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HelloServlet Web Application using Tomcat Server

AIM:

Implement Hell World Simple Wen application using Tomcat Servlet Server.

Project DIR:

webapps

- HelloServlet

- index.html

- WEB-INF

- web.xml

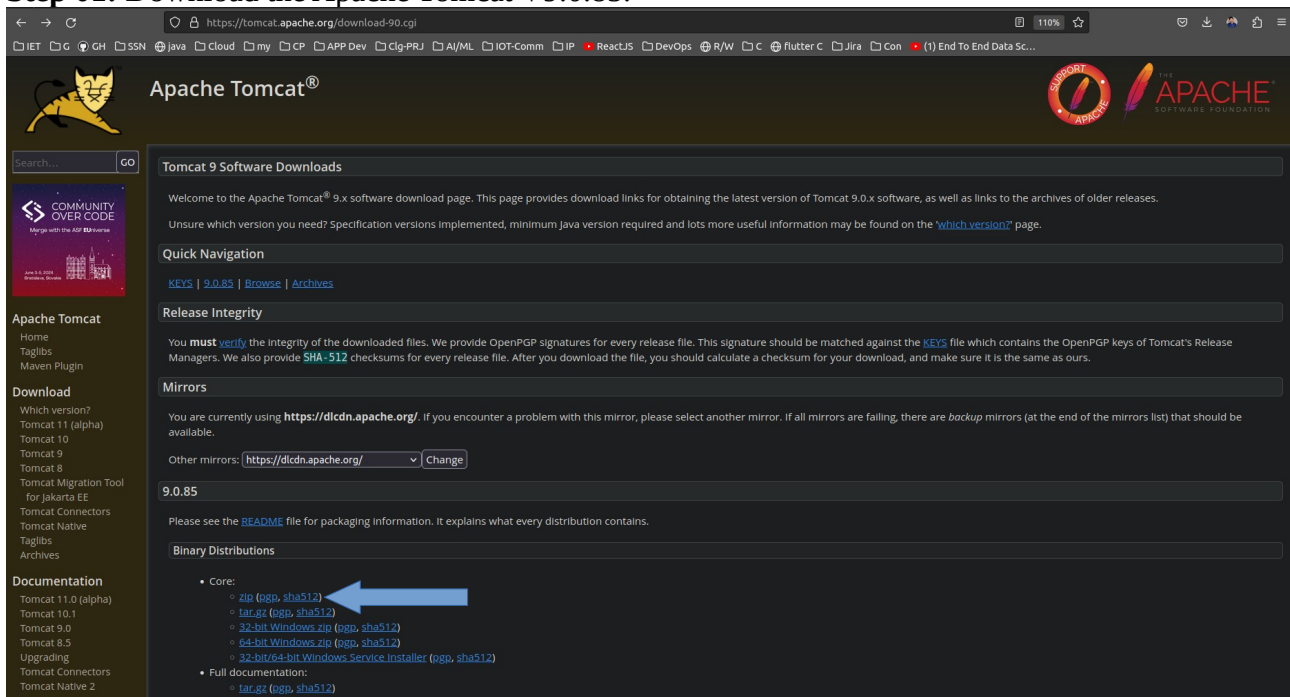
- classes

- HelloWorld.java

- HelloWorld.class

Procedure:

Step 01: Download the Apache Tomcat V9.0.85.



Step 02: Extract the .zip file.

Step 03: move the extracted folder to “usr/local”.

```
dev@dev: ~  
dev@dev:~$ sudo mv '/home/dev/Downloads/apache-tomcat-9.0.85' '/usr/local'  
dev@dev:~$
```

