* System & Functional Testing (Black Box Testing) :-

- In this firstly Build comes from DIT (Development integration Testing) Enviornment to the SIT (Software Integration Testing).
- So, whenever the Build comes on SIT, we need to do the Sanity testing for (to check) the stability of build.
- After sanity testing this system Integration test is happen so that we also called it as "system and functional Testing".
- SIT is the Enviornment where we checking the correctness & Completeness of functionality of the system as per SRS document or we can say that user Requirements.
- This system and functional testing done by the Black Box Tester, so we called as "Black Box Testing" also.
- system and functional Testing includes such types of testings:

1) Functional Testing
2) Usability Testing
3) Security Testing
4) performance Testing

- So these types of testing have been done in BBT and Testers are involved in this Testing.

1) Functional Testing :-

- Functional Testing is the process of checking correctness & completeness of the functionality of the build.
- In this functional Testing testers are going to check Internal functionality depend upon external functionalitys.
- How exactly application will behave with user is tested in this Testing (i.e functional testing)
- In this functional testing there are different coverages :-
  1) Behavioural coverage
  2) Input Domain Coverage
  3) Error Handling coverage
  4) Back-end coverage
  5) Service level Coverage
  6) Calculation base coverage
- functional testing consist of two parts :- 1) Functional Testing 2) Non-Functional Testing

1) Behavioural coverage :-

- In this Behavioural coverage of functional testing we check the properties and Behaviour of the object.
- for example :-
  1) suppose if there is "Text Box" so will check the property of text box is accept user input or Not. and in behaviour will check it will focus while curson on the text box so it will focus or Not.
  2) If there is Notification box of Terms and condition in this will check the property that it will do tick when user click and in Behaviour will check that it will check / uncheck.

2) Input Domain coverage :-

- In Input domain coverage we are going to check type and size of Input.
- Type means Datatype of Input and size means if there is Mobile so size is '10'.

- for calculating Input domain coverage we have two methods:-
1) Ecp (Equivalence Class partitioning)
2) BVA (Boundry Value Analysis)

1) Ecp (Equivalence class partitioning) :-

- Ecp is a technique which is used to reduce (Huge data) i.e test data into managable part.
- It maintain datatype of object.
- **How will do Ecp:-**
  1) first Identify Input data pattern
  2) Group Input data as per escpected behaviour is equivalent
  3) Each one is Equivalence class
- **Example:-** If there is sale on cloths in 'Brandfactory' and they offer Discount on order amount greater than 15000/-
- So Here, there are two equivalence classes
  a) 1 to 15000/-
  b) above 15000/-

2) BVA (Boundry Value Analysis)

- In Boundry Value Analysis Application changes it's Behaviour at boundry so it is neccessary to consider that condition also so we need to use BVA method.
- It checks the size of object
- **How will check BVA:-**
  1) Firstly find out the main value.
  2) will check condition at a) At Boundry
     b) Boundry + 1
     c) Boundry - 1

- **Example:-** If we consider same example as Ecp so we have 2 Ecp classes we need to check a) at 15000/- (i.e at boundry)
  b) 15000 + 1 (Boundry + 1)
  c) 15000 - 1 (Boundry - 1)

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3) Error-Handling Coverage :-

- In Error handling coverage we are going to check wether system shows correct error message or not so this kind of testing we are doing in Error Handling coverage.
- for example:-
  - If there is "pincode" text box on the Application form and that pincode accepts only 6-digit pincode.
  - And if user puts only 4-digit in this box and click on enter so, in that case system should Highlights text box with red colour with error msg "please enter 6-digit-No".
- So this kind of Validation we done during this coverage wether system shows error msg or not.

4) Back-end Coverage :-

- This Back-end coverage we are going to validate in functional Testing.
- for any software / system there should be a backend means there is Database.
- In this Back-end coverage will check wether the entered information from user get stored in database or Not.
- Also In this we can check wether data get fetch from database or Not.
- example:-

  If we are filling some Information through form of any application so that willbe stored in database through package so if we want to test / fetch the information from database so in that case we need to hit the querier for fetching information from database.
- so these are the types of testing will be done during this Backend coverage.

5) Service - Level Coverage :-

- As a product owner will prepare the sequence for the functions, Modules and users stories in the functional flow diagrame
- so as per the sequence of the functionalities of module get tested in service - Level coverage.
- In this coverage we are going to check working flow of system as per functional flow diagrame.
- for example:-

Suppose if there is flow of Application loging - for authenticate User.

go into the Application Icon → click on

↓

Asking for login - Credentials

↓

If Not login already → then ask for sign-up

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fill the sign-up form → submit

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and get log-in into application → as authenticate User

↓

do surfing into application → access content of App^n

↓

finally Logout

- so if this kind of flow will be generate for login so in service - level coverage will check that it will sequentially perform the flow or Not.
- which is already created by our product owner in the fundional flow diagrame.
- so this kind of service - level testing is done during the functional Testing.

Calculation - Base Coverage :-

- In this calculation base coverage we check about the arithmatic operations of the Application.
- Arithmatic operation means Addition, Substraction, Multiplication, Division those operations we checked in this coverage.
- for examples.
  - If there is Banking Application and if customer credit Some amount into the Account so it reflect with the "adding" amount with priviously available value.
  - and if debit so substracted value will get reflect in that account
  - so this kind of operation we are going to check in this calculation - base coverage.