# SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

**An Autonomous Institution**

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

## COURSE NAME : 19CS511 SOFTWARE TESTING

III YEAR / V SEMESTER

Unit 3- LEVELS OF TESTING

Topic 4 : The Test Harness and Running the Unit tests and Recording results

# Test Harness - Problem

- Test harness could an asset to any organization but at the same time, it incurs a cost for writing automates test suites or test cases through skilled developers

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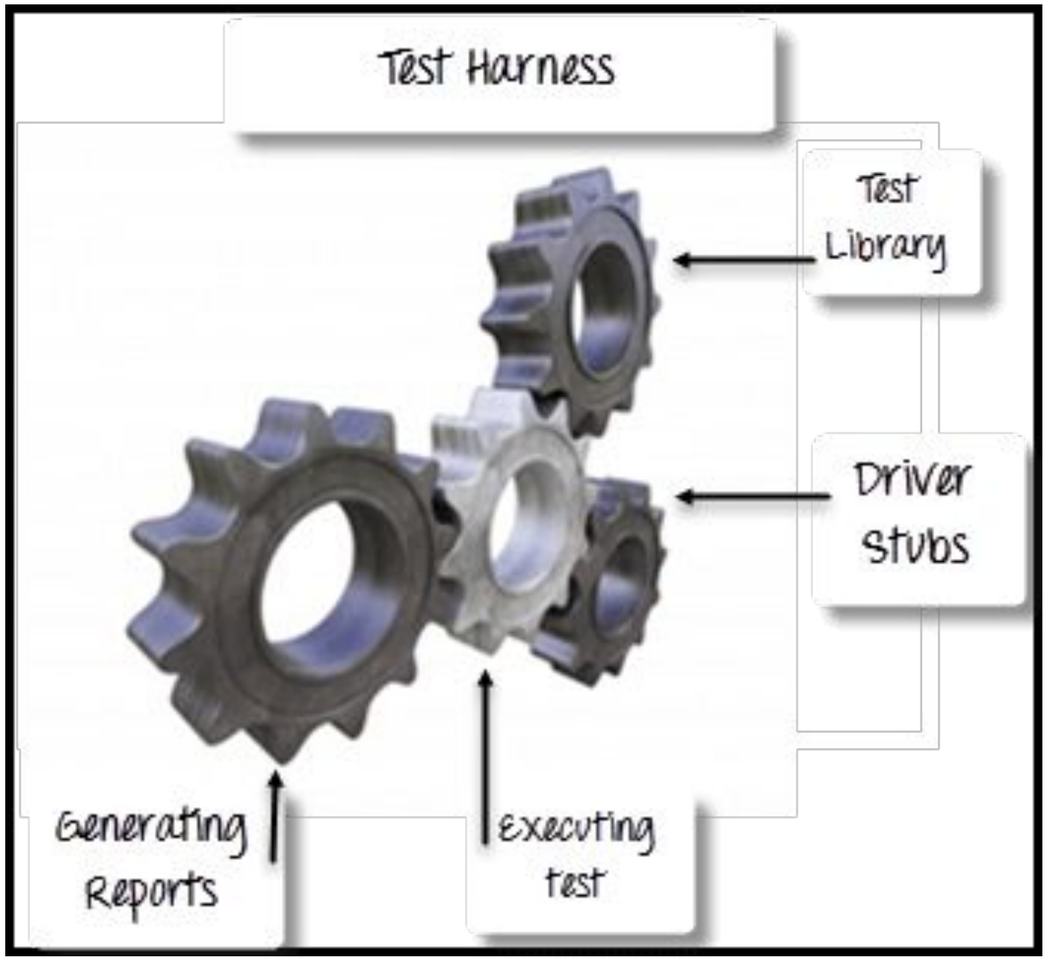
# Test Harness

**Test Harness in Software Testing** is a collection of stubs, drivers and other supporting tools required to automate test execution. Test harness executes tests by using a test library and generates test reports. Test harness contains all the information needed to compile and run a test like test cases, target deployment port(TDP), source file under test, stubs, etc.

# Test Harness-Cont..



# Why use Test Harness?

- Automate the testing process
- Execute test suites of test cases
- Generate associated test reports
- Support for debugging
- To record the test results for each one of the tests
- Helps the developers to measure code coverage at a code level
- Increase the productivity of the system through automation
- Enhance the quality of software components and application
- To handle the complex condition that testers are finding difficult to simulate

