed
3	Click on 'Inbox' button	NA	'Inbox' page should be displayed
4	Select a mail and click on 'move to spam'	NA	mail should be moved to spam
5	Click on "Spam" Button	NA	mail should be displayed in spam
6	click on 'Logout" Button	NA	user A should be successfully logged out from the application

Scenario 2 :-

Login as user A click on Spam and select a mail and click on move to inbox and click on inbox and check wheather mail is displayed

Step no	Action/description	Input	Expected Result
1	~~open the browser &~~ enter the URL	www.gmail.com	"Login/~~Home~~ welcome" page should be displayed
2	Enter the UN and pwd & click on Login Button	UN: user A pwd: user B	Home page should be displayed
3	Click on Span Button	N/A	Spam page should be displayed
4	Select mail and Click on move to Spam	N/A	mail should be ~~disp-layed~~ moved to span
5	Click on Inbox Button	N/A	mail should be dis-played in Inbox
6	Click on Logout Button	N/A	user A should be successfully logged out from the app-lication

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Scenario 3:-

Login as user A and Compose a mail and Send a mail and click on draft checks whether mail is displayed.

Test case

Step no	Action/ Description	Input	Expected Result
1	open the browser and enter the URL	www.gmail.com	Login/welcome page should be displayed
2	enter the UN and pwd and click on Login Button	UN:- user A pwd:- user A	'Home' page should be displayed
3	Click on Compose ~~and Select a mail~~	NA	Compose page should be displayed
4	Enter values for all the fields and click on send button	To: userB@gmail.com cc: Sub: Body:	mail should be sent
5	click on Draft Button	NA	Mail should not be displayed in Draft
6	click on 'Logout Button'	NA	"user A" should be ~~seen~~ successfully logged out from the application

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Scenario:-4

Login as user A Compose a mail and Send a mail to user B and click on Sent items and check mail is displayed select the mail and delete the mail and click on Trash and check mail is displayed and logout as user A and login as user B click on Inbox and check whether mail is displayed

Test case

Step no	Action/Description	Input	Expected Result.
1	Open the Browser & enter the URL	www.gmail.com	Login/Welcome page should be displayed
2	Enter the UN and PWD and Click on Login Button	UN: user A pwd: user A	Homepage should be displayed
3	Click on Compose Button	NA	Compose page should be displayed
4	Enter valid data for all the fields and click on Send Button.	To: userB@gmail cc: Sub: Test mail Body: Rcmo 1	mail should be Sent
5	Click on sent items Button	NA	Mail should be displayed in sent items page
6	Select a mail and click on delete Button	NA	mail should be deleted
7	Click on "Trash" Button	NA	Mail should be displayed in Trash page.
8	Click on logout Button	NA	User A should be successfully loged out from the application.

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→ what is difference between Test Scenarios and Test Cases

Test Scenario	Test Cases
1) Definition:- Test Scenario is a high level documentation of all the customer business workflows ~~according~~ to the customer requirement.	1) Definition:- Test case is a detailed documentation of the test Scenario's which helps TE to test the application / software.
2) Test Scenario's are written by looking into the Requirement	2) Test Cases are written by looking into both test scenario and the Requirements.
3) By looking into test Scenario we cannot test any project until and unless we have a good ~~programming~~ project knowledge	3) By looking into test cases we can test any project no matter wheather we have project knowledge or not

→ Types of Integration testing

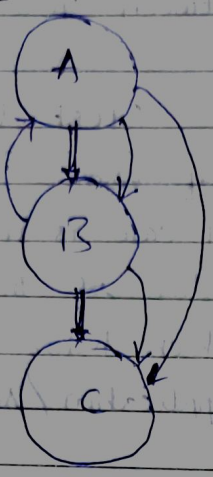
There are two types of Integration testing.

1) Incremental Integration Testing.
2) Non-Incremental Integration Testing (Big Bang method)

Incremental Integration Testing:-

Incrementally adding the modules and testing the data flow between the modules is called as Incremental Integration testing.

Example:-



A --> B
B --> A
B --> C
A --> C

There are two types of Incremental Integration testing

a) Top Down Incremental Integration Testing.
b) Bottom up Incremental Integration Testing.

Sandwich Testing (or) Hybrid Testing

It is a Combination of top down and bottom up Incremental Testing.

