SOFTWARE TESTING

1) What is software?
2) What is Testing?

WHAT IS SOFTWARE?

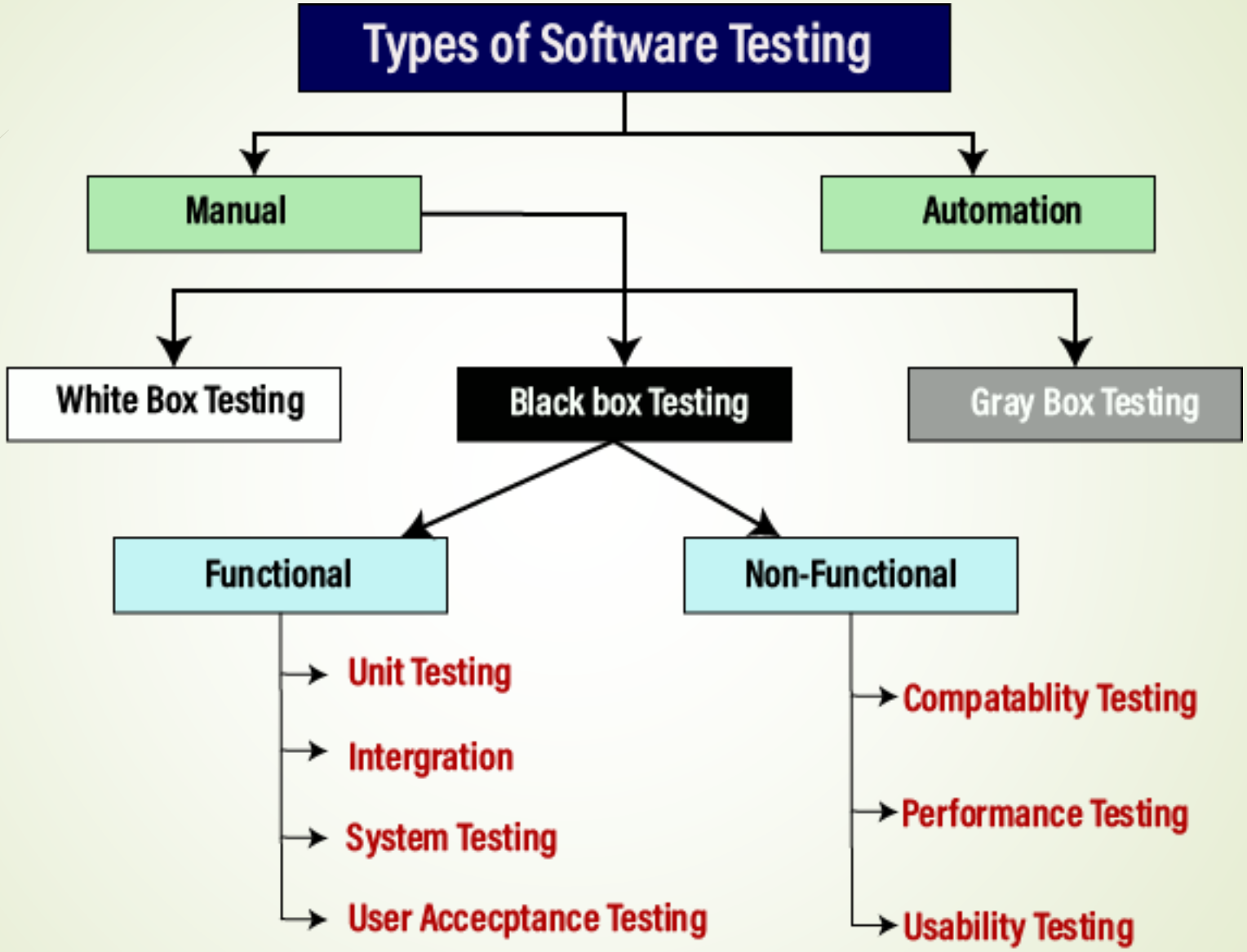
Software:- Every piece of codes, written in programming language and its convert into a executable file. finally end-users are using that file.

