Diplomado Avanzado de Java (J2EE & Struts)

Objetivo:
Nuestro Diplomado Avanzado de Java tiene como finalidad enseñar a los alumnos que ya conocen Java diferentes estructuras (frameworks) o tecnologías relacionadas con Java que permiten enriquecer una aplicación. Estas tecnologías centrales son Struts, Web Services y EJB.

Dirigido a:
Desarrolladores con experiencia en Java (J2SE, Servlets, JDBC y JSP) que desean profundizar en otras tecnologías de Java y mejorar sus desarrollos actuales.

Requisitos:
Conocimientos de HTML, Java, JDBC, Servlets y JSP o haber tomado nuestro **Diplomado de Programación Java (J2SE y J2EE)**

Estructura del diplomado:

Uso del IDE Net Beans	8 o 12 horas (Módulo gratis a los alumnos inscritos al diplomado)
Struts	24 horas
Web Services	24 horas
EJB	32 horas
Aplicación	20 horas
Total:	108 a 112 horas

DCInternet

STRUTS (24 HORAS)

Descripción: En este módulo el alumno usará Java Struts como una estructura (framework) para desarrollar aplicaciones Web que sigan el patrón de diseño Model/View/Controller.

STRUTS OVERVIEW

- Objectives of Struts
- Where Does Struts Come From?
- Underlying MVC Architectural Components
- Model 1 Design Pattern
- Model 2 / MVC Design Pattern
- Implementing MVC with a Framework
- What is Struts?
- Basic Struts Components
- Struts Documentation
- A Struts-Based Application: Logon

STRUTS IN A SIMPLE WEB APPLICATION

- Stars Information Application
- List Stars Flow
- Display Star Flow
- ActionServlet: the Controller
- struts-config.xml
- ActionForm: Form State
- The execute Method of Action
- The execute Method of StarsDisplayAction
- Directing Flow of Processing with an ActionForward
- Building a View with Struts Tags
- Using Struts Taglibs in a JSP
- The struts-blank.war: A Good Place to Start
- Review: Flow through a Typical Struts-Based Application

THE CONTROLLER

- ActionServlet as a Controller
- RequestProcessor
- Developer Responsibilities
- Mapping
- Forwards
- Lifecycle of an ActionForm
- ActionForm Considerations
- The validate Method

ACTION AND THE BUSINESS MODEL

- The Role of an Action
- The execute Method of Action
- Threading Considerations
- execute() Method Considerations
- Handling an Error
- Some Best Practices for Action
- More Best Practices for Action

MEETING ADDITIONAL APPLICATION REQUIREMENTS

- Java's MessageFormat Class
- Using MessageResources
- Techniques for Formatting Data
- Preventing Duplicate Form Submits
- Using ForwardAction and IncludeAction
- DispatchAction
- Configuring LookupDispatchAction
- JSP Buttons for LookupDispatchAction
- Extending LookupDispatchAction

HANDLING ERRORS

- Error Handling Options with Struts
- Documenting Errors with ActionError
- JSP Error Pages
- Declarative Java Exception Handling
- Logging in Struts

VALIDATION

- Validator Overview
- Validator Requirements
- Configuring Validator Rules
- Struts Validators
- Configuring the Struts Validators
- Configuring Form Validation: validation.xml
- Validator Rules Usage
- Validation with Regular Expressions: The mask Rule
- ValidatorForm verses ValidatorActionForm
- Multiple Page Input with the Validator
- Implementing a Validator Method
- Other Validator Implications

PAGE COMPOSITION WITH TILES

- Tiles Overview
- Building a Tiles Template
- Basic Tiles Example
- Tiles Definitions
- Additional Options with Definitions
- Placing Definitions in a Configuration File
- Using the <put> Tag
- Defining Attributes with <putList>, <add>, <bean>, and <item> Tags
- A Tiles Controller
- Enabling the Tiles Plug-In
- Using Tiles

THE VIEW

Forwarding to a View
Overview of Struts Tags
Struts HTML Tags
Form Related Tags
Struts Bean Tags
Some Bean Tags
Struts Logic Tags
Logic Tag Commonalities
The <iterate> Tag
Logic Tag Examples
Some Struts View Best Practices

ADDITIONAL VIEW AND FORM SUPPORT

More HTML Tags
Dealing with URLs
Using Error Tags
Internationalization with Struts Tags
Accessing Bean Properties
DynaActionForm: A Configurable Form
Indexed and Mapped Properties in a Form

WEB SERVICES WITH JAVA (24 HORAS)

Descripción: En este módulo aprenderá como desarrollar aplicaciones Web Services con Java y el kit de Desarrollo Java Web Services. Los tópicos iniciales cubren las tecnologías y arquitecturas básicas como XML y después se hace énfasis en un desarrollo práctico de esos conceptos en un ambiente Web distribuido.

INTRODUCTION TO WEB SERVICES

What is a Web Service?
Service-Oriented Architecture
Distributed Applications
Traditional Web Technologies
XML and Java
Web Services Structure
Why Web Services?
Web Services Architectures
RPC and Document Styles
Web Service Initiatives

UDDI AND JAXR

The UDDI Project
Taxonomies in UDDI
APIs and object model
Universal Business Registry
JAXR
The Inquiry API
Private Registries
The Publishing API

JAVA AND XML

JAXP
Parsing XML with SAX
Event Handling
Parsing XML with DOM
The Document Tree
Nodes
Validating XML
Transformations
Generating XML
JAXB

WEB SERVICES AND J2EE

J2EE Architectures
Standard J2EE Protocols
The Enterprise JavaBean
Compile
Package
Package (cont'd)
Deploy
Client

