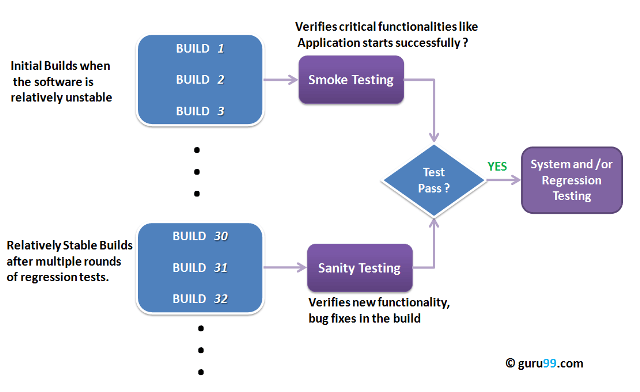
**Software testing interview questions**

1. Difference between Smoke and Sanity testing?

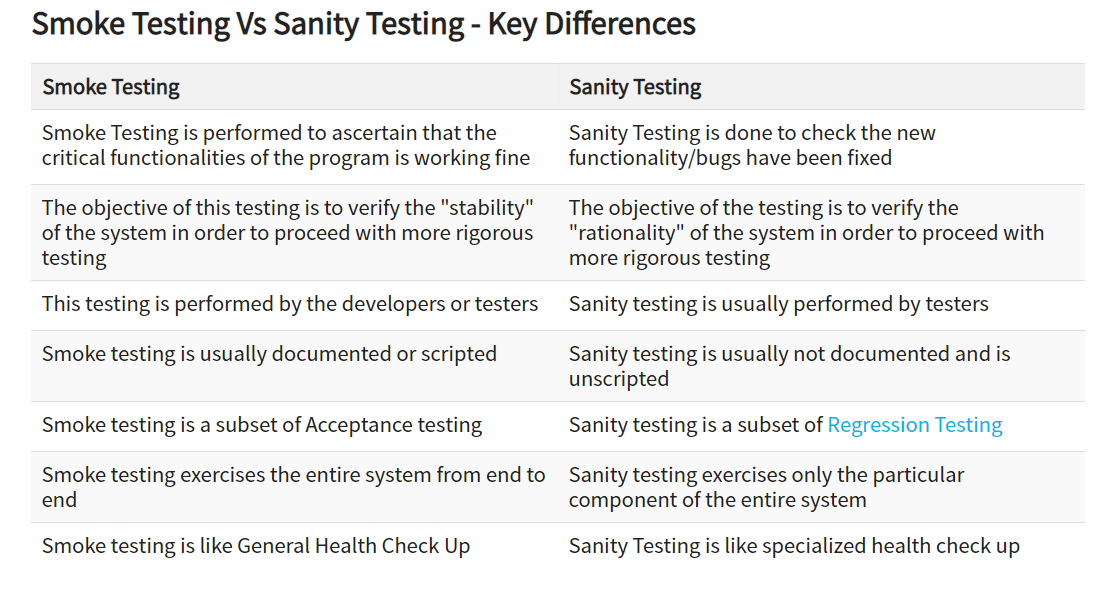
**Ans-** 

**What is Smoke Testing?** [Smoke Testing](https://www.guru99.com/smoke-testing.html) is a kind of Software Testing performed after software build to ascertain that the critical functionalities of the program are working fine. It is executed "before" any detailed functional or regression tests are executed on the software build. The purpose is to reject a badly broken application so that the QA team does not waste time installing and testing the software application.

In Smoke Testing, the test cases chose to cover the most important functionality or component of the system. The objective is not to perform exhaustive testing, but to verify that the critical functionalities of the system are working fine.  
For Example, a typical smoke test would be - Verify that the application launches successfully, Check that the GUI is responsive ... etc.

**What is Sanity Testing?** Sanity testing is a kind of Software Testing performed after receiving a software build, with minor changes in code, or functionality, to ascertain that the bugs have been fixed and no further issues are introduced due to these changes. The goal is to determine that the proposed functionality works roughly as expected. If sanity test fails, the build is rejected to save the time and costs involved in a more rigorous testing.

The objective is "not" to verify thoroughly the new functionality but to determine that the developer has applied some rationality (sanity) while producing the software. For instance, if your scientific calculator gives the result of 2 + 2 =5! Then, there is no point testing the advanced functionalities like sin 30 + cos 50.



## Points to note.

* Both sanity tests and smoke tests are ways to avoid wasting time and effort by quickly determining whether an application is too flawed to merit any rigorous testing.
* Sanity Testing is also called tester acceptance testing.
* Smoke testing performed on a particular build is also known as a build verification test.
* One of the best industry practice is to conduct a Daily build and smoke test in software projects.
* Both smoke and sanity tests can be executed manually or using an automation tool.  When automated tools are used, the tests are often initiated by the same process that generates the build itself.
* As per the needs of testing, you may have to execute both Sanity and Smoke Tests in the software build. In such cases, you will first execute Smoke tests and then go ahead with Sanity Testing. In industry, test cases for Sanity Testing are commonly combined with that for smoke tests, to speed up test execution. Hence, it's a common that the terms are often confused and used interchangeably

2**) What is Regression Testing?**

Ans- 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. This testing is done to make sure that new code changes should not have side effects on the existing functionalities. It ensures that the old code still works once the new code changes are done.

## Need of Regression Testing

Regression Testing is required when there is a

* Change in requirements and code is modified according to the requirement
* New feature is added to the software
* Defect fixing
* Performance issue fix

## How to do Regression Testing

Software maintenance is an activity which includes enhancements, error corrections, optimization and deletion of existing features. These modifications may cause the system to work incorrectly. Therefore, Regression Testing becomes necessary. Regression Testing can be carried out using the following techniques:

[](https://www.guru99.com/images/regressiontestingtypes.png)

### Retest All

* This is one of the methods for Regression Testing in which all the tests in the existing test bucket or suite should be re-executed. This is very expensive as it requires huge time and resources.

### Regression Test Selection

* Instead of re-executing the entire test suite, it is better to select part of the test suite to be run
* Test cases selected can be categorized as 1) Reusable Test Cases 2) Obsolete Test Cases.
* Re-usable Test cases can be used in succeeding regression cycles.
* Obsolete Test Cases can't be used in succeeding cycles.

### Prioritization of Test Cases

* Prioritize the test cases depending on business impact, critical & frequently used functionalities. Selection of test cases based on priority will greatly reduce the regression test suite.

## Selecting test cases for regression testing

It was found from industry data that a good number of the defects reported by customers were due to last minute bug fixes creating side effects and hence selecting the[Test Case](https://www.guru99.com/test-case.html)for regression testing is an art and not that easy.  Effective Regression Tests can be done by selecting the following test cases -

* Test cases which have frequent defects
* Functionalities which are more visible to the users
* Test cases which verify core features of the product
* Test cases of Functionalities which has undergone more and recent changes
* All Integration Test Cases
* All Complex Test Cases
* Boundary value test cases
* A sample of Successful test cases
* A sample of Failure test cases

## Regression Testing Tools

If your software undergoes frequent changes, regression testing costs will escalate.

In such cases, Manual execution of test cases increases test execution time as well as costs.

Automation of regression test cases is the smart choice in such cases.

The extent of automation depends on the number of test cases that remain re-usable for successive regression cycles.