

→ Why testing?

ans →

- There are two approaches to get quality product

1. Design robust code

2. Remove all defect

Obviously second one is practically approachable

• why testing / significance of testing.

e.g.

Nokia. - Monopoly (single company) \rightarrow oligopoly (multiple)

In oligopoly market - huge competition is there, to survive in market quality product is necessary.

ans →

- In general, in old era market was monopoly, in current situation market is oligopoly, to survive in this huge competition market organisations require quality product/sw let us take example

During symbian era nokia rules the world. but when technology changes to android, nokia disappear from market. This signifies quality is the only parameter for existence of organization in the market.

• SQA - SW quality assurance.

1. Meet customer req^r - what purpose

2. Meet customer expectation - performance, security

3. timely deliverable

4. cost of SW

5. Risk management

{ Technical }

{ Non technical }

14/04

SQA - To monitor and measure the strength of development

process.

SW project - SDLC process

Software development life cycle.

A SW related issue resolved by SW issue \rightarrow SW Engg \rightarrow process

- * correction - something that need to be fixed.
- * Adaptability - Ability to cope with unexpected disturbance.

- Lcd :- lifecycle development

- Life cycle testing.

Imp Q → How many developer and tester

Ans → - web based, enterprise appn → 3:1

- system critical, Robotics → 1:1

- Machine critical (satellite, missile) → 1:3

- ISRO, NASA → 1:7

Q - SDLC

Ans → It consist of 3 generic phases.

- cust. req^r of software design, modification, correction, enhancement
- analysis, code structure, adaptability, reengineering.

Q. stages of SDLC.

Ans - Req^r gathering - BRS - Business req^r specification.

Analysis - SRS - SW, Req^r specification

Design - HLD, LLD

coding → ORM

Project design object relⁿ mapping

coding - Programming

testing - test document

Maintaince - support.

Imp. Q. Testing comes before coding or after coding.

Ans → Dev. & testing runs simultaneously. When SRS document is ready one copy goto developer & one copy is with us.

- * re-engineering - re-design.
- * enhancement - improve quality, attractiveness

e.g.

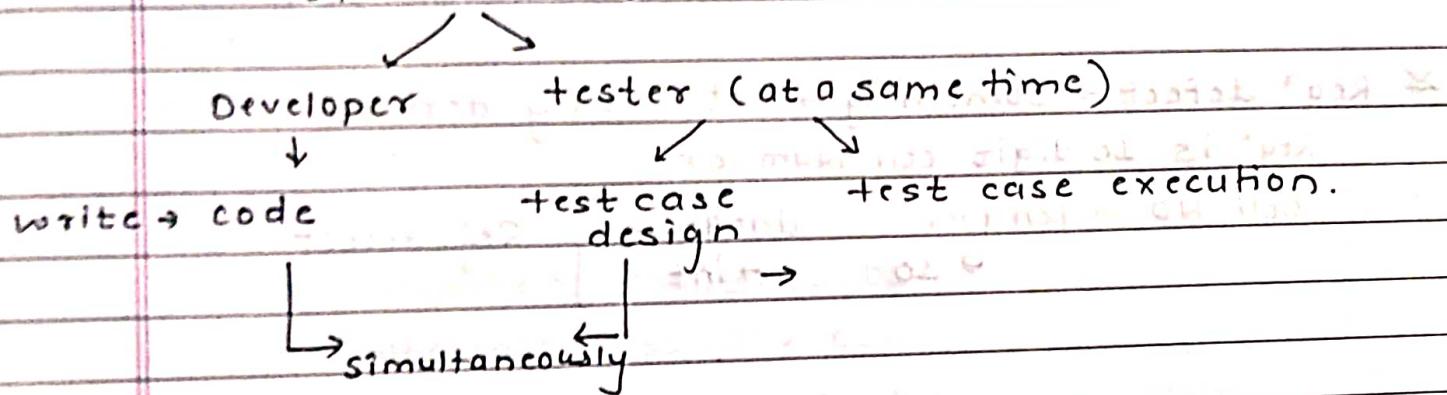
Req^r - 5digit Numerical Zip code

zip code → static

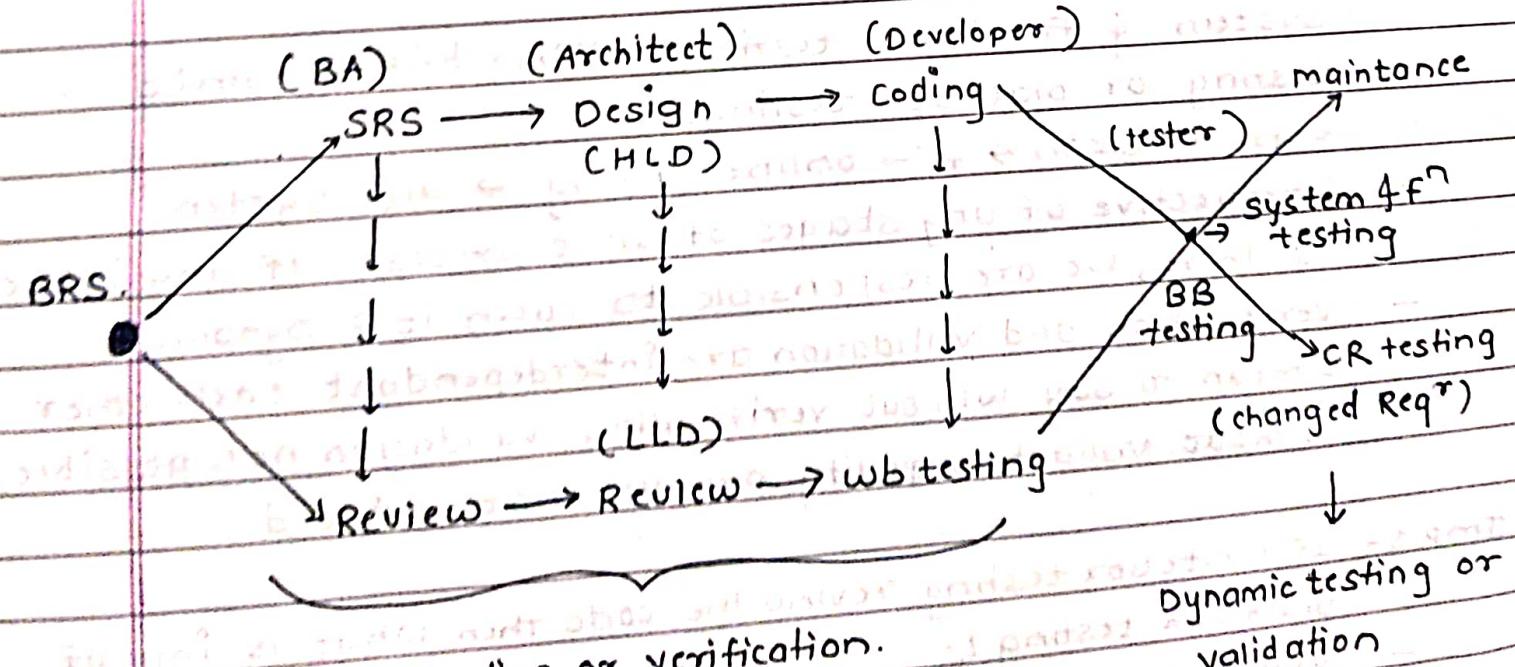
subscriber → Dynamic.

name

SRS document



- * Graphical representation of SDLC
- * Business should satisfy end user perspective



static testing or verification.

dynamic testing or validation

e. fish model.



e.g. country code will display along with cell Number
↳ Req^r.

req^r → country code, cell number (BRS)

cell NO.	length	datatype	SRS (CBA)
	14.	char	

* Req^r defect → Something → not clearly defined.

Req^r is 10 digit cell Number.

cell NO.	length	datatype	Req defect.
	↳ 10	→ int	

Imp Q - what is the difference between verification and validation?

Ans → If we analysis the architecture of SDLC, BRS, SRS, Design and coding will be reviewed at each, every level. it is nothing but whitebox testing or static or verification.

System of functional testing nothing but dynamic testing or blackbox testing.

e.g. amazon → f → online buying → diff system

- irrespective of any stages of SDLC process, if any issue is there, we are responsible to catch it → Dynamic.

- verification and validation are interdependant each other.

I mean to say without verification, validation not possible, without validation quality product not achieved.

Imp Q - If whitebox testing review the code then what is imp of blackbox testing?

- white box testing verifies presence of defect in the code, BB testing verifies presence of defect as well as absense of defect

- whitebox follows 2D while BB follows 3D model.



- I mean to say, we have to cover the positive as well as negative scenario.

- **BRS**

↳ - Business req^t Specification

3 - designed by BA.

- 1st stage of SDLC.

e.g. WhatsApp.

↓ req^t

msg

file transfer

Audio calling

Video calling

BRS → whatsapp-msg-BRS-001

whatsapp-msg-BRS-002

Customer

→ BRS

→ Developer

Ans → It is defined as requirement of customer to be developed as software. It acts as a bridge between customer req^t and technical specification.

- **SRS / FRS / CRS**

- software req^t specification.
- also called functional req^t specification of customer req^t specific.
- considered as baseline document.
- BA responsible for design it.
- It is design with respect to BRS.

e.g.

whatsapp → msg

filetransfer

↙ ↘

sending Receiving .

- Pdf, excel, word.

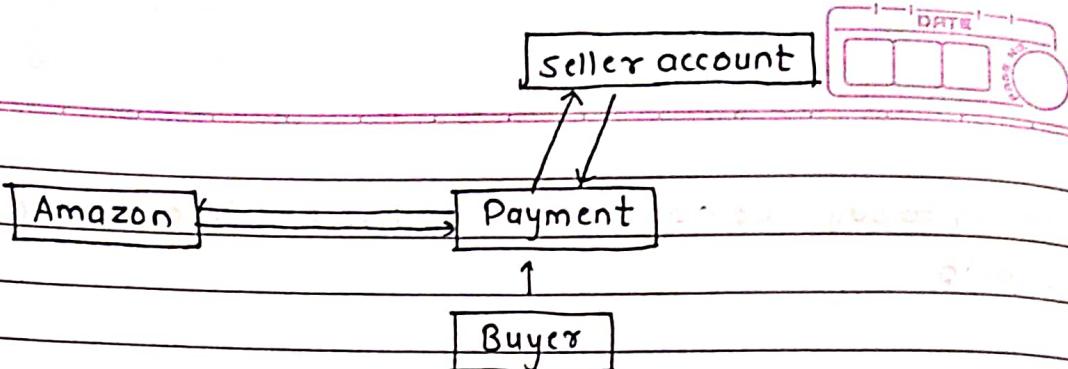
Size = 2mb

= < 2mb

= > 2 mb

SRS - whatsapp-msg-SRS-sending-001.

e.g.



Ans def → SRS defines the functional requirement to developed and system req^r to be used.

Q. - what it consist ?

1. functional requirements
(use case / Business condition)
2. snapshots. - sample model.

Q. where does this snapshots comes in SRS ?

- 1. via html coding - Hypertext markup lang. / webpage - content
- 2. idoc software - intermediate document
- 3. functional flow diagram - step by step - block diagram .
- 4. system information .
- 5. Environment (Python, Linux, oracle ..)

Q. Apart from SRS, what are the other related documents req^r for testing ?

- High level design, low level design, mapping document (etc)

• Review.

- It is static testing technique to check completeness & correctness of document.

• HLD

- High level Design
- external Design
- Design by solution designer or project designer

Ans def → Hierarchy of all possible functionality to be developed as module.

→ Technically it is define as functional workflow of integrated modules / submodules / components.

Flow → system flow during interface of running app system

↳ appn

↳ component

↳ module management, communication, exchange of data

↳ component → Submodule (sub function modules within)

↳ Submodule → child modules (sub modules)

↳ child modules → child modules (sub modules)

↳ element → communication

↳ attribute.

- LLD or low level design is a process of detailed design of system.
 - low level design
 - internal design
 - Data architecture | Backend architecture.
 - It is designed by designer.

Ans → It is defined as static logic of every submodule.

e.g., class diagram, object diagram, E-R diagram, schema.

class :- Good, Best, 1st, 2nd, 3rd

class :- Human, Animal ..

Schema :- Relationship maintained of every object in dB.

↳ one : many ↓

country

↓ ↓ ↓

State1 State2 State3



- * Prototype \rightarrow snpstype.
 - req^r during KT to client.
 - a sample model of app^r during KT to client.
- coding.
 - After completion of design and their review, Developers writes the program to construct physical software by using various programming lang.
 - e.g. Python, Java, R.
- whitebox testing / clear/transperncy / glass.
 - After completion of code design, the developer review or verify code with 2D approach to correctness and completeness of code.
- Blackbox testing / System-fⁿ.
 - Ans →
 - During blackbox testing, we concentrate on functionality of system, I mean to say during BB testing we check function of system with respect to customer req^r. (not aware of internal parts).
 - During this test, basically we follow the 3D approach.
 - Business logic would be implemented to satisfy business req^r.
 - we validate internal functionality of app^r depends on external interface.
 - e.g. Amazon login page.

At Req^r is cell phone number having 10digit.
Pin code - 6 digit.

external \rightarrow { cell number - 10digit - acceptable.

11 digit - not

special char - not

internal - cell number
pincode

length \rightarrow 10

\rightarrow 6

datatype \rightarrow int

\rightarrow int



e.g. Email ID.

length	min	max	implies
5.	40	40 or 256	minimum length = 40 maximum length = 256 else = 40
			if specified
			by customer
			Business emails & first character part are -
			date flushing or separator and delimiter are -

→ Grey box testing name after its method

- black + white = Grey

A blackbox tester having knowledge about internal structure of coding is called Grey box testing.

→ Red box testing / protocol testing

- (we are red box tester)

- Telecom architecture
- A Blackbox tester deals with telecom architecture is called as Redbox testing.

• Review → SRS.

After completion of SRS BA review SRS document, they concentrate on,

1. Are they meet customer requirement provided?

2. Are they completed?

3. Are they Achievable? (w.r.t. technology)

4. Are they reasonable? (w.r.t. cost)

5. Are they testable? (w.r.t. Environment)

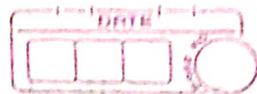
e.g. customer should give cell number requirement with star mark
it should be compulsory.