Top Down Incremental Integration Testing:-

Incrementally adding the modules and testing the data flow between the modules and ensure that the module your adding is child of the previous module is called as Top down Incremental Integration Testing

Here data will flow from parent module to child module

Example:

Next page ->

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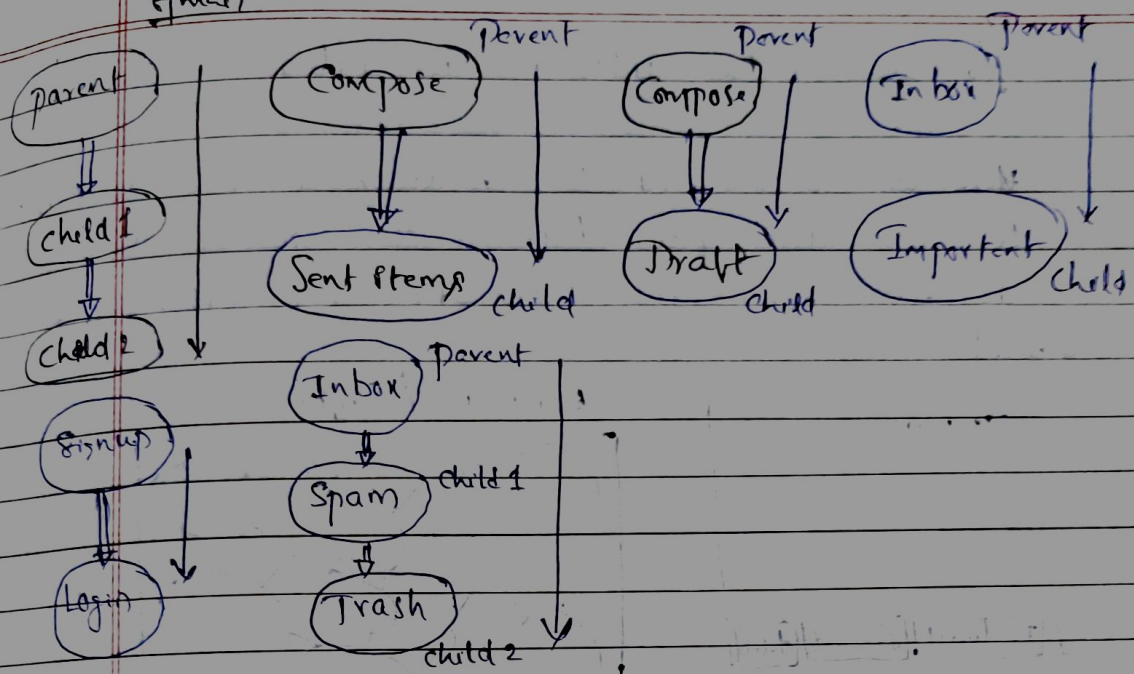
Gmail

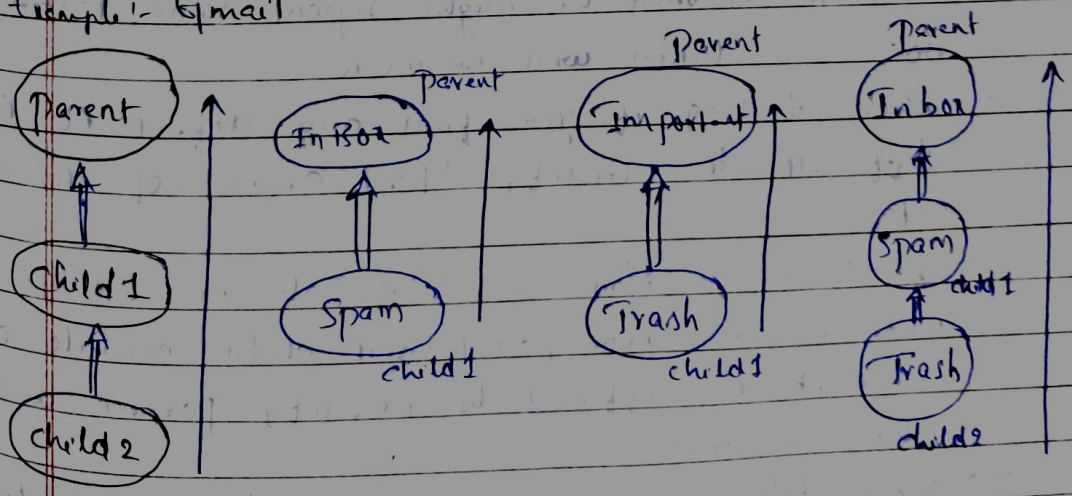


Bottom up Incremental Integration Testing:-

Incrementally adding the modules and testing the data flow between the modules and ensure that the module you's adding is parent of the previous module is called as Bottom up incremental integration testing.

