

# Comparing the efficiency of selenium and UFT through writing the test script for checking out the website for ensuring its QA

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## Abstract

Normally, when you take a software developing company there the testing plays the most pre-dominant role. Their main work is to find out the “bugs or errors” that had been occurred in the software during the developing stage<sup>3</sup>. The error may be syntax error or semantic error. We may think testing is an easy task but it is a challenging task for the testers to execute it, because they have to write the test cases and scripts and check out the functionality is working properly or not. Then verification and validation of the website is also done. In that place to make the work as simple the testing team started making use of the automation tool. In this paper the two different automation testing tools had been taken and tested in the software training institute website for checking out the quality of the software<sup>10</sup>. As well as the effectiveness of the software had been calculated through the report that had been generated by the two testing tools. To make the automation testing tool to “RUN” the test scripts and test cases had been written and the software that had been developed and tested for checking out its accuracy.

**Keywords:** selenium, Unified Functional Testing, SDLC, Sikuli, QA (quality assurance) and Software Development Life Cycle (SDLC).

## 1. Introduction

Software testing plays the important role for improving the software quality. Manual testing would require a lot of time and effort for you to complete. So in that case the software testers had switched up to the automated testing tool. Normally, the software end users are in great demand compared to the before. This had created a great challenge for the developers to complete the development of the software and ensure “the quality and produce defect free software under particular interval of time within a budget quoted”. The quality of the software could be determined only after the different level of testing and it acts as the one of the main predominant role in the Software Development Life Cycle (SDLC)<sup>1& 2</sup>. For testing there are many tools had been available in the online. When compared to the manual many prefer the automated testing tools because through doing testing using that software one can able to find the level of the bug within a short span of time<sup>9</sup>.

Here in this paper the comparison had been processed between the selenium and UFT. While the one tool is an open source and the other one is a licensed product. The effectiveness and the features of the tools had been analyzed and for analyzing that the website had been created and from that everything had been processed. The individual test script had been written and the test report had been collected and finally the report had been compared<sup>6</sup>.

## 1.1 Importance of testing in the Software industry

After the development of the website and before implementing them into the market there is a need for the software to pass the stage called the “testing”. Without testing when the website had been hosted in online then sure there would raise a lot of problems to solve them out it would be so difficult<sup>8</sup>. This is the main reason why the website had been tested before it had been hosted in online.

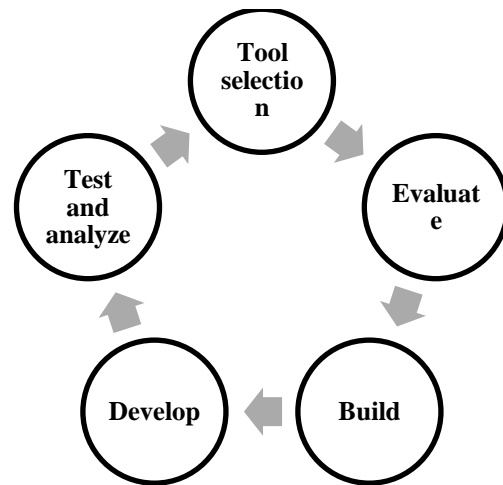
### 1.1.1 Regressive type of testing strategies

For developing the software there would be a team as well as for testing and finding its accuracy there would be another team. They two would not have any link between them. Once the development phase had been over the software would be send to the testing team. The tester would test them and predict out the website and take an error report and send them to the developer team<sup>4</sup>. Through going through the report the developers would cross check it and solve out all the error. Again after the correction it would be send to the testing team. It is a cyclic regression process until the target had been achieved it would keep on processing.

As a developer their role would be entirely easy. Based on the interaction that they had received from their client they would plan and start executing. But in case of testing it is not easy as like that.

At past the testers made use of the “manual test cases” as like unit testing, integration, black box testing, and white box testing so on. It was entirely typical for them to manage in that case to overcome from that typical situation and to save their time the tester started making use of the automation testing tools. This acts as the starting point for making use of automation testing tools.

