NALANDA INSTITUTE OF TECHNOLOGY
Software Industry Based Training Camp

2013

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JAVA Training Syllabus

Module 1 – Fundamentals
- OOPS
- Software Engineering
- SQL Queries
- Basics of Designing
- Web Programming

Module 2 – Learning the Language (Core Java)
- Java Language Fundamentals
- Java Virtual Machine
- Java Run Time Environment
- Java Classes and OOPS implementation
- Attributes
- Methods
- Accessing Object Members
- Constructors and Destructors
- Package
- Data Type, Identifiers, Keywords
- Identifiers
- Variables, Declarations, and Assignments
- Java Reference Types
- Constructing and Initializing Objects
- Memory Allocation and Layout
- Executing the Constructor
- Assigning References
- Language Coding Conventions
- Expressions and Flow control
- Variables and Scope
- Variables Initialization
- Logical Operators
- Casting
- Switch Statements
- Looping Statements
- Break Statement
- Continue Statement

- Expressions and Flow Controls
- Array
  - » Declaration of Array
  - » Creating Arrays
  - » Referencing Arrays
  - » Initializing Arrays
  - » Multidimensional Arrays
  - » Array Bounds
  - » Array Resizing
  - » Copying Array
- Class Design
  - » Objectives
  - » Subclassing
  - » Single Inheritance
  - » Access Control
  - » Overriding Methods
  - » Invoking Overridden Method
  - » Polymorphism
  - » Virtual Method Invocation
  - » Polymorphic Arguments
  - » Overloading Methods
  - » Methods using Variable Arguments
  - » Overloading Constructors
  - » Constructing and Initializing Objects
  - » Object Class
  - » Equals Method
  - » Equals Example
  - » ToString Method
  - » Wrapper Classes
  - » AutoBoxing of Primitive Classes
  - » Static Keyword
  - » Class Attribute
  - » Class Method
  - » Static Initializers
  - » Final Keyword

- o » Final Variables
- o » Enum Types
- o » Static Imports
- o » Abstract Class
- o » Interface
- • Overloading and Overriding
- • I/O Stream
- o » Stream
- o » Types of Stream
- o » Fundamental Stream classes
- o » Input Stream Method
- o » Output Stream Method
- o » Reader Methods
- o » Writer Methods
- o » Stream Chaining
- o » Command Line Arguments
- o » Console I/O
- o » Writing to Standard Output
- o » Reading From Standard Input
- o » Files and File I/O
- o » Creating a New File Object
- o » File Tests and Utilities
- o » File Stream I/O
- o » File Input example
- o » File Output Example
- • Packages and Interfaces
- • Exceptional Handling
- o » Exceptions
- o » Try-catch statement
- o » Finally Clause
- o » Exception Categories
- o » Handle or Declare Rule
- o » Method Overriding and Exceptions
- o » Try with resources statement
- o » Custom Exception
- • Java GUI
- o » Abstract Window Toolkit
- o » Container
- o » Positioning Components
- o » Frames
- o » Panel
- o » Layout Manager
- o » Border Layout
- o » Flow Layout
- o » Grid Layout
- o » Box Layout
- o » Swing

- • AWT
- • Layout
- • Swing Reference Class
- • Threading
- o » Creating the Thread
- o » Thread Scheduling
- o » Basic Control of Thread
- o » The Join Method
- o » Object Lock Flag
- o » Releasing the Lock Flag
- o » Using Synchronized
- o » Thread State Diagram with Synchronization
- o » Deadlock
- o » Thread Interaction
- o » Thread State Diagram with Wait and Notify
- o » Monitor Model For Synchronization
- o » The Producer Class
- o » The Consumer Class
- o » The SyncStack Class
- o » The Pop Method
- o » The Push Method
- o » The SyncTest Class
- • Garbage Collection
- • JDBC API
- o » JDBC Architecture
- o » JDBC Driver and Driver Types
- o » JDBC Data Types
- o » Steps in using JDBC
- o » Retrieving Data from a Result Set
- o » Using Prepared and callable statements
- o » Handling Exception
- • String Handling

Module 3 – Advanced Java (J2EE)

- • J2EE Architecture
- o » 3 tier Architecture
- o » N-tier Architecture
- • Java Servlet
- o » Servlets on the web
- o » Execution of java servlets
- o » Java server pages
- o » Model 2 Architecture and Frameworks
- o » J2EE Platform
- o » J2EE Architecture
- • JSP
- o » JavaServer Page Technology
- o » Steps for JSP Page Processing
- ▪ » JSP Page Translation

- » JSP Page Compilation
- » JSP Page Class Loading
- » JSP Page Servlet Instance
- » JSP Page Initialization
- » JSP Page Service
- » JSP Page Destroyed
- » Developing and Deploying JSP Pages
- » Writing JSP code using scripting elements
- » Writing JSP code using page directive
- » Writing JSP code using standard tags
- » Writing JSP code using Expression Language
- JSTL and Custom Tag
- » Advantage Of Custom Tag Library
- » What is Custom Tag
- » Declaring Tag
- » Custom Tag Library Overview
- » JSTL Sample Tag
- » Set Tag
- » If Tag
- » ForEach Tag
- » URL Tag

- » Out Tag
- Developing Dynamic Forms
- » Servlet Lifecycle
- » Customize servlet with initializing parameters
- » Error reporting within web form
- » Repopulating Web Form
- Sharing Application Resources Using the Servlet Context
- » Servlet Context
- » Servlet Context API
- » Web Application Lifecycle
- » Web Application Listener
- » Event Listener Categories and Interfaces
- » Servlet Context Listener API

Module 4 – Database Programming using JDBC

- Database Connection
- MySQL

Tools

- Eclipse / NetBeans

What Industry Experts Tells:

The syllabus of java contains lots of items which are out of industry and their use is no longer in developing Java Application. The following item need to remove from the course:

a) Frame
b) Panel
c) AWT
d) Swing

Content Added by Industry Experts

- String Classes
- Collections
- Ant
- XML Implementations.
- HTML
- CSS

- Javascript
- Advanced Content
- Struts
- Spring
- Hibernate
- Web services Implementation