Here data will flow from child to parent module.

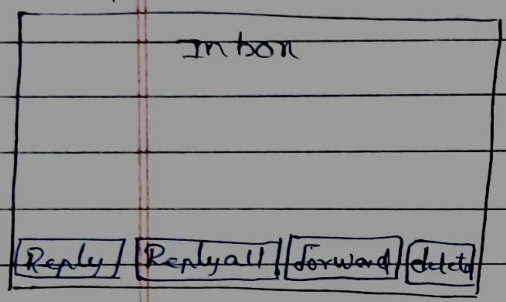
Example:- Gmail



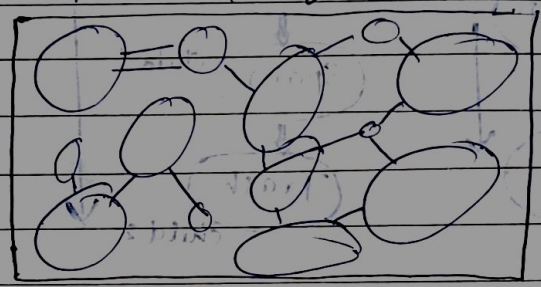
Non-Incremental Integration Testing (Big Bang method)

Here we Combine all the modules in one shot and test the data flow between the modules is called as Non-Incremental Integration Testing (Big Bang method)

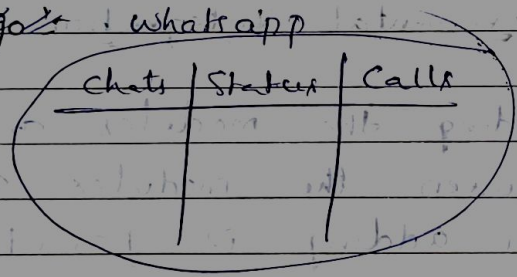
G-mail



Application/Software



~~when to go~~ : whatsapp



Drawbacks:-

→ Chances are there we might miss some data flows between the modules.

→ chances are there we might repeat same testing, so time taken will be more.

→ while testing if you find any defect it is difficult to identify "Root Cause" of the defect.

When to go for Non-Incremental Integration testing:-

→ when we dont know parent and child module or when it is difficult to identify parent and child module.

→ when data flow is very complex don't spend time in identifying parent and child module Just go for Non Incremental Integration testing

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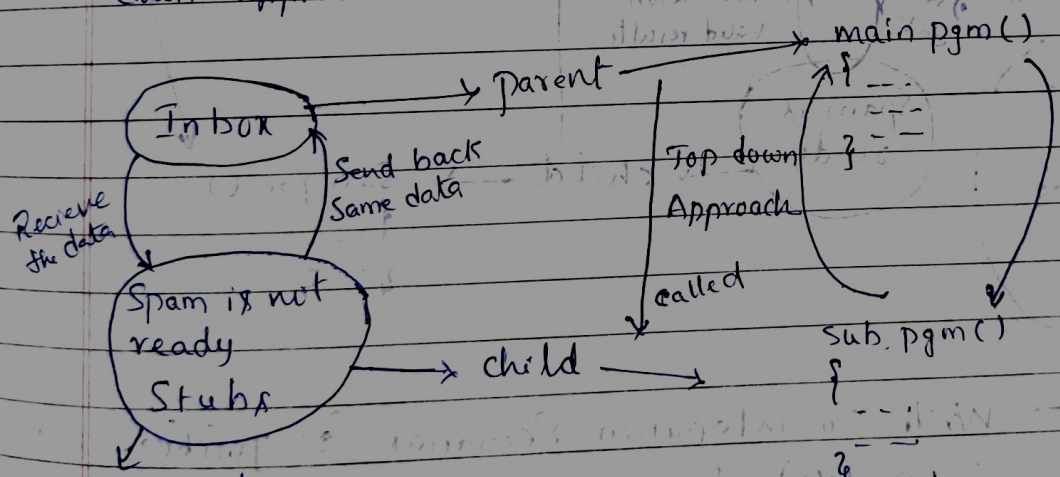
Assume that there are two modules "A" and "B". module "A" is ready and module "B" is not ready. How will you do the Integration testing between the modules "A" and "B" or is it possible to do the integration testing between "A" and "B"

Yes we can do integration between module 'A' and 'B' by using "STUBS" and "DRIVERS".