- Software's are available in two types,
  1) Installing Software's
     - Browser-Chrome, Firefox, etc..,
     - Media players- VLC,MX-Player, etc..,
     - System-Windows,Linus,Android, etc..,
  2) Web Application Software's
     - Facebook.com
     - Google.com
     - Gmail.com

WHAT IS TESTING?

- Testing to satisfying(or fulfil) the customer NEED or EXCEPTATIONS.
- How we are satisfy:

  Identify whether it is bug free or not, for find the error with multiple phases of testing.
- Testing to validating, we are make a Quality product or not,
  - With right FORM
  - With right CONFIGURATION
  - With right TIME
  - With right PRICE.


Types of Software Testing
Manual
Automation
White Box Testing
Black box Testing
Gray Box Testing
Functional
Non-Functional
Unit Testing
Intergration
System Testing
User Accecptance Testing
Compatablity Testing
Performance Testing
Usability Testing

AUTOMATION TESTING

Automation Testing is a software testing technique that performs using special automated testing software tools to execute a test case suite.

Lot of Automating tools are available in markets,

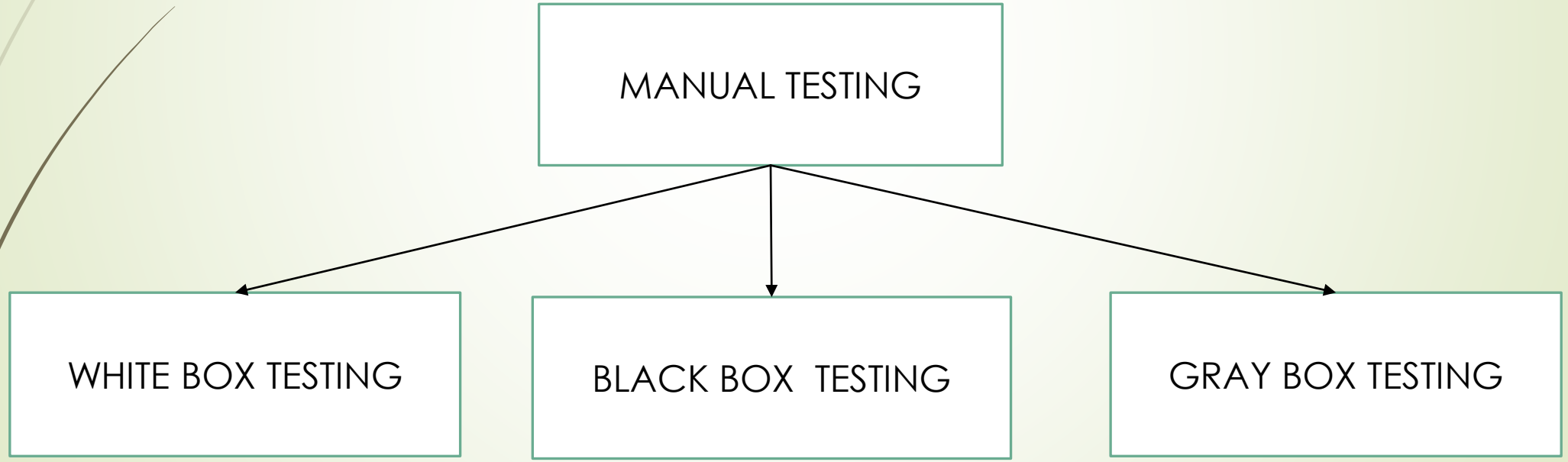
Example:

