Research on Automated System Testing in Web Site Applications

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Abstract: The article discusses technology and methodology for automating the process of testing Web site applications and system programs for adaptation of applications to technological processes were considered. Developers and automation professionals are currently going through popular boom times. In the process of software development and testing, not only developers and testers work in the team, but business professionals who identify a number of changes when new versions of software products are released will be able to perform these studies. In technical systems, an integral part of the release is automated test creation. It is the use of automation tools. An object-oriented approach to project implementation, a set of standard tools to ensure construction processes and debugging programs, connecting auxiliary libraries for the used programming language (C++, C#, Java, etc. programming languages); check system versions, automation project and software product storage options are considered. Despite the proliferation of quality assurance tools and experts in technological processes, IT software testing is important. Development and security of software systems are at the forefront of the Internet space. Complexity and difficulties of testing loads experts into test automation technology with multiple steps and end-to-end calls. In the system studies have been conducted for higher levels of management and control. A clear demonstration of automation in this article approaches and development approaches are important. Research results clearly show this automating software testing areas is a new strategy poised to transform usability, security ensures the efficiency and reliability of current and future software applications. Testing is a very important activity. In the process of software development, it is necessary to eliminate defects on the spot. It consists of the process of checking and modifying the source code. Effective testing ensures high quality and software ensures excellence. This article discusses the important and vital issue of software testing. Testing can be done manually and using automated systems. This technique has its own advantages and disadvantages. The main objective of this study is to identify and then analyze the weaknesses and strengths of automation techniques and will consist of testing web applications that are currently in rapid development. Research itself, to implement information work was carried out on the stages of development of this topic (articles, reports, automation tools themselves). As a result, the authors draw conclusions about the further directions for the development of web application testing, identify the advantages and the problem existing solutions and insufficiently developed processes are identified.

Keywords: Software testing, Web application testing, automation system testing, front-end, selenium, Web Driver, Browser.

Introduction
Test automation in technological processes is the practice of automatically conducting tests, managing test data and using the results improve software quality. It is primarily a quality assurance measure, but its activities include commitment and shapes the entire software
development team. From business analysts to developers and DevOps engineers most of the test automation covers everyone. Information technology and software changes have become an integral part of life. Potentially touching millions of individuals and security and reliability of enterprises, IT programs and systems are important. Human intervention in software developments are never short of bugs and errors. In recent years, IT software errors have increased and are possible adversely affect service delivery and performance. Error handling and error correction the early stages of the software development phase are the beginnings of a managed IT system environment. Many organizations around the world have become victims of dishonesty and ineffectiveness consists of software development and integration. IT software testing refers to analyzing and interrogating a software program to identify bugs and hidden failures. Software testing is scheduled to ensure that the integrated software program functions to your satisfaction ensures boundaries, access and quality maintenance. Software for a complete information technology system the testing area should not miss the software development life cycle. In accordance with the requirements of the technological system, software development is not absolute, under which the testing process is conducted. Not a test, of course is done to demonstrate an error-free system, but to install a firewall that supports the installation and created opportunities to control the operation of the entire system. If the developer writes the code, he will definitely test it. If it is a function, the developer can call it differently arguments and what it returns. If the developer has opened the site, he will open it in the browser, add links, buttons and checks that everything is done according to the specifications. This process is called manual testing – person checks the operation of the program. If you count all desktop and mobile browsers, you will need to support more than 10 browsers, and each of them will be attached to the system. They are has many versions that differ significantly from each other. Until recently, we tried manually. The tester passed all and the status of the site's pages in all browsers is checked and it works as intended. This resulted in a long delay in the release process. Development and testing took about the same amount of time. The system can transfer this task to the shoulders of robots. Usually it is possible and the task is done. Technological processes testing through automated testing is the safest method.

