

## About Codefrux

While the current trends around the world are based on the internet, mobile and its applications, we try to make the most out of it. As for us, we are a well established IT professionals based in Bangalore, constantly coping up with the extensive advancement and adapting to new Technology.

Java® is one of today's most popular programming languages whose usage is multi-fold. At our Core Java training program, you'll learn to design, write, compile, and run basic Java applications that incorporate fundamental programming concepts and accepted programming techniques. You will learn to best use the fundamentals of Object Oriented Programming and how Java, as a programming language adds glint to it.

## What you will Learn In This Course

- Create object-oriented programs using Java programming language
- Create Java classes by extending existing Java classes
- Implement Interfaces in Java application
- Access internal properties of a class using reflection
- Apply Exception Handling mechanism in Java application
- Develop UI applications using AWT/Swing
- Create Multithreaded application in Java
- Create Java Applets
- Create networking application in Java
- Use JDBC APIs in Java application
- Use and create package and interfaces in a Java program

## Who should take the course?

- Anyone who wants to learn Java
- People who want to produce the highest-quality, creative software
- People looking to go from absolute beginner to advanced Java expert

## 1. Java – Overview

1. History of Java
2. Tools You Will Need
3. Try It Option
4. What is Next?
5. Quiz
6. Summary
7. Hands on

## 2. Java Environment Setup

1. Try it Option Online
2. Local Environment Setup
3. Popular Java Editors
4. What is Next?
5. Quiz
6. Summary
7. Hands on

## 3. Java – Basic Syntax

1. First Java Program
2. Basic Syntax
3. Java Identifiers
4. Java Modifiers
5. Java Variables
6. Java Arrays
7. Java Enums
8. Java Keywords
9. Comments in Java
10. Using Blank Lines
11. Inheritance
12. Interfaces
13. What is Next?
14. Quiz
15. Summary
16. Hands on

## 4. Java – Objects & Classes

1. Objects in Java
2. Classes in Java
3. Constructors
4. How to Use Singleton Class?
5. Creating an Object
6. Accessing Instance Variables and Methods
7. Source File Declaration Rules

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8. Java Package
  9. Import Statements
  10. A Simple Case Study
  11. What is Next?
  12. Quiz
  13. Summary
  14. Hands on

## **5. Java – Basic Datatypes**

1. Primitive Datatypes
2. Reference Datatypes
3. Java Literals
4. What is Next?
5. Quiz
6. Summary
7. Hands on

## **6. Java – Variable Types**

1. Local Variables
2. Instance Variables
3. Class/static Variables
4. Quiz
5. Summary
6. Hands on

## **7. Java – Modifier Types**

1. Java Access Modifiers
2. Java Non-Access Modifiers
3. The Static Modifier
4. The Final Modifier
5. The Abstract Modifier
6. Access Control Modifiers
7. Non-Access Modifiers
8. Quiz
9. Summary
10. Hands on

## **8. Java – Basic Operators**

1. The Arithmetic Operators
2. The Relational Operators
3. The Bitwise Operators
4. The Logical Operators
5. The Assignment Operators
6. Miscellaneous Operators
7. Precedence of Java Operators

8. Quiz
9. Summary
10. Hands on

## 9. Java – Loop Control

1. While Loop in Java
2. for Loop in Java
3. Do While Loop in Java
4. Loop Control Statements
5. Break Statement in Java
6. Continue Statement in Java
7. Enhanced for loop in Java
8. Quiz
9. Summary
10. Hands on

## 10. Java – Decision Making

1. If Statement in Java
2. If-else Statement in Java
3. The if else if else Statement
4. Nested if Statement in Java
5. Switch Statement in Java
6. The ? : Operator:
7. Quiz
8. Summary
9. Hands on

## 11. Java – Numbers Class

1. Number Methods
2. Java XXXValue Method
3. Java – compareTo() Method
4. Java – equals() Method
5. Java – valueOf() Method
6. Java – toString() Method
7. Java – parseInt() Method
8. Java – abs() Method
9. Java – ceil() Method
10. Java – floor() Method
11. Java – rint() Method
12. Java – round() Method
13. Java – min() Method
14. Java – max() Method
15. Java – exp() Method
16. Java – log() Method
17. Java – pow() Method

18. Java – sqrt() Method
19. Java – sin() Method
20. Java – cos() Method
21. Java – tan() Method
22. Java – asin() Method
23. Java – acos() Method
24. Java – atan() Method
25. Java – atan() Method
26. Java – toDegrees() Method
27. Java – toRadians() Method
28. Java – random() Method
29. Quiz
30. Summary
31. Hands on

## 12. Java – Character Class

1. Escape Sequences
2. Character Methods
3. Java – isLetter() Method
4. Java – isDigit() Method
5. Java – isWhitespace() Method
6. Java – isUpperCase() Method
7. Java – isLowerCase() Method
8. Java – toUpperCase() Method
9. Java – toLowerCase() Method
10. Java – toString() Method
11. Quiz
12. Summary
13. Hands on

## 13. Java – Strings Class

1. Creating Strings
2. Java – String Buffer & String Builder Classes
3. StringBuffer Methods
4. Java – String Buffer append() Method
5. Java – String Buffer reverse() Method
6. Java – String Buffer delete() Method
7. Java – String Buffer insert() Method
8. Java – String Buffer replace() Method
9. String Length
10. Concatenating Strings
11. Creating Format Strings
12. String Methods
13. Java – String charAt() Method
14. Java – String compareTo(Object o) Method

