Java Chapter.16 JSP

Contents

Time Required: 60 minutes
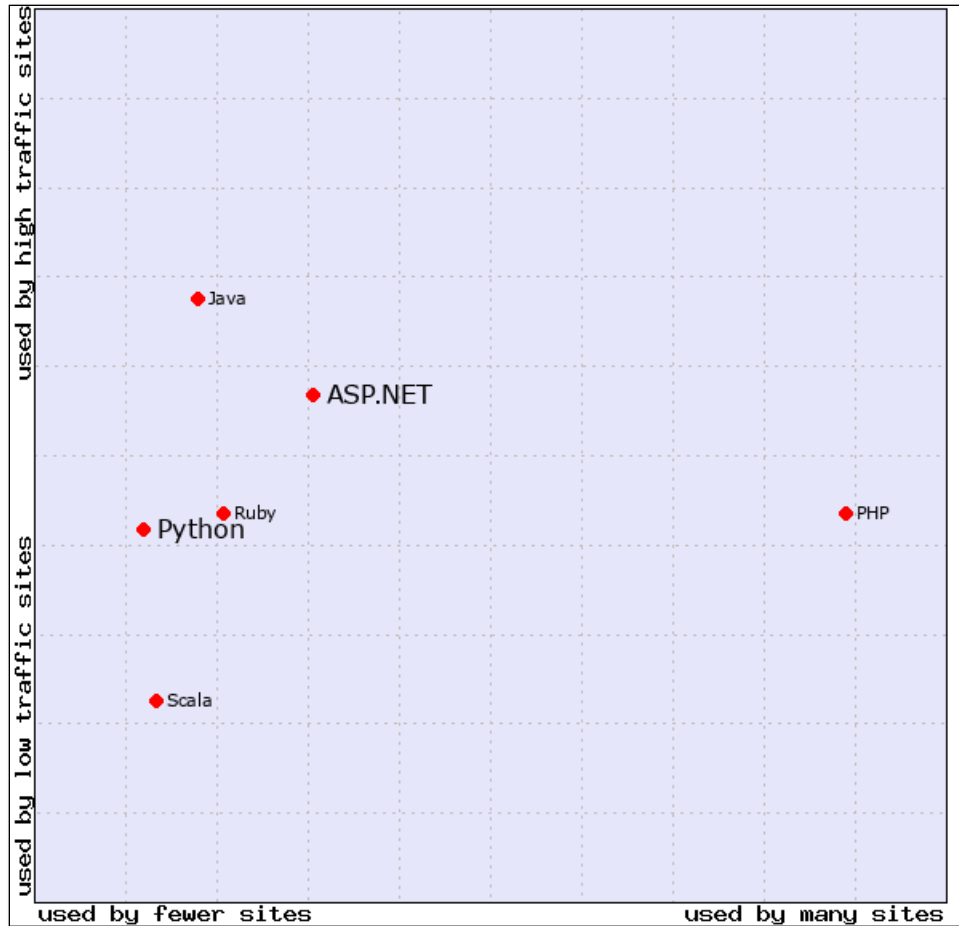
Eclipse Setup

Please follow these directions to install Eclipse. We want to download the zip file and manually install Eclipse Enterprise Java and Web Developers edition.

NOTE: There have been issues using the Eclipse installer. Use the zip option.

1. Go to www.eclipse.org

2. Click **Download**.

3. Click **Download Packages**. (Don't download the Eclipse installer.)

4. Choose the **Eclipse IDE for Enterprise Java and Web Developers** for your OS.

5. Extract the files from the downloaded zip file. You should end up with an eclipse folder with all the eclipse program files inside it.

6. Move that folder to your c:\drive. Example: **c:\eclipse**

7. Go into the **c:\eclipse** folder → Right Click **eclipse.exe** → **Send to** → **Desktop (create shortcut)**.

8. You are ready to go with Eclipse.

What is Apache Tomcat?

The Apache Tomcat® web server is an open source implementation of the Java Servlet, JavaServer Pages, Java Expression Language and Java WebSocket technologies. These are developed under the Java Community Process.

