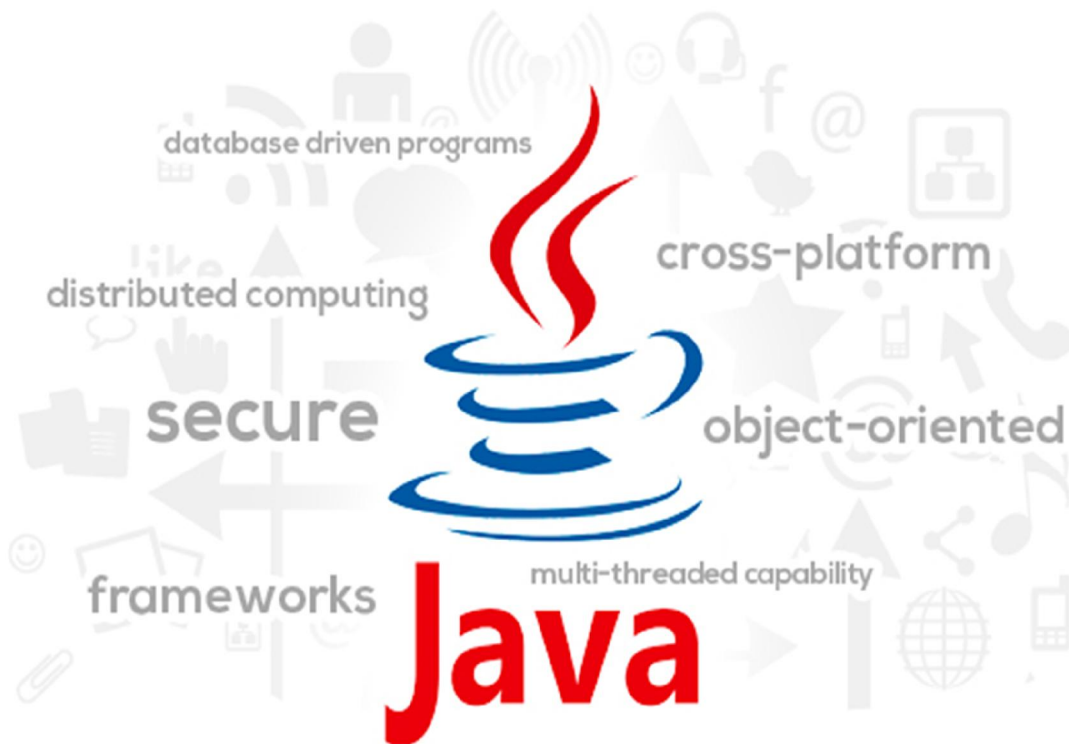




JAVA Training Program



NEXOGEN SDC

Training | Development | Consultant

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CORE JAVA

1. Introduction

- ❖ Programming language Types and Paradigms.
- ❖ Computer Programming Hierarchy.
- ❖ How Computer Architecture Affects a Language?
- ❖ Why Java?
- ❖ Flavors of Java.
- ❖ Java Designing Goal.
- ❖ Role of Java Programmer in Industry.
- ❖ Features of Java Language.
- ❖ JVM –The heart of Java
- ❖ Java's Magic Byte code

2. Language Fundamentals

3. The Java Environment:

- ❖ Installing Java.
- ❖ Java Program Development
- ❖ Java Source File Structure
- ❖ Compilation
- ❖ Executions.

4. Basic Language Elements:

- ❖ Lexical Tokens, Identifiers
- ❖ Keywords, Literals, Comments
- ❖ Primitive Datatypes, Operators
- ❖ Assignments.

5. Object Oriented Programming

- ❖ Class Fundamentals.
- ❖ Object & Object reference.
- ❖ Object Life time & Garbage Collection.
- ❖ Creating and Operating Objects.
- ❖ Constructor & initialization code block.
- ❖ Access Control, Modifiers, methods
- ❖ Nested , Inner Class & Anonymous Classes
- ❖ Abstract Class & Interfaces
- ❖ Defining Methods, Argument Passing Mechanism
- ❖ Method Overloading, Recursion.
- ❖ Dealing with Static Members. Finalize () Method.

