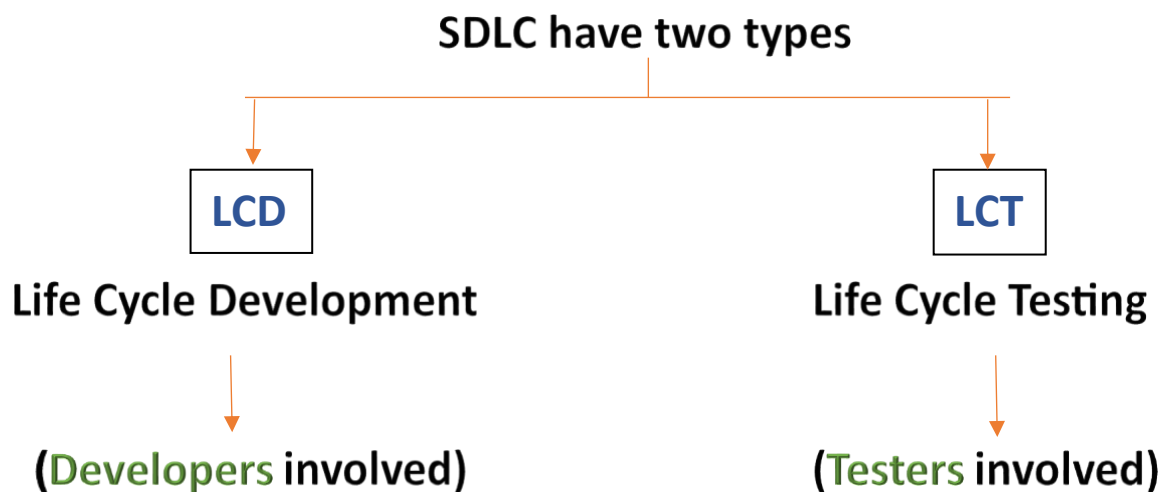


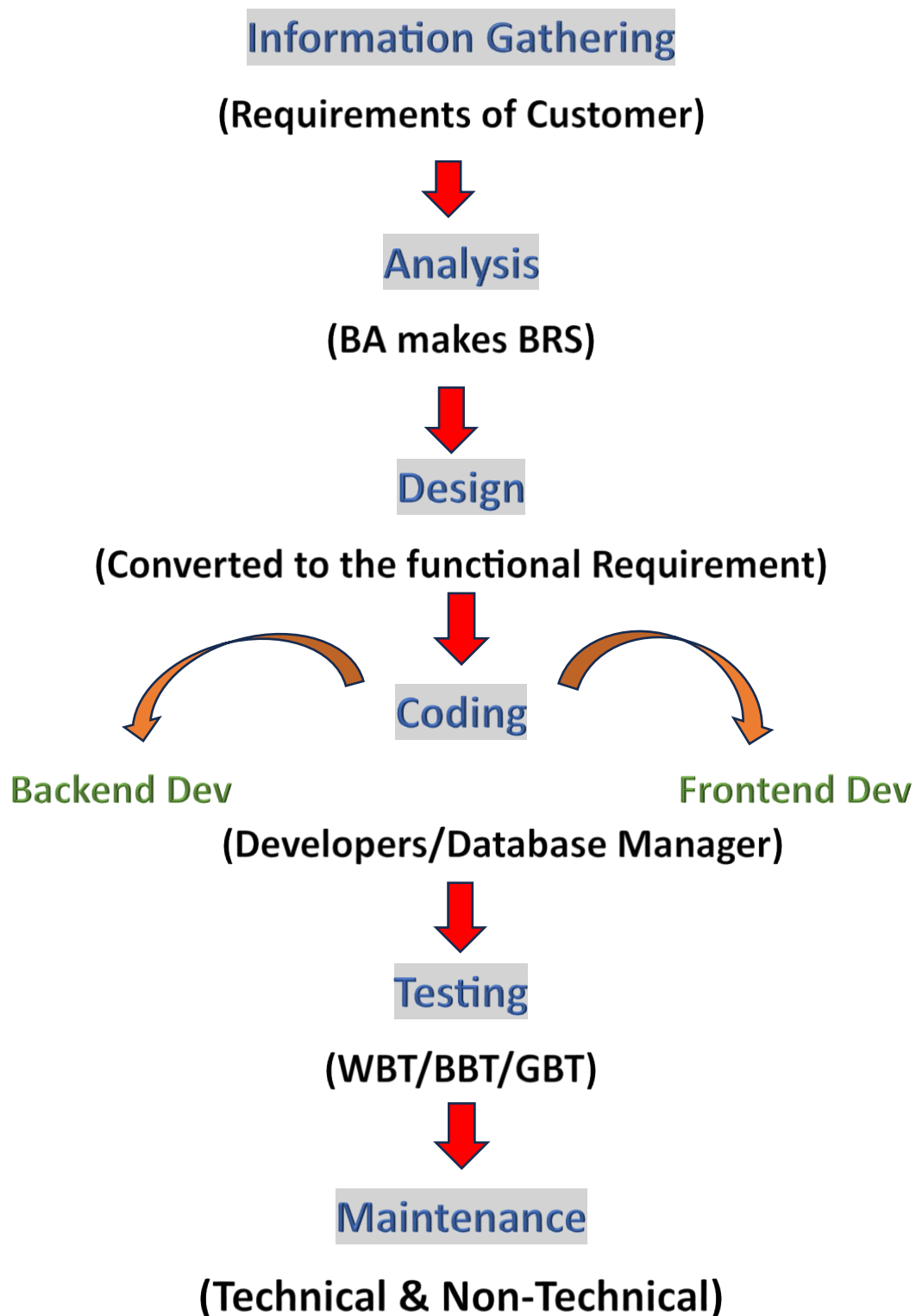
SDLC- SOFTWARE DEVELOPMENT LIFE CYCLE

- SDLC stands for **Software Development Life Cycle**.
- It is a series of steps that provides a well-defined model **to develop and manage the life cycle of low cost and high-quality software** in the **shortest possible time**.
- The objective of SDLC is to create quality software that **fulfils the customer demands** and **meets expectations**.



Harish Kumar

- ❖ SDLC process includes following 6 stages:



Information Gathering: -

- BA gathers information from client.
- Information gathering is nothing but gathering requirements from customer.
- Information gathering involves Business Required Specification (BRS).
- BRS is bridge between Client, BA and Developer.
- BA prepares BRS documents



Analysis: -

- BA involved in this process.
- SRS (Software Required Specification) is produced in Analysis process.
