

## \* System and Functional testing includes :-

- Once smoke testing is done then system Integration Testing is done.
- System Integration Testing (SIT) is also called as system & functional testing.
- It is nothing but Black Box Testing (BBT)
- In that, we are going to check whole functionality of our application.

→ System & functional testing include-

- 1) Functional Testing
- 2) Usability Testing
- 3) Security Testing
- 4) Performance Testing.

## ① Functional Testing :-

→ Functional testing is a process of checking internal functionality depend upon external functionality.

→ Functional testing include

- 1) Functional testing
- 2) Non Functional testing.

## ② Usability Testing :-

- In this testing we are going to check user friendliness of our build.
- We check, colour, fonts, visuality
- It is also called as accessibility testing.

ex- easy to find or understand web application  
ex- when in mobile number add text table we enter 3 digits instead of 10 digit into latter the it shows the message please enter 10 digit number.

## ③ Security Testing :-

→ We check the privacy of build from user aspects.

## ④ Performance testing :-

→ It includes speed of processing  
→ ability of system how it handle load.

→ Type of Performance Testing

- 1) Load Testing
- 2) Stress Testing.

## \* i) functional testing :-

→ It is a process of checking internal functionality depend upon external functionality

→ It includes six type of coverages

1) Behavioral coverage

2) Input domain coverage

3) Error Handling coverage

4) Back-end coverage

5) Service level coverage

6) Calculation base coverage.

v) Calculation based coverage.

## i) Behavioral coverage :-

→ In this we check property and behaviour of object

→ ex. Property of check box, Tick should be visible when user click on the check box

→ Behaviour of checkbox

## ii) Input domain coverage :-

→ It check type & size of input

→ Type - datatype of input

→ size - limit or size of that particular Textbox

→ ex- mobile no. field size is 10 & type - number

→ input domain coverage contain two types:

(a) Boundary Value Analysis (BVA)

(b) Equivalence class partition (ECP)

## ③ Boundary Value Analysis (BVA) :-

→ It check size of object

→ In BVA we are going to check how our system is functioning or working when we insert boundary value.

→ Formula of BVA :-

min

max

min - 1

min + 1

max - 1

max + 1

→ Ex. Number field [ ] is accepting 1 to 100 values

→ Boundary value for that particular textbox are → 0, 1, 2, 99, 100, 101

0 > Invalid

1 > Valid

2 > Valid

99 > Valid

100 > Valid

101 > invalid

## ④ Equivalent class partition (ECP) :- Partition

→ In maintains datatype & objects

→ In textbox we should accept 4 to 6 characters.

BVA	ECP
size	Invalid
min = 4 ✓	0 - 9
max = 6 ✓	A - Z
min - 1 = 3 ✗	a - z
min + 1 = 5 ✓	special symbol
max - 1 = 5 ✓	space (-)
max + 1 = 7 ✗	.

→ We are creating equivalence class or equal class to check large size of data.

→ For ex. We need to check 101 to 1000 number for that particular textbox then we are going to create equal classes and gives random input to our textbox.

→ If that textbox is accepted random value from the particular class then we are going to say that whole class it passed

→ If that textbox is not going to accept random input then particular class then we are going to say the whole class is failed.

Class 1 : 101 to 200 > Accepted  
Class 2 : 201 to 300 > Accepted  
Class 3 : 301 to 400 > Accepted  
Class 4 : 401 to 500 > Accepted  
Class 5 : 501 to 1000 > Accepted  
Class 10 : 1001 to 1100 > Not Accepted.

#### 11) Error Handling Coverage :-

→ In this we are going checking whether the system is showing warning or error message or not.

→ Ex. mno. Box is there it should accept 10 digit then developer develops build According to that if customer enters 9 digits less than or more than 10 digit then it highlight text box

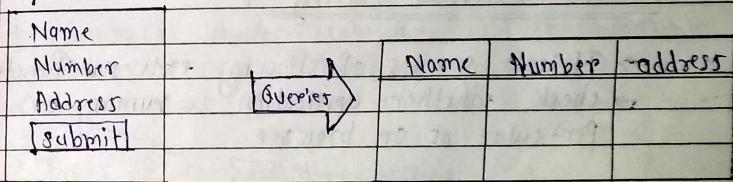
& error message display i.e. "enter 10 digit number"

#### 12) Back-end Coverage :-

→ In Back-end coverage we check whether the entered information from user gets stored in db (database) or not.

→ we also check whether data get fetched from db or not.

#### 13) Service level coverage :-



#### 14) Service level coverage :-

\* In function flow diagram we create sequence of functions and modules. \*

→ In this we are going to check sequence & Function of module on the basis of function flow diagram.

