

Acceptance Testing

Utilization of Testing

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Project Name	Efficient water quality analysis & prediction using machine learning
Maximum Marks	8 Marks

Abstract:

Applications of automation tests differ from manual tests unlike manual tests,

Auto tests are not suitable for all areas. The main uses of automation tests are regressions tests, data-driven tests, smoke tests, static & repetitive tests, load and performance tests [5]. These test types are based on measurable data.

Automation testing is a good tool for testing functional and non-functional test types.

The use of automation test tools has improved greatly. According to International Software

Testing Qualifications Board yearly test reports published worldwide, test automation in 2015-2016 was 58.5% [6], it increased to 64.4% in 2017-2018 [7].

This indicates significance of automation testing tools in future and thus motivates to further explore, analyze and compare further insight in this direction.

However, contrary to many views, automation tools need manual testing.

Testing in the software development process is a high cost factor. In order to minimize these costs, test automation has been presented as an effective solution.

Automation tests require manual test runs [8]. First, the manual operation of the subject to be automated should be made and then the situations to be automated should be decided. For this reason, manual

tests are part of automation tests and cannot be separated. On this issue, the following that Instead of increasing human resources during the test, improving the level of test automation and risk reduction offers an approach to assist manual testing [3]. One of the most important issues or automation is

INTRODUCTION:

Software testing is a process of running a program with intent of finding errors [1]. Software testing facilitates the quality of the software under development [2].

To increase the quality testing is the effective way.

Manual testing and automation testing are the two methods of testing. Manual testing is also called as static testing.

It is carried out by the tester. Automation testing is also called as dynamic testing [3].

As a result of this acceleration, it was necessary to accelerate the tests performed at different points and to run them in a more algorithmic manner.

In the face of this necessity, software testing automations as well as manual tests have made a rapid entry into the market. Manually testing in most of the cases is time consuming, costly and chaotic.

Some of the main reasons for the development of automation are listed as follows.

- Higher Testing Efficiency
- Simulation of User Environment
- Higher ROI: Saves Time and Costs
- Volume and Simultaneity
- Early Detection of Bugs [4].

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RELATED WORKS:

There are many studies in the literature of automation test tools. There are studies that will be used especially in the selection phase of test automation tools and have certain information transfer. The dynamics within the scope of the project play an important role in the decision making process of the test tools.

After healthy observations and decisions, these tests will be more efficient [10].

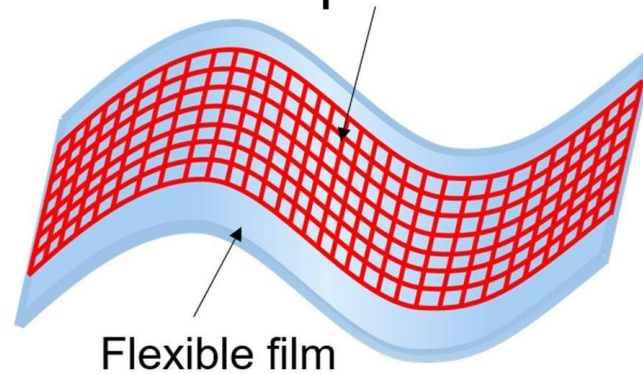
There are well known and popular three automation tools Selenium free source, HP Quick test professional (QTP) and Test Complete [12]. A comparative study of automated tools observed Test Complete has easy to use user-interface and efficient playback [12]. To find best tool in selenium suite they compared it with some other tools for similar tasks and also evaluated performance on the basis of related metrics [11].

Using Selenium to automat zed functional test can reduce costs. For selenium, the scenario increased its writing efforts by approximately 15% from QTP [13].

Selenium should be preferred if you do not want to spend money on the test tool [14]. Selenium is a good option when it comes to web applications [15].