- SRS is detailed functional documentation.

BRS

1. Business Required specification
2. This is overall requirement gathering
3. Ex, sign up page, homepage Links, etc.

SRS

1. Software Requirement Specification
2. This is detailed documentation which shows minor units of s/w
3. Ex, sign up page should have name, number, email, password Field.

❖ SRS – Software Required Specification

SRS documentation consists of 4 stages as following:

Functional Flow Diagram

(Step By Step Flow)



Functional Requirement

(Customer's Requirement)



Use Cases

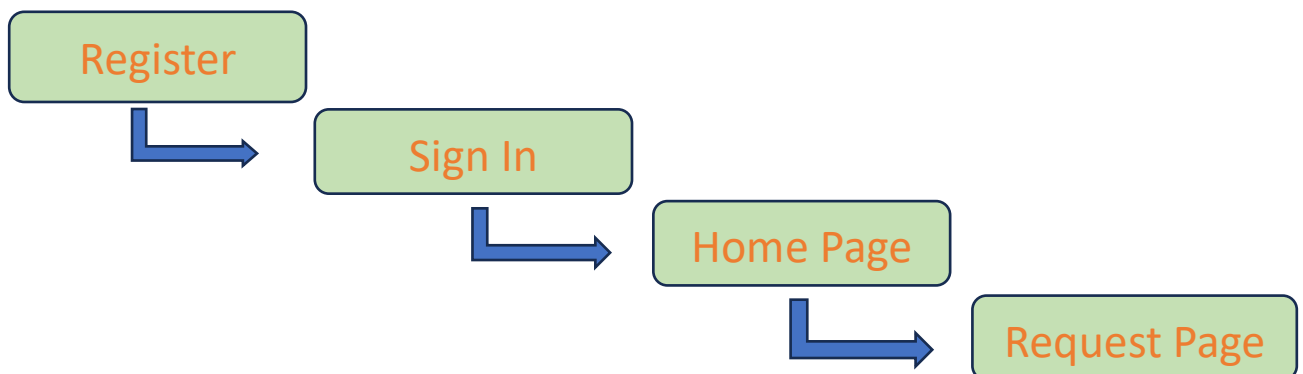
(Nothing but Functionality)



Snap Shots

(Format/Prototype)

A. Functional Flow Diagram



- Represents step by step stages of application
- Represents relation between the tasks.
- This gives proper sequence of tasks.
- Dependencies Between the tasks.
- Overall, this Functional Flow Diagram is actually a Stepwise Representation of Software.
- Example,- FACEBOOK.

