GLOBAL ACADEMY OF TECHNOLOGY

Department of Information Science & Engineering

Manual

JDBC and Servlets – Installation and Configuration in Eclipse IDE

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Contents

Java Database Connectivity

Software Checklist

- ✓ Eclipse – oxygen from the link http://www.eclipse.org/downloads/
- ✓ JDK – jdk8u144 or 151 or 152 for windows x64 from the link http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html (select appropriate .exe file for your system)
- ✓ MySQL Database: mysql-5.5 from the link https://dev.mysql.com/downloads/windows/installer/5.5.html
- ✓ JDBC driver for MySQL: mysql-connector-java-5.1.44 from the link https://dev.mysql.com/downloads/connector/j/5.1.html (select zipped package)

Setup JDBC Development Environment.

1. **Install Eclipse IDE.** Unzip the package and save the eclipse folder in any location you desire. Create eclipse shortcut on desktop.
2. **Install Java.** Make sure you have appropriate JDK installed on your system. Use jdk8 from the above mentioned link.
3. **Install MySQL** using executable msi file downloaded from the above mentioned link with standard configuration (do not customize anything)
4. **Install Java MySQL Connector.** Unzip the folder downloaded from the above mentioned link and save the folder in any location (Best practice is to copy the folder in workspace where you are willing develop your application)