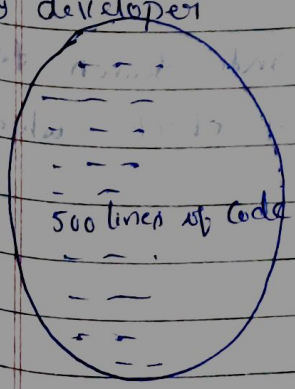
Stubs :-

- "STUBS" are the "Dummy" module.
- It is a programme written by the developers.
- STUBS will recieve the data and send back same data but it will not give any valid results.
- STUBS are known as "called" programm in the Top down Approach.



Dummy module

It is a programme written by developer



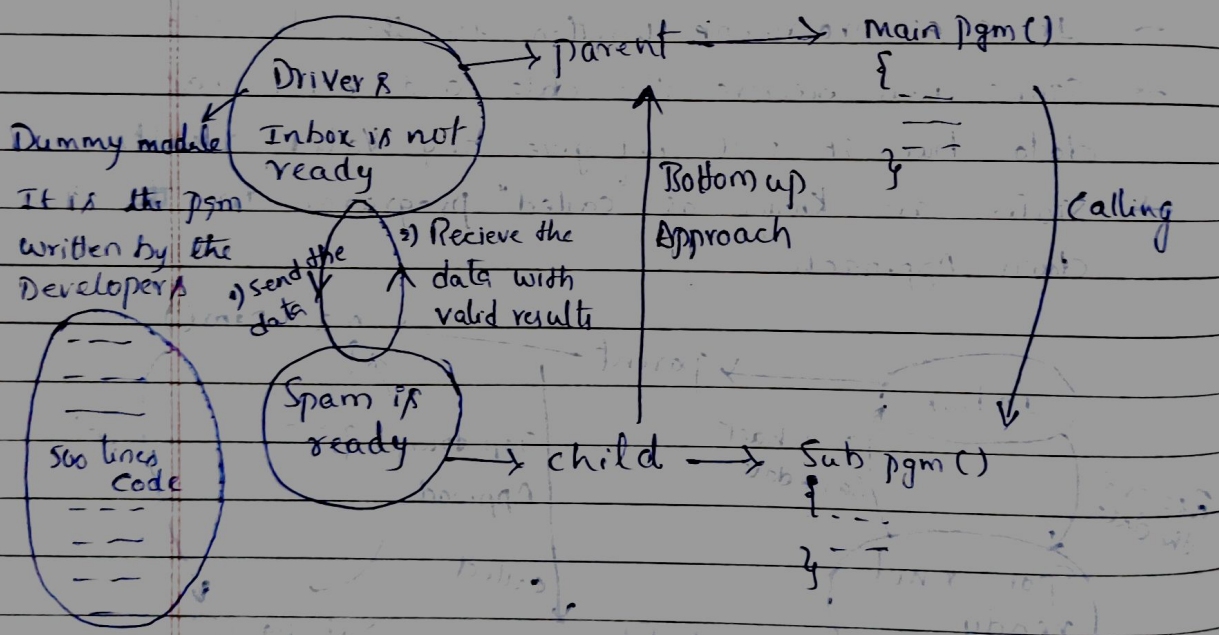
DRIVERS :-

→ Drivers are the "Dummy" module.

→ It is the programme written by the developers.

→ Drivers are mainly used to check Interface between two modules, It means Drivers will first Send the data and Recieve the data with Valid results.

→ Drivers are also known as "Calling" pgm in ~~Bu~~ Bottom up Approach.