- Review - Design
 - by solution / project designer.
 - Are they complete ?
 - Are they meet req?.
 - Are they understandable ? - client, technical.
 - Are they followable ? - when logic is difficult split it into small pieces.
 - Does they handle error ?
- Review during coding.
 - whitebox testing → subset
 - ↓
 - folder → unit testing (code review)
 - Debugging process → code review.
 - After completion of code design developer review the code to validate whether logic is correct or not.
 - They will review the code unit wise.

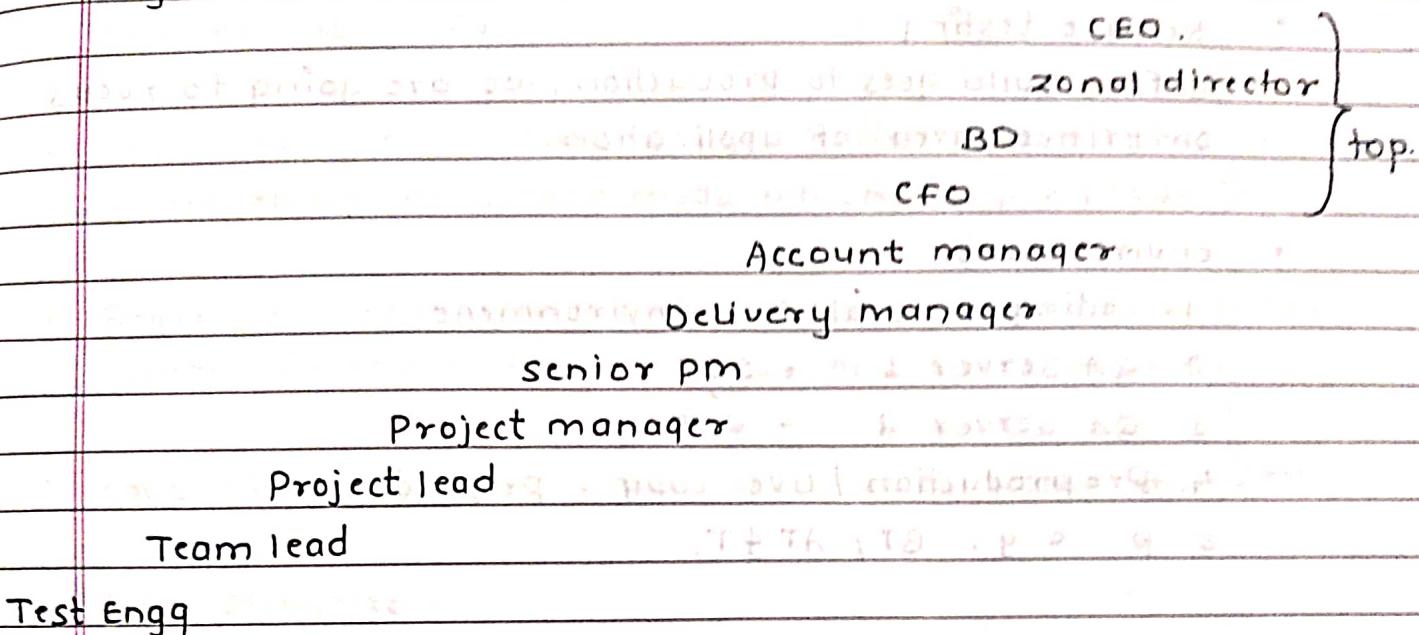
e.g. If 1000 Line program-developer runs it blockwise
 (4 to 5 lines - block)

Imp → is whitebox testing is unit testing.
 → Absolutely not, white box testing is folder
 & unit testing → subset.
 also known as,
 1 programmable testing, component testing,
 3 Structural testing, module testing, microtesting.

Imp → process Architecture
 - process architecture defines the implementation
 of SDLC
 - various model are there in process architecture
 V-model, waterfall, agile.



- organization structure



- Techno manager

Technical management. TIB | TQ | TIC

→ TIB → TQ → TIC

VIMP - workflow business process. TQ → QA | TQ → QA → QA

BRS → SRS → HLD → LLD → coding → code review

↓ (Deploy code)

system int | component testing → QA Server 1 - SIT / CIT

↓ Regression.

UAT | CAT user acceptance / customer acc. testing → QA Server 2 - UAT / CAT

↓ Regression.

Pre production server / Live copy

↓

Production server

↓

Release testing.

* - Same client - you can't work in both team
(SIT / UAT)

- Release testing
 - Before build goes to production, we are going to focus on critical area of application.
- Environment
 - 1. Coding - local dev. Environment
 - 2. QA Server 1 - SIT
 - 3. QA Server 2 - UAT
 - 4. Preproduction / live copy - preprod.
 - 5. P e.g. BT / AT 4T.

IMP. which environment you are going to work - SIT

local ; BT | local host | 8080

SIT ; BT | SIT host | 8081

UAT ; BT | UAT host | 8082

preprod ; BT | PP host | 8083

IP address or host name

necessary URL

URL

• Live environment - www.bt.com

• cloud environment

everything under one umbrella i.e. googlepay.

Advantages of cloud

1. Data security.

cloud → web service Amazon .

run ↴ www.amazon.in

→ until & unless error become zero, it will not go to next step.

• code review / verified - 7 stages.....

QA Server 1 - x_1 , Regression - x_2



QA Server 2 X₃ , Regression X₄

Prep X₅ ~~Testing~~ Prod

Release test X₆

- Before going for actual live production some type of configuration of server made which is pre production.

- Regression means, if while execution test code 80 error occurs, in regression will focus on 80 issue only.

- code will be transfer from developer to tester thru FTP

Team Structure

Dev. team

BA

Platform / Env

DB administrative team

Test team

- Release Spans

- 1 Release = 3 months / quarterly deliverable

R₁, R₂, R₃, R₄ - 1 year

(this is possible for V model & waterfall)

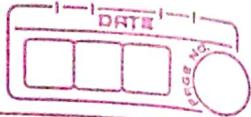
- for agile →

1 Release = 1 month / 4 week

Imp - what is end criteria and exit criteria.

e.g - Exit office is entry criteria for class.

- completion of class is the exit criteria.



- Pre condition - Entry / exit.
- Exit criteria of LLD is entry criteria of coding.
- Exit criteria of coding is entry criteria of WB testing.
- Exit criteria of WB testing is entry criteria of SIT testing.
- Exit criteria of SIT testing is entry criteria of UAT.

In document part

Req analysis - first step.

Exit criteria of Req analysis is entry criteria

- test case design.

-II- of test case design is -II- of test case execution.

• V - model

- verification and validation.

- mapping betn dev vs testing.

LCD - life cycle development

Life cycle testing

LCT

Req gathering analysis

Test plan

assessment of dev plan

req phase testing

Design & coding

Design phase Test

Programming phase

Test case design

Deploy the code on QA server

Test execution SIT

User acceptance UAT

Test document

Install the build

Maintaince

- CR - change req

- RFC - Req for change

- DRE - Defect Removal efficiency



- who is good tester?
 - who understand the development process perfectly

Q - If Design phase testing and program phase testing done by developer then how it comes under testing part?
→ client is least bother who is performing but client is going to deal with what is been done.

- Advantages of V model.

- Development & testing comes parallel.

- Drawback

- very high cost project

- expense, multiple stages in testing.

(High & very high, rich client use this)

- DRE - Defect removal efficiency / Test productivity
DD - Defect deficiency / test efficiency.

$$DRE = \frac{A}{A + B}$$

$$A + B$$

A - Defect found during ISIT & A server 1

B - Defect found during UAT & A server 2

e.g. A = 80 ; B = 30

DRE = $\frac{80}{80+30} = 0.8$ no → fantastic testing

110 0.9

- This will be in fraction.

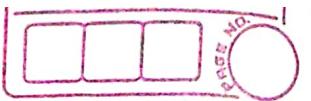
- Zero bug testing?

- This means Ratio - 1

A = 80 ; B = 0 ; DRE = 1

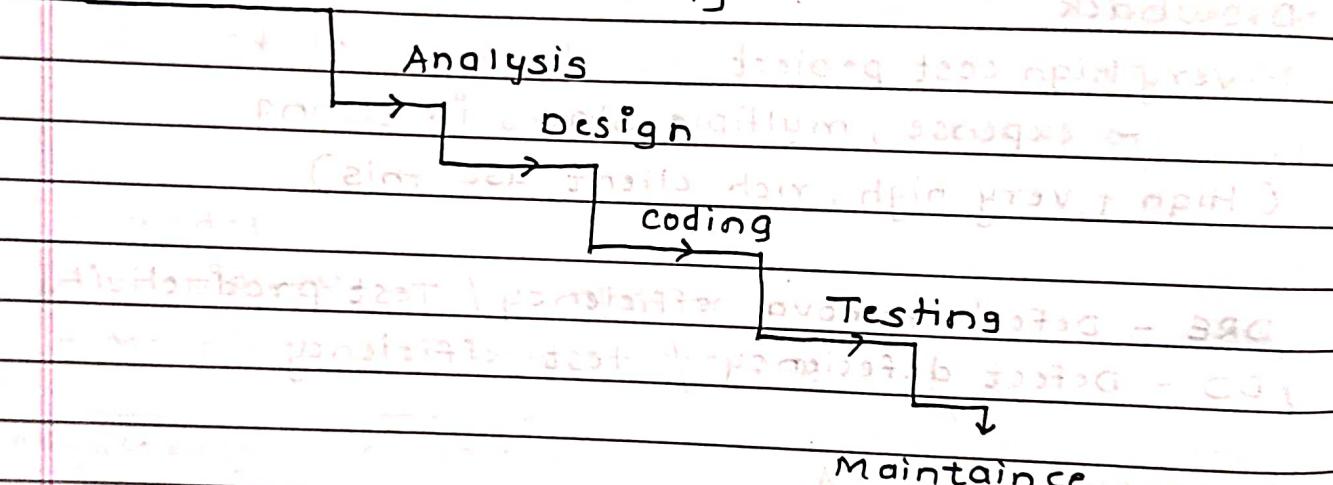
- is it possible in real world?

- I never got a chance, offcourse it is possible but difficult.



- waterfall model
 - client model description
 - It looks like waterfall.
 - This is stricter process, hence product generates highly robust product
 - This project activities follows linear sequential phase
 - Linear sequential phase means each phase purely depends as deliverables of the previous stage.

Requirement Gathering



- Advantages
 - At a time focus on a single stage
 - project activities follows linear sequential phase.

- Disadvantages

1. If testing is going on, if the issue due to design, coding, analysis — you need to change everything.

IMP

- {
- v + wf x
 - wf + agile ✓
 - v + agile ✓



e.g. assume, I am testing one application; if requirement defect is there, testing will be suspended.

2. time consuming

3. High cost

i.e. → American express, mastercard, AT&T, visa, fedex.
for all small organisation PET process dev. — Indian.

P - Process, E - Expert, T - Tools & Techniques.

→ Agile.

- 1 month Release.

- It is cumulative approach.

- Deploying the code by monthwise

- Sprint wise delivery

e.g. - cell no. 10 digit.

- In sometimes 100 requirement given by customer but most of times 80-85 req get repeated.

- one req given by customer then it will be looked until delivery of project

- If in betn req comes then it will be considered as 'change request' on chargeable basic to customer.

1 Jan → project start

↳ CR in backlog

change request

project delivery

→ deployment

31st march

Q. Agile is a model or methodology?

→ Methodology.



- client → organisation.
 - There is deal between client and organisation, organisation charges client to deliver project as per requirement.
 - If organisation failed to deliver project at given delivery date then client charges penalty to organisation.
 - This is strict process and applied in 'V' of waterfall model.
 - But in agile, there is value driven
 - In case of any changes in organisation stage

SUPPOSE client has given 10 req^r, 7 req^r completed
client will not charge penalty.

- Q. what are the different types of agile
- kanban, lean, xp - extreme programming,
 - dsdm - dynamic system dev. method
 - fdd - feature driven deployment
 - crystal

Scrum ***

- Agile terminology
 - Account manager
 - dm, pm, spm
 - Business Analyst
 - project req^r
 - Estimation
 - module req^r or Component req^r
 - Release
 - SR S
- Agile.
 - solution owner
 - stakeholder
 - product owner
 - product owner Backlog
 - Estimation.
 - sprint backlog
 - sprint stories.

- use case aligned with closure of acceptance criteria
- PM has responsibility of each user story
- every status call is linked to Scrum meeting.

• Agile defn

- Agile is a philosophy, it is flexible by nature, it is not plan driven, its value driven, req' of customer in agile is absolute dynamic in nature, frequent changes in req' doesn't have any impact neither on development nor on testing in production.

VIMP Agile Architecture

solution owner

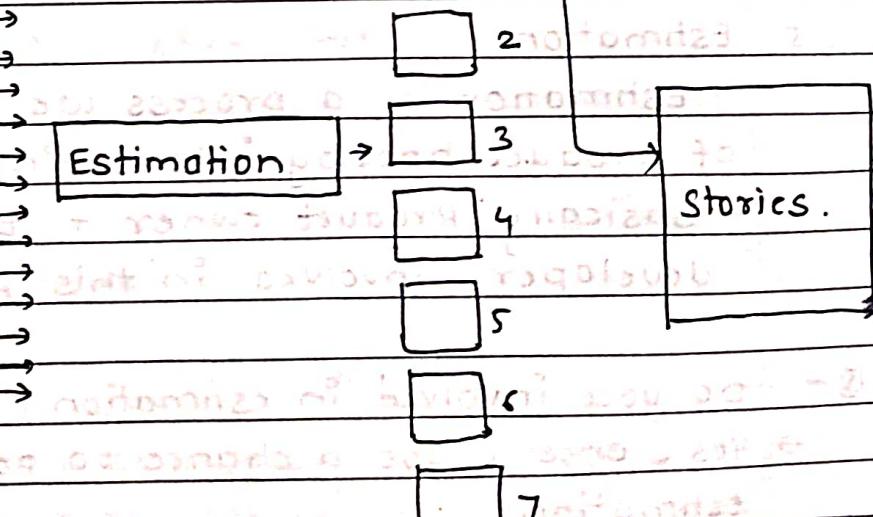
↳ Stake holder

Product owner

product Backlog
(collection req')



Estimation



Stories contain → Description, Reference, Acceptance criteria.