B. Functional Requirement

FirstName	- Should accept character only, Length (special characters are not allowed)
LastName	- Should accept character only, Length (special characters are not allowed)
DOB	- DD-MM-YYYY format (only digits)
Phone No.	- Only digits allowed

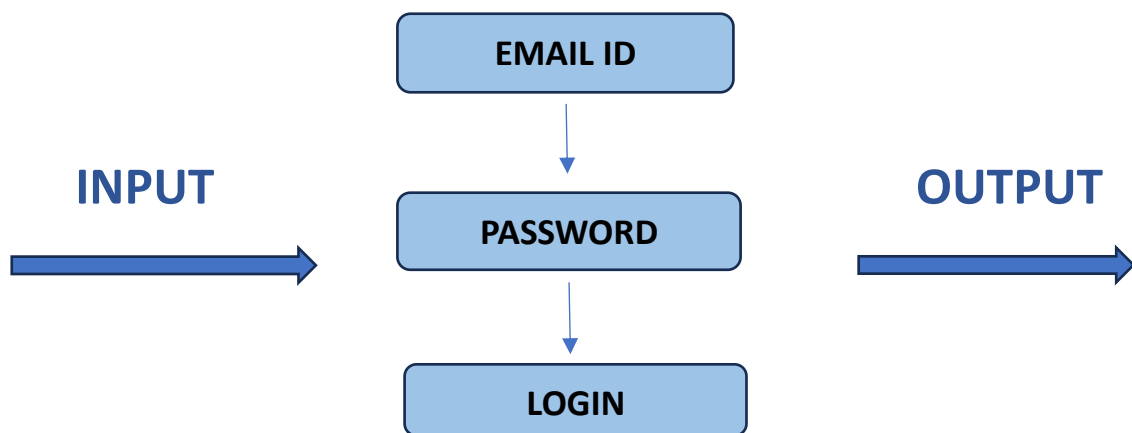
SUBMIT

- These are some functional requirement attributes.

- Functional requirement means attributes which are **required** to complete a specific function.

C. Use Cases

- Now we have a Login function:



- Use Cases – Test Scenarios – Test Cases – Testing – Enter System – Start To end
- Use Cases Testing is a Technique that helps to identify test cases that cover the entire system from start to finish.
- Use Cases is a combination of **Input + Process + Output**.
- Checking the functionality for available inputs, process and output.

D. Snap Shots

- Snapshot is Format/ Review / Prototype.
- Snapshots are **visualization of functionalities** before development.
- Snapshots are created by BA.

- Snapshot provides idea to a developer that how s/w is supposed to be look like.
- BA uses IRISE s/w for snapshot creation.

[**IMP:** - When coder is developing the code s/w tester do **Test Case** design and **Test Case Execution** design.]

Design: -

- **System Architecture** develops the design.
- It has two stages:
 - I. **HLD** – High Level Design
 - II. **LLD** – Low Level Design

High Level Design (HLD)

- 1) High Level Design contains working on **Main Module**.
- 2) Includes main module **relation and dependency**.
- 3) High Level Design is created by **Design Architecture**.
- 4) **External** Design.

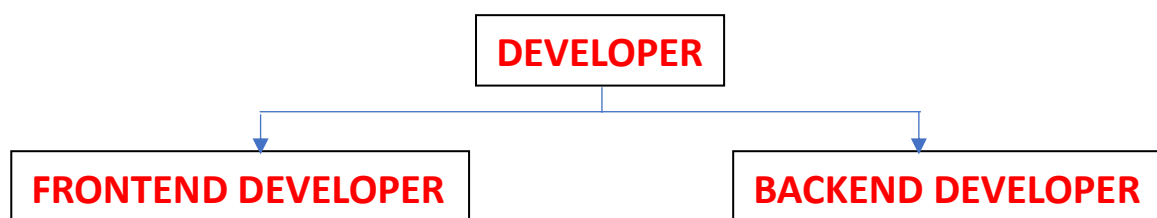
Low Level Design (LLD)

- 1) Low Level Design contains logic of every **Sub-Module**.
- 2) Its **Structural Design** for working on main module.
- 3) Low Level Design is created by **Frontend Developer**.
- 4) **Internal** Design.



Coding: -

- Coding is nothing but Programming.
- One line is code; multiples lines of code is a program.
- Set of programs is written by developer and creates software.
- This phase conducted by developer or programmer.
- They must follow predefined coding guidelines or discuss with management team.
- Used suitable programming languages like C, C++, Java, Python, PHP, etc.
- Used Suitable databases like SQL, ORACLE, etc.
- Programming tools used like Compiler, Interpreters, debuggers.
- There are two types of developers-



1. Focuses on layout, animation, content organization, navigation, graphics.
2. Programming Languages used: JavaScript, HTML, CSS.