Selenium – open source

QTP – Licenced source

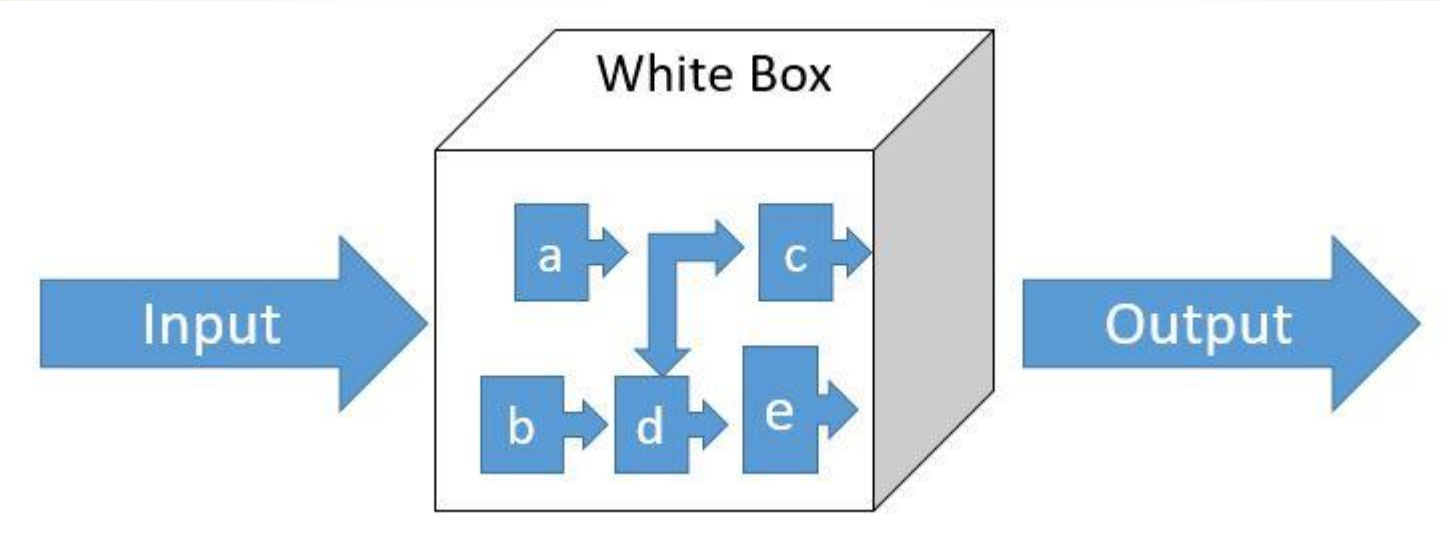
MANUAL TESTING

Manual testing is a software testing process in which test cases are executed manually without using any automated tool.