Website application management in technological process automation

Automation processes enable automation testers by simplifying test development and execution and ensures fairness of events. A simple automation system provides an environment for executing and creating test plans and is moved to a repeating output state. They are specialized tools that help you with your day-to-day test automation tasks. He is it's a testing tool, motion capture tool, or web testing tool that's there to take all the hard work out of it. Technological create test scripts and allow more time for quality checks. Test automation is a proven, cost-effective approach to improving software development. Therefore, choosing the best test automation framework test results and operating system can be crucial in the time frame. Strategic integration of test protocols is the way to successfully automate software testing. Test automation is scalable and streamlined the support structure under which the test automation suite is designed, produced and implemented. These technological processes include many tools and practices designed to facilitate and shape effective performance and raises the profile of software performance. It contains the physical structures used to create and test the logic interaction between key components such as coding standards, object repositories, test results manages storage and access to external resources. A procedure provides a standard way to add, there are cases of modification and release of test functions and scripts. During implementation, the framework provides scalability with minimal energy consumption and ultimate reliability state stability are guaranteed. A test automation system is a platform developed by integrating various hardware and software resources along with using various tools for automation testing and web services automation basics based on a creates a set of qualified assumptions. This framework enables efficient design and development of automated testing scripts and provides reliable analysis of problems or errors for the system or application under test. Test the automation system plays an important role in the automation processes of information
technology and is relevant further processes are managed based on the software management system. Testers can install a built-in script and record tests using automation protocols. Full the automation system helps the test team reuse test components and increase functionality, script development that provides easy maintenance and access to high-level automation scripts. Test process integration improves efficiency and provides speed. It also increases test accuracy and reduces troublesome maintenance costs and risks. These are frameworks are reliable building blocks for various types of software testing, such as functional testing, unit testing, and so on. In the technological system test, and for performance test functions, command parameters must be generated from the operating system. The important functions of software testing automation processes are as follows is widely defined because it is effectively used to define objects and regulate their reuse in test scripts. Evaluation is used to perform some actions on these identified objects and furthermore to retrieve these objects.

There are many categories of test automation systems in technological processes, each of which has its own infrastructure. They are usually distinguished by their main features such as automation, reusability and simplicity. Maintenance and repair. It is always important to make the right choice for the software engineer and testing team automated process. Some test and analysis frameworks used in automation testing are discussed

# Linear Scripting system software
Creating and executing test scripts is done separately for each test case. Testers record each test step such as viewing, navigation, user inputs, applying checkpoints and then playing scripts to run tests. This type of framework is used in small scale applications.

# Data-driven automation system
Unlike modular processes, data-driven test scripts can easily pass and run correctly different data sets. With the help of this system process, the number of test scripts is significantly reduced and at the same time it provides test and coverage is completed with reusable tests. Designing this framework requires coding skills and testing experience and in the automation system, the receiver is directed to the drilling program.

# Keyword-based automation.
Otherwise known as word-based test automation, it only executes automation test scripts based on the following information. Keywords displayed in Excel sheet. A tester is able to work with keywords to develop any test automation script. This framework has shares analogy with data-driven testing. Although designing keyword-based automation can take some time, you don't need to be an expert in the field. Process provides a process to be able to write test scripts. However, staff with good test automation skills are needed.

# Modular automation
The complete application is divided into smaller independent modules that the testers create individual test scripts modules. These test scripts can be modified and combined to create larger test scripts achieve the desired scenario.

5. Hybrid automation
As the name suggests, hybrid test automation is a combination of two or more processes.
Conclusion

Writing tests can seem like a waste of time. But over time, when the project grows, new functionality is added or existing is processed, automatic tests (autotests) save a lot of time for testing, help to identify errors in time, confidence in the stable operation of the site. Thanks to the work of the browser community, automated testing has become really effective and easy to use - it exists becomes cross-browser. Now it is worth paying attention to the test methods themselves - both creating new ones improving the algorithms of the old ones. I think one of the possible areas of improvement is to test the appearance order. Existing solutions rely on the percentage of pixel similarity in the generated blocks, and this is quite high. dubious feature for bug detection - it allows for a large number of false positives and bugs that aren't there is. One of my goals now is to solve this problem. One of the methods I will consider is this creating algorithms that determine the displacements between the internal blocks of the element in question and their relative position. Software testing has become a major need in the IT industry. As time goes on, the technology I require will rise, and its impact is felt mainly in software testing and validation. Software testing is important for two main reasons reasons. First, it is a guarantee of software quality, and secondly, it is an integral segment of software costs and management. Test automation and related testing despite high maintenance and implementation costs cases provide excellent benefits in the long run of design, development safety and efficiency. and launching new software programs. Automated unit testing is a necessity for developers to meet the fast development timelines of today's software markets. The number of development organizations is increasing Follow Microsoft Corporation's leadership and implement a build-the-day approach. Earlier construction dates set up and built over a period of time, measured in days, weeks, or months. New development processes such as object-oriented development and languages such as Java often requires software development. Otelbayev Azizbek, a student of the Nukus Mining Institute at the Navoi State University of Mining and Technologies, is studying the process of testing technological applications used in mining enterprises. These applications ensure process quality and process safety in mining enterprises. Many of Azizbek's scientific studies and articles about his activities in mining enterprises were published in magazines. Currently, Azizbek is engaged in web sites. Research has been exploring the use of automated web applications in mining operations.
References


