FULL STACK JAVA DEVELOPMENT - COURSE STRUCTURE*

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

WEB PROGRAMMING
120 hours

WEB Clients Overview HTML • HTML Elements • HTML 5 • CSS Styles • CSS Flex-box • CSS Animation • Bootstrap • JavaScript Basics • DOM Interactions • JS Language • JS functions • JS OOP Principles • EcmaScript 2015+ • JS Promises • AJAX • JS Frameworks • jQuery • NPM • Webpack • Babel • ReactJS: Props, Components, States, Forms, Events, Routers • Redux • Adaptive Web Applications for Mobile

CORE JAVA
200 hours

Integrated Development Environments • Types and Variables • Statements and Operators • Object Oriented Programming • Java Virtual Machine • Junit Test-Driven Development Primitives and Classes • Immutable vs Mutable classes Algorithms and Data Structures Model View Controller (MVC) Paradigm • UML • Exceptions and exceptions handling • Collections Maps • IO Streams • Stream API • File System • Socket • Console • Multithreading • Race Conditions, Synchronization and DeadLocks

DATABASES FUNDAMENTALS
24 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 • MongoDB • MongoDB in Cloud • CRUD Operations: Create, Read, Update, and Delete Data • Mongo Aggregation

JAVA TECHNOLOGIES
80 hours

Spring Framework Overview • Spring Boot Applications • SOA (Service Oriented Architecture) • Rest Controller (WEB services) • Spring Data MongoDB Repositories • Spring Data JPA • Repositories (Hibernate) • Spring Security (Authentication, Authorization, Accounting) • High Level Architecture • Scalable • Architecture • MicroServices • BigData Overview & Kafka

TOTAL THEORETICAL/PRACTICAL HOURS
504 hours

REAL PROJECT DEVELOPMENT   (frontend and backend application)
150 hours

Full development process with application design and coding using the most popular version control system and deploying on cloud.

TOTAL HOURS
654 hours **

* — RanCode Academy 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

QA MANUAL AND AUTOMATION - COURSE STRUCTURE*

PROGRAMMING LANGUAGE FUNDAMENTALS
80 hours

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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 **

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