SOFTWARE
TESTING

Types of Software Testing

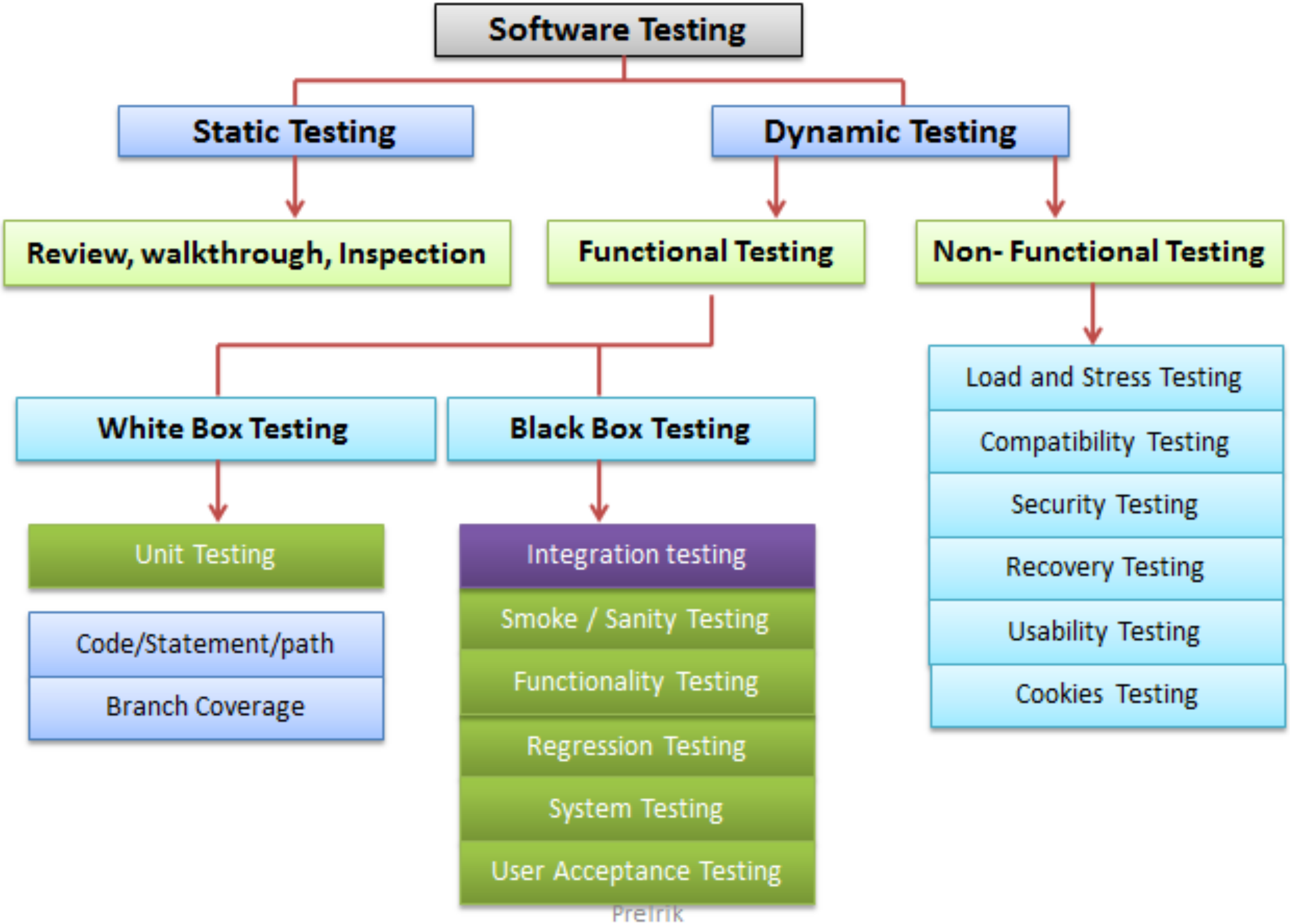
1. Functional Testing
2. Non-Functional Testing
3. Unit Testing
4. System Testing
5. Integration Testing
6. End to End Testing
7. Acceptance Testing
8. Smoke Testing

