Software Development Life Cycle (SDLC)
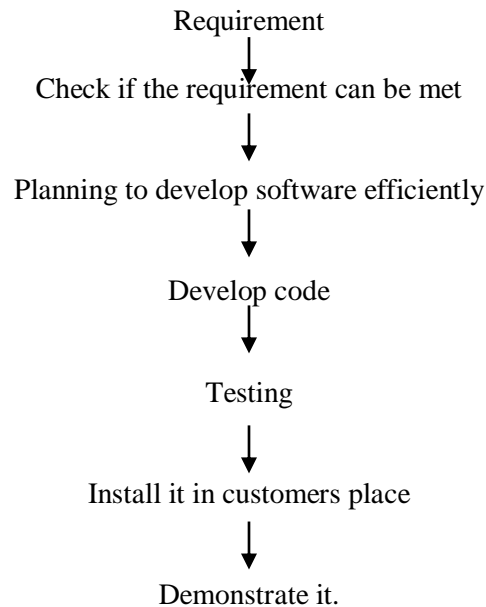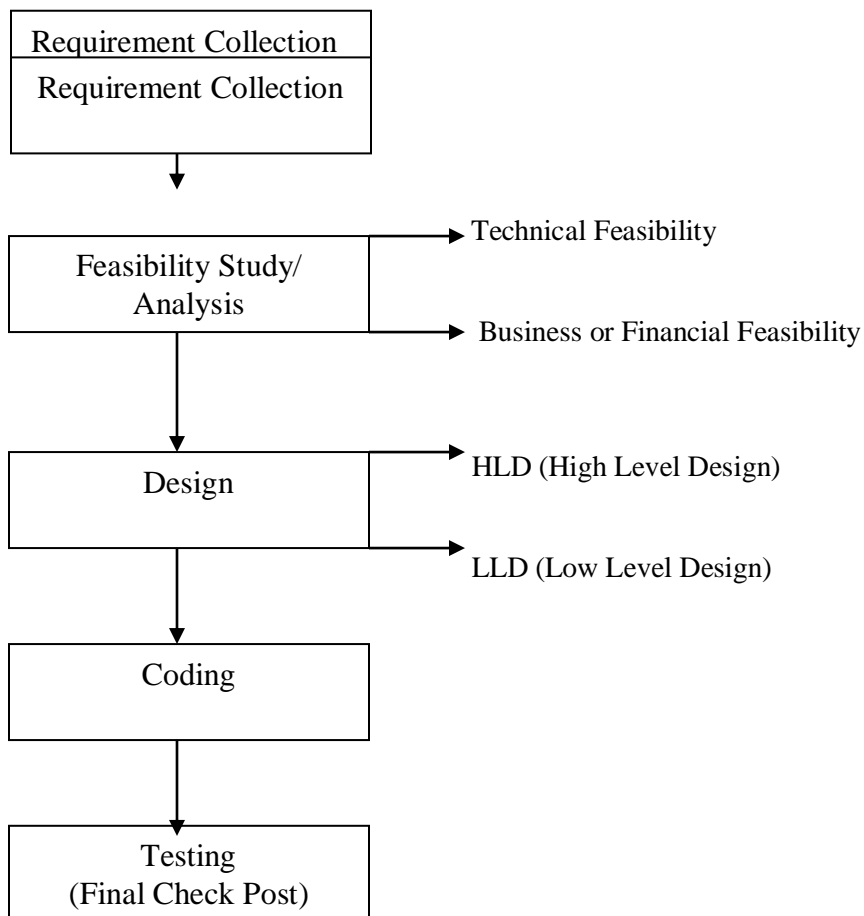
Definition: -

The complete phase in which the software will be rolled out completely.
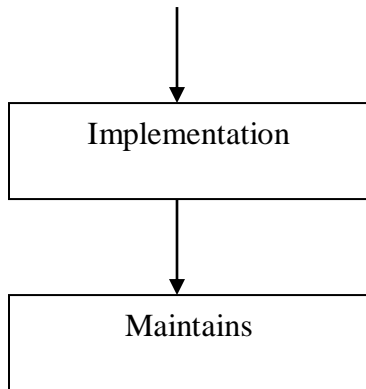
Requirement

↓

Check if the requirement can be met

↓

Planning to develop software efficiently

↓

Develop code

↓

Testing

↓

Install it in customers place

↓

Demonstrate it.

Waterfall Model

(It is also called sequential model or classical model.)

Requirement Collection
Requirement Collection

↓

Feasibility Study/ Analysis	→ Technical Feasibility
	→ Business or Financial Feasibility

↓

Design	→ HLD (High Level Design)
	→ LLD (Low Level Design)

↓

Coding

↓

Testing (Final Check Post)

To Be Continued…

```
                    ┌──────────────────────┐
                    │                      │
                    │   Implementation     │
                    │                      │
                    └──────────────────────┘
                               │
                               ▼
                    ┌──────────────────────┐
                    │                      │
                    │     Maintains        │
                    │                      │
                    └──────────────────────┘
```

HLD: -(High Level Design)
How to communication between one module to another module.
- Project architects.
- Minimum experience 10 to 12 years.
- Front End. (User Interface)
- Back End. (Data Storage)

LLD: -(Low Level Design)
Small features in the software.
Ex: - In the search engine when you start typing in he black, its starts suggesting the settled topics.

Search
```
┌──────────────────────────┐
│   Software Test          │
└──────────────────────────┘
```
Software Testing
Software Testing ppt
Software Testing class
Software Testing Tutorials
So on…….
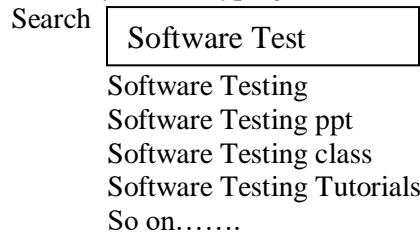
Ms Word and PDF format can create.

Testing: -
- How to go ahead & have efficient testing instead of testing for each & every case.
- The test engineer will be test the product & find if there are any bugs in it.
- If there is any bug present in the software then it is sent back for coding again & again until the bugs are fixed.

Requirement Collection: -
Domain experts should have ultimate knowledge of domain/particulars technology, more of security checks and measure or experts or business analyst.

Feasibility (possibility) Study / Analysis: -
- Checking will they go ahead & do the process correctly.
- Simulation Software. (server/hardware/software set up/support staff/you should be financial to do the project done)
- Product development software & working place.
- It is divided into two parts such as *1. Technical Feasibility and 2. Business or Financial Feasibility*.

Maintains: -
After the software is being implemented in the customer's base it is being regularly maintained by the software development company for upgrading more amounts of features if requirement arises.

Advantages: -
- It is also called as sequential or classical model.
- As it is sequential, the management will have a clear idea of which stage of SDLC they all in.
- They can crate a clear cut deadlines for a task.

To Be Continued…

- As the requirements are frizzed, it is used for machine critical or life critical model or application due to unidirectional.
- After having the requirement frizzed the next level can be done.
- When the requirement all clear then only they can go ahead with this model.
- Managing control is very easy.

Disadvantages: -

- Testing is just a phase over and it is done in each and every stage of SDLC.
- The time taken to deliver a product is more.
- If anything is wrong in the requirement collection the entire software is going to be wrong.
- If the business analysis's gets a wrong products, when the development team has to remove unwanted things. It may so happen that they may miss to remove few things leaving behind a lot of bugs.
- Testing is not done by test engineering, it is done by developers.
- This process offer time consuming process.

Spiral Model/(Iterative Model)
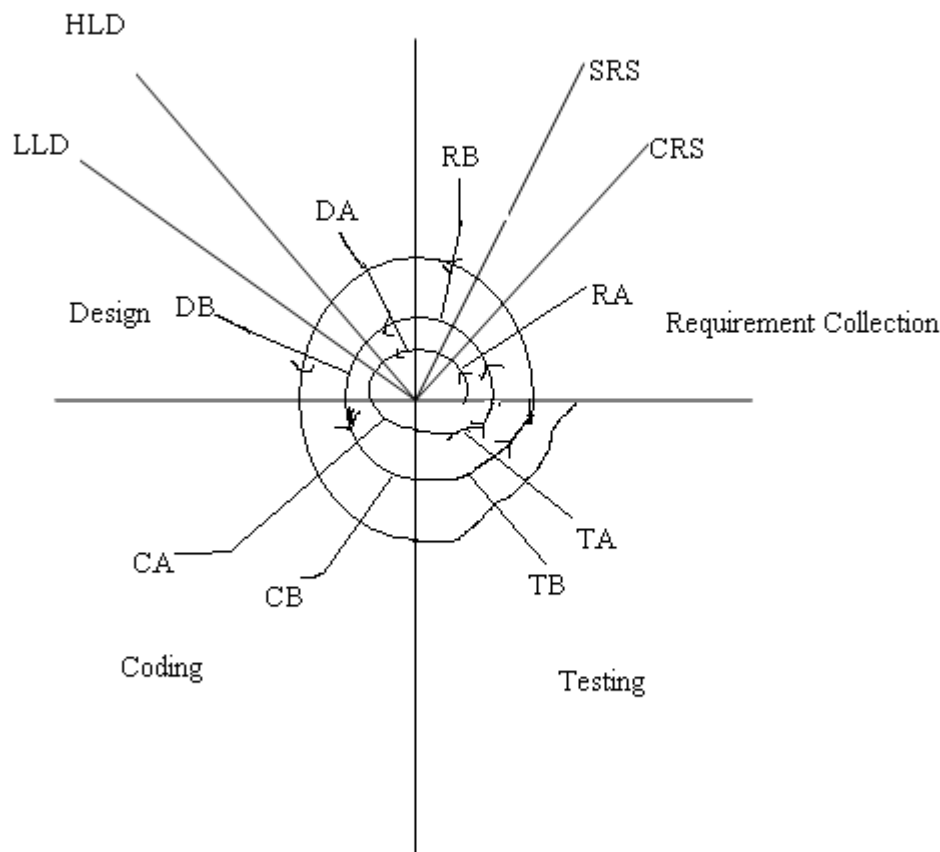
CRS stands for Customer Requirement Specification.

SRS stands for System or Software Requirement Specification.

Requirement collection: -

- The business analyst collect the customer requirement specification in the from of PDF format.
- This CRS is later converted into SRS.
- SRS is documented by architect, system analysis, and technical analysis with 10 to 12 years of experience.
- After the SRS documented it is given to the design and development team.

To Be Continued…

- The developers evaluate or validate the product process and identify the risk in the product and also find the way to rectify those risks.

LLD: -

It is also called as TDD (Technical Design Document)

                FS (Function Specification or Functional Spec)

   FDD (Functional Design Document)

After the design phase is completed it's given to the development team where coding is carried out using different programming language.

This model is mainly used in product based company or for companies where they gate multiple requirement changes; this model is very much suitable.

Once the model is developed it is given for the testing team.

Where there is multiple release of particular application integration of the different release is done properly.

Example: -
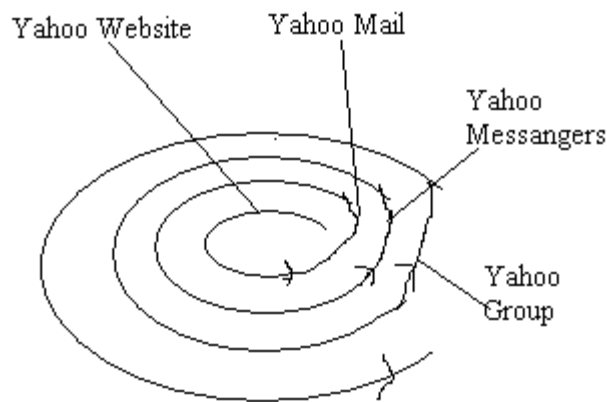
- In the 1st release only yahoo website is created.
- In the 2nd release the yahoo mail features are created. So it has to ensure that yahoo website and yahoo mails had integrated properly and some way for the renaming release.
- So the testing team will go ahead and carry out testing with all the modules write different releases and check if the integration is done properly.

Example of LLD: -

Old Feature   New Feature

Old Feature: -

Here when we search fro dept. name the required data is fetched from the database & displayed in the main page. After fetching the data from the database it takes lot of time from the webpage to get reloaded and display the data. In order to over come this problem and also save time, a new feature is added in the next feature.

New Feature: -

In this feature look up icon or magnifier glass is added to overcome the problem of reloading the page. After entering the dept name, when the look up icon is clicked a new window popup with the list of dept name without reloading the page and saving a lot of time.

(In FS we use some condition or restriction for ex: - user name = 8-32 character or password = only alphabets.)

There are two types of company such as

1. Product Based Company: -
- In this company created the products and sale the product in market.
- Spiral Model is mostly used for only product based company.
- Ex: - Yahoo, Google, Intel

2. Service Based Company: -
This type of company will give service to the client and also create the software.
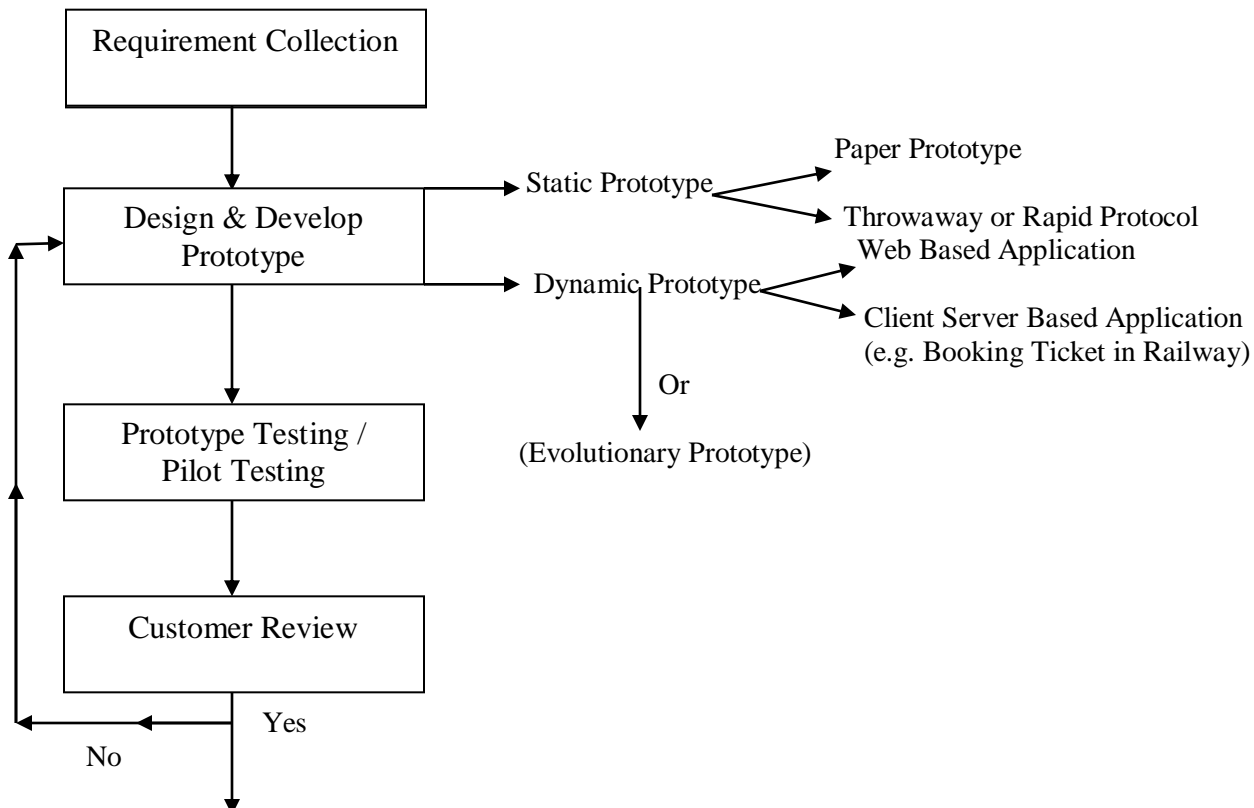
Ex: - Infosys, Wipro so on……

Advantages: -
- Requirement changes can be handling very easily.
- Interdependency (one release to other release) releases can be easily handled.
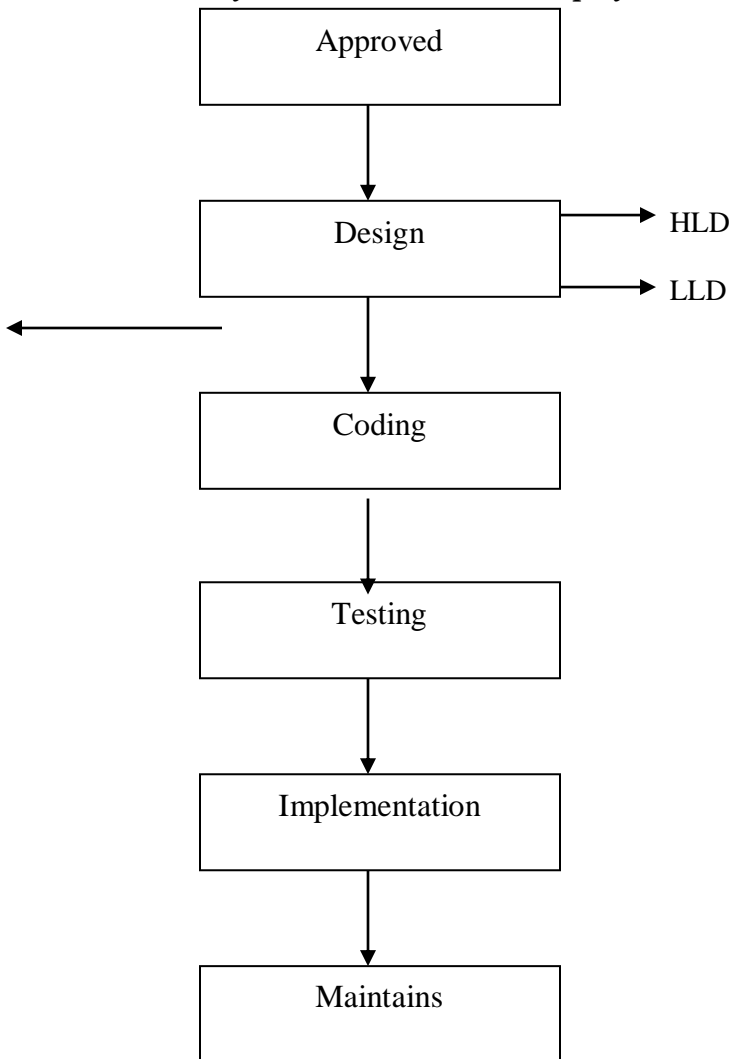- Review based conformation & conform commitment to next level.

