



Syllabus: Core Java Programming

Chapter 1: Introduction to Java programming

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

Chapter 2: Object-oriented programming with Java Classes and Objects

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

Chapter 3: Inheritance

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

Chapter 4: Exception handling with try-throw-catch-finally constructs

- ☐ The Exception class

## Chapter 5: The Object class

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

## Chapter 6: Working with types: Wrapper classes

- ☐ Enumeration interface

## Chapter 7: Packages

- ☐ Package access
- ☐ Documentation comments

## Chapter 8: Applets

- ☐ Configuring applets
- ☐ Applet capabilities and restrictions

## Chapter 9: 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

## Chapter 10: Threads

- ☒ Synchronization

## Chapter 11: The I/O Package

- ☒ InputStream and OutputStream classes
- ☒ Reader and Writer classes

## Chapter 12: Basic concepts of networking

- ☒ Working with URLs
- ☒ Concepts of URLs
- ☒ Sockets

## Chapter 13: Database connectivity with JDBC

- ☒ Java security

## Syllabus: Advanced Java Programming (J2EE)

(Web-Server & support Technologies)

### Java Database Connectivity

- ☒ JDBC Product
- ☒ Types of Drivers
- ☒ Two-Tier Client/Server Model
- ☒ Three-Tier Client/Server 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

## 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

## Structs

- ☐ 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