1. Solution owner
 - To collect money (Deals with agile projects)
 - He is responsible for cost analysis and channelization of revenue.
2. Stake Holder
 - Responsible for project deliverables and handle monitor & controlling the technical operations.
3. Product owner
 - Product owner responsible for collection of product backlog, involved in estimation, design of stories.
4. Product Backlog.
 - The list of project requirement to be delivered of corresponding agile project.

Note:- Every defect goes to database is considered as critical.

5. Estimation
 - Estimation is a process we use, transformation of product backlog into sprint backlog.
 - Basically Product owner + test engineer, developer involved in this process.

Q - Do you involved in estimation?

→ Yes, once I got a chance to perform agile estimation.

so basically, There are 3 major parameter are used to perform estimation.

1. effort , 2. knowledge . 3. complexity.



6. Sprint Backlogs
- whenever the project required delivered on sprint
 - The list of requirement to be delivered in corresponds sprint in agile project is known as 'Sprint Backlogs'

7. Sprint

- Sprint is nothing but 1 agile release.
- Duration of sprint is 1 month / 4 weeks.

8. Stories

- Stories is designed by product owner this defines functional requirement to be developed and system req to be used.

Description
Reference
Acceptance criteria

come inside stories.

- Acceptance criteria / use case of soft submits

- Business conditions

e.g. Invoice no :- 8 digit no. - req^v 1

b) Invoice will display - (IN) - prefix - req^v 2

e.g. IN-23139428, a four part no.

→ Assume, in the invoice code - invoice number, country code, state code will be represent. In that case, we need to manipulate three tables individually, making it in single statement using concatenation operator is a task of developer.

- But as a test engineer, I need to manipulate each and individual data on a specific table that is what i need to say.

Q : Who is good tester

- Simplification is the fundamental nature of testing and making it complex representation its fundamental nature of developer.

• Acceptance criteria

- It defines a functionality in terms of input and output in process.

• Agile Meetings

1. Agile Velocity

- 1 sprint :- 7-11 sprint backlog
7 sprint - 7 months.

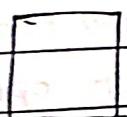
In 1 sprint, $9 * 7 = 63$ sprint backlogs

(Guessing)

"Agile velocity is a [guessing technique] is used to estimate the total number of sprint backlogs can be delivered for a corresponding agile project"

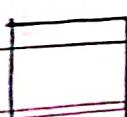
$av = [\text{total number of sprint backlog developed in very first sprint}] * [\text{Total no. of sprints}]$

3. Agile Grooming



sprint 1

31st Jan - end



sprint 2

3 feb (meeting) - groom

(to check any changes)

Defⁿ "This meeting is basically conducted just before start of any sprint"

At the end of sprint 1 and before start of sprint 2 (if req^r changes or not).

Basically,

In this meeting, Product owner, test engineer, developer are involved.

- As requirement, is absolutely dynamic in nature in agile process.
- we analyse existing requirement is clean and clear or any modification.

3 Burndown chart

Q. Do you involved in this?

→ Absolutely no sir.

(How much task is given, how much is completed)

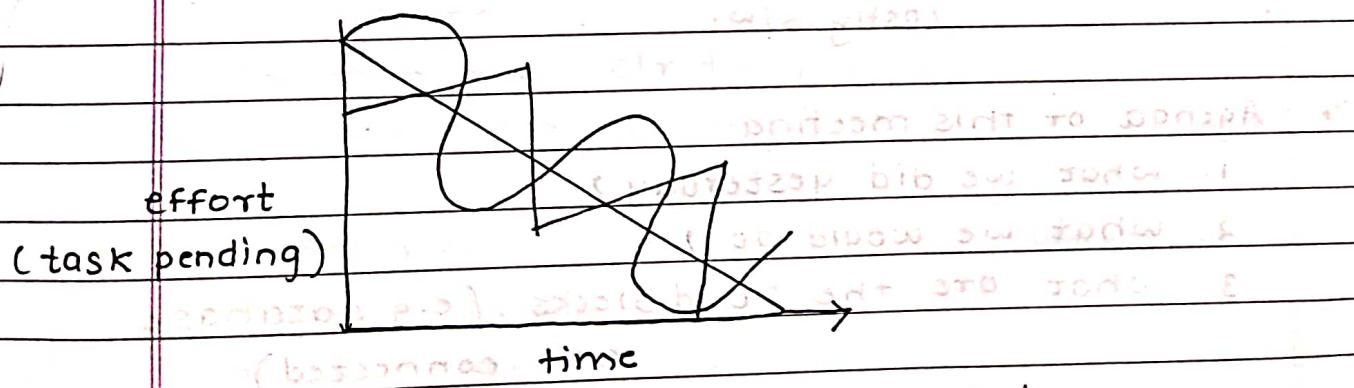


fig. Burn down chart

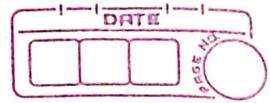
15 may - 50%

16 may - 60%

31 may - 100%

Everyday basic task is checking.

Defⁿ "This chart represents the mapping betⁿ pending task / effort vs pending time."

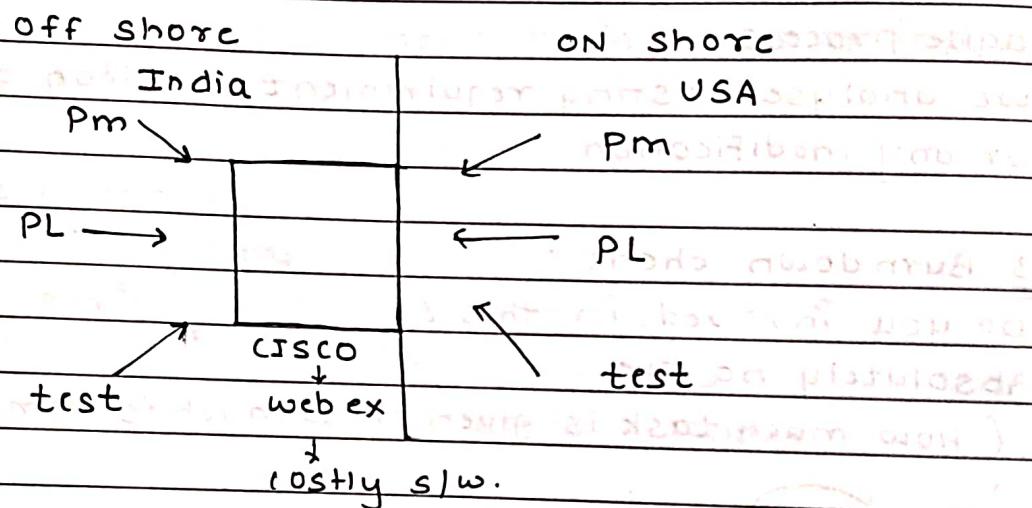


4. Scrum meeting.

- Everyday standup call
- Everyone belong to project - Dev, test engg, project lead.
- Duration of meeting - 1 to 1.5 hr.

Q. At what time American client visit us?

- 5.30 to 7 pm
- 10.00 - 11.00 hours



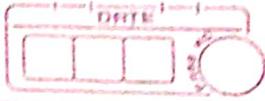
• Agenda of this meeting

1. what we did yesterday ?
2. what we would do ?
3. what are the road blocks . (e.g database not connected)

5. Agile capacity.

" considering the strength of requirement of agile project, we need to analyse / measure the no. of resources req' of the specific agile project this strength is agile capacity."

- availability of resources w.r.t req' / sprint backlog.



→ ↵ Effort estimation.

- developer & tester both have different roles at



dev → 100 ; test → 0 } replicated interface
test → 100 ; dev → 10 } original interface

e.g. If there is one req^r customer wants to add 10 address.

e.g. e.g. amazon delivery address.

- Developer role.

Address

add

for i=0 ; i<10; i++

{
 // some code
}

edit

delete.

- developer will do $ctrl + c$ & $ctrl + v$

developer effort is minimum.

- Tester role

customer name, address

country name,

country code,

state code

add 1

add 2

add 3

we have to check up to add 10, each & every req^r.

IQ

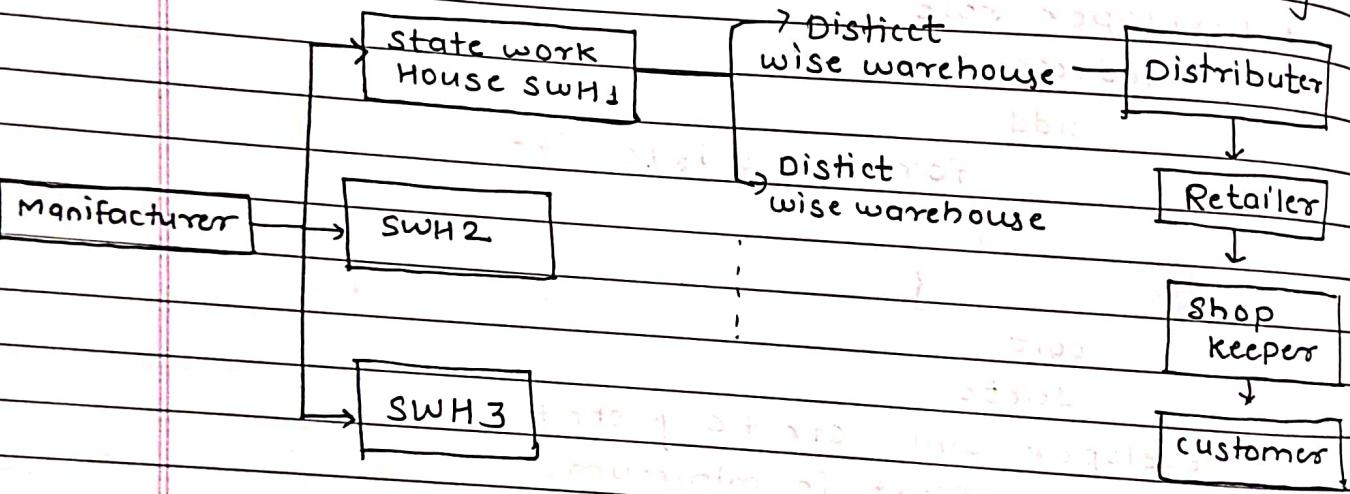
In which project you are working?

→ project basically classified with various type of verticals.

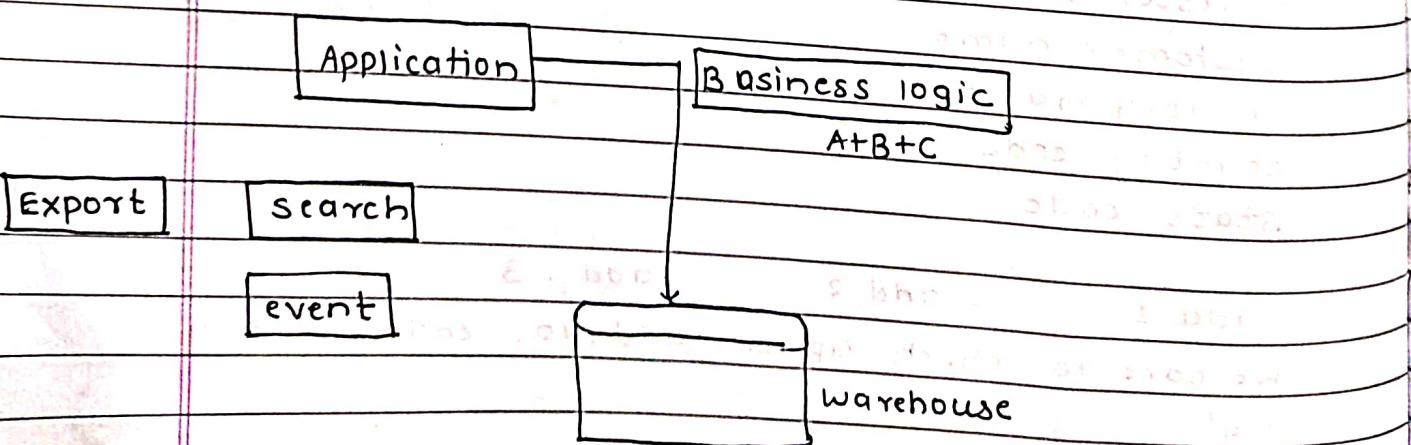
- telecom banking healthcare logistic

- I am working in logistic vertical, in supply chain domain.

The path / Journey from product manufacturing to product deliverables (customer) is known as "supply chain domain".



Application architecture



assume ME = 1000 RS.

operation cost 200 + medical 100 + staying 700 → Data.
A+B+C



- end user wants to search availability of production on specific location.

- Greed

- Basically, in my project application business logic (application) will be implemented and data would be pulled from dB & result will be display on Greed.

- Application GUI (Graphical User Interface)

Product id	<input type="text"/>
	<input type="text"/>
	<input type="text"/>
	<input type="text"/>

on the greed, = 20 records will be display.

- product id
- product type
- location id
- location type

sprint 1 :- product id ... a ... Search

product id ... b ... Search

product id ... c ... Search

product id ... d ... Search

sprint 2 :- product id ... a ... loc id ... search

product id ... b ... loc id ... search

product id ... c ... loc id ... search

product id ... d ... loc id ... search.



sprint 3

product id ... a ... locid .. subscriber type e --- Search

product id ... b ... locid .. subscriber type e --- search

product id ... c ... locid .. subscriber type e --- search

product id ... d ... locid .. subscriber type e --- search

ctrl c + ctrl v for subscriber type f.

sprint 4.

req^r added → Radio button

→ Indian or not.

indian product id ... a ... search

indian product id ... b ... search

same for non indian

* If more than 20 records →

If req^r is for 21 record, we have to use export option.

export → if $req^r = 20$ record

< 21 record

> 21 export

must satisfy two conditions.

1. mapping of the front end with warehouse } search.

2. Map excel sheet data with the database } export.

Note - Requirement estimation means you must be strong enough with application behaviour



- Agile follows two basic and core approach:
 1. Iteration approach.
 2. Regression.