Disadvantages: -
- It is just phase on hear.
- Parallel task activity can not happen for regards to this particular model.
- Requirement collections establishes
- Objective – Aim of project.
- Constrains – What are the obstacles/difficulties to be faced.
- Alternatives - Alternatives path in order to overcome the difficulties.

Prototype Model

```
┌─────────────────────┐
│      Approved       │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│       Design        │──────▶ HLD
│                     │──────▶ LLD
└─────────────────────┘
◀──────────    │
           ▼
┌─────────────────────┐
│       Coding        │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│       Testing       │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│   Implementation    │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│      Maintains      │
└─────────────────────┘
```

Prototype Testing Definition: -
- It will be checked the prototype is working properly or not which need for customer's requirement.
- It's also called pilot testing.
- Pilot testing is the part of non functional testing.

Static Prototype: -
- In this all the requirement is static or not going to change in the form of CUI builds, MS Word, Screen Shots.
- It is also called as throwaway prototype because it is developed in rough form for short term communication. Sometimes in the form of pictorial representation with paper and pen.
- There are two types of application such as
  - Web based application.
  - Client based application.

Dynamic Prototype: -
- In this the development & design is going to change.
- It is the form of dummy application. Whatever the customer has spoken it is represented as a dummy of real time application with all the navigation links.
- It is also called as evolutionary prototype based on understanding the requirements creating the dummy application.
- Is the link clicked is navigating to appropriate page or not.
- It is working as a real time application but functionally is not being validated.
- Once the testing part is over, the model is sent for customer approval, so that it can meet up the customer criteria.

To Be Continued…

- When the customer does not exactly know what he wants, or keep on OS installing or requirement are not properly communicated then this kind of model is used.

Advantages: -

- We get to have a clear understanding what exactly the business need of the customer in the clear.
- Customer gets to know in the field of how exactly it is look like well.
- The possibilities of software to get rejected all most next to nil.
- The prototype what ever design and develop will help the software company in freezing the next project.
- The customer has been clearly communicated even if he does not have the computer knowledge.
- Better understanding of application.

Disadvantages: -

- The cost of assess designing and developing of prototype is go to be back by software develop company.
- This is time consuming process.
- The prototype whatever design and developing go ahead having stop lateral thinking.
- The code which ever created by the developer team if it is not used it was waste.

Senario: -

- In small company work flow is could not be much organized that time the protocol is used.
- Online management system is prototype model.

'V' Model

- In this model the execution happens in 'V' Shape and the deliverables happens in parallel.
- They want to check any conflict the requirements.
- Any wrong requirement also gone to be check.
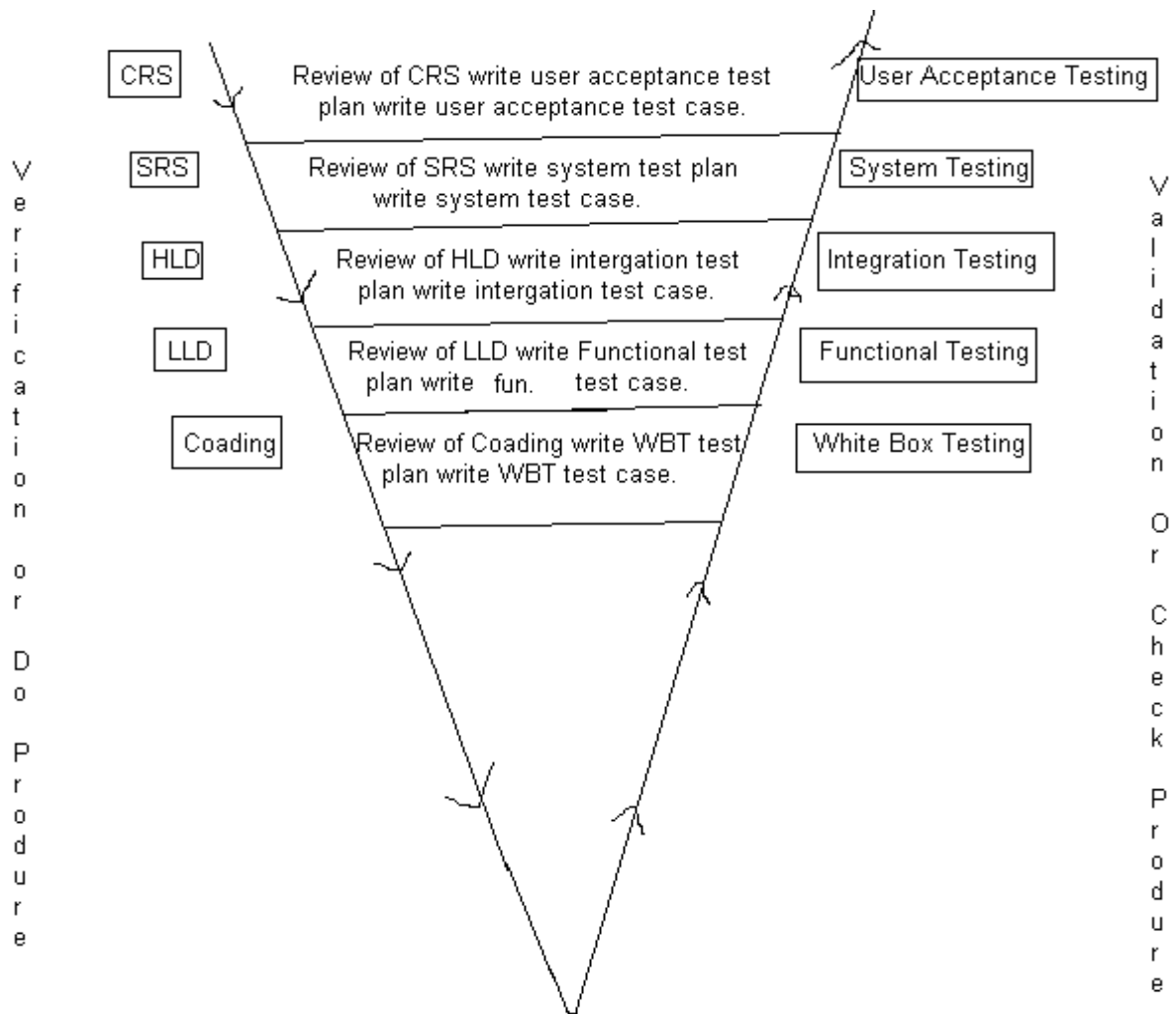
CRS & User acceptance testing is done in customers place, where user acceptance testing is done after the product is been delivered to the customers.

Test Plan: -
It is a document which drives the complete testing activity for a successful delivery of project.

Test Case: -
It is a step by step procedure to verify the functionality of an application. It ensure that at least one test case from each & every requirement.

(White box testing is done by only development team.)

User Acceptance Testing: -
Before going ahead to have the product checking the product design as per the requirement specification.

Functional Testing: -
- Me going on and checked all individual features and individual component is called as functional testing.
- Functional testing refers to test all features and functions of a system to ensure requirements and specifications are met.

Integration Testing: -
Combine all models and checking the data flow from one model to another model is either working properly or not.

System Testing: -
In here all models are combined and check each and every part of application is working or not.

Verification: -
The process of collecting the requirement how exactly the application are done.

Validation: -
In this procedure checking if the product is according to the requirements or not. (Testing)

E.g. Requirement is preparing a north Indian curry. In this example the verification part is collection the requirement of curry, ingredient to be add, produce to prepare & preparing a curry and validation part is checking if the curry is in north Indian style or if it is in south Indian or something.

CRS: -
It is a wage form of information provided by the customer will document his requirements either in form of PDF or word file & hand it over to the software company.

SRS: -
Technical document prepared by software Developer Company keeping CRS as a base line.

1ˢᵗ Phase: -
- CRS is documented & user accepting testing (UAT) is performed in the customer place.
- CRS is given to the S/W development Company & also for the UAT team to review CRS and prepare test plan & UAT test case.
- UAT team will check 1. If there is any conflict in requirement.
  - 2. If there is any missing requirement.
  - 3. If there is something wrong in the requirement.

2ⁿᵈ Phase: -
- Here SRS is prepared while half way through the process of preparation of SRS, the company will hire the testing team.
- SRS is documented by architect, sr.engg, mean time the testing team need to be occupied with some work, CRS is given to the testing team to prepare the test plan.
- In case if testing team is not able to understand pre requirement any part of the CRS, he would get it clarified it with designation people the development team.
- If both testing team and developer team all unable to understand the requirement, they would go ahead & get it clarified with the customer.
- After the SRS is documented, testing team will review the SRS keeping CRS as the base line.
- Similarly HLD is reviewed keeping SRS as the base line & soon white box testing is done by the development team.

Advantages: -

To Be Continued…

- The fault modification can be avoided as the testing team is involved writ the form of the phase of requirement collection.
- The down word flow of the phase is very much reduced.
- The cost of fixing a defect is very chief of the defect is identifying very earlier stage.
- The verification and validation is happen in each and every stage.
- Risk management in this model is very good.
- The product is being come out in highly quality.
- As a testing team and the development team working together so the thing completed very fast.
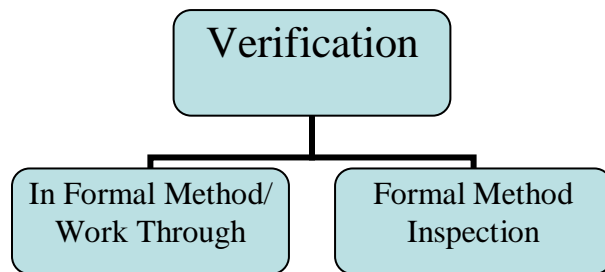
Disadvantages: -

- The cost of access is gone be high.

Validation: -

Are we building the project right?

Verification: -

Are we building the right project?

```
                    Verification
                         |
          _____
         |                                |
 In Formal Method/              Formal Method
  Work Through                    Inspection
```

In Formal Method Or Work Through: -

- It is something happen peer to peer level.
- Work through having an informal discussion the peer.
- Peer means equal designation employee.
  - o E.g. Test Engg. – Test Engg.
    - Dev Engg. – Dev Engg.
    - Test Lead – Test Lead.
    - Dev Lead – Dev Lead.
- Work through is a kind of informal discussion with peer without giving any prior information or intimation.
- The time & venue is not fixed or intimated before the discussion happen verbally with peer at work place.

Formal Method Inspection: -

- They called inspection a formal method.
- Inspection is a formal review meeting. Because before the meeting they can schedule in official and it give information to the people.
- It is also called scheduled meeting.
- The meetings happen minimum 3+ people and who have also interested. It means the meeting happens in between the Reader, Writer, Moderator and Interest Parties.

Reader: -

Go ahead to customer and come out the information. The person is called Reader.

Writer: -

- The person whose go ahead takes down a detailed note of all the topics discussed in the meeting.
- All the information recorded by the writer and the same person send all the meeting description to all persons. So this process is called MOM. (minutes Of Meeting)

Moderator: -

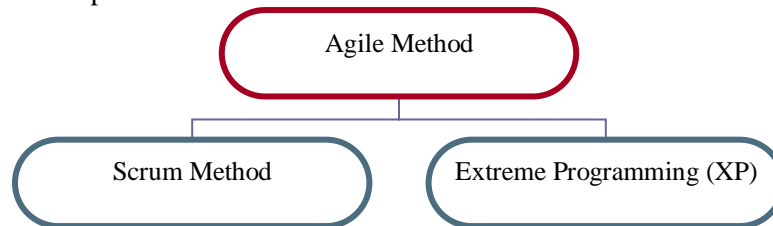Whose go to description between the sr. peoples i.e. is project leader or a project manager.

Meeting Question: -

- When this task can be completed?
- Why to these resource free?
- We be able to complete the task with in the deadlines.

To Be Continued…

- How can this issue be approached?

Agile Model

- Compare to 'V' model this model is far best.
- The most important criteria in this model are the customer satisfaction by delivery the software within a short span of time.
- Delivery happens from couple of weeks to months.
- Requirement changes can be handling very easy.
- It is a good return in investment.
- The business people and develop team need to have communication on a daily basis.
- The effective way of having communication is have to Face – Face for a preprocess.
- It will go have a constant pace of indefinite.
- Consistency (i.e. only technical)
- Collaborating Approach. (i.e. All the developers, Designers and the Testing team should work in hand and equally.)
- Few rounds of testing in carried out by business analyst.
- Testing is done frequently.
- Usage of Automation tool in this model save good amount of time, by which the product can be delivered as early as possible.(Regression)
- It is divided into two parts such as

```
                          ┌─────────────────────────┐
                          │      Agile Method        │
                          └─────────────────────────┘
                                      │
                      ┌───────────────┴───────────────┐
          ┌───────────────────────┐   ┌───────────────────────────────┐
          │     Scrum Method       │   │   Extreme Programming (XP)     │
          └───────────────────────┘   └───────────────────────────────┘
```

Scrum Method: -

The delivery of software to customer is happen one to two months in span of scrum.

As customer gives the priority of the requirement when a developer has completed module1, but due to shortage of time he or she is unable to complete module 2 in the 1st release.

The customer will not wait & will insist to release the module 1 first & then give module 2 & module 3 in the 2nd release.

Extreme Programming: - (XP)

The delivery of software to customer is happen 3 to 4 or 3 to 5 weeks in the span of XP.

Developer attends the call of the customers on order to understand the requirement or request so that the task can be completed.

The customers wait even if there is a slight delay in the development.

Advantages: -

- Documentation is very less compared to other module.
- Delivery of the product is done in very short period of time.

Hybrid Model

Combining of two or more model and get best products is called hybrid model.

Let us take the combination of Spiral model and Prototype model which are discussed above and drawn the model also. In here we had drawn the results only after combination of spiral model and prototype model in below.
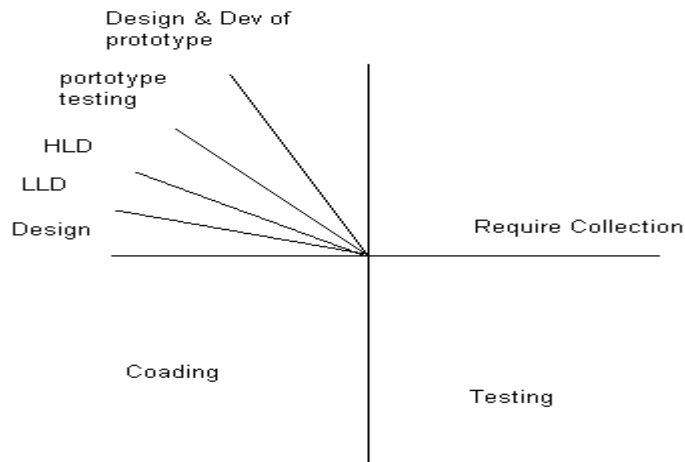
Let us take the combination of V - model and Prototype model which are discussed above and drawn the model also. In here we had drawn the results only after combination of V - model and prototype model in below.
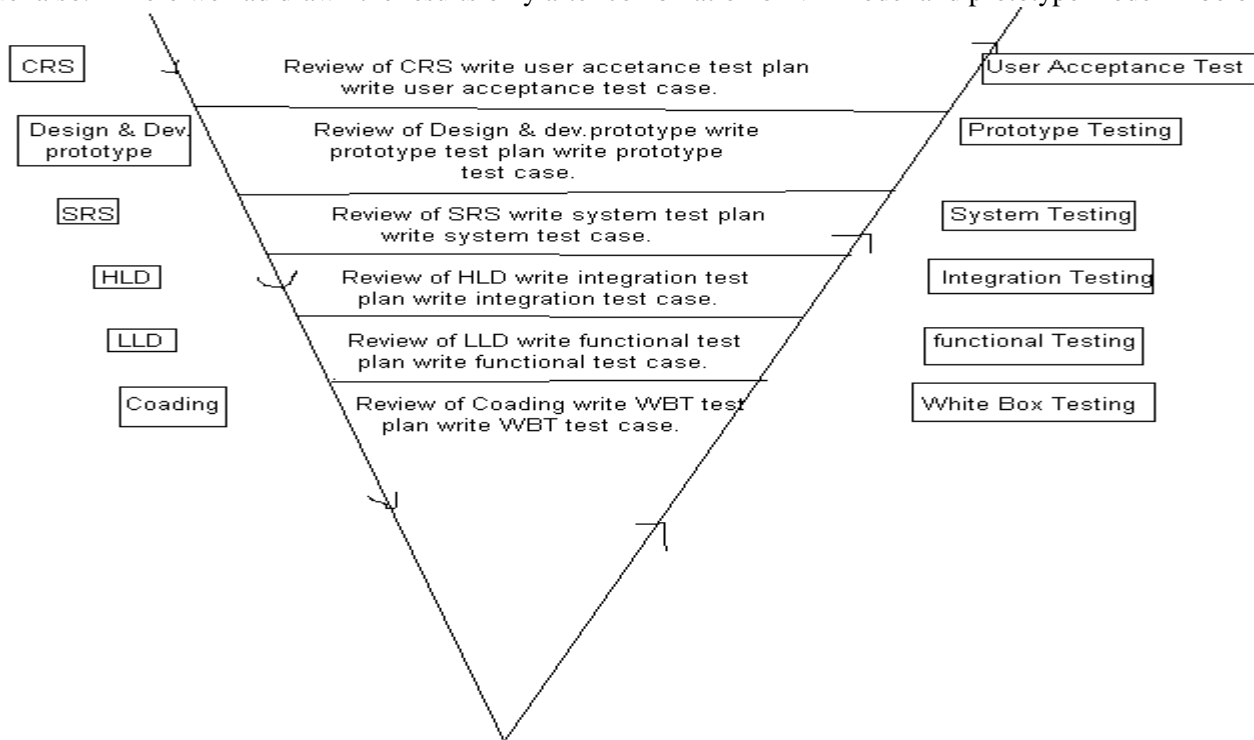
Software Testing

Definition: -

Software which is developed and ensure, if it is working as per the customer requirement specification or not.