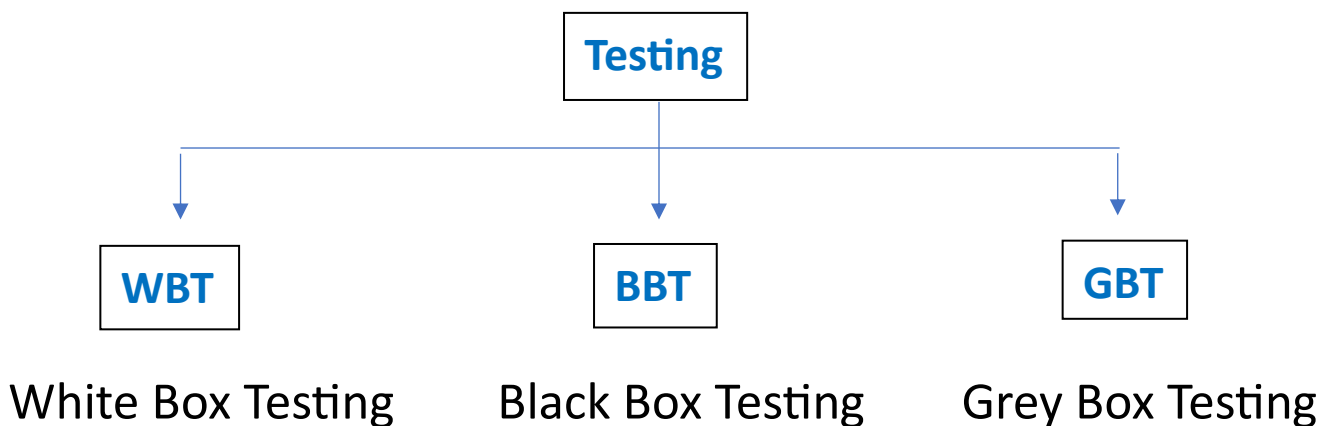
1. Focuses on building code, debugging, database management.
2. Programming Languages used: Java, Python, Node.JS

[**IMP**: - Developer who works on Frontend Development as well as Backend Development is called Full Stack Developer.]



Testing: -

- It is a process to check completeness and correctness of s/w or application with respect to the customers requirements in terms of functionalities.
- There are three types of testing-



❖ **WHITE BOX TESTING (WBT)**

- It is also called as:
 - ✓ Clear Box Testing
 - ✓ Glass Box Testing
 - ✓ Transparent Testing
 - ✓ Code Level Testing
 - ✓ Static Level Testing

✓ Unit Testing

- In WBT only Developers are involved.
- Developers perform code level testing, unit testing (Test their own code after development).
- Considered only positive scenarios/valid scenarios.
- Aware about internal structure of application.
- In white box testing whenever coder completes his code writing and before deploying, he checks if any bug is there, if found he has to solve it.
- Coder cannot send code to the tester without performing white box testing.
- Coder tests only positive scenarios.
- White box testing has purpose to test correctness and completeness of program.

❖ **BLACK BOX TESTING (BBT)**

- In BBT only testers are involved.
- Tester verify/validates internal functionality of application depends on external functionality (frontend).
- It's a build level testing technique
- It is also known as functional and system testing or dynamic testing.
- Tester validates end to end testing step by step.
- Overall functionality gets checked in this type.
- Not aware about internal structure of application.

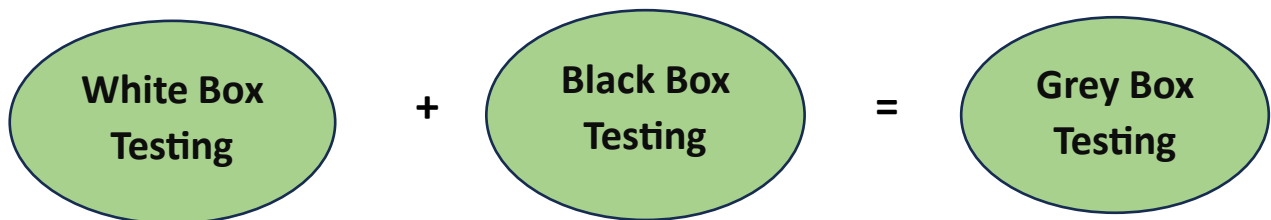
POSITIVE SCENARIO

If there is mobile number field, in India mobile numbers are of 10 digits, then tester checks field functionality by entering 10-digit numbers whether it works or not.

NEGATIVE SCENARIO

Lets take same example, the number field should not accept less than 10 or more than 10 digits, then tester checks system by entering less or more than 10 digits.

❖ GREY BOX TESTING (GBT)



- In GBT only testers are involved.
- Grey Box Testing is the combination of White Box Testing and Black Box Testing.
- In Grey Box Testing tester needs some programming language knowledge.
- In case of any defect occurs, tester makes some changes in code itself instead of assigning to the developer.



Maintenance: -

- Maintenance means provide service after delivery of product.
- Maintenance involves non-technical support as well as technical support.
- Non-technical support called as BPO.

BPO- Business Process Outsourcing

- Technical support called as KPO.

KPO- Knowledge Process Outsourcing

Harish Kumar