Quality Assurance(QA) engineer fits in the gap between Development and Test. They use their expertise of Testing Techniques, Revenue Applications and available industry technologies and tools to drive efficiency’s in their Software Testing. They understand both sides of Development and Test and use this knowledge to optimise testing from a machine perspective.

There is a basic training needs that should be completed before entry or by the first year in the role. This includes:

* Java Knowledge
  + Java courses available online.
  + Five-day classroom courses to get an understanding of Java.
  + But generally, for automation works people need only basic (Core Java and Spring) Java initially, then learn the rest by using it.
* Software Testing fundamentals
  + ISTQB foundation
* Understanding of SQL

The technical training that Revenue should assist with in conjunction with self-learning is the following. Again, this should be done as early are possible in the career of an QA engineer

* Understanding of Revenue Automation Framework: -senior automation resource mentor: timeframe 4 hours
* Selenium: Mentoring & self-learn & OJT: timeframe 10 hours
* Cucumber BDD: Senior mentor: timeframe 2 hours
* Git version control: self-learn & OJT: timeframe 8 hours
* Jenkins scheduling job: Mentoring & OJT: timeframe 4 hours
* Maven- Java build tool: Mentoring & self-learn & OJT: timeframe 8 hours
* REST API- testing with Spring TESTTemplate: Mentoring & self-learn: time frame 8 hours
* SOAP API- testing with Spring WebService Mentoring & self-learn: time frame 4 hours

The QA Role within Revenue is wide and varying; a sample of some of the key responsibilities and duties can be found below, along with the skills required. It is not expected that a single person will possess all these skills or duties, but each team should have someone capable. And it is the role of the Team Lead and individuals to avoid islands of knowledge by both sharing and acquiring skills and experience in the following areas over time. It is expected that within X years a QA engineer will have most of the below.

**Key Responsibilities and duties include:**

* Write detailed acceptance criteria (A/C)
* Identify and set up data requirements where necessary for testing
* Peer review colleagues work
* Becomes familiar with document management tools in Revenue e.g. RevNet, Alfresco, WIKI, Spira, Jira
* Be part of the existing automation team and deliver automation as per requirements and best practice
* Execute automation scripts tracking and managing the resolution of issues generated during testing.
* Keep Team lead informed of project progress
* Communicate and work with Development Team in sprint giving feedback on requirements and milestones
* Assist where needed with the Manual teams to remove repetitive tasks and translate technical documents
* Evaluate test cases for inclusion in Regression and Disturbance packs
* Build, maintain and add to existing automation frameworks and application scripts
* Investigate and recommend test process improvements
* Establish and communicate KPI’s and WIKI documentation
* Collaborate with Technical Infrastructure, Manual Test, Development, and business areas
* Maintain up to date knowledge of industry trends and developments
* Catalogue automation tests of other inflight projects into the Release Wide Disturbance Test pack
* Catalogue of reusable automation assets delivered from project teams (e.g. PAM tool)
* Implement and contribute to the Revenue automation approach, methodology and best practices
* Update existing Automation processes and implement continuous improvements to increase robustness and level of automation of the test system
* Automate for newly integrated features and develop the relevant toolsets
* Review Disturbance Test pack for suitability for automation
* Integrate the test framework into the CI
* Uses their expertise to research and introduce new technologies to improve efficiencies in their Software testing
* Point of contact for other users in Revenue with technical test queries
* Provide infrastructure and tooling support to Project delivery teams
* Designs and does Proof of Concepts on new frameworks.
* Perform duties as test automation SME and provide guidance to QA Analysts and junior test automation engineers in all areas of test automation
* Monitor and advise other teams in Revenue making use of QA team technical assets
* Coach and mentor junior members of the team

**Key Competencies and Skills required:**

* Good Java experience
* Experience with SQL
* Good Git experience
* ISTQB Certification
* Experience with IDEs(eclipse or Intellij)
* Experience with BDD tooling (Cucumber)
* Worked with agile development (task estimation, test & deployment automation, continuous integration)
* Working experience of tools like Selenium, Appium, REST Assured or equivalent.
* Experience with Spring framework
* Ability to work as part of an inter-disciplinary team
* Familiar with Revenue Delivery Method
* Familiar with document management tools in Revue e.g. RevNet, Alfresco, WIKI, Spira, Jira
* Experience with Test Management tooling such as JIRA
* Experience with Maven
* Experience with tools such as Jmeter or HP LoadRunner
* Experience the breath of testing techniques
* Experience working with Docker containers
* Good communication skills with the ability to efficiently report to key stakeholders
* Experience with CI/CD systems (e.g., Jenkins, Travis)
* Experience with Winium/ Sikuli automation packs
* Keen interest in software automation
* Ability to work as part of an inter-disciplinary team
* Problem-solving and troubleshooting skills; sound organisational, negotiating and decision-making skills
* Self-motivated and avid learner who strives to continually improve.
* Good working knowledge of Linux/Unix
* Experience with applications hosted on Linux environments
* Experience with scripting languages, (Perl, PHP, Python, JavaScript, Tcl,Ruby)
* Ability to drive new technologies, tools, and processes
* Courage to challenge how things are done. So, they fit within in optimised way of working with Automation

**Difference between Developer and Tester and where Automation Tester lie**

|  |  |  |
| --- | --- | --- |
|  |  |  |
| |  | | --- | |  | | |  | | --- | |  | |  |
| **Software Developer** | **Software Tester** | **Automation Tester** |
| 1. A good developer is one who is technically sound. | [1. Tester may or may not be technically sound, because we need both black box and white box testers and in black box testing programming knowledge is not necessarily must.](http://testingbasicinterviewquestions.blogspot.in/2014/09/top-10-differences-between-black-box.html) |  |
| 2. He is one who develops the application according to client or customer requirements. | 2. He is one who tests the application by check whether the application is working as per the client and customer requirements or not. |  |
| 3. He is one who is totally involved in the phases of development and he is also responsible to the development of code, and also writes the code to generate the needs of a particular software or application. | 3. He is one who test the application by checking whether the code that is written by development team is appropriate or not, and they also test whether the code fulfils the requirements of that particular application and software or not. |  |
| 4. They always focus on how application or software can work. | 4. They always focus on where application or software can go wrong. Boundary values: optional parameters |  |
| 5. Good developers always understand the problems as soon as possible. | 5. Good testers always report the problems as soon as possible. |  |
| 6. Good developer is one who always has some knowledge of product internals. | 6. Good tester is one who always has some domain knowledge, means they have some product and project knowledge. |  |
| 7. He is one who makes the software or application. | 7. He is one who only tests the software or application. |  |
| 8. Perfect developers are one who not only makes the best application, but they also give suggestions for further improving the application also. | 8. Perfect testers are one who not only finds out the bugs in the application, but they also find out the root cause of the bug too. |  |
|  |  | 9: works with development to allow Design For Test of the application: hook entries; API setup and tear down activities: decoupled classes; stub entries. |
|  |  | 10: works with test to identify defect clusters areas to Priority Test |