JavaServer Pages (JSP) is Java's answer to the popular Microsoft's Active Server Pages (ASP). JSP, like ASP, provides a simplified and fast means to generate dynamic web contents. It allows you to mix static HTML with dynamically generated HTML - in the way that the business logic and the presentation are well separated.
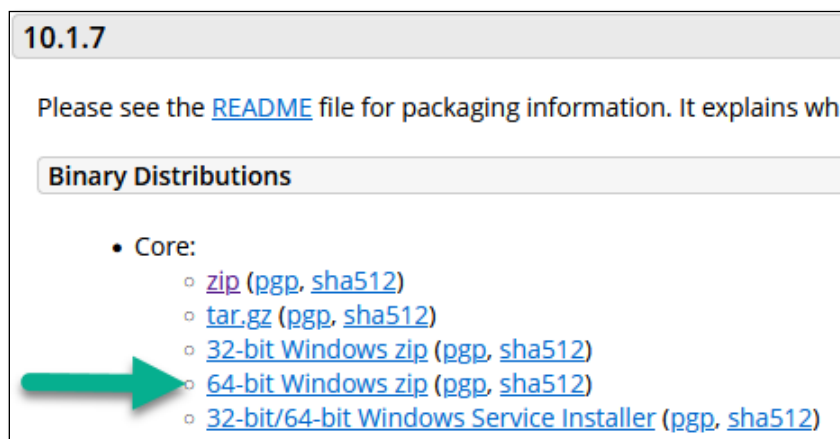
JSP is used on many websites, including BlackBoard.

Tomcat Setup in Eclipse

1. Go to https://tomcat.apache.org/download-10.cgi

NOTE: The version number may have changed. 10.1.7 was current at the time of this writing.

2. **Mac:** Click the zip file (first option under core).
   Windows: Click on the 64-bit Windows zip.