Types Of Software Testing: -

There are three types of software testing such as

- o White Box Testing
- o Black Box Testing
- o Grey Box Testing

White Box Testing: -

It is something which is carried out by developer team and look for the flow of the code and logic of the code or the developer can see the flow of code and logic of the code.

Black Box Testing: -

To Be Continued…

It is something which is carried out by professional test engineer by purely look into the user interface of the application.

It is done by which is not looking for the flow of the code and logic of the code.

Grey Box Testing: -

It is combination of both white box testing and black box testing.

A person who knows the internal flow of the code & some knowledge of user interface part of the application will work on grey box testing.

White Box Testing.

The Different Kinds Of Testing Performed In White Box Testing Are: -

1. Statements:-

In here the flow of the code is checked. It is also called structural testing, clear box testing, unit testing and also glass box testing.

2. Path Testing: -

In this testing we go ahead and checking the flow of the code in each and every path, if it is working properly or not.

Example1:
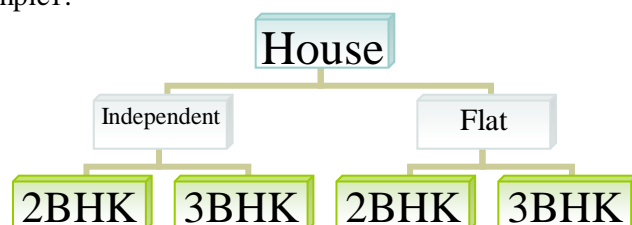
- ❖ To navigate between different path and check if all the path are working properly or not.
- ❖ To check if each and every individual path writes module and sub module are covered properly or not.

3.Loop Testing: -

To check if the loop is executing properly or not.

Example: - for (I = 1; I <= 5; I++)

```
{
Statement 1;
Statement 2;
While (I == 3)
}
{
Sub statement 3;
Sub statement 4;
}
{
Statement 5;
Statement 6;
}
```

4.Condition Testing: -

To check if all the conditions are satisfied or not. I am testing for both +ve and –ve scenarios.

Example: -

```
if (cond1 and cond2)          if (cond1 or cond2)
{                             {
Stmt1                         stmt 2
}                             }
Else                          else
{                             {
Stmt 2                        stmt 1
}                             }
```

Cond1	Cond2	And	Or
Stmt1	Stmt1	Stmt1	Stmt1
Stmt1	Stmt2	Stmt1	Stmt2
Stmt2	Stmt1	Stmt1	Stmt2
Stmt2	Stmt2	Stmt2	Stmt2

HERE
Stmt1=False
Stmt2=True

To Be Continued…

When "AND" operator is used, it would better if we write the false statement first & true statement next. As in "AND" false condition the statement is executed more no. of time. It is better to put it first so we can save execution time.

For "OR" the vice versa of the above.

Performance Angle: -

To check if it is consuming more amount of time to execute the program or code.

Example: - if (month = jan)

     31 days

Else if (month = feb)

     28 days

Else if (month = mar)

     31 days

Else if so on………..

……………………..

……………………..

Else if (month = dec)

     31 days

In here we can use the switch case option to execute the program very fast.

Example: - switch (month)

    Case (jan)

      31

    Case (feb)

      28

    …………….

    …………….

    So on….

    Case (dec)

      31

Here more amount of time is consumed to execute this. If the statement where as switch case required very less amount of time.

It is very comfortable from the If Else case.

Rational Purifier: -

This tool helps you going on memory debugging and memory leakage detection. Any name starts in rational that model is only created by IBM Company.

Memory: -

If the hardware memory card capacity is only 16MB & if the program to be installed is 16.2MB, it cannot install in the mobile.

So it is required to remove the space occupied by the unused variables, functional, classes etc. with the help of some debugging tool.

Example: -

CPP Checking: -

It is a kind of tool, mainly used for C++ programs to identify the unused data or functions or objects.

After doing CPP checking the plug may reduce to 8MB, so it can be installed in the mobile we should also check for memory overflow, leakage or reference.

Difference Between White Box Testing And Black Box Testing: -

WBT	*BBT*
1. It is done by Developer.	1. It is done by Professional Test Manager.
2. Look for the flow of the code or logic of the code.	2. No logic of code required.
3. Look into lines of code.	3. This model required functionality of the application.
4. Completed 1st in the develop team and to handover The product to the testing team.	4. After complete of developer team it handover to customer.

To Be Continued…
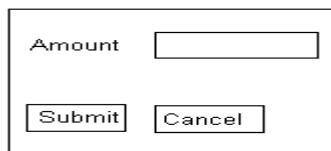
Black box Testing

Definition: -

It is testing the functionality of an application if it is working as per the requirement specification. So it is called Black Box Testing.

Functional Testing: -

- Testing of the individual and independent component is called functional testing.
- Verifies the functionality of individual and independent component which is separately testing.
- It is also called as unit testing or component testing.

Example: -

```
Amount  [          ]

[Submit]  [Cancel]
```

Here we want to transfer 100 – 1000 one account to another account.

Exiting Testing: -

Me going ahead and doing the testing something more then what is require level so it is called exiting testing.

Positive Testing: -

Me entering the values the require inputs specifies with in the range and having check my application either my application is working or not. So it is called positive Testing.

Example: - 735, 900….(between 100 to 1000)

Negative Testing: -

Me going ahead intension of cracking the application or breaking the functionality is called negative testing.

Example: - 75, 1200, rupees, seven00,$*+ (these error guessing and not working)
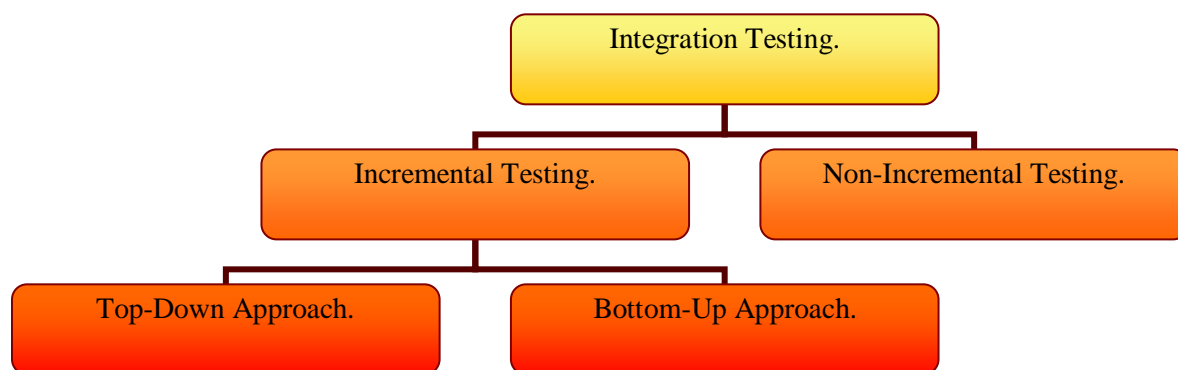
Under Testing: -

Me going ahead missing out the requirements what we have to be testing.

When you press submit button the appropriate access we except such as

- It should tare to me the appropriate page.
- Garaged feature.
- Keyboard/mouse events.
- Conformation message.
- Tab navigation order start from 1st left to end right/ tab and check.
- Keyboard shortcut keys (alt+s) working.
- Tool tip or alternation case.

Integration Testing.

We go ahead combining the modules and checking for the data flow will be happen or not in between them.

```
                    ┌─────────────────────┐
                    │ Integration Testing.│
                    └─────────────────────┘
                ┌────────────┴────────────┐
        ┌───────────────────┐   ┌────────────────────────┐
        │ Incremental       │   │ Non-Incremental        │
        │ Testing.          │   │ Testing.               │
        └───────────────────┘   └────────────────────────┘
         ┌──────┴──────┐
  ┌──────────────────┐ ┌──────────────────┐
  │ Top-Down         │ │ Bottom-Up        │
  │ Approach.        │ │ Approach.        │
  └──────────────────┘ └──────────────────┘
```

Example1: -

```
┌──────────────────────────┐
│                          │
│  FAN   [            ]     │
│                          │
│  TAN   [            ]     │
│                          │
│  Amount[            ]     │
│        [Transfer]  [Cancel]│
│                          │
└──────────────────────────┘
```

- I am going ahead and to enter valid account number in FAN (from account number) and enter to a valid account number in TAN (to account number).
- In here amount of 500/- rupees transfer to my account to To- account holder. It is the part of integration testing because in here the flow of data or data flow happens in between from account to To-account.

Example2: -

I am going ahead to send email To-mail id to another email id i.e. called from ID. After sending the email the dataflow will be happen in between.

```
┌──────────────────────────────────────┐
│                                      │
│              To  [          ]        │
│  Inbox                               │
│              CC  [          ]        │
│  Sent Item                Add to Drafts│
│              Sub [          ]  Save to Contact.│
│  Outbox                              │
│              ┌──────────┐            │
│  Drafts      │          │            │
│              │          │            │
│  Document    │          │            │
│              │          │            │
│  Level       └──────────┘            │
│                                      │
│          [Submit]  [Cancel]          │
│                                      │
└──────────────────────────────────────┘
```

Scenario: -

- Draft folder
- Save to contacts should be save the contacts information in the address book.
- Out of space in the mail sender should held the mail in the out box.
- Carbon copy.
- Attaching the file and send emails.
- Compose a mail and cancel the task and check of the mail is saved in the draft folder.
- It is divided into two models such as
  - Incremental Integration Testing.
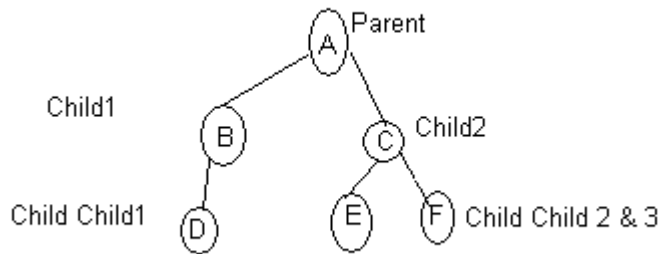 - Non Incremental Integration Testing.

Incremental Integration Testing: -

We go ahead and having the models added in a sequential manner. It is also divided into two types such as
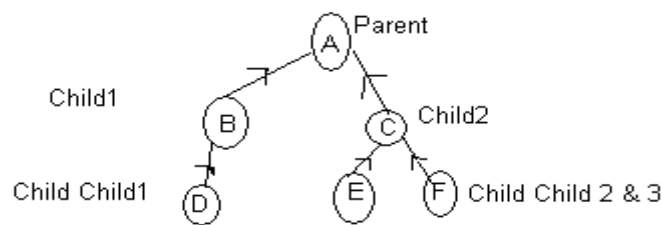- Top Down Approach.
- Bottom Up Approach.

Top Down Approach: -

To Be Continued…

The child should be the direct dependent of the parent module and in same way the child child1 should be direct dependent of the child1. This type of process is going on in the top down approach. In here the data flow gone to top to bottom.

Bottom Up Approach: -


In here the data flow goes to bottom to up.

Top Down + Bottom Up = Sandwich Testing.

Non Incremental Integration Testing: -
- It is also called BING BANG Method.
- In here we added a lot of module simultaneously manner.
- Select randomly and testing without falling a sequential manner these may be chance of testing modules and difficult to find out any missing from the testing modules.

Stub And Drivers

Stub: -(Top - Down)
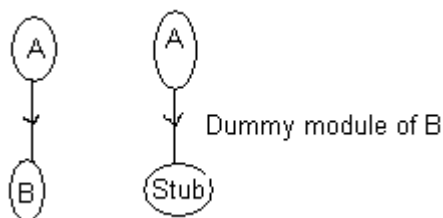
If 'A' module is already developed but the 'B' module is not developed at that time. In that time the customer needs the application any how. So at the time the developer develop a dummy application of the 'B' module and tested them. So the dummy model is called stub. It takes a few weeks to develop the dummy module. It happens only Up – Bottom Model.

Drivers: -(Bottom Up)
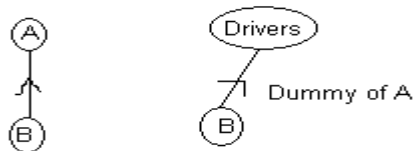
If 'B' module is already developed but the 'A' module is not developed at that time. In that time the customer needs the application any how. So at the time the developer develop a dummy application of the 'A' module and tested them. So the dummy model is called Drivers. It takes a few weeks to develop the dummy module. It happen only Bottom – Up Models.

Driver called module which needs to be tested.

We can not use stub and drivers in non incremental integration testing.

System Testing.

Definition: -

It is end – end testing where in the testing environment is just like that of a production environment. In this testing all the module combine and testing the dataflow is working or not between the modules.

Example: -

```
        Requesting for loan amount  = 20,000
        Interest of one month        =    400
        1st time activation charge   =    250
                                     -------------
                Total                = 20,650
Next time   Requesting for loan amount  = 20,000
        Interest of one month        =    400
                                     -------------
                Total                = 20,650
                                     --------------
```

After one month a person take loan of 20,000 and he want to pay the loan after one month at the time of paying loan the interest is 400 of the principal amount and the 1st processing fees is 250. So the person paying to bank total 20,650.

After 30 days again if the person takes a loan of Rs. 20,000. He should be charge only the interest of 400 rupees. The one time processing fee should not charge again.

Here the requirement is to check if one time processing fee charged for the second time also? If it is charged again, it indicates that these are defect in the application.

Patch: -

The patch files are may be .exe file or .DLL file or .Jar file.

If the defect is very high the testing team is not go any work but the develop team is going the patch file.

Build: -

Software is slowly developed in step by step systematic approach. After each module is developed it is developed in common place which the build team or make a team will obtain all the modules & make it is one piece of software & gives it for testing team for testing. All the developed modules all put together & module into a single software by the build team & it is put in shared drive such as

:\\ QSPIDER\morning batch116\build\001
                        002
                        003
                    No of build.

After build team combines all the modules & makes it a one software, he/she will inform it to all the team member by sending email & software will put upon the shared drive for 10mts these will be approximate 35-40 build. For each build the modules completed by the development team & the bugs fixed in the previous build is put together & made as single software.

Release: -

The final piece of software or final build which is being handed over to the customer is called as release.

One single release can have no of builds.

Test Bed: -

Installation and configuration piece of software build in the testing environment created for the testing.

To Be Continued…

- Test bed is the environment that is required to test software.
- This include requirement of H/W S/W Memory CPU speed operating system etc.

User Acceptance Testing.

- Ensure that the system which is developed is it fit to use or not.
- User Acceptance Testing is often the final step before rolling out the application.
- Usually the end users who will be using the applications test the application before 'accepting' the application.
- This type of testing gives the end users the confidence that the application being delivered to them meets their requirements.
- This testing also helps nail bugs related to usability of the application.
- Before the User Acceptance testing can be done the application is fully developed.
- Various levels of testing (Unit, Integration and System) are already completed before User Acceptance Testing is done. As various levels of testing have been completed most of the technical bugs have already been fixed before UAT.
- In software development, user acceptance testing (UAT) - also called beta testing, application testing, and end user testing

Who uses the user acceptance testing?

- Employee of the organization.
- Software engineers of the organization.
- Third party of the organization.
- Customers to customer of the organization.
  Another kind of testing is also involved so called as operational acceptance testing.

Operational Acceptance Testing: -

- System developed well enough for operational purpose.
- Testing process and process execution is called operational testing.
- Accepting testing process and process execution by customer or client is operational Acceptance testing.
- Example for operational testing is to verifying that the file labeling and protection procedures function properly.
- How for I am recover from the crash?
- How for can I able to go ahead backup or restore the data?
- How for my system is being secure from this security elaboration.
- It is also called compliance acceptance testing or production acceptance testing or regularity acceptance testing.
- This is kind of testing is happened some security of Govt. laboratory.

Performance Testing.

Definition: -

- Testing being stability and the response time of an application by applying the load is called performance testing.
- Performance testing is executed to determine how fast a system performs under a particular workload.

Load: -

- It is no of users which the application can handle.
- Load testing is primarily concerned with testing that can continue to operate under a heavy load (stress).

Response Time: -

It is something the time taken for the application to respond.

Stability: -

Stability testing checks to see if the software can continuously function well in or above a long period.
(These non-functional testing can also serve to validate and verify other quality attributes of the system, such as scalability, reliability. The resource usage must be monitored.)

Performance Testing Tools: -

Test Name	Company Name
1. Load Runner	Mercury/HP
2. Silk Performance	Seague
3. Rational Performance	IBM

To Be Continued…

4. Astra Load   Mercury/HP
5. E-Load   Emprix/Oracle
6. Web Application For Stress Testing   Microsoft
7. Web load   Open Source.

Q. when to do performance testing?

A. Only when the functionality of application is stable. Or ensure the functionality of an application should be stable for as go ahead performance testing.