Q - what is Iteration ?

- Iteration approach also known as repetition because the behaviour of application is simply repetitive in nature.
e.g. Sprint.

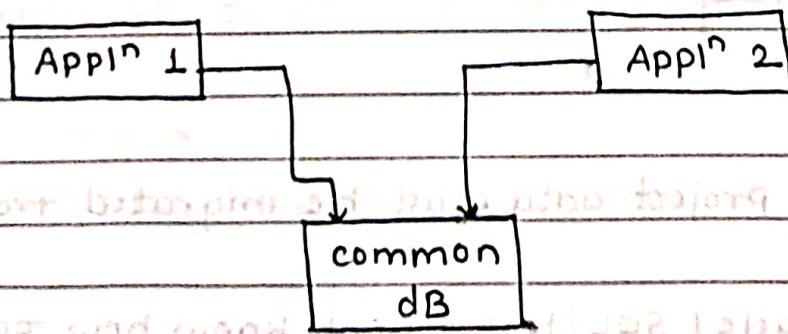
• Regression.

- Regret + action
 - If developer makes mistake (error in code) tester sends error to fix.
 - developer fixes the code & return to tester, means developer regret & take action this is known as regression.

↳ complexity

Q. what is complexity ?

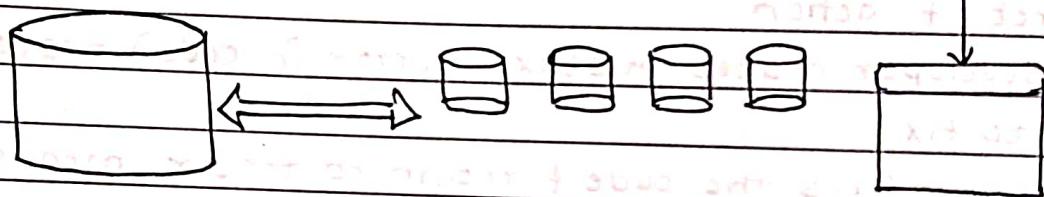
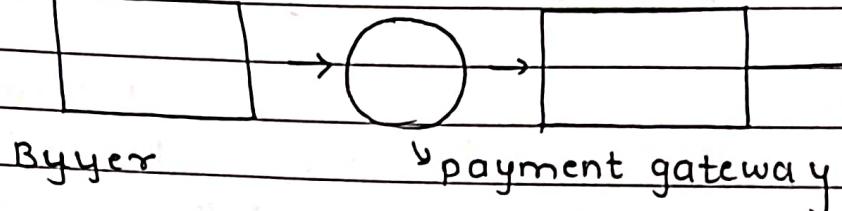
AI program



e.g. suppose, credit and debit card, involves same name, bank name, person, -ve and +ve
credit debit

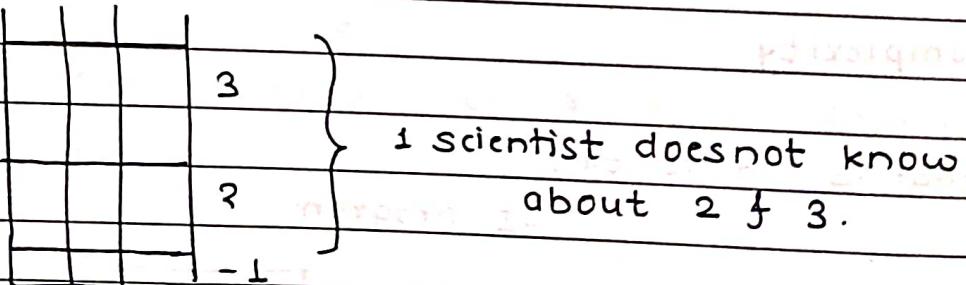
- every request takes 5 min to process.
 - if it takes > 5min, process will be terminated.
- $S_1 R_1 \dots S_2 R_1$ | $S_1 R_2 \dots S_2 R_2$ --- system requirement

↓ knowledge



everything is on data.

e.g. missile part.



• Teradata

→ Basically, my project data must be migrated from oracle to teradata

- I know, oracle | SQL but i dont know how to access teradata, we'll req mapping sheet from teradata dev.



select

status

status

100

a - op. 25 - 100 - A

200

b - op. 25 - 200 - B

300

c - op. 25 - 300 - C

400

d - op. 25 - 400 - D

oracle

mapping.

Teradata

* Stories

- Stories designed by 'product owner'
- Stories consist of
 - a) Description
 - e.g. requirement name.

Sprint
backlog →

SB - sprint 1 - country - region

- Suppose, there is requirement of browser button.
- Descrp → As an end user I can able to upload files from external system into content dB.
- if it success app will acknowledge with success message.

Acceptance criteria →

/ Business condition / use case.

Browse

AC 001 - As an end user i can upload the file using browse / test box.

AC 002 - As an end user i can upload various type of file such as pdf, xs, notepad, ..

AC 003 - I must recognise the max file size = 5mb.

AC 004 - if it is success appr' should acknowledge with success msg

" file uploaded successfully"

AC 005 - if it is failure msg will be

" file uploaded unsuccessfully".

AC 006 - if it is success → Green color will be display.

AC 007 - unsuccessful → red color will be display.

- Testbox → Browse button → external system → precond'n (pdf)
 - 5 mb - success
 - <5mb - success
 - >5mb - fail.

If file upload success, success msg will be display.

Green clr - everything ok

Red clr - something wrong. } High priority.

Testing will be focused on business Analysis.

- Test box browse external system.

	S	S	Sm	green
pdf	<5	S	Sm	green
	>5	F	fm	red

	S	S	Sm	green
notepad	<5	S	Sm	green
	>5	F	fm	red

Same with xls, worddoc = 48 conditions.

Q. why dev and tester team not seat together
→ To get quality product.

5	s	Sm	green	Negative scenario.
<5	s	Sm	green	
>5	f	fm	Red	

Total 65 conditions.

Q. Drawback of agile

- Drawback of agile :
 - Agile opposes system integration architecture
 - support client server architecture.
 - system integration - gg.vl. of project belongs to system integration.

system

Application

This component

do not do so, as it would be a waste of time.

10. *Leucosia* *leucostoma* *leucostoma* *leucostoma*

digitopeltini *coquilletti* =

eng. misere signum

Concept and Summary

2023-24 学年 第一学期

Answers

Submodule

element

Attribute

1. *Georgijević* (Георгијевић) 2000

PM 0 901 2010 10

• 2008 年度第 4 回 丁亥年

卷之三

, module ..

e of System than dev

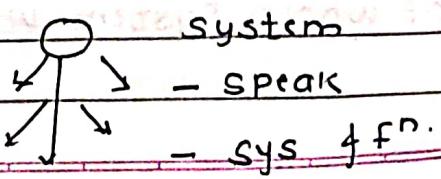
Multiple components.

changes in the environment

e.g.

Human

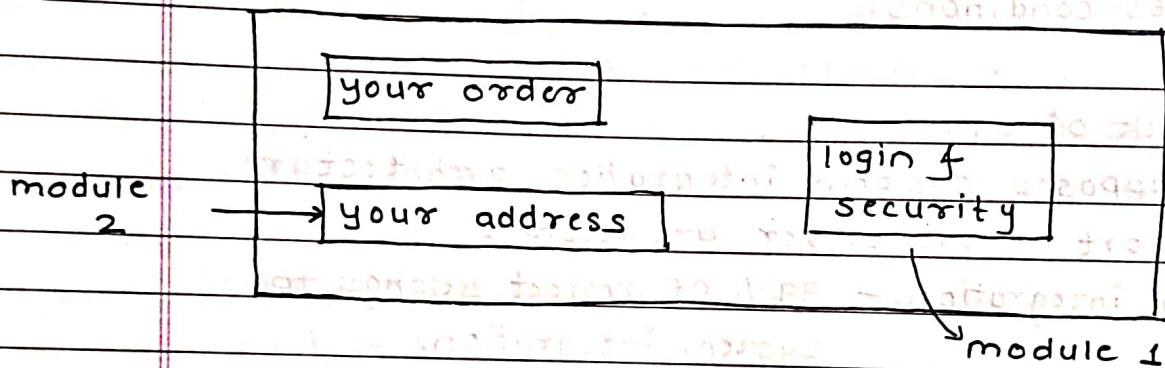
systems



→ Diff bet integration and system integration.

- Integration of component, appn, module, submodule, element, attribute within one system is called as integration.

e.g. In amazon appn you want to integrate address add, delete, edit.. fn in one system



- System integration

: multiple system are integrated with each other to derive the functionality w.r.t customer req is known as 'system integration'.

Developer point of view

- After completion of code design & their review developer integrate all the interdependent module & submodule into a master file using call function w.r.t high level design & low level design.

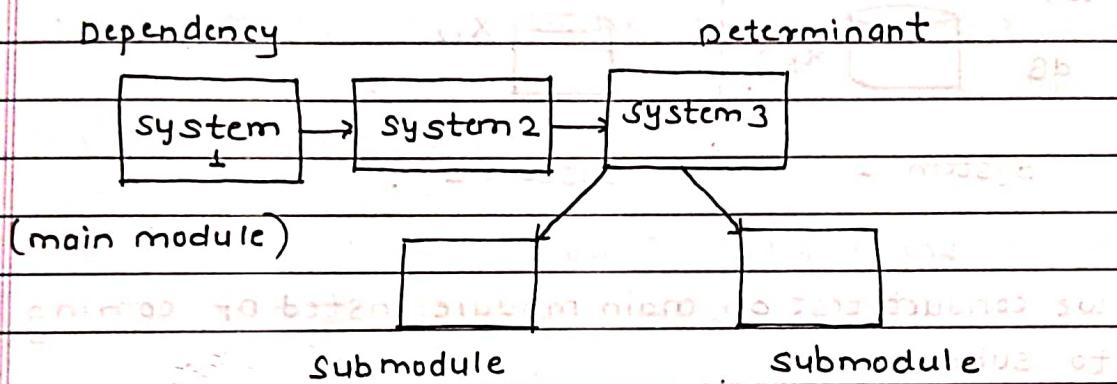
- After integration .exe file get created

- During integration we are going to validate functionality of whole system w.r.t customer requirement.

- There are three possible approaches we can implement during sys. Integration.

- Q. what is approach & method
- method - means predefined soln
 - Approach - possible soln w.r.t environment.

- Top down approach:



- Q. what is upstream and downstream dependency

→ upstream dependency means - dependant

downstream dependency - determinant

Main module - parent

Sub module - child.

• During system integration we need to analyse upstream dependency and downstream dependencies.

• I mean to say dependency system and determinant system during 'Top down approach'

e.g. ~~Amazon~~ payment gateway - Bank account

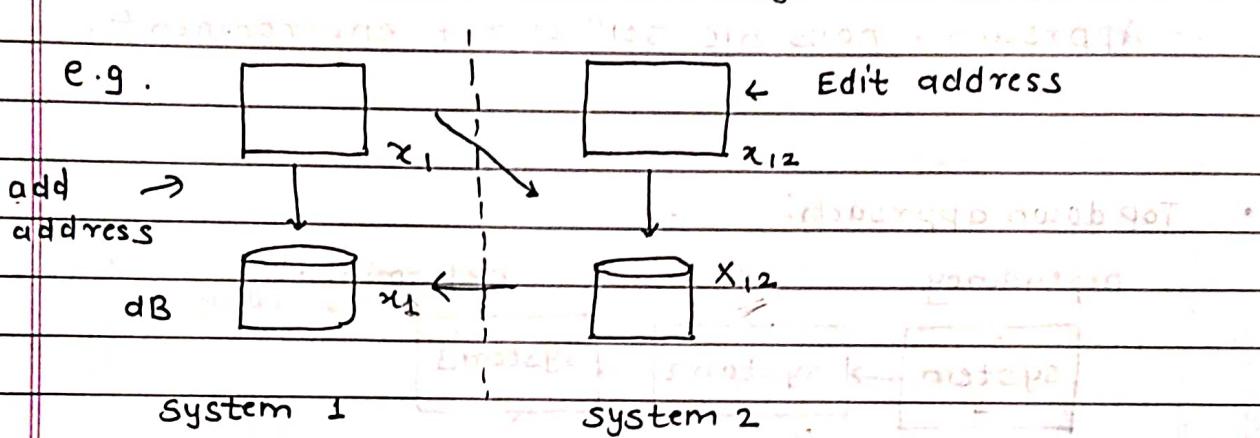
- payment gateway - Bank account.

etc.

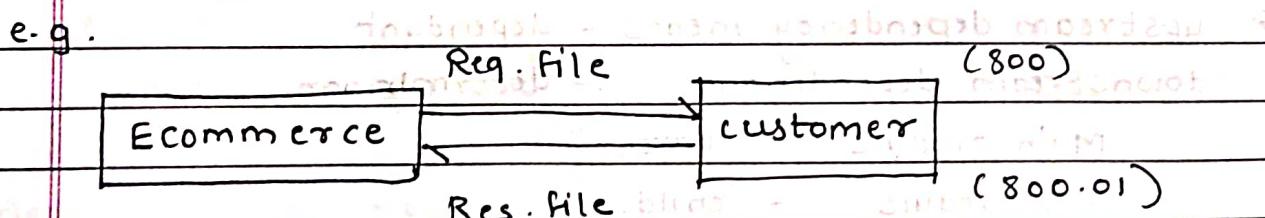


* **stub.** ~~most common used testing tools are stub~~

- Q. what is mean by Stub ? ~~error point can't~~
- It is temporary program to check the status of Submodule if data send or not. ~~functionality~~
- It is also called as called programme. ~~functionality~~

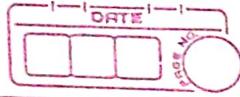


- we conduct test on main module insted of coming to submodule.
- we used one temporary program called 'Stub' to validate functionality w.r.t customer requirement.



* The request file and response file data not matching
i.e defect.

- Practical application of stub. ~~can't print module~~
- Stub will be designed by developer
- It will be in .xml and .json file format
 - , .xml - extensive mark of Language
 - , JSON - java script object Notes.



