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## LAB-5542: Project Jersey: Building RESTful Web Services in Java

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# Instructor-Led Hands-on Labs

- > Instructors will provide background for exercises
- > Exercises are self-paced
  - Hard-copy and online lab guides are available
  - Use suggested durations as a guide
- > Raise your hand at any time for assistance
- > To get the most out of the lab...
  - **Read** the lab guide, especially the background
  - **Don't** just copy and paste the solutions

# Housekeeping

- > Before you leave, **please** fill out a survey and hand it to someone before you leave
  - We **really** want to know what you think!
- > Please log out of your machine when done
- > Please look around to make sure you have all of your belongings
  - The hard copies of the lab guides are yours to keep

# RESTful Web Services

- > Built to work best on the web
- > Following REST architectural style
  - Resources (data) accessible through URI's
  - Uniform set of simple, well-defined operations
  - Designed to use a stateless communication protocol (typically HTTP)
- > Typically map the four main HTTP methods to the operations they perform
  - Create, retrieve, update, delete

# Mapping of HTTP Methods to RESTful Web Service Operations

HTTP Method	Operation Performed
GET	Get a resource
POST	Create a resource or other operations as it has no defined semantics
PUT	Create or update a resource
DELETE	Delete a resource

# Project Jersey

- > Open source, production quality reference implementation of JAX-RS: The Java API for RESTful Web Services
- > Implements support for annotations defined in JAX-RS, making it very easy for Java developers to build RESTful web services
- > Adds additional features not covered by JAX-RS
  - MVC support (with pluggable template processors)
  - Client API and others

# Exercises

- > **Exercise 1:** Hello World!
  - Expected duration: 20 minutes
- > **Exercise 2:** Advanced JAX-RS/Jersey Features
  - Expected duration: 60 minutes
- > **Exercise 3:** Jersey Client API
  - Expected duration: 15 minutes

# Getting Started

- > If you have not logged in, log in with
  - username: **lab5542**
  - password: **hol009**
- > Online lab guide will open in a browser window
- > All necessary software and lab files are already installed on your lab machine
  - Start from **exercise 1**



# Exercise 1: Hello World!

- > Quick introduction into the basics of JAX-RS and Jersey
  - Shows how to create a new Jersey project (using maven)
  - Explains the project structure – basic pieces of a simple Jersey web application/service
  - Shows how to make simple modifications to the project to show how the programming model works

## Exercise 2: Advanced JAX-RS/Jersey features

- > Use some more advanced features of JAX-RS and Jersey to develop a RESTful web service for managing system properties on the server
  - Typical CRUD-type of service – Create/Retrieve/Update/Delete operations on the system properties
  - System properties as a convenient data source (no need to deal with a database)

## Exercise 2 – URI Structure

- > Before we start coding we should think about how our service will be exposed (structure of the resource URI's and operations allowed on those URI's)

URI template	Operation	Description
/properties	GET	List of all system properties
/properties/{property}	GET	Representation of a property named {property}
/properties/{property}	PUT	Adds/updates a property named {property}
/properties/{property}	DELETE	Deletes a property named {property}

## Exercise 3: Jersey Client API

- > Introduction into Jersey-specific client API
  - Uses Jersey Client API to build a Swing-based client application showing how easy it is to build clients for any RESTful web service (not necessarily Jersey or JAX-RS based)
  - Uses ant instead of maven to show how to use Jersey without maven

# Congratulations!

- > You should now have completed this lab
- > If you would like more time to continue working, please consider taking the lab exercises with you
  - Discs containing all of the labs offered this year are available for you to take home
  - The lab guide will tell you where to get help with this lab after JavaOne
- > Thank you for attending this hands-on lab!



# JavaOne<sup>SM</sup>

# Thank You

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