Example: -

```
┌──────────────┐
│  Notepad     │
│              │
│              │
│              │
└──────────────┘
```
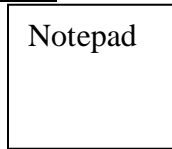
In notepad open to file as a go to the file menu from title bar then choose open option.

- 5 sec is taken to load the page.
- So which testing to be performed performance testing or functional testing?
- As it is a stand alone application functional testing has to be carried out.

(Note: - Rational quantifies which is coming out with graph, with thick & thin lines.)

- Performance testing is done application like Client/Server and Web based application.

Requirement: -

100 users should be able to access the yahoo account in 2sec.
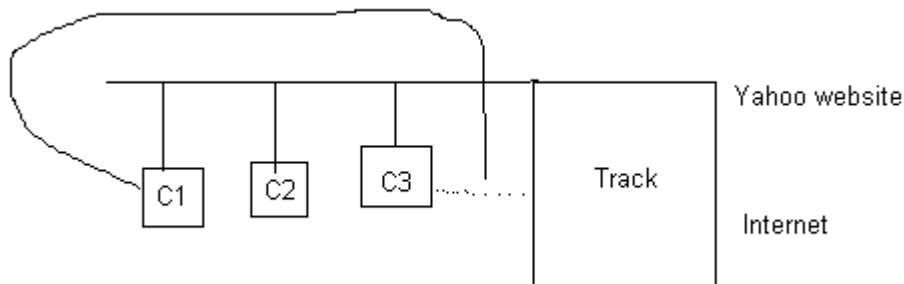
Intranet is kind of LAN where in only limitation.

HTTP:\\ Track.yahoo.com
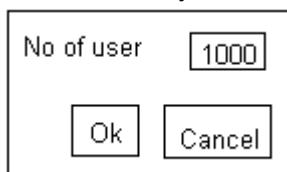
Calculating The Response Time: -
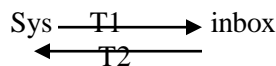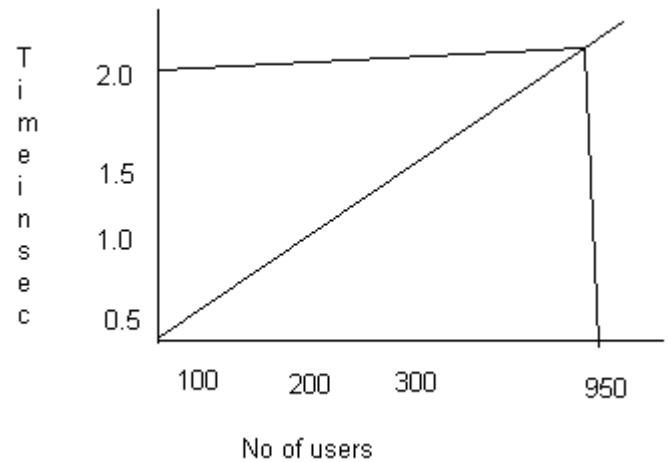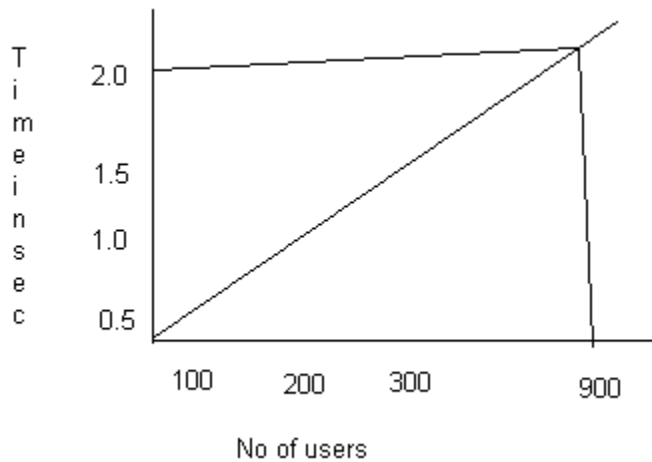
Sys ──T1──→ inbox
  ←──T2──
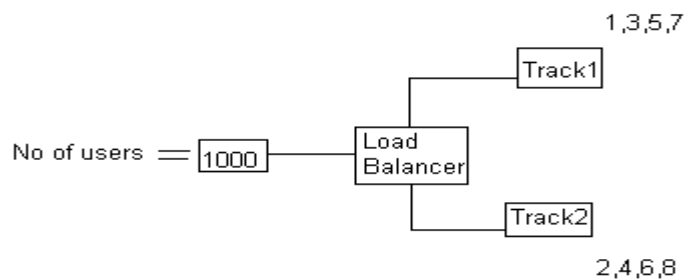   Total time = T1+T2
      Time RT = T1-T2
Where T1 = time taken to click the inbox.
      T2 = time taken to fetch the data.
      The entire load is shared by only one track hardware is insufficient. So an extra track is to be added.

      Load balance is hardware configure with the user interface. Such as way the even pulses all going to track2 & odd pulses to track1.

HTTPUNIT: -
      We go ahead and created the virtual memory.
Example: -
      If generate trigger pulses
      10 trigger pulse = 1 browser
      100 trigger pulse = 10 browser
      1000 trigger pulse = 100 browser
      Load will be less by gone rating trigger pulses. (instance so the load will be less.)
      Load Runner comes up with
              1. server
              2. Agent.
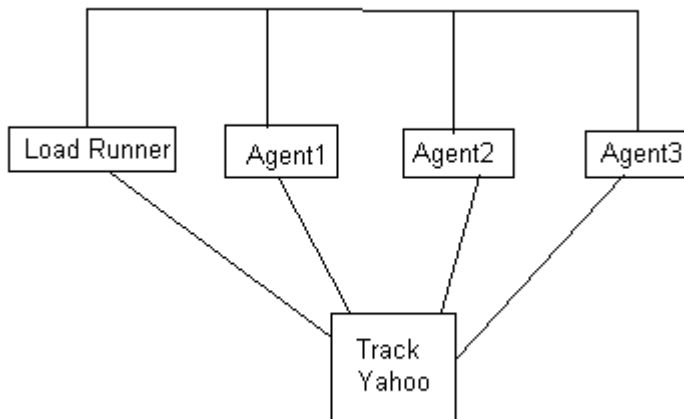
Server is one computer which limits signals. It is like master agent is another computer which generates virtual user. It's like software agent is in the listening mode.
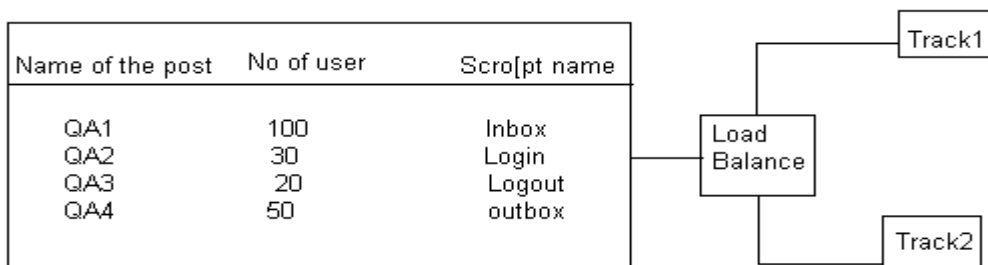
Types Of Performance Testing: -
1. Load Testing.
2. Stress Testing.
3. Volume Testing.
4. Soak testing.

Load Testing: -
Applying a load lesser then or equal to a desire no and checking for the stability and response time of application is called load testing.

If it is requirement & check with 40 users & its response time is 2sec, then it is not good & we can not increase the no of users. So we need to go ahead & look for other option like, changing code or changing the server.

If for 40 users response time is 2 sec, then we can increase the load up to 70 & checks the response time & if it is 1.45sec then we can increase the load to 100 & check if response time is 2sec.

Question: - If the application has to be tested for billions of users, how it is done?

Answer: - First they will work on set of data and using that result, they will go ahead & obtain some kind of calculation & plot it in form of graph and then they will analyze the response time for it.

It is also called positive testing.

Stress Testing: -
- It is performed to find out the max load that can be applied without the application getting crashed.
- In here increases the no of users.
- Restricting the resources and test the application.
- Scalability Testing is the subset of stress testing.
- It is also called negative testing.

Example: -
100 users = RT 2sec

For the stress testing we will increase the no of user more then the load such as

To Be Continued…

110 users = 5sec
120 users = 20 sec
130 users = 30 sec
140 users = 40 sec
150 users = crashed

Say for example if there is an application which can handle 25 simultaneous user logins at a time. In load testing we will test the application for 25 users and check how application is working in this stage, in performance testing we will concentrate on the time taken to perform the operation. Where as in stress testing we will test with more users then 25 and the test will continue to any number and we will check where the application is cracking the hardware resources.

Scalability Testing: -

In this testing we are interested in finding out the exactly point at which the application gets crashed. It is a subset of stress testing.

Example: -

In the above case the application gets crashed somewhere between 146/150.we need to find out where exactly 145/150 it gets crashed. If it increases at 147 it gets crashed, 147 is no of scalable users.

Volume Testing: -
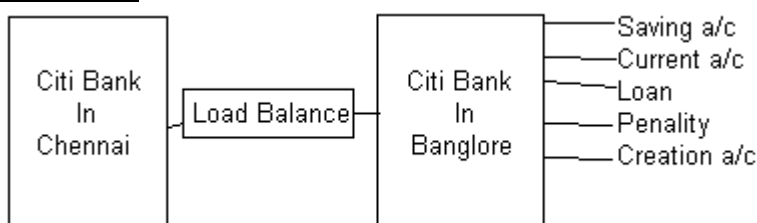
Basically it checking the data transfer is properly or not.

The Chennai server of Citibank server is connected through load Bangalore server. So we need to check the information transferred properly or not. Without any leakage or loss of information or packed loss.

Soak Testing: -

To test the application continuously if the server can work constantly without any problem.

Apply a load over a period of time and check out for the response or checking the memory leaks.

Example: -

Yahoo mail can not stop working, at any point of time these will be some one of the other logging in & logging out. So it schedule be able to stand it. These shouldn't be any memory leak.

When server is going to overload to certain period of time. So these shouldn't be any memory or data loss.

When the application is functionally stable then only I am going to checking the perform testing.

Performance testing is coming out in the category of non-functional testing type.

Performance testing will be done for X feature & scenario performance testing. As such needn't be done for all the links in the application because these may few links added as advertisement. Some may not be used frequently.

Usability Testing.

- It is also called non functional testing.
- Usability testing is carried out look and feel of the application.

Categories Of Usability Testing: -

1. *Performance Efficiency: -*
   - A No. of steps me going ahead and complete the task.
   - Time taken carried out to complete the task.
2. *Accuracy: -*
   - No. of mistakes done.
   - How far able to recover from your issues or mistakes.
3. *Recall: -*
   - How far is application able go ahead call you back after a period of gap.
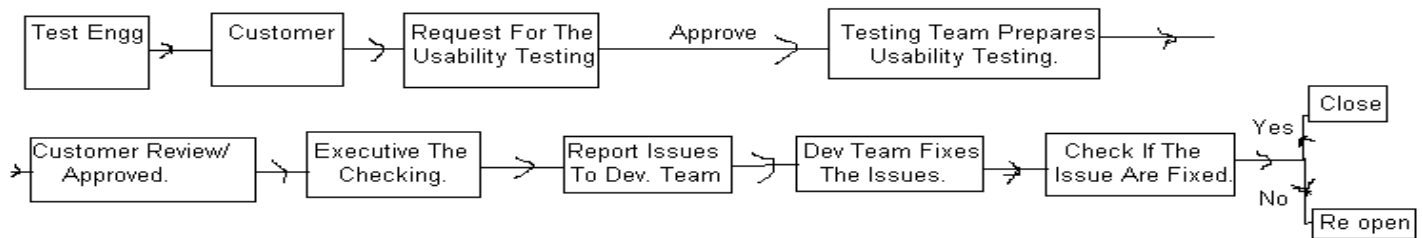4. *Emotional Respond: -*
   - What exactly is going to be your emotional response after having a task complete.

The usability testing divided into two parts

To Be Continued…

Scenario: -

1. Me going a head engaged some unknowing person or third party (such as unemployed, housewife etc.) having my application tested is called as hallway testing. And the second scenario is discussed below.

```
Test Engg → Customer → Request For The      Approve    Testing Team Prepares  →
                        Usability Testing              Usability Testing.
```
```
                                                                            Close
                                                                       Yes
→ Customer Review/ → Executive The → Report Issues → Dev Team Fixes → Check If The
  Approved.          Checking.        To Dev. Team    The Issues.      Issue Are Fixed.
                                                                       No
                                                                            Re open
```

Check List: -

- All pages should have a link to the home page.
- Alternative test/tool tip should be displayed for all images.
- Page should have unique page name.
- Page should have a title name.
- Bread crumbs should be properly updated.

Bread Crumbs: -

Each & every page navigates to check the updated or not.

Home → Music → Movies → Hindi → Actor → Salman

How to check my check list?

Page Name	1	2	3	4	5
Home	NA	Y	Y	Y	Y
Music	Y	N	Y	Y	Y
Movies	Y	Y	N	N	Y

20 List Of Check List: -

- Site Load-time Is Reasonable
- Adequate Text-to-Background Contrast
- Font Size/Spacing Is Easy to Read
- Flash & Add-ons Are Used Sparingly
- Images Have Appropriate ALT Tags
- Site Has Custom Not-found/404 Page
- Company Logo Is Prominently Placed
- Tagline Makes Company's Purpose clear
- Clear Path to Company Information
- Home-page Is Digestible In 5 Seconds
- Clear Path to Contact Information
- Main Navigation Is Easily Identifiable
- Navigation Labels Are Clear & Concise
- Number of Buttons/Links Is Reasonable
- Company Logo Is Linked to Home-page
- Links Are Consistent & Easy to Identify
- Site Search Is Easy to Access
- Major Headings Are Clear & Descriptive
- Critical Content Is Above The Fold
- Styles & Colors Are Consistent
- Emphasis (bold, etc.) Is Used Sparingly
- Ads & Pop-ups Are Unobtrusive
- Main Copy Is Concise & Explanatory
- URLs Are Meaningful & User-friendly
- HTML Page Titles Are Explanatory

To Be Continued…

Accessibility Testing.

- It is the part of non-functional testing.
- Another name is 508 compliance testing or ADA testing. (ADA stands for American Disability Act.)
- Accessibility testing is mainly done by the view point of physically challenged people.
- World Wide Web consortium people come out and set up some rules is called as web content accessibility guidelines (WCGA).

1. Visual Impairments: -

- Low or restricted machine, color blind ness.
- Assistive Technology.
- An enlarge the image and see the enlarge picture very good visibility format.
- The color combination of website should be used appropriate.
- Zoom the text content or enlarge the text content.

2. Motor Skills: -

- What ever the movements which you are doing regard your mouse the operation should be achieve by means of your keyboard activity.
- Shortcut keys are used.

3. Hearing Impairments: -

- In here the main thing is volume Control.

4. Cognitive Abilities: -

- Our customers go ahead and they cannot understand about the product.
- Issues for memory loss.
- Link testing tool helps to check all the link of application working or not.

Ad hoc Testing.

- It is also called monkey testing because the testing carried out randomly not in sequentially.
- It can be done any given stages of projects for the right day1 & last day of project.
- Here testing is not done using test case.

Compatibility Testing.

- Testing the application with different hardware & software environment is called compatibility testing.
- It is very much applicable for product based company.

Example: -

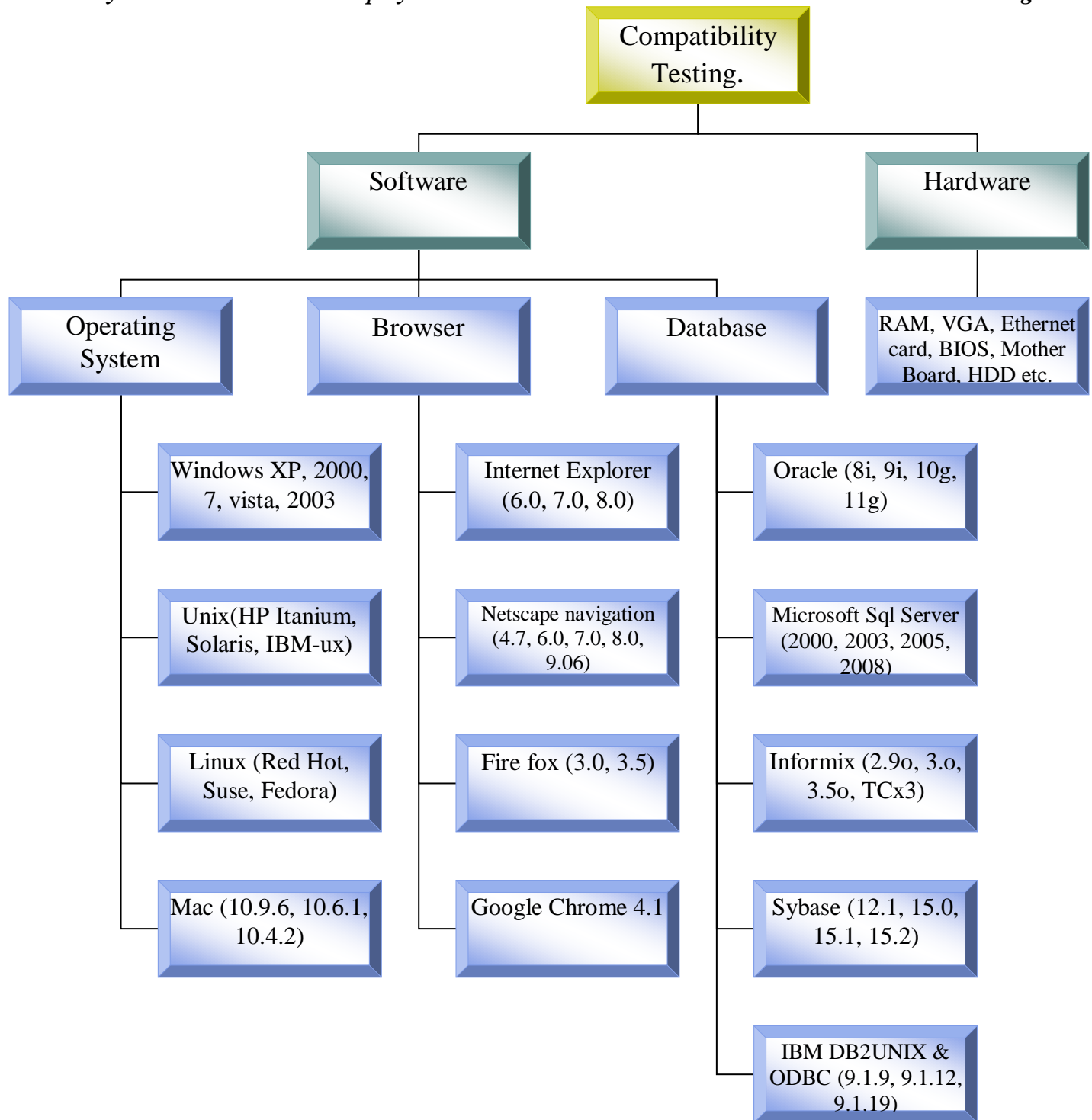Adobe acrobat: - To check if it is being supported by all the OS.

