

CORE JAVA

CORE JAVA Basics-oops concepts

18 -days

- A simple java program-compilation and execution
- Class
- Object-definition and creation
- Primitive data types
- Operators
- Typcasting-necessity and usage
- Functions-passing parameters, return data types etc
- Static keyword-meaning and purpose
- Interpreting system out. println
- Polymorphism-static and dynamic
- Method overloading and method overriding
- Constructors-this and super keyword
- String class and string buffer class
- Arrays-declaration and usage
- Command line arguments
- Inheritance-types, usage, 'final' keyword
- Super class reference-subclass object rule
- Interfaces-late binding and early binding
- Abstract class
- Packages
- Access specifiers -public, private, protected and default
- Access modifiers
- Inner classes
- Static and non-static blocks
- Exception handling-try, catch, throws, throws, finally
- Keywords and their usage, user defined exceptions
- Multithreading
- Streams {i/o and files}
- Networking
- Wrapper classes
- Collection framework
- New features in java 1.6

ADVANCED JAVA

12-days

- **JAVA DATABASECONNECTIVITY(JDBC)**
- **Getting started with web application in Java**
Introduction to Web Application, Need for Web Application, Technologies used in Web Application, Web Architecture Models --- Model-1 and Model-2, Introducing MVC Architecture
- **Introduction to Servlets** : Introducing CGI, pros & cons of CGI, What is Servlet?, Need of Servlet, About ServletContainer, Servlet API, About javax.servlet.Servlet interface, Servlet LifeCycle, About ServletConfig, About GenericServlet Configuring Servlets on Tomcat 6.x, BEA Weblogic 8.1/9.x/10 (On Windows/Linux), IBM Websphere 6.0 and Pramati 4.1 servers

- **Request Processing and Features of HTTP**
About ServletRequest and ServletResponse, About Request Parameters, About Initialization Parameters, Need of initialization parameters, About RequestDispatcher, Using RequestDispatcher to Forward & Include, When to use Include & Forward, Difference between Include & Forward, Request Attributes, Understanding Http basic, Understanding HttpServlet, HttpServletRequest & HttpServletResponse
- **Session Tracking**
Need to maintain client data, URL Rewriting, pros & cons of URL Rewriting, benefits of URL Rewriting, When to use URL Rewriting, Hidden Form Fields, Pros & cons of Hidden Form Fields, When to use Hidden Form Fields, Cookies, Pros & Cons of Cookies, When to use Cookies, Http Session, Pros & Cons of Http Session, When to use Http Session, Context Attributes, Need of context attributes, How to configure context attribute, How to access context attribute, Example demonstrating the usage of Context Attributes, About various scopes, When to use which scope, Single Thread Model, Need of synchronization in Servlets, Using SingleThreadModel
- **Introducing Filters, Listeners & Wrapper**
Need of filters, Filter Interception Design Pattern, Changes in Servlet 2.4 in filter configurations, Configuring Filters to work with Forward & Include, About Listeners, What are Listeners?, Need of event programming and importance of Listeners, The Various Listeners (ServletContextListener, ServletContextAttributeListener, HttpSessionListener, HttpSessionBindingListener, HttpSessionAttributeListener, HttpSessionActivationListener), About Servlet Wrappers (ServletRequestWrapper, ServletResponseWrapper, Http Request and Response Wrappers), Applet to Servlet Communication
- **Servlet 2.5 Features**
- **Security**
Introducing Security (JAAS), Authentication, Authorization, Data Integrity, Introducing Web Security, Http Authentication Mechanism, Http Basic Authentication model, Http FORM based Authentication model, Http Digest Authentication Model, Declarative Security, Working with declarative security in web application, Programmatic Security, Working with programmatic security in web application
- **Introducing to JSP**
JSP Introduction, Difficulties in using Servlets to build huge views, Need for alternative approach to built dynamic web pages, Introducing tag based approach, JSP architecture, JSP Lifecycle (Translation, Compilation, Initialization, Request processing, Destroying)
- **Introducing JSP Basic Tags and Implicit Objects**
Scripting Tags (Scriptlet tag, Declarative Tag, Expression Tag), Implicit Objects, Need of Implicit Objects, About all the implicit objects (request, response, out, page, application, session, config, exception), Directive Tags (Page directive, include directive, taglib directive)
- **JSP Action tags and Java Beans**
What is Java Bean?, Need of java Beans, Advantages of using Java Beans, Action Tags (include, forward, param, useBean, setProperty, getProperty, plugin, params, fallback) , Differences between directive include and action include
- **Enhancing the JSP tags support**
JSP Custom Tags, Need of custom tags, Empty Tags, Tag Handler Life Cycle, Body Content Tag, Body Tag Handler Life Cycle, Iteration Tags, Iteration Tag Handler Life Cycle, Simple Tags

