Core JAVA

Duration: 60 hours   **Batches: Regular/ Weekend**

Object Oriented Programming (OOPS) concepts
Advantages of OOPS
OOPS concepts and terminology
Fundamentals of OOPS

Core Java Programming Introduction of Java
What is Java?
How to Get Java
A First Java Program
Compiling and Interpreting Applications
The JDK Directory Structure
Using Eclipse

Data types and Variables
Primitive Datatypes, Declarations
Variable Names
Numeric Literals, Character Literals
String formatting and parsing,
String Literals,
Arrays, Non-Primitive Datatypes,
The Dot Operator

Methods
Methods
Calling Methods
Defining Methods
Method Parameters
Scope
Method Parameters
So, Why All the static?

Operators and Expressions
Expressions

Assignment Operator
Arithmetic Operators
Relational Operators
Logical Operators

Increment and Decrement Operators
Operate-Assign Operators (+=, etc.)
The Conditional Operator
Operator Precedence
Implicit Type Conversions
The Cast Operator
Strict typing
Type conversion

Control Flow Statements
Statements
Conditional (if) Statements
Data types and Variables 3
Adding an else if
Conditional (switch) Statements
while and do-while Loops
for Loops
A for Loop Diagram
Enhanced for Loop
The continue Statement
The break Statement

Object-Oriented Programming
Introduction to Object-Oriented Programming
Classes and Objects
Fields and Methods
Encapsulation
Access Control

Inheritance
Polymorphism

Objects and Classes
Defining a Class
Creating an Object
Instance Data and Class Data
Methods
Constructors
Access Modifiers
Encapsulation

Using Java Objects
Printing to the Console
printf Format Strings
StringBuilder and StringBuffer
Methods and Messages
toString
Parameter Passing
Comparing and Identifying Objects,
Destroying Objects

Inheritance in Java
Inheritance
Inheritance in Java
Casting
Method Overriding
Polymorphism
super
The Object Class

Packages
The import Statement
Static Imports
Casting
CLASSPATH and Import
Defining Packages
Package Scope

Exception Handling
Exceptions Overview

Catching Exceptions
The finally Block
Exception Methods
Declaring Exceptions
Defining and Throwing Exceptions
Errors and Runtime Exceptions
Assertions

Input/Output Streams
Overview of Streams
Bytes vs. Characters
Converting Byte Streams to Character
Streams
File Object
Binary Input and Output
PrintWriter Class
Reading and Writing Objects
Basic and Filtered Streams

Collection Framework
The Collections Framework
The Set Interface
Set Implementation Classes
The List Interface
List Implementation Classes
The Map Interface
Map Implementation Classes
Utility classes
Generics
Primitive wrapper classes

Inner Classes
Inner Classes
Member Classes
Local Classes
Anonymous Classes
Instance Initializers
Static Nested Classes

Introduction to Threads
Non-Threaded Applications
Threaded Applications
Creating Threads
Thread States
Runnable Threads
Coordinating Threads
Interrupting Threads
Runnable Interface ,ThreadGroups

Interfaces and Abstract Classes
Separating Interface and Implementation
UML Interfaces and Realization
Defining Interfaces
Implementing and Extending

Interfaces
Runnable Threads
Abstract Classes

Applet
Life Cycle of an Applet
A "Hello, World" Applet