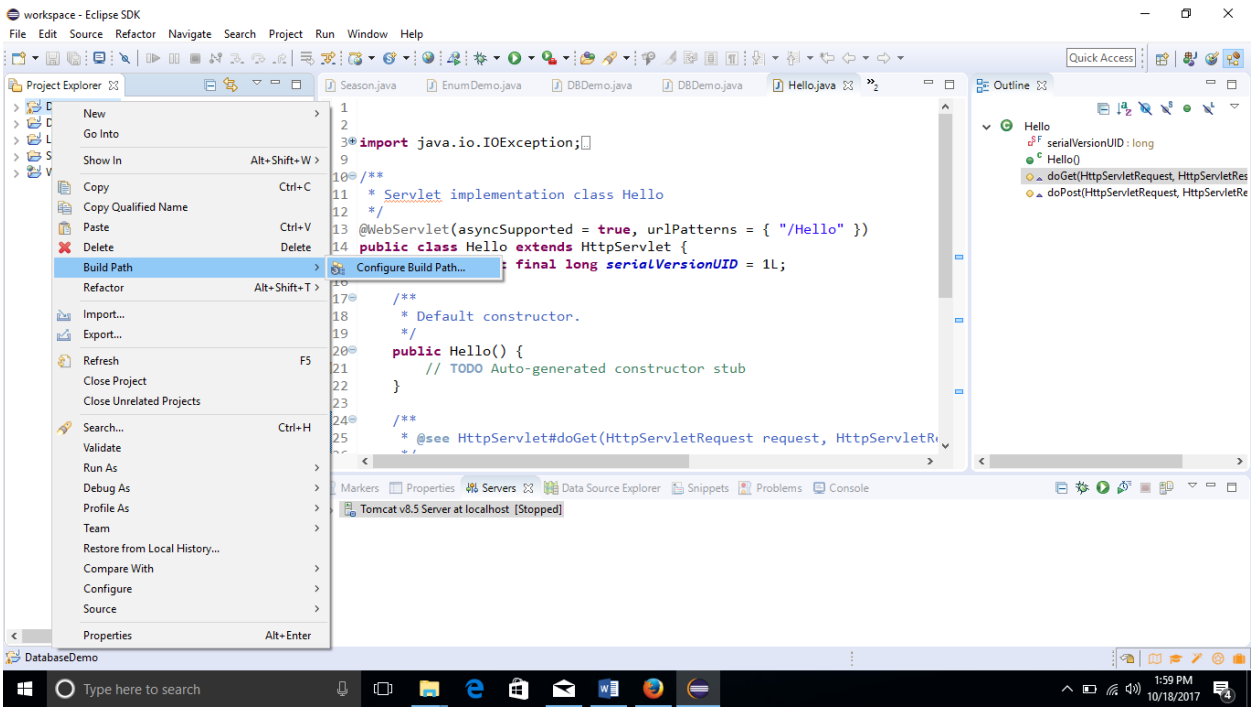
Create JDBC application

1. **Create a Java project in Eclipse.**

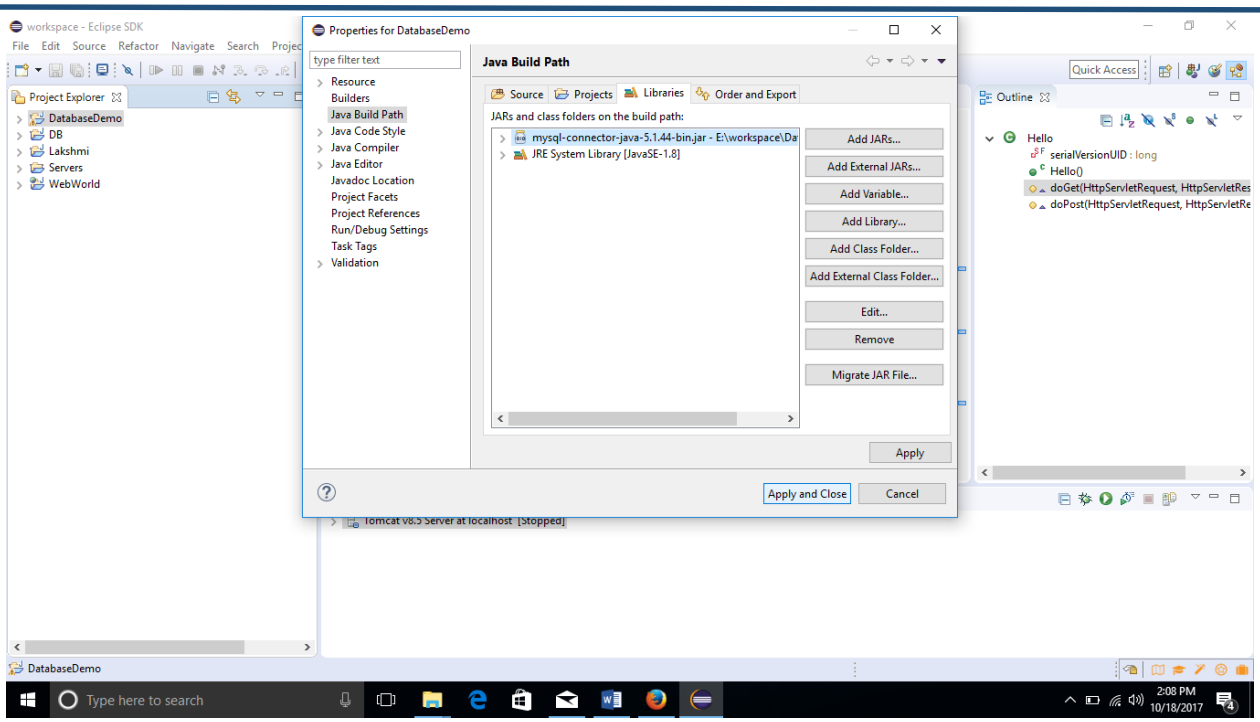
   File -> New-> Project-> Java and give logical name for your project. The created project will be seen on Project Explorer window which is located on the left side of the eclipse workbench.

2. Configure JDBC driver in Eclipse IDE.

Add the downloaded Java MySQL Connector JAR in client **project's classpath.** To do this, **right click on your Java Project -> Properties -> Build Path -> Configure Build Path**



In the Java Build Path window, select **Libraries-> Add External JARs…** Browse through the location where you have saved JDBC driver folder. (Step 4 in "setup a JDBC development environment" section) Add "mysql-connector-java-5.1.44-bin.jar" file and close the window



3. Develop JDBC Application

- Now, all the JDBC packages required for your application is ready. Right click on the Project you have created and create a class to develop your application. Your class should have methods for all five JDBC process steps.
- Go to MySQL command line client. This asks you to enter the password. Enter the password which you had given during MySQL installation process.
- Create new database, create some sample tables and insert some values to the table. Write Java application to access these created data and check if everything is working fine. If everything goes good, enjoy developing your application.