→ Write 30 integration Scenarios (25 positive and 5 negative) for any Search field (whatsapp, Instagram, facebook, Swiggy

→ Login as userA enter nike shoes into search text field and click on Search and check wheather Nike shoes is displayed

→ ~~to~~

→ Login as "user A" enter Latest Telugu movies into Search text field and click on Search wheather movies are displayed in telugu

→ Login as "user A" enter latest Telugu songs into Search text field and click on Search button wheather songs are displayed in Telugu.

→ Login as "user A" click on Search and enter the latest Kannada movies into the Search text field and click on Search wheather Kannada movies are displayed

→ login as "user A" click on Search and enter "~~Spide~~ ~~Q~~ ~~Ta~~ 'Q' Alphabet in Search text field and check that ~~starting with~~ ~~words are displayed~~ below all data are matching with 'Q'.

→ login as "user A" click on Search ~~and~~ ~~enter~~ check for one ~~telugu~~ particular Video Song and check it is displayed

→ login as "user A" click on Search and enter latest Bollywood movies" and click on Search check wheather movies are displayed

→ Login as "user A" click on Search and enter live news Telugu and click on Search check wheather ~~lat~~ live news are displayed in telugu

→ login as "user A" click on Search and check wheather previously ~~so~~ searched ones are displayed

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→ login as "user A" click on Search button & enter ~~check~~ ~~for~~ How to prepare mutton in Search text field and check respective Videos are displ-ayed.

→ Login as "user A" click on Search button & enter How to prepare "Chicken 65" in Search text field and click on Search and check respective Videos are displayed.

→ Login as "user A" click on Search and click on mic and speak in english for respective item and check wheather it is displayed.

→ Login as "user A" click on Search and click on mic and speak in telugu for respective item and check wheather it is displayed.

→ Login as "user A" click on Search and enter "Vidya Vox" Songs and check wheather Vidy Vox Songs are displayed.

→ Login as "user A" click on Search and

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How to write Integration Scenarios for whatsapp (25 positive Scenarios and 5 negative Scenarios)

→ open the whatsapp as "userA" and click on chats and send a message to "user B" contact then go to "user B" and check that ~~mes~~ respective message is displayed

→ Login as "user A" and click on Search and type "user B" name which in the Contact's list and check "user B" name is displayed.

→ open the whatsapp as "user A" and click on search ~~selec~~ ~~t the~~ for "user B" which is in the Contact's list and click on "user B" and send a Smiley Symbol and then go to "user B" whatsapp and click on chats and check wheather Smiley Symbol is displayed

→ open the whatsapp as "user A" and click on "user B" ~~and~~ contact and send a 1500 Smiley symbols one by one and then go to "user B" whatsapp ~~on~~ click on the chats open the "user A" contact in "user B" whatsapp and check 1500 Smiley symbols are displayed

→ open the whatsapp as "user A" and click on ~~chats~~ chats ~~the~~ ~~user~~ and click on "user B" and select a particular message on "user B" chats and click on star symbol and go back to home page and click on menue and click on starred messages check the starred message is displayed

→ open the whatsapp as "user A" and click on chats and click on "user B" which is in our Contact list and send a message to "user B" and

Click on the respective message and click on delete icon and click on "Delete for everyone" and go to "userB" whatsapp and click on chats and open "userA" chats check the message is displaying as this message was deleted

→ open the whatsapp as userA and click on menue and select settings. check settings page is displayed.

Negatives

→ open the whatsapp as "userA" and click on chats and send a message to "userB" and then go to the "user C" whatsapp and click on chats and open the "userA" chats check wheather message is displayed

→ Login as "userA" in whatsapp click on "menue" and select settings option and check it goes to starred message's page.

→ Login as "userA"