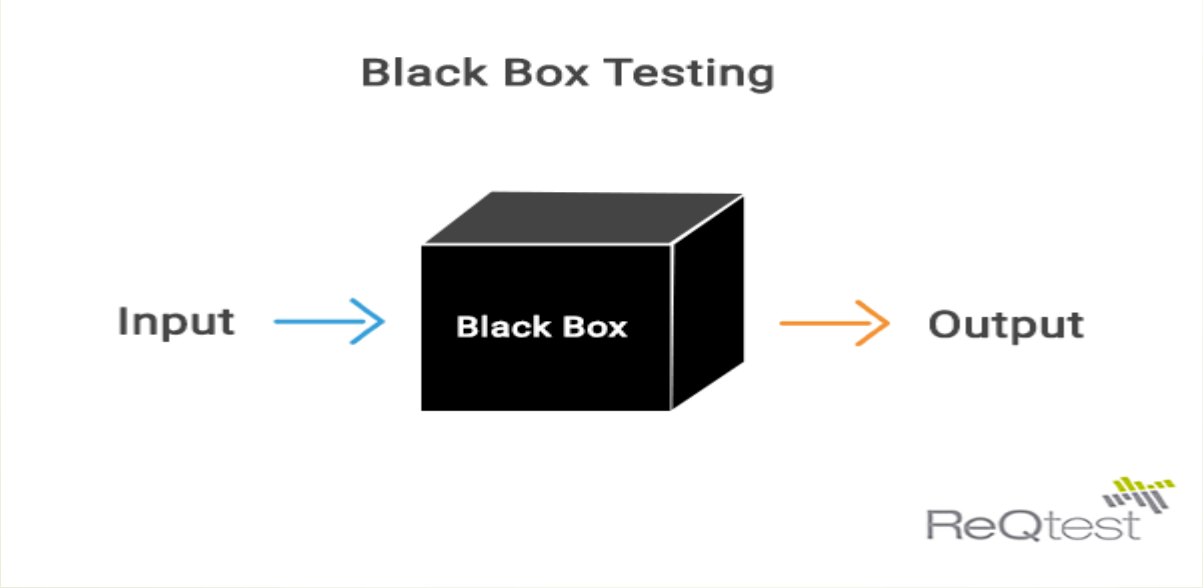
WHITE BOX TESTING

White box testing is **used to examine the internal structure, design, coding and inner-working of software**. Developers use this testing method to verify the flow of inputs and outputs through the application, improving usability and design and strengthening security.



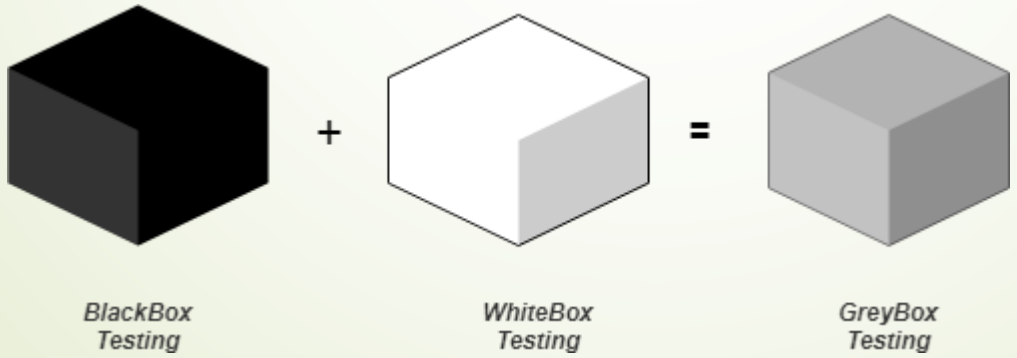
BLACK BOX TESTING

Black-box testing is a method of software testing **that examines the functionality of an application without peering** into its internal structures or workings.