And more…
And mo…

9. Security Testing
10. Sanity Testing
11. Performance Testing
12. Regression Testing
13. Alpha Testing
14. Beta Testing
15. Black Box Testing
16. White Box Testing

And more…
And mo…

Types of Software Testing:



Software Testing

Static Testing

Dynamic Testing

Review, walkthrough, Inspection

Functional Testing

Non- Functional Testing

White Box Testing

Black Box Testing

Unit Testing

Code/Statement/path

Branch Coverage

Integration testing

Smoke / Sanity Testing

Functionality Testing

Regression Testing

System Testing

User Acceptance Testing

Load and Stress Testing

Compatibility Testing

Security Testing

Recovery Testing

Usability Testing

Cookies Testing

Static Testing:

It is also known as Verification in Software Testing. It is a method of checking documents and files. Verification is the process, to ensure that whether we are building the product right i.e., to verify the requirements which we have and to verify whether we are developing the product accordingly or not.

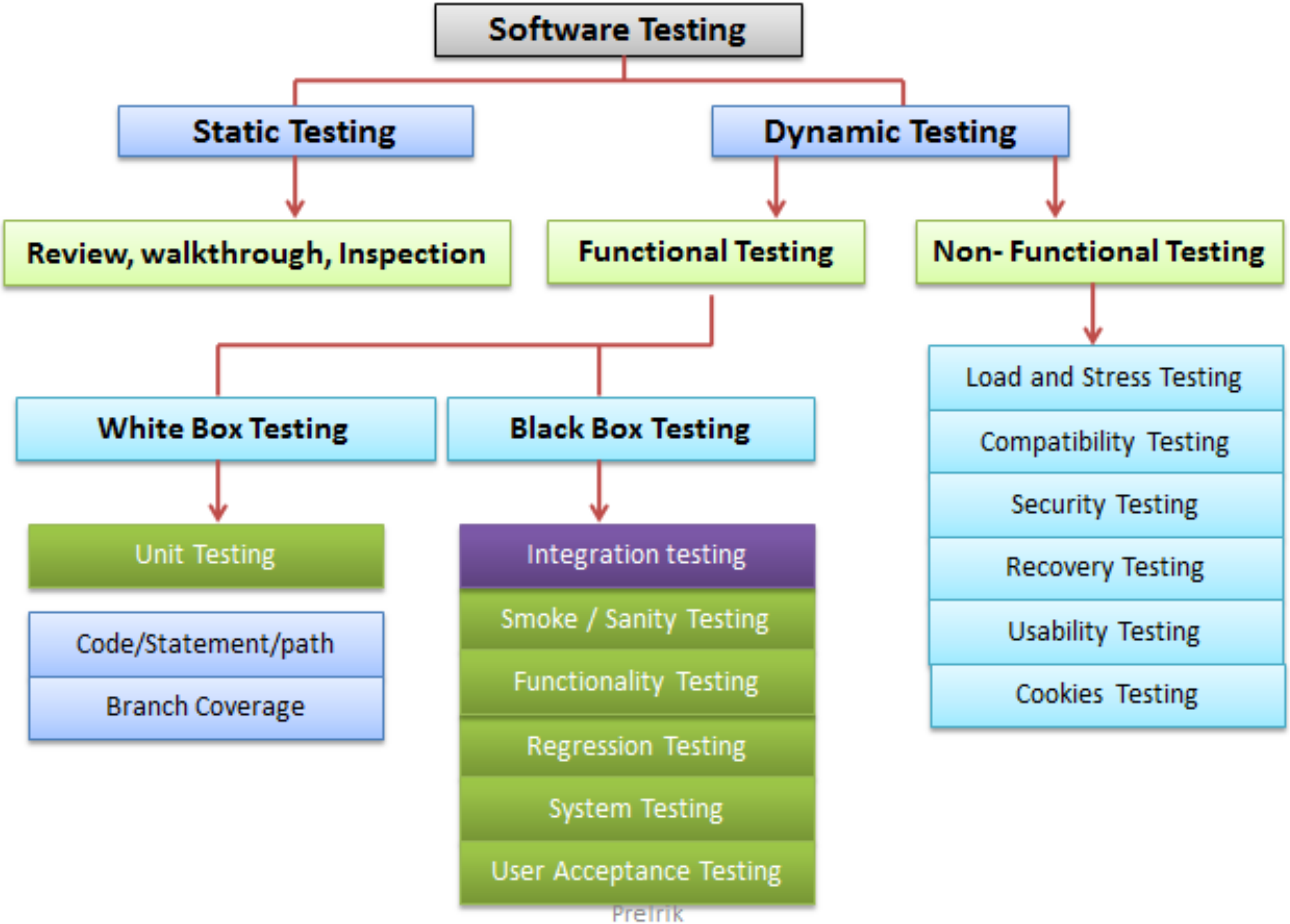
Activities involved here are Reviews and Walkthroughs.