→ We check working of system as per function flow diagram or not.

## vii) Calculation Base coverage :-

- We check arithmetic operation, it includes addition, subtraction, multiplication & division.
- ex - if we add 2 things to cart and it is of 50 rs then total is 100 again we add 2 things of 50 rs each then total is 1000 rs.
- If we have remove of 1 thing of 50 rs then total is 950 rs. This operation is get check in the calculation base coverage.

## \* viii) Non- Functional testing :-

- It is a process of checking external functionality.
- check whether application is running on particular os or browser.

### Types of Non-functional testing :-

- 1) Recovery Testing
- 2) Compatibility Testing
- 3) Configuration Testing
- 4) Inter System Testing
- 5) Installation Testing
- 6) Globalization Testing
- 7) Sanitization Testing
- 8) Parallel Testing.

## i) Recovery Testing / Backup Testing / Pick up testing

- Process of checking system is able to recover from abnormal situation to normal situation.
- ex - when we accessing google page and suddenly internet connection lost then google shows that you are offline and whenever connection resume page which we were accessing is shown by google.

## 2) Compatibility Testing :-

- Process of checking whether build is compatible with user expected platform or not.
- User expected platform are os & Browser.

### → Types of compatibility Testing :

- i) Forward compatibility Testing
- ii) Backward compatibility Testing.

### 1) Forward compatibility testing:-

- Build is correct but os or browser do not work properly then it is a forward compatibility testing.

### 2) Backward compatibility Testing:-

- If os or Browser is ok but build do not work properly then it is backward compatibility testing.

## Compatibility Testing

→ We found most of defects in backward compatibility testing.

## Compatibility Testing

→ generally we are involved in browser compatibility testing.

\* → Browser compatibility testing has two types.

### (a) Cross Browser Compatibility Testing

### (b) Version Compatibility Testing

### (a) Cross Browser Compatibility Testing:-

→ We are going to check in this compatibility testing is same build on different - different type of browser.

→ ex. Internet Explorer, Edge, chrome, mozilla, Firefox, safari etc.

### (b) Version Compatibility Testing:-

→ In this we are going to check different - different version of same browser.

→ For ex. we are going to check our build on chrome browser with different version

① Java → 17 → 24-10-2021

② Chrome → 95.0.4634.45 → 29-10-2021

③ Mozilla Firefox → 95.0.1 → 04-11-2021

④ Edge → 95.0.1020.44 → 06-11-2021

⑤ Safari → 15.0

→ 21-09-2021

⑥ Opera → 81.0.4196.31

→ 05-11-2021

⑦ Android → 12.0

→ 04-04-2021

⑧ iOS → 15.1

→ 29-10-2021

⑨ Windows → 20H2

→ 09-11-2021

## 3) Configuration Testing :-

→ Configuration testing is nothing but hardware compatibility testing → process of checking whether our application is working on different different hardware or not.

## 4) Inter System Testing :-

→ It is the process of checking whether our application shares data with other application or not.

## 5) Installation Testing :-

→ It is the process of checking whether our application shares data with other application or not.

## 5) Installation Testing :-

→ It is the process of checking installation of our build with existing software into user expected platform.

## Globalization Testing :-

- It is a process of checking whether our application supports different language or not.
- Globalization Testing include:
  - i) Localization Testing
  - ii) Internationalization Testing
  - iii) Globalization Testing

### i) Localization Testing :-

- We are going to check whether our application supports local language or not.
- ex. malayali, hindi, Telugu etc.

### ii) Internationalization Testing :-

- We are going to check whether our application supports official language of country or not.
- ex. Hindi, Japanese etc.

### iii) Globalization Testing :-

- We are going to check whether our application supports English language or not.

## 7. Sanitation Testing :- / Garbage testing - Garbage testing

- We are going to find out extra features from the application which are not mentioned in the customer requirement.
- ex. Extra feature -
  - If paytm project is going on in customer request customer want that below each object there should be a price like RS. 400. But developer did ~~RS.~~ 400 ₹.  
This "₹" is extra feature.

## 8. Parallel Testing :-

- It is the process of checking our product with other product.
- It is also known as comparison testing. \*

## ★ iii) Usability Testing :-

- It is a process of checking user-friendliness of our build.
- In short we are going to check how the system is userfriendly to use.
- It is divided into two Type :-
  - i) GUI Testing
  - ii) Manual Support Testing.

### I) GUI Testing :-

#### ① Easy of use :-

- In this, we are going to check on one click next action will happen immediately.
- If any blind person click on any button then system should be generated voice message.