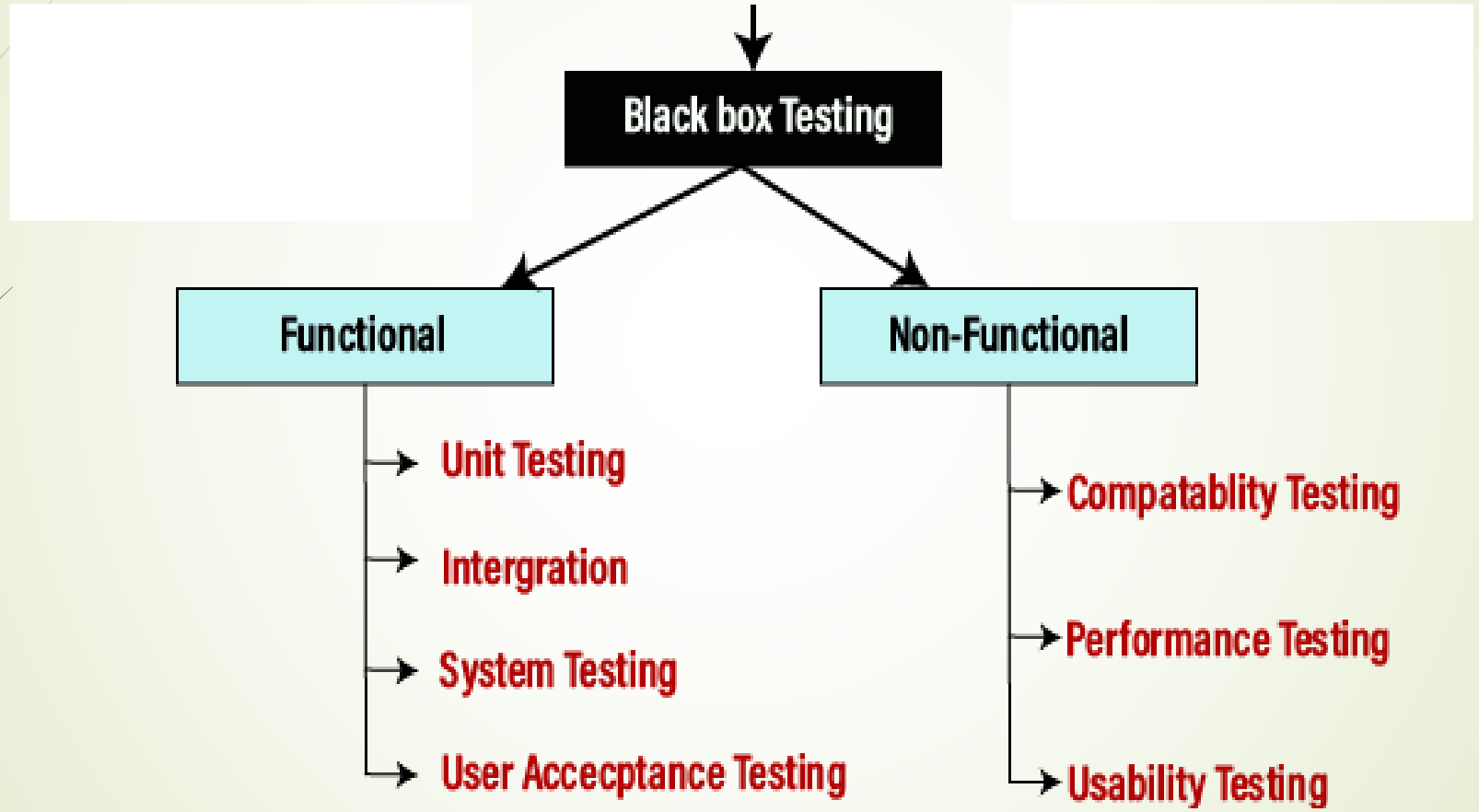


GRAY BOX TESTING

- Gray Box Testing is a software testing method, which is a combination of both White Box Testing and Black Box Testing method.
- In White Box testing internal structure (code) is known
- In Black Box testing internal structure (code) is unknown
- In Grey Box Testing internal structure (code) is partially known