Q. What XML consists of?

- • It consists of text and values
- XML is universal language
- any system in world can understand this language.
- XML can send from 1 system to 2 systems and easily understandable.

Q. Are you able to edit XML?

- Yes, we can edit XML in 'Notepad++'
- ctrl A, ctrl C, ctrl V change as per customer requirement

Q. How to validate stub?

- • 1 release - 1 stub.
- we store stub in desktop, in XML file and it will be opened in Notepad++ to validate.

* Object-Value Reln & Value-Value Reln theory

Q. What is critical task you got in career?

- Basically in analyzing schema relationship, we need to analyze object-value reln and value-value reln.

This was bit critical task, because machine intelligence can't detect it correctly.

Eg. = Billing price in telecom domain

$$\text{BPL} = \text{call rate} \times \text{duration of call}$$
$$= [(\text{value}) \times (\text{value})]$$

∴ billing price = Value-Value Reln theory
but final bill is nothing but price + its combination of taxation, ast, all float decimal at point
i.e. $(\text{object}) \times (\text{value})$



Note - Every file name - (folder structure mechanism)

i.e stub file as

= R4.0-SIT_amazon_order_grid_price_report.xls

Q. How do you send files from 1 system to server?

There are two possible approach.

1. via unix - (due to secure system)

2. via ftp - (file transfer protocol)

* 1. Via unix

- Unix command written in putty terminal

- putty used to interact any system to another system

- following are command used to check

1. CD

2. CD ..

3. CAT ..

4. LS

5. chmod 777

In real world, stub will go and interact with another system and gives back response to main system.

Then open sql developer & run [select * from help] to check request file & response file.

In realworld response file will get in 15/20 sec if not get, wait for sometime and send another stub.

Request file - xml file will get from module.

Response file - xml file will get from submodule



Q. How you collect response file?

→ we collect it from database by using query

select * from reqt_xml where file_name = 'stub'

- once we receive response file from server we perform 'xml parsing'
- It is nothing but mapping b/w req xml and response xml file.

* Every defect belongs to request file (xml) & response file (backend) should be considered as critical

Backend = DB, webservice, etl, bi, si, file handling.

* List of defect.

1. request file and response file data not matching

e.g - (subscribername, cityname)

req. file = vodafone - pune

res. file = pune - vodafone

length is same but this is critical defect.

2. currency code

It is getting displaced as postplace in resp xml for billing price but is prefixing req xml file

3. subscriber ID & location ID is not getting matched.

Q. Response file validation?

→ using command - cd /etc/mkt/batchportal/2016/07

CAT, LIST

(GREP)



- Q Where you use unix in your project?
- 1. Sending file to server
2. Validation of response file.
3. Job run_ (setup file run)
4. Server status validation
5. log file validation (i.e text file created after every run)

* via ftp ?

File Transfer protocol.

- Q Diff betw. FTP & HTTP
1. FTP is file transfer protocol used with filezilla tool
2. HTTP - Higher text transfer protocol = browser
- In this only text is integrated to another system
- In HTTP (extra secure zone added)
e.g. = wikipedia
3. In FTP text & images integrated to another system.

Note - stub implementation is suitable when server architecture is not available with us or under construction

Eg - payment system is under construction so 1st main system can implement stub.

Imp. System & functional test

- Basically one independant module and its sub all gets integrated then its (.exe) copy gets created to form system.
- once .exe file created we are going to perform system and functional testing through black box technique



• During this test we are going to focus on functionality of whole system with respect to customer requirement.

It is classified into 4 category.

a) GUI test / usability = user interface.

b) functional test

c) performance test

d) security test.

a] Usability test

• During this test we concentrate on user friendliness of build / API

• After this it is further classified in 3 sub categories

i. GUI test - Graphical user interface

ii. Manual support test

1. front end depend on backend

End user shouldn't face any difficulties so client

"Kiss Technology"

(Kiss - keep it simple if my sweetheart)

- Python is widely used because it is very simple and faster

- Actually python is against type declaration hence it is simple, sweet & faster.

e.g.: a = 8.5m considered as no. b = 8.5m

- GUI classified in 3 categories.

- (generally we deal with frontend)

1. pleasantness & attractiveness

2. Ease of use (userfriendliness of screen, subscreen)

3. Ease of operate (userfriendliness of operation)

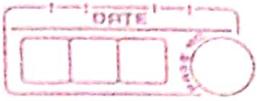
4. Speed of processing.

(i.e less no. of event to complete task)

2. Manual support test

- It context sensitiveness of user manuals

Eg = Regular expression.



Q. What is Regular expression?

- Assume TV mfg unit preparing remote. It consist of start and stop button in one click.
- It means same time logical name & event name is same i.e. (start & stop) that time we use regular expression.

- START → [s][t][a-z]^{*}
STOP → To operate event

Q. What are Microsoft GUI rules?

→ 1. controls are visible

VI 2. i.e. size of text should be visible on screen

SMOO 3. controls are initcap

A 4. i.e. 1st letter should be capital

S 5. control should not overlap

VICSMOP 6. i.e. (gap required) in word

4. System menu existence

i.e. at top file, view, edit menu required.

5. ok/cancel existence.

6. controls are alignment

* Defects -

1. Every GUI defect's considered medium / critical levels.

2. imp of GUI defects is likely w.r.t to time.

Eq: in this case business impacted maximum
tomorrow is delivery of logo missing, during this
business impacted maxm (logo - location)

* Defect type.

i. Improper error message

ii. Alignment



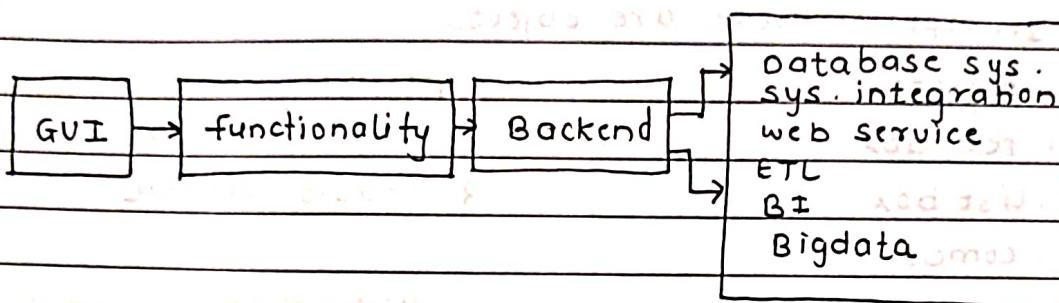
3. Improper date format

4. front size

5. color.

Q. Do you involved in GUI test ?

→ Yes, we covered it during functional test.



Automation = (3-4 months)

= 30% coding + 70% business logic.

- I have involved in dataset automation.

2)

* functionality Testing

- There are two types -

1. functionality / Requirement testing : I. f/R

2. Non functionality.

Q. what is diff. betⁿ functionality & non-functionality ?

→ • we validate functionality of application on system with respect to customer requirement.

• During this we concentrate on.

1. behavioral coverage.

B

2. Input domain

I

3. Error handling

E

4. Backend coverage

B

5. Service level

S

6. calculation based.

C



Q. What is difference b/w list box & combo?

- 1. Behavioral change / Object - property.

- To check behavior of object
- I mean to say - to check object's property
- In appln there are objects.

- 1. text box
- 2. list box
- 3. combo.

property.

Q. What is diff. b/w list box & combo?

→ list box = multiple objects can be selected

combo = single object.

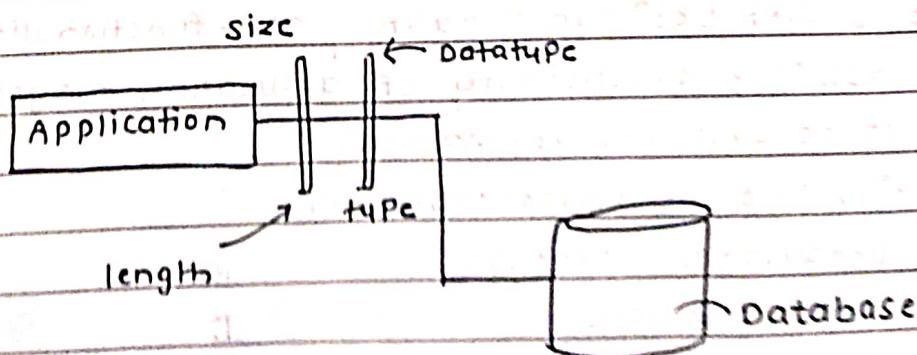
4. radio button - on/off (male/female)

5. check box - check/unchecked

6. button - focus/unfocus

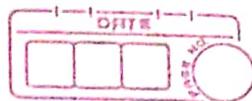
2. Input domain coverage

- To check size and type of ip via text box.



In real time nature data (size) as of static (type)

Note -



- * The data intelligence is derived from 2 basis
1. The nature of the data in terms of static or dynamic by nature.

E.g. → Database structure

Customer Name → cust.name = Nullable OR com.ID = Unique

Customer Address → cust.address = nullable
Customer City → cust.city = nullable
Customer Zipcode → cust.zipcode = nullable
Customer Phone → cust.phone = nullable
Customer Email → cust.email = nullable

Q. Where you have written query?

→ we have used front end database utility tool developer or Toad (Dell product)

• length is combination of min & max.

(min) a ... b (max)

Nature of Data

static

dynamic

length

cell no ;

cust.Name ; address

(min - max) = 10

city.Name ; email .

Note - When analyzing table structure must satisfy business logic

Eg. Email length .. min(5) ... max (256)

* Types of data

1. Alphabet

- upper case

- lower case

2. Numeric

3. Special char

4. Blank.



Q. Diff. bet" varchar & varchar2

→ varchar & varchar2 will be governed with nature of data in terms of 'static' or 'dynamic'.

- static data represent varchar
- dynamic data represents varchar2
- static - 2000 bytes; - 5 char used - 15 char wasted
- dynamic - 4000 bytes. - 15 char space utilised.

Q. Boundary value analysis.

→ min, max, min-1, min+1, max-1, max+1

- w.r.t data boundary.

Q. Equivalence class partitioning

→ (Numeric, alphabet - upper, lower, special char, blank)

IMP -

? Q. what you perform in database ?

- Basically we performed data manipulation

• Table structure validation

• Every defect in dB belongs to hyper critical

Defect →

1. Transaction ID is getting replicated twice

2. order status ID not getting replicated in dB.

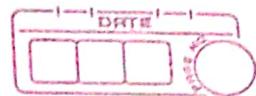
3. Billing Price info is not getting displayed proper with currency code.

3. Error handling coverage.

- preventing negative navigation.

4. Backend coverage

- validate backend.



5. calculation.

- order of calculation of arithmetic logic to validate arithmetic logic.

6 service level

- order of functionality, order in proper sequence.

* Non-functionality

- Any object in world having some function.

1. Recovery

RC²I²PGS

2. compatibility

3. configuration

4. Intersystem

5. installation

6. parallel

7. Globalisation

8. sanitisation.

1. Recovery - I

- also known as reliability testing (trustable)

Defⁿ - In this test, we validate the recovery of application from abnormal to normal.

→ Technical phenomenon.

- The start event & end event, any abnormal situation happened, then system have tendency to follow rollback mechanism.

Buyer

merchant

Bank A

B. Bank

• Abnormal

↓

pay

Normal

click to execute

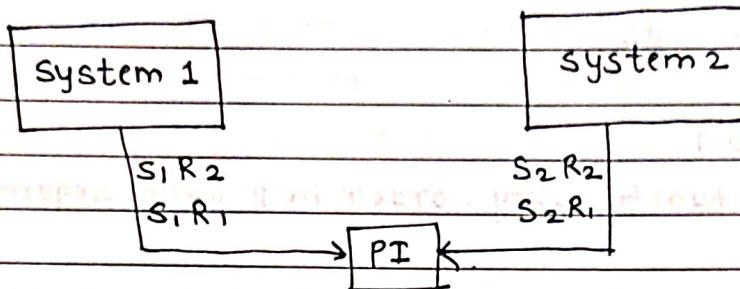
need not to be execute.



e.g.

customer req.

Number of S₁ open downlinks + Number of S₂ to select



- Every request takes 6 min to process

- S₁R₁ ... S₂R₁ ... S₁R₂ ... S₂R₂

condition point (2 dev + 1 tester) through

S₁R₁ ... takes 6 min.

S₁R₁ ... ≤ 5

S₁R₁ ... > 5.

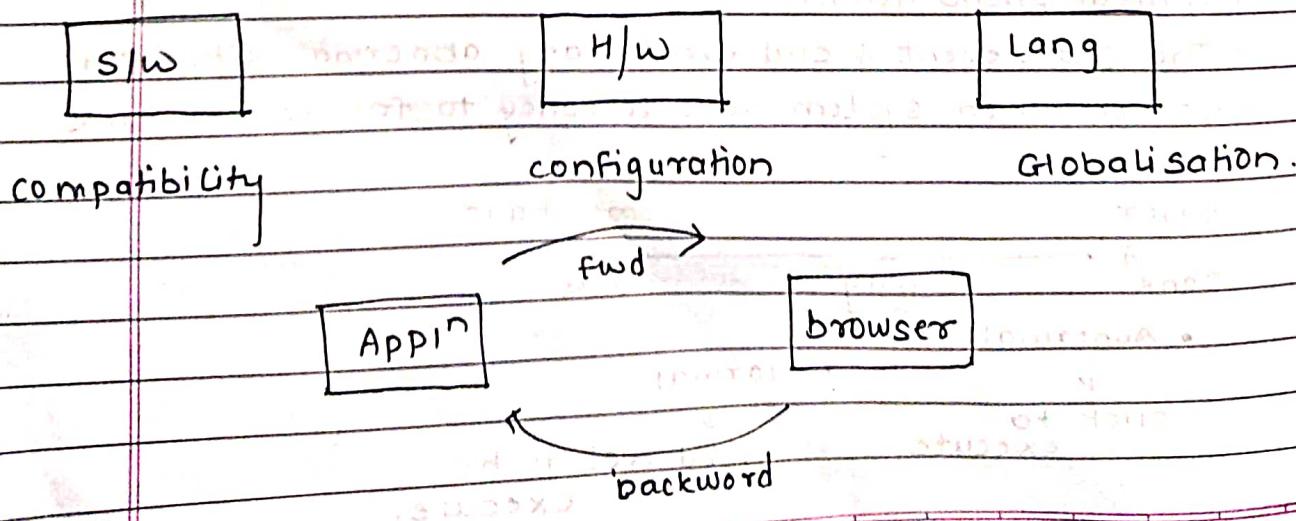
S₂R₁ ... 5

S₂R₁ ... ≤ 5

S₂R₁ ... > 5.

