

# JAVA+UI



## CURRICULUM

### J2SE (JAVA 2 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
- Using final to prevent Overriding & Inheritance
- Garbage collection

#### » 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
- Multiple exception handling
- Dimond Operator

## » WINDOWS PROGRAMMING

### Swing & AWT

- Introduction to JFC
- Controls

### Event Delegation Method

- Event Classes
- Event listeners

## » APPLINET

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

## » Multi threaded Programming

- The java thread model
- Creating a thread: Extended Thread and Implementing Runnable
- Creating multiple Thread and Context Switching
- Synchronization: methods 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 name is not known until runtime
- Getting and setting value of an objects field if field name is unknown until runtime
- Invoking a method on an object if the method is unknown until runtime
- Creating a new array whose size and components type are not know until runtime
- Invoking private member of a class

## » ADVANCED JAVA/J2EE (JAVA 2 ENTERPRISE EDITION)

### » COLLECTION FRAMEWORK

- The Collection Interfaces (list , set, Sorted set)
- The collection classes (The array list, Linked list, Hash set, Tree set)
- Accessing a Collection via an Iterator
- Working with maps
- Working with Comparators
- The Collection Algorithms
- The Legacy Classes and Interfaces (Enumeration, Vector, Stack, Dictionary, Hash table)
- Date and Time Handling
- COLLECTION CLASS
- Array class

### » SYSTEM PROPERTIES & INTERNATIONALIZATION

- Usage of Property file
- Define the locale
- ResourceBundle
- Fetching Text from ResourceBundle

### » REMOTE METHOD INVOCATION (RMI)

- Distributed Applications
- RMI Architecture
- Implementation
- Call-Back Mechanism

## » DATABASE PROGRAMMING USING

### JDBC(4.1)

- JDBC Drivers
- Statements
- Metadata
- Scrollable & Updatable Result set
- Batch Updates
- Data Sources And Connecting Pooling
- Row sets
- Transaction (commit , rollback,savepoint)
- Getting Data from excel sheet
- Generating log file

## » INTRODUCTION TO J2EE ARCHITECTURE TIER ARCHITECTURE

- Single Tier
- Two Tier
- Three Tier
- N Tier

### J2EE COMPONENTS

- Web components
- Business components

### J2EE CONTAINERS

- Containers Type
- Containers Services

## » J2EE Services

- Java Naming and Directory Interfaces
- Java Transaction Services
- Java Messaging Services
- Java Authentication & Authorization Services

## » INTRODUCTION TO UML

- Use Cases
- Diagrams

## » INTRODUCTION TO XML

- Document type Definition (DTD)
- XML parsers
  - Document object module(DOM)
  - Simple API for XML (SAX)

## » JAVA SERVLET

- Introduction to Web Programming
- Advantages to Servlet
- Servlet Lifecycle
- Request Dispatching
- Session Tracker
- Event Listener
- Dependency Injection
- Filters
- Servlet with Annotation

- @WebFilter
- @WebInitParam
- @WebListener
- @WebServlet
- @MultipartConfig
- @ServletSecurity
- File uploading/file downloading
- Security
- Refreshing servlet

## » JAVA SERVER PAGES (JSP) & JSTL

- JSP Architecture
- JSP Element
- JSP Directives
- JSP Actions
- JSP Objects
- Custom Tags
- Using Tags of JSTL
- Expression Language
- Exception handling in JSP

## » Ajax

- XMLHttpRequest
- Ready State
- Onreadystatechange
- ResponseText
- ResponseXML
- Status
- StatusText
- Div Tag
  - Functon
    - Open ( )
    - Send ( )
- Ajax Web Application Model

## » JQuery

- JQuery with Ajax
- JQuery Event
- JQuery Selectors
- JSON
- Calling JSP with JQuery
- Animation
- get ( ) Function
- JQuery Ajax Event

## » ENTERPRISE JAVA BEANS (EJB-3.2)

- Introduction
- Architecture
- Types of EJB

## » SESSION BEANS

- Introduction
- State Management
- Dependency Injection
- Interceptors
- Timer Service
- Life cycle Callback Methods
  - @PostConstruct
  - @PreDestroy
  - @PreActivate
  - @PrePassivate
- Types
  - Stateless
  - State full
  - Singleton