- ❖ Native Method. Use of "this" reference.
- ❖ Use of Modifiers with Classes & Methods.
- ❖ Design of Accessors and Mutator Methods
- ❖ Cloning Objects, shallow and deep cloning
- ❖ Generic Class Types

6. Extending Classes and Inheritance

- ❖ Use and Benefits of Inheritance in OOP
- ❖ Types of Inheritance in Java
- ❖ Inheriting Data Members and Methods
- ❖ Role of Constructors in inheritance
- ❖ Overriding Super Class Methods.
- ❖ Use of "super".
- ❖ Polymorphism in inheritance.
- ❖ Type Compatibility and Conversion
- ❖ Implementing interfaces.

7. Package

- ❖ Organizing Classes and Interfaces in Packages.
- ❖ Package as Access Protection
- ❖ Defining Package.
- ❖ CLASSPATH Setting for Packages.
- ❖ Making JAR Files for Library Packages
- ❖ Import and Static Import
- ❖ Naming Convention For Packages

8. Exception Handling:

- ❖ The Idea behind Exception
- ❖ Exceptions & Errors
- ❖ Types of Exception
- ❖ Control Flow In Exceptions
- ❖ JVM reaction to Exceptions
- ❖ Use of try, catch, finally, throw, throws in Exception Handling.
- ❖ In-built and User Defined Exceptions
- ❖ Checked and Un-Checked Exceptions

9. Array & String & StringBuffer:

- ❖ Defining an Array
- ❖ Initializing & Accessing Array
- ❖ Multi -Dimensional Array
- ❖ Operation on String

- ❖ Mutable & Immutable String
- ❖ Using Collection Bases Loop for String
- ❖ Tokenizing a String
- ❖ Creating Strings using StringBuffer

10. Threading :

- ❖ Understanding Threads
- ❖ Needs of Multi-Threaded Programming.
- ❖ Thread Life-Cycle
- ❖ Thread Priorities
- ❖ Synchronizing Threads
- ❖ Inter Communication of Threads
- ❖ Critical Factor in Thread –DeadLock

11. Applet:

- ❖ Applet & Application
- ❖ Applet Architecture.
- ❖ Parameters to Applet
- ❖ Embedding Applets in Web page.
- ❖ Applet Security Policies

12. A Collection of Useful Classes:

- ❖ Utility Methods for Arrays
- ❖ Observable and Observer Objects
- ❖ Date & Times
- ❖ Using Scanner
- ❖ Regular Expression
- ❖ Input/Output Operation in Java(java.io Package)
- ❖ Streams and the new I/O Capabilities
- ❖ Understanding Streams
- ❖ The Classes for Input and Output
- ❖ The Standard Streams
- ❖ Working with File Object
- ❖ File I/O Basics
- ❖ Reading and Writing to Files
- ❖ Buffer and Buffer Management
- ❖ Read/Write Operations with File Channel
- ❖ Serializing Objects

13. GUI Programming:

- ❖ Designing Graphical User Interfaces in Java
- ❖ Components and Containers
- ❖ Basics of Components
- ❖ Using Containers
- ❖ Layout Managers
- ❖ AWT Components
- ❖ Adding a Menu to Window
- ❖ Extending GUI Features Using Swing Components
- ❖ Java Utilities (java.util Package)
- ❖ The Collection Framework :
- ❖ Collections of Objects
- ❖ Collection Types
- ❖ Sets
- ❖ Sequence
- ❖ Map
- ❖ Understanding Hashing
- ❖ Use of ArrayList & Vector