3. Extract the zipped folder to a location you can find later.

4. Move all the files to a folder named: **c:\apache-tomcat**
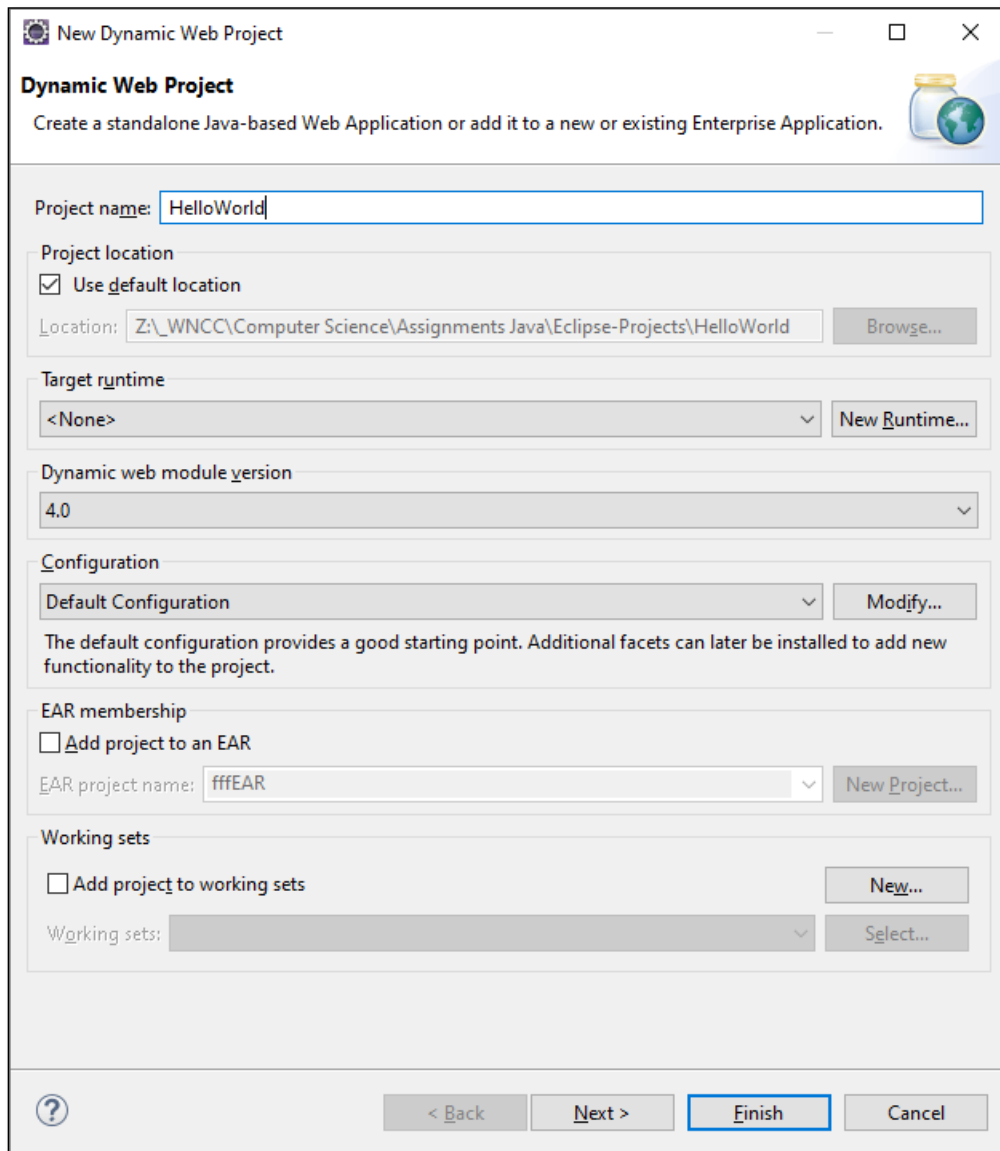
JSP Hello World

Traditionally, a Hello World project is the first project created in a new programming language. It is used to ensure that the development environment is functional.

In this tutorial, we will create a simple JSP file and run it in the Eclipse IDE using Apache Tomcat Server.

1. Open **Eclipse**. Click **File → New → Other →** Search for **Dynamic Web Project**.

2. Project name: **HelloWorldJSP**. Check the settings to match the screenshot.
   Target runtime: <None>
   **Dynamic web module version: 4.0**

3. Click **Finish**.

4. If you are asked to open the **Java EE perspective** go ahead

5. Open the **HelloWorldJSP** folder.

6. Click on the **Servers** tab located at the bottom. Click **No servers are available**.

7. Select **Apache**. Click **Tomcat v10.1 Server**. Click **Next**.

8. Tomcat installation directory: Browse to the location of your Tomcat folder.
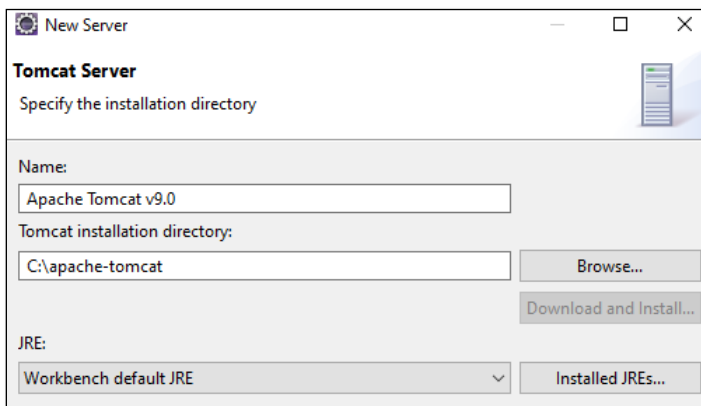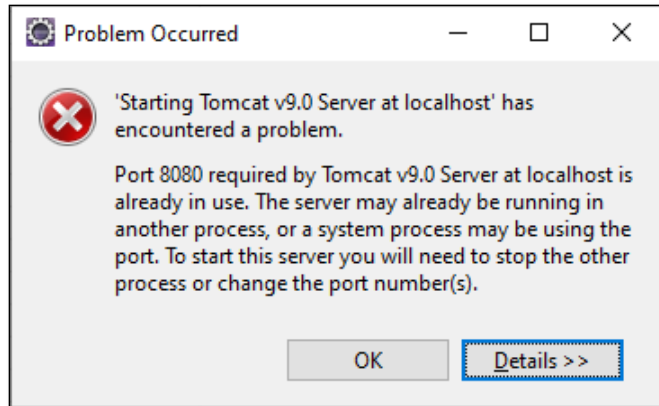