## 1.2. Process that had been carried out before executing the automation testing

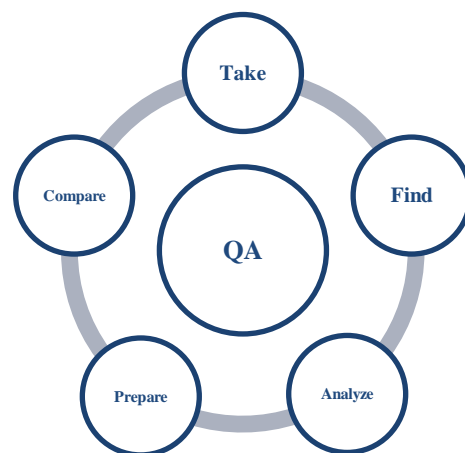


The automation testing is a regression process until it meets up its target it would keep on executing.

The different stages of execution are that.

- Stage 1:** The test automation and analyze made.
- Stage 2:** Tool selection. “Selenium and UFT”
- Stage 3:** Evaluation of the suitable framework had been done.
- Stage 4** Build which means the testing had been done on what had been examined. **Website name: “Soft Tech Solution”**
- Stage 5:** The test scripts and cases had been written for executing and analyzing

In case when the error or fault found in analyzes phase then that particular problem had been taken and processed as follows.



To ensure the Quality Assurance (QA)<sup>5</sup> the bug part had been **taken** again after the correction and then the problem area had been **find**, after that **analyze** had been done and based on that the reported had been **prepared** to **compare** up its effectiveness.

## 2. Comparison done between the Selenium and UFT

When you have taken the list of automation testing tool you can able to find out a huge sum of testing tool. Among them the two popular tools that had been used here for testing is the “Selenium and UFT (Unified Functional Testing)”.

**Selenium:** The selenium is an open source tool. For executing them there is a need for the programming knowledge for processing them. But one can able to learn it in a short span of time. When you want to install them then you can directly install them from its official site<sup>7</sup>.

**Unified Functional Language:** At first the UFT is called us the QTP (Quick Test Professionals) that only would support for the GUI. But after the lot of improvement the QTP had been renamed as the UFT. In case when you want to install it there is a need for you to install it from HP. For making use of it there is a need for you to get your license.

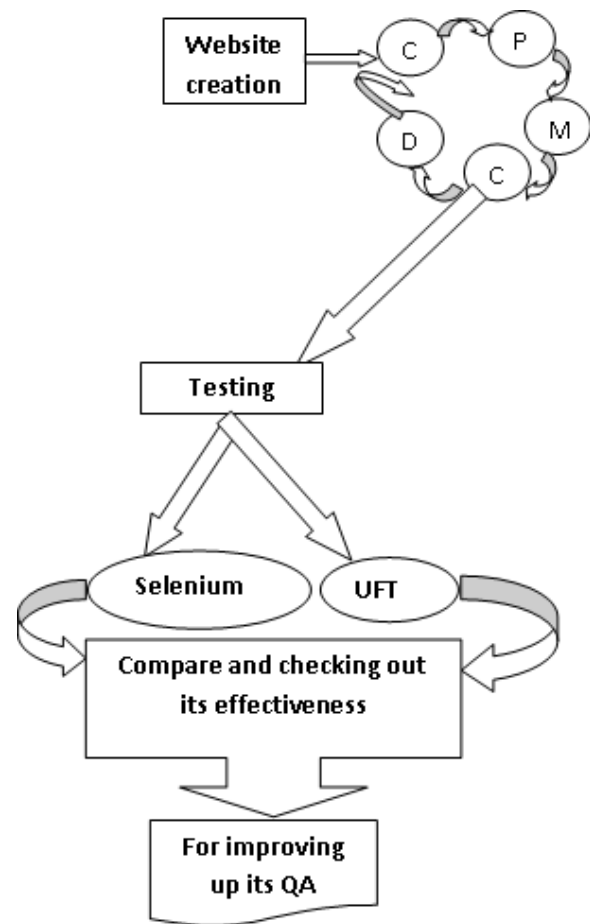
### 2.1 Comparison table

	Selenium	UFT
<b>License</b>	Open source. Easy	Licensed
<b>Testing</b>	It is web based as well as desktop application	Web application can be automated
<b>Supporting language</b>	It supports for Java, .Net, PHP, and many other languages	VB Script
<b>Built in object</b>	Does not have built in object.	Have built-in object.
<b>Technical support</b>	It does not give technical support	It gives technical support

**Result 1:** When the features and functionality of the Selenium and UFT had been taken then one

would be better than other. It shows the equal importance in the testing field.

## 3. Systematic analysis of testing process



To analyze and to find out how the effectiveness of the automation testing tool the following strategy plans had been carried out.