****HAPPY CODING****

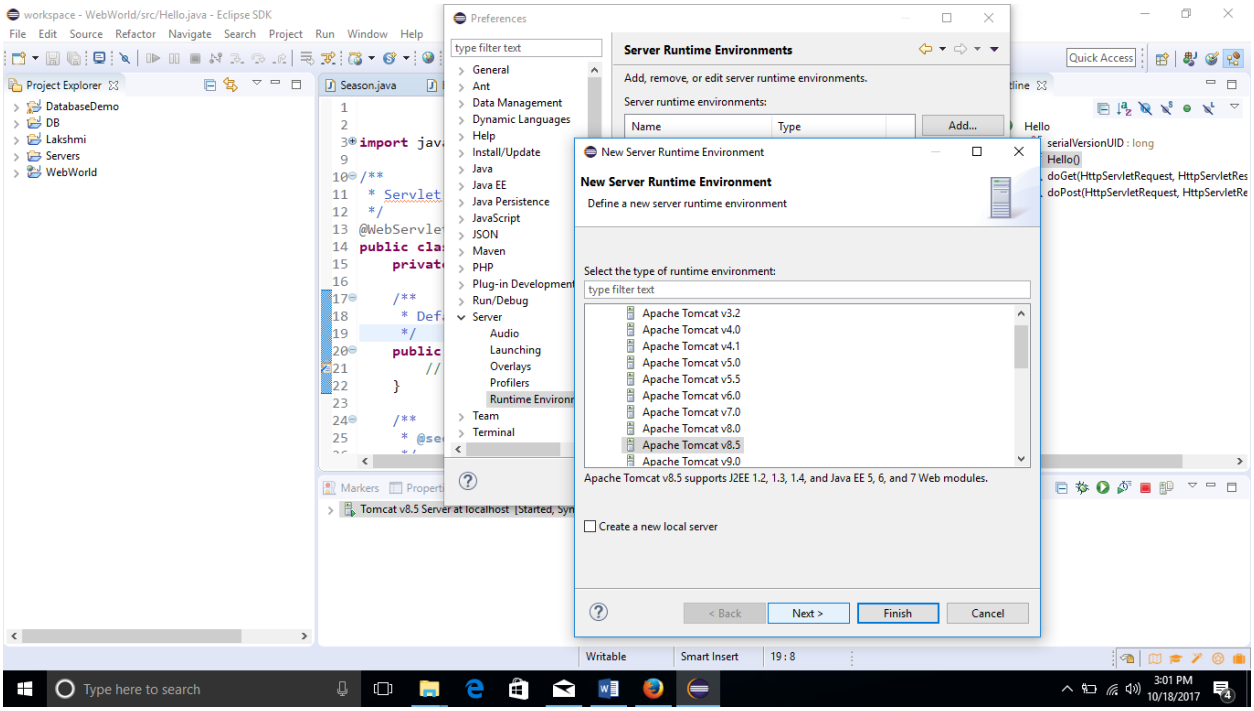
Dynamic Web Project With Servlets

Software Checklist

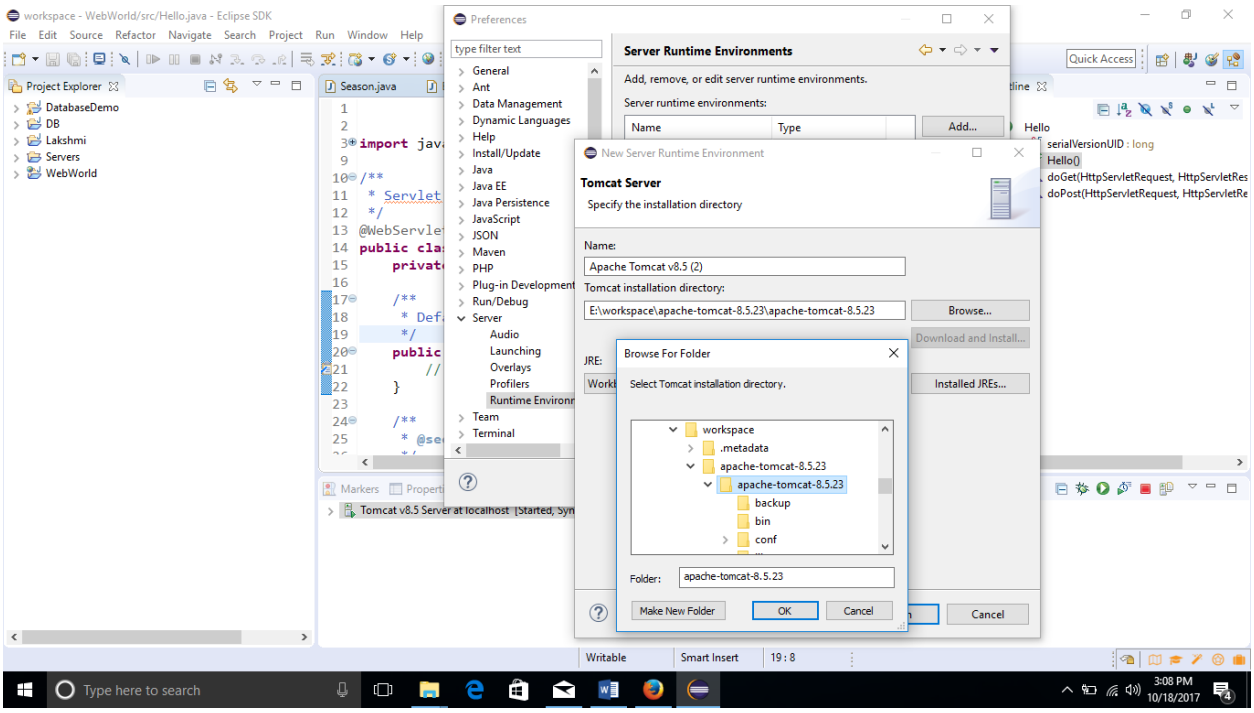
- ✓ Eclipse – oxygen from the link http://www.eclipse.org/downloads/
- ✓ JDK – jdk8u144 or 151 or 152 for windows x64 from the link http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html (select appropriate .exe file for your system)
- ✓ Web Server – Apache Tomcat. Install respective Tomcat for the JDK you have installed. If you have installed jdk8, then go for Tomcat 8. Download apache-tomcat-8.5.23 from the link https://tomcat.apache.org/download-80.cgi