TYPES OF BLACK BOX TESTING

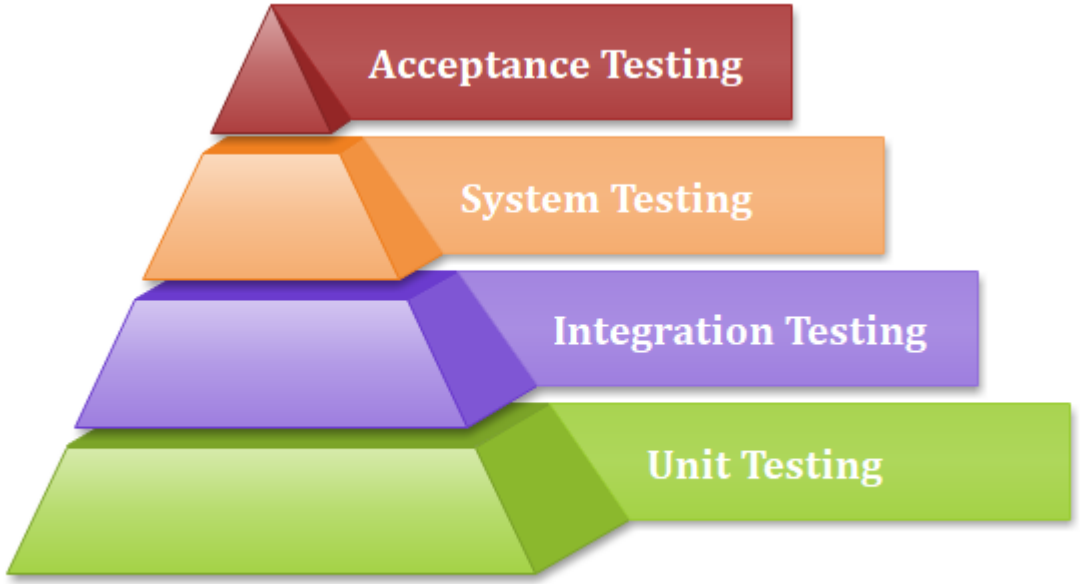


FUNCTIONAL TESTING

To test the actual behaviour(functionality) of the software.

LEVEL OF FUNCTIONAL TESTING:

- ✓ Unit Testing
- ✓ Integration Testing
- ✓ System Testing
- ✓ User Acceptance



UNIT TESTING

Unit testing is the first level of functional testing in order to test any software. In this, the test engineer will test the module of an application independently or test all the module functionality is called **unit testing**.

INTEGRATION TESTING

Once we are successfully implementing the unit testing, we will go integration testing. It is the second level of functional testing. To integrate all the modules and to verify Top-end to Bottom-end.

TWO WAYS OF INTEGRATION TESTING:

1) Top-down Incremental Integration Testing

- In this approach, we will add the modules step by step or incrementally and test the data flow between them. We have to ensure that the modules we are adding are the **child of the earlier ones**.

2) Bottom-up Incremental Integration Testing

- In the bottom-up approach, we will add the modules incrementally and check the data flow between modules. And also, ensure that the module we are adding is the **parent of the earlier ones**.

SYSTEM TESTING

System Testing is a level of testing that validates the complete and fully integrated software product. The purpose of a system test is to evaluate the end-to-end system specifications.

To verify any uncovered requirement errors.

Verify that all system elements are work properly and that overall system functions and performance has been achieved.

USER ACCEPTANCE TESTING

User Acceptance Testing (UAT) is a type of testing performed by the end user or the client to verify/accept the software system before moving the software application to the production environment. UAT is done in the final phase of testing after functional, integration and system testing is done.

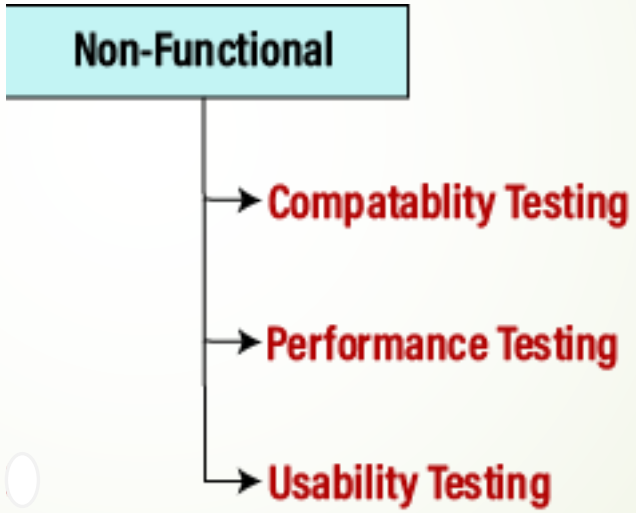
NON-FUNCTIONAL TESTING

It to be test the actual functionality and as well as to validating the performance, with under some possibilities of conditions.

Why Non-Functional Testing:

- Functional and Non-functional testing both are mandatory for newly developed software.
- Functional testing **checks the correctness of internal functions** while Non-Functional testing **checks the ability to work in an external environment**.

