## A First Web Service in Java

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Java introduced JAX-WS<sup>1</sup> (the Java API for XML Web Services) which is now a part of Java EE as well as Java SE since version 6. It simplifies the creation of web services, namely by providing the wsgen and wsimport tools. It is possible to use JAX-WS in GlassFish as well as Tomcat, and their usage is described in the official documentation.

## 1 Running a Simple Example

The simple example provided in the src directory allows you to run a web service with a standalone client. The service is implemented in Weather.java using the @WebService and @WebMethod annotations. The service is published by creating an endpoint in WeatherEndpoint.java.

We compile the server, generate the web service, and start the endpoint at port 8081, as the following figure shows.

We may then use a browser to check the WSDL file (Web Services Description Language), in order to test that the web service has been published

<sup>&</sup>lt;sup>1</sup> http://jax-ws.java.net

correctly, as shown in the figure that follows.

```
This XML file does not appear to have any style information associated with it. The document tree is shown below.

**V<!--

"Dublished by JNX-MS RI at http://jax-ws.dev.java.net. RI's version is JNX-MS RI 2.2.4-b01.

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"definitions wnlns.vsus" http://www.vs.dev.java.net. RI's version is JNX-MS RI 2.2.4-b01.

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Finally, we develop the client application, which is provided in Client.java, and use the wsimport tool to parse the WSDL file and automatically generate the necessary files. The client application may then be compiled and executed, as shown in the following figure.

```
| Serc - bash - bash - 80x24 | Java | bash | + bender:src raul$ wsimport -p client -keep http://localhost:8081/weather?wsdl parsing WSDL...

| Generating code... | Compiling code... | bender:src raul$ ls -RF client | Client.java | ObjectFactory.class | Forecast.class | ObjectFactory.java | package-info.class | Forecast.java | Weather.class | package-info.java | ForecastResponse.class | Weather.java | ForecastResponse.java | WeatherService.class | bender:src raul$ java -cp . client/Client.java | bender:src raul$ java -cp . client.Client | Weather in Budapest: Light rain throughout the day. | bender:src raul$ |
```