Configuring Apache Tomcat in Eclipse

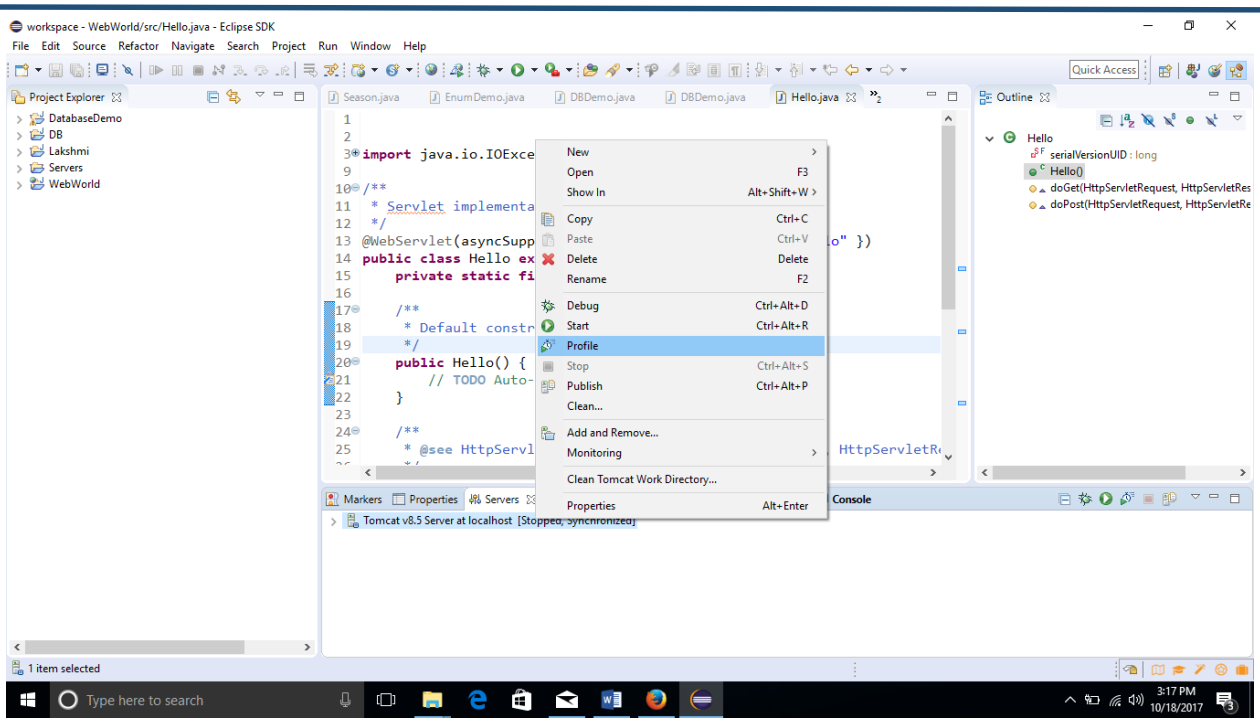
1. Open **Window -> Preferences -> Server -> Installed Runtimes** to create a Tomcat installed runtime. Click on **Add...** to open the **New Server Runtime** dialog, then select your runtime under **Apache** (Apache Tomcat v8.5 in this example)



2. Click “Next” and browse through the location where you have saved the downloaded Apache Tomcat folder and select the folder. Make sure that you have selected the right Apache Tomcat version



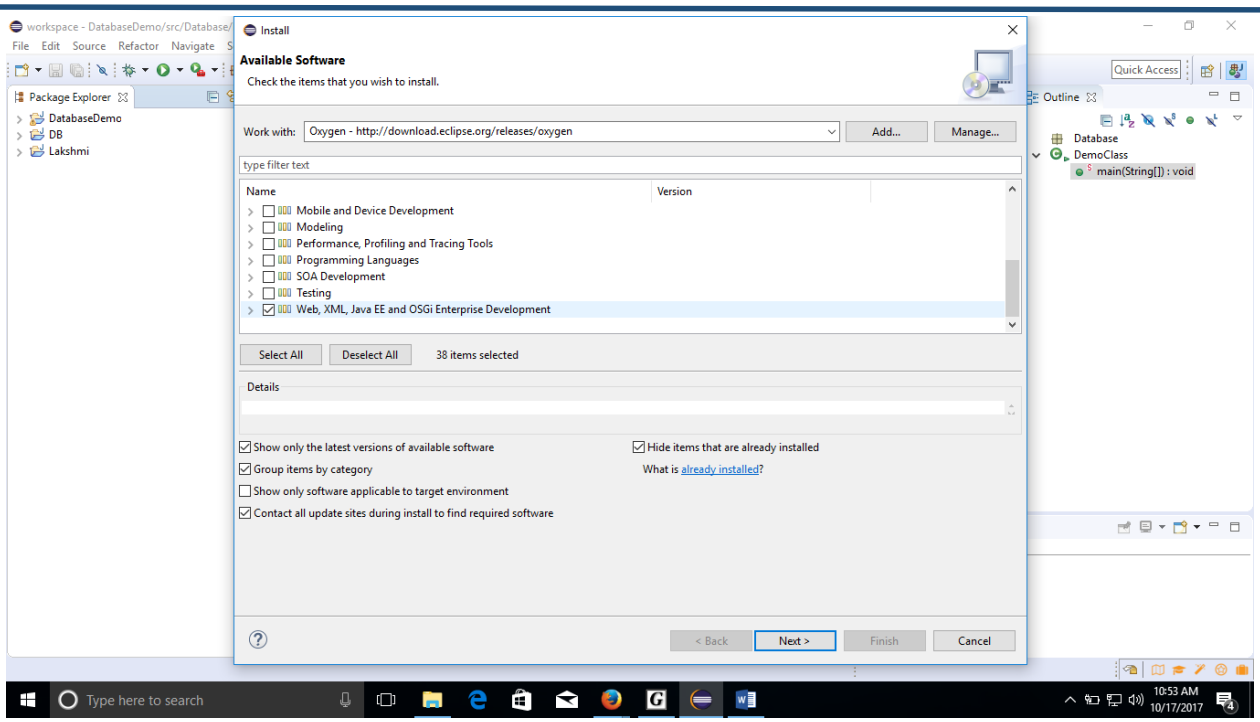
3. This step creates “Server” tab in the Eclipse IDE (Near Console tab in the bottom of Eclipse workbench). Now start the eclipse by right clicking on the Tomcat server and select “Start”. Now the web server is started ready to service.



