**Restful Web Services**

**overview**

Restful Web Services with JAX-RS class teaches participants how to design and develop web services using the RESTful architecture and Java EE 6.

**Duration**

Online

* It is a 12 days program and extends up to 2hrs each.
* The format is 40% theory, 60% Hands-on.

Corporate

* It is a 3 days program and extends up to 8hrs each.
* The format is 40% theory, 60% Hands-on.

Classroom

Private Classroom arranged on request and minimum attendies for batch is 4.

**course content**

* Overview of REST and JAX-RS
  + The REST Vision
  + Use of HTTP
  + Use of URIs
  + Use of Content Types
  + CRUD Operations and Business Operations
  + HATEOAS and the Richardson Maturity Model
  + JAX-RS
  + Applications, Resources, and Providers
* Configuration and Lifecycle
  + The JAX-RS Application
  + XML Configuration
  + Annotation-Driven Configuration
  + Applications
  + Root Resource Classes
  + Per-Request vs. Singleton Lifecycle
  + Providers
* Dispatching Requests
  + The Application Path
  + The @Path Annotation
  + The HTTP Method Annotations
  + Sub-Resource Locators
  + Annotation Inheritance and overriding
  + @XXXParam Annotations
  + The @DefaultValue Annotation
  + Parameter Types
  + Parameter Converters
* Handling Requests
  + The Application Path
  + The @Path Annotation
  + The HTTP Method Annotations
  + Sub-Resource Locators
  + Annotation Inheritance and overriding
  + @XXXParam Annotations
  + The @DefaultValue Annotation
  + Parameter Types
  + Parameter Converters
* Producing Responses
  + Supported Return Types
  + The Response Class
  + Response Entities
  + Binary Content
  + Delivering a File
* Entity Translation
  + Entity Parameter and Return Type
  + Entity Providers
  + @Consumes and @Produces Annotations
  + Built-In Entity Providers
  + Custom Entity Providers
* Working with XML and JSON
  + The JAXB Entity Provider
  + Driving XML Representations from Schema
  + Driving JSON Representations with JAXB
  + JSON Without JAXB: Jackson, MOXy, etc.
  + CRUD Patterns
  + Error Handling
  + Sub-Resources
* Dependency Injection
  + The @Context Annotation
  + Injectable Types
  + The Application Subclass
  + Servlet Configuration and Context
  + Impact of Lifecycle Policies
  + Context Providers
  + Using CDI
* Validation and Error Handling
  + Using Response
  + Throwing WebApplicationException
  + Exception Mapping Providers
  + Selection of Exception Mappers
  + Support for JSR-303
  + Annotating Method Parameters
  + Annotating Entity Classes
  + Error Reporting
* Generic Services
  + Generic Entities
  + Generic Entity Providers
  + ParameterizedType
  + Reflection-Driven Entity Providers
  + Annotation Inheritance
  + CRUD Patterns, II
  + Serialization, Recursion, and Scope
  + Dynamic Sub-Resources
* Working with Databases
  + Persistence Services
  + The Java Persistence API
  + JPA Support for JSR-303
  + Handling IDs and Keys
  + Cascading
  + Caching
  + Error Handling
  + Hypermedia Challenges
* The Client API
  + The Builder Pattern
  + Client
  + WebTarget
  + Invocation
  + Basic Usage
  + Managing Content Types and Entities
  + Error Handling
  + Registering Providers
  + The Service Locator Pattern
  + Generic Clients
* Filters and Interceptors
  + The Filter Interfaces
  + Processing Pattern
  + The Request and Response Context Interfaces
  + Aborting a Request
  + The Interceptor Interfaces
  + Adaptive Streams
  + Filters on the Client Side
  + Interceptor Strategy for Hypermedia
* Security
  + Concerns for RESTful Services
  + Authentication and Authorization
  + HTTP BASIC and DIGEST
  + HTTPS
  + Programmatic Security
  + SQL Injection
  + Cross-Site Request Forgery
  + Message-Level Security
  + HMACs
* The Java API for XML Binding
  + The Need for Data Binding
  + XML Schema
  + Two Paths
  + JAXB Compilation
  + Mapping Schema Types to Java
  + Java-to-XML Mapping Using Annotations
  + Marshalling and Unmarshalling
  + Working with JAXB Object Models