QUALIZEAL

Software Development Engineer in Test (SDET)

A New Normal to Achieve a Higher Degree of Automation in the DevOps/Agile World

Preface

Reduce Software Delivery Risks - Improve Efficiency and Productivity.

Organizations have realized the importance of automated software testing and its role in the software development life cycle.

The post-pandemic era has seen significant improvements in testing methodologies, which has also shifted the role of testers from the status quo. Software Development Engineer in Test or SDETs are now considered imperative to releasing defect-free software and transitioning into the next phase of innovation.

> ## "If we want to be serious about quality, it is time to get tired of finding bugs and start preventing them from happening in the first place." ""
>
> — Alan Page

Experts predict that by 2025, there will be over **100 zettabytes** of data stored in the cloud . the beginning of 2022 saw a **1.8% increase** in mobile users and **3.78 billion people** purchasing consumer goods online. Imagine the pressure these increasing numbers would put on application developers committed to ensuring a seamless and flawless mobile user experience. Testing and development teams cannot deliver under such high expectations without additional support.

Companies are putting more extraordinary efforts into ensuring quality in the software development space to innovate and market their products faster. 2021-22 World Quality Report revealed that the number of people who agree that they get higher ROI from automation efforts increased to 50% in 2021 from 37% the year before.

The need for uninterrupted customer experience has increased the requirement for highly skilled quality engineering professionals.
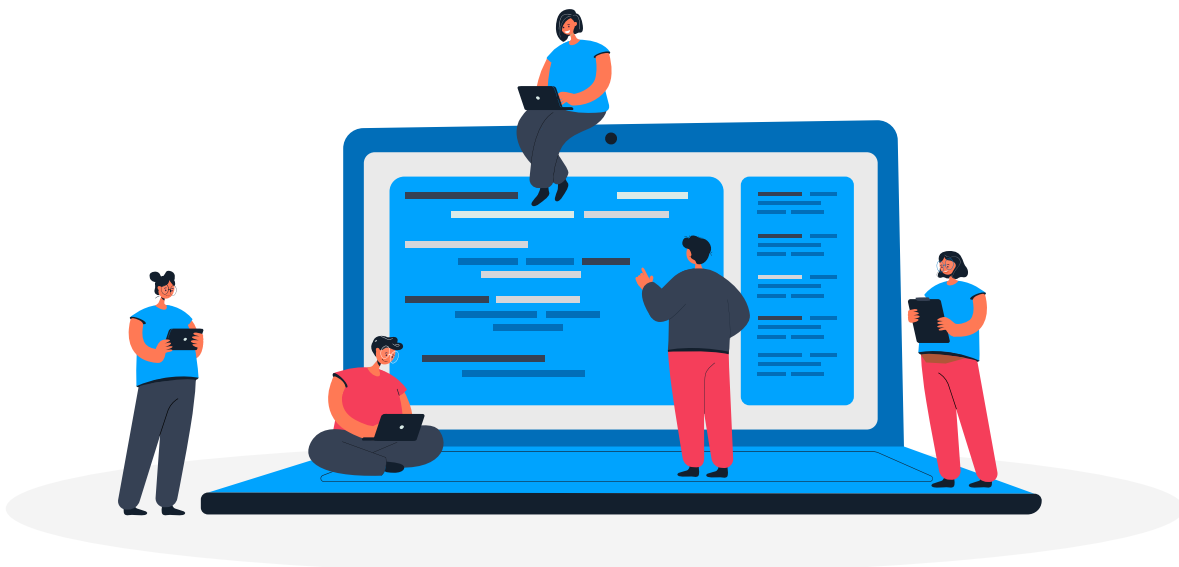
The need for software development engineer in test

CXOs are under tremendous pressure to upgrade service quality and delivery speed. While the agile lifecycle model ensures better software quality, continuous delivery, and customer satisfaction, it also needs experts who would rapidly provide results under the given model. In such scenarios, the SDETs role becomes critical. Unlike the native testing teams, SDETs work as a test team and are responsible for writing and testing the code.

Software testing consumes a significant amount of time and resources since it is a crucial phase of the development cycle. Code coverage, unit testing, and acceptance testing can reduce timelines and efforts, but specialists need to understand and deliver these solutions.

SDETs function in the complex world of Quality Engineering and provide strong analytical, technical, and problem-solving skills hence reducing timelines and assuring a higher success rate.

Who are SDETs and what makes their presence crucial

The role of SDETs is crucial in Agile and DevOps. They work alongside developers to help automate acceptance criteria in user stories. These professionals can write anything from automated integration tests, API tests, and/or UI automation tests. Since agile development is fast-paced and has shorter targets, there is significantly less time left for manual testing. In lack of SDETs, the chances of errors and bugs become high.

We believe that SDETs represent the customers more than the company. These professionals understand user expectations and influence product design to suit their requirements.

SDETs also possess a thorough understanding of the entire system, and they focus their skills on improving the said system's testability, robustness, and performance. Their presence in an agile team eliminates the burdens by automating most manual tasks.