} 2 appn shared same database
and it is resolved with
FIFO system

* compatibility test - also known as portability test





during this, we check compatibility of s/w with customer effect environment.

- basically, if appn is ok is called forward compatibility. (browser not ok) vice versa.

- In common, backward is maximum.

- I have involved in browser compatibility test.

→ Browser test type

1. cross Browsing. - IE, chrome, firefox.

2. version comparison - IE9, IE10, IE11.

- How will you do version com. test?

- using vmware test

- deals only with frontend

(cross browsing - 3 month / 1R)

- They want to launch s/w in france

- IE vs chrome

- IE vs Safari

- IE vs firefox.

- During this, we concentrate on,

1. Interface validation

2. Hyperlink accessibility

3. tab validation

4. page Navigation

5. performance of appn speed

6. cookies.

7. cache.

e.g. 4g mobile can't use 2g sim

"Soft must be compatible with hardware"

Q. 3.2 configuration test.

Q. Do you involved in configuration test?

→ Yes, My project on configuration test.

(e.g. Telecom project - bss, amdocs, Tcm)

Network related project -

(operating support system) i.e complex project.

- During this test we are going to concentrate on to check compatibility of slw with hlw device.
- * Hint :- 5g mobile This feature is too faster than 4g. so it is very difficult to test.

Example :- 1. LAN - Local area Network

2. WAN - Wide area Network

3. MAN - Metro area

4. VLAN - Virtual LAN

5. Topologies

a) standalone d) Mesh

b) ring e) bus.

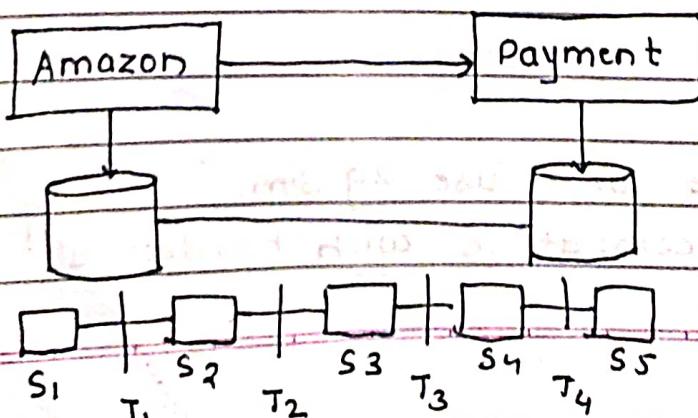
c) star f) hybrid

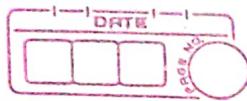
All this network support soft or not need to test in configuration test.

4 Intersystem test

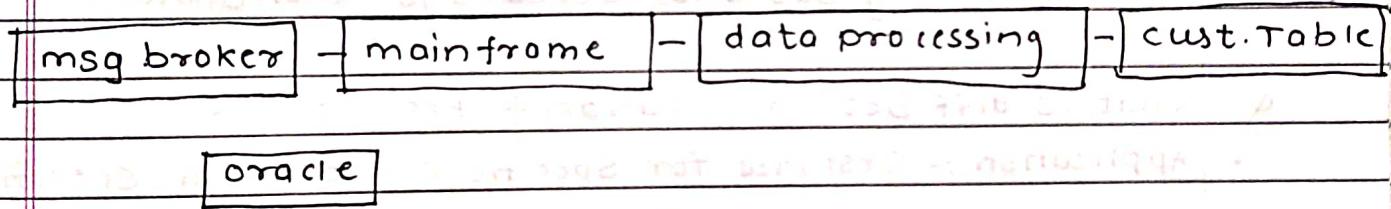
Q → Do you involved in this?

→ Yes, I ha. involved in intersystem test.





- It is nothing but inside test.
- when 2 system's are working & data transformation takes place for the diff software which gets attracted
- with help of data intelligence data tested
- " Data movement takes place for diff system that need to be test.
- During this test we concentrate on coexistence of System / application along with its associated subsystem to share information / resources.
- I mean to say we have to validate system and it's associated subsystem.
- we are going to validate whether the information or data processed perfectly or not.

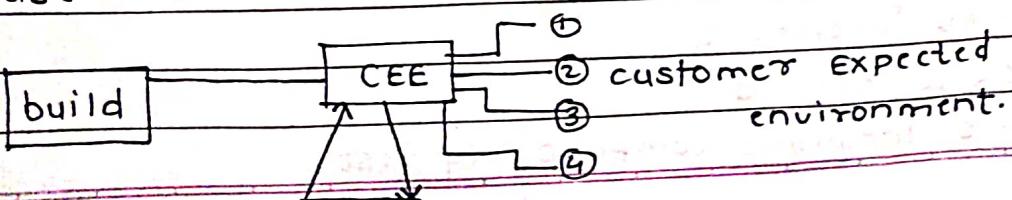


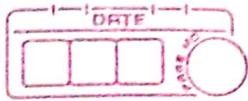
Note:- Intersystem testing perform with file handling mechanism / whenever file sharing.

Data science = | collection | Analytics | integration | visualisation

5. Installation Testing

- Q Do you involved in installation testing?
- I never got a chance but,
- During installation test we concentrate on or validate installation of customer expected environment or end user environment.





- During this we focused on 4 Parameter
 - 1. set of program execution before installation
 - 2. Easy interface during installation
 - 3. verify diskspace post installation
 - 4. check uninstallation.

→

6 Parallel Testing

Defn - It is nothing but piece of product, in this we compare product functionality with existance product (same) from market.

Eg - Payment vs Googlepay vs phonepay.

- Never got a chance to collaborate because same
- It is nothing but understand sys. environment.

Q. what is diff betⁿ Application & Product ?

- Application :- Designed for specific client for a specific requirement.
- product :- soft. appln designed for multiple user with unique feature

7 Sanitation test

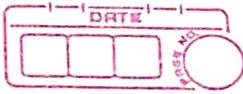
- It is also called as 'Garbage test'.
- During this test we will try to identify the extra features or present functionality in application.
- During enhancement if customer approaches further requirement the organisation can generate more revenue.

8 Globalisation Test.

Q. Do you involved ?

→ Yes, I involved

- i.e language compatibility test.



• It is classified 3 category

a) localisation - local / regional lang.

b) Internationalisation - french, Japanese lang.

c) Globalisation - English lang.

• Basically it is performed during front end testing.

→ • Basically my client wants to launch product in Southern Canada, where some people speak french.

- During this test we validate lang. compatibility with our SW

- Generally we used to check our app's support's multilingualistic character.

* customer req = for lang. compatibility
duration = 3 months / 1 release.

- functionality of interface

1. Link validation

2. Tab validation

3. Hyperlink accessibility

4. Speed of performance / processing

5. Cookies

6. Session.

• Requirement :- (ofc system)

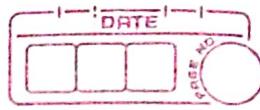
- Generally standard as per is date = yyyy_mm_dd

req. - 1. data format change to dd-mm-yyyy

2. default french should be hyperlinked

3. copyright's mentioned

4. Data going in DB must be in english only.



- * performance Test
 - Every performance related issue should be considered as critical defect.
 - performance testing validate speed of process or application.

Q. What is performance testing? (Ans: It is a type of functional testing)

1. Load
2. Stress
3. Endurance
4. Storage
5. Data volume

Q. Why perform issue came? (Ans: Not a performance issue)

→ It is because of three factors.

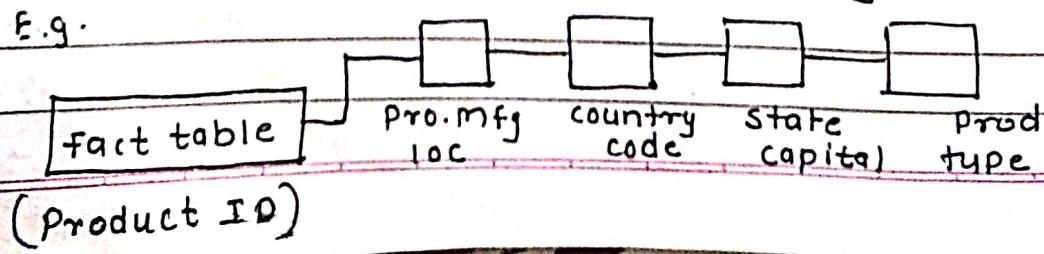
1. Frontend
 - wrong logic
2. Backend
 - wrong logic
3. NO. of user count.

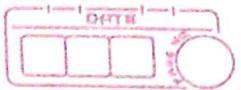
- while defining class & object;
not defined properly in this case.
 - schema defn not maintained.
 - ER diagram not maintain.
 - class, object
 - Table structure
 - shortest path detection.
- If count is more
app gets hanged e.g. - goto meet performance issue.

Q. Shortest path detection.

→ It is an algorithm based on 'Ant colony Algorithm'

E.g.





."whenever analyzing data processing we have to observed various types of dimension tables and its duration."

- Assume info collected from dim 2 and another from dim 8.
- we have to find out shortest path to data to be pulled out so that thing need to observe and code must care this.

* Solⁿ →

Step 1 - we request to platform (Pf) team to take 'Trace file'

Trace file = when we click on any object it log file at backend.

Step 2 - Pf team share with us 'Tracefile'

- Trace file consist

USER NAME TIME LOGIN OBJECT CLAPSED TIME.

Amit 8.00 am 8.03 am add 3 sec.

Step 3 - once we receive trace file we focus on clapsed time then share 'trace file' with developer team.

* 1. Load Testing } - (Never got a chance)

2. Stress Testing. } only done in automation

3. Endurance Testing. }

(S/w used for this 'Load runner' 'Jmeter')

4. Storage } involved

5. Data volm } in this.

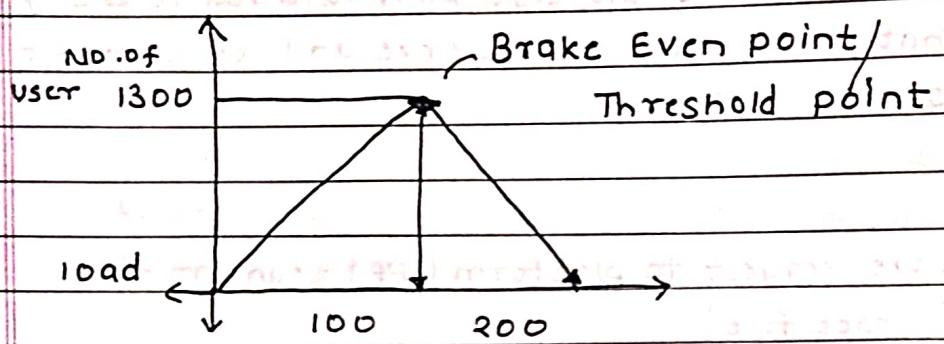
1]. Load Testing

- • The execution of app with customer expected load and customer expected configuration to estimate performance.
- Quest. req^r release given and app tested.

2. Stress Testing.

Q. If load testing satisfy cust. req then what imp of stress test?

→ objective of stress testing is to identify the 'break even point' or 'threshold point'



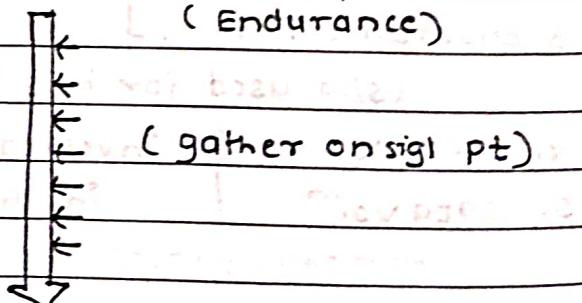
- The future enhancement no. of user count may increase identify BED. - necessary for customer.

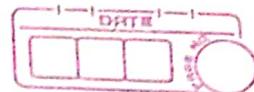
3 Endurance Testing.

→ During this, we test system or appln with maximum load extended over significant period of time.

- It is nothing but how much time appln can bear the max^m load. i.e (Endurance)

- * practically
- . At rendec point release the reqst and observe how appln behaves on graph.





4. Storage testing = (capacity)

a. what is diff betⁿ storage & data vol^m testing?

• During storage testing we concentrate on two factors.

1. store the specific data in appropriate location

2. Disk space availability.

- I mean to say, we have to check enough space efficient space is available to prevent unexpected termination.

- when data volume gets increased in system.

In that case system behaves abnormal is need to check data vol^m testing.

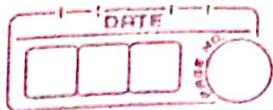
Eg. 4g - 5g (upgrade).

- past = legacy; present = live
- previously client was using MPLS network (multi protocol level switching)
- Now data has been migrated to FTTH (fiber to home)
- I mean, volume of data increased in a database
- During data vol^m testing we analyze the system / appn performance by increasing vol^m of data in dB.
- when vol^m of data increase in dB we have to check to ensure appn performance of fine.

E.g. copper to fiber optic.

5 Security test

- Every defect belongs to this considered as critical defect.
- classified into 3 categories.
 - 1. Authorization } our involvement
 - 2. Access control }
 - 3. Encryption or Description - g. never got chance.



1. Authorization

- To check whether user login correct or not
to check user is valid or not.

- e.g. - Amazon - ask user to enter password & OTP
 - Amazon - ask user to enter password & OTP [2 security]

2. Access control (role based access control)

- It is also called as role based access control system
- A valid user is having access for specific application or not.

E.g. WhatsApp - add member user [Admin. Yes.]

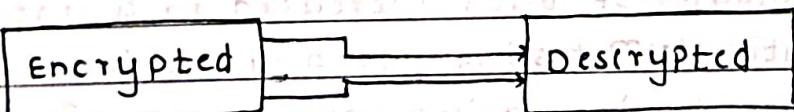
send msg [User Yes] [Admin. Yes]

send file [User Yes] [Admin. Yes]

remove member [User NO] [Admin. Yes.]

