

How to Select Test Cases to Automate for a Maximum ROI

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If test automation is a key practice of modern software testing, it will be a big mistake to automate 100% of your test cases. This article provides some tips on how to select the test cases that can be automated if you want to achieve the maximum benefits of your software testing efforts.

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Automation has become deeply integrated in our daily lives. Whether it's buying concert tickets, shopping online, continuous virtual meeting reminders, making a payment straight from your smart device or something else, automation can be found in nearly every interaction. One area that has seen a significant surge in adoption has been software testing practices. In the past, such tests were solely focused on identifying application performance glitches, but the scope of testing and quality assurance has broadened enormously in recent years. Onus is on the quality assurance specialists to not only identify, prevent and mitigate all defects, but also to reduce costs, improve performance and customer satisfaction. Therefore, today's tests are designed to ensure the delivery of quality software with speed. The most common software testing approaches, [functional](#), [regression](#) and integration testing, are strengthened by embracing test automation.

According to the World Quality Report in 2019, 24% of testing teams encounter obstacles prohibiting them from deciding on the exemplary test scenario. Undoubtedly, [test automation](#) can save an entity ample time and costs when executed properly. Users are cognizant of the importance of automation but the challenge is to identify the ideal processes in which to automate that will ensure the greatest return on investment. While every test case can be automated, it isn't always the best course of action. Organizations instead must identify the ideal test cases for automation in order to achieve the most optimal results.



What is a Test Case and Why is it Important?

A test case is typically a detailed document related to the Application Under Test (AUT) that entails the requirements shared by the business users, specifications, testing conditions, inputs and expected outcomes. Initially, there are at least two types of test cases to validate the functionality of an application's feature:

- A test case that gives valid results when the inputs are correct
- A test case that gives invalid results when the inputs are incorrect

Most examiners combine multiple test cases into a complete end-to-end assessment suite for the maximum coverage, simplified maintenance and a more streamlined process.

What are the Ideal Test Cases for Automation?

According to [Software Testing News](#), a majority of businesses see a return on their test automation investment immediately (24%) or within the first six months (24%). The remainder sees a result within 6-12 months (28%) or after one year (15%). However, 9% of businesses reported never getting an ROI.

While there are many underlying reasons that businesses fail to maximize their ROI when incorporating test automation, it is most often due to an incorrect selection of test cases.

This is why it is so crucial for testing teams to compare test cases with a set of defined specifications. Following are the types of most recommended test cases for automation implementation.

- **Regression Tests (Smoke Testing and Sanity Testing):** This examination is repetitive in nature. Regression tests are performed whenever slight changes are made to the code to ensure that the rest of the functionality remains unimpacted. It consumes significant time and resources when done manually.
- **Performance Tests (Load Testing and Stress Testing):** Performance tests are conducted to evaluate how a system operates in terms of responsiveness and stability under a particular workload. Automation can help to speed up the testing process and facilitate faster time-to-market.
- **Data-driven Tests:** Data-driven processes are prone to human errors. Test automation practices and tools are a sure-fire solution to help mitigate any shortcomings.

Which Test Cases Should Not be Automated?

Software test automation has completely transformed analysis and quality assurance practices. However, automating every test case can be subversive. Below are some of the scenarios where test automation must be avoided to prevent exaggeration or misuse of test automation.

- **Ad Hoc Testing and Exploratory Testing:** Such testing approaches involve learning and evolution simultaneously. Ad hoc and exploratory tests are performed by examiners when they have no concrete criteria for checking an application. It is meant to evaluate what to expect as an outcome.
- **Usability Testing:** This form of analysis measures the product's user-friendliness and acceptance. While one can automate some of the common usability scenarios, larger coverage is not recommended as each user interacts with an application differently and there are just too many use cases. If automated, it is unlikely that all outcomes will be captured appropriately and accurately.
- **Anti-Automation Tests:** Features like CAPTCHA recognition can be an example of anti-automation. Programming this functionality would defeat its purpose and compromise the security of the product.

Conclusion

If you are looking to simplify your software testing process, without sacrificing quality AI-powered [test automation](#) is your solution. Some test automation solutions can even help your organizations select the best test cases to ensure quality at speed and a maximized ROI.

About the Author

Ajay Kaul is a visionary leader and trendsetter. As managing partner of [AgreeYa Solutions](#), he has been instrumental in leading the company through solid growth and international expansion for the past 20 years. Kaul has three decades of experience building powerful and innovative solutions for businesses across various industries and verticals. His expertise and knowledge span across enterprise sales management, marketing and strategy, global delivery and mergers and acquisitions. Follow AgreeYa on social media @agreeyasolutions.