**What is an SDET?**

An **SDET**, or Software Development Engineer in Test, is a crucial role in software engineering that combines software development with testing to ensure software quality. Originating from innovative tech practices, SDETs design automated testing frameworks, develop test cases, and write code to enhance software testability. This role facilitates seamless integration of quality assurance into the software development lifecycle, supporting rapid and reliable software delivery

**Differences between SDET Meaning, QA, and Tester**

Because of these developer-like activities, a software development engineer requires a unique set of skills; someone who has testing skills, understands testing, and can also program.

Enter the role of a software development engineer in test.

Very often, **SDET is involved in both white-box and black-box testing**—all the way from helping create low-level unit tests to high-level activities like test planning, creating test cases, and manual software testing.

SDETs also have skills that make them perfect resources for creating test automation frameworks and tools.  Many times they are part of a development team. They are also the ones that help **select what might be the best test automation tools** for their teams.

According to [Rick Martin](https://testguild.com/topic/rick-martin-ag21/), a principal engineer and quality engineering practice manager, test automation is not just about automating tests. SDETs need to look at the entire software development lifecycle and work closely with developers and [DevOps](https://testguild.com/podcasts/performance/) to build continuous integration pipelines. The collaboration and conversations around requirements, environments, data, and reporting are crucial.

I've also found that many excellent testers on a test team don't have the technical skills or desire to code.

That's fine.

But I think there's an opportunity for more software development engineer in test professionals at most companies to fill in the gap between developers and traditional testers.

Having a software development engineer in test as part of your developer's code reviews to make sure this is happening is crucial if you plan on having your developers focus on test-driven development.

**Software developer engineers in test really are a hybrid-type of a role.**

**Can SDET Developers Even Test?**



Some folks will say that developers can’t test because test automation tool development and testing are two different skills that require two different systems of testing.

**Difference between SDET, Test Engineer, and QA Tester**

These three roles in the software testing domain are often used interchangeably, but they do have some key differences. Let's go through each of them.

1. **SDET** (Software Development Engineer in Test): An SDET is a software professional with a hybrid skillset, combining expertise in software development and testing. SDETs are typically responsible for creating automated test frameworks, designing and implementing test cases, and writing code to improve the overall testability of the software. They are often involved in the entire software development process and collaborate closely with developers, applying their knowledge of programming languages, data structures, and algorithms to identify and fix issues in the code.
2. **Test Engineer:** A test engineer is a role primarily focused on testing the functionality, performance, security, and other aspects of a software product. Test engineers design and execute test plans, test cases, and scripts manually or using automated testing tools. They are responsible for identifying and reporting software defects and working with developers to ensure that the product meets quality standards. Test engineers may specialize in different aspects of testing, such as functional testing, performance testing, or security testing.
3. **QA Tester (Quality Assurance Tester):** A QA tester is responsible for ensuring that a software product meets the established quality standards, including functionality, usability, and performance. QA testers are involved in the testing process by executing test cases, reporting bugs, and verifying that issues are resolved before the product is released. While they may use automated testing tools, QA testers often perform manual testing to identify defects and ensure that the user experience is smooth and meets expectations. QA testers typically work closely with the development team, test engineers, and other stakeholders to identify and address issues throughout the software development lifecycle.

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| **Role** | **Primary Focus** | **Key Responsibilities** | **Automation/Manual** |
| SDET | Software Development & Testing | – Develop automated test frameworks- Design & implement test cases- Improve the testability of software | Automation |
| Test Engineer | Testing various aspects of software product | – Design &execute test plans, cases & scripts- Identify & report software defects- Specialize in testing areas | Both |
| QA Tester | Ensuring software product meets quality standards | – Execute test cases- Report bugs- Verify issues are resolved- Collaborate with the development team | Manual |

According to [Kuzzat Altay](https://testguild.com/podcast/automation/a454-kuzzat/" \t "_blank), the CEO of Cydeo, in today's agile world there is a growing need for cross-functional team members. Developers are expected to test and testers (SDETs) need development skills. He sees manual testing becoming more focused on exploratory testing, while automation handles regression and validation. SDETs need to work closely with developers, providing the requirements for automated tests based on the manual test cases. Having technical coding skills is becoming increasingly important for job security and income potential as a tester.