SYSTEM TESTING

Definition (what) :-

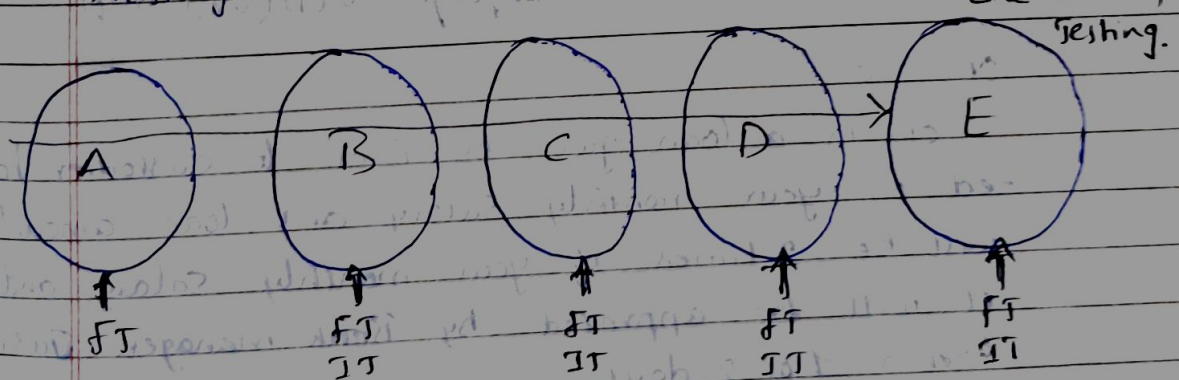
It is a end to end Testing done by the test Engineer in testing Server/environment which is ~~Sim~~ Similar to the production Server/environment.

Note :- End to End testing is a part of System testing.

→ If End to End testing is done in testing Server Similar ~~Similar~~ to production Server then we can tell Both are Same.

→ what is End to End testing ?

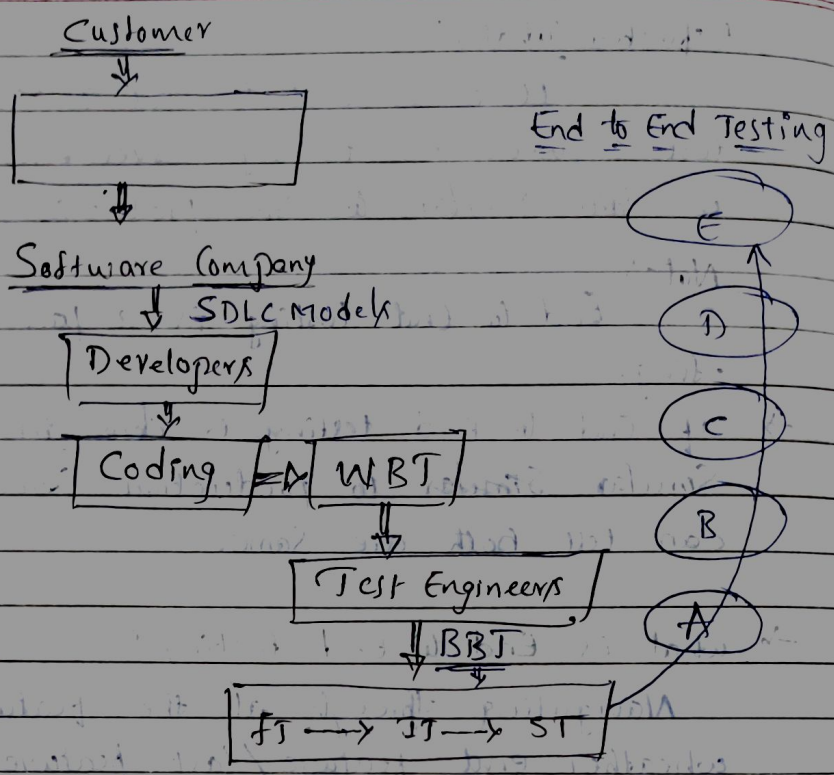
Navigating through all the features and check wheather end feature / last feature is working as expected or not is called as End to End testing.



Note :-

while doing End to End testing we are least bother ~~ered~~ about FT and IT because we start doing End to End testing already we will be done with FT & IT.

Diagram → Next page



Example 1:- Citibank Customer

→ Req → CRS → Business language → OD (over Draft)

OD:- 0

OD is a loan given by Bank to customer based on your monthly salary and loan amount will be 2 times of your monthly salary and it will be approved by Bank manager. Just within 1 or 2 days.

How the Requirement works

→ If any New Customer applies for OD for the first time for 20,000 the Bank will charge 2% rate of interest per month and Bank will charge 250 Activation fees.

