

7 Appendix A – Development Environment

Many development tools are available today for Java developers to utilize when developing Web Services. Two in particular are recommended and used throughout this book.

7.1 Install Java Development Kit (JDK) 6

Visit Oracle's website (<http://www.oracle.com>) and download Java Platform (JDK) 6. Follow the installation instructions and use all defaults.

JDK 7 can be used to run all of the examples in this book; however, it would be difficult to work with Oracle WebLogic at this time because this software package still runs with JDK 6. Oracle WebLogic 12 can be made to work with JDK 7, but it takes more time to set up.

7.2 Install Eclipse Interactive Development Environment (IDE)

Visit Eclipse's website (<http://www.eclipse.org>) and download the latest version of Eclipse IDE for Java EE developers.

After installing Eclipse on your system, run it by double-clicking on the Eclipse icon in the installed folder. The two basic project types that are used in this book are Java Projects and Dynamic Web Projects. Instructions for creating these projects are provided in the following sections.

7.2.1 Create a Java project in Eclipse

To create a Java project, take the following steps:

1. Select File (menu) → New → Java Project. A Project creation screen will pop up. Enter your project name and click 'Next' at the bottom.

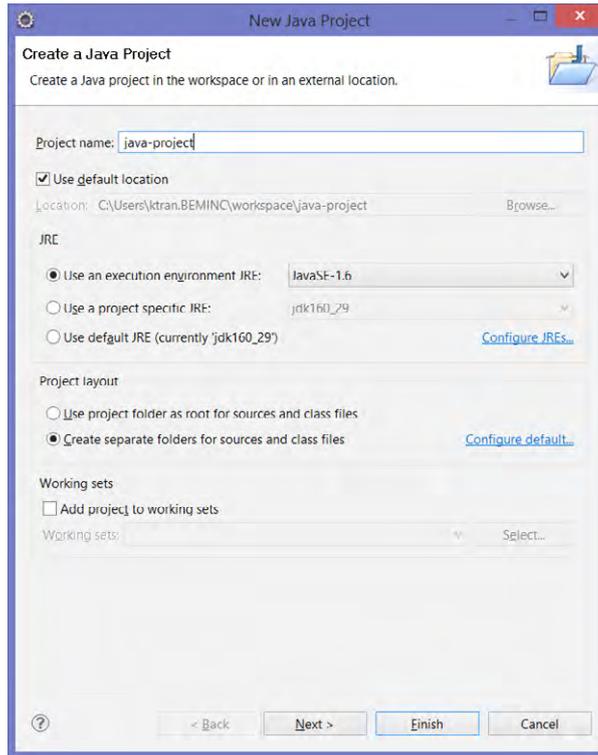


Figure 7-1. Create a Java Project for the Eclipse IDE

2. On the Java Settings screen, choose all default values and click 'Finish' at the bottom.

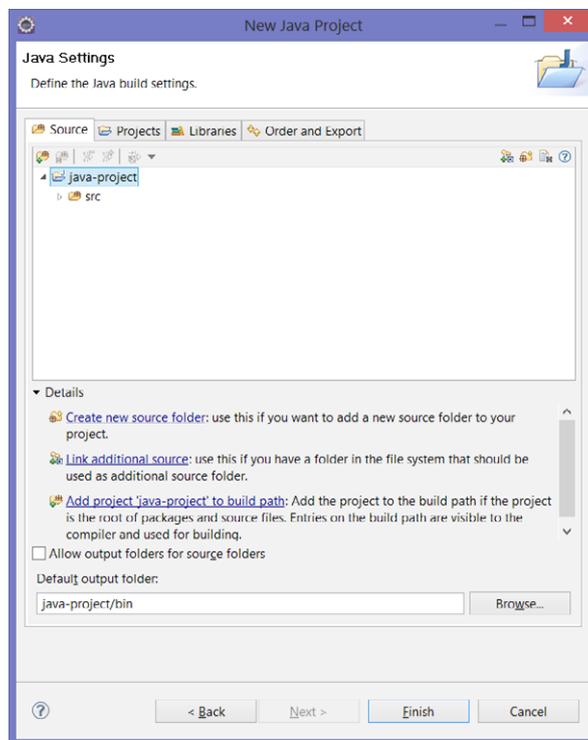


Figure 7-2. Java Settings Screen

7.2.2 Create a Dynamic Web project in Eclipse

1. Choose File (menu) → New → Other... A 'Select a wizard' window pops up as shown below:

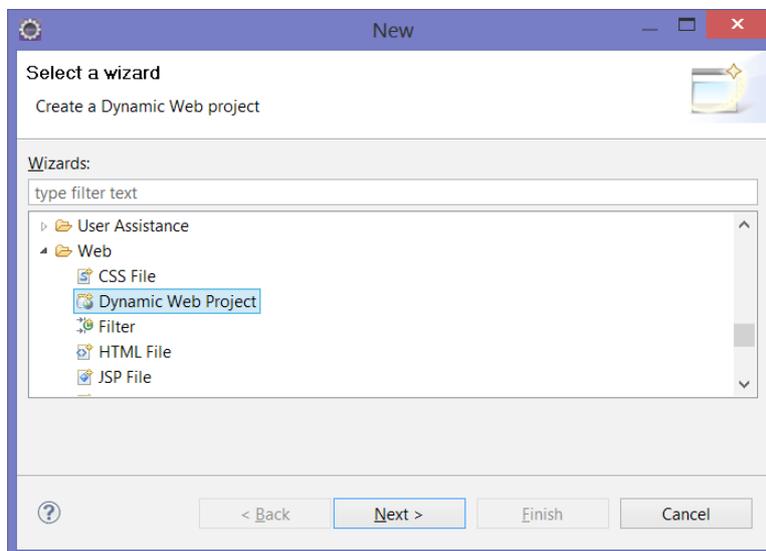


Figure 7-3. Create a Dynamic Web Project

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2. Enter the project name and click 'Next' at the bottom of the screen.