14. Event Handling:

- ❖ Event-Driven Programming in Java
- ❖ Event- Handling Process
- ❖ Event-Handling Mechanism
- ❖ The Delegation Model of Event Handling
- ❖ Event Classes
- ❖ Event Sources
- ❖ Event Listeners
- ❖ Adapter Classes as Helper Classes in Event Handling
- ❖ Anonymous Inner classes a Short -cut to Event Handling
- ❖ Avoiding Deadlocks in GUI Code
- ❖ Event Types & Classes
- ❖ Networking Programming
- ❖ Networking Basics
- ❖ Client-Server Architecture
- ❖ Socket Overview
- ❖ Networking Classes and Interfaces
- ❖ Network Protocols
- ❖ Developing Networking Applications in Java

15. Database Programming using JDBC:

- ❖ Introduction to JDBC
- ❖ JDBC Drivers & Architecture
- ❖ CRUD operation Using JDBC
- ❖ Connecting to non-conventional Databases.

1. Servlet API

- **Introduction to JEE**
- Overview of Dynamic web applications
- Introduction to Servlet
- Servlet life cycle
- Annotations and their use in Servlet development
- Difference b/w web server & application server
- Installing and configuring web & application server
- Web Application formats
- Deployment modes supported by servers
- Creating and deploying a simple web application
- Understanding the role of ServletRequest & ServletResponse
- Difference b/w parameters and attributes
- Using different content type for response
- Using RequestDispatcher for Include & Forward
- Initialization Parameters and their use
- ServletConfig & ServletContext
- Inter application collaboration
- State Management and use of HttpSession & Cookies
- Hidden Form fields and URL Rewriting
- Using Http only Cookies
- Listeners and web application events
- Applying Filters to servlets
- Asynchronous request processing
- File Uploading & downloading
- Security

2. Java Server pages (JSP)

- Advantages of JSP over Servlet
- JSP Architecture
- Integration of JSP & Servlet API.
- JSP implicit objects
- Use of JSP Tags, Actions and Directives
- Error Handling in JSP
- Using Java Beans in JSP
- Defining Custom Tags

JSTL & Expression Language

3. Tools & IDE (Eclipse & NetBeans)

- **Introduction to Eclipse**
- Installing eclipse
- Project Management
- Creating various type of projects
- Closing & Importing projects
- Building projects
- Managing Libraries and Dependencies
- Adding jar files from eclipse library
- Adding third party jar
- Removing jar files from a project
- Code Generation & Refactoring
- Generating getter & Setter methods
- Generating constructors
- Overriding and implementing methods
- Renaming classes and members
- Moving classes and packages
- Using line, method, exception and data member breakpoints.
- Setting up conditional breakpoints.
- Using step into, step over, step return and resume.
- Peeking into stack and heap contents
- Unit Testing
- Introduction to JUnit
- Understanding assertions
- Writing & executing Test Cases
- Managing test cases with Test Suites
- Subversion (SVN) Code Repository & Client
- Need of Code Repository
- Architecture of SVN Code Repository
- Configuring Project in a SVN Code Repository
- Installing SVN Client
- Connecting client to SVN Repository
- Checking out project form the repository
- Extracting interfaces and abstract classes
- Server Management
- Starting and stopping servers
- Deploying
- Debugging



4. Project

- Project Description
- Project Architecture
- Project Conventions and Deliverables
- Data sources, Work flows and Modules
- Project Interface Design
- Creating project prototype
- Testing, Modification & Acceptance
- Commencement of next Iteration
- **Testing, Modification & Acceptance...**
- **Integration Testing and project deployment**

Long Term Courses

- Android / IOS
- .NET (C# , ASP, VB)
- JAVA (Core /Adv.)
- PHP, MySQL
- Web Designing
- Web Designing
- E - Accounting
- H/W & Networking
- Tally.ERP, BUSY
- PL/SQL, ORACLE

6 Months / Weeks Live project Training

Short Term Courses

- NIELIT CCC
- C, C++
- MS OFFICE
- HTML
- English Speaking

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