Java SE: Programming I

What is a Java Program

- Key features of the Java language
- Java technology and development environment
- Running and testing a Java program

Creating a Java Main class

- Java classes
- The Main method
- Adding a Main method

Data in the Cart

- Introducing variables
- Working with strings
- Working with numbers
- Manipulating numeric data

Managing Multiple Items

- Working with conditions
- Using IF statements
- Working with a list of items
- Processing a list of items

Describing Objects and Classes

- Working with objects and classes
- Defining fields and methods
- Declaring, instantiating, and initializing objects
- Working with object references
- Doing more with arrays

Manipulating and Formatting the Data in Your Program

- Using the String class
- Using the Java API docs
- Using the StringBuilder class
- More about primitive data types

- More numeric operators
- Promoting and casting variables

Creating and Using Methods

- Using methods
- Method arguments and return values
- Static methods and variables
- How arguments are passed to a method
- Overloading a method

Using Encapsulation

- Access control
- Encapsulation
- Overloading constructors

More on Conditionals

- Relational and conditional operators
- More ways to use IF/ELSE constructs
- Using switch statements
- Using the Netbeans debugger

More on Arrays and Loops

- Working with dates
- Parsing the args array
- Two-dimensional arrays
- Alternate looping constructs
- Nesting loops
- The ArrayList class

Using Inheritance

- Overview
- Working with subclasses and superclasses
- Overriding methods in the superclass
- Creating and extending abstract classes

Using Interfaces

- Polymorphism
- Polymorphism in the JDK foundation classes
- Using interfaces
- Local-variable type inference
- Using the List interface
- Introducing Lambda expressions

Handling Exceptions

- Overview
- Propagation of exceptions
- Catching and throwing exceptions
- Handling multiple exceptions and errors

Deploying and Maintaining the Soccer Application

- Packages, JARs, architecture
- Application modification and requirements

Understanding Modules

- The Module system
- JARs
- Module declarations
- Modular JDK

JShell

- Testing code
- JShell basics
- JShell in an IDE