

ADVANCED JAVA---Duration : 10 days

Core Java : 2 Days

Introduction to java

- Features of Java
- OOPs
- Data types and Operators
- Arrays
- Control Flow statements
 - If, Switch, For, While, and Do
 - Enhanced For Loop

Class Design

- Class and Objects
- Methods and Constructors

Polymorphism

- Method Overloading
- Constructor Overloading
- Use of **this** keyword

Encapsulation

- Packages and Access Specifiers

Inheritance

- Inheritance Basics
- Use of super keyword
- Overriding
- Runtime Polymorphism

Advanced Class Features

- Static variables, Static block and methods
- Static Import

Abstraction

- Abstract classes and methods
- Final classes and methods
- Interfaces

Exception Handling

- Exception and Errors

- Checked and UncheckedException
- Handling exceptions using try, catch and finally
- Java7 multi catch
- Use of throw and throws

java.util

- Generics
- Collections Framework
- List, Set
- Map
- Iterator, ListIterator and Enumeration

JDBC

- JDBC overview
- Types of drivers
- java.sql interfaces Driver, Connection, Statement
- Loading a driver and establishing a connection using DriverManager
- Perform CRUD operations using JDBC interfaces
- Prepared Statement for precompiled queries
- Mapping SQL and Java Types

Hibernate : 3 Days

Introduction to ORM framework

- JDBC Vs Hibernate
- Features of Hibernate

Hibernate Architecture Overview

- Configuration and Session Factory
- Session
- Transaction
- Environment Setup
- Getting started with Hibernate quickly

Database Connection and Schema Generation

- Mapping JavaBeans to tables
- Mapping properties to columns
- Building a Configuration Programmatically /Using .properties file /Using XML configuration file
- Creating a HBM document from the java bean class
- Creating a java bean class from a HBM document

Persisting objects using Hibernate

CRUD Examples

- Persisting data
- Loading data into an object
- get Vs load
- Deleting, updating & finding objects
- Using HQL to get all objects

Lifecycle

- Transient State
- Persistent state
- Detached state

Setting up all types of Mapping

- Mapping composite keys
- Mapping a java class
- Mapping Collections
- Mapping Association
- Component Mapping
- Inheritance Mapping
 - Table-per-class
 - Table-per-subclass
 - Table-per-concrete

Hibernate Annotations

- Using annotation for all kinds of mapping
- Use of @Entity, @Embedded and other annotations
- Mapping a simple class, Association, Inheritance

Hibernate Query Language

- Using Query interface for single/multi select statements
- Named and positional parameters
- Named and Native Queries
- Using SQL Queries
- Working with HQL Joins
- Using Criteria for select statements
- Pagination using HQL

Hibernate Cache Overview

- Introduction to the Caching
- First Level /Second Level/Query cache
- Cache Modes
- EHCache Configuration

Spring : 3 Days

Introduction

- Overview of Spring framework
- Dependency Injection (DI)
- What is Spring?

Spring Architecture

- Spring Container, IoC, DI
- Configuration Metadata - XML
- Dependency Injection (DI) in Spring, DI Configuration

Spring Core Container and Beans

- BeanFactory Interface and ApplicationContext
- ClassPathXmlApplicationContext, FileSystemXmlApplicationContext
- Spring Beans
- Loading Spring Configuration File

What are Setter Based and Constructor Based DI?

XML Based Configuration

- Setter Based and Constructor Based
- Factory Methods, Definition Inheritance (Parent Beans)
- Collection Valued Properties
 - Configuring and using Array, List, Map, Set and Properties
- Inner Bean
- Bean Scopes
- Autowiring of Dependencies using byName,byType,constructor
- Bean LifeCycle
- InitializingBean and DisposableBean
- Creating custom lifecycle methods

Annotation Driven Configuration

- Setter-Based /Constructor based
- Use of @Component, @Value

- Autowiring using @Autowired, @Qualifier
- Use of @PostConstruct and @PreDestroy

Database Access with Spring

- Issues with JDBC / Typical JDBC Flow
- Introduction to Spring DAO Support
- Queries and Inserts
- Additional API Capabilities
- Using Spring with Hibernate
 - Spring Database API, (Simple)JdbcTemplate, (Simple)JdbcDaoSupport

Introduction to Spring Web MVC

Spring MVC Architecture

- DispatcherServlet and Context Loader Listener
- Use of Controllers, View Resolvers
- Stereotypes: @Component, @Service, @Controller, @Repository

Creating a Spring MVC application using Maven

Validation Framework

- Declarative Validation, @NotNull, @Size, @Min, etc
- Custom Validators

Integration of Spring MVC with JDBC and Hibernate

- Internationalization
- Spring Tags

Aspect Oriented Programming (AOP)

- Overview of AOP
- Introduction to Spring AOP
- AOP Basics
- Aspect, Join point, Advice, Pointcut, Weaving
- Using Aspects
- Using @AspectJ Annotations
- AspectJ Pointcuts, Autoproxies

JavaScript/Jquery/Ajax : 2 Days

Introduction to JavaScript

- What is JavaScript?
- JavaScript and Events
- JavaScript and Old or Disabled Browsers
- JavaScript from External Files

JavaScript deep dive

- The HTML Document and JavaScript
- Syntax
- Debugging in JavaScript
- Data types, Variables, Operators
- Types Of operators : Number, String or Boolean
- Control Structures, Block, Loops, for - in
- Identifying different types of dialog box(alert, confirm, prompt)
- Arrays in JavaScript

Objects

- What Are Objects?
- User-Defined Objects
- Manipulating Objects
- Working with String, Number and Boolean

Validating form using DOM

Event Handling

- Introduction to Event Handlers
- Event Handlers as JavaScript Methods
- Handling Window, Document, History, Navigator objects
- Using Inner HTML with DOM in div tags for event Handling

Introduction to AJAX

- Getting Started with AJAX
- The Purpose of Ajax
- Traditional Web Application
- An Ajax Web Application
- The XMLHttpRequest Object
- Creating an XMLHttpRequest Object
- XMLHttpRequest open() Method
- Using an XMLHttpRequest Object
- Steps to do ajax operation
- Getting JSP or text pages as response
- Response as XML or text
- Handling the Response using INNERHTML

- Use of GET and post with AJAX

Introduction to JQuery

- Overview of JQuery
- Downloading JQuery or using from CDN
- Use of \$(document).ready function

DOM manipulation with JQuery

- Use of selectors in JQuery
- DOM traversal and manipulation
- Using Element, Class and ID Selectors with jQuery
- Modifying the Content and Styles of Selected Elements
- Adding and Removing Elements Using jQuery
- Binding events to elements
- Looping over a set of elements
- Adding JQuery UI plugins
 - Date picker
 - Slider
 - Accordion
 - Tabs

Handling Ajax Requests with JQuery

- Get and post requests with JQuery

