



## Syllabus for "Core Java Programming– introduction"

### Course Outlines:

#### Introduction to Java programming

- The Java Virtual Machine
- Variables and data types
- Conditional and looping constructs
- Arrays

#### Object-oriented programming with Java Classes and Objects

- Fields and Methods
- Constructors
- Overloading methods
- Garbage collection
- Nested classes

#### Inheritance

- Overriding methods
- Polymorphism
- Making methods and classes final
- Abstract classes and methods
- Interfaces

#### Exception handling with try-throw-catch-finally constructs

- The Exception class

#### The Object class

- Cloning objects
- The JDK LinkedList class
- Strings
- String conversions

#### Working with types: Wrapper classes

- Enumeration interface

#### Packages

- Package access
- Documentation comments

#### Applets

- Configuring applets
- Applet capabilities and restrictions



## TECHNOLOGIES

### Basics of AWT and Swing

- Layout Managers
- Event Handling
- The Action Listener interface
- Panels
- Classes for various controls, such as label, choice, list, Checkbox, etc.
- Dialogs and frames
- Using menus
- Using the adapter classes
- Graphics

### Threads

- Synchronization

### The I/O Package

- InputStream and OutputStream classes
- Reader and Writer classes

### Basic concepts of networking

- Working with URLs
- Concepts of URLs
- Sockets

### Database connectivity with JDBC

- Java security



## Syllabus for "Advanced Java Programming – introduction"

### Course Outlines:

#### (Web-Server & support Technologies)

#### Java Database Connectivity

- JDBC Product
- Types of Drivers
- Two-Tier Client/Server Model
- Three-Tier Client/Sever Model
- Basic Steps of JDBC
- Creating and Executing SQL Statement
- The Result Set Object
- Working with Database MetaData
- Interface Servlets

#### Servlet

- Interaction & Advanced Servlets
- Life cycle of Servlet
- Java Servlet Development Kit
- Javax.servlet package
- Reading Servlet Parameters
- Reading Initialization Parameters
- The javax.servlet.http Package
- Handling HTTP

#### JavaServer Pages

- JSP Technologies
- Understanding the Client-Server Model
- Understanding Web server software
- Configuring the JSP Server
- Handling JSP Errors
- JSP Translation Time Errors
- JSP Request Time Errors
- Creating a JSP Error Page

### TECHNOLOGIES

#### RMI

- RMI Architecture
- Designing RMI application
- Executing RMI application EJB
- Types of EnterpriseJava beans
- Session Bean & Entity Bean
- Features of Session Bean
- Life-cycle of Stateful Seession Bean
- Features of Entity Bean
- Life-cycle of Entity Bean
- Container-managed Transactions &
- Bean-managed Transactions



- Implementing a container-manged Entity Bean

## XML

- What is XML?
- XML Syntax Rules

## Struts

- Introduction to the Apache Struts
- MVC Architecture
- Struts Architecture
- How Struts Works?
- Introduction to the Struts Controller
- Introduction to the Struts Action Class
- Using Struts ActionFrom Class
- Using Struts HTML Tags
- Introduction to Struts Validator Framework
- Client Side Address Validation in Struts
- Custom Validators Example
- Developing Application with Struts Tiles

## Hibernate

- Introduction to Hibernate 3.0
- Hibernate Architecture
- First Hibernate Application