

CURRICULUM

JSE (JAVA STANDARD EDITION)

» Introduction to JAVA

- Understanding Requirement: why JAVA
- Why java important to the internet
- JAVA on LINUX PLATFORM

» Introduction to JAVA Virtual Machine

- Java Virtual machine Architecture
- Class loading process by class loaders
 - Booting loader
 - Extension loader
 - System loader
- Role of Just In time compiler (JIT)
- Execution Engine

» An overview of JAVA and buzzwords

- Data Types , Variables ad Arrays
- Operators
- Control statements
- Object oriented paradigms
- Abstractions
- The Three OOP Principles:
(Encapsulation, Inheritance, Polymorphism)

» JAVA classes and OOP Implementation

- Class fundamentals
- Commands line arguments
- Learning Static_INITIALIZER
- Declaration of objects
- Instance variable Hiding
- Overloading and Overriding of Methods
 - Upcasting
 - Down casting
- Understanding of Access Controls (private, public and protected)
- Learning Nested and Inner classes
- Dynamic method Dispatching
- Using Abstract classes

» Packages and Interfaces

- Defining a package
- Understanding CLASSPATH
- Access Protection
- Importing packages
- Defining and Implementing interfaces
- Anonymous classes
- Abstract classes Vs Interfaces
- Adapter classes

» Exception handling

- Fundamental of Exception handling
- Types of Exceptions
- Learning exceptions handlers
- Try and Catch
- Multiple catch Clauses
- Nested Try statements
- Throw , throws and finally
- Creating custom exceptions
- Assertion

» String handling

- Learning String Operation
- Learning character Extraction
- Learning string Comparison
- Understanding string Buffer Classes
- String builder class
- Creating Immutable Class

» New in JDK 5/6/7

- Premain method , Object size
- Generics
- Annotations
- Vargs
- Static Import
- For each
- String in which

» Windows Programming

Swing & AWT

- Introduction to JFC
- Controls

Event Delegation Method

- Event Classes
- Event listeners

» APPLET

- Applet Basics
- Architecture and Skeleton
- Simple Applet Display Methods
- The HTML Applet Tag
- Inter Applet communication
- Trusted Applet (Applet with Database)

» INTRODUCTION TO EVENT HANDLING

- Event Delegation Model
- Event Classes
- Event Listeners
- Adapter Classes

» Multi threaded Programming

- The java thread model
- Synchronization: methods and Implementing Runnable
- Creating multiple Thread and Context Switching
- Creating a thread: Extended Thread and statements
- Inter thread Communication
- Thread local
- Dead lock
- Threadpool executor class
- Shutdown hookup
- Re-entrant locking

» Introduction to I/O streams

- File handling
- Binary Streams
- Character stream
- Serialization
- Scanner
- Stream tokenizer
- String tokenizer
- GzipOutputStream class
- Data Encryption & decryption

» NETWORKING

- URL, InetAddress
- Socket And Server Socket
- Datagram socket
- Socket factories

» Reflection API

- Determining the class of an object
- Getting information about classes modifier, fields, methods, constructor, and super classes
- Finding out constant and method declaration belong to an interface
- Creating an instance of a class whose

» NETWORKING

- Introduction to Networking
- URL, InetAddress
- Socket and Server Socket
- Datagram Socket

» COLLECTION API

- Collection Overview
- The Collection Interfaces (List, Set, SortedSet)
- The Collection Classes (ArrayList, LinkedList, HashSet, TreeSet)
- Accessing a Collection via an Iterator
- Working with Maps

JEE (JAVA ENTERPRISE EDITION)

» INTRODUCTION TO JAVA

- Introduction to J2EE Architecture
- Tier Architecture
 - Single Tier
 - Two Tier
 - Three Tier
 - N Tier

» J2EE COMPONENTS

- Web Components
- Business Components

» J2EE CONTAINERS

- Container Types
- Container Services

» JDBC

- Introduction to JDBC
- JDBC Drivers
- Statements
- Metadata
- Scrollable & Updatable ResultSet
- Batch Updates

» JAVA SERVLET

- Introduction to Web Programming
- Advantages of Servlets
- Servlet Lifecycle
- Packing and Deployment
- Session Tracking
- Request Dispatching

» JAVA SERVER PAGES (JSP)

- JSP Architecture
- JSP Elements
- JSP Objects
- Custom Tags

» RMI

- Distributed Applications
- RMI Architecture
- Implementation

» ENTERPRISE JAVA BEANS (EJB 3.0)

- Introduction
- Architecture
- Types of EJB
 - SESSION BEANS
 - Introduction
 - State Management
 - Types
 - Stateless
 - Statefull
 - Life Cycle
 - ENTITY BEANS
 - Introduction
 - Persistence
 - Life Cycle
 - Types
 - CMP
 - Introduction
 - Primary Key Class
 - EJB Methods
 - EJB QL
 - Syntax
 - Clauses
 - BMP
 - Introduction
 - Implementation
 - EJB Relationships

» JAVA Mail API

» ANT SCRIPT, BUILD.XML

» PACKAGING THE APPLICATIONS

» J2EE DESIGN PATTERN

- Why Design Patterns?
- Front Controller
- Composite View
- Session Façade
- Message Facade
- Service Locator
- Data Access Object
- Value Object

» DEPLOYMENT

» INTRODUCTION TO STRUTS 2.0

UTILITIES

- My Eclipse 8.0
- Net Beans 6.5

Web Server

- Apache Tomcat 6.0

Application Server

- Bea's Weblogic 10.3
- IBM's WebSphere
- JBoss 4.1