Step 04: Create the Project DIR.

```
dev@dev: /usr/local/apache-tomcat-9.0.85/webapps/HelloServlet/WEB-INF/classes  
dev@dev:~$ cd /usr/local/apache-tomcat-9.0.85/webapps/  
dev@dev:/usr/local/apache-tomcat-9.0.85/webapps$ sudo mkdir HelloServlet  
dev@dev:/usr/local/apache-tomcat-9.0.85/webapps$ cd HelloServlet/  
dev@dev:/usr/local/apache-tomcat-9.0.85/webapps/HelloServlet$ sudo touch index.html  
dev@dev:/usr/local/apache-tomcat-9.0.85/webapps/HelloServlet$ sudo mkdir WEB-INF  
dev@dev:/usr/local/apache-tomcat-9.0.85/webapps/HelloServlet$ cd WEB-INF/  
dev@dev:/usr/local/apache-tomcat-9.0.85/webapps/HelloServlet/WEB-INF/classes$ sudo touch HelloWorld.java  
dev@dev:/usr/local/apache-tomcat-9.0.85/webapps/HelloServlet/WEB-INF/classes$ ls  
HelloWorld.java  
dev@dev:/usr/local/apache-tomcat-9.0.85/webapps/HelloServlet/WEB-INF/classes$
```

Step 05: Give Root permission to the project DIR.

```
dev@dev: /usr/local
dev@dev: /usr/local/apache-tomcat-9.0.85/webapps/HelloServlet/WEB-INF/classes$ cd /usr/local
dev@dev: /usr/local$ sudo chmod -R 777 apache-tomcat-9.0.85
dev@dev: /usr/local$ ls
apache-tomcat-9.0.85  bin  etc  games  include  lib  man  sbin  share  src
dev@dev: /usr/local$
```

Step 06: Add Path to ~/.bashrc file.

```
dev@dev: /usr/local$ sudo gedit ~/.bashrc
```

Go to last line and **Add the line.**

```
118
119 #THIS MUST BE AT THE END OF THE FILE FOR SDKMAN TO WORK!!!
120 export SDKMAN_DIR="$HOME/.sdkman"
121 [ -s "$HOME/.sdkman/bin/sdkman-init.sh" ] && source "$HOME/.sdkman/bin/sdkman-init.sh"
122
123 CATALINA_HOME=/usr/local/apache-tomcat-9.0.85
124
```

save and close the file.

Run the .bashrc file to make the changes.

```
dev@dev: /usr/local$ source ~/.bashrc
dev@dev: /usr/local$ . ~/.bashrc
dev@dev: /usr/local$
```

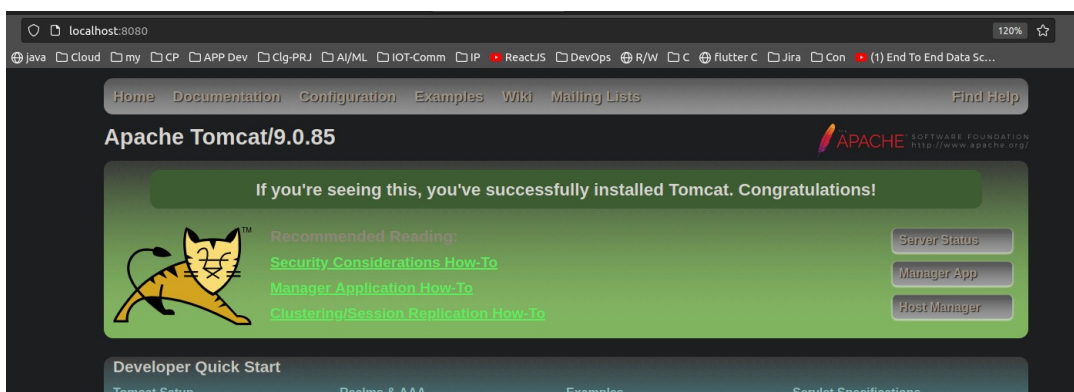
Step 06: Check the changes made correctly.

```
dev@dev: /usr/local$ echo ${CATALINA_HOME}
/usr/local/apache-tomcat-9.0.85
dev@dev: /usr/local$ echo ${CATALINA_HOME}/bin/startup.sh
/usr/local/apache-tomcat-9.0.85/bin/startup.sh
dev@dev: /usr/local$
```

