# **Developing RESTful API using Java**

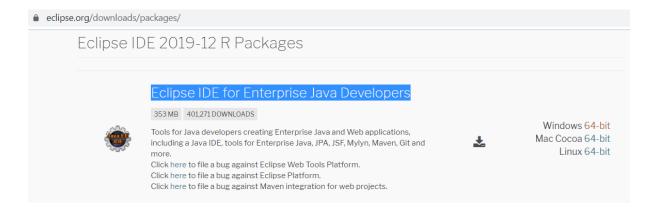
### **IDE used:**

Eclipse IDE for Enterprise Java Developers.

Version: 2019-12 (4.14.0) Download Eclipse IDE from

https://www.eclipse.org/downloads/packages/

The suitable package for this implementation is "Eclipse IDE for Enterprise Java Developers":



# Step 1:

Install Apache Tomcat server from <a href="https://tomcat.apache.org/download-80.cgi">https://tomcat.apache.org/download-80.cgi</a>

Direct download link (for Windows):

http://apachemirror.wuchna.com/tomcat/tomcat-

8/v8.5.51/bin/apache-tomcat-8.5.51.exe

# Binary Distributions • Core: • zip (pgp, sha512) • tar.gz (pgp, sha512) • 32-bit Windows zip (pgp, sha512) • 64-bit Windows zip (pgp, sha512) • 32-bit/64-bit Windows Service Installer (pgp, sha512)

### Step 2:

Download Jersey RESTful Web Services from <a href="https://eclipse-ee4j.github.io/jersey/download.html">https://eclipse-ee4j.github.io/jersey/download.html</a>

Jersey JAX-RS 2.1 RI bundle direct download link: <a href="http://repo1.maven.org/maven2/org/glassfish/jersey/bundles/jaxrs-ri/2.30/jaxrs-ri-2.30.zip">http://repo1.maven.org/maven2/org/glassfish/jersey/bundles/jaxrs-ri/2.30/jaxrs-ri-2.30.zip</a>

eclipse-ee4j.github.io/jersey/download.html

JAX-RS 2.1 / Jersey 2.26+

Jersey 2.30, that implements JAX-RS 2.1 API API is the most recent release of Jersey. To see the details about all changes, bug fixed and updates, please check the Jersey 2.30 Release Notes.

For the convenience of non-maven developers the following links are provided:

- Jersey JAX-RS 2.1 RI bundle bundle contains the JAX-RS 2.1 API jar, all the core Jersey module jars as well as all the required 3rd-party dependencies.
- Jersey 2.30 Examples bundle provides convenient access to the Jersey 2 examples for off-line browsing.

Alternatively, it can also be downloaded from <a href="https://jar-download.com/artifacts/org.glassfish.jersey.bundles/jaxrs-ri/2.1/source-code">https://jar-download.com/artifacts/org.glassfish.jersey.bundles/jaxrs-ri/2.1/source-code</a>

Step 3: Open Eclipse IDE

Some useful links

Setting up tomcat: <a href="https://www.youtube.com/watch?v=PH-bK3g2YmU">https://www.youtube.com/watch?v=PH-bK3g2YmU</a>

Building RESTful API (reference):

https://www.youtube.com/watch?v=5jQSat1cKMo

# **REST/RESTful Web Services**

- REST stands for Representational State Transfer. It's an architectural pattern for creating web services.
- A RESTful service is one that implements that pattern.
- REST Client applications can use HTTP GET/POST/PUT/DELETE methods to invoke Restful web services.

### Java RESTful Web Services API

Java API for RESTful Web Services (JAX-RS) is the Java API for creating REST web services. JAX-RS uses annotations to simplify the development and deployment of web services. JAX-RS is part of JDK, so you don't need to include anything to use it's annotations.

### **Restful Web Services Annotations**

Some of the important JAX-RS annotations are:

- **@Path**: used to specify the relative path of class and methods. We can get the URI of a webservice by scanning the Path annotation value.
- @GET, @PUT, @POST, @DELETE and @HEAD: used to specify the HTTP request type for a method.
- @Produces, @Consumes: used to specify the request and response types.
- <u>@PathParam</u>: used to bind the method parameter to path value by parsing it.

# **REST API Implementations**

There are two major implementations of JAX-RS API.

- 1. **Jersey**: <u>Jersey</u> is the reference implementation provided by Sun. For using Jersey as our JAX-RS implementation, all we need to configure its servlet in web.xml and add required dependencies. Note that JAX-RS API is part of JDK not Jersey, so we have to add its dependency jars in our application.
- 2. **RESTEasy**: <u>RESTEasy</u> is the JBoss project that provides JAX-RS implementation.

## **Output**

# (Error 404 - Page not found: O... some err in path...)

