

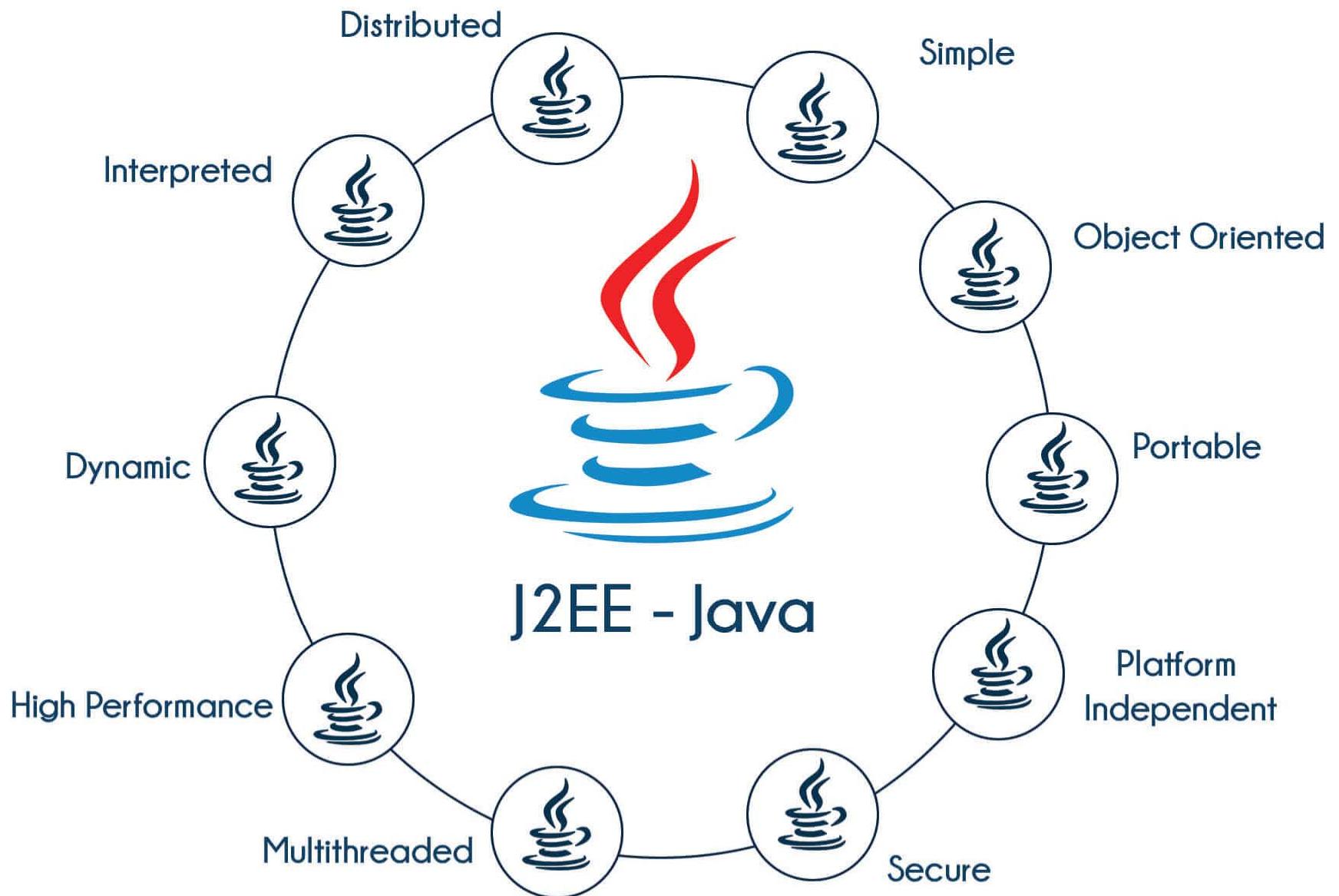
# Java

DESARROLLO DE APLICACIONES WEB

# Eclipse IDE

The screenshot displays the Eclipse IDE interface with five distinct windows:

- About Eclipse IDE**: A dialog box showing the version (2024-03 (4.31.0)), build ID (Build id: 20240307-1437), and copyright information. It also notes that the product includes software developed by other open source projects.
- Eclipse Enterprise Java and Web Developer Tools 3.33**: A marketplace card for the Eclipse Web Tools Platform. It includes a gear icon with "web tools" text, a star rating of 1707, and a download count of 1.20M (16,449 last month). It lists supported technologies: XML, HTML, CSS, JS, and JSON.
- Eclipse Web Developer Tools 3.33**: Another marketplace card for the Eclipse Web Tools Platform, featuring a similar gear icon. It has a star rating of 1684 and a download count of 766K (5,620 last month).
- WindowBuilder Current**: A marketplace card for WindowBuilder, showing a gear icon with "windowbuilder" text, a star rating of 1033, and a download count of 1.13M (17,232 last month). It describes WindowBuilder as composed of SWT Designer and Swing applications.
- JUnit-Tools 1.1.0**: A marketplace card for JUnit-Tools, showing a green checkmark icon, a star rating of 161, and a download count of 108K (1,116 last month). It describes JUnit-Tools as a set of tools to optimize the creation and maintainability of JUnit tests.



# ¿Qué es un Servlet?

- Un Servlet es un objeto java que pertenece a una clase que extiende javax.servlet.http.HttpServlet. Existen diferentes tipos de Servlets pero HttpServlet es el más usado.
- Un contenedor de Servlet es un programa capaz de recibir peticiones de páginas web y redireccionar estas peticiones a un objeto Servlet.

# ¿Qué es un Servlet?

- Funcionamiento de un contenedor de Servlets
  - El Browser pide una página al servidor HTTP que es un contenedor de Servlets
  - El contenedor de Servlets delega la petición a un Servlet en particular elegido de entre los Servlets que contiene.
  - El Servlet, que es una objeto java, se encarga de generar el texto de la página web que se entrega al contenedor.
  - El contenedor devuelve la página web al Browser que la solicitó.

# Apache Tomcat

- Apache Tomcat es un contenedor Java Servlet, o contenedor web, que proporciona la funcionalidad extendida para interactuar con Java Servlets, al tiempo que implementa varias especificaciones técnicas de la plataforma Java: JavaServer Pages (JSP), Java Expression Language (Java EL) y WebSocket..



# Install Apache Tomcat

The screenshot shows a web browser window with the URL [tomcat.apache.org/download-10.cgi](https://tomcat.apache.org/download-10.cgi). The page is titled "Apache Tomcat®" and features the Apache logo. On the left, there's a sidebar with links for "Community OVER CODE", "Apache Tomcat" (Home, Taglibs, Maven Plugin), "Download" (Which version?, Tomcat 11 (alpha), Tomcat 10, Tomcat 9, Tomcat 8, Tomcat Migration Tool for Jakarta EE, Tomcat Connectors), and "Quick Navigation" (KEYS, 10.1.24, Browse, Archives). The main content area is titled "Tomcat 10 Software Downloads" and contains text about the move from Java EE to Jakarta EE, migration tools, and release integrity instructions.

Welcome to the Apache Tomcat® 10.x software download page. This page provides download links for obtaining the latest version of Tomcat 10.1.x software, as well as links to the archives of older releases.

Unsure which version you need? Specification versions implemented, minimum Java version required and lots more useful information may be found on the '[which version?](#)' page.

Users of Tomcat 10 onwards should be aware that, as a result of the move from Java EE to Jakarta EE as part of the transfer of Java EE to the Eclipse Foundation, the primary package for all implemented APIs has changed from `javax.*` to `jakarta.*`. This will almost certainly require code changes to enable applications to migrate from Tomcat 9 and earlier to Tomcat 10 and later. A [migration tool](#) has been developed to aid this process.

**Quick Navigation**

[KEYS](#) | [10.1.24](#) | [Browse](#) | [Archives](#)

**Release Integrity**

You **must verify** the integrity of the downloaded files. We provide OpenPGP signatures for every release file. This signature should be matched against the [KEYS](#) file which contains the OpenPGP keys of Tomcat's Release Managers. We also provide SHA-512 checksums for every release file. After you download the file, you should calculate a checksum for your download, and make sure it is the same as ours.