Dynamic Testing:

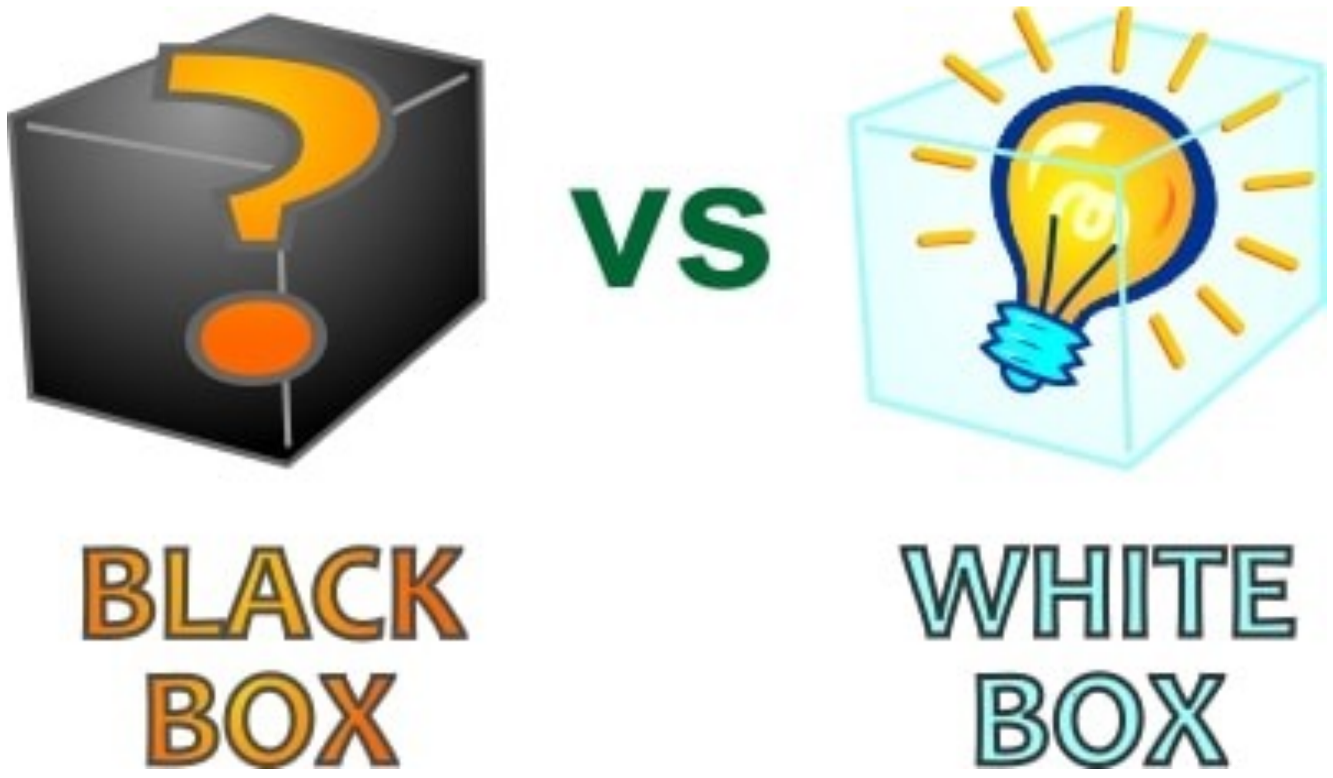
It is also known as Validation in Software Testing. Validation is a dynamic process of testing the real product. Validation is the process, whether we are building the right product i.e., to validate the product which we have developed is right or not.