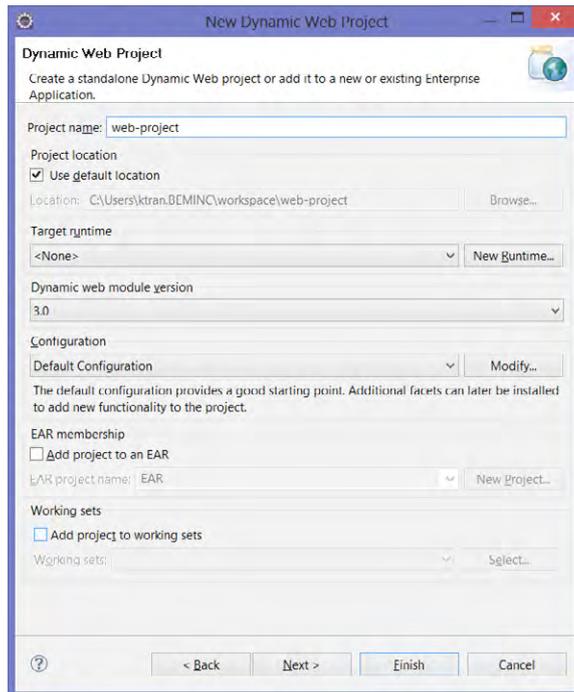


Figure 7-4. Options for a Dynamic Web Project

3. Click 'Next' on the Java screen.

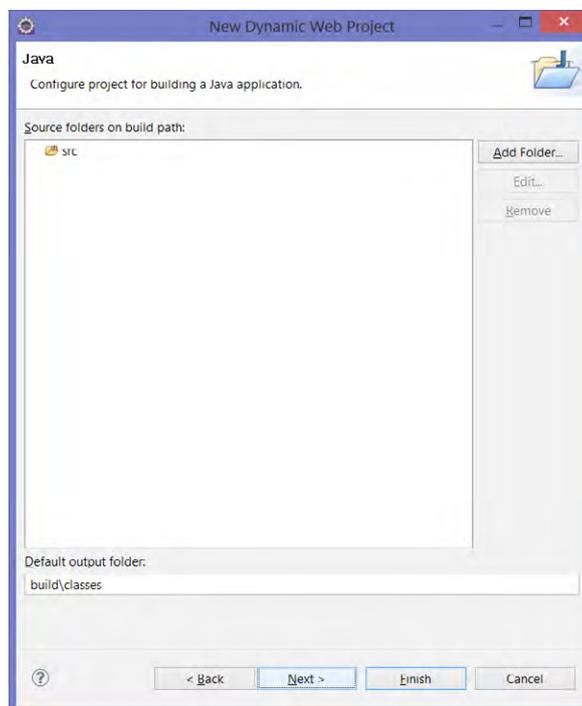


Figure 7-5. Additional Java Options

4. Make sure to check 'Generate web.xml deployment descriptor'.

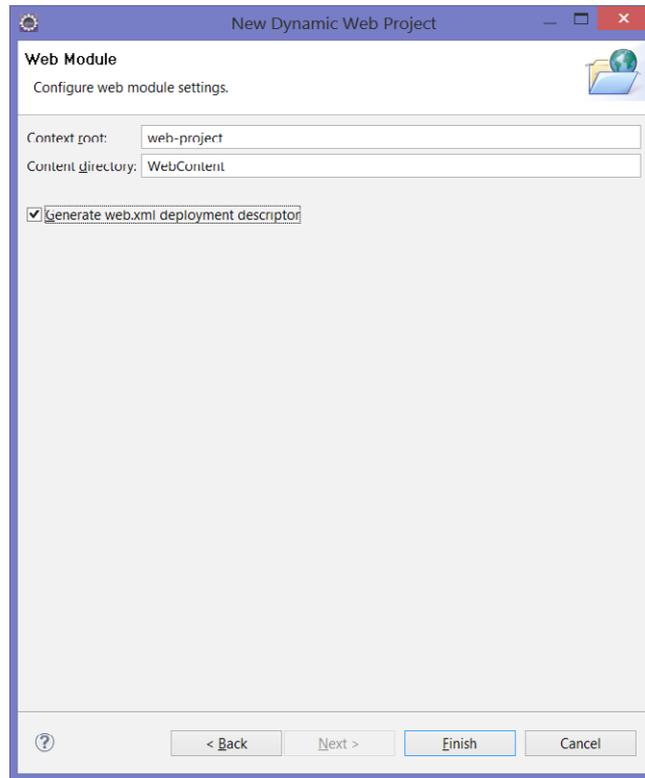


Figure 7-6. Finishing the Creation of a Dynamic Web Project

7.3 Install MySQL Community Server Database

Visit MySQL's website (<http://www.mysql.com>) and download the MySQL Community Server. This version is freely available to developers.

Run the installer and choose the default options. Make sure to remember your root password.

Download and install Employees, a sample database, from MySQL's website: <http://dev.mysql.com/doc/employee/en/index.html>. Follow the installation instructions and use all default options.

Create a user called 'empl_1' and assign the Employees database.

If you'd prefer a simpler approach, create an Employees database with just a single table 'Employees' as shown below.

Listing 7-1. A DDL for creating employees table

```
CREATE TABLE employees (
  emp_no      INT          NOT NULL,
  birth_date  DATE         NOT NULL,
  first_name  VARCHAR(14)  NOT NULL,
  last_name   VARCHAR(16)  NOT NULL,
  gender      ENUM ('M', 'F') NOT NULL,
  hire_date   DATE         NOT NULL,
  PRIMARY KEY (emp_no)
);
```

Download and extract the JDBC driver for accessing MySQL database:

<http://dev.mysql.com/downloads/connector/j/>

7.4 Install Oracle Fusion Middleware Software

Visit Oracle's website (<http://www.oracle.com>) and download Oracle Fusion Middleware (formerly 'WebLogic Server') version 12.1.1. Oracle may require the user to sign up for an account. This version is fully functional for developers; however, it is limited to five (5) client connections. Make sure to download the Windows or Linux Installer version. Warning: this is a large download (1.2 GB). The installer version includes a JDK and a customized Eclipse IDE for Oracle's middleware. Run the installer and choose all default options.



