JAVA CODE IMMERSION

FULL-TIME PROGRAM SYLLABUS

PROGRAM LENGTH: 10 WEEKS
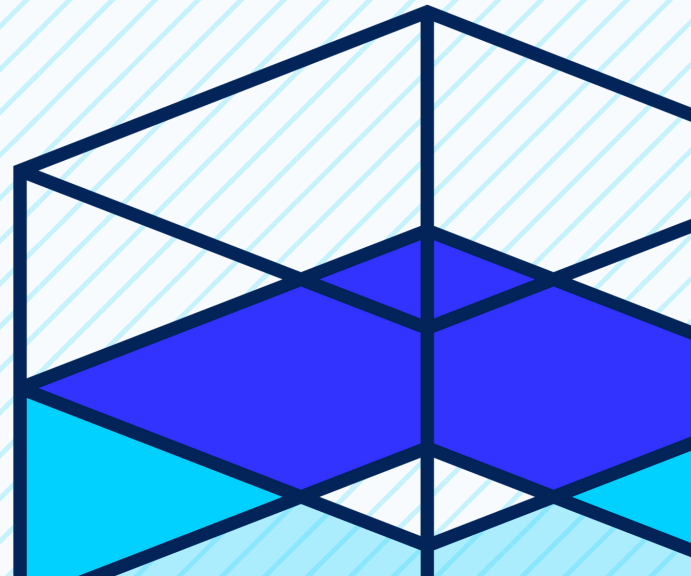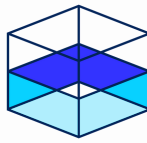
PROGRAM OVERVIEW

Our Code Immersion program, above all else, develops software engineers ready to succeed in today's digital workforce. The goal of this course is to introduce the topics and skills needed to begin a career in Java programming. It's specifically geared toward aspiring developers with no prior knowledge but is also a great refresher course for those with knowledge of a different programming language. Tech Talent South's Code Immersion programs are the perfect launching point for those who are passionate, persistent, and eager to learn.

Students can expect to be proficient in the concepts listed below and more specifically, have a strong foundational base in Java. In addition to our core curriculum, our career services, interview readiness, and other talent development activities put students in front of professionals who are excited about getting to know them and connecting them with potential opportunities. The technology opportunities are continuously expanding and so are our graduates.

COMPLETION REQUIREMENTS

A candidate will be considered to have successfully completed the course objectives upon obtaining a minimum score of 70% on the final examination.

PREREQUISITES

The course requires students to have access to a personal computer (Windows or macOS), basic computer literacy, and access to Wi-Fi.
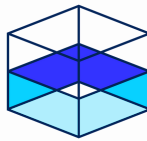
COURSE OUTLINE

INTRO TO PROGRAMMING, COMMAND LINE, GIT, GITHUB, AND AGILE
The program begins with a high-level introduction to basic programming concepts as well as a discussion of soft/power skills that will be required: decision making, critical thinking, attitude, collaboration, communication, time and resource management and more. Students will also start out with a strong foundation in general development practices like version control using Git and GitHub as well as a familiarity with the Command Line Interface (CLI). Throughout the course, students will practice being responsible for their code by practicing standard collaboration techniques. Ultimately, in this introductory segment, students will be taught common development methodologies with an emphasis on agile development.

FRONT-END DEVELOPMENT
In this segment students will learn the basics of front-end web development including markup languages (HTML and CSS) as well as front-end programming with JavaScript. The JavaScript fundamentals component not only teaches front-end development, but also focuses on the foundational programming knowledge (syntax, variables, functions, branching, loops, and data storage) that will support their programming throughout the remainder of the course.

ADVANCED JAVASCRIPT
In the Advanced JavaScript component of the course, students will be introduced to more complex JavaScript approaches such as object orientation.

FRONT-END FRAMEWORKS
Students will learn the popular front-end frameworks, React and Angular. They will be introduced to the syntax and its core concepts of each. Emphasis will be placed on data handling through the creation of interactive client-side programs initially and full-stack applications at the end of the course.
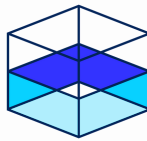
DATABASES AND SQL
At this point, students will dive into server-side database management by first learning how to work Structured Query Language (SQL) and how it is used to manage databases. Students will learn how to make basic and advanced queries as well as how to use SQL for reporting and manipulating data within a database. Finally, students will learn normalization tactics and how to model data. As a foundation for server-side programming in Java, the emphasis is on relational databases.

JAVA DATA STRUCTURES AND FUNCTIONS
Students will be introduced to the Java programming language and will learn its syntax, commonly used data structures, as well as the basic structure behind its functions and methods. Emphasis will be placed on the implementation of functions and data structures.

OBJECT ORIENTED PROGRAMMING WITH JAVA
Students will learn the fundamentals of object-oriented programming (OOP) through a deeper dive into the Java programming language. Core OOP concepts of encapsulation, abstraction, inheritance, and polymorphism will be taught through project-based learning.
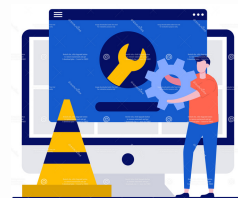
ADVANCED JAVA
The Advanced Java module covers core programming concepts such as algorithms and big-O notation as well as advanced data structures and search algorithms.