LEVEL OF NON-FUNCTIONAL TESTING

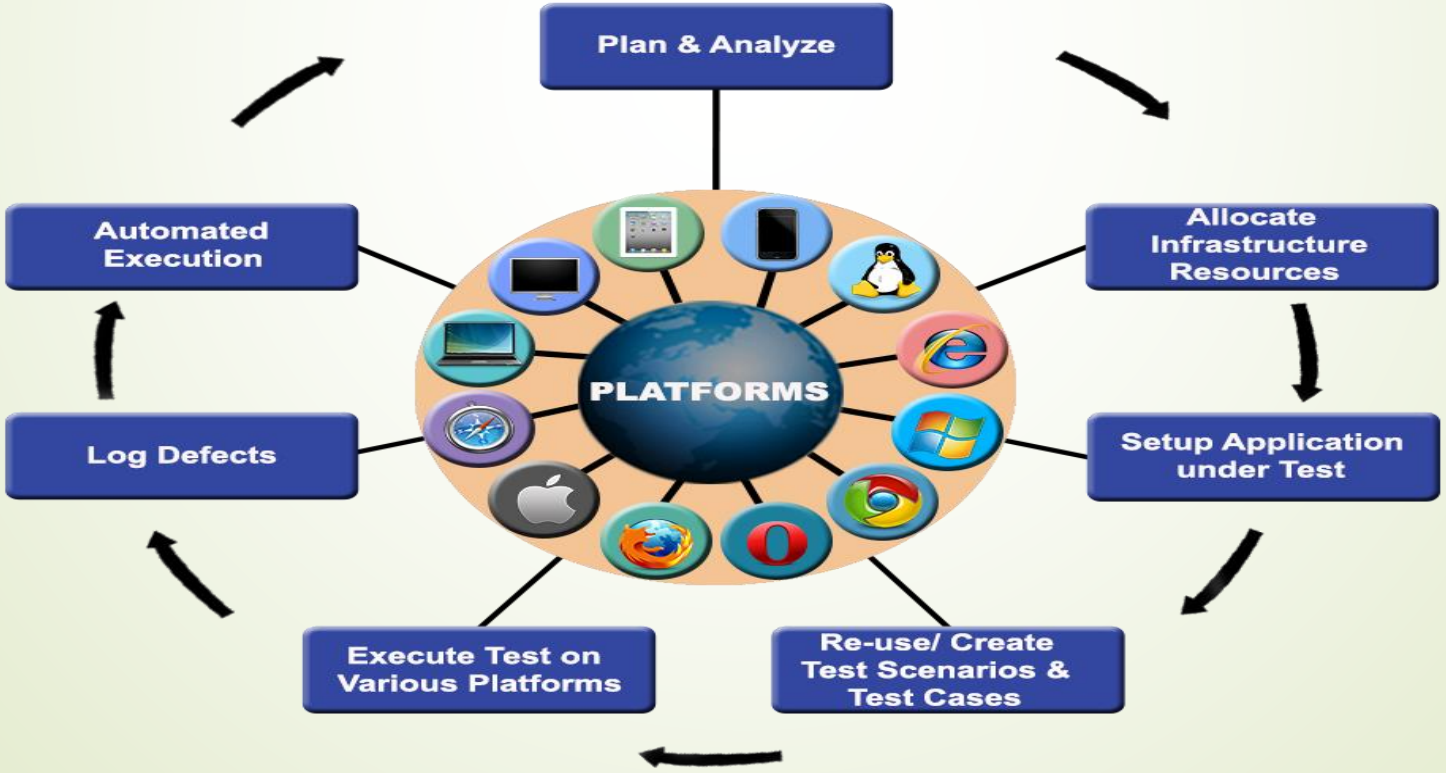


PERFORMANCE TESTING

Performance Testing is a software testing process used for testing the speed, response time, stability and scalability of a software application under particular workload. The main purpose of performance testing is to identify and eliminate the performance bottlenecks in the software application.