**C = Communication**

**P = Planning**

**M = Modeling**

**C = Construction**

**D = Deployment**

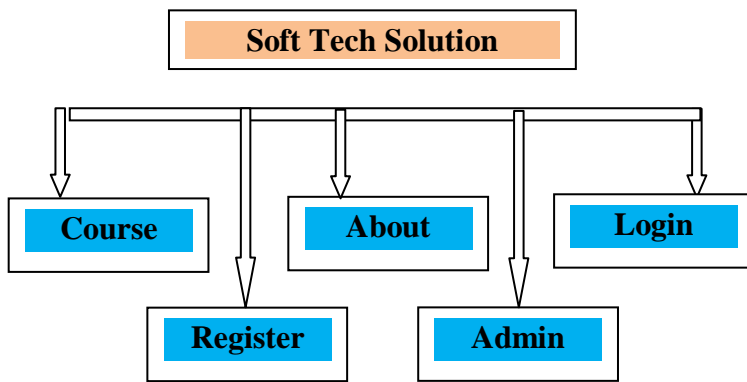
### 3.1 Website Design Procedures

The website had been designed as per the software development life cycle as like:

**Communication:** The communication has been done with the Software training institute members.

**Planning:** Based on the requirement that they had given the designing process had been done.

**Modeling:** The dummy demo had been designed to check out whether the process had flow in the correct level.



**Construction:** The code had been written through using the PHP and the test had been carried out through using the Selenium and the UFT.

**Deployment:** Delivery and collecting feedback from them.

#### 3.1.1 Website images

The website output had been given below.



Figure 3.1.1: Home page

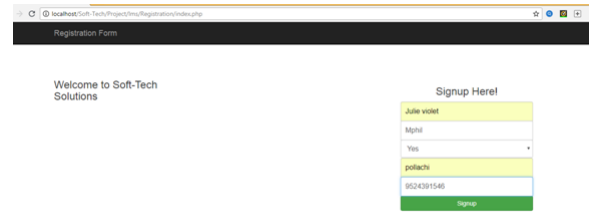


Figure 3.1.2: Entry page

### 4. Testing implementation using the two different tools

In this for comparing the effectiveness the test script had been written from both test cases and then that particular report had been analyzed in it. First in the selenium the Admin page had been taken:

#### 4.1 Testing using the Selenium

##### 4.2

The testing had been carried out for checking out whether the website that had been designed had meet up its requirements.

##### 4.1.1 Testing done in Admin Page:

The admin module is the main module only the admin would have the entire accessing control to view up the entire details. He can able to view up the details of the students who are doing the registration, the staff who is log in to it and then the student. The admin would schedule the task based on that everything would be executed.

#### Test script:

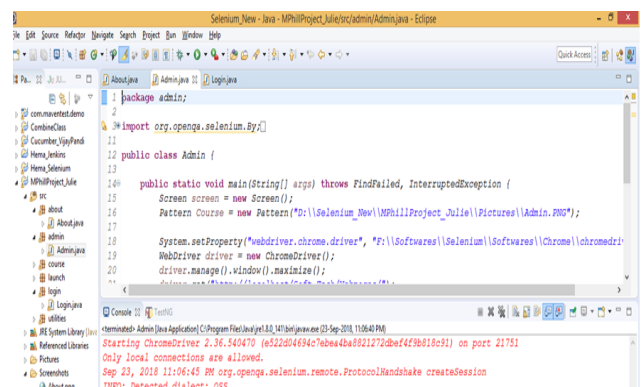
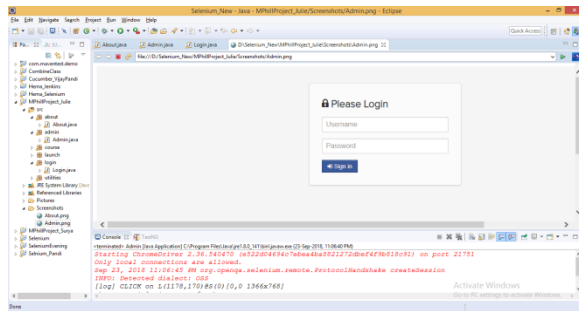


