Analysis of Automation and Manual Testing Using Software Testing Tool

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Abstract
Testing is the process of checking the system working fine or not according to the need of customer . Testing is basically used to find bug, error from the system , make report and send to the developer. Testing can be done by two types either manually or automation testing. This paper show the problem related to manual testing and discuss the concept of manual and automation testing .This paper show the importance of automation testing and test cases and difference of automation and manual testing and use of Qtp tool.
Keyword
Manual and automation Testing, Problem with Manual testing, Test cases, Qtp tool, Working and its uses.

1 INTRODUCTION

Organization test software by manually or automatically. The goal of software tester is to check systematically and stepwise detect bug with minimum amount of time .They want to check the quality of software, system working fine or not according to the need of customer. Software Tester play important role in finding out the error or bug and make report and send to the developer to fix the error. More automation and better tools for software testing can lower the cost of software development, increase the reliability of software, and reduce the negative economic impact of defective software.

Software testing activities consists of four main steps in testing a software:-requirement analysis and gathering, test planning, and test case, test execution, test reporting and defect management. To reduce the laborious human effort in these testing activities to some extent by using testing tool.
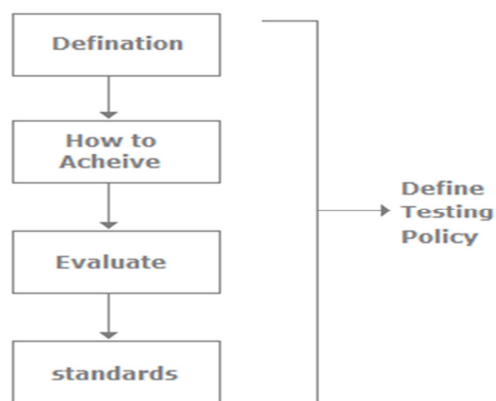
2 MANUAL TESTING

The test design here is done manually based on informal requirements documents. The test designer goes through the requirements document and manually invents test cases for testing an implementation that is based on the same set of requirements. The output of the manual test design step is a document that describes the desired test cases. With the test cases, test execution is done manually. A manual tester follows the steps of the test cases and directly interacts with the SUT comparing the values of the SUT output with ones expected, finally recording the test verdict. In order to carry out the test design, the test designer needs to possess expert knowledge about the SUT and he also needs to have test design strategy skills.
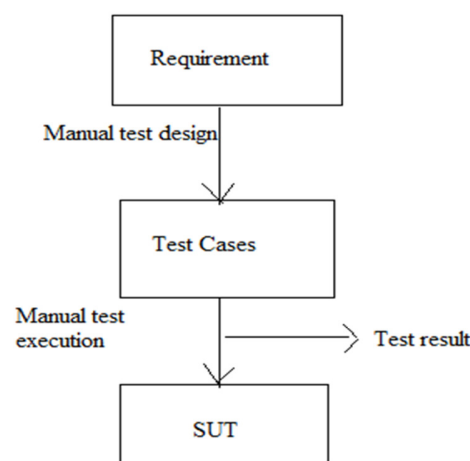

Fig 1:-Test policy

Fig 2:-Manual Testing

2.1 Problem With Manual Testing:

1. Time Consuming:-It take more time to execute Test case.
2. High Cost: Large number of tester are need to test the project.
3. Less accuracy:-not provide accurate result.