- **Internationalization**
Introduction to Internationalization, Need Of Internationalization, Internationalizing Web Application
- **JSP Expression Language (EL)**
Introduction to EL, Need Of EL, Basic Syntax of using EL, EL Operators, Arithmetic Operator, Relational & Logical Operator, Implicit EL Objects, Introducing Functions with EL, Accessing request parameters, Accessing request attributes, Accessing session attributes, Accessing context attributes, Accessing init parameters, Using EL within a JSP
- **Introducing JSP Standard Tag Library (JSTL)**
Introduction to JSTL, Features of JSTL, JSTL Core Tag Library (Variable Support Tags, Flow Control Tags, Iterator Tags, URL Tags, Miscellaneous Tags), JSTL XML Tag Library (Core Tags, Flow Control Tags, Transformation Tags), JSTL Internationalization Tag Library, Setting the Locale, Messaging Tags, The setBundle and bundle Tags, The message Tag, Formatting Tags, JSTL SQL Tag Library, Working with the Data Source, SQL Functions, JSTL Functions, Handling Dynamic Attributes in Tag Files
- **Web Design Patterns**
Web Tier Design Considerations, MVC (Model View Controller), Filter Interception, Front Controller, Composite View, Business Delegate, DAO (Data Access Object), DTO (Data Transfer Object), Command Pattern, Application implementing MVC architecture
- Introduction to mvc 1 and mvc 2 architecture

1. J2EE

5-days

- Introduction to xml
- JNDI
- Socket programming
- RMI
- EJB - session beans, entity beans, message driven beans
- Introduction to struts 1.3
- Design patterns

2. STRUTS

5-days

- Front controller design pattern
- Application controller design pattern
- What is struts?
- What is framework?
- Need of struts framework
- Struts architecture
- The elements of struts architecture
 - Action servlet
 - Struts configuration file
 - Request processor
 - Action class
- Simple struts application
- Form beans and types of form beans
- Validations and validation framework
- internationalization
- Struts modules – request processor, module config, request utils
- Struts plug-in
- Types of action class

- Exception handling in struts
- Tiles framework
- Examples of all the above topics using an IDE [my eclipse]
- New features in struts 1.3

3. SPRING

10-days

- What is spring and use of spring framework over EJB-2?
- Spring architecture
- Injecting dependencies with spring core container
- Ioc [inversion of control]
- Modules in spring framework
- Bean factory
- Spring AOP
- Before advice, after advice, around advice, Throws advice
- Spring DAO
- Spring-hibernate
- Spring-struts
- managing different transactions
- spring-JEE
- spring-jms
- spring-Remoting- rmi ,burlap,hessian
- Examples of all the above topicS

4. HIBERNATE

5-days

- What is Orm?
- What are the MainFeatures of ORM?
- Why Object/Relational Mapping(ORM)?
- Understanding Hibernate Architecture
- Configuration
- SessionFactory
- Session
- Query
- Criteria
- HiberanteConfiguration
- HibernateMappings
- PersistentClasses
- UsingHibernetatoPerformBasicPersistentOperations
- Step1: PrepareConfigurationObject
- Step2: BuildSessionFactory
- Step3: ObtainaSession
- Step4: PerformPersistenceOperations
- Step5: Closethe Session
- Working with Hibernate to perform Basic CRUD Operations...
- Understanding Persistent Classes Mapping
- Problem ofGranularity
- Working with Component Types
- Problem of SubTypes
- Table perClassHierarchy
- Implementing TableperClassHierarchy
- Table perSubclass
- Table erConcrete Class
- Problem of Relationships

- One-to-One
- One-to-Many
- Many-to-Many
- Understanding Hibernate QueryLanguage(HQL)And Criterion Api
- Introducing HQL
- Using Hibernate Apl to Execute Hql Queries
- Obtaining a Query Instance
- Cusomizing the Object
- Executing the Query
- Preparing Hql Queries to Retrieve Persistent Objects
- The From Clause
- The Select Clause
- Using Constuctor Expression in SELECT Clause
- Using Aggregate Select Expression in SELECT Clause
- The Where clause
- Positional Parameters
- Named parameters
- Named Queries
- Using Criterion API to Build Queries
- Adding Restrictions to Criteria
- Using HQL to perform Bulk Update and Delete Operations
- **NATIVE SQL**
- Implementing Servlets with Hibernate
- Implementing Servlets with Hibernateand Ejb
- Implementing Struts with Hibernate
- Implementing Spring with Hibernate

5. WEB SERVICES

5-days

- Service-Oriented Architecture with Java Web Services
- An Overview of Java Web services
- Basic SOA Using REST
- The Role of WSDL, SOAP, and Java/XML Mapping in SOA
- The JAXB 2.0 Data Binding
- JAX-WS—Client-Side Development
- JAX-WS 2.0—Server-Side Development
- WSDL-Centric Java Web Services with SOA-J
- Springs with web services

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LOG4J

JUNIT

JAVAMAIL

JNDI

JMS

JTA

JTS

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