Figure 4.1.1.1: Admin page

### The screenshot taken for analyzing



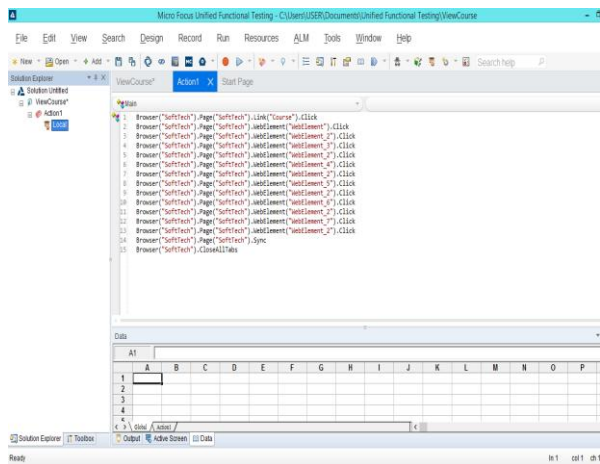
**Figure 4.1.1.2: Output - Screenshot**

The test script had been written using the Java. Then the selenium had been imported, “import.org.selenium.By()”. The class name had been given as the admin. The system property and the other required fields like the web drive and select drive had been included while writing the test script in Selenium.

Once when the test script had been completed then the test script had been run through using the Java and the screenshots had been captured.

Second the same website had been tested through using the UFT.

### 4.2 Testing using the UFT

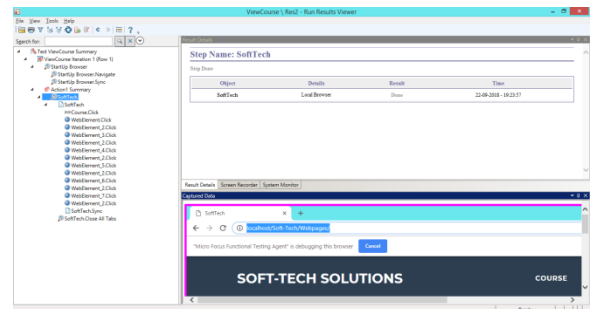


**Figure 4.2.1: Test cases**

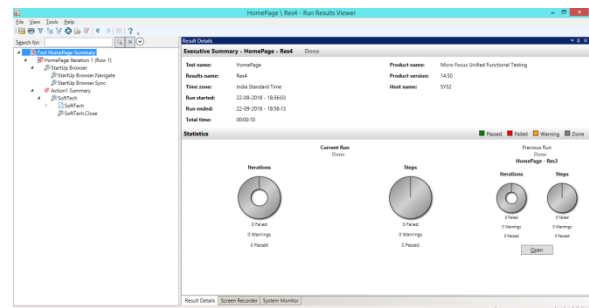
The UFT would give the accurate result along with the time and the second that is required for the testing. Through doing testing as like this the tester can able to find out how long it is required for them

to do and complete the testing. When the time prolongs they can able to predict up for what reason the time is taking so long.

- ✓ They do analyze about whether the picture gets loaded so slowly, if in case yes then the picture had been changed to small once that would be easy to load.
- ✓ If in case when loading when the bug had been find then in the iteration report one can able to find out.
- ✓ It works based on the regression process and this would be used for ensuring that the website that had been developed had met their client needs and whether their customer would feel flexible to make use of it.



**Result 2:** When the testing had been done through using the two different automation testing tool the selenium could able to produce the result fast. While running the test script the result would be noted down below simultaneously. In case of UFT it takes lot of time and it would execute in the form of different iterations as listed below



### 5. Selenium Vs UFT which tool would work so effective

Normally comparing two different tools and finding its efficiency is not an easy task. When you

check out one would be better when compared to the other.

a).If you are a starting a new IT business there it is not an easy task for you to buy the licensed product and make use of it as like the UFT in that place you can make use of the Selenium.

b).In case of high branded company there is a need for you to make use of the licensed product there instead of UFT the selenium tool can be used.

## 5.1 Analysis the efficiency of the testing tool

### 5.1.1 Selenium

According the survey the selenium tool had been used widely all over because it is an open source and it had a multiple of features and benefits:

1).The selenium acts as a combination of the different tools and Domain specific language. Through using this tool you can able to record the test and it would support for the different browsers.

2).It acts as a flexible language one can able to easily learn. The selenium would support for parallel test execution through which you can able to reduce the time of the test executions.

### Drawbacks:

A).It contains an incomplete solution it is because it cannot able to work effectively without any third party framework. Here the selenium had been integrated up with the Sikuli.