Step 07: Start the Tomcat Server.

```
dev@dev: /usr/local$ ${CATALINA_HOME}/bin/startup.sh
Using CATALINA_BASE:   /usr/local/apache-tomcat-9.0.85
Using CATALINA_HOME:   /usr/local/apache-tomcat-9.0.85
Using CATALINA_TMPDIR: /usr/local/apache-tomcat-9.0.85/temp
Using JRE_HOME:        /usr
Using CLASSPATH:        /usr/local/apache-tomcat-9.0.85/bin/bootstrap.jar:/usr/local/apache-tomcat-9.0.85/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
dev@dev: /usr/local$
```

Step 08: Go to Browser and Type <http://localhost:8080> .



Step 09: Write the Code.

index.html

```
<html>
  <head>
    <title>My First Web Application</title>
  </head>
  <body>
    <form action="hello" method="get">
      <button type="submit">Click Me</button>
    </form>
  </body>
</html>
```

web.xml

```
<web-app>
  <servlet>
    <servlet-name>HelloWorld</servlet-name>
    <servlet-class>HelloWorld</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>HelloWorld</servlet-name>
    <url-pattern>/hello</url-pattern>
  </servlet-mapping>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
  </welcome-file-list>
</web-app>
```

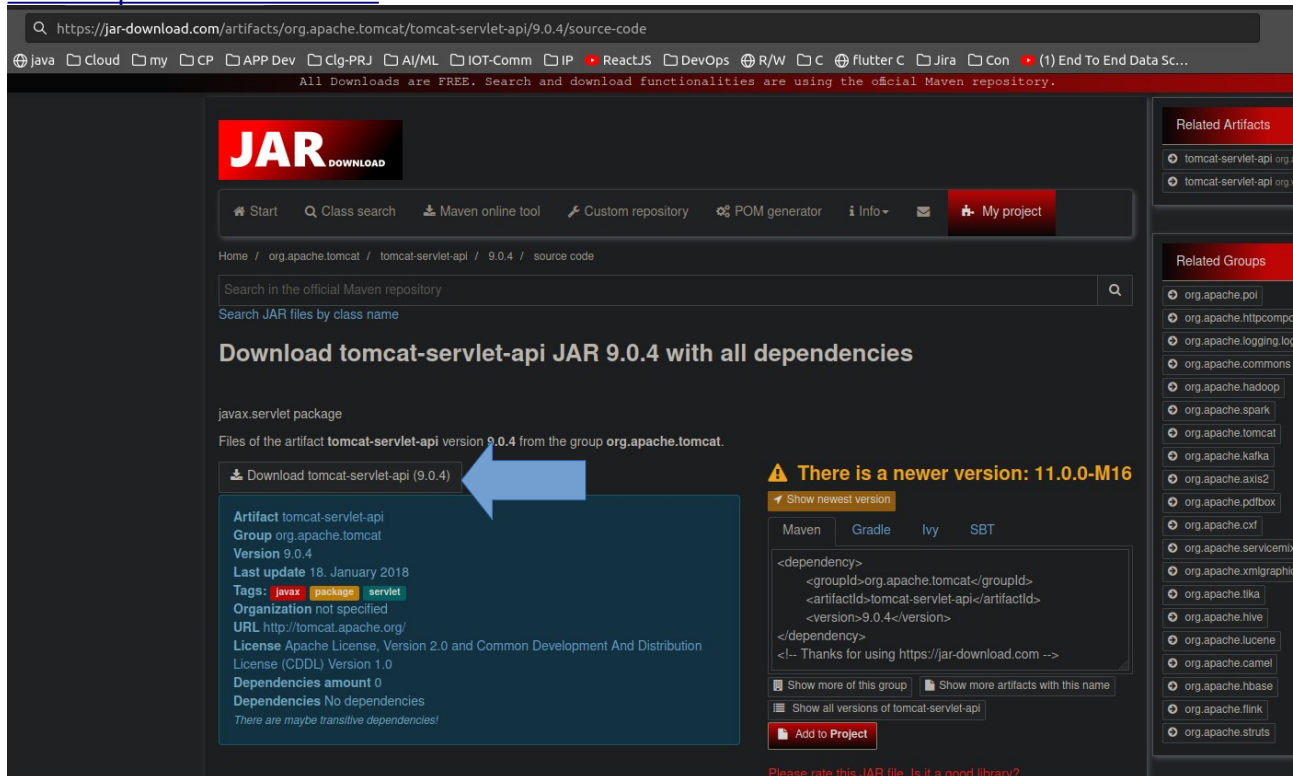
HelloWorld.java

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class HelloWorld extends HttpServlet {

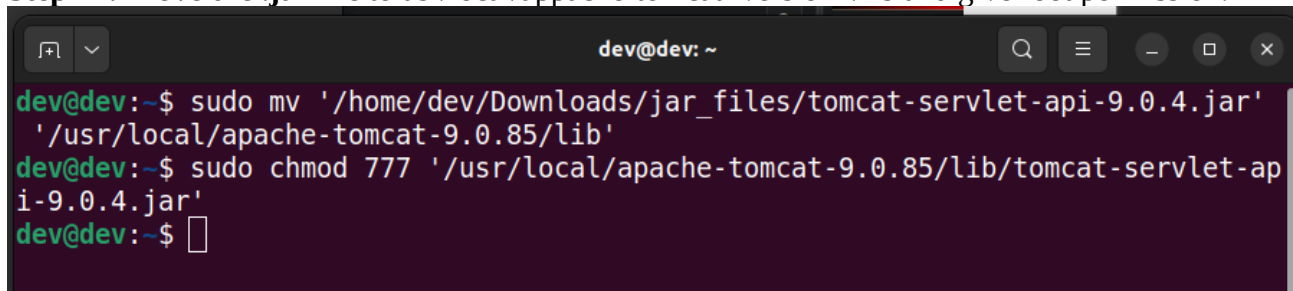
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws IOException, ServletException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Hello World!</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Hello World!</h1>");
        out.println("</body>");
        out.println("</html>");
    }
}
```

Step 10: Download the **Servlet API** <https://jar-download.com/artifacts/org.apache.tomcat/tomcat-servlet-api/9.0.4/source-code> .

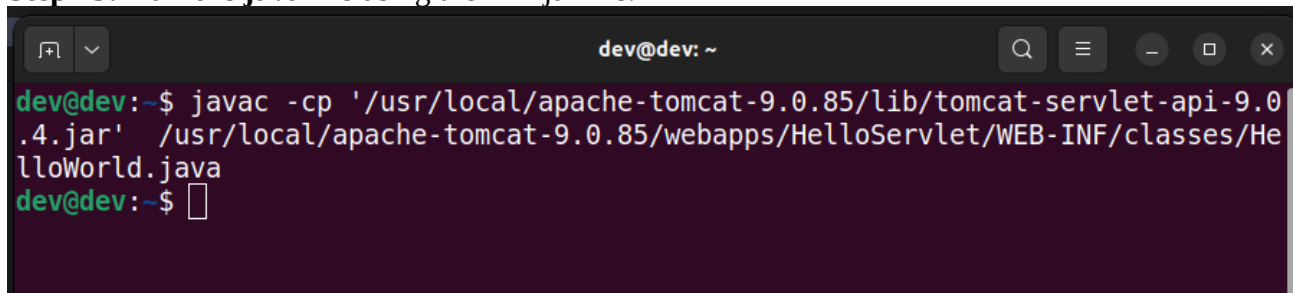


Step 11: Extract the file.

Step 12: Move the .jar file to `usr/local/apache-tomcat<version>/lib` and give root permission.



Step 13: Run the java file using the API jar file.



Step 14: Open the Browser and locate to <http://localhost:8080/HelloServlet/>



Learning Outcome:

1. Understand the the working of an Web Server and the protocol in real time.
2. Developed a simple Client Server application.
3. Understand the underline of Web Application.