#### ② Speed of Processing :-

- How quick application on user reaction

#### ③ Manual Support testing :-

- It is the process of checking context sensitivity to the user's manual input
- For ex. Search result should be displayed
- ex. If there is Uber app and we have to security testing :- enter source and destination Then we click on source tab it shows all location suggestion starting with 'P'

#### ④ Security Testing :-

- It is process of checking privacy related to user operation

### → Types of security Testing :-

- Authorization
- Access control
- Encryption & Decryption.

#### i) Authorization

- Process of checking whether person is authorized or not & register or not

#### ii) Access Control

- Process of checking whether authorised person has permission to access specific operation.

#### iii) Encryption & Decryption :-

- It is a process of checking whether the data is converting from encryption & decryption
- Encryption :- It is process of converting normal data to into an unreadable form It helps you to avoid any unauthorized access to data.
- Decryption :- It is method of converting the unreadable / coded data into its original form.

### Performance Testing :-

- Performance Testing is includes speed of processing our build.

R  
Retesting → ability of system how it handled the load

- Type are load testing & stress testing
- Tool use - Load Runner tool
- In this testing performance of Test Engineers is involved
- Load Runner tool creates simulation like many user are using system at a time

For ex. If any site is developed then we check in there many user can use at a time or crashed

• Load Testing	Stress testing
- Test the performance of the system or software application under extreme load	- Test the strength & health of the system or soft. robustness
- In load testing load is limit to break the threshold of a break	- In stress testing load limit is above the threshold of a break
- Huge number of users	- Too much user in to much data.
→ capability of software	→ It is ensure system security

## Regression Testing

\* VAT

## User Acceptance Testing (UAT)

- It is a process of collecting feedback from customers.
- Once SIT is done we are going to start for VAT

→ Types of UAT

- 1) Alpha Testing
- 2) Beta Testing

### 1) Alpha Testing :-

- This Testing happens in the controlled environment.
- in presence of developer, tester & customer.
- In that we are going to share our screen & will start execution of real time scenarios which was given by the customer.

### 2) Beta Testing :-

- This testing is done in uncontrolled environment.
- In this tester & developer less involved.
- Tested in customer environment.

Process -

## \* Important points :-

- 1) Error :- mistake in the program is called as an error
- 2) Defect :- When tester found mistake i.e. error then it is called defect
- 3) Bug :- When developer accept that it is actual defect then it is called as Bug.
- 4) Issue :- When developer found difficulty to solve the bug is called as issue.

→ We are going to check each scenarios of application in short we are giving random input to our application & check whether our application is breaking or not.

## Exploratory Testing :-

- We are not aware about the application but we have the test cases & test case data then we are going to perform exploratory testing
- We check level by level of functionality coverage is called exploratory testing

## \* Testing Terminology :-

- 1) Monkey Testing
- 2) Exploratory Testing
- 3) Ad-hoc Testing.

### 1) Monkey Testing :-

- It is a speed testing
- We are conduct the testing on basic functionality of application
- When there are maximum no. of test cases & less time to deliver a product then we do monkey testing

### Ad-hoc Testing :-

- We are aware about application but we don't have test case data then we are going to perform Adhoc Testing
- ex. Camera of phone Test

## \* HOT Fix / Production issue :-

- When any defect found in production by the customer, those defect called as hot fix or production issue.

- Tool user - HP ALM < Test tools and techniques

communication) Testing (For international communication) in org  
→ so to solve the problem of customer QA  
assign it to the team which includes developer and tester that team is called Hot Fix Team

### \* Priority of Severity :-

#### 1) Priority :-

- The defect with respect to the customer requirement i.e. nothing but priority
- How soon that defect should be fixed

→

- Priority is divided into 3 categories
- 1) High
- 2) Medium
- 3) Low

#### 2) Severity :-

- Seriousness of the defect with respect to the functionality
- Severity means how sever it is affecting the functionality
- Severity is divided into
  - 1) Critical
  - 2) Major
  - 3) Minor

#### 1) Critical -

- we are not able to proceed further
- Ex. Application crash

#### 2) Major -

- major functionality is not working but we are able to test application
- ex - sign up button not working

#### 3) Minor -

- Bug in functionality in sub-module
- Ex - colour of button, font of records

#### Ex :-

- ① Submit button do not work

→ High priority & High severity

- ② submit button work properly but colour is different

→ High priority

- ③ low severity - because it does not affect working.

### \* Defect Logging :-

Defect logging a process of finding defect in the application under test or product by taking or recording feedback from customer and new versions of product that fix the defect