

TEST AUTOMATION USING A CUSTOMIZED TOOL

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ABSTRACT

Recent software industry is adopting huge technological upgrade across globe in every domain and process. Software testing is no exception in this change phenomenon. There are many automated software testing tools which can fit into many technologies but may not be suitable for the recent trend in software industry like workday, salesforce, Devops model etc. These industry leading tools will help partial automation but we require customized test automation tool for end to end test execution. This paper depicts a complex scenario where we have developed one customized tool and its usage.

Keywords: Coded UI, Comparison, Reporting, Test Automation, Windows Forms Application.

I. INTRODUCTION

Maintenance of software is an integral part of software development life cycle (SDLC). With each maintenance release, software will have new configuration, enhancement, batch output or patch and these may inject new defects to the application. To detect these defects, regression testing is an obvious choice. Interface level/unit level regression testing can be time taking and labor intensive when performed manually as well as defect prone and costly. Manual process is not always effective for defect detection as it does not reach deep interface of the software. Test automation resolves these problems. Interface/ output batch file level regression testing of large application for major or minor changes prefers test automation as it is cost effective due to its schedule/quality adherence.

Various industry tools are available for interface testing but when it comes together (e.g. Batch file, interface, and Data validation), it is preferred to develop a customized automation tool for test execution due to cost effectiveness and quality delivery. Recent technology up-gradation has millions of data migration from existing to new system but it may distort data configuration. Customized tool is the best option for cost effective end to end validation.

II. CASE STUDY

A need to perform test automation for an application's output, a huge batch file in which test data has to be provided from a customized user interface without any intervention of the application under test (AUT) and the testing tool. Output batch file has multiple versions and it has limitations of direct record and play back with any standard testing tool. Customized test report has to be maintained and compared in a spread sheet for different test run of different versions of AUT (Fig: 1).of all the Automation test tools in the market, Visual studio provides us to build customized standalone GUI application. It is a user friendly interface which can be

integrated with the automation test suite (Coded UI Framework) and AUT. Automation test suite can be triggered from the customized interface where the test data would be provided. Market tools e.g. selenium, HP UFT and Test complete are not suitable either it does not support windows based AUT or would require external plugins.

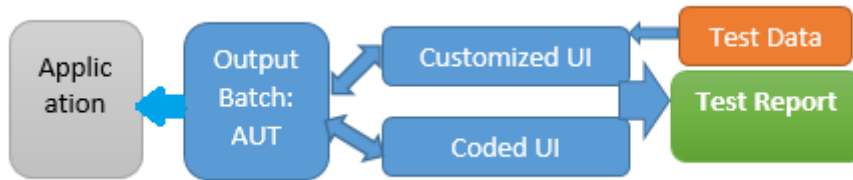


Fig 1: process block diagram.

III. OUR APPROACH

We need to divide our solution mainly into two parts. First, for providing user interface (UI) to collect test data, this purpose can be accomplished by developing windows form application or web application. Second, writing automation tests that can perform a test run on AUT using the test data provided in the UI application. Our final solution shall consist of both the parts i.e. UI part and Coded UI automated test suite (Fig: 2).