# Install Apache Tomcat

The screenshot shows a web browser window with the title "Apache Tomcat® - Apache Tomcat". The URL in the address bar is "tomcat.apache.org/download-10.cgi". On the left, there's a sidebar with links for "Archives", "Documentation" (including Tomcat 11.0 (alpha), 10.1, 9.0, 8.5, Upgrading, Connectors, Native 2, 1.3, 1.2, Wiki, Migration Guide, Presentations, Specifications), and "Problems?" (Security Reports, Find help). The main content area shows a message about mirrors and a download progress bar for "apache-tomcat-10.1.24.exe" (13.5 MB, Done). Below that, it says "10.1.24" and "Please see the [README](#) file for packaging information. It explains what every distribution contains." Under "Binary Distributions", there's a list of core distributions:

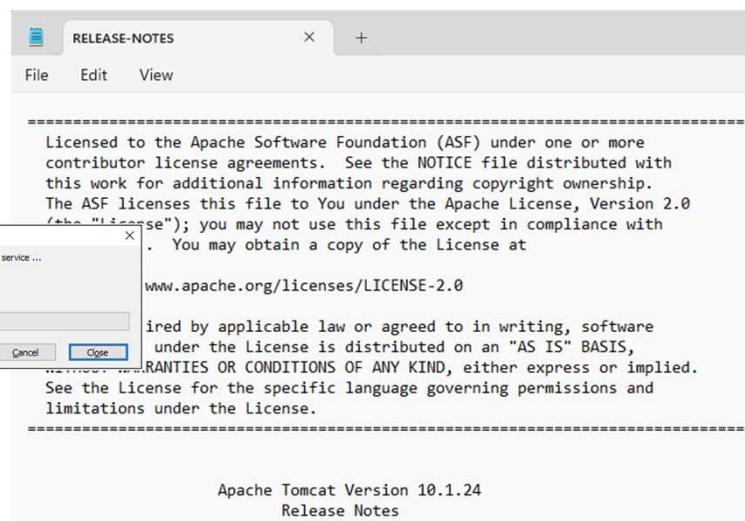
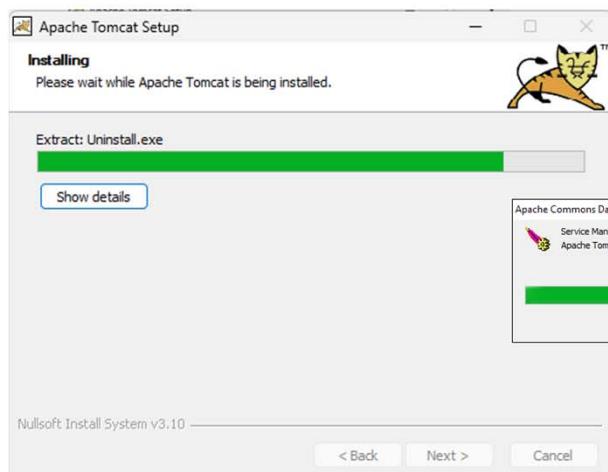
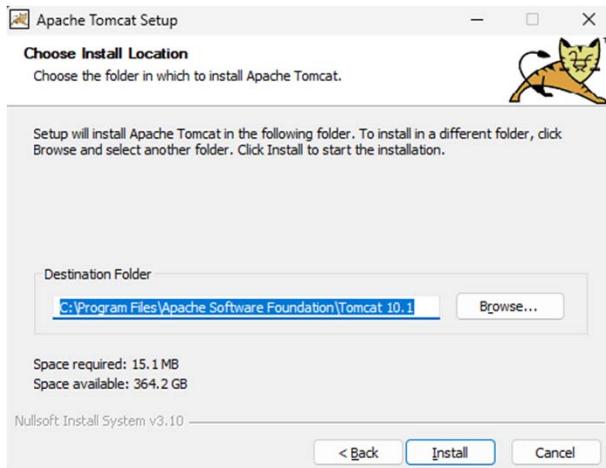
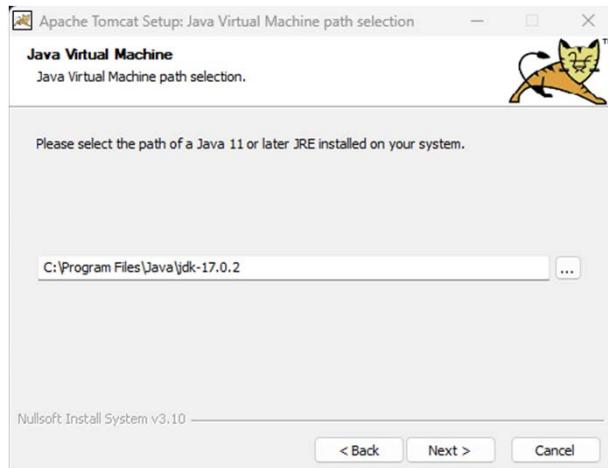
- Core:
  - [zip \(pgp, sha512\)](#)
  - [tar.gz \(pgp, sha512\)](#)
  - [32-bit Windows zip \(pgp, sha512\)](#)
  - [64-bit Windows zip \(pgp, sha512\)](#)
  - [32-bit/64-bit Windows Service Installer \(pgp, sha512\)](#)