Activities involved in this is Testing the software application

Types of Software Testing:



- Software Testing
  - Static Testing
    - Review, walkthrough, Inspection
  - Dynamic Testing
    - Functional Testing
      - White Box Testing
        - Unit Testing
        - Code/Statement/path
        - Branch Coverage
      - Black Box Testing
        - Integration testing
        - Smoke / Sanity Testing
        - Functionality Testing
        - Regression Testing
        - System Testing
        - User Acceptance Testing
    - Non- Functional Testing
      - Load and Stress Testing
      - Compatibility Testing
      - Security Testing
      - Recovery Testing
      - Usability Testing
      - Cookies Testing



Black Box Testing:

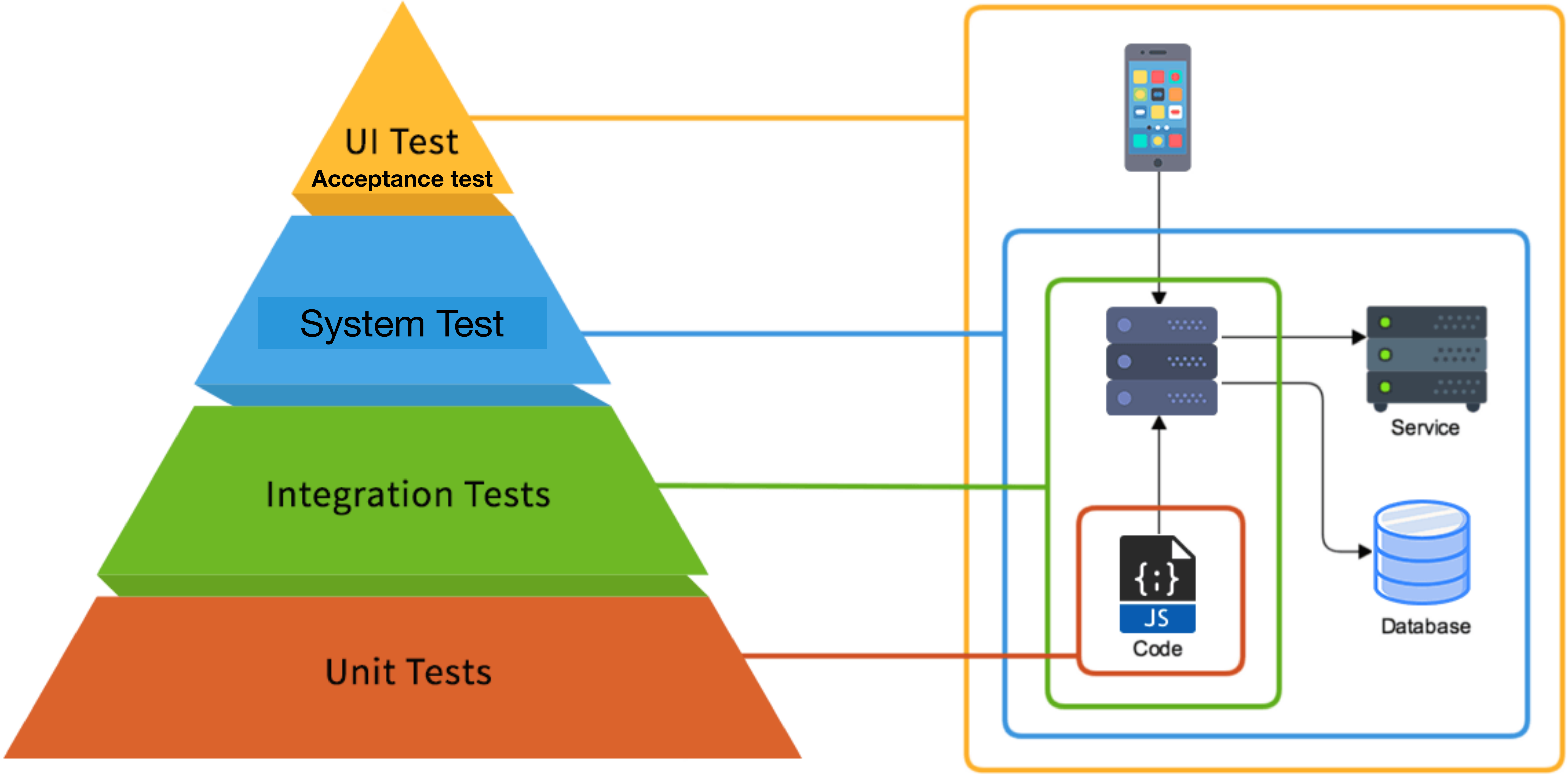
It is also called as Behavioral/Input-Output Testing. Black Box Testing is a software testing method in which testers evaluate the functionality of the software under test without looking at the internal code structure.