Auto cad: -

If in case this application is tested in W7, XP & vista OS but has been missed out test with 2000 OS. If at the time a customer working on auto cad with windows 2000 then he finding that application gets frizzed when clicked on 3D view. He may put bad comments about the product. Then he discussed about the product with his friends who want to buy the product.

A few customer who want to buy this particular application, then they visit and enquiry about the product and they ask for few people suggestion about the product and if he gets a bad feedback that time he will not buy the product. Which will a great loss for the company?
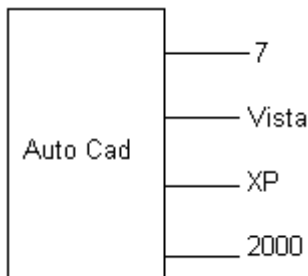
So he considers totally bad comment out of 5 people jumps to conclusion that the product is not good.

Compatibility Testing.

Software

- **Operating System**
  - Windows XP, 2000, 7, vista, 2003
  - Unix(HP Itanium, Solaris, IBM-ux)
  - Linux (Red Hot, Suse, Fedora)
  - Mac (10.9.6, 10.6.1, 10.4.2)

- **Browser**
  - Internet Explorer (6.0, 7.0, 8.0)
  - Netscape navigation (4.7, 6.0, 7.0, 8.0, 9.06)
  - Fire fox (3.0, 3.5)
  - Google Chrome 4.1

- **Database**
  - Oracle (8i, 9i, 10g, 11g)
  - Microsoft Sql Server (2000, 2003, 2005, 2008)
  - Informix (2.9o, 3.o, 3.5o, TCx3)
  - Sybase (12.1, 15.0, 15.1, 15.2)
  - IBM DB2UNIX & ODBC (9.1.9, 9.1.12, 9.1.19)

Hardware

- RAM, VGA, Ethernet card, BIOS, Mother Board, HDD etc.

Difference Between Functionality Testing And Compatibility Testing: -
- If able to go and replicate an issues or a bug across in all platform that issues are called functionality testing.
- If able to go and replicate an issue or a bug in one platform or a few platform that issues are called compatibility testing.

Additional Knowledge For Students: -

Short Note About Norton Ghost: -

Key Technologies: -
- Creates full system and file backups.
- Restores from system failures.

To Be Continued…

- Saves recovery points to offsite locations.
- Creates full system and file backups.
- Restores from system failures.
- Saves recovery points to offsite locations.
- Symantec ThreatCon integration.

Features: -

- Full system backup (disk image)—Backs up everything on a hard drive or partition.
- File and folder backup—Backs up only the specific files and folders you choose rather than saving an entire drive.
- NEW FTP backup—Copies recovery points to a FTP site for easier offsite backup management.
- NEW Offsite backup—backs up your files to NAS (Network-Attached Storage) devices.

Negative Testing: -

When I am trying to crash the application by given some invalid data that testing is called negative testing.

Example: -

Bharat Matrimonial ----- used by Indian customer. (IE 7, IE 8)

And it is used by OS Windows XP, Vista

XP: IE 7-------Defect by develops team.

If I am one system then we go ahead uninstall the software and after that I installed necessary software

I.e. 20 minutes for IE8

1hr for Vista & IE7

0.5 hr vista & IE7

When a product is developed, we need to do the market analysis. If the product is bharat matrimonial which is used mostly by Indians? It is found that 90% of the customers are using IE. So it is not necessary to carry out testing for the browsers, where only 50% users are using it. So testing can be done for the product which is popularly used.

For testing the application in different software environment. It is required to switch between two OS which requires a lot of time for instance. To switch for XP to vista it would take nearly 3hours which is really a waste of time?

So software called Norton Ghost is used. The software will take snapshots or it will capture the system configuration.

Example: - Installing some software files it will be stored in one single file.

D: \Ghost image\win xp5.5

--------------------\win xp 6.0

By doing this it will take only 20 to 25 minutes to switch between two OS where as per the previous it was taking about 1.30hrs.

Because of the drivers which are interested to support the hardware device it may conflict the new applications.

System restore = Norton go back = for h/w make sure that it does not conflict with any other h/w.

Examples Of Compatibility Testing: -

Example1: -
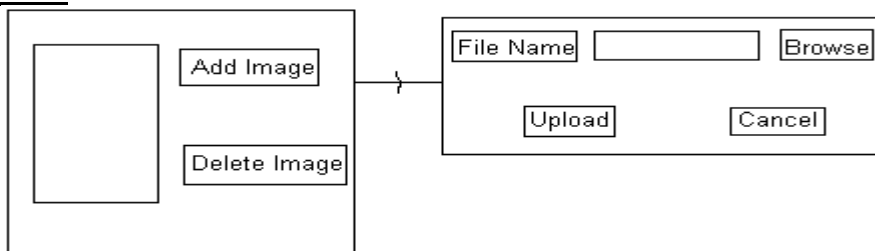
Here choose the path of filename i.e. c:\documents and setting\my picture\ddf.jpeg (inside the filename box).

The content inside the box is very large then the box. So by using the arrow key we see the file name from source to destination. But it does not go to the after some letters. In this type of station we use the end key to reach the last of the name. In same process we go to the start position of letter to use the home key. This above issues only for IE but it is working properly with fire fox.

Example2: -

C:\documents and setting\my picture\ddf

When we start entering the file name it will automatically take to the name e.g. DDE to bmp or j for jpeg/jpg. This works properly for IE but it is not working properly for chrome.

To Be Continued…

If we enter invalid text it show error message in Google chrome but we enter invalid name in IE they doesn't show any error and at last it show a blank image by default. This type of feature is called smart head recognized.

(Note: - RAID is used in a company instant of HDD which stands for Randatiry array of inexpensive disk.)
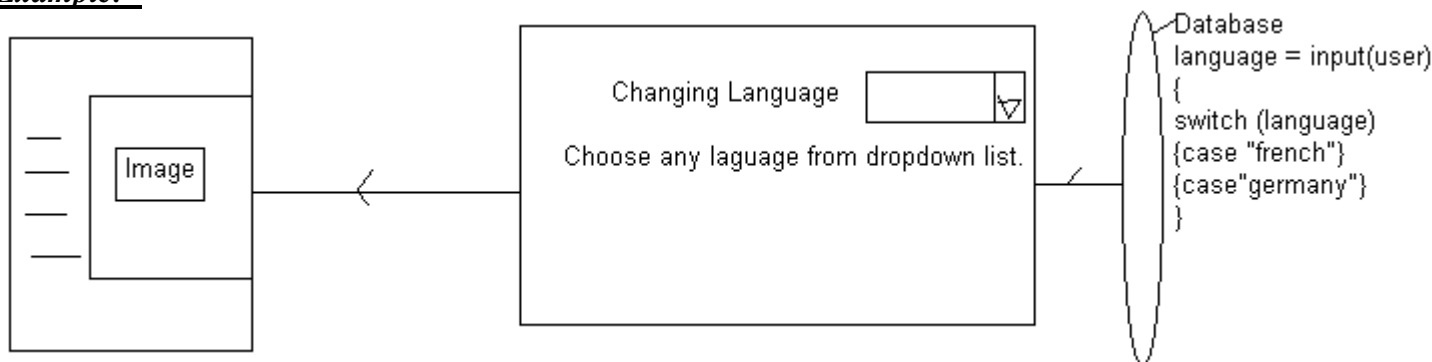
Internationalization Testing.

Definition: -

Testing the application in different languages with out any changes of engineering. It is also called I18N Testing because there are 18 characters in between I to N.

In here we go ahead testing the functionality test and its working properly.

Example: -

When we choose any other language then the request goes to the server then opens the selected language and we can load the image depending on the language wise.

The I18N testing categorized into two types such as
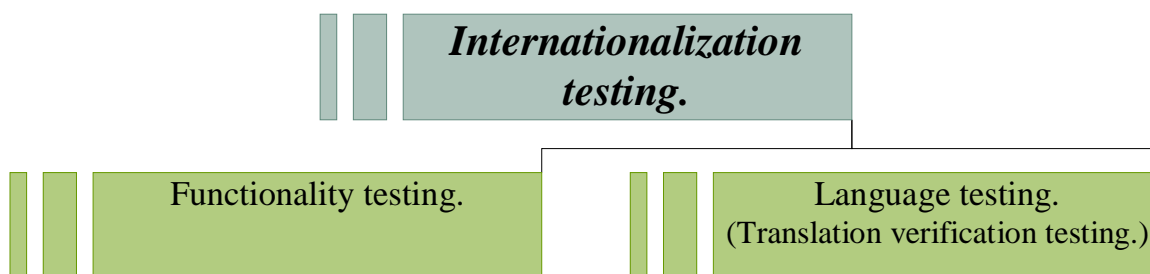
In this testing we can test the different languages in a same application without any changes of engineering.
e.g. 1,00,000 (we read 1lakh in India)
    100,000(100 founds in other languages)
This is the difference to understand in different languages but the value is same or the concept is same.
Example: -

To Be Continued…
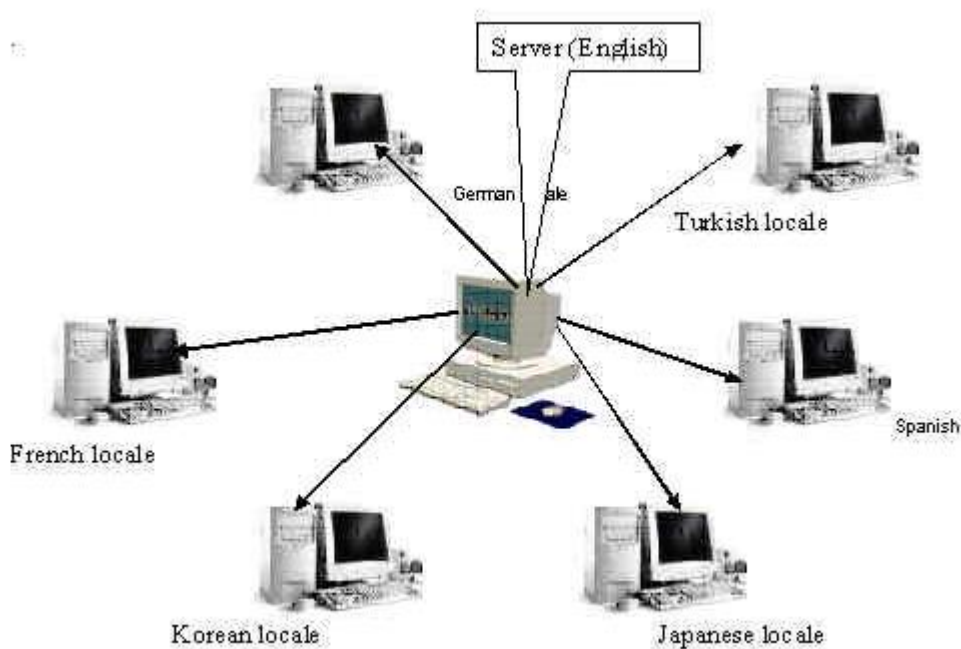
Translation Verification Testing: -

To make sure that translation of all the spelling to check & grammar is used properly or not which is done by language experts.

Functionality Testing: -

Which is done by normal test engineers? Firstly we need to make sure that application UI or functionality is not getting broken with the translated text.

The above process can be carried out in three ways such as

- o Pseudo translation.
- o Pseudo translation tools.
- o By experience.

Pseudo Translation: -

If an unknown script/string needs to be translation, copy that particular string & paste it in the pseudo translator. So the result will be something like this

e.g. String = inbox
Language = Japanese
Jp ******inbox*****ja

Then above method cannot be used to translate the entire text. It can only be done by word. So this process is not suitable for huge applications containing huge amount of words or strings.

Pseudo Translation Tool: -

This tool can be used for transfer or modify to other languages with a huge amount of words or strings or an application also.

By Experience: -

As the test engineer have worked for months together on the same application may be with the English version so by then he would be pity comfortable with the flow of this task to be carried out.

As he would be familiar with the symbols used to represent a link, the flow of the task to be carried out.

Scenario:-

- The inbox character is in English language is 5 but in other hand we can design in other language it may take more then characters. i.e. the main point is the size of contents are different.
- Copy write text content which is present in the application should be in the respective languages.

To Be Continued…

- When we work the application in English language it works properly but if we go ahead and work in other language such as French, Germany it's not working properly. These types of issues can also finding.

Localization Testing.

The localization application is check to ensure that this is very much localized to specific region.

As the 10 character between the l to n. so it is also addressed in L10N testing.

L10N Testing + I18N Testing = Globalization Testing

Parameter Taken To consideration Are: -

1. ### *Language: -*
   - Writing direction such as some languages are writing left to right or right to left. Example L to R is English or France and R to L is Arabic or Persian.
   - Representation of numerical. Example 1,00,000(in India, its count 1lakh) and 100,000(in other state ,its count 100 founds).
   - Unicode representation of characters (in other language) and ASCII representation of characters (in English).
   - Concept of capitalization (representation of the respective scripts in capitalization format).
   - Check the spelling (sometimes the spellings very from country to country). Example: - Color in UK
        Colour in USA

2. ### *Input: -*
   - Keyboard short cut keys assign properly.
   - Text in the images should be in the respective languages.
   - Audio files should be in the respective languages.
   - Video files with sub titles should be in the respective languages.

3. ### *Culture: -*
   - Appropriate names & respective titles. (Example: - Mr.Santosh in India)
   - The Govt. assigned numbers like SSN: - Social Security Numbers (US), NIC: - National Insurance numbers (UK), UIN: - Unique Identification Number (India).
   - Currencies.
   - Weight & height (in India KG & In US POUNDS).
   - Zip code in the combination of numeric & alphabet in other country but in India we addressed the Pin code which is only numeric.
   - Paper size.
   - Date Time format (in UK DD/MM/YY but in US MM/DD/YY)
   - Writing styles & directions.

## *Difference Between Functionality and Compatibility and Globalization Testing: -*
   - F.T: - The application fails to work in an Irrespective of the OS.
   - C.T: - The application fails to work only in on particular OS or software.
   - G.T: - The application fails to work in on particular language.

Smoke Testing.

It is also called as sanity testing or skim testing or dry run testing.

Example: -

Suppose development team has given a build which consist of 5 module & which need to be tested in 4days.

         ← 4 Days →

A	B	C	D	E

     ← 3 Days →
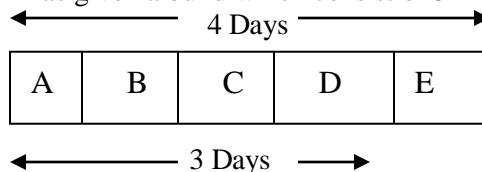
1st day – A module being tested
2nd day – B module being tested.
3rd day – C module being tested.
4th day – E module being tested & found that is getting crashed.

In the 4th day of testing the E module is crashed & it is a very critical defect. And the developer tells that it require 3 days to fix the bugs. And 1st day is needed to do testing. But the application needs to be delivered to the customer on the 4th day, but it would take 4th day extra in this situation.

To Be Continued…

So identify the critical test case/critical feature in the entire module & testing in the very first day is called smoke testing.

So that the bug can be found very easily & given to the developer & some time. It can be fixed so that no delay in the project & in the sometime developer is also working & testers are also not sitting idle.

Some IMP Point: -

- Functionality wise important test case and identify the smoke test case.
- Here we identify the +ve testing in test case.

Difference Between Smoke Testing And Sanity Testing: -

Smoke Testing.	*Sanity Testing.*
A term which is obtained from hardware terminology. Example: - when the system is switched on & if there is SC then these will be smoke produced initially.	
It is to identify critical & do with positive testing.	
It is sallow & wide testing. In this i am not going ahead & do in depth functionality testing.	It is narrow and depth of testing.
Testing the functionality of menu if it is working properly or not by clicking the entire menu button.	Taking up one particular menu and testing in depth each & every sub menus or options.

(Note: -Smoke testing is the 1ˢᵗ testing which is done firstly in an application.)

Alpha & Beta Testing.

Alpha Testing: -
It is the kind of testing which is carried out by professional test engineers in the development organization.

Beta Testing: -
It is the kind of testing which is carried out by both professional test engineer and trusted customer.