9. Click **Finish**.

10. Test the new server: Right Click **Tomcat** → Click **Start**.

11. If the result is **[Started, Synchronized]**, you are good to go.
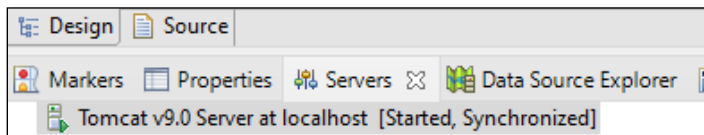
Tomcat Startup Error

1. If you receive this error:

2. Go to **c:\apache-tomcat\conf**

3. Open **server.xml** with Visual Studio Code.

4. Find the following line. Replace **8080** with 8081. Save the file.

```
69        <Connector port="8080" protocol="HTTP/1.1"
70                   connectionTimeout="20000"
71                   redirectPort="8443" />
```

5. In **Eclipse** → Right Click **TomCat** → **Delete** → Click **OK**.

6. Add **Tomcat** again.

7. If there is still an error: try port 8082. Keep going until you find one that works.

Add The Code

If there are no errors, it is time to create your first Java Server Page.

1. In the Eclipse project: Go to **src** → **main**. Right Click **webapp** → **New** → Click **JSP File**.

2. File name: **HelloWorld.jsp**. Click **Finish**.

3. Insert the following code between the body tags.

```
1  <%@ page language="java" contentType="text/html; charset=ISO-8859-1"
2       pageEncoding="ISO-8859-1"%>
3  <!DOCTYPE html>
4  <html>
5  <head>
6  <meta charset="ISO-8859-1">
7  <title>Hello World!</title>
8  </head>
9  <body>
10 <b>Welcome to My First JSP Page!</b>
11 <p>Hello World!</p>
12 </body>
13 </html>
```
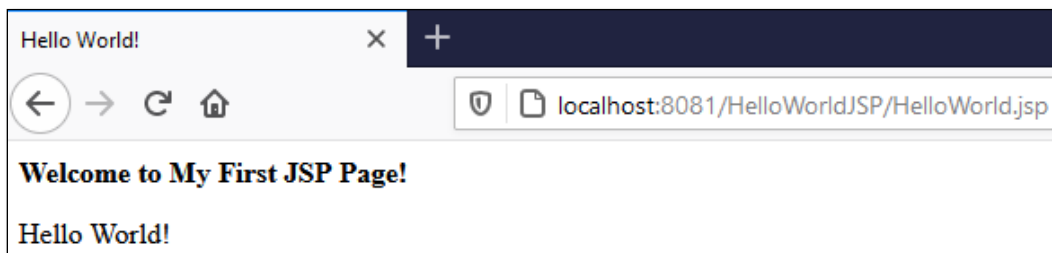
4. Save the file.

5. Run the JSP project on Tomcat: **Right Click** on your JSP file → **Run as** → **Run on Server**.

6. **Run on Server** dialog box: You should see your Tomcat Server automatically selected. Click **Finish**.

7. Your jsp page should show up in a new tab.
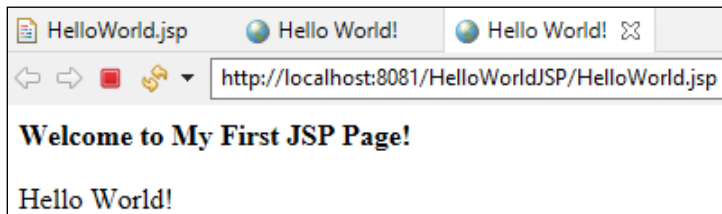
8. Copy and paste the URL (http://localhost:8081/HelloWorldJSP/HelloWorld.jsp) into a web browser. You should see the same web page.

Assignment Submission

1. Insert screenshots showing your jsp page in Eclipse and in a web browser.

2. Zip up the project folder.

3. Attach and submit in Blackboard.