White Box Testing:

It is also called as Glass Box, Clear Box, Structural Testing. White Box Testing is based on applications internal code structure. In white-box testing, an internal perspective of the system, as well as programming skills, are used to design test cases. This testing is usually done at the unit level.

Grey Box Testing: Grey box is the combination of both White Box and Black Box Testing.

Levels of testing



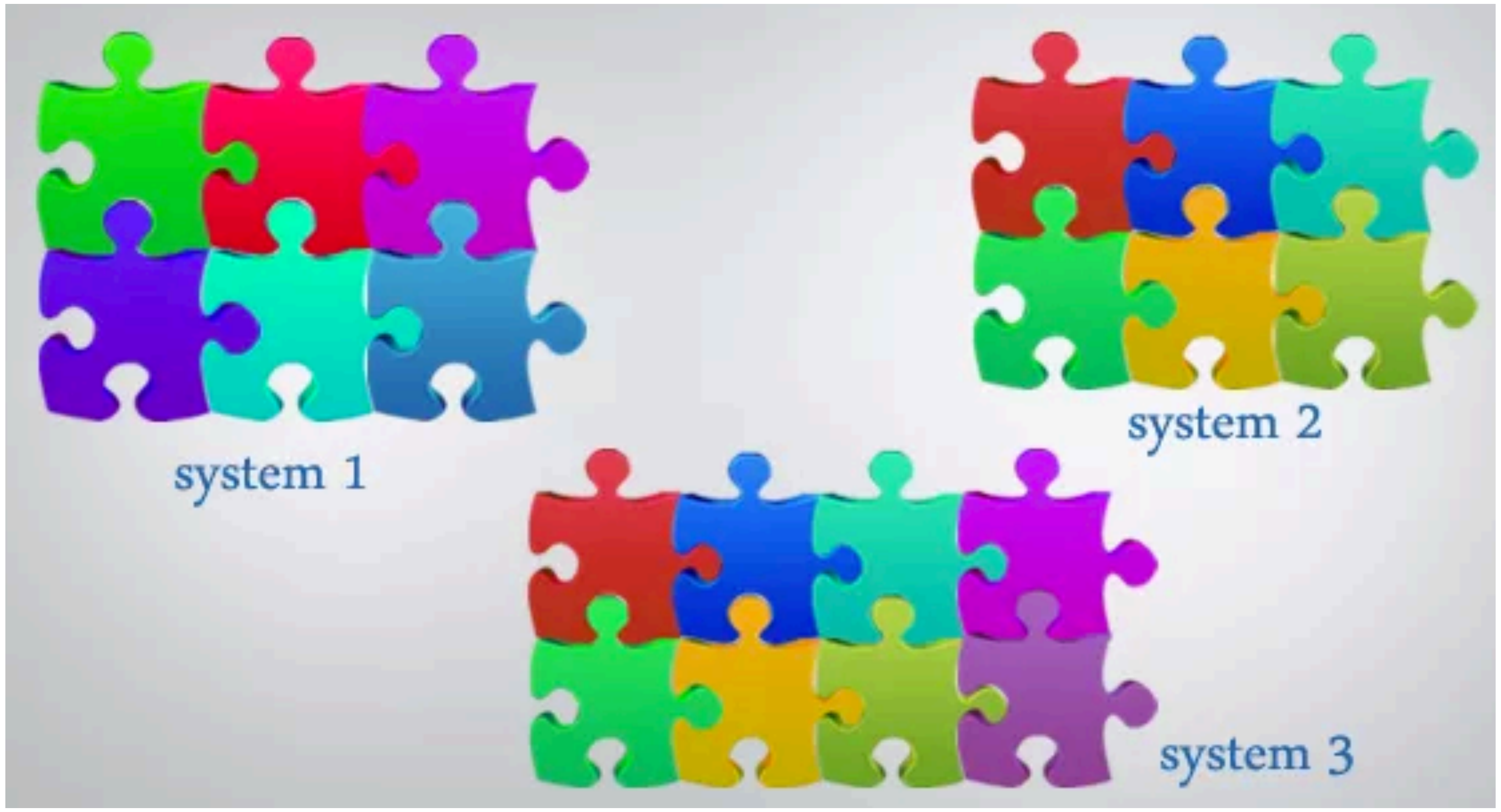
Unit Testing

Unit Testing is done to check whether the individual modules of the source code are working properly. i.e. testing each and every unit of the application separately by the developer in the developer's environment. It is AKA Module Testing or Component Testing

Integration testing

Level of software testing where individual units are combined and tested as a group. The purpose of this level of testing is to expose faults in the interaction between integrated units.

System testing (End-to-end testing)



System Testing is the testing of a complete and fully integrated software product.

Usually software is only one element of a larger computer based system. Ultimately, software is interfaced with other software/hardware systems.

System Testing is actually a series of different tests whose sole purpose is to exercise the full computer based system.

User Acceptance Testing

Formal testing with respect to user needs, requirements, and business processes conducted to determine whether or not a system satisfies the acceptance criteria and to enable the user, customers or other authorized entity to determine whether or not to accept the system

Smoke testing

The initial testing process exercised to check if the software under test is ready/stable for further testing.

Makes sure that application is stable and ensures that no major issue exists.