(Note: - The alpha & beta testing is mainly used in product based company.)
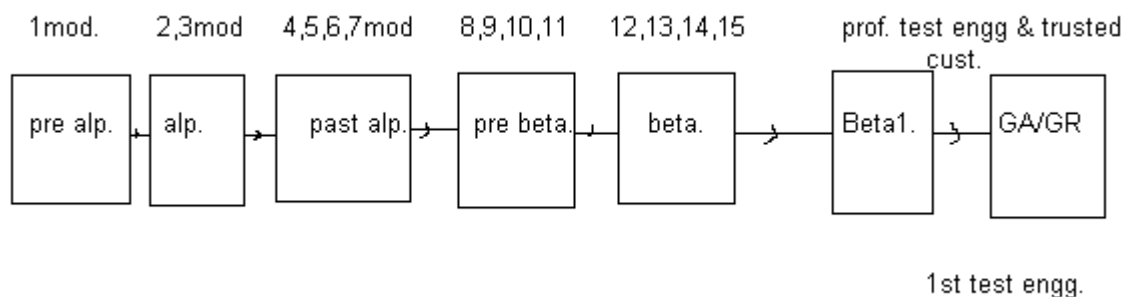
GA stands for General Availability.
GR stands for Golden Releases.

For a product based company if a customer requests for some extra requirements with that of the exiting product, then during the process of development as shown above beta testing is over, the product is given for the trusted customer.

Trusted Customer: -
People eagerly waiting to us a particular product because of the craze with the features of the products.

Or

Customer coming up with requirements to upgrade the exiting product.

Beta version: -
It is the expected to have lot of bugs & the customers are very much aware about the products. So in this beta version we can fix the bugs. The beta2 version is working rarely because we go head and fixing the bus in beta version after that if we got any bugs then we can fix the bugs in beta2version. It is the last version.

To Be Continued…

After the beta phase only one test engg will be engaged for testing and the trusted customer will also report the bugs that found to the test engg.

The test engg has to reproduce the defect & detect some more defects by him self & report it to developers.

Deferred: -

To move some amount of defects to the next release. So that the product can be released easily by fixing only critical bugs.

Code Freeze: -

If a project manager insists to complete the project as fast as possible, then the developed would specify a date and telling that hence after this date he would not do any modification in this code. What the tester find the bugs. This date is called freezing date and the code section is called freezing code.

(Module: - It consists of couple of pages.)

Recovery Testing.

If a crash occurs in an application, how far is the application capable of recovery from that data or defects are recovery testing.

After including a defect in the application, which will crash the application, the reason for crash should get updated in the log file.

Example: - log file saved into notepad.

(Note: - Application crash we need to go ahead that crash file saved go an to log file.)

A.1. Log file checks it is similar to notepad logging & information.

Example: - bank printer, each day transaction will be printed in the log sheet.

A.2. In messengers each & every user login & log out details in recorded.

B. It should ensure that it is killing its sessions as soon as crashing occurs or else you will get message telling that the application is already running, so we need to check, if the process is killed by task manager.

Example: - Task Manager.exe

Internet Explorer.exe

Mcfee.exe

Googletalk.exe

C. The application should not be corrupted while working with application.

D. Need to ensure that when a application is re launched or re opened. It should be reverting with earlier settings/sessions.

Example: - If I was working with tabs & the browser gets crashed, after re launched the browser all the 15 tabs should be available.

HTTP: - Hyper Text Transfer Protocol.

SSL: - Secure Socket Layer.

In the case of HTTP, the application should not take me to the exact place where I was working. Instead it should take to the login page, when a crash occurs.

But for HTTP it should take to the exact page where I was working & even for word document, there should not be any loose of data after recover from the crash.

Recovery testing cannot be done for web based application server.

Failover Testing: -

This is done to check if the server can recover from the crash or failure. This testing cannot be done by a normal user from the user end, because he can do only web application recovery testing.

Start ----- run -------- shut down (-R).
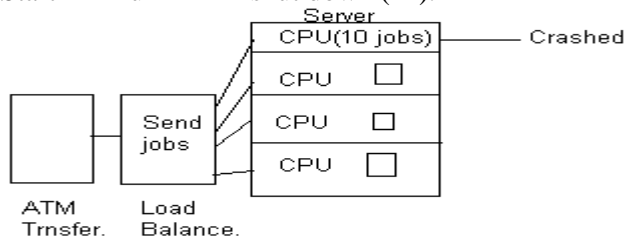
When one CPU gets crashed, which is associated with 10 jobs, so the server should de able to recover fast or assign those 10 jobs to other server & all the 10 jobs should get executed.

(Note: - In command prompt type shutdown-r)

Product based company i.e. yahoo, Google, oracle.
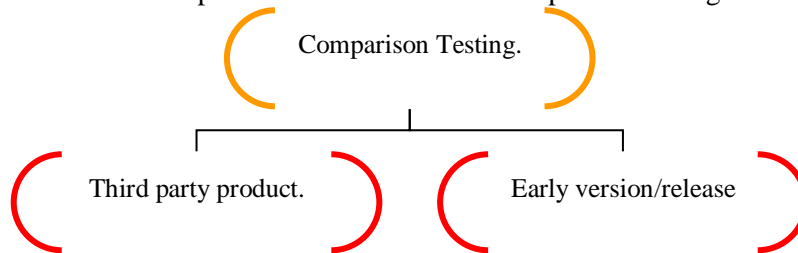
To Be Continued…

Service based company i.e. TCS, Infosys, Wipro.
1. Requirement collection.
2. Design phase.
3. Code freeze.
4. Functional testing.
5. Integration testing.
6. System testing.
7. Maintains.

Comparison Testing.

Introduction: -
Comparing a product with another products feature is called comparison testing.

```
                    ┌─────────────────────────┐
                    │   Comparison Testing.   │
                    └─────────────────────────┘
              ┌──────────────┴──────────────┐
    ┌───────────────────┐        ┌───────────────────┐
    │ Third party product. │     │ Early version/release │
    └───────────────────┘        └───────────────────┘
```

Third Party product: -
Comparing the product with third party product & getting the tree points, to do marketing.

CRM: - Customer Relationship Management. It manages the product purchased by a customer, his phone no, add, issues registered with the call center.

HR ──→ CRM ──→ Oracle (HP-Itanium)

This was developed in 1990's with CGI or Perl tool as years passed on & lot of customers have purchased the tool, as a result the load on server has increased and the customer are not able to access the fall fast. So HP will go ahead & upgrade it with .net tool & report that to it customer, that now it would take only less amount of time for accessing the tool.

But the tool should have the same look & feel as that of old tool but with grater accuracy & faster. So this way the comparison as done with the previous tool.

Third Party Testing: -
MSS: -Microsoft Sequenal Server.

PSQL: - Pervasive SQL (This company will develop a product same as that if mils but with 0.001% difference because of some copyright issues.)

When a test engg. executes the test cases & the finds some defect. If the reports to the developer the developer team may tell that, the defect is also present even in MSS, so it is not necessary to fix it.

So next time the test engg. While executing the test cases, if he finds any defect, he will 1st compare with MSS and then report it to the developer team. This process is called third party testing.

Comparing Between GMail And Yahoo Mail: -
Gmail: -
1. Speed is (high speed/sec).
2. Threading (searching mail option is present).
3. Launching of selected application is available & is very first.
4. In case of slow internet connection, you can view your mail in HTML format.

Yahoo Mail: -
1. 3 sec of time (a bit slow).
2. It is not present.
3. It is not available.
4. No option is available for quick loading.

Revenue generation & getting profit with use of small scale resource or large scale is also a faction of comparison testing.
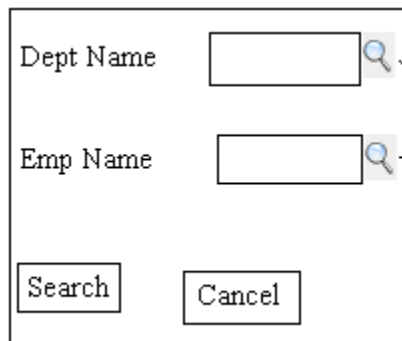
Static or Non-Functional Testing: -
Any testing which doesn't involves functionality of application. It is checking the look & feel.

Before completing the code or before it being execute the developer going ahead & checking out for mistakes process of creating of documents related to test plans is also is called static testing.
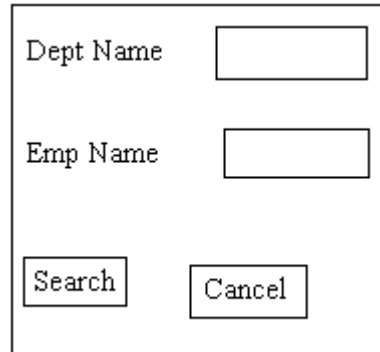
Example: - Performance testing, prototype testing, accessibility testing and usability testing.

Earlier version releases.

Earlier release   *Current Release*

In the earlier release it wasn't taking much of time to load but in the current release it is taking a lot of time to get loaded.

Dynamic Or Functional Testing: -

Testing the functionality of application is called dynamic or functionally testing.

Example: - System, integration, functional and user acceptance testing.

Test Case.
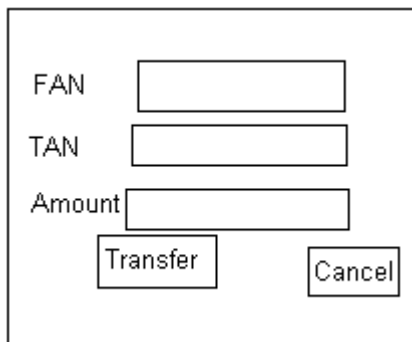
Definition: -

A step by step procedure to verify the functionality of an application.

Question: - Why & what is the need for a test case?

Answer: - To have consistency in the work fashion, I need to have document prepared. I am having things prepared, where it can be released at any given point of time.

Example: -

Using notepad creating test cases for each & every field.

1. Text – Amount Field.
2. Text – From account field.
3. Text – To account field.

But if the files all named like this it would difficult for me to find the desired file next time for using it or in case if I am leaving the job & someone else is taking over it, that person would find it difficult to find things.

Consistency In Work: -

When I don't have case document, there are chances that my work may not be consistent depending on my mood

Reusability: -

If there is no proper document I may miss out to test few field.

Documentation: -

By this we can make sure that the entire field tested. And the customer can get a clear picture of that exactly the present work status.

Test Case Template.

To Be Continued…

```
Project Name:
Test Case Name:
Module Name:
Requirement ID:                          —Header
Seveirity:
Pre-condition:
Test Data:
Brief Description:

SI No.| Description| Input| Excepted| Actual| Status| Comment
                           Result.| Result.


                                         —Body




Author Name:
Date of creation:                        —Footer
Approved by:
Modification History:
```

Project Name: -
> Qspider Morning Batch - 93
> Project Name – Release Name/Project Name

Test Case Name: -
> There are three ways to write this such as
1. Test case name.
2. Module Name – Test Case Name.
   Example: - Amount Transfer – Add Beneficiary.
3. Project Name – Module – Test Case Name
   Citi Bank – Amount Transfer – Add Beneficiary

(Tool which is used to manage all the test cases are called query center.)

Example: - D:\song(project name)\instrumental music(module name)\guitar(sub module)\1.mp3

Requirement ID: -
> Unique identification number for different requirement.

Severity: -
> Functionally wise, how much important or critical is the test case.
> Example: -

Server1	Critical	1	1 – Critical	1 – High	>
Server2	Major	2	2 – Major	2 – Medium	=
Server3	Minor	3	3 – Minor	3 – Low	<

Different types addressing level of critically followed in different company such as
1. 60% of test case can be marked as critical.
2. 30% of test case can be marked as medium.
3. 10% of test case can be marked as low.

Pre – Condition: -

      Before going ahead & getting the test case executed a particular set of task should be done.
Example: - for testing the amount transfer, the 1st we should make sure that there is more amount in the account. This condition is not applicable for every test case.

Test Data: -
      A source of input information required to perform the testing. That is called test data. (SQL queries & XML files)
Example: - Server A & server B is there, they are properly connected or not to transfer & receive data is pre – condition. While creating data, sending & receiving information is called test data.

Archive: -
      To obtain some data from some place. It is divided into two parts such as 1. Creation of data (pre condition) and 2. Data to be moved history table (task).

Brief Description: -
      Write shortly what the test case all about.

Description: -
      Set of task to be carried out desiring testing.

Input: -
      Giving appropriate value to perform testing. Example: - URL, username, password.

Excepted Result: -
      What the desiring output should be.

Actual Result: -
      Example: - page cannot be displayed.

Status: -
      Passed (if excepted & actual results are same).
      Failed (if excepted & actual results are different).

Comment: -
      Here bug ID or defect ID is written to report to the development team & the message to be converged to the development team is also written here.

Author Name: -
      Name of the person who has created the test case to have the accountability of the work done.

Date Of Creation: -
      Standards to be followed such as yyyy-mm-dd or dd-mm-yyyy.

Approved By: -
      The person who has received the test case are approved the test name is mentioned.

Modification History: -
      Name of the person.
      Date of modification.
      Details of modification or modification history.

Test Case Design Techniques.

1. ### Error Guessing: -
Amount | 100 - 10000 |

1. Blank space.
2. Alpha numeric.
3. Alphabets.
4. Special Character.
5. 75
6. 100000
7. +ve input.

2. ### Equivalence Portioning/Class: -

Equivalence Portioning.

Pressman Method.   Practical.

Pressman Method: -

The range of value I need to come out entered two invalid inputs and one valid input applying to have an application tested.

Example: - -75 & 10,001 (two invalid input tested.) and 7395 (valid input tested.)

- Range of values is in here 2 invalid inputs & 1 valid input.
- Set of values: - {10, 35, 40, 5} when we set the values then we can tested very easily and find easily invalid input & valid input for example 17 & 14 (invalid input) & 5 (valid input).
- Boolean of values: -In here we can tested the true & false value.

Practical: -

Amount | 1 - 10000 |

1 – 10000 sub categories.
1 – 100 (interest 2% charges).
101 – 5000(interest 5% charges).
5001 – 10000(interest 7% charges).

Amount -5, 15,000 & 5000 (under testing).
-5, 105 & 50
90, 5500 & 1000
4000, 50000 & 7000
These above we have to test.
From above testing the some testing is excitable testing such as (50, 90, 1000 & 4000).

OR

Equivalence partitioning is a software testing technique that divides the input data of a software unit into partitions of data from which test cases can be derived. In principle, test cases are designed to cover each partition at least once. This technique tries to define test cases that uncover classes of errors, thereby reducing the total number of test cases that must be developed.

In rare cases equivalence partitioning is also applied to outputs of a software component, typically it is applied to the inputs of a tested component. The equivalence partitions are usually derived from the requirements specification for input attributes that influence the processing of the test object. An input has certain ranges which are valid and other ranges which are invalid. Invalid data here does not mean that the data is incorrect; it means that this data lies outside of specific partition. This may be best explained by the example of a function which takes a parameter "month". The valid range for the month is 1 to 12, representing January to December. This valid range is called a partition. In this example there are two further partitions of invalid ranges. The first invalid partition would be <= 0 and the second invalid partition would be >= 13.

```
    ... -2 -1,     0 1 ......12, 13  14  15 .....
    --------------|-------------------|---------------------
 Invalid partition 1     valid partition    invalid partition 2
```

3. ***Boundary Value Analysis: -***

We want to go ahead and test the boundary value of A – B.

(A-1), A & (A+1)   (B-1), B & (B+1)
        L.B   U.B

L.B stands for lower boundary & U.B stands for upper boundary.
For example 100 – 1000

99, 100 & 101(L.B)   999, 1000 & 1001(U.B)

Difference Between Equivalence Portioning And Boundary Value Analysis: -

To Be Continued…

Equivalence Portioning: -

- In here there are 2 invalid inputs & 1 valid input. (Total 3 inputs.)
- We can work set up values & Boolean values.

Boundary Value Analysis: -

- In here 4 valid inputs & 2 invalid inputs. (Total 6 inputs.)
- We cannot work set values & Boolean values.

FAN = 4 digit account no.
TAN = 4 digit account no.
Amount = 100 – 10000

Functional Testing: -

Step No.	Description.	Input.	Excepted Result.	Actual Result.	Status.	Comment.
1	Invoke the browser & provide the input URL.	Input URL = http://trackcitibank.com	Sign on page should be displayed.			
2	Provide the username and password & click on sign on login to the page.	Username = Testuser & password = Testpass	Welcome page should be displayed.			
3	Click on the amount transfer link from the left navigation of menu.		Amount transfer page should be displayed with following components FAN, TAN, Amount, and Transfer & Cancel.			
4	Enter a valid FAN and next to the tab key.	FAN = 1234	Cursor focus should be taken to the TAN field.			
5	Enter a valid TAN & hit on the tab key.	TAN = 5467	Cursor focus should be taken to the amount field.			
6	Verify the amount field.					
6.a	Enter a special characters & click on the transfer button.	Amount = +*&	Verify the pup of message enter amount ranging from 100 – 10000			
6.b	Enter the negative integer & click on the transfer button.	Amount = -456	Verify the pup of message enter amount ranging from 100 – 10000			
7	Click on the cancel button from the		Conform whether taken back to the			

	conformation page.		amount transfer page.			
8	Click on the cancel from amount transfer page.		Check it taken back to the welcome page.			
9	Click on the sign out button.		Where able signed out the successfully application.			

Integration Testing: -

Step No.	Description.	Input.	Excepted Result.	Actual Result.	Status.	Comment.
1	Open the browser & enter the "URL = http://track.citibank .com"		Welcome page should be displayed.			
2	Login to the account of user A as test user/ test password.		Home page should be displayed.			
3	Click on "view account summery" link from left navigation bar.		Make note of the account balance.			
4	Click on the amount transfer link from the left navigation bar.		Amount page should be displayed.			
5	Enter valid account no. into the FAN (03359098674), TAN (602701210601) & amount field (1230.00)& click on the transfer button.		Conformation page should be displayed.			
6	Click on the view account summery link from the left navigation bar.		Account summery page should be displayed.			
7	Check for the account balance.		Verify the total amount displayed should be the previous amount balance -1230.00			
8	Click on the logout link.		User should be logged out.			
9	Log in to the account of user B as B user / B password.		Home page should be displayed.			
10	Click on the view account summery link from the left navigation bar.		Account from user A should be credited.			
11	Click on the logout link.		Page should be signed off successfully.			

