CODERS ACADEMY

Training | Internships | Projects | Product Development

Core Java

Advance Java

Course Contents

Proposed Hours - 25/40

Core Java

Core Java is the most basic and the purest form of Java which set the foundation for other editions of the programming language. Core Java refers to the Java Standard Edition (Java SE) which is the basic foundation of the Java platform and is used for the development of enterprise level applications for both desktops and servers

INTRODUCTION TO JAVA

- History of JAVA
- Java v/s C & C++
- Features of Java
- Execution of java program

PROGRAMMING CONSTRUCTS

- Variables and constants
- Data types in Java, Data types conversion
- Operators in java, control structures
- Best practices

OBJECT ORIENTED PROGRAMMING

- Introduction to OOPS
- Access Modifiers
- Implementation of classes and objects
- Inheritance in Java
- Overloading and Overriding
- Abstract classes, Constructors and Destructors
- Packages and Interfaces
- Super and this members
- Best practices

APPLET, AWT & SWINGS

- Life cycle of Applet
- Applet V/S Applications
- AWT Delegation Model
- Windows components
- Layout managers, Tour of Swings
- Best practices

EXCEPTION HANDLING

- Types of Errors
- Exception Structure
- Exception Classes
- Throw and Throws blocks

THREADING

- Thread Life Cycle
- Life cycle methods of a Thread
- Synchronization of Thread
- Dead Lock in Threads, Best practices

REMOTE METHOD INVOCATION

- Introduction to RMI
- RMI V/S Socket programming
- RMI Architecture
- Execution of RMI

J2EE

INTRODUCTION
- Introduction to J2EE
- Elements of J2EE
- J2EE Platforms
- J2EE Architecture
- Key enabling technologies of J2EE

ENETRPRISE APPLICATION ARCHITECTURE
- Client/Server applications
- Multi-tier applications
- Web application architecture
- Advantage of Multi-tier Architecture
- Server-side application development using java

JAVA BEANS & COMPONENT MODELS
- Basics of software components
- Java beans architecture
- Bean properties
- Methods and Events
- Creating JavaBeans
- Using JavaBeans
- Differences between EJB and JavaBeans

EJB ARCHITECTURE
- Where and how EJB are used
- Roles in EJB Specifications
- Session and Entity Beans
- The EJB Container
- The EJB Server
- The EJB Clients

REMOTE METHOD INVOCATION (RMI)
- Purpose and architecture of RMI
- RMI Classes and interface
- RMI Clients and Server
- Parameter passing and serialization

OBJECT SERIALIZATION
- What is Serialization?
- Serialization Object

SESSION BEANS
- The Home Interface and Home Object
- The Remote Interface and EJB Object
- Stateful and Stateless Beans
- Session Beans Life cycle
- Exceptions related to Session Beans

DEPLOYING SESSION BEANS
- Overview of development Description
- Abilities and Limitations of Development Description
- Adding information to Deployment Descriptor
- Using JNDI with EJB

ENTITY BEANS
- Implementing Business Logic Methods
- Entity Beans Interface
- Loading and Storing Entity Beans
- CjbCreate, CjbLoad and Ejbstore Methods
- Primary Key Definition Persistence Management Techniques
- Container-Managed Persistence, Bean-Managed Persistence

J2EE

JNDI
- Naming and Directory Services
- JNDI Packages
- JNI Service Providers

JMS MESSAGING SERVICES
- JMS Overview
- Uses for JMS
- Classes and Interface in the JMS API
- Vendor Support for JMS
- Using JMS with EJB

JDBC
- The JDBC Connectivity Model
- JDBC Drivers, Connecting to Database
- Executing SQL with JDBC
- Processing Results from Query
- Stored Procedures and Function

XML
- Introduction
- GML, SGML
- HTML, XML, Documents, Element DTD
- Creating Elements, Creating Attribute
- Attribute type PCDATA
- CDATA, NMTOKENS etc
- DOM (Document Object Model) SAX (Simple AI to XML)
- XSLT, XML Schemas

INTRODUCING COBRA INTO ENTERPRISES ARCHITECTURE
- Introduction to COBRA
- COBRA Architecture

JAVA SERVLETS & SERVER PAGES
- Servlet Life Cycle
- Writing the Servlet using Servlet API
- Cookies, Session Tracking JSP
- Application Server Concepts (Webspher)

INTRODUCTION TO APPLICATION SERVE
- Difference between Web server and Application Server
- Connection Pool Management
- Data Source, Load Balancing
- Complete Life Cycle and Development of J2EE Application

PROJECT - (Complete Life Cycle Project Demo For J2ee)
- Requirements phase (RS)
- Functional Specifications (FS)
- Cut Phase
- Testing Phase
- Acceptance & Presentation

UDII
- Introduction (Services Discovery, Five Data types)
- Overall design Principles (Unique Identifiers)
- Containment
- Data Structure notation (Structure Specification, Structure Break down)
- The Business Service Structure (Structure Specification, Structure Break down)
- The Binding template Structure (Structure Specification, Structure Break down)
- The Model Structure (Two Main uses, Defining the technical fingerprint)
- The Publisher Assertion Structure (Structure Specification, Structure Break down)

ADAVANCED JAVA

EJB
- Enterprise application architecture
- Differences between EJB and java beans
- EJB architecture
- Session beans (stateless/state full)
- Deployment of session beans
- Entity beans (CMP/BMP)
- Deployment of entity beans
- Message driven beans
- Deployment of MDB
- Transaction

JAVA Design patterns
Introduction to JDK, EJB and JEE
STRUCTS
- Structs architecture
- Validation framework
- Tiles Frame work

PORTLETS
- Developing and Deploying Portlets using Portlets API's
- Event Handling
- Portlet Messaging

AJAX
- AJAX basics
- Technologies used in AJAX
- AJAX operations
- XML Http request methods and properties
- Methods
- DOM API's & inner HTML
- AJAX security

SPRING FRAMEWORK & HIBERNATE
- Introducing the spring Framework
- Spring architecture fundamentals
- Deploying components in the spring container
- Simplifying data access with JDBC templates
- Data Access Object (DAO) patterns
- Managing Transactions
- Analyzing J2EE transaction support
- Applying Spring transaction strategies
- Accessing Enterprise services
- Remote Method Invocation (RMI)
- Building web services
- Asynchronous messaging
- Scheduling tasks and processes
- Persisting objects with Hibernate
- Integrating Hibernate
- Generating Hibernate Applications

WEB SERVICES
- XML
- XML Parsers
- SAX
- DOM
- XML Binding
- JDOM

WEB SERVICES (SOAP, WSDL and UDDI)
- Data Binding with JAXB
  SOA (Service Oriented Architecture)
- JAX WS Basics
- UUDI and JAXR
- SOAP and the SAAJ API
- Describing Web Services with WSDL
- Message Handlers
- JAXWS Provider and Restful web services
- JAX RPC
- JAX WS Dispatch and Asynchronous Web Services
- JAX RPC Advanced Concepts
- Securing web services

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