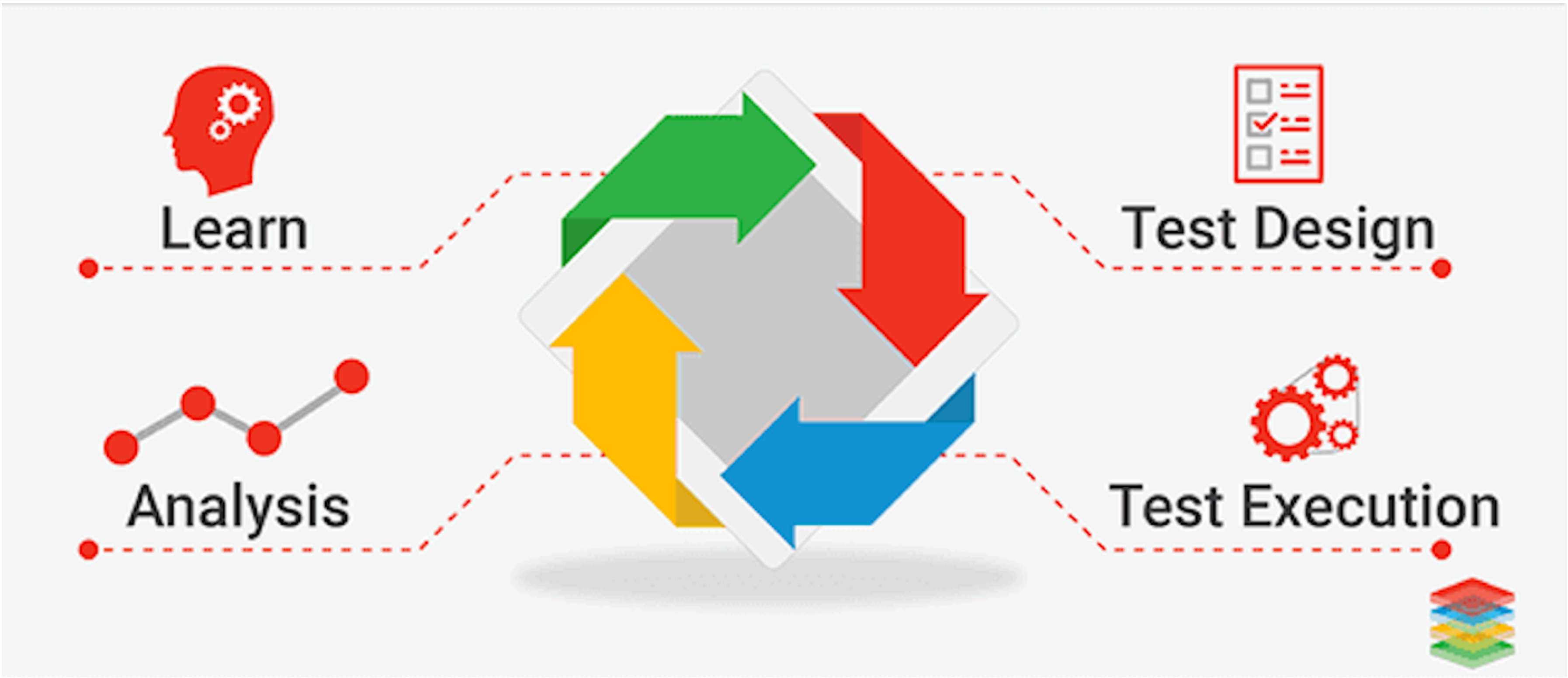
Regression testing

Repeated testing of an already tested program, after modification, to discover any defects introduced or uncovered as a result of the changes in the software.

In simple words, We do regression testing by re-executing the tests against the modified application to evaluate whether the modified code breaks anything which was working earlier.

Exploratory testing

Process of exploring the application and understanding the functionalities, adding or modifying existing test cases for better testing or looking for any issues.

