



**PROGRAMMING LANGUAGE FUNDAMENTALS**

**80 hours**

Basics · Hardware and Software Architecture · Computer and Networking Basics · Software Infrastructure and Applications · Numbering Systems Notation · Open Sources and Open Standards · Development Platforms Integrated Development Environment · IDE Eclipse Basics · Compiler and Builder · Programming Language Basics · Data Types · Operators · Statements · Functions · Symbol Presentation and Coding · Array · Basic Programming Patterns · C Practicing · Sequential and Binary Search · Sorting · Reversing · Merging · Object Oriented Programming · OOP Principles (Encapsulation, Inheritance) · Polymorphism · Classes and Objects · JAVA Basics · OOP Implementation in JAVA · JAVA Practicing

**SQL PROGRAMMING FUNDAMENTALS**

**32 hours**

Database and SQL Basics · Relational Databases · Tables · Logical Structure · Keys · Indexes · SQL Development Platform · Table Creation · Create Table Statement · Data Types · Table Update · Insert Statement · Update Statement · Combination of Select and Update Statements · Selection from Table · Simple Select Statement · Using WHERE clause · Selection Conditions · Ordering · Grouping vs Ordering · Aggregate Functions · Tables Joining · Examples of Complex Select Statements

**CORE JAVA FUNDAMENTALS**

**100 hours**

Introduction in Java and JVM · Data Types (Primitives and Classes) · Operators and Methods · Basic Algorithms · Arrays · Java Inheritance · Interfaces · Java Collections Framework (JCF) · Iterator Design Pattern · Exceptions · Input-Output Streams · JUnit — Java Automation Testing · Wrapper Classes · String / String Builder

**SOFTWARE TESTING**

**80 hours**

What is testing and why is testing necessary · Testing Objectives · Roles of Testing · Fundamental test process · The psychology of testing · Software development models · Test levels · Test types · Test organization · Test plans, estimates, and strategies · Identifying test conditions · Test design · Test progress monitoring and control · Risks and testing · Incident management · Types of test tools · Test Management tools (Jira/QAspace, Trello) · WEB testing · Chrome DevTools · Linux basic principles · Integration testing (REST API) Postman · Mobile testing · Android debug bridge (ADB)

**SOFTWARE TESTING AUTOMATION**

**100 hours**

Basic autotests concept, HTML, DOM · Setting up Browser, Project, IDE · Git/GitHub · Locating page elements using CSS and Xpath · Selenium WebDriver commands · Using test data from file (DataProvider) · Infrastructure for building and running tests — Maven or Gradle · Testing framework TestNG · Assertions and Expectations · Continuous integration server — Jenkins · Running tests by scheduler · Logger, Listener, screenshotting · Mobile automation testing · Appium

**TOTAL THEORETICAL/PRACTICAL HOURS**

**392 hours**

**PRACTICAL WORK ON REAL PROJECTS**

**80 hours**

**TOTAL HOURS**

**472 hours\*\***

\* — Tel-Ran educational center can make changes and adjustments to this program due to the relevance of the studied technologies without losing the total number of study hours without notifying students. The online QA English course is free and optional.

\*\* — doesn't include FREE webinars that are held regularly on topics covered in class and on homework analysis