Setup Dynamic Web Project Environment

Create Dynamic Web Project in eclipse to work on servlets. If Dynamic Web Project option is not available, follow the below steps:

1. Go to **Help -> Install New Software.** This opens up the following window. Provide the appropriate link (it depends on the version of your eclipse. The examples are run on eclipse version 'Oxygen' and hence the link http://download.eclipse.org/releases/oxygen is mentioned) for searching in "Work With" column as shown below.
2. Under the listed names, select Web, XML, Java EE option and click next. Keep on hitting "Next" button, accept terms of the license agreement, and click "Finish"
3. Restart Eclipse and Create Dynamic Web project.
4. This enables you to create servlets and provides all required servlet APIs.


Install
Available Software
Check the items that you wish to install.
Work with: Oxygen - http://download.eclipse.org/releases/oxygen
Add...
Manage...
type filter text
Name
Version
Mobile and Device Development
Modeling
Performance, Profiling and Tracing Tools
Programming Languages
SOA Development
Testing
Web, XML, Java EE and OSGi Enterprise Development
Select All
Deselect All
38 items selected
Details
Show only the latest versions of available software
Group items by category
Show only software applicable to target environment
Contact all update sites during install to find required software
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Package Explorer
DatabaseDemo
DB
Lakshmi
Outline
Database
DemoClass
main(String[]) : void
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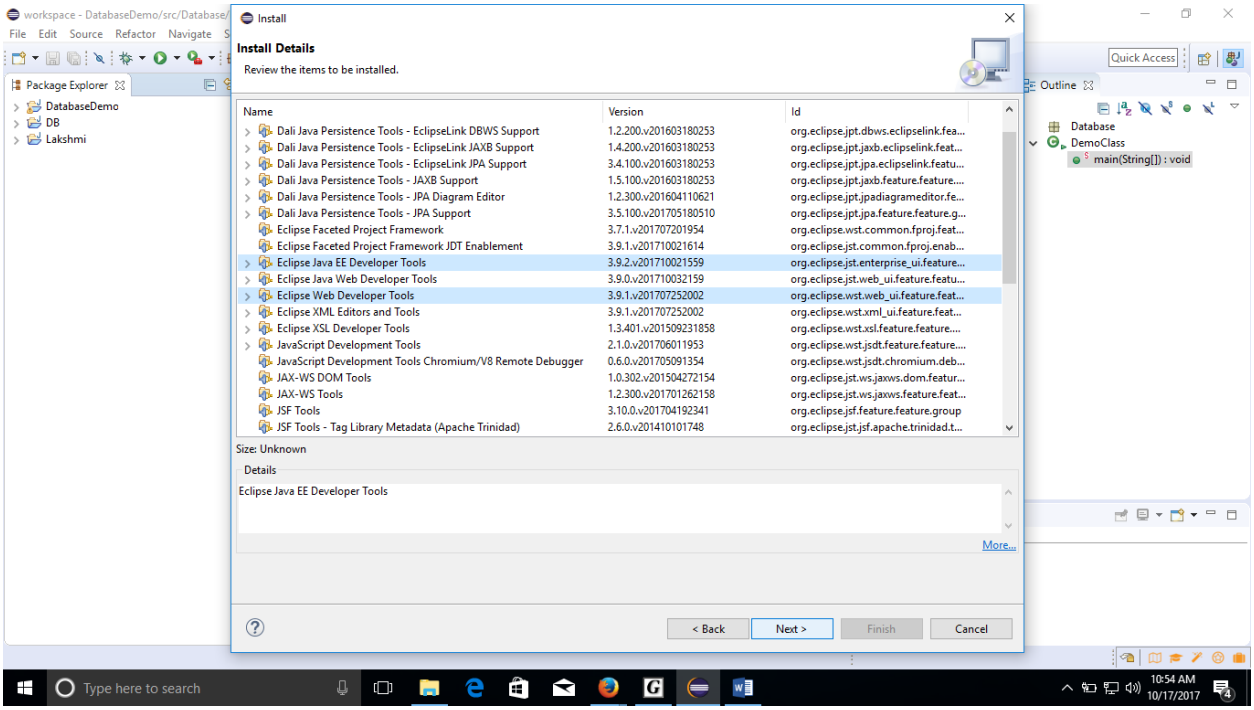
Install
Install Details
Review the items to be installed.
Name
Version
Id
Dali Java Persistence Tools - EclipseLink DBWS Support
Dali Java Persistence Tools - EclipseLink JAXB Support