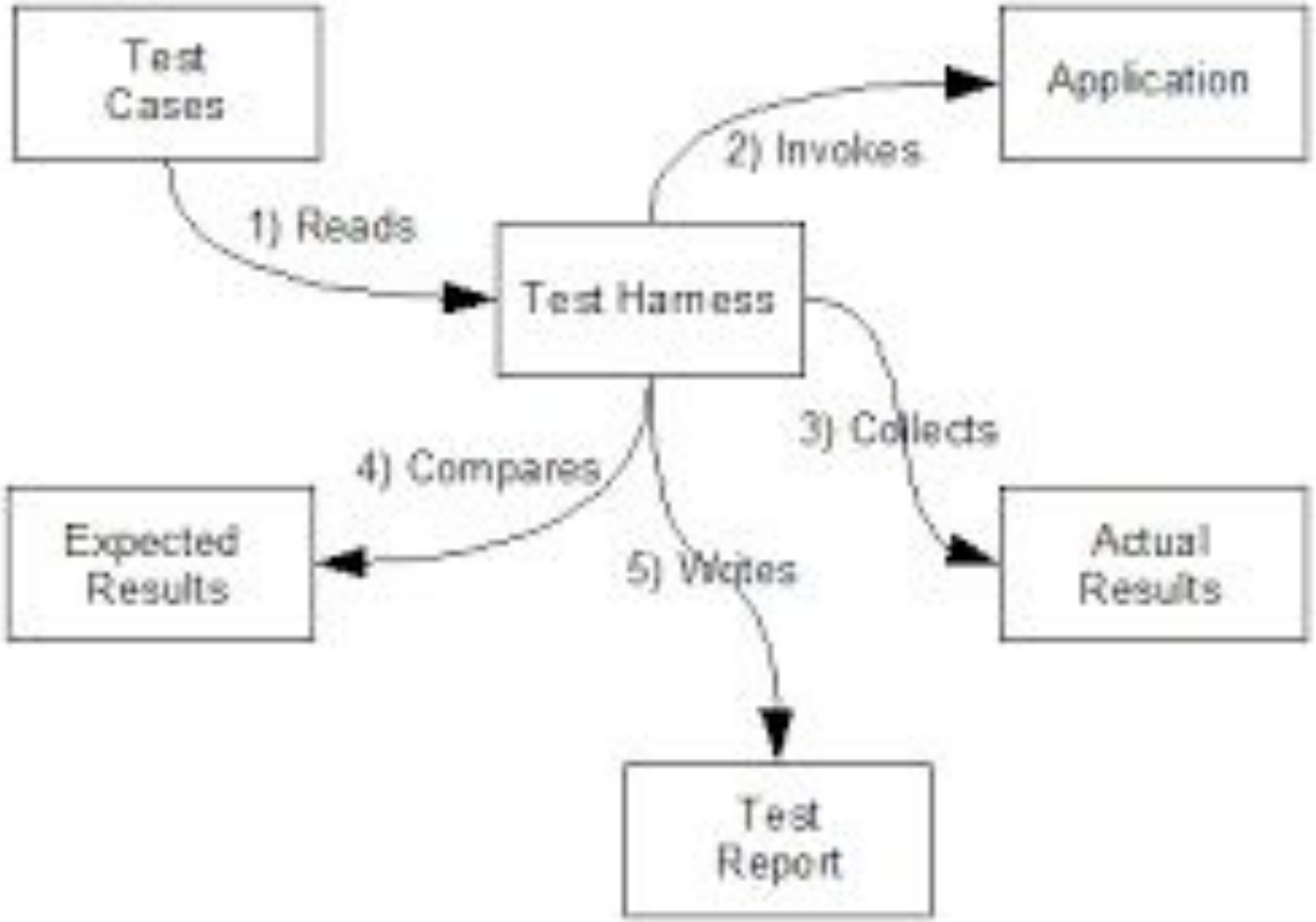
# Test Harness -Cont..

- **There are two contexts where Test Harness is used**
- **Automation testing:** It contains the test scripts, parameters necessary to run these scripts and gather results to analyze it
- **Integration testing:** It is used to put together two units of code or module that interact with each other to check whether or not the combined behavior is as expected or not

# Test Harness –Cont..

| Test Harness | Test Automation Framework |
|---|---|
| •A test harness is composed of drivers and stubs, which are small dummy programs that interact with the software under test | •It is a set of processes, procedures, abstract concept and an environment in which automated tests are designed and implemented |
| •You can not "Record & Playback" script in Test Harness | •A tester can manually "Record & Playback" script in this framework |
| •Test harness contains all the information needed to compile and run a test like test cases, target deployment port(TDP), source file under test, stubs, etc. | •Test automation framework contains information like test library, testing tools, automated testing practices, a testing platform, etc. |
| •A test harness is categorized into<br>• Automation Testing<br>• Integration Testing | •Automation framework examples<br>• Data-driven testing<br>• Keyword driven testing<br>• Modularity driven testing<br>• Hybrid testing<br>• Model-based testing<br>• Code driven testing<br>• Behavior-driven testing |

# Test Harness -Cont..



# Activity

| Advantages | Disadvantages |
| --- | --- |
| increased productivity due to automation of the testing process.<br>Increased probability that regression testing will occur.<br>Increased quality of software components and application.<br>Repeatability of subsequent test runs.<br>Offline testing (e.g. at times that the office is not staffed, like overnight).<br>Access to conditions and/or use cases that are otherwise difficult to simulate (load, for example). | Test Harness tools do not support record and play features.<br>Testers using test harness tools are expected to have knowledge of programming languages such as JAVA, .NET, Groovy, Ruby, Python, etc.<br>Test harness could an asset to any organization but at the same time, it incurs a cost for writing automates test suites or test cases through skilled developers. |

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# Assessment 1

1. List out the Advantages of Test Harness

a)_____

b)_____

c)_____

d)_____

2. Identify the Disadvantages of Test Harness

a)_____

b)_____

c)_____

d)_____

**TEXT BOOKS:**

1. Ricardo Baeza-Yates and Berthier Ribeiro-Neto, —Modern Information Retrieval: The Concepts and Technology behind Search, Second Edition, ACM Press Books, 2011.

2. Ricci, F, Rokach, L. Shapira, B.Kantor, —Recommender Systems Handbook‖, First Edition, 2011.

**REFERENCES:**

1. C. Manning, P. Raghavan, and H. Schütze, —Introduction to Information Retrieval, Cambridge University Press, 2008.

2. Stefan Buettcher, Charles L. A. Clarke and Gordon V. Cormack, —Information Retrieval: Implementing and Evaluating Search Engines, The MIT Press, 2010.

# THANK YOU