

## **PROGRAMMING in JAVA**

**60 Hours**

### **Module 1 – Introduction**

**5 Hours**

History, Overview of Java, Object Oriented Programming, A simple Programme, Two control statements - if statement, for loop, using Blocks of codes, Lexical issues - White space, identifiers, Literals, comments, separators, Java Key words. Data types: Integers, Floating point, characters, Boolean, A closer look at Literals, Variables, Type conversion and casting, Automatic type promotion in Expressions Arrays.

#### **Operators:**

**5 Hours**

Arithmetic operators, The Bit wise operators, Relational Operators, Boolean Logical operators, Assignment Operator, Operator Precedence. Control Statements: Selection Statements - if, Switch: Iteration Statements - While, Do-while, for Nested loops, Jump statements.

### **Module 2 – Classes:**

**21 Hours**

Class Fundamentals, Declaring objects, Assigning object reference variables, Methods, constructors, “this” keyword, finalize ( ) method A stack class, Over loading methods, using objects as parameters, Argument passing, Returning objects, Recursion, Access control, Introducing final, understanding static, Introducing Nested and Inner classes, Using command line arguments.

Inheritance: Inheritance basics, Using super, method overriding, Dynamic method Dispatch, using abstract classes, using final with Inheritance.

### **Module 3 – Packages:**

**7 Hours**

Definition, Access protection importing packages, Interfaces: Definition implementing interfaces. Exception Handling: Fundamental, Exception types, Using try and catch, Multiple catch clauses, Nested try Statements, throw, throws, finally, Java’s Built - in exception, using Exceptions.

### **Module 4- Multithreaded Programming:**

**14 Hours**

The Java thread model, The main thread, Creating a thread, Creating multiple thread, Creating a thread, Creating multiple threads, Using isalive() and Join(), Thread - Priorities, Synchronization, Inter thread communication, suspending, resuming and stopping threads, using multi threading. I/O basics, Reading control input, writing control output, Reading and Writing files, Applet Fundamentals, the AWT package, AWT Event handling concepts The transient and volatile modifiers, using instance of using assert.

### **Module 5 – JAVA Database Connectivity (JDBC) :**

**08 Hours**

Database connectivity: JDBC architecture, JDBC Drivers, the JDBC API: loading a driver, connecting to a database, Creating and executing JDBC statements, Handling SQL exceptions, Accessing result sets: Types of result sets, Methods of result set interface. An example JDBC application to query a database.

### **Books for Reference:**

1. The complete reference Java –2: V Edition By Herbert Schildt Pub. TMH.
2. SAMS teach yourself Java – 2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub. Pearson Education.