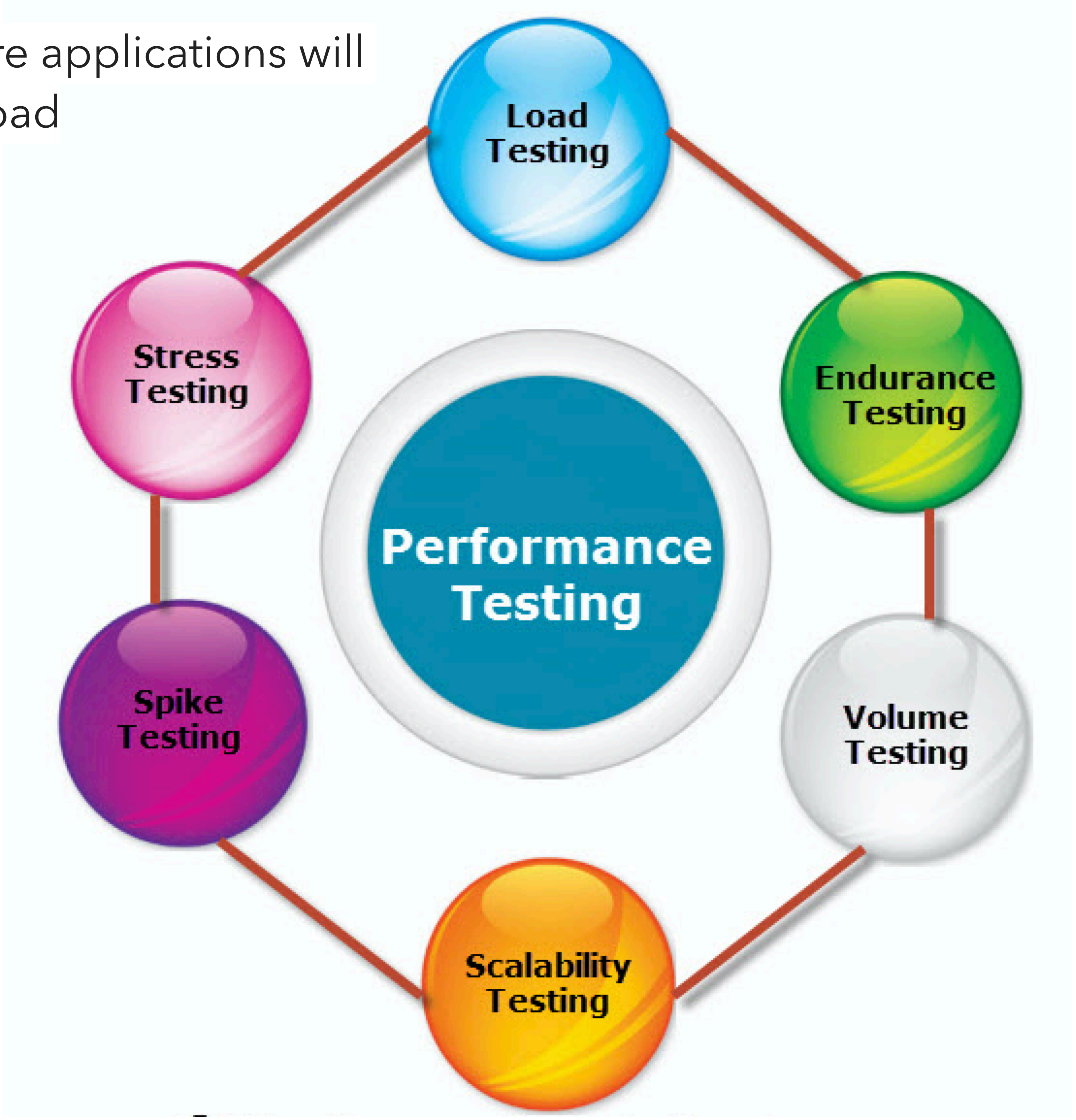


Performance testing

Type of software testing to ensure software applications will perform well under their expected workload

The focus of Performance Testing is checking a software program's

- **Speed** - Determines whether the application responds quickly
- **Scalability** - Determines maximum user load the software application can handle.
- **Stability** - Determines if the application is stable under varying loads



Types of Performance Testing

- **Load testing -** checks the application's ability to perform under anticipated user loads. The objective is to identify performance bottlenecks before the software application goes live. (Huge amount of users)
- **Stress testing -** involves testing an application under extreme workloads to see how it handles high traffic or data processing. The objective is to identify the breaking point of an application. (Too many users, too much data, towards system crash.)
- **Endurance testing -** is done to make sure the software can handle the expected load over a long period of time.
- **Spike testing -** tests the software's reaction to sudden large spikes in the load generated by users.
- **Volume testing** - Under Volume Testing large number of data is populated in a database and the overall software system's behavior is monitored. The objective is to check software application's performance under varying database volumes. (Huge amount of data)
- **Scalability testing** - The objective of scalability testing is to determine the software application's effectiveness in "scaling up" to support an increase in user load. It helps plan capacity addition to your software system.