3 AUTOMATION SOFTWARE TESTING

The test execution problem is solved by automating it by writing test scripts Instead of directly interacting with, the test engineer writes a collection of executable test scripts each containing one or more test cases. These test scripts can be automatically executed. They stimulate the system with certain input values. Test scripts can be implemented in many scripting or programming languages and then executed on a framework that can read in scripts in that particular language. The test execution tool records the output values, compares the observed values against expected values and finally gives out a test verdict. As test scripting is a programming task, test engineers need to possess different skills from test design and test execution.
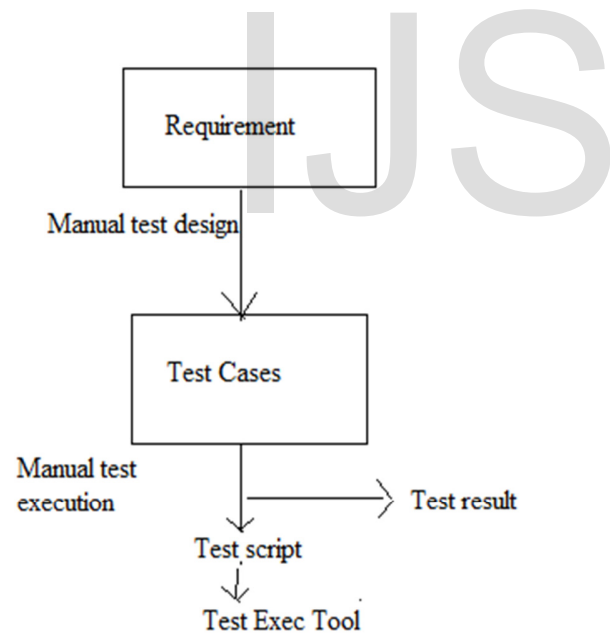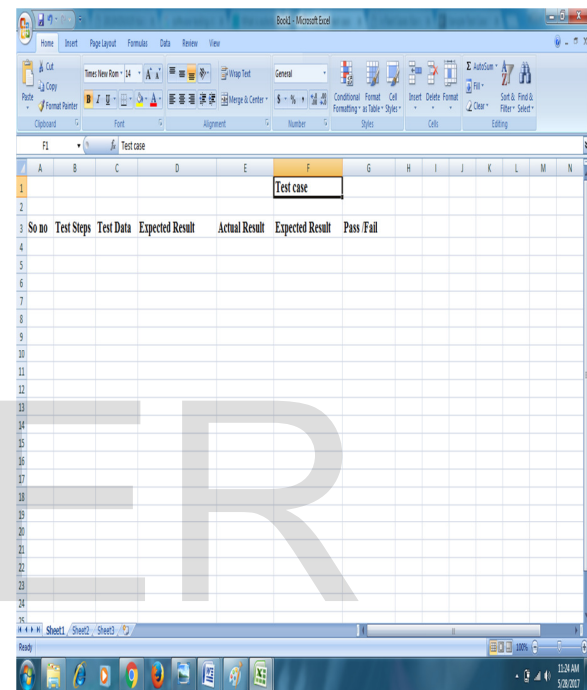

Fig 3:-Automation Testing

As the test execution is automated using test scripting, one can already run the initial testing using the automated scripts. Regression testing can also be done for "free" by simply re-executing the test script.

3.1 Test case

Manual test involves the construction of test cases by analyzing the source code and specifications. Test cases generated manually are usually more purpose intended in finding certain kind of faults. Manual test case generation involves strenuous labor as software systems are becoming more and more complex. This makes manual test cases generation infeasible. Thus here we are aiming at reducing the manual labor by automating the Test Case.

3.2 How To Write A Test case:-

4 QTP TOOL & ITS WORKING

QTP stands for Quickest Professional, a product of Hewlett Packard (HP). This tool helps testers to perform an automated functional testing seamlessly without monitoring once script development is complete.
HP QTP uses Visual Basic Scripting (VBScript) for automating the applications. The Scripting Engine need not be installed exclusively as it is available part of the Windows OS. The Current version of VBScript is 5.8 which is available as part of Win 7. VBScript is NOT an object oriented language but a object based language.

4.1 Advantage:-

- Developing automated tests using VBScript doesn't require a highly skilled coder and relatively easy when compared other object oriented programming languages.

- Easy to use, ease of navigation, results validation and Report generation.
- Readily Integrated with Test Management Tool (HP-Quality Center) which enables easy scheduling and Monitoring.
- Can also be used for Mobile Application Testing.

4.2 Working

- **Test Automation Feasibility Analysis** - First step is to check if the application can be automated or not. Not all applications can be automated due to its limitations.
- **Appropriate Tool Selection -** The Next most important step is the selection of tools. It depends on the technology in which the application is built, its features and usage.
- **Evaluate the suitable framework** - Upon selecting the tool the next activity is to select a suitable framework. There are various kinds of frameworks and each framework has its own significance. We will deal with frameworks in detail later this chapter.
- **Build the Proof of Concept** - Proof of Concept(POC) is developed with an end to end scenario to evaluate if the tool can support the automation of the application. As it is performed with an end to end scenario which will ensure that the major functionalities can be automated.
- **Develop Automation Framework** - After building the POC. Framework should be built after diligent analysis of the technology used by the application and also its key features.
- **Develop Test Script, Execute and Analyze** - Once Script development is completed, the scripts are executed, results are analyzed and defects are logged, if any. The Test Scripts are usually version controlled.

5 CONCLUSION

Manual testing is a time consuming process and requires large number of software tester and not provides accurate result whereas automation testing tool provide accurate result and enable us to record the test suit and re-play it if required. This paper gives brief introduction of manual and automation testing, problem related with manual testing and describe the importance of automation testing .

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