BASIC SOAP AND JAX-RPC CLIENTS

SOAP Overview
The SOAP Envelope
SOAP Over HTTP
RPC and Document styles
JAX-RPC
A SOAP Client
config.xml and wscompile
The Client Program

JAX-RPC SERVERS

A SOAP Server
The Service Interface and Implementation
config.xml and wscompile
Generated Files
Packaging the Application
Deploy

DESCRIBING WEB SERVICES WITH WSDL

The WSDL Meta-Language
WSDL Structure
Services and Ports
Bindings and Port Types
Data in Messages
Creating WSDL
The Process

SOAP AND SAAJ API

Data Types for JAX-RPC
Message handlers
Actors and SOAP headers
SOAP encoding
SAAJ
Attachments
Building attachments
A Document Server
JAXM
Using JAXM

CASE STUDY

The Case Study Application
Presenting the User Interface
The Web Application Layer
Completing the Web Application
EJB components
EJBs and persistence
Packaging EJBs
Adding a Web Service
Deploying the Application

APPENDIX A - SECURITY IN WEB SERVICES

Security Requirements for Web Services
Encryption
Digital Signatures
Single Sign-on and SAML
Access Control and XACML

ENTERPRISE JAVABEANS (32 HORAS)

Descripción: Explores the Enterprise JavaBean (EJB) Component Architecture for building multi-tier client/server applications. Java programmers will be able to write and deploy reusable, distributed components and take advantage of the services offered by the EJB infrastructure.

EJB AND THE J2EE ARCHITECTURE

- Evolution of Distributed Computing on the Web
- The J2EE Solution
- The Enterprise JavaBean
- Roles in Enterprise JavaBeans Development
- EJB Container and Application Server
- Reference Implementation Services

GETTING STARTED

- Defining the Bean Class
- Remote Interface
- Writing Business Methods
- Home Interface
- Compiling
- Creating the J2EE Application
- Packaging the Enterprise Bean
- Deploying the J2EE Application
- The Client
- Locating the Bean
- Create an Enterprise Bean Instance
- Invoking the Bean's Methods
- Compiling the Client
- Deploying the Client
- Running the Client

THE JAVAX.EJB PACKAGE

- The Remote Interface
- The Home Interface
- The Local Interface
- The Local Interface Usage
- Container Objects
- SessionBean Interface
- EntityBean Interface
- MessageDrivenBean Interface
- EJB Exceptions
- EJB Context
- Three Contexts
- Other Interfaces

BEAN-MANAGED PERSISTENCE

- Why BMP?
- Create
- Remove
- Load
- Store
- EjbFindByPrimaryKey and other Finder Methods
- DBObjects

CONTAINER-MANAGED PERSISTENCE

- Why CMP?
- Two Layers of Responsibility
- Coding Conventions in the Abstract Entity Bean
- Deploying a CMP Bean
- ejb-jar.xml
- Proprietary Deployment Descriptors
- Container-Managed Relationships
- EJBQL: Finders in CMP
- Limitations of CMP

TRANSACTIONS

- Transactions in EJB
- Container-Managed Transactions
- Transaction Support Attributes
- Bean-Managed Transactions
- SessionSynchronization

EJB SECURITY

- Security Issues
- Authentication
- Deploying a Secure Bean
- Authorization
- Container-Managed Security
- Security and Deployment Descriptor
- Bean-Managed Security
- Bean-Managed Security and Deployment Descriptor

SESSION BEANS

A Session Bean
What About State?
Stateless Session Beans
Life Cycle of a Stateless Session Bean
Stateful Session Beans
Life Cycle of a Stateful Session Bean
HttpSessions and Cookies

DEPLOYMENT

EJB Deployment Process
Anatomy of the Deployment Descriptor
Structural Data
Assembly
Environment Entities
Compile
Bundling

EJB CLIENTS

Client Types
Web Components
The JNDI API
Lookup with JNDI
PortableRemoteObject.narrow()
Using the Bean

ENTITY BEANS

An Entity Bean
Persistence Models
EntityBean Home Interface
Finder Methods
Primary Key
The Component Interface
Session Bean Clients
Life Cycle of an Entity Bean

JMS

Introduction to JMS Concepts
What is JMS?
Parent Interfaces and GMD
JMS Definitions
Message Object
Multi-Threading and JMS Exception
PTP Domain and Interfaces
Pub/Sub Domain and Interfaces
JMS Server and Destination
Creating the Client
Handling the Message
Producing the Message

MESSAGE-DRIVEN BEANS

Message-Driven Beans
Asynchronous Processing
Comparing MDBs
MDB Interfaces
Deploying MDBs
MDB Deployment Descriptor Elements

APPENDIX A - SUPPORTING TECHNOLOGIES

JDBC
XML
RMI
Servlets
Database Transaction Isolation Levels
The JSP Solution

Software a Utilizar

- Java Development Kit (JDK), Version 1.5
- Struts Framework
- JBoss Application Server
- Apache Http Server

Material a utilizar:

- Una mochila de la empresa para ambos cursos
- Un manual de Struts
- Un manual de Web Services
- Un manual de EJB
- Un lápiz para hacer anotaciones

IMPORTANTE

- *El precio del cuadro no incluye IVA.*

Formas y condiciones de pago:

Para la inscripción, aplicación de los descuentos y aseguramiento de que el diplomado se impartirá en las fechas pactadas se requiere el pago anticipado antes con depósito o transferencia bancaria a la siguiente cuenta:

- ❖ Depósito en Banamex cuenta 4923239 Suc. 575 a nombre de Desarrollo y Capacitación en Internet, S. A. de C. V. (CLABE en caso de transferencia electrónica vía Internet 002180057549232394)
- ❖ O cheque a nombre de Desarrollo y Capacitación en Internet, S.A. de C.V.