15. Java – String compareTo(String anotherString) Method
16. Java – String compareToIgnoreCase() Method
17. Java – String concat() Method
18. Java – String contentEquals() Method
19. Java – String copyValueOf(char[] data) Method
20. Java – String copyValueOf(char[] data, int offset, int count) Method
21. Java – String endsWith() Method
22. Java – String equals() Method
23. Java – String equalsIgnoreCase() Method
24. Java – String getBytes(String charsetName) Method
25. Java – String getBytes() Method
26. Java – String getChars() Method
27. Java – String hashCode() Method
28. Java – String indexOf(int ch) Method
29. Java – String indexOf(int ch, int fromIndex) Method
30. Java – String indexOf(String str) Method
31. Java – String indexOf(String str, int fromIndex) Method
32. Java – String Intern() Method
33. Java – String lastIndexOf(int ch) Method
34. Java – String lastIndexOf(int ch, int fromIndex) Method
35. Java – String lastIndexOf(String str) Method
36. Java – String lastIndexOf(String str, int fromIndex) Method
37. Java – String length() Method
38. Java – String matches() Method
39. Java – String regionMatches() Method
40. Java – String regionMatches() Method
41. Java – String replace() Method
42. Java – String replaceAll() Method
43. Java – String replaceFirst() Method
44. Java – String split() Method
45. Java – String split() Method
46. Java – String startsWith() Method
47. Java – String startsWith() Method
48. Java – String subsequence() Method
49. Java – String substring() Method
50. Java – String substring() Method
51. Java – String toCharArray() Method
52. Java – String toLowerCase() Method
53. Java – String toLowerCase() Method
54. Java – String toString() Method
55. Java – String toUpperCase() Method
56. Java – String toUpperCase() Method
57. Java – String trim() Method
58. Java – String valueOf() Method
59. Quiz
60. Summary

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61. Hands on

#### **14. Java – Arrays**

1. Declaring Array Variables
2. Creating Arrays
3. Processing Arrays
4. The for each Loops
5. Passing Arrays to Methods
6. Returning an Array from a Method
7. The Arrays Class
8. Quiz
9. Summary
10. Hands on

#### **15. Java – Strings Class**

1. Creating Strings
2. Java – String Buffer & String Builder Classes
3. StringBuffer Methods
4. Java – String Buffer append() Method
5. Java – String Buffer reverse() Method
6. Quiz
7. Summary
8. Hands on

#### **16. Java – Date & Time**

9. Getting Current Date & Time
10. Date Comparison
11. Simple DateFormat Format Codes
12. Date and Time Conversion Characters
13. Parsing Strings into Dates
14. Sleeping for a While
15. Measuring Elapsed Time
16. GregorianCalendar Class
17. Quiz
18. Summary
19. Hands on

#### **17. Java – Regular Expressions**

1. Capturing Groups
2. Regular Expression Syntax
3. Methods of the Matcher Class
4. Quiz
5. Summary
6. Hands on

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## 18. Java – Methods

1. Creating Method
2. Method Calling
3. The void Keyword
4. Passing Parameters by Value
5. Method Overloading
6. Using Command-Line Arguments
7. The Constructors
8. Parameterized Constructor
9. The this keyword
10. Variable Arguments(var-args)
11. The finalize() Method
12. Quiz
13. Summary
14. Hands on

## 19. Java – Files and I/O

1. Stream
2. Standard Streams
3. Reading and Writing Files
4. ByteArrayInputStream
5. DataInputStream
6. FileOutputStream
7. ByteArrayOutputStream
8. DataOutputStream
9. File Navigation and I/O
10. File Class
11. Directories in Java
12. Listing Directories
13. Quiz
14. Summary
15. Hands on

## 20. Java – Exceptions

1. Exception Hierarchy
2. Built-in Exceptions
3. Exceptions Methods
4. Catching Exceptions
5. Multiple Catch Blocks
6. Catching Multiple Type of Exceptions
7. The Throws/Throw Keywords
8. The Finally Block
9. The try-with-resources
10. User-defined Exceptions



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11. Common Exceptions
  12. Quiz
  13. Summary
  14. Hands on

## **21. Java – Inner Classes**

1. Nested Classes
2. Inner Classes (Non-static Nested Classes)
3. Accessing the Private Members
4. Method-local Inner Class
5. Anonymous Inner Class
6. Anonymous Inner Class as Argument
7. Static Nested Class
8. Quiz
9. Summary
10. Hands on

# **JAVA - OBJECT ORIENTED**

## **22. Java – Inheritance**

1. extends Keyword
2. Sample Code
3. The super keyword
4. Invoking Superclass Constructor
5. IS-A Relationship
6. The instanceof Keyword
7. HAS-A relationship
8. Types of Inheritance
9. Quiz
10. Summary
11. Hands on

## **23. Java – Overriding**

1. Rules for Method Overriding
2. Using the super Keyword
3. Quiz
4. Summary
5. Hands on

## **24. Java – Polymorphism**

1. Virtual Methods
2. Quiz
3. Summary
4. Hands on

## 25. Java – Abstraction

1. Abstract Class
2. Inheriting the Abstract Class
3. Abstract Methods
4. Quiz
5. Summary
6. Hands on

## 26. Java – Encapsulation

1. What is Encapsulation
2. Benefits of Encapsulation
3. Quiz
4. Summary
5. Hands on

## 27. Java – Interfaces

1. Declaring Interfaces
2. Implementing Interfaces
3. Extending Interfaces
4. Extending Multiple Interfaces
5. Tagging Interfaces
6. Quiz
7. Summary
8. Hands on

## 28. Java – Packages

1. Creating a Package
2. The import Keyword
3. The Directory Structure of Packages
4. Set CLASSPATH System Variable
5. Quiz
6. Summary
7. Hands on

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## Project Work

After course completion, students will be assigned to work on live project to polish the technology skills you have acquired with us.