

JAVA Fundamentals

(Course Duration: 30 Hours)

Course Contents

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

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

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