Primary SDET skills include, but are not limited to, the following:

Deploying test automation frameworks

Building high-quality test automation solutions

Debugging and customization as per the requirements

Creating high-performance code

Thinking beyond testing and development

Identifying risks from the end user's viewpoint

The growing intrigue behind SDET and the zeal to launch error-free applications have led to an increase in demand for professionals in this domain. Currently, there are 8000+ vacancies for SDETs on LinkedIn alone. Worldwide, this number is way higher.

Organizations committed to achieving digitization at complete potential should leave QAs in the past and move into the future with SDETs.

SDET vs Quality Assurance

Software Development Engineer in Test (SDET) vs. Quality Assurance .

Quality Assurance (QA) and SDET are two different software testing roles. The depth of technical knowledge possessed by the specialist makes the latter superior.

A Quality Assurance (QA) professional's primary job role involves ensuring that all the processes in the software development lifecycle comply with quality assurance standards.

On the other hand, the Software Development Engineer in Test (SDET) finds their place in both development and testing. Their focus lies on the end product's testability, robustness, and performance. Unlike a QA, the SDET thinks from the customer's perspective and emphasizes creating a user-friendly product.

Software development engineer in test vs. Full-stack tester

SDETs are often designated as full-stack testers despite significant differences between the two roles. SDETs are technical testers who have a thorough understanding of automated tests. They are experts when working in agile and/or DevOps alongside developers.

Unlike a full-stack tester, an SDET has a thorough understanding of quality engineering and software development. They can automate everything in application development by leveraging automated integration tests, API tests, UI automation tests, etc. SDETs also focus on an array of testing methodologies and types, while a full-stack tester would generally concentrate on improving the application's functionality.

Apart from this, a full-stack tester is just involved in testing the application and ensuring that it is free from faults or any issue that may arise post-launch. Their key areas of expertise include test automation (functional), API testing, performance testing, database testing and security testing. SDET combines developer and tester skills to perform multiple tasks like project management, deciding end-user software requirements, participating in the design process, coding, and building test automation tools.

Upskilling automation engineers and developers into SDET roles

Automation engineers and developers have prior knowledge of programming languages and automation tools. Organizations that already have these professionals should actively consider further training and skill development programs and help them reach new heights in their careers. Such upskilling sessions would benefit both parties with some significant advantages, including:

Increase the chances of retaining the employees

Save organization's resources on hiring and training new SDETs

Increase employee satisfaction as they'll gain new skills under company sponsorship

 A larger window for innovation with SDETs performing testing and development

If you are an application engineer or a developer planning to enter the next phase of your career, it would be best to consider SDET training. Expanding your portfolio would give you a deeper exposure to many niche areas of application testing and development.

Application testing zones where SDETs prove helpful

- API-UI Testing and Development
- Continuous Integration and Delivery
- Mobile Automation

- Rule File Validation Testing
- Binary Testing
- Widget Testing

SDET.

Advantages of having SDETs in your team

The software testing market size exceeded USD 40 Billion in 2020 and is expected to grow at a CAGR of over 7% in coming years . Trends like automation testing will make application development a more promising sector with more chances to develop new products and services at a rapid speed. If your organization has already invested in a high-quality automation tool, hoping that it will provide quick results, you would also know about the particular issues that may arise when there is a lack of understanding of the tool. Some of these risks include:

The testing team may find it difficult in adapting their style of work as per the tool's requirements.

Incompatibility with the current infrastructure may slow down or hinder the automation process.

The internal team may not have the necessary skills to work with the tool even if the said tool delivers at full capacity.

SDETs in these scenarios will resolve these issues by providing a perfect balance between software development and testing. SDETs would allow development and testing teams to find a balance while optimizing the resources in the best way possible.

By bringing SDETs onboard, your organization will have the following advantages:

SDET professionals know multiple programming languages and possess critical skills like software and UI design.

Since SDETs can work as a standalone team and are capable of building, running & managing the application, organizations can cut down expenses on hiring and training additional testing/development professionals.

They are well versed in development and testing processes keeping client (or customer) requirements as a priority.

SDETs can comprehend the code for application development and automate the acceptance test through this expertise. Due to these reasons, they can build products that will cater to customer requirements and gain a competitive edge over their counterparts.

The presence of SDETs in your team can impact program management and configurations if your client has additional requirements.

The Way Forward

More and more organizations are taking testing automation seriously, and hence, they are investing in high-quality automation tools. The demand for SDETs will increase in the near future as the focus will soon shift to tasks like performance testing, load testing, and security testing. SDETs will find an excellent place to fill in organizations that plan to automate more tests or improve existing automated tests.

Test automation is a necessity through which IT companies would extend their longevity in the market. This is the best time to consider SDETs as a part of your application development teams and find an upper hand in the ever-competitive market. With their presence, launching any high-profile application development initiative would be a seamless and hassle-free process with product delivery and innovation guaranteed at a superfast pace.

QualiZeal's SDET experts help businesses reach their full potential through unhindered productivity and growth. In addition, we equip our clients with an agile skill set and infrastructure to enable them to develop and deliver the highest-quality apps conceivable.