System Testing: -

To Be Continued…

Step No.	Description.	Input.	Excepted Result.	Actual Result.	Status.	Comment.
1	Open the browser & enter the URL http://test.citibank.com		Welcome page should be displayed.			
2	Login to user A as A user/ A password.		Home page should be displayed.			
3	Click on the "over draft" link from the left navigation bar.		Over draft page should be displayed.			
4	Applying for a loan amount of "20,000" into the amount field and click on the "submit" button.		Conformation message should be displayed starting "loan applied successfully".			
5	Click on the logout link.		User A should be signed off.			
6	Login manage with "manager/boss".		Manager page should be displayed.			
7	Click on the pending "loans link" from the left navigation bar.		a. Pending loans page should be displayed. b. user A name should be listed in the table.			
8	Select the check box next to A and click on the approve button.		Verify the conformation message "loan approved for user A for 20,000 rupees".			
9	Click on the logout link.		Manager should be signed off.			
10	Log in user A as A username/ A password.		Home page should be displayed.			
11	Click on the "view account summery" link to the left hand side of the navigation pane.		"20,000" rupees of loan amount should have get credited.			
12	Logout of user A.		User A should be signed off.			
13	Log on to the database and execute the query to add a month span of time thinking the current date of consideration as 28/01/2010. a. Updated loans table set repayment date to date (28/01/2010; dd/mm/yyyy) when user = A. b. update user account set balance = 21,000		Date is updated to the database.			

	where user = A.					
14	Login user A as A user/A password.		Home page should be displayed.			
15	Click on "amount transfer" link to the left side of the pane.		Amount transfer page should be displayed.			
16	Select the FAN(123) and the bankers account number "567789" and key in the amount as "20650" (20000+400+250) and click on the transfer button.		Conformation message should be displayed "amount of 20650 transferred successfully".			
17	Sign of user A.		User A should be signed off.			
18	Login as manager with "manager/boss".		Manager page should be displayed.			
19	Click on "pending loans dues" link to the left hand side of the navigation pane.		User "A loan should have closed".			
20	Click on the logout link.		Manager should be signed off.			
21	Repeat step 2 to 15		Same			
22	Select the FAN (123) and the bankers account number (567789) and key in the amount as 20,400 (20000+400) and click on transfer button.		Conformation message should be displayed stating "amount of 20,400 transferred successfully".			
23	Repeat step 18 – 20		User A should have closed loan.			

Writing Test Cases.

Identify Scenario: -

        Flight application   Username = (minimum 4 character)

                                        Password = (Mercury)

            Log in

For doing functional testing write username = write different username with password as mercury.

```
            ┌─────────────┐
            │   Flight    │
            └─────────────┘
            ┌─────────────┐
            │   Login.    │
            └─────────────┘
```

Insert Order.	Update Order.	Open Order.	Delete Order.
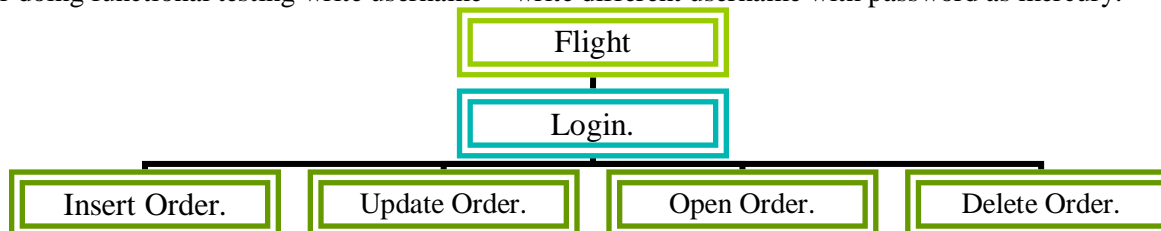
What all the possible navigation which a product can go through.

Some Interview Question: -

1) How many test cases can write in a day?

Answer: - 8 to 10 test cases write with in a day an average of 20 steps.

2) How many test case have you totally written in the current project?

Answer: - I have done the test cases approximately 267 to 276.

3) How many test cases can be executes per a day?

Answer: - approximately 40 to 50 test cases execute per a day.

4) How many test cases per a day?

Answer: - I can review maximum of 15 to 17 averages of 20 steps each & every test cases.

Test Suite: -

- It is less commonly known as a validation suite.
- Collection of test case and group of test case which is grouped based on the functionalize wise collection is called test suite.
- A collection of test cases kept under one particular place is called test suite.
- For example: - test suite = quality center ⟶ test management tool. (it is a quality center of test management team. In here store, save and execute the test cases.)
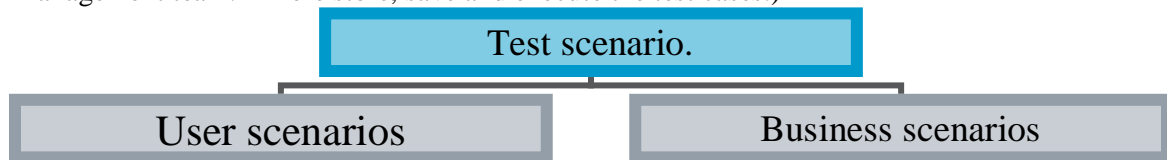
User Scenarios: -

All the feature used by the end-users the UI part of a page. The place where amount transfer FAN, TAN, Login details are all present is scenarios.

Example: - Date and time that the user has logged in the account, IP address & account summery.

Business Scenarios: -

The advertisements placed on the login page. The page can only read the information in it. Admin posts can add.

Review Of Test Cases.

The test case what ever you done appropriate or correct it was tested or checked in another person.

Checking each & every task performed if it meets up to the quality is called review. To check whether a test case is as per the requirement specification & as per the company stared or not. It is put in a common place.
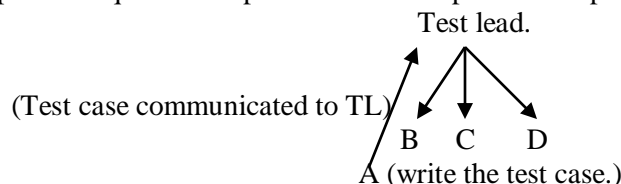
The test case writes a test engg. And review to another test engg. If a test engg A writes test case is communicate this to the test lead. The test lead will give the test case to either of test engg (B/C/D) depending who is free.

It is categorized in four types such as

1. *Peer Review: -*

The process of one test case written by test engg being reviewed by another test engg & checking if the test case is designed as per the requirement specification or not is called peer review.

2. *Test Lead Reviews The Test Case: -*

- If B, C & D test engg are very busy & have no band width to review the test cases. That time the test lead itself will review the test cases.
- If the test leads is a domain expert of that particular module, for which the test engg has written test case. Then the lead will go ahead & review the test case.

3. *Development Team/Developer Review The Test Case: -*

- It mainly happened in product based company.
- Obsolete: - it is something test case which not be necessary to be review or observing.
- They are having test cases review of old test cases.
- Reviewing the new test cases.

```
                        ┌──────────────┐
                        │  Testing.    │
                        └──────────────┘
              ┌───────────────────┴────────────────────┐
        ┌────────────────┐                    ┌────────────────────┐
        │ Manual Testing.│                    │ Automation Testing.│
        └────────────────┘                    └────────────────────┘
       ┌────────┴─────────┐          ┌──────────────┼──────────────┐
 ┌──────────────┐ ┌──────────────┐ ┌────────────┐ ┌──────┐ ┌────────────────┐
 │ Normal web   │ │ Domain based │ │ Testing    │ │ QTP  │ │ Java, .Net,    │
 │ based testing│ │ testing.     │ │ tools.     │ │      │ │ Pearl, VC++. VB│
 └──────────────┘ └──────────────┘ └────────────┘ └──────┘ └────────────────┘
```
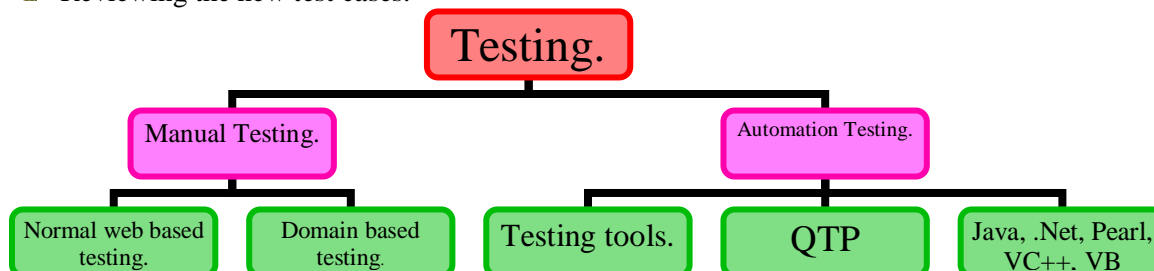
4. *The Customer Will Review The Test Case: -*

Some time the customers may review the test case to check how good the test cases are written, if the quality of work is good & if it matches with the customer requirements.

As the final products quality mainly depends on the kind of testing performed or the strategic used.

Review of Test Case: -

- Test case template.
- Carry forward/renames of name.
- Understanding requirement wrongly test cases.
- Writing the test cases with out changing my test cases. (Test case design techniques.)
- Pre condition is required but the developers miss out to give the pre condition then the test engg will gave. (Pre – condition missing.)
- Test case flow.
- Numbering of test cases.
- Scenario: - 1. Clean up part.
    2. Navigate to x – y – z delete page table.
    3. Enter Emp xyz search field and click on the search button.
    4. From the search result, select the record name "EMP.xyz" and click on delete.
    5. Click on gives to continuing the deletion.
- Test case flow.
- We entering the default value inside the search textbox.
- Standards of the organization.
- Multiple test cases are in a single line.

Test Case Review Template: -

Sl No.	Module Name	Test Case Name	Test Steps	Severity	Date Placed For Review	Author Name	Review's Name	Date Of Review	Comments		
									Reviewer	Authors	Status

Status: -

- Yet to start.
- Review in progress.
- Awaiting comments in corporation.
- Complete.
- Blocking.

Regression Testing: -

To Be Continued…
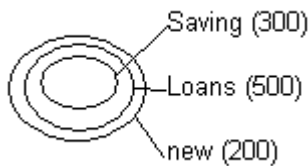
Example: -   300 test cases for saving.
                 500 test cases for loans.
                 200 test cases for new.
                -100 test cases for housing loan deleted.
                +20 test cases for housing loan is deleted properly.
                 All total 920 test cases.

Definition: -

Re execution of the same test cases across difference results in order to ensure that the changes like addition, deletion, modification or bug fixes are does not cause by impact of the unchanged module is called regression testing. Or Regression testing is after fixing the bug whether it has affected any other functionality or not we r going to test.

It is classified into three categories such as
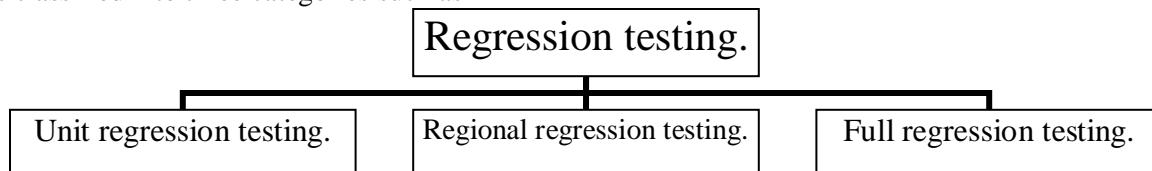
Unit Regression Testing: -

Suppose the developer teams perform some code change to add a small feature, this should not create any impact on other feature.

Example: - Like to change a small feature of search option. i.e. the maximum length of character is 6 in the search option but it the developer changed it 8 characters.

Regional Regression Testing: -

It is a just part of regression testing. Because of change to one module, part of other modules of the application is getting affected.
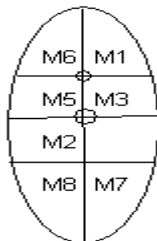
Because of change mode to M1 part of M6, M5, M3 & M7 are also being affected.

Full Regression Testing: -

- Migration of technology. (ASP to JSP)
- Change ministatement
- To transfer amount from a ICICI to non ICICI account. It should not take more then 2 hours of time.
- If the account balance is 500/-. A check for 1500/- is issued, instead of bouncing the check, the check is passed by deducting Rs 1000 from F.D.
- Request for check book. As so many features all being changed the entire application should not get affected.

Retesting: -

To process of testing as application again to check if the defects raised are fixed properly or not is called re-testing. Or Retesting is testing whether the bug which is found has been fixed or not.

Question: - what is the difference between the regression testing and retesting?

Answer: - Re execution of the same test cases across difference results in order to ensure that the changes like addition, deletion, modification or bug fixes are does not cause by impact of the unchanged module is called regression testing. Or Regression testing is after fixing the bug whether it has affected any other functionality or not we r going to test.

To process of testing as application again to check if the defects raised are fixed properly or not is called re-testing. Or Retesting is testing whether the bug which is found has been fixed or not.

Question:- What is the difference between retesting and unit regression testing?

Raw Backs Of Regression Testing: -

- Time taken for the particular work.
- Consistency will not be there.
- 1st release.
- This regression testing acts separates between manual testing and automation testing.

Question: - When to be go for automation testing?

Answer: - When application is functionally stable it is only then we go for automation testing.

Example: -   10 test engg – 1st release.
10 test engg – 2nd releases.
10 test engg – 3rd releases. (In here 7no manual test engg + 3no automation test engg).
8 test engg – 4th releases. (In here 5no manual test engg + 3no automation test engg).

Requirement Traceability Matrix (R.T.M)

- It is also called cross reference traceability matrix/ traceability matrix.
- A traceability matrix is a document, usually in the form of a table, that correlates any two base lined documents that require a many to many relationship to determine the completeness of the relationship. It is often used with high-level requirements (these often consist of marketing requirements) and detailed requirements of the software product to the matching parts of high-level design, detailed design, test plan, and test cases.
- A requirements traceability matrix may be used to check to see if the current project requirements are being met, and to help in the creation of a Request for Proposal, various deliverable documents, and project plan tasks.
- The Requirements Traceability Matrix (RTM) captures the complete user and system requirements for the system, or a portion of the system.
- The RTM captures all requirements and their traceability in a single document, and is a mandatory deliverable at the conclusion of the lifecycle.
- The RTM is used to record the relationship of the requirements to the design, development, testing and release of the software as the requirements are allocated to a specific release of the software.
- Changes to the requirements are also recorded and tracked in the RTM.

1. Drag and drop column.
2. Resize the column.
3. Find operation.
4. Sorting.

Stud ID	Name	Class	Marks
111	Arun	1st	90
112	Alex	2nd	85

Test Case For Drag & Drop: -

- Drag & drop of column.
- Over looping of columns.
- Complete movement of data from column to column.
- No copies of columns should may be present moving column to column.
- Save changes after re arranging columns.
- Unsaved changes after re arranging the columns.
- Drag & drop column through out row.

Resize The Column: -

When alignment the heading part the column should be alignment.

Sl No.	Module Name	High level req..	Low level req..	Req id.	Author name.	Date of creation.	Test case name	Approved by.	Severity	Attachment	Defect id.
1	QIA	1.i. Grid	1.a. Drag &	1535 1537	Arun Arun		1-8 what	Ajay	High		

		Feature	Drop column. b.Resize the column. c. find. d. sort.	1538 1541	Arun Arun		ever writ test 1st			

Some time it is called foreword requirement traceability matrix.

STLC (Software Testing Life Cycle)

Requirements	→	System Study.

↓

Test Plan.

↓

Write test cases using standard template & test case design techniques. → System Study.

↓   ↓

Prepare R.T.M   Identity Test Scenario.

↓   ↓

Execute Test Case.   Write Test Cases.

↓   ↓

Defect Tracking.   Review Test Cases.

↓   ↓

Test Execution Report. / Test Summery Report.   Fix Review Comments.