Dali Java Persistence Tools - EclipseLink JPA Support
Dali Java Persistence Tools - JAXB Support
Dali Java Persistence Tools - JPA Diagram Editor
Dali Java Persistence Tools - JPA Support
Eclipse Faceted Project Framework
Eclipse Faceted Project Framework JDT Enablement
Eclipse Java EE Developer Tools
Eclipse Java Web Developer Tools
Eclipse Web Developer Tools
Eclipse XML Editors and Tools
Eclipse XSL Developer Tools
JavaScript Development Tools
JavaScript Development Tools Chromium/V8 Remote Debugger
JAX-WS DOM Tools
JAX-WS Tools
JSF Tools
JSF Tools - Tag Library Metadata (Apache Trinidad)
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Package Explorer
DatabaseDemo
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main(String[]) : void
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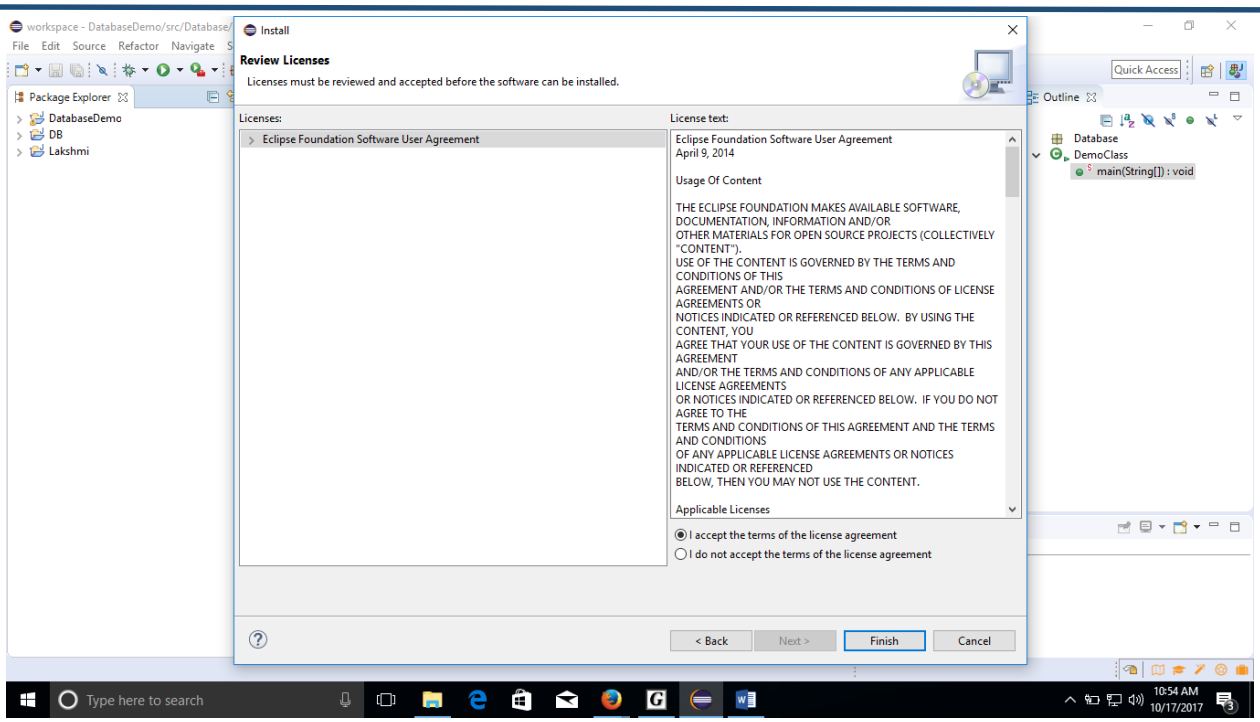
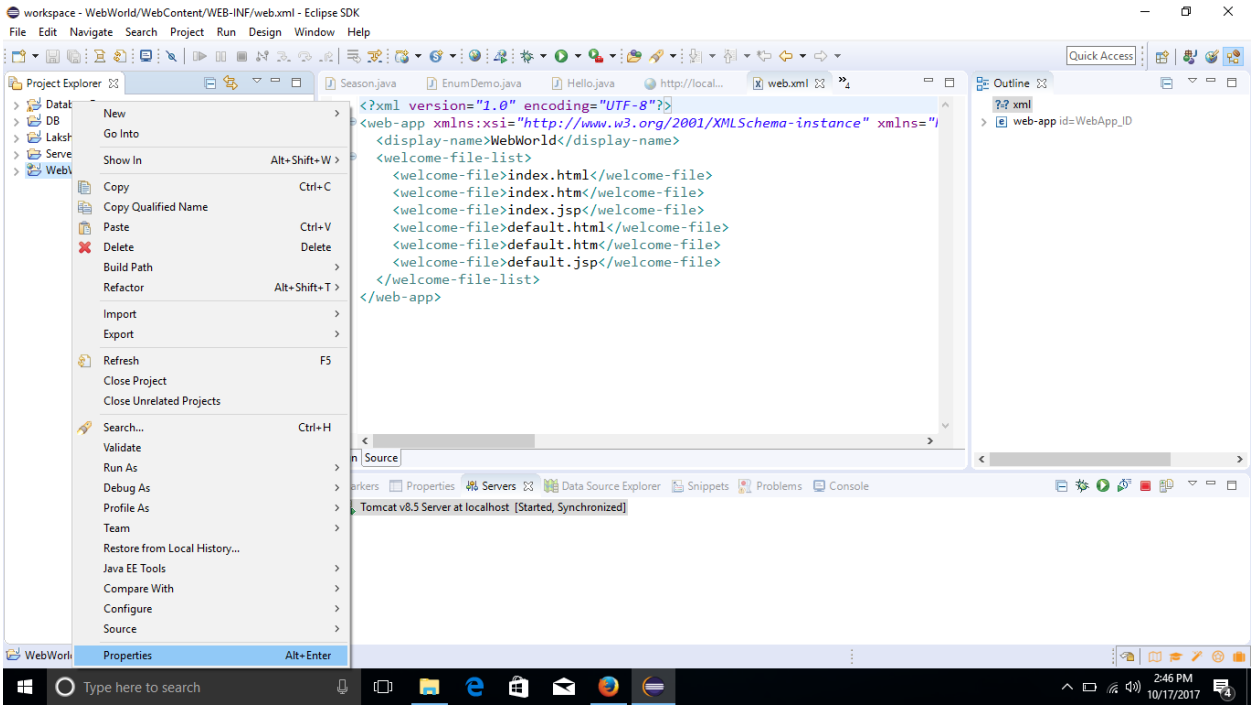
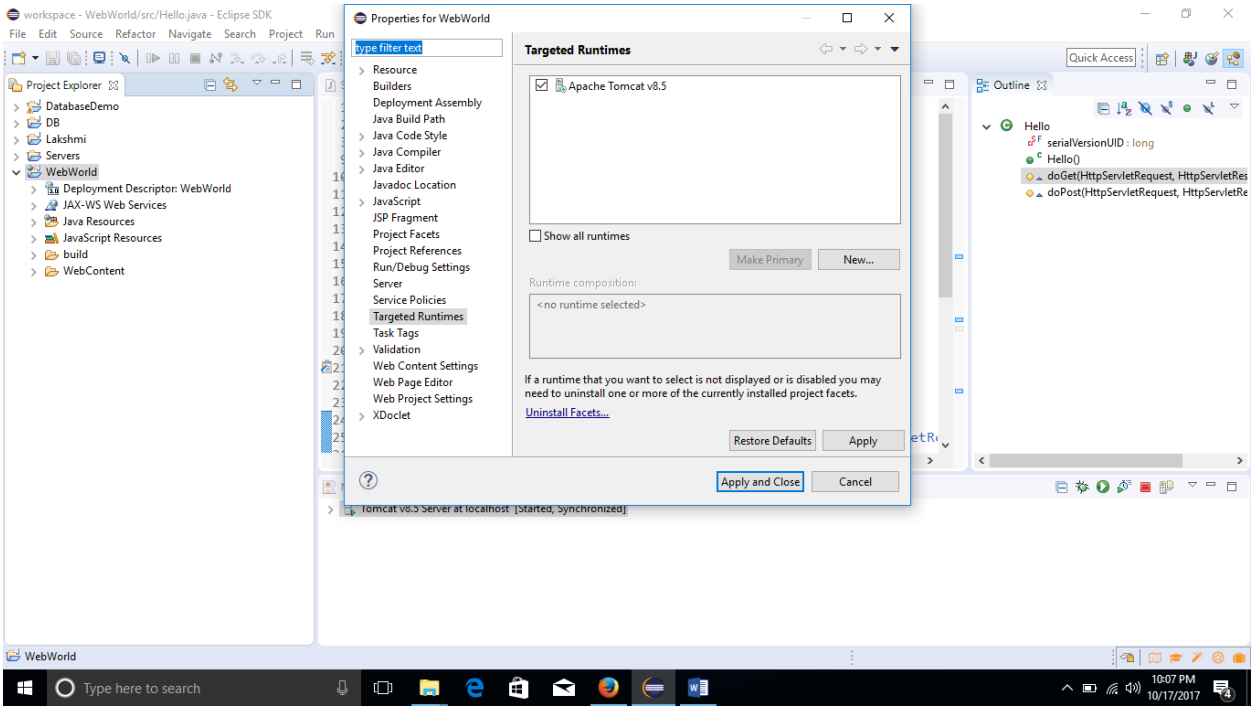


