

Course Outline

Java SE 8 Fundamentals NEW



Duration: 5 days (30 hours)

Learning Objectives:

- Write Java code that uses variables, arrays, conditional and loop constructs
- Manipulate primitive numeric data and string data using Java operators
- Create Java classes and use object references
- Access the fields and methods of an object
- Manipulate text data using the methods of the String and StringBuilder classes
- Use casting without losing precision or causing errors
- Declare, override, and invoke methods
- Access and create static fields and methods
- Use classes from the java.time and java.time.format packages to format and print the local date and time
- Encapsulate a class using access modifiers and overloaded constructors
- Define and implement a simple class hierarchy
- Demonstrate polymorphism by implementing a Java Interface
- Use a Predicate Lambda expression as the argument to a method
- Handle a checked exception in a Java application

Target Audience:

- Application Developers
- Web Administrator
- Developer
- Project Manager
- System Administrator
- Technical Administrator
- Technical Consultant
- Team Leader

Topics Covered:

- What Is a Java Program?
 - Introduction to Computer Programs
 - Key Features of the Java Language
 - The Java Technology and Development Environment
 - Running/testing a Java program
- Creating a Java Main Class
 - Java Classes
 - The main Method
- Data In the Cart
 - Introducing variables
 - Working with Strings

- Working with numbers
- Manipulating numeric data

- Managing Multiple Items
 - Working with Conditions
 - 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
 - Introducing the NetBeans IDE
 - Introducing the Soccer League Use Case
- 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
 - The remaining 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 of inheritance
 - Working with subclasses and superclasses
 - Overriding methods in the superclass
 - Introducing polymorphism
 - Creating and extending abstract classes
- Using Interfaces
 - Polymorphism in the JDK foundation classes
 - Using Interfaces
 - Using the List Interface
 - Introducing Lambda expressions

➤ Handling Exceptions

- Handling Exceptions: An overview
- Propagation of exceptions
- Catching and throwing exceptions
- Handling multiple exceptions and errors