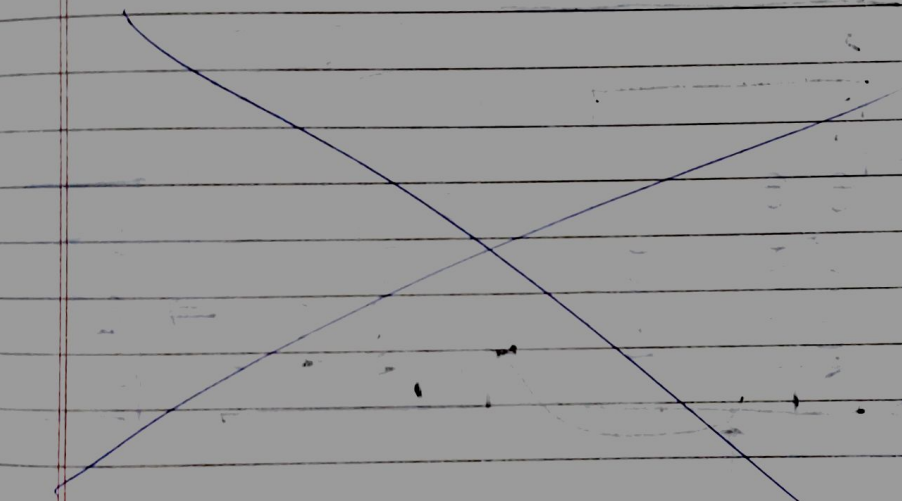
→ After 1 month Customer will repay the OD (20,000 + 400 + 250 = 20,650)

→ If Same customer applies for OD for the 2nd time then bank will charge only 2%

rate of Interest per month and Bank will not charge Activation fees.

↓

Business language



(user A)

User Interface/Workflow

→ Login as Customer

Amount balance
Amount Transfer
OD
Transactions
Logout

OD
Apply OD
OD Balance
repay OD

Apply OD
Amount
Apply | Cancel
Conformation message

OD Balance
OD amount approved
2065.50
OD amount repaid
20650

Repay OD
Amount
Repay | Cancel
Conformation message

Managers Interface/Managers Workflow

→ Login as manager

~~Approve~~ Pending OD
Deposit OD
Logout

Deposit OD
A/c no
Amount
Deposit | Cancel
Conformation message

~~Approve~~ Pending OD

Users	Amount	Select
User A	20000	☐
B	30000	☐
C	10000	☐

Approve | Cancel
Conformation message

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Note:-
By looking into the application which feature is the end feature once after writing the Scenario by looking into the Scenario which is the end feature.

How to write System Scenarios and Test Cases:-

Scenario 1:-
Login as Customer A and Apply for OD for Rs 20,000 and Logout as Customer A and Login as Bank manger approve the pending OD and Logout as Bank manger. Login as Customer A check the OD Balance (20,000) and Logut as Customer A after 1 month make sure that 2% rate of interest and 250 Activation fees should be charged to the customer (20,650) logout as Customer A and Login as Bank manager and deposit the OD (650) logout as Bank manager and Login as Customer A check the OD Balance and Repay the OD (20,650) and check the OD Balance and make sure that Amount Balance is "00000".

Test Case:-

Step-1: ~~Login~~ Login as Customer A → click on 'OD' Button → click on Apply 'OD' Button → Enter amount as '20,000' and click on 'Apply' Button → Conformation message should be displayed → Logout as Customer A.

Step-2: Login as Bank manager → click on pending 'OD' Button → Select Cust A Amount and click on Approve Button → Confirmation message should be displayed → Logout as Manager.

Step-3:- Login as Customer A → click on 'OD' Button → Click on 'OD' Balance Button → OD Balance Page should be displayed with approved amount as 20,000 → Logout as Customer.

Step-4:- change the Server / System date for next 1 month.

Step-5:- Login as Customer A → Click on 'OD' Button → click on 'OD' Balance button → OD Balance page should be displayed with the amount need to be repayed as 20,650 → Logout as 'Cust A'.

Step-6:- Login as Bank manager → Click on 'Deposit OD' Button → Enter Cust A Account no and Amount as '650' and click on 'Deposit Button' → Conformation message should be displayed → Logout as Bank manager.

Step-7:- Login as Customer A → Click on 'OD' Button → click on 'OD' Balance Button → OD Balance page should be displayed with OD Balance amount as (20,000 to 20,650) → Click on 'Repay OD' Button → Enter amount as 20,650 and click on 'Repay' Button → Confirmation message should be displayed → Click on 'OD' Balance Button → 'OD' Balance page should be displayed with Balance amount as "00000".