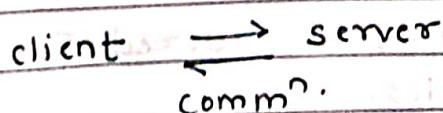
3. Encryption & Decryption

- Data conversion b/w client & server.



P/W = salin.

- Assume (x+3) is code → when we type system encrypted as [QDLIS] when this data goes to server decrypted as [safin]



In security test 2 types test required to do

1. front end

2. Back end.



front end - check with user ID access is available for specific appln or not.

Back end - in dB run query select flag in table 'flag' column check Y/N. if updated by people.

Take both front end & backend screenshot & make word doc.

* Defect, Bug, issues

Q. Diff betⁿ defect, bug, issues.

- A mistake in code called error.
- Due to this, error in the code we got mismatched, due to this mismatch defect is identify.
- When this defect is accepted by developer then it is called as 'bug'.
- Sometime some defects are called as 'issue' when all are correct.

E.g.: USA & India - client server then due to 1/2 hr diff data on invoice & order date not same.

IMP. User Acceptance Test [UAT]

Note - Types of project

1. Traditional project - SIT & UAT both will your company.
2. off the shelf - only testing of dev to other comp.
3. Maintenance - no testing, no dev only suffered.

→ I involved in SIT & UAT for 3 months for diff clients.

Q. Diff betⁿ SIT & UAT?

→ • Exit criteria of SIT is entry criteria for UAT.



- It is classified in two types (UAT)

alpha & beta. Here cust. involvement is must

imp → • Alpha is applicable for application.

& beta is applicable for beta.

- Alpha is tested by real customer/end user

beta is tested by not real customer / side like people.

- Alpha will be tested where dev. environment

Beta will be tested at customer side configuration.

* Regression testing.

- After completion of UAT organisation creates find regression team.

- This team consist some Hard engg + developer + Tester, i.e release team.

- Release team concentrate on critical area of application.

- Hence it is also called as post mortem testing

- They concentrate on

1. overall critical functionality

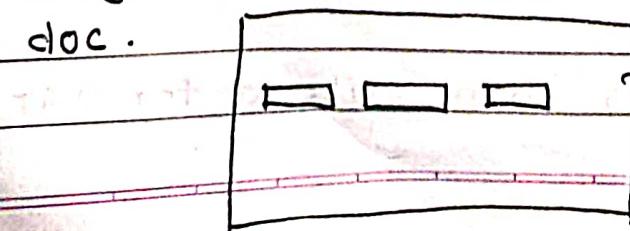
2. input device handling - mouse, keyboard, etc

3. output device handling

4. O/S handling.

- After completion of regression testing we offer KT to customer and then comes back to 'organisation'

Note:- I involved in providing KT to customer. where I designed the document in self explanatory doc.



Explain.



- * post deployment architecture
 - There can be 2 approaches.
 - 1. If defects are identified then it can be because of organisation (Production issue)
 - 2. Due to customer missing to provide information i.e. defect from client (cust change reqst)
- E.g. - Delhi.UT and Delhi. need to inform for town & state / UT.
- a) production issue / live defect
 - once build goes to production and defect must be valid and this must be due to missing functionality.
- b) client defect - enhancement defect missing info from client.

→ Life cycle of CR and production issue.

→ production issue → missed functionality → impact analysis (high/med/low) → code modifications → Testing C.R → Enhancement → impact analysis → code modifications → testing

CCB → change control board team → handle, care of above activity.

CCB comes under configuration management.

Q. What is configuration management?

→ To handover the change requests during test case execution.

Q. What would be your approach if request comes during test case execution.

→ Basically, once build goes to production. There can be two approaches.

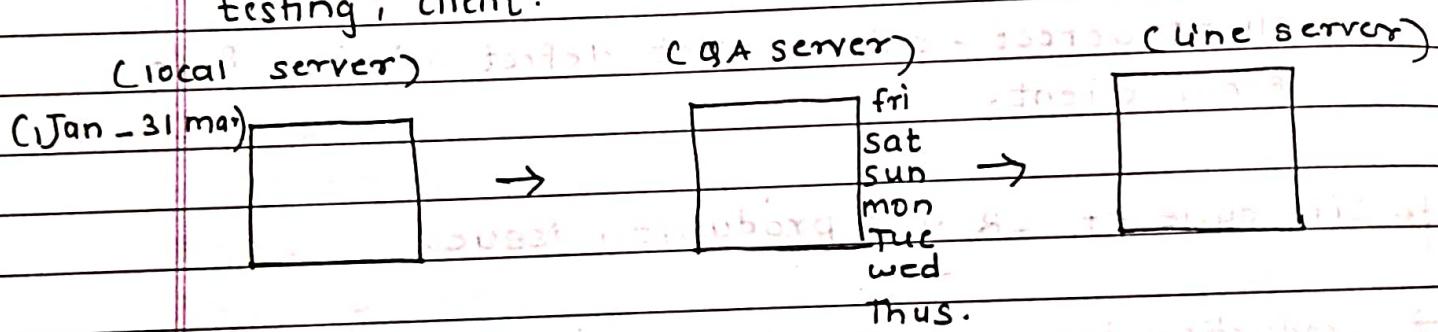
1. prod issue. 2. C.R

- we are going to analysis its impact how it impacting on system and according single code modification of its testing. carried out, all this carried out by CCB team

CCB - means change control board.

Imp. Build architecture

- It represent communication diagram of development, testing, client.



- Every time code deployment will be on Friday only after 6:00 PM.

- whenever deploying code need to mention some name. It will be given by configuration management tool.

(cm tool for naming purpose) | clearcase / virtual source safe.

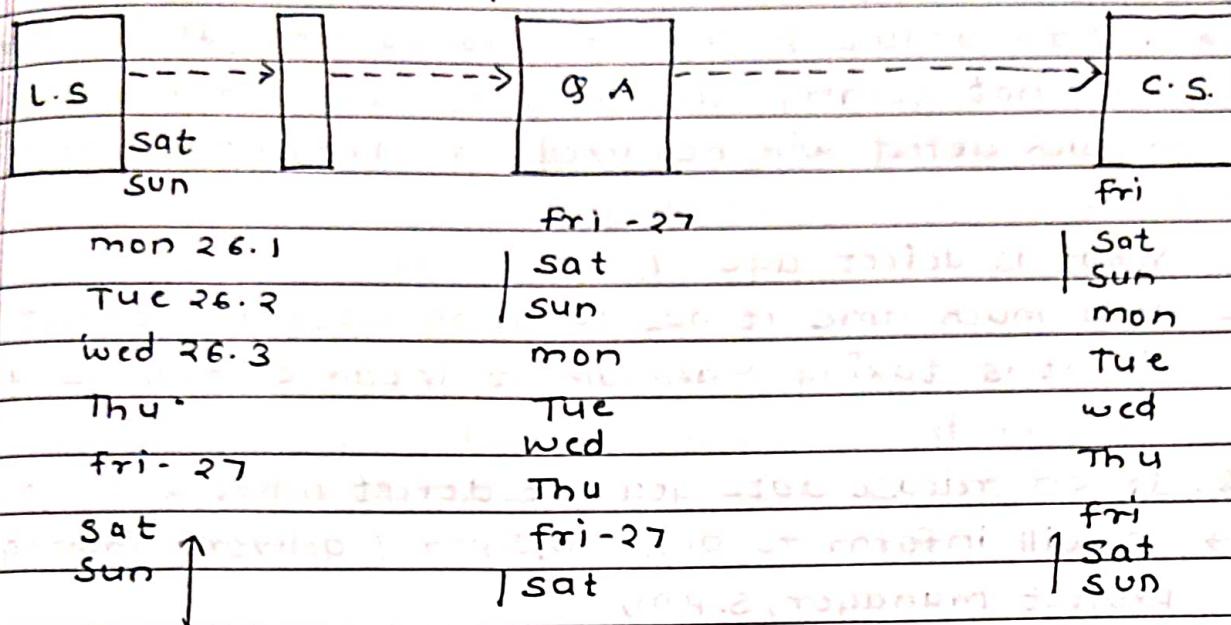
* Build version control defects

→ If version is two times repeated then it will be marked as build version control defects.

[Build Architecture]



cm tools.



[master buildline]
CBL integrated

- In database select ^ build version.
to check deployment date of build version will be in table

date	version
11/21	1.0
11/21	2.0
11/21	3.0
11/21	4.0
11/21	26.0

- Q. If you have existing defect and new scenario, then which will be 1st tested.
→ Existing defect must be tested first then new scenario.



Q. What is blocker defect?

- I am unable to login or transaction ID / order ID is not getting generated (highly critical)
- Such defect will be fixed in (1 hr) immediately

Q. What is defect age?

- How much time it has taken to close the defect, if it is taking maximum it means critical issue.

Q. If on release date you got defect what will you do?

- I will inform to DM, PM, SPM (Delivery manager, Project manager, S.P.M.)

→ Monkey Testing.

Q. What is monkey testing? If you have less time what will you do?

- Situation comes when we have maximum tasks to be covered in less time. In this case we ignore or skip low priority test cases / functionality.

IMP. Gorilla Testing

(frustrated testing)

- It is testing / mechanism to test module / submodule repeatedly to ensure it works correctly / perfectly and there is not present any single defect
- In this testing system / module can be tested with same approach.
- Due to this it is called as 'frustrated Testing'



Q. When you are not aware about appln / fun. what will you approach.

* Exploratory testing

→ In this case we will perform exploratory testing it is level by level functionality coverage need to perform (phase by phase).

Q. What is mean by Adhoc testing?

→ In this, if we don't have sufficient test data then with help of past data we perform test is called as adhoc Testing.

Imp - sanity test [Every Monday]

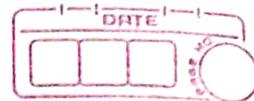
- Build verification test / Tester acceptance / level 0 test
 - Health checkup test
 - Actually, once we receive build from developer will start sanity test.
 - In this we check stability of build, whether build is ready for not
 - During this test we concentrate on core or basic functionality of application.
- * (perform in one day)

Imp - Q - Do you write test cases for sanity test?

- what i understand basic functionality of any system / application is constant by nature.
- That means we need not to write test cases hence we design this test cases in initial stage of application design.

Q. what are the functionality you test?

- Eg. In amazon appln - check core functionality [E-commerce appln]



1. log in & security
 - scenario - uid, pwd, forgot pwd, uid = email/no.
2. Add address
 - scenario - add address, edit, remove
3. Order
 - scenario - order ID, generation, payment done
4. Payment done - NcfT, Netbanking, credit card, upi, debit card, Pnvoice generation.

Apart from this,

5. Page navigation.

6. Hyperlink accessibility.

7. tab validation - all tabs working or not.

8. Interface validation.

Q. DO you log the defect in sanity?

→ Basically, if defect is critical we log the defect.

Eg. → If sender is placed and order ID not generated

If order ID not getting generated, then how invoice will get generated, then it will be critical defect

Such defect is will be log.

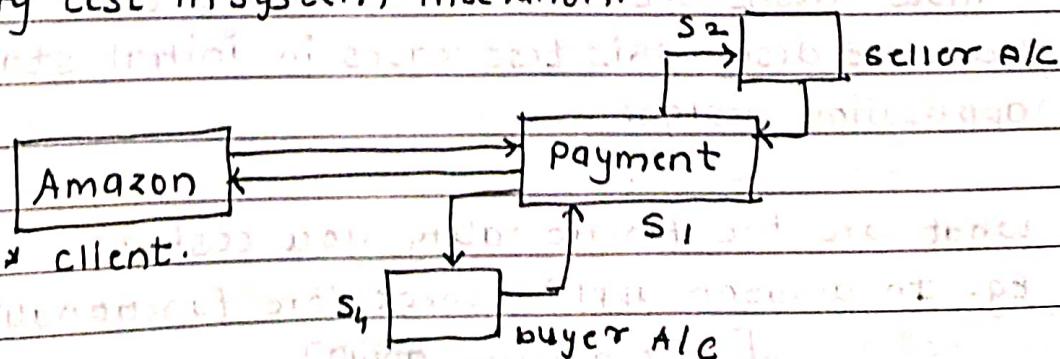
Q. Environment Defect.

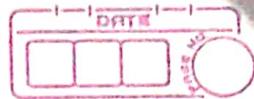
- In general we find environmental related defect

during sanity test.

- Like run time error, file missing, 404 issue.

Q. Sanity test in system interaction.





S1 - need to test system comm" protocol.

C1 - S1 - reqst

C1 - S1 - response

S1 - S2 - reqst

S2 - S1 - response

S1 - S3 - reqst

S3 - S1 - response

Q Build upgradation activities?

- To synchronise new build with past build to run appn.
i.e upgrade build with / synchronise with database.

Q How you receive build?

- They keep it on drive centrally & its IP address share with us.

Q Sanity testing in ETL?

- ETL core functionality - compare source data - Target data
 - Extraction - Test (extracted info correct or not)
 - Transformation - Test
 - Load - Test
- mapping in terms of count, duplicate, null values.

Q How you delete null values?

- Generally make externally initialized programs with code which creates new unique db instead of same db.

Q Smoke test? diff betn sanity & smoke [Every Monday]

- • Smoke - sanity + trouble shoot.
- Extra check up of sanity test.
- When build doesn't work need to identify problem.
Generally once we receive new build, we reqst pf team for build upgradation, once BUA gets done some valid / invalid objects created.

Q. Package creation ?, e.g country , add, address.

→ Database administrator creates package for all objects and compile it. After compilation DBA shares valid and invalid objects.

→ If invalid object need to be validate we request to PF team to recompile object.

→ If during execution defects occur then, we find out this object from which package and request PF team to recompile the package (PK-upgradation act)

→ Assume during execution if defects we have identify this object belongs to which package.

Generally we perform this package validation smoke testing.

Q. Difference bet' Bigbang VS - Incremental.

* Bigbang test

→ Start to end one test in one shot.

- also called as walk through / inspection

- It is informal testing

- one big functionality from start to end.