If servlet APIs are not available even after selecting Dynamic web application, follow the below steps.

1. Right click on the project you have created and go to properties

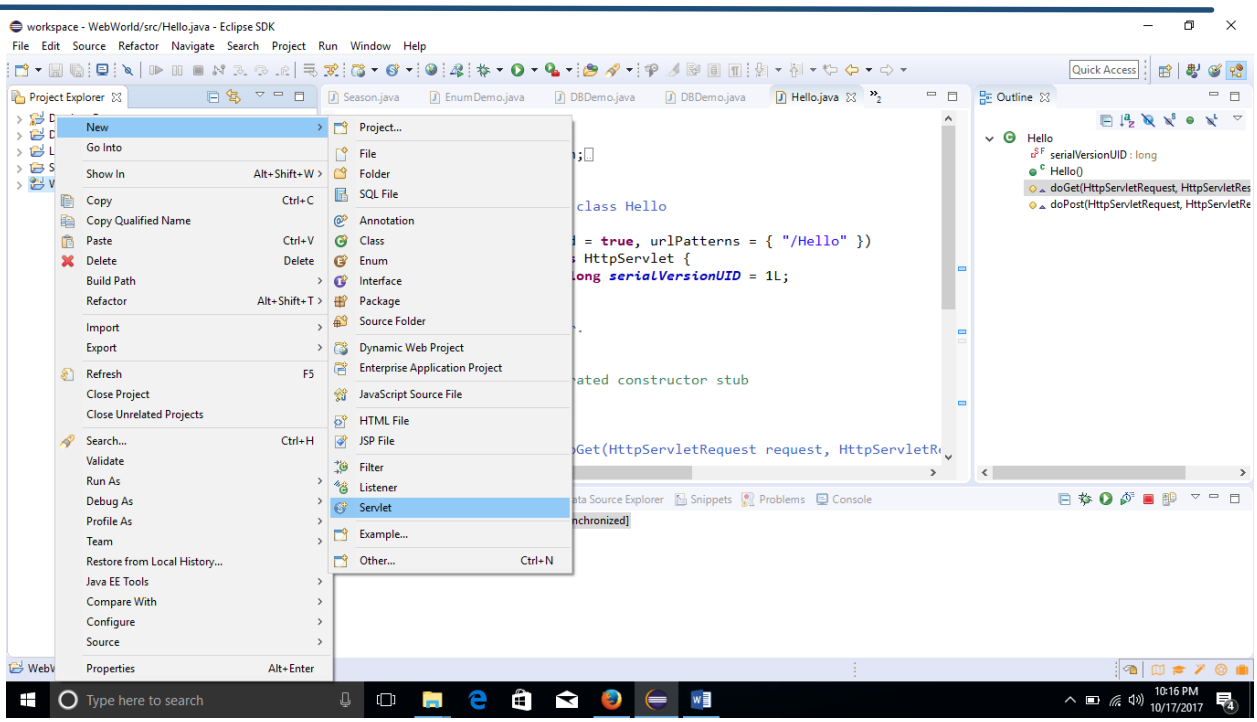


2. Select Targeted Runtimes from the list and check apache Tomcat vX.X. Click on "Apply and Close". This provides all servlet API for your project.

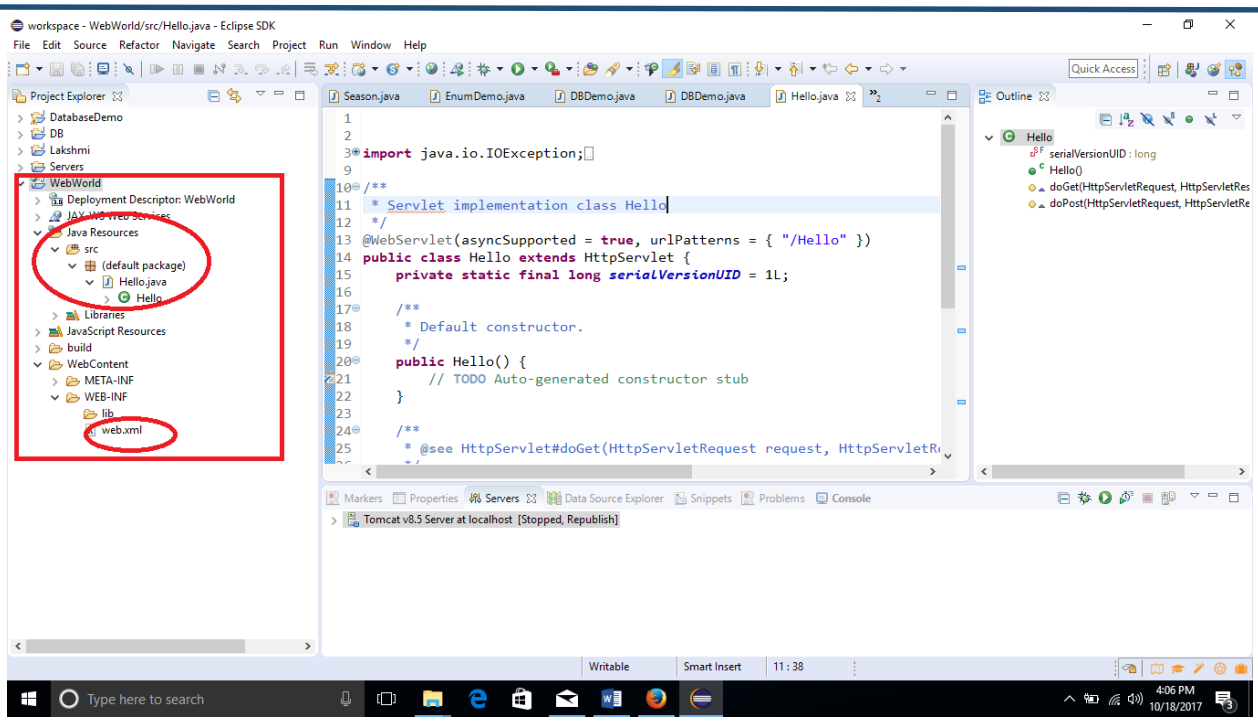


Developing Servlets

1. Right click on the Web Project you have created **New-> Servlet**. Give logic name for the Servlet and give package name if required. If package name is not mentioned, it will save the servlet in default package.



2. In the superclass textbox, select **HttpServet** or **GenericServlet**, extract all default methods, and click “finish”.
3. The created servlet will be found in **Java Resources-> scr-> default package**.
4. Make the appropriate deployment descriptors entry in **web.xml** file which is located in **WebContent->WEB-INF**



5. Start Tomcat server if not started yet.
6. If html file to be created, right click on project -> New-> HTML and give logical name for it. HTML file will get saved automatically in WEB-INF directory.
7. Now, web environment and servlet class is ready for application development.

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