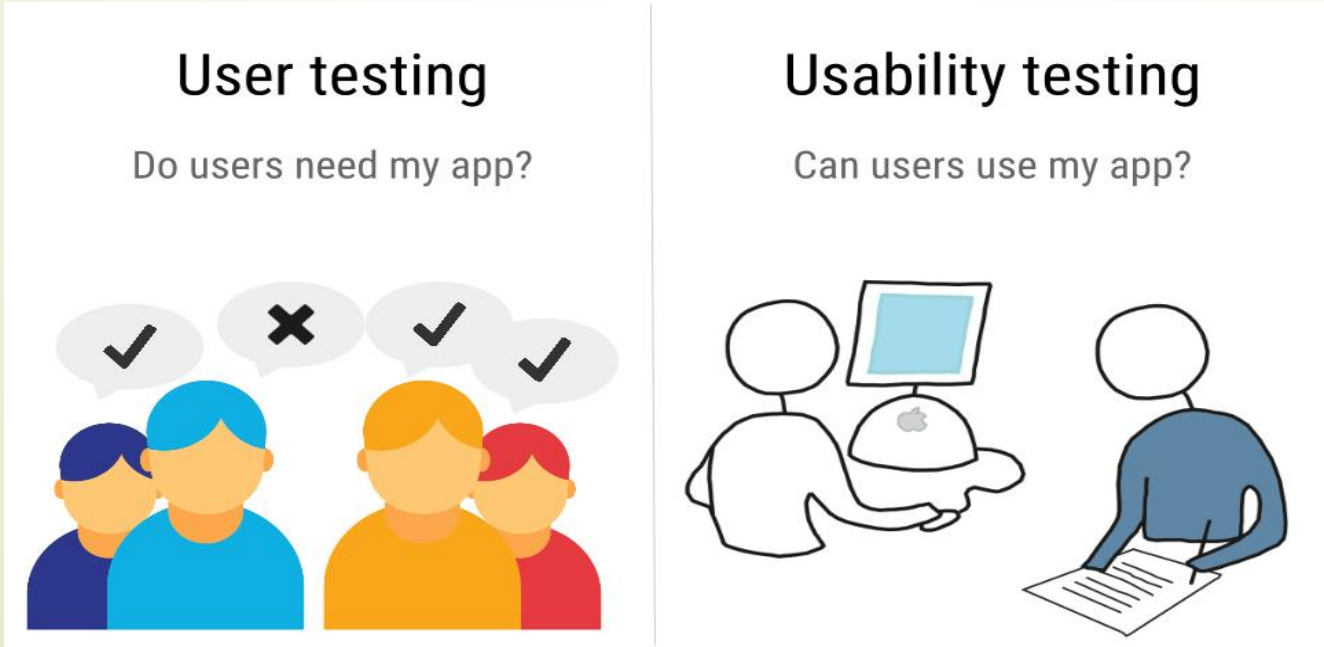
COMPATIBILITY TESTING

Compatibility Testing is a type of Software testing to check whether your software is capable of running on different hardware, operating systems, applications, network environments or Mobile devices.



USABILITY TESTING

Usability Testing also known as User Experience(UX) Testing, is a testing method for measuring how easy and **user-friendly a** software application is. Usability testing mainly focuses on user's ease of using application, flexibility of application to handle controls and ability of application to meet its objectives.



OTHER TESTING METHODS

- Smoke Testing
- Sanity Testing
- Regression Testing
- Adhoc Testing

SMOKE TESTING

Smoke testing is performed on the new build given by developers to QA team to verify if **the critical functionalities are stable or not**. This should be the first test to be done on any new build and Tester to decide the further proceeding or not.

SANITY TESTING

Sanity testing is **a subset of regression testing**. After receiving the software build, sanity testing is performed to ensure that the code changes introduced are working as expected

REGRESSION TESTING

Regression Testing is defined as a type of software testing to confirm that a recent program or code change has not adversely affected existing features. Regression Testing is nothing but a full or partial selection of already executed test cases which are re-executed to ensure existing functionalities work fine.

ADHOC TESTING

Ad hoc Testing is an informal or unstructured software testing type that aims to break the testing process in order to find possible defects or errors at an early possible stage. Ad hoc testing is done randomly and it is usually an unplanned activity which does not follow any documentation and test design techniques to create test cases.

THANK YOU

by,

RAJESH KANNAN . R