- This testing basically perform after completion of entire system development and before build goes to production.

- During this test we concentrate on at single stage instead of multiple stages.

→ I have involved in this bigbang test.

e.g. - Amazon → select product → click → buy → payment → i.e. if order processing book - all inf' OK.



- Incremental Test → It's a type of parallel approach
 - also known as formal test
 - In this we are going to test from unit level to system level.

vImp. Retesting vs Regression testing.

- Retesting → same kind of orbitons approach, but different
 - Need understand this on three angles

1. front end (UI to business logic to DB)

2. Backend (ETL, DB only about modifications)

3. System integration

- Retesting is an approach

- we have to test using multidimensional approach.
i.e multidimension data analysis.

- In this, with diff data we need to test to get the clear functionality / view of system / application.

E.g. → user login → multidimensional approach

i/p - cmail & pwd →

} front end

} concept.

cell of cmail & pwd → Test based upon cell

only pwd

E.g. → In database - in data check date format

i/p - enter date with diff

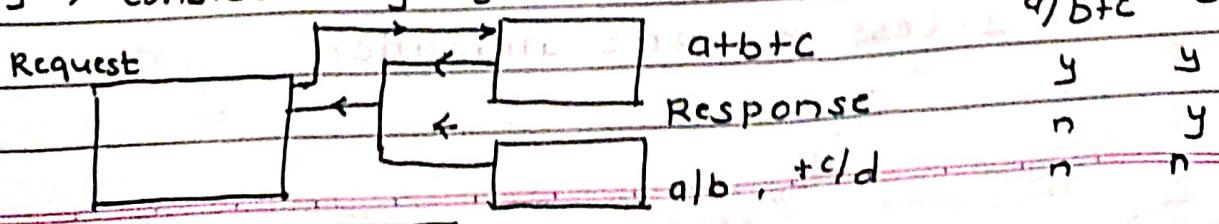
} Backend

dd.mm.yyyy, yyyy.mm.dd, etc

} concept.

- price value, currency code

Eg → consider any system





- Regression Testing → Regret action
- It means reexecution of app! on the modified build to check bug fixed works and occurrence of side effect.
- Once we receive initial build we perform retest or execute app! if fixed any defect we send into developer to fix it.
- Once we receive modified build we perform retest on modified to check whether existing defect fixed or not / resolved or not.
- Regression team (No write test case)

Q. What you do in regression?

- After completion of SIT; previously failed test cases During this we focus on,
 - 1. Previously failed test cases.
 - 2. High priority test scenario
 - 3. If time permits interdepartment test scenario
 - 4. New added scenario.

Q. Where you used manual & or automation?

- In common testing practice we would prefer to best automate w.r.t test impact & criticality
 - Test impact means test repetition, criticality means complex to test manually.
 - Two reason to implement test automation.
 - If we perform test automate then we can
 - 1. reduce human error
 - 2. reduce time
 - 3. Less resource utilisation



NOTE - we can't implement it in backend operation, but in front end some cases we can implement.

e.g. Amazon → add address → fill 10 add → 10 rec generated.

- * Data set Automation / Data set automation - ML algorithm
- . Dataset will be in csv file - (common separated value how to use →)
- csv will be imported in tool / selenium .

```
import csv (mode) Read .
with open ('file dir. path', 'r') as file & inderstation
    csv_file = csv.DictReader(file) (Dictionary reader)
    arr [ ] = [100, 200] (file) list (create dataset)
    for row in csv_file ; - loop create [for repeated
        approach]
        p = dict (row) - convert list data (fn dict)
        in dict
        g = p ["Element"]
        ↗
        variable print (g)
```

Name
* [if getting issue define file dir. path with (\) double slash]

arr.append (g) - to insert 'g' element in list

print (arr) → to print list

[All element come under in list]

min = arr [0]

for i in range (0, len(arr));

if (arr [i] < min).

min = arr [i]

Print ("smallest recharge is " + str (min))

Q. What is standalone architecture ?

Ans →

- * standalone →
 - A system / computer where application & its server will be there.
 - A comp with its own DB.

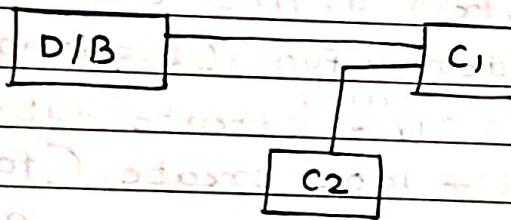
* 1 Tier Appn

- one client & one server

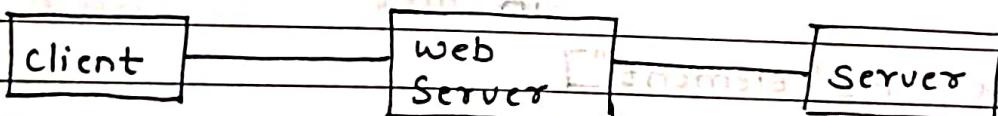


* 2 tier appn

- One server with multiple clients



* 3 Tier Appn



Q. what is diff betw http & https ?

→ http - hypertext transfer protocol

https - - secure (mode)

Note → http:// www.amazon.com

world wide web

Domain

This is web server (runs on web)



Q. Which database you used ?

→ oracle 10g, 11g, 12c, 13c, 14c

Q. What is diff betn oracle 10g, 11g, 12c ?

→ g - stands for grid ; i - stands for internet
c - cloud.

Imp → webserver

client program to access webserver (A)

java appn → weblogic / tomcat

.net appn → iis (internet info service)

big appn like, → multiple web logic (n tier)

AT, BTT

Q. What is web based appn ?

→ It means any software running (website) on server

Q. Testing in web based appn ?

→ 1. Basically we perform functionality validation

2. page navigation

3. hyperlink accessibility

4. tap validation

5. performance test validation (object response time)

6. security - session, cookies, cache.

Q. Diff betn session & cookies ?

1. Session time out - End user did login but haven't done any event session will time out. In betn two events '1' min session time required for security purpose.

Defn → It is nothing but time gap/span betn two events for end user for security on web based appn.

2. Cookies.

- 1 When end user access web based app files stored at two place.
 - 2.- Temporary files - this files modified erasable (i.e. cookies)
 - 3 - permanent file - at google server (can't delete, remove)

Defn - During accessing any web based app files get stored at two place.

- 1. temp.
- 2. Permanent
- temp files means cookies.

Q. SQL injection?

- This is used for hacking.
- Out of million conditions one condition satisfy with true condition.
- That true condition means SQL injection.

Q. SQL buffer overflow?

- When end user insert under restricted information data to database; that time DB will show abnormal behaviour so system will get impacted. This condn called as 'SQL buffer overflow'.

Q. What is statement of work?

- Consider one project released of one company.
- In this, lots of company fight's for front end, backend oper.
- After that they finalise assignment of project i.e. statement of work.
- Green Signal given as you are shortlisted, but work won't start.



Q How you receive requirement ?

→ Basically, BA keeps it in central drive or configuration management tool. i.e (git)

→ Roles & responsibilities.

1. first we are going to analyse in requirement analysis

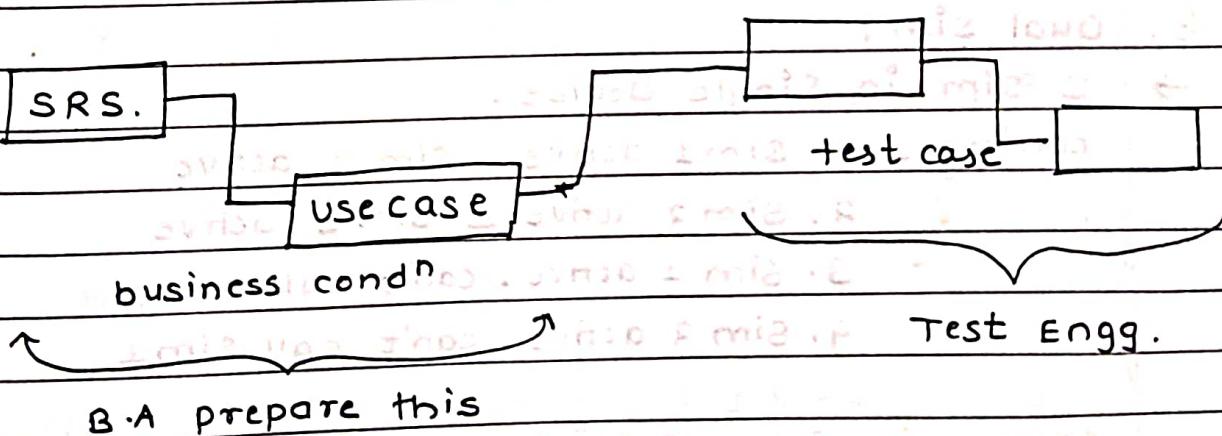
+ In this meeting BA will explain about project orders, deployment

+ PM SIT in this meeting.

'Requirement analysis' - is the meeting co-ordinated by 'BA', once final SRS get completed.
+ it takes < 2days>.

2 Then will start to write test scenario

Test scenario



* SRS :- It defines functional requirement to be developed and system requirement to use.
- It contains 'Test case'.

* Use case :- It defines functionality in terms of input, output and process business condition

* Test Scenario.

- All per probable condition.

Q. How you represent circle) air float scenario

→ circle is $C = 2 \pi r$ or

$$A = \pi r^2$$

Q. Right angle triangle ?

→ 1. $a = 90$; $b+c = 90$

2. $b = 90$; $a+c = 90$

3. $c = 90$; $b+a = 90$

4. $b = 90$; $ac * ac = ab * ab + bc * bc$

5. $c = 90$; $ab * ab = ac * ac + bc * bc$

6. $a = 90$; $bc * bc = ba * ba + ac * ac$

7. $\frac{1}{2} ab * bc$; $b = 90$

8. $\frac{1}{2} ca * ab$; $a = 90$

9. $\frac{1}{2} bc * cb$; $b = 90$

Q. Dual sim ?

→ 2 sim in single device.

calling - 1. Sim 1 active - Sim 2 active

2. Sim 2 active - Sim 1 active

3. Sim 1 active. can't call Sim 2

4. Sim 2 active. can't call Sim 1

Same write for messaging.

Q. Pen & Pencil (Scenario)

1. write, ink must not match with paper.

2. It obeys gravitational rule / principle

3. written lines must not be erasable.

4. It follows capillary tube mechanism

5. fuel - is ink in liquid ?

PEN.



1. write, ink must not match with paper
 2. It doesn't obey gravitational rule.
 3. written lines must be erasable
 4. It doesn't follow compilatory tube mechanism.
 5. fuel - is graphical rod.
- } pencil

* Email - Scenario.

	ID.	more than 1	less than 1
1. compose	to	1	>1 , (separated by)
	cc	1	>1 , <1
	bcc	1	>1 , <1

t cc bcc.

Y Y Y.

Y Y N.

conditions. → 8

Subject - fill - length - → 14+3 - 13.
blank

text body - fill ... e.g 250 w. 14, 100 5
blank

size

Attachment - fill ... pdf, excel, jpg ✓ 20
blank

total 90
scenario →



2. Reply.

- 1st same as per compose

Subject - RE:

text body -

Attachment -

3. Reply to all.
(if multiple email ID)

TO. → >1

Attach - NO

NO

4. forward.

everything blank.

Sub - fw:

Prefix. - yes ↗

NO - blank.

e.g

a	b	c
a	b	c
Y	Y	Y
Y	Y	Y
Y	N	Y
N	Y	Y

req^r a or b ↗ c

a	b	c	ans
Y	Y	Y	Y
Y	Y	NO	Y
Y	N	Y	Y
N	Y	Y	Y

test case - priority.
defect - priority, severity



* Test case format. (excel sheet)

Test case ID. (unique)	Description	priority	Testdata pre- conditions	Action/ event	Accepted Result.
	<ul style="list-style-type: none">• Test case ID - R4.0_Amazon_Address_Add001• Description - End user can able to add address. The info will be stored in database.• priority<ul style="list-style-type: none">↳ IMP of business w.r.t customer req'↳ High↳ Low↳ shipping add.↳ billing add.				medium

Q. Who assigned priority ?

→ obviously we, test engineer

I mean to say how much business getting impacted with this functionality.

Sometimes, Considering complexity we take help from BA

ex →

Mr Amit, from your bus. class Information Age
please define here, the variant point
shipping address and biling address.

- Test data .- cell no - 9999999999
i.e 10 digit numeric
- zip code - 888888
i.e 6 digit numeric.

callibm
2011



• pre-condition.

1. Application login should be successful.

3. 'Your Account' page should be displayed.

• Action

- click on 'your address Tab' in your Account page

• Expected result

- 'your address' page should be displayed.

• Action

1. click on 'your address Tab' in your account page Expected
your address Tab page should be displayed

2. click on 'add address Tab' in your account page.

3. 'Add a new address' should be displayed.

3. Select 'country / Region' Drop down.

3. Default country 'india' should be displayed.

4. Enter mobile number in mob No. text box.

4. BVA -

ECP -

Value -

→ same for edit function

→ just copy & paste.

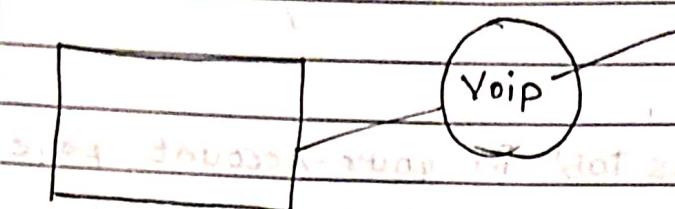
9. Database Impacted?

→ Yes.

for specific col.



* External review by client { 2 day per day 4 hr - 8 hrs



I have involved in walkthrough and regression testing.

e.g. Goibibo.
Test scenario.

R1.O - Goibibo - Domestic flight - one way - from.

R1.O - Goibibo - Domestic flight - one way - to

Action: Expected Result:

1. Select the 'city name from dropdown. 1. list of city names must be displayed.

format should be city name, country name,

(city code) for example: Delhi, India, (DEL).

2. Select the 'city name' to dropdown.

1. 2. from city name to city name

2. validate dropdown.

should not be equal

3. if same

3. App must throw error

Same for international