



JSPM's
Bhivrabai Sawant Institute of Technology
and Research, Wagholi, Pune-412207.



DEPARTMENT OF COMPUTER ENGINEERING
WORKBOOK

BE COMPUTER SEM I

A.Y. 2020-2021

**SUBJECT: SOFTWARE TESTING AND
QUALITY ASSURANCE**

SUBJECT CODE: 410245(B)

UNIT NO : 3

Software Test Automation

Designed By: Prof. Adsure S. S.

Syllabus Covered

| Unit 3 | Software Test Automation |
|--|--------------------------|
| What is Test Automation, Terms used in automation, Skills needed for automation, What to automate, scope of automation, Design and Architecture of automation, Generic requirement for Test Tool, Process Model for Automation, Selecting Test Tool, Automation for XP/Agile model, Challenges in Automation, Data-driven Testing. Automation Tools like JUnit, Jmeter | |

Name of Student: *A. Shiva Surya Saran*

Roll No: *BE-B 20*

1] Select correct option. (Click right tick on correct answer)

1] Beta testing is useful way of compatibility testing. True or false.

a) True

b) False

2] Which of the following is not a method of dynamic testing

1. System testing

2. UAT

3. Inspection

4. Unit Testing

5. Walk through

6. Technical review

a) 1,2,4

b) 3,5,6

c) 2,3,5,6

d) All of the above

3] Verifying that whether software components are functioning correctly and identifying the defects in them is objective of which level of testing?

a) Integration testing

b) Acceptance testing

c) Unit testing

d) System Testing

4] Configuration testing deals with hardware while compatibility testing deals with software. True or false.

a) True

b) False

5] What is example of load testing?

a) Downloading large contents from the internet.

- b) Running multiple applications on a computer or server simultaneously.
- c) Printing large document using printer in a queue.
- d) Generating a large amount of traffic on particular page.
- e) *All the above*

2] What is Automation Testing? List some advantages and disadvantages of automation testing?

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

Advantages:

1. Reliable
2. Repeatable and programmable.
3. Comprehensive and Reusable.
4. Better quality of service as well being fast and economical.

Disadvantages:

1. Proficiency is required to write the automation test scripts.
2. Debugging the test script is major issue.
3. Test maintenance is costly in case of playback methods.
4. Maintenance of test data files is difficult, if the test script tests more screens.

3] Why is Automation Testing required?

Test Automation is the best way to increase the effectiveness, test coverage, and execution speed in software testing. Automated software testing is important due to the following reasons:

- Manual Testing of all workflows, all fields, all negative scenarios is time and money consuming
- It is difficult to test for multilingual sites manually
- Test Automation does not require Human intervention. You can run automated test unattended (overnight)
- Test Automation increases the speed of test execution
- Automation helps increase Test Coverage
- Manual Testing can become boring and hence error-prone.

4] Which test cases can be automated?

- High Risk - Business Critical test cases
- Test cases that are repeatedly executed
- Test Cases that are very tedious or difficult to perform manually
- Test Cases which are time-consuming

5] List out the criteria's for selecting test automation tool.

- Environment Support
- Ease of use
- Testing of Database
- Object identification
- Image Testing
- Error Recovery Testing
- Object Mapping
- Scripting Language Used
- Support for various types of test - including functional, test management, mobile.
- Support for multiple testing frameworks
- Easy to debug the automation software scripts
- Ability to recognize objects in any environment
- Extensive test reports and results
- Minimize training cost of selected tools

6] Define:***a. Data-driven Testing***

Data Driven Testing is a software testing method in which test data is stored in table or spreadsheet format. Data driven testing allows testers to input a single test script that can execute tests for all test data from a table and expect the test output in the same table. It is also called table-driven testing or parameterized testing.

b. XP/Agile model

Agile Automation Testing in software development is an approach of using test automation in agile methodologies. The purpose of agile automation testing is to make the software development process more effective and efficient while maintaining the quality and time as well as resource consumption. Thus, the implementation of such a process requires a lot of coordination and collaboration between teams.

7] Explain some Automation testing tools***Selenium***

It is a software testing tool used for Regression Testing. It is an open source testing tool that provides playback and recording facility for Regression Testing. The Selenium IDE only supports Mozilla Firefox web browser. It provides the provision to export recorded script in other languages like Java, Ruby, RSpec, Python, C#, etc.

Ranorex Studio

Ranorex Studio is an all-in-one tool for automating functional UI tests, regression tests, data-driven tests and much more. Ranorex Studio includes an easy to use click-and-go interface to automate tests for web, desktop, and mobile applications.

Testim

Testim is the fastest path to resilient end-to-end tests—codeless, coded or both. Testim lets you create amazingly stable codeless tests that leverage our AI, but also the flexibility to export tests as code. Customers like Microsoft, NetApp, Wix, and JFrog run millions of tests on Testim each month

-----EVALUATION SHEET -----

| Ques.no | Max.Marks | Marks Obtained | Remark |
|----------------|------------------|-----------------------|---------------|
| 1 | 5 | | |
| 2 | 5 | | |
| 3 | 4 | | |
| 4 | 4 | | |
| 5 | 4 | | |
| 6 | 4 | | |
| 7 | 4 | | |
| TOTAL | 30 | | |

SUBJECT INCHARGE

DAC

HOD