↓   ↓

Post Mortem Meeting.   Approved.
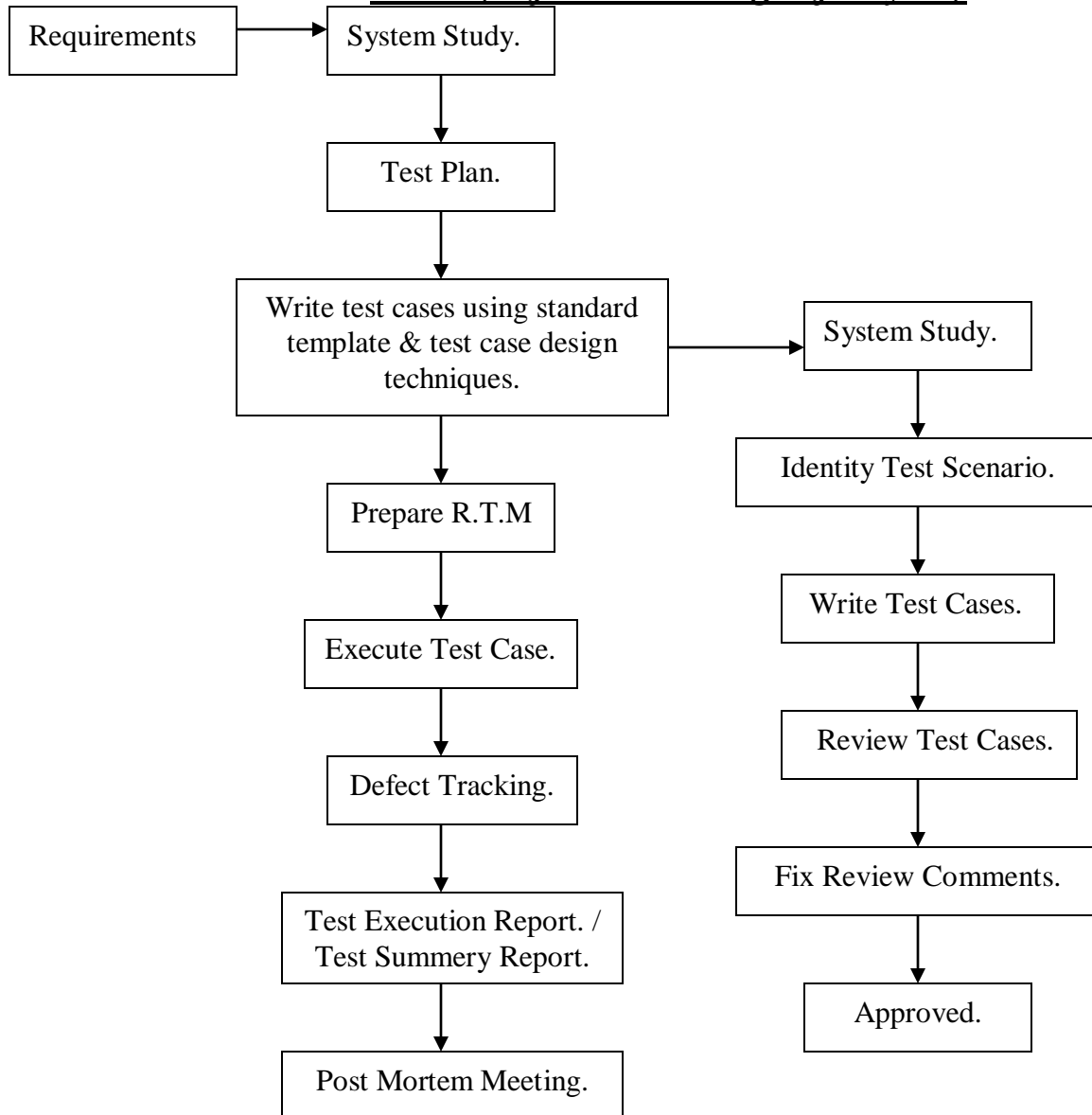
Requirements: -
It is the customer requirements. It can be in any form such as CRS, SRS, BRS, Design documents, Use case, Application itself.

System Study: -
To understand what exactly is the module I am working is all about & studying the entire project or application.

Prepare Test Plan: -
It is the study carried out to understand which contains the detail regarding the resource required the cost involved to do testing, time taken to do testing etc.

Review Test Cases: -

After review test case the reviewer writes the review comments but he does not rechecks if the review comments all fixed properly or not by the author.

Test Execution Report Or Test Summery: -

Here a report is prepared regarding the testing carried out.

Test Case: -

Total No Of Test Cases Execute: -

No Of Test Case Passed: -

No Of test Case Failed: -

Defects: -

Total No Of Defects: -

Critical: -

Major: -

Minor: -

After complete of these stages the product or application is handled over to the customers.

Post Mortem Meeting Or Project Closure Meeting: -

After handing over the product to customer the project manager will held a meeting to discuss various issues encounters during that product such as   1. Achievement.
2. Mistake.
3. Approach.
4. Changes to be carried out to over come mistake etc.

Design Document: -

Example: - Service based company.

```
        CRS
         |
         v
        SRS     (Sometimes keeping this as baseline they directly write test case.)
        / \
       v   v
    Test    Develop
```
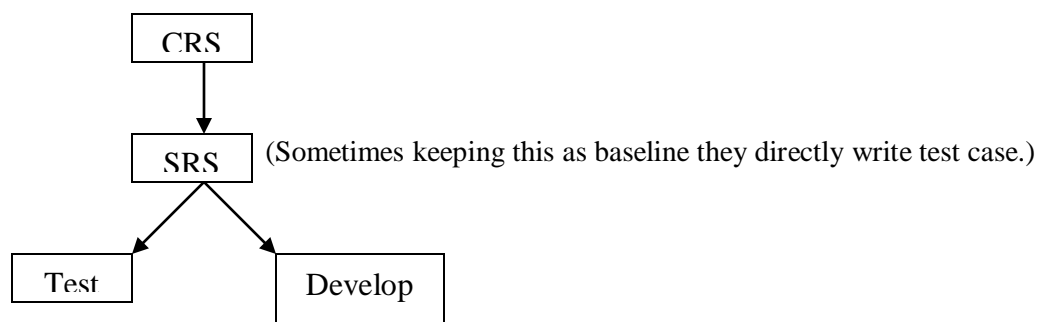
Example: - Product based company.

If there two product base companies, which are competitor of each others, then the marketing team of one company will go ahead & check in the market what the competitor's product is all about & will do the same kind of product.

```
    Marketing Team.
         |
         v
    TDD (Technical Design Document) or FDD (Functional Design Document) or FS (Functional Specification.)
        / \
       v   v
    Test    Develop
```

User Case: -

Very few companies follow this method. Requirements are given inform of pictures or representations which could user case. It is a factorial format representation of requirement.
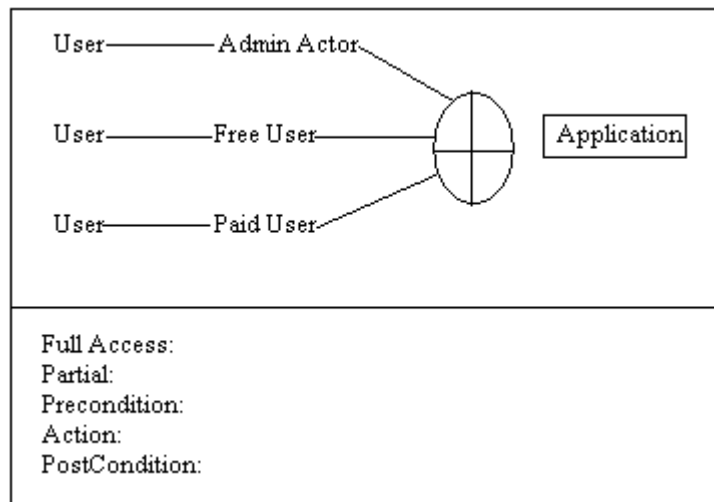
Application: -

For certain project there won't sequence specify itself.

Example: - Actitime project we did in Qspider, it is for here an exiting application itself explanatory testing is done.

Explanatory Testing: -

We going ahead & exploring (learning) the application and testing it. In this there all chances that, the test engg may write test case for feature that is already removed by developer.

If test engg is not able to understand the application then he will contact the developer & have things understood. If the developer no idea then they contact to business analysis person if he have no idea then they go ahead & contact the customer and understood clearly about the product.

Test Plan.

It is a document which derives the complete listing activity for a successful delivery of project.

There are 16 sections are in a test plan such as

1. Objective.
2. Scope.
3. Approach.
4. Testing Methodologies.
5. Roles & Responsibilities.
6. Deliverables.
7. Test Environment.
8. Assumption.
9. Risk.
10. Contingency Plan.
11. Entry & Exit Criteria.
12. Effort Estimation.
13. Schedule.
14. Defect Tracking.
15. Test Automation.
16. Templates.

1. Objective: -

What exactly is the need for calling out testing or aim.

2.Scope: -

Possibility of me go ahead check an application. After the product is delivered to customer , what is the scope of work , that need to be classical out in that product.
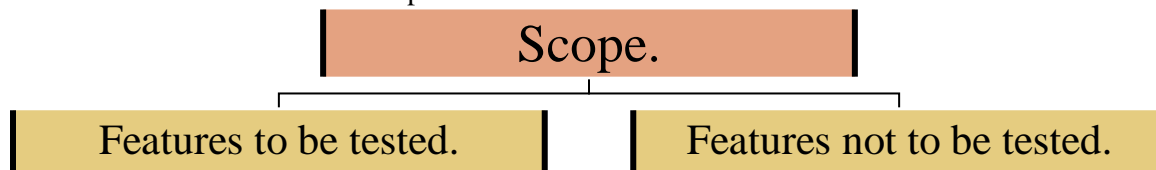
Features To Be Tested: -

Example for Grid Features

1. Resize.
2. Drag & Drop.
3. Find
4. Sort

Which need to be performed.

Features Not To Be Tested: -

Couple of scenario the testing team not to be tested. The test engg go ahead and take risk based test (RBT).

If the test engg have no sufficient time then they go ahead and tell the some part admin module & some part of user module they tested.

Web side

Email   Third Party application which is not tested because it is purchased from third party.
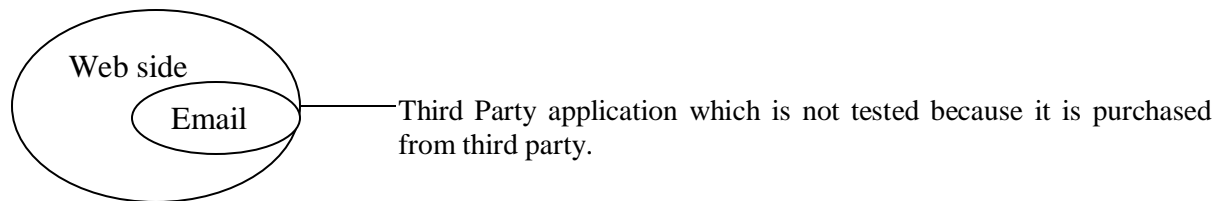
System Integration Testing: -

Having your application tested by the third party software is called system integration testing. Which is shortly called as SIT?

In here the testing team tested only their product which is developed by developer team but not tested the third party application.

Approach: -

Describe the data flows and test philosophy. Simulation or Live execution, Etc. This section also mentions all the approaches which will be followed at the various stages of the test execution.

a. It is mentioned in from of high level scenarios of some particular module.

Example: -Compose a mail & send it. Check if it is present in sent item or not.

b. If the scenarios bit tricking then the approach to goes from testing is represent in from of flow graph. It is basically a detailed procedure to perform testing.

Flow Graph Of Yahoo.

Yahoo.

Mail.   Groups.   News.

Sign In.   New User.   Reset Password.

Inbox.   Sent Item.   Folders.   Spam.   Trash.   Compose Mail.

Delete.   Open Mail.   Read.   Unread.   Flag.   Reminder

Replay.   Replay All.   Foreword.   Move Prev.   Move Next.   Spam.   Delete
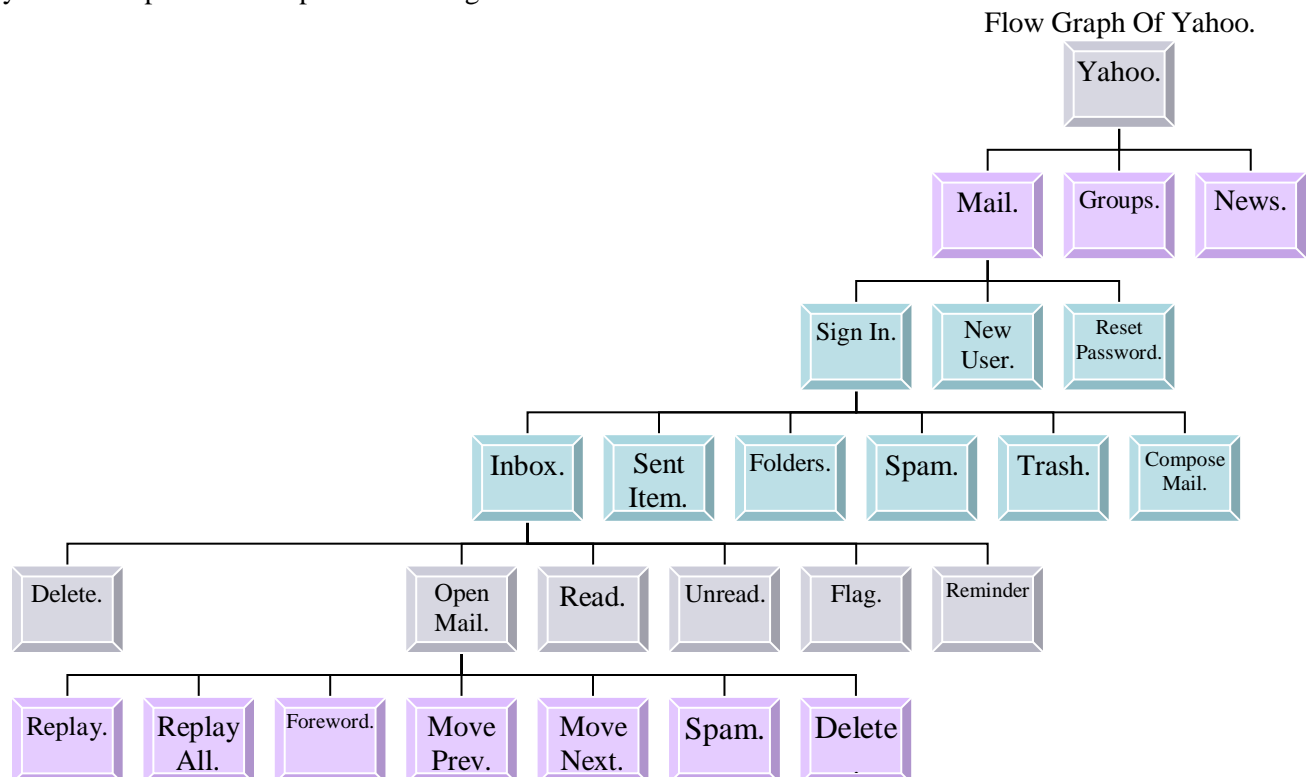
To Be Continued…

Testing Methodology: -

If the requirement is to test CNNIBN.Com, then this project what all the type of testing to be carried out such as

1. Integration Testing.

2. System Testing.

3. Smoke Testing.

4. Accessibility Testing.

5. Performance Testing.

6. Compatibility Testing.

7. Regression Testing.

8. Comparison Testing.

9. White Box Testing.

The above are the type of testing to be carried out & implementation of how to carry out with each section.

Roles & Responsibilities: -

If there are 10 people in software company , then the software company & customers will come with a assignment that the customer will pay only for those 10 people and complete the people in specified amount of time.

But the company will have some people in pool or bunch i.e. they all extra resource, so that if they want some extra people to complete the project say about 15/17 people. The 10 people out of 15/17 people accounting to be paid by customer is called build-able resource.

Roles & Responsibilities of

Test Manager: -

- Write / review test plan.
- Cost & effort estimation.
- Resource allocation.
- Handle issues & explanation. (CESC)
- Provide managerial updates.

Test Lead: -

- Write / review test plan.
- Allocate work to test engg.
- Derive standard templates.
- Write test cases for the module "grid features".
- Conduct review meetings.
- Review test cases.
- Consolidate reports sent by the test engg to the manager.
- Handle customer cases.

Test Engg ABC: -

- Review test plan.
- Write test cases for the module "model lookup".
- Review test cases.
- Prepare R.T.M.
- Execute test cases.
- Defect tracking.
- Attended customer calls.

Test Engg EFG: -

- Prepare test environment.
- Write test cases for the model "amount transfer".
- Review test cases.
- Execute test cases.
- Perform globalization testing.
- Perform compatibility testing.
- Defect tracking.

To Be Continued…

Test Engg XXI: -

- Identify the test case for automation.
- Prepare the automation frame work.
- Automate the test cases defined for the automation using the functional tool (QTP).
- Review test scripting.
- Execute test scripting.
- Maintain test scripting.
- Defect tracking.

Deliverables: -

What, besides software, will be delivered?

    i. Test report.
   ii. Test software.
  iii. Test plan.
  iv. R.T.M
   v. Test execution report.
  vi. Defect tracking sheet.
 vii. Matrices & graphs.
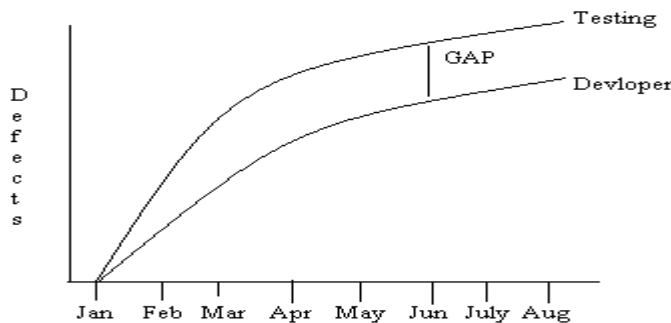
The defects of data which is find by tester & developer is represented by graph.
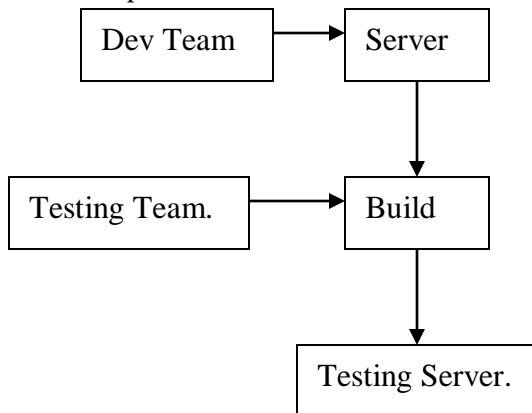
Test Environment: -

- Security clearance.
- Office space & equipment.
- Hardware/software requirements.

It is all about which environment is the testing to be carried out.

Example: - If the product is a stand alone product. Then the hardware such as 64 Bit AGP, 1GB RAM, 500 GB Hard Disk, 2.7 GHZ processor and Software such as windows, UNIX (OS).

If the product us client / server based then

Test Bed: -

Preparing the testing environment is called test bed. Or A test bed (also commonly spelled as test bed in research publications) is a platform for experimentation of large development projects.

To Be Continued…