

# Programming in JAVA

## MCS-508

### Block 1: Object Oriented Methodology and Java

#### Unit 1: Object Oriented Programming

Paradigms of Programming languages, Evolution of Object Oriented Methodology, Basic Concepts of OOA Approach, Comparison of object oriented and procedure - oriented Approaches, Benefits of OOPS, Applications of OOPS. Classes and objects, Abstraction and Encapsulation, Inheritance, Method overriding and Polymorphism.

#### Unit 2: Java Language Basics

Introduction to Java, Primitive Data Type and Variables, Java Operators.

#### Unit 3: Expressions Statements and Arrays

Expressions, Statements, Control Statements, Selection Statements, Iterative Statements, Jump statements, Arrays.

### Block 2: Object oriented concepts and Exceptions Handling

#### Unit 4: Class and objects

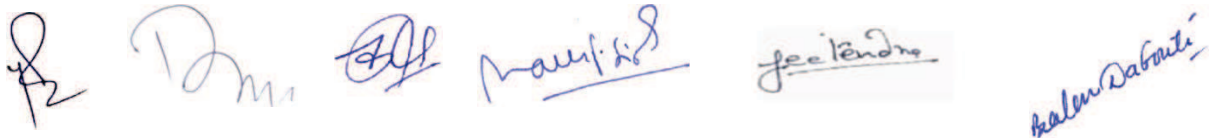
Class Fundamentals, Introducing Methods, this Keyword, Using objects as Parameters, Method overloading, Garbage collection, the finalize () Method.

#### Unit 5: Inheritance and Polymorphism

Inheritance Basics, Access, Multilevel, inheritance, Method overriding Abstract classes, Polymorphism, Final Keyword.

#### Unit 6: Packages and interfaces

Package, Accessibility of Packages, using Package members, Interfaces, Implementing interfaces, interface and Abstract classes, Extends and Implements together.





## Unit 7: Exceptions Handling

Exception, Handling of Exception, Types of Exceptions, Throwing, Exceptions, writing Exception subclasses.

### **Block 3: Multithreading, I/O, and Strings Handling**

## Unit 8: Multithreaded Programming

Multithreading, The Main thread, JAVA Thread Model, Thread Priorities, Synchronization in JAVA, Inter thread Communication.

## Unit : I/O In Java

I/O Basics, Streams and stream, Classes, the predefined streams, Reading from and writing to console, reading and writing files, the transient and volatile Modifiers, using instance of Native Methods.

## Unit 10: Strings and Characters

Fundamental of Characters and Strings, the String class, String operations, Data Conversion using value of () Methods, Strings Buffer and Methods.

## Unit 11: Exploring Java I/O

Java I/O classes and interfaces, Stream classes, Text streams, Stream Tokenizer, Serialization, Buffered stream, print stream, Random Access file.

### **Block 4: Graphics and user interfaces**

## Unit 12: Applets

The applet class, Applet architecture, An applet Skeleton: Initialization and Termination, Handling events, HTML Applet TAG.

## Unit 13: Graphics and user interfaces

Graphics contexts and Graphics objects, user interface components, Building user interface with AWT, Swing - Based GUI, Layouts and layouts and layout Manager, Container.

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Unit 4: Networking Features

Socket overview, reserved parts and proxy servers, Internet Addressing: Domain Naming Services (DNS),

Java and The Net: URL, TCP/IP Sockets, Datagrams.

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