# Install Apache Tomcat

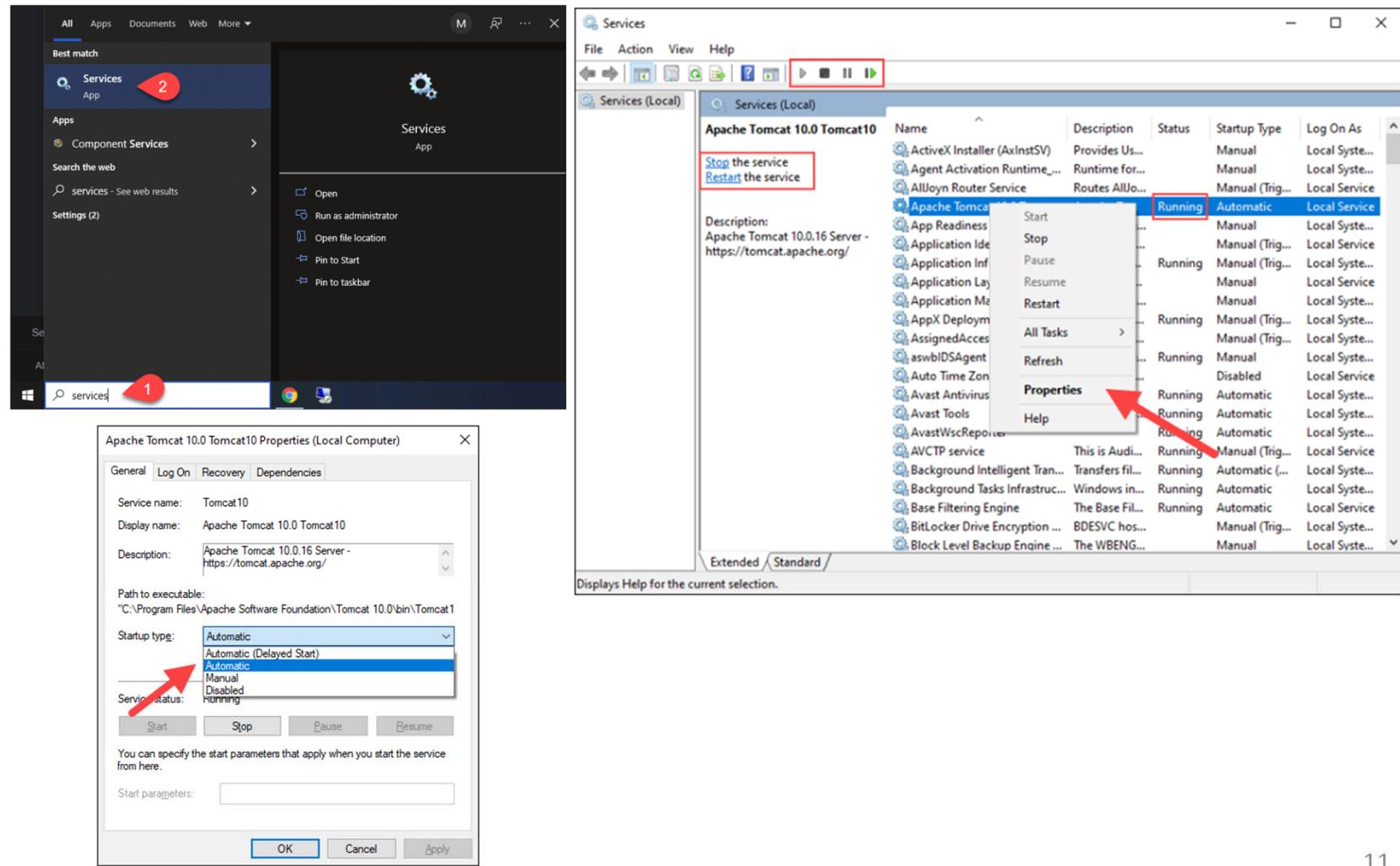
The image displays four windows from the Apache Tomcat Setup wizard:

- Welcome to Apache Tomcat Setup**: A welcome screen with instructions to close other applications before starting setup. It includes a note about updating system files and a "Click Next > to continue" button.
- License Agreement**: A screen showing the Apache License Version 2.0, January 2004, and the TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION. It features a "I Agree" checkbox and "Next >" and "Cancel" buttons.
- Choose Components**: A screen where users can select components to install. A dropdown menu shows "Full" selected, and a list includes Tomcat, Start Menu Items, Documentation, Manager, Host Manager, and Examples. A red arrow points to the dropdown menu. A "Description" tooltip is shown over the "Tomcat" item. The "Space required: 19.7 MB" is noted at the bottom.
- Configuration Options**: A screen for basic configuration. It shows fields for Server Shutdown Port (-1), HTTP/1.1 Connector Port (8080), Windows Service Name (Tomcat10), and Create shortcuts for all users (unchecked). Under Tomcat Administrator Login (optional), it shows User Name (phoenixnap) and Password (redacted). Roles (admin-gui,manager-gui) are also listed. The "User Name" field is highlighted with a red border.

# Install Apache Tomcat



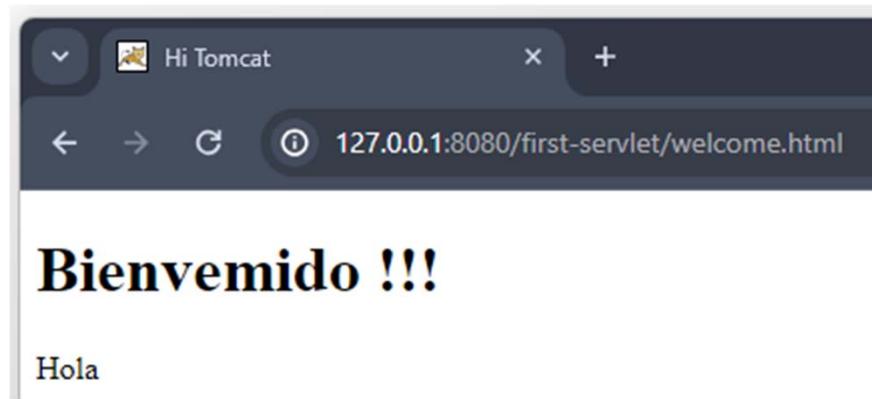
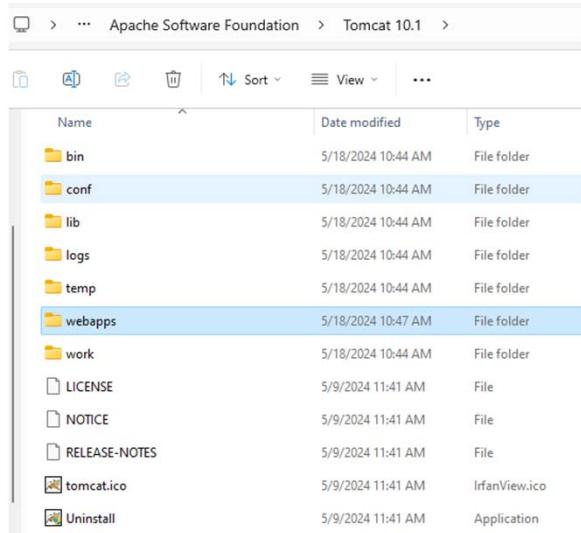
# Install Apache Tomcat



# Install Apache Tomcat

The screenshot shows a web browser displaying the Apache Tomcat 10.1.24 homepage. The URL in the address bar is 127.0.0.1:8080. The page title is "Apache Tomcat/10.1.24". The top navigation menu includes links for Home, Documentation, Configuration, Examples, Wiki, and Mailing Lists, along with a "Find Help" search bar. On the right side of the header is the Apache Software Foundation logo. A green banner at the top center says "If you're seeing this, you've successfully installed Tomcat. Congratulations!". Below this, there's a cartoon cat icon and a section titled "Recommended Reading" with links to Security Considerations How-To, Manager Application How-To, and Clustering/Session Replication How-To. To the right are three buttons: Server Status, Manager App, and Host Manager. The main content area is divided into three columns: "Developer Quick Start" (with links to Tomcat Setup, First Web Application, Realms & AAA, JDBC DataSources, Examples, and Servlet Specifications/Tomcat Versions), "Managing Tomcat" (with links to Release Notes, Changelog, Migration Guide, Security Notices, and information about manager webapp access), "Documentation" (with links to Tomcat 10.1 Documentation, Tomcat 10.1 Configuration, Tomcat Wiki, and developer info from RUNNING.txt), and "Getting Help" (with links to FAQ and Mailing Lists, and descriptions of various mailing lists like tomcat-announce, tomcat-users, taglibs-user, and tomcat-dev).

