**BASICS OF JAVA**

• Introduction to Java Technology  
• Java programming Basics  
• Introduction to Java Development Tools  
• Exploring your Java Class & Compiling and Interpreting Applications

**DECLARATIONS & OPERATORS**

• Declaring Primitives & Reference Variables  
• Java Arrays, Multi-Dimensional Arrays  
• Using Operators

**FLOW CONTROL**

• Conditional Statements  
• Looping Statements  
• Branching Statements Practical (Hands-on Working Examples)

**CLASSES & METHODS**

• Declaring Classes  
• Defining Methods  
• Use Static methods, JavaBeans Naming  
• Develop Constructors

**OBJECT ORIENTED PROGRAMMING (OOP) CONCEPTS**

• Describe Encapsulation, Use Polymorphism & Inheritance  
• Develop Interfaces, Abstract Classes & Nested Classes  
• Method Overriding, Overloading & Constructor Overloading

**PACKAGES**

• Defining and Importing packages  
• Access and non-Access Specifiers  
• Explore java.lang package – Using String & Wrapper classes

**EXCEPTION HANDLING**

• About Java Exception Handling & Exception Hierarchy  
• Using try-catch Blocks  
• “throws” keyword, throwing an Exception & “finally” Statements

**COLLECTIONS FRAMEWORK**

• Introduction to Collection classes & Interfaces  
• Core Collections Interfaces: List, Set & Map

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Advance Java\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**Course Outline:**

Client Side Technologies:

 1)      Html

2)      CSS

3)      Java Script

**Introduction to Java EE**

Overview of Java EE Architecture, Need for enterprise applications, Java EE application development roles, Introduction to enterprise applications, Getting started with web application in Java

Introduction to Web Application, Need for Web Application, Technologies used in Web Application, Web Architecture Models. Introducing MVC Architecture

I**ntroduction 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 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) , 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

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

Web Design Patterns:

MVC (Mode-View-controller)

**JDBC**

JDBC Overview & Architecture

Step By Step Usage of JDBC API

Connecting to Oracle 10g XE Database in Java

Practical (Hands-on Working Examples)