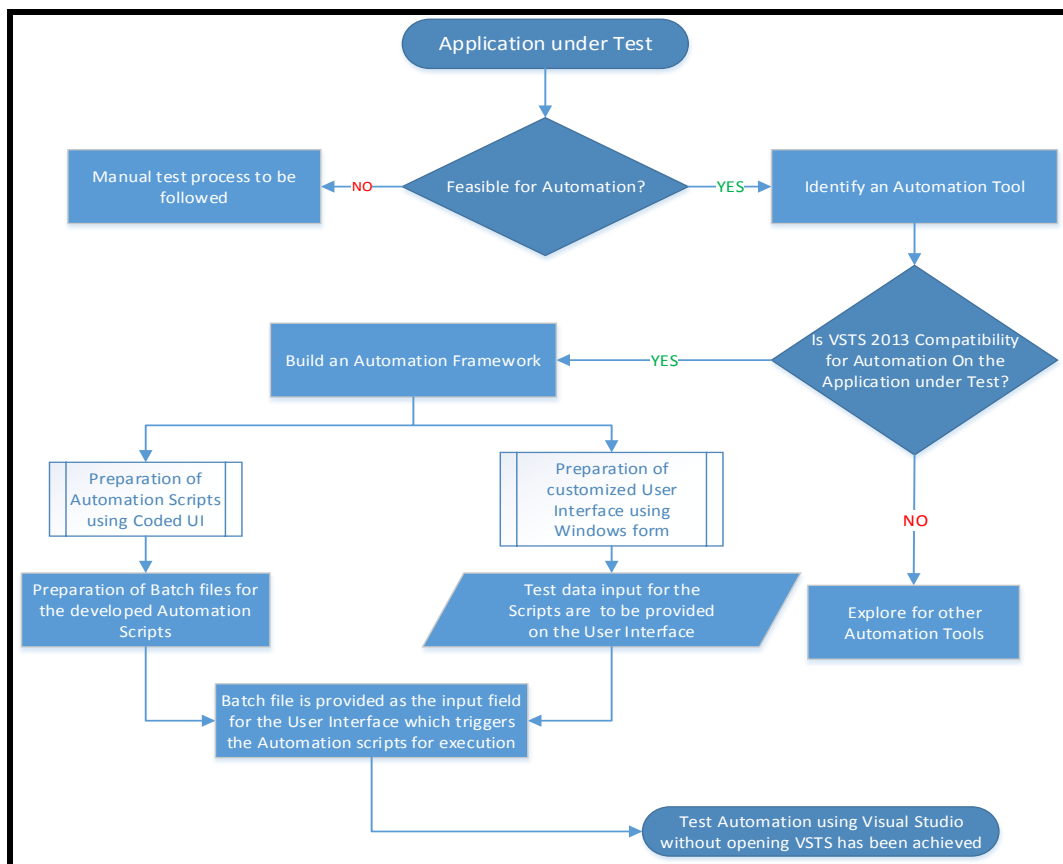


Fig 2: Test Automation Block Diagram.

1.1 Algorithmic Steps

- Create a UI application using windows Form Application.
- Collect test data from UI application.
- Trigger test application to run for collected test data from command prompt. This serves our purpose of interaction between these tools.
- Save the result of test run and compare between two test runs (Fig: 3).