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7.5 Install Apache Tomcat server

Visit Apache Tomcat's website (<http://tomcat.apache.org>) and download the latest Tomcat version 7. Tomcat is an open source JEE application server that is available for free download.

Verify the Tomcat server by visiting <http://localhost:8080> on a browser. The following page should appear:

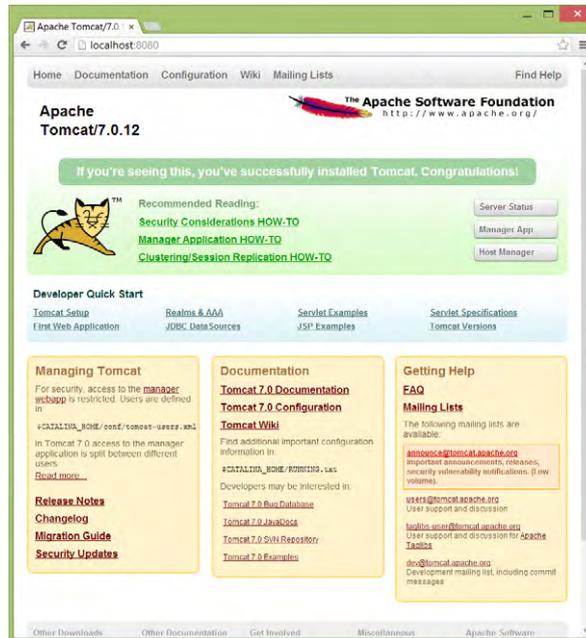


Figure 7-7. Working Tomcat Console Screen

7.6 Apache CXF

Visit the Apache CXF website to download the software package. Unpack the download into a directory. All necessary Java libraries are stored in the unpacked directory. Make sure to include appropriate library files (JAR) in the library of the cxf-ws Java project.

```
aopalliance-1.0.jar
asm-3.3.jar
axis.jar
commons-dbcp-1.4.jar
commons-discovery-0.2.jar
commons-logging-1.1.1.jar
commons-logging.jar
cxf-2.4.0.jar
geronimo-activation_1.1_spec-1.1.jar
geronimo-annotation_1.0_spec-1.1.1.jar
geronimo-javamail_1.4_spec-1.7.1.jar
```

geronimo-servlet_3.0_spec-1.0.jar
geronimo-ws-metadata_2.0_spec-1.1.3.jar
jaxb-api-2.2.1.jar
jaxb-impl-2.2.1.1.jar
jaxrpc.jar
neethi-3.0.0.jar
saaj-api-1.3.jar
saaj-impl-1.3.2.jar
spring-aop-3.0.5.RELEASE.jar
spring-asm-3.0.5.RELEASE.jar
spring-beans-3.0.5.RELEASE.jar
spring-context-3.0.5.RELEASE.jar
spring-core-3.0.5.RELEASE.jar
spring-expression-3.0.5.RELEASE.jar
spring-web-3.0.5.RELEASE.jar
stax2-api-3.1.1.jar
woodstox-core-asl-4.1.1.jar
wsdl4j-1.6.2.jar
wsdl4j.jar
xml-resolver-1.2.jar
xmlschema-core-2.0.jar

7.7 Install SOAPUI software

Visit SOAPUI's website (<http://www.soapui.org>) and download a free version of SOAPUI software.

7.8 Source Code

All Java code for this book can be found at Dr. Tran's blog: <http://drtran.bemach.com>.