B).It requires the high level of proficiency and it would be hard task for you to modify codes. The script would be selenese and not user friendly for you to modify.

## 5.1.2 Unified Functioning Testing

The QTP would be primarily used for the functional, service testing as well as the regression testing. After that the Sun Microfocus had renamed as the UFT its features and functionality had been increased.

### Merits of UFT

- ✓ It supports for the record and playback and it make use of the active screen that is used for recording the script.
- ✓ It supports for all the popular automation frameworks as like the keyword driven testing, data driven testing, modular, hybrid and so on.

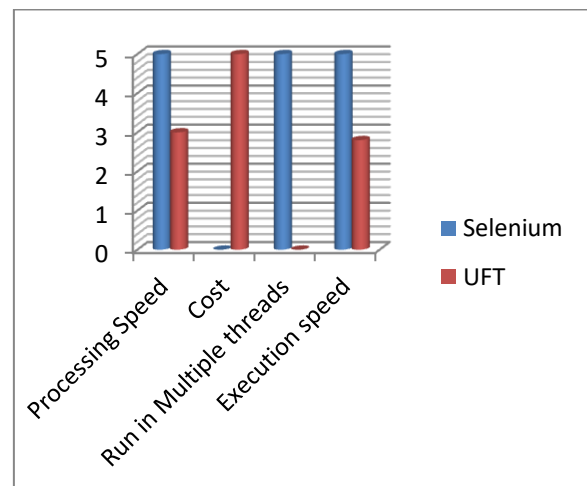
### Demerits of UFT

- ✓ The cost would be high and it is a licensed product. It cannot able to run in the multiple threads.
- ✓ Slow in execution when compared to the other testing tools.

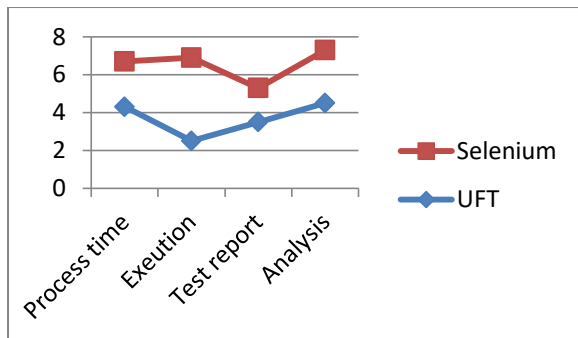
**Result 3:** Both the tool has merits and demerits on the equal level. Based on the requirement and needs one can make use of the testing tools.

## 5.3 Result analysis

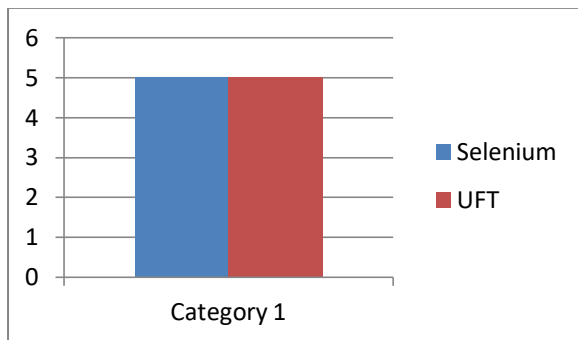
**Result 1:** Functionality is dependent



**Result 2:** Selenium process fast but UFT take some time, but both produce accurate result.



**Result 3:** Both the tool has merits and demerits on the equal level. Based on the requirement and needs one can make use of the testing tools.



After the comparison of the Selenium and UFT both would have the same level of the importance and features. But when comparing its functionality it is dependent based on the type of the testing that had been done. Through doing different testing the QA of the website had been improved.

## 6. Conclusion

After the development of the technology man started depending on the system. Instead of doing the hard works they are switching towards the smart works. Through following those things one can able to save their pretty time. This is how the automation testing tool had created an impact in the software testing team. Through writing the test script the tester can able to run the test and can able to easily collect up the report based on that. With that reports help they can easily able to pin point in which area the occurrence of error had happened.

The automation testing that had been done using selenium and UFT had automatically makes the testers work easy. After collecting the report the software tester team would send them to the development team and with its help the developer can able to easily solve out the problem. In future sure with the help of the effective automation testing tools the software testing team can able to produce the 100% effective software through finding the bugs in the testing stage and they would reduce it. When the users are using them they would feel that they are comfortable to make use of it.

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