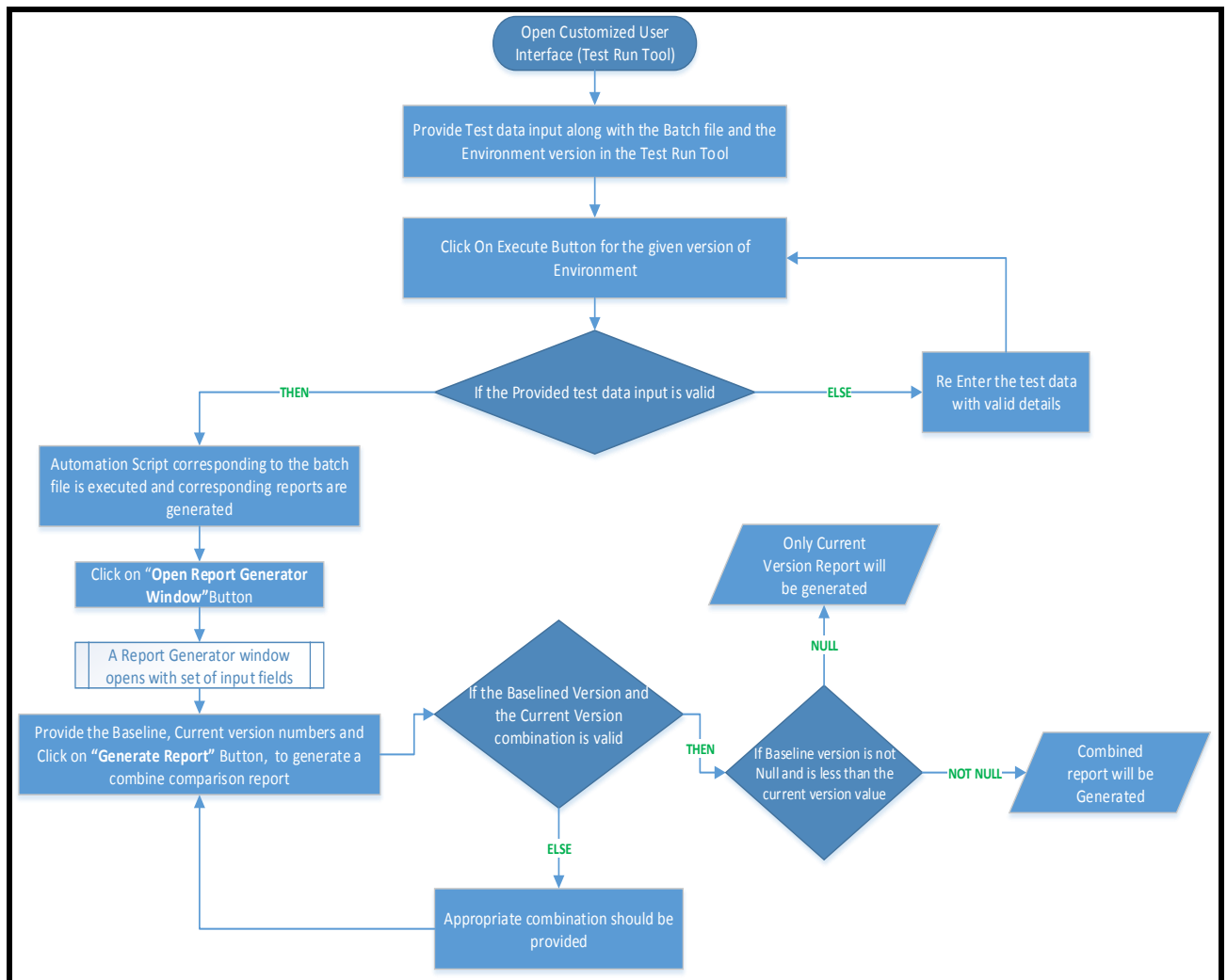


Fig 3: regression test approach.

1.2 Results

Visual Studio 2013 helped us to build customized UI which in turn triggers the Automation test Suite through the batch files. Below UI, developed using VSTS where we are collecting the test data required for the test execution. Execute Button triggers the automation test suite through the batch files.

This approach can be extended across other applications where we need to run the test cases based on the customized test data, without intervening any test tool or Application under Test (Fig: 4).

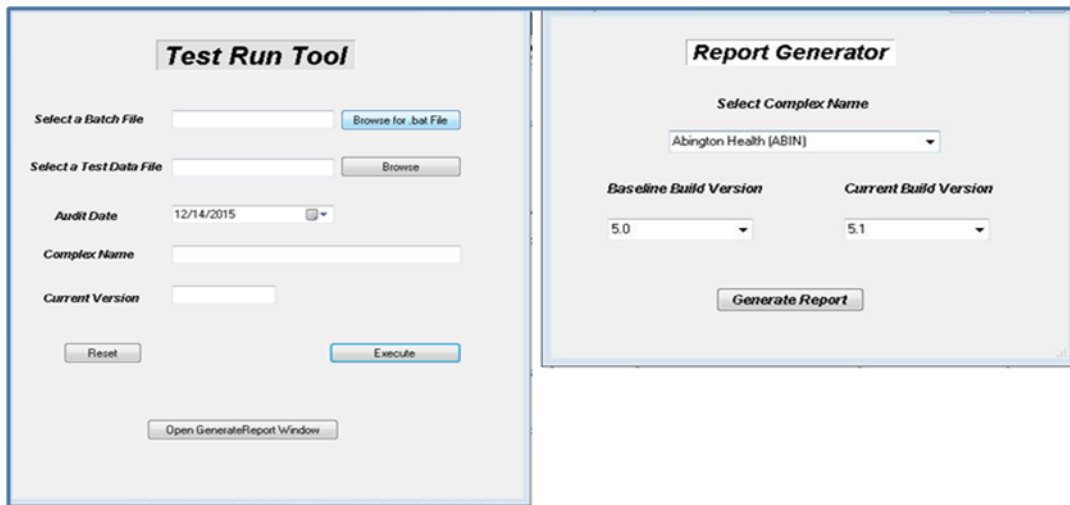


Fig 4: customized user interface for test automation.

IV. CONCLUSION

There are many benefits for usage of this customized tool as below:

- Coverage – Test automation is to cover in more % of regression, i.e., with the automation we can increase test coverage in each version/cycle release.
- Fast – Due to test automation by using customized UI, it is very faster.
- Preference – Modular approach enables selecting required AUT version.
- Unmanned run – Tests can run overnight without person attention.
- Reporting – Customized, well-designed reports.
- Reuse – Easily maintainable since all data is stored in Excel files pass through batch file.

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