

MYEDU Education Centre, owned by Myedu OÜ Approved 22.05.2023	
Name of training programme	Software testing engineer (QA engineer)
Training programme group	153135 Software and application development and analysis / Tarkvara ja rakenduste arendus ning analüüs
Learning objectives	At the end of the training, the student will be able to carry out various types of manual testing and develop test documentation independently, using modern tools and methodologies.
Knowledge and skills acquired through successful completion of the curriculum Learning outcomes to be achieved	At the end of the training, the student <ul style="list-style-type: none"> <li>- knows the principles and techniques of test design;</li> <li>- uses different tools for testing;</li> <li>- understands the software development process and the role of testing in this process;</li> <li>- is able to draw up test documentation (checklist / test case / bug report / test plan / test report);</li> <li>- knows how to plan testing process;</li> <li>- Understands the principles of testing web and mobile applications;</li> <li>- Understands client-server architecture, REST API principles;</li> <li>- Can write SQL queries and understands the basics of working with databases;</li> <li>- automates API testing scenarios using Postman.</li> </ul>
Who this course is for, the target group	Professionals planning to work in IT (or already working) who want to gain the basic knowledge and skills needed to work as a QA engineer in Estonia and beyond.
Conditions imposed on the trainee to start the training, if they are a prerequisite for achieving the learning outcomes	Basic computer skills are required for participation in the training: switching the computer on and off, using the keyboard and mouse, working with a browser, creating and editing Word documents. The student must have a computer connected to the Internet.
The language of instruction	English Language
Total amount of training, including the proportion of classroom, practical and independent work	168 hours
Independent work	112 hours
Work in the classroom	56 hours (28 online classes of 2 academic hours each)
Duration of training	4 months
The content of the training:  Structure and scope of training	<p>The curriculum is based on the professional standard Tarkvaraarendaja, tase 6, competence B.3.5, taking into account the International Software Testing Qualifications Board (ISTQB) basic level certification requirements and current trends in the field of information technology.</p> <p><b>Unit 1: Fundamentals of Testing</b> Basics of software testing: Includes the definition of testing, the tester's tasks and the creation of test documentation such as checklists and bug reports. Test Design: Covers software requirements analysis, test design principles, and techniques such as equivalence classes and boundary values used to create effective test cases. 5 webinars. 10 ac hours of classroom work and 20 ac hours of independent work. Theoretical material and guided practical work.</p> <p><b>Unit 2: Testing web applications</b> An overview of web application architectures. Testing web applications: Client-server architecture, URL, HTTP and DevTools basics. Principles of GUI testing, web forms, validation and using DevTools. Cross-platform and cross-browser testing: Adaptive and responsive design, limitations of DevTools. 3 webinars. 6 ac. hours of classroom work and 12 ac. hours of independent study. Theoretical material and practical work under the guidance of a teacher.</p> <p><b>Unit 3: Mobile application and API testing</b> Introduction to mobile testing. The basics of working in Android Studio. The concept of APIs and the principles of testing REST APIs. Working with the JSON format, Postman and curl tools. Getting to know the API documentation, using Swagger as an example. Testing SOAP API. The structure and elements of XML files, using XSD schema. 4 webinars. 8 ac.h of classroom work and 16 ac.h of self-study. Theoretical material and practical work under the guidance of a teacher.</p> <p><b>Unit 4: Basic DB and SQL. Linux console</b> Basics of databases and SQL language. Practice compiling SQL queries on the simulator. Sorting, logical statements, inline functions, creating, changing and deleting data, subqueries and joins using JOIN. Operating systems. The file system. Basics of the console. Structure of commands: keys and arguments. Copying, moving and deleting files. The VIM editor. The grep and ping utilities. 5 webinars. 10 ac. hours of classroom study and 20 ac. hours of self-study. Theoretical material and practical work under the guidance of a teacher.</p> <p><b>Unit 5: Final project</b> Practical work on the simulator - testing a service that includes a web application and a mobile application. Overview of processes in QA, the concept of test environments. Introduction to test automation and CI/CD processes. 7 webinars. 14 ac. hours of classroom work and 28 ac. hours of independent work. Theoretical material and guided practical work.</p> <p><b>Unit 6: Employment programme</b> Preparing a CV and setting up a LinkedIn page Soft skills Test interview on soft skills Motivational letter and discussion of the offer 4 webinars. 8 ac. hours of classroom work and 16 ac. hours of self-study. Theoretical material and practical work under the guidance of a teacher.</p> <p><b>Final test</b> The course will conclude with an online quiz to reinforce what you have learned and advice on further reading material, videos and articles.</p>
Teaching methods:	<p><b>Classroom (online) work:</b> theoretical material (lectures and discussion of examples). <b>Practical work (online and independently):</b> performing tasks, conducting software testing, preparing test documentation. All practical assignments are completed in the Google Documents environment and checked by the teacher. Detailed written feedback on each work is given.</p> <p><b>Practical exercises will include:</b></p> <ul style="list-style-type: none"> <li>- assignments on test design principles and techniques</li> <li>- mastering of various tools for conducting testing;</li> <li>- exercises on the software development process and the role of testing in this process;</li> <li>- exercises on preparing test documentation (check-list / test-case / bug-report / test-plan / test-report);</li> <li>- mastering the test process planning;</li> <li>- Web and mobile application testing tasks;</li> <li>- mastering client-server architecture, API operating principles;</li> <li>- tasks on SQL queries and working with databases;</li> <li>- assignments on automation of API testing scenarios using Postman.</li> </ul> <p><b>Independent work</b> includes reading additional material on the subject and watching training videos.</p> <p>In between lessons, there is discussion in a closed group on Telegram</p>
Description of the learning environment:	<p>Classes take the form of online video conferences on Zoom and Google Documents. In the learning environment, theoretical and practical lessons are taught and homework is sent out. The student asks his/her own questions and receives feedback from the teacher. The number of students in one group ranges from 1 to 8. One academic hour is 45 minutes. Each lesson lasts 2 academic hours. Classes are held twice a week on weekdays, either in the evening.</p>
List of training materials	<p>Teaching material is made available to students electronically.</p> <p>Lecture notes; Test documentation templates; Training simulators for testing web , mobile applications and APIs.</p>
Completion requirements, including assessment methods and assessment criteria	<p>Doing homework, staying in online classes. The final test is used to assess learning outcomes.</p>
Conditions for graduation and documents to be issued (Certificate or Certificate)	<p>Successful completion of the course requires attendance in at least 80% of the academic and practical lessons and completion of all homework. Achievement of the learning outcomes is assessed through practical work and a final test.</p> <p>A certificate is issued to a learner who has attended at least 80% of the lessons, completed all practical work and passed the final test.</p> <p>A certificate of participation or completion is issued to a learner if the learning outcomes have not been achieved, but the learner has participated in the training.</p> <p>A certificate is issued according to the number of training hours attended, if the pupil has participated in at least half of the classes</p>
A description of the training provider's qualifications, training or work experience required for the training	<p>Vladimir Ovodenko QA engineer 10 years experience, 5 years teaching experience</p> <p>Valentina Smith is a QA manager with 12 years' experience in fintech. ISTQB certified specialist</p>