Because it gives a tester more flexibility to test various complex scenarios

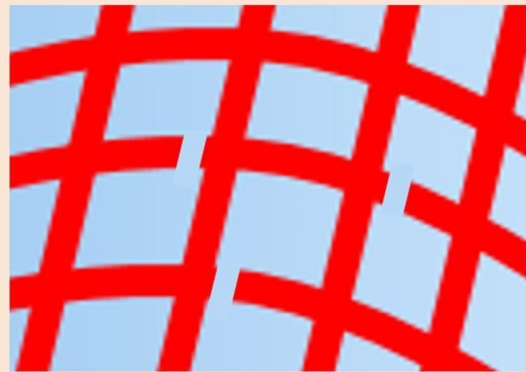
Mesh-patterned ITO



(i) Reducing tensile stress



(ii) Stopping propagation of cracks



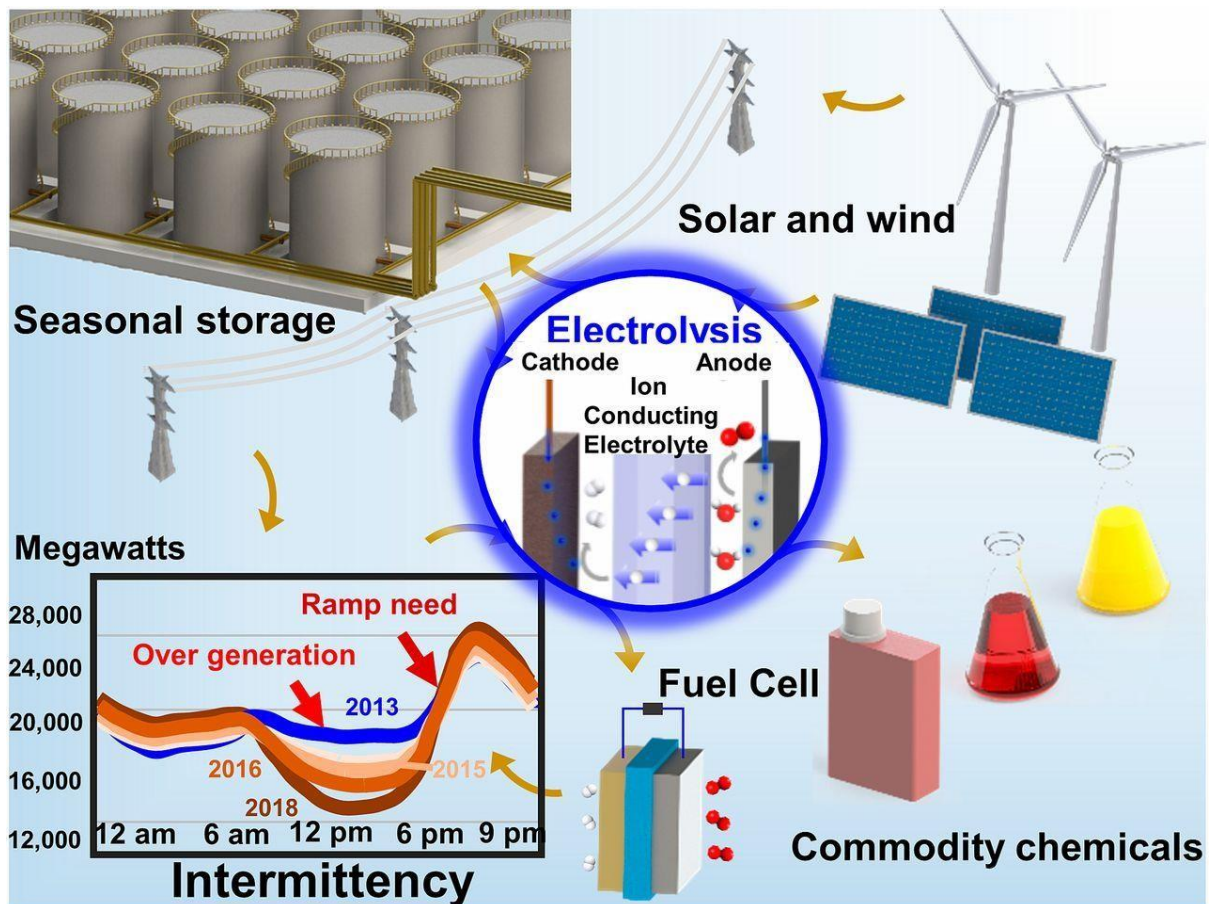
Data Driven Testing Framework:

In the application tests, the same functions can be tested with different data sets.

Therefore, it is not a reasonable option to give test data within the automation code.

Retention of data in external databases is a more logical and effective method.

This framework provides a distinction between these types of data. It creates isolated test data by keeping the data in different files. Data is traditionally stored in “Key / Value” pairs [20].



Keyword Driven Testing Framework

The keyword-based test framework separates test data from scripts and also allows it to store a specific set of code from the test script to an external data. In terms of keywords are determined in this code set, and so the framework is named this way. Test Data and keywords kept in a table-like structure. Keywords and test data must be assets independent of the automation tool used [20]