## » ENTITY BEANS

- Introduction
- Java Persistence API
- Java Persistence Query
- Language(JPQL)
  - The Entity Life Cycle
- Entity Relationships
  - @One To One
  - @One To Many
  - @Many To One
  - @Many To Many
- @Entity
- @Id
- @Table
- @Column
- @Basic

## » MESSAGE DRIVEN BEANS & JMS2.0

- Messaging overview
- Messaging models
  - Point to point models
  - Topic subscriber models
- JMS Implementation
- Life cycle
- @MessageDriven
- @ActivationConfigProperty

## » J2EE DESIGN PATTERN

- Why design pattern?
- Front controller
- Composite view
- Session façade
- Service Locator
- Data Access Object
- Value object
- Singleton pattern , factory pattern

## » JAVA MAIL

- Email system and Protocols
- Architecture
- Sending mail
- Receiving mail
- Handling attachments
- Replying & forwarding

## » PACKAGING AND DEPLOYMENT USING ANT

### » BLUETOOTH API

- Local Device
- UUID class
- Discovery Listener

### » Introduction to Web services

- A conceptual overview of Web Services
- Web services requirements
- SOAP
- WSDL
- UDDI

### » UTILITIES

- My Eclipse 2013
- NetBeans 6.5

### » WEB SERVER

- Apache Tomcat 7.0

### » APPLICATION SERVER

- Bea's Web logic 10.3/12c
- J Boss
- Sun Application server
- Web share

## » STRUTS 2.X curriculum

### » STRUTS 2 FRAMEWORK

- MVC /Model2
- Filter
- Action
- Result
- Interceptors
- Valuestack, ONGC and DATA transfer
- Action Context

### » WORKING WITH STRUTS 2 ACTIONS

- Introducing Struts 2 actions
- Packing your actions
- Implementing Actions
- Transferring data onto objects
- File uploading: a case study

### » ADDING WORKFLOW WITH INTERCEPTOR

- Why intercept requests
- Interceptors in actions
- Surveying the built –in struts 2 interceptor
- Building your own interceptor

## » DATA TRANSFER: OGNL AND TYPE CONVERSION

- Data transfer and type conversion
- OGNL and Struts 2
- Built-in type convertors
- Customizing type conversion

## » BUILDING A VIEW : TAGS

- An overview of struts tags
- Data tags
- Miscellaneous tags
- Using JSTL and other native tags
- A brief primer for the OGNL expression language

## » UI COMPONENT TAGS

- Why we need UI components tags
- Tags, template, and themes
- UI component tag reference

## » RESULTS IN DETAIL

- Life after action
- Commonly used result types
- Global results

## » INTEGRATING WITH SPRING AND HIBERNATE/JPA

- Why use spring with struts 2?
- Adding to spring to struts 2
- Why use the java persistence API with struts 2?

## » EXPLORING THE VALIDATION FRAMEWORK

- Getting familiar with the validation framework
- Wiring your actions for validation
- Writing a custom validator
- Validation framework advanced topics

## » UNDERSTANDING

### INTERNATIONALIZATION

- The struts 2 framework and JAVA i18n
- A struts 2 i18n demo
- Struts 2 i18n: the details
- Overloading the framework's default locale determination

## » Struts with Annotation

## » DATABASE CURRICULUM

### » SQL Basic

- Introduction
- Select
- Where
- Insert
- Update
- Delete

## » SQL ADVANCED

- SQL order By
- SQL AND & OR
- SQL in
- SQL between
- SQL join
- SQL union
- SQL create
- SQL drop
- SQL alter
- Decode SQL
- SQL group By
- SQL select by
- SQL create view
- Creating index

## » SQL Functions

- Aggregate functions
- Scalar functions

## » Working with Dates

## » Introduction to PL

## » Working with Procedure and Functions

## » Working with Triggers »

## Working with Sequences



## » What is an HTML Table?

- Using the Border Attribute
- Aligning a Table on the Page
- Aligning Tables and Text

## » Creating a Hyperlink

- IFrame

## » Graphic File Formats

- Using Images to Anchor Links

## » Forms and Controls

- Forms , Form Elements
- Form Actions, Form Methods , Form \ Design

## » CSS 2 and CSS 3

### CSS review and basics

- CSS syntax
- CSS selectors
- Classes and ID's

## » Some basic CSS properties

- The box model
- Div's and spans

## » Creative artwork and CSS

- Graduated fills
- Round corners

## » Layout principals with CSS

- Document flow
- Absolute positioning
- Relative positioning
- Static positioning
- Floating elements

## » CSS based navigation

- Styling links with pseudo classes
- CSS drop down navigation systems

## » Creating a CSS styled form

- Associating labels with inputs
- Form based selectors
- Formatting inputs

## » Working with other media types

- Switching to a different media

## » JavaScript

- Introduction to JavaScript
- Common Programming Concepts
- Java and JavaScript
- Working with Variables and Data
- JavaScript Reserved and Keywords
- Expressions and Operators
- Functions, Methods, and Events
- Methods as Functions
- User Events and JavaScript Event Handlers
- The button, checkbox, text, text area, radio button, and select Objects
- The if...else, while, for, break, and continue Statements
- JavaScript Language Objects
- The String, Array, Date, and Math Objects
- Evaluating Strings
- Setting and Extracting Time Information

## » JQuery

- Getting Started with jQuery
- Traversing the DOM and Chaining
- Handling Events and Event Delegation
- AJAX, JSON and Deferreds
- Grids , Tables with Ajax , Pagination, JQuery UI

## » HTML5

### » Laying out a page with HTML5

- New HTML5 Structural Tags

### » HTML5 - How we got here

- New Features of HTML5
- Current State of Browser Support

## » SECTIONS AND ARTICLES

## » HTML5 AUDIO AND VIDEO

- The audio Element
- The video Element
- Accessibility
- Scripting Media Elements
- Dealing with Non-Supporting Browsers

## » HTML5 FORMS

- New Input Types

## » HTML5 NEW FORM FIELD ATTRIBUTES

- required
- placeholder
- autofocus
- autocomplete
- form
- pattern

## » NEW FORM ELEMENTS

- datalist
- progress and meter

## » HTML5 WEB STORAGE

- Overview of HTML5 Web Storage
- Web Storage

## » HTML5 CANVAS

- Getting Started with Canvas
- Drawing Lines
- Color and Transparency
- Rectangles
- Circles and Arcs
- Quadratic and Bezier Curves
- Images

## » INTEGRATED APIS

- Offline Application API
- Drag and Drop API

## » Bootstrap

### » Layout with Bootstrap

- Grid Layouts

### » Everyday Bootstrap »

### Bootstrap Component

# ANGULAR 2

## » Typescript

- What is Typescript
- Typescript Classes
- Typescript Array ,String ,Tuples, Union
- Interface
- Inheritance
- Constants and scoped variables
- Arrow function
- Template String
- Modules

## Introduction

- Anatomy of an Angular 2 Application
- Get the Most from This Course
- Sample Application

## Introduction to Components

- What Is a Component?
- Creating the Component Class
- Defining the Metadata with a Decorator
- Importing What We Need
- Demo: Creating the App Component
- Bootstrapping the App Component
- Demo: Bootstrapping the App Component

## » Templates, Interpolation, and Directives

- Building a Template
- Building the Component
- Using a Component as a Directive
- Binding with Interpolation
- Adding Logic with Directives: ngIf
- Adding Logic with Directives: ngFor

## » Data Binding & Pipes

- Property Binding
- Handling Events with Event Binding
- Handling Input with Two-way Binding
- Transforming Data with Pipes

## » Retrieving Data Using HTTP

- Observables and Reactive Extensions
- Setting Up
- Sending an Http Request
- Subscribing to an Observable

## » Navigation and Routing Basics

- Setting Up
- Configuring Routes
- Tying Routes to Actions
- Placing the Views
- Passing Parameters to a Route
- Activating a Route with Code

## Services and Dependency Injection

- How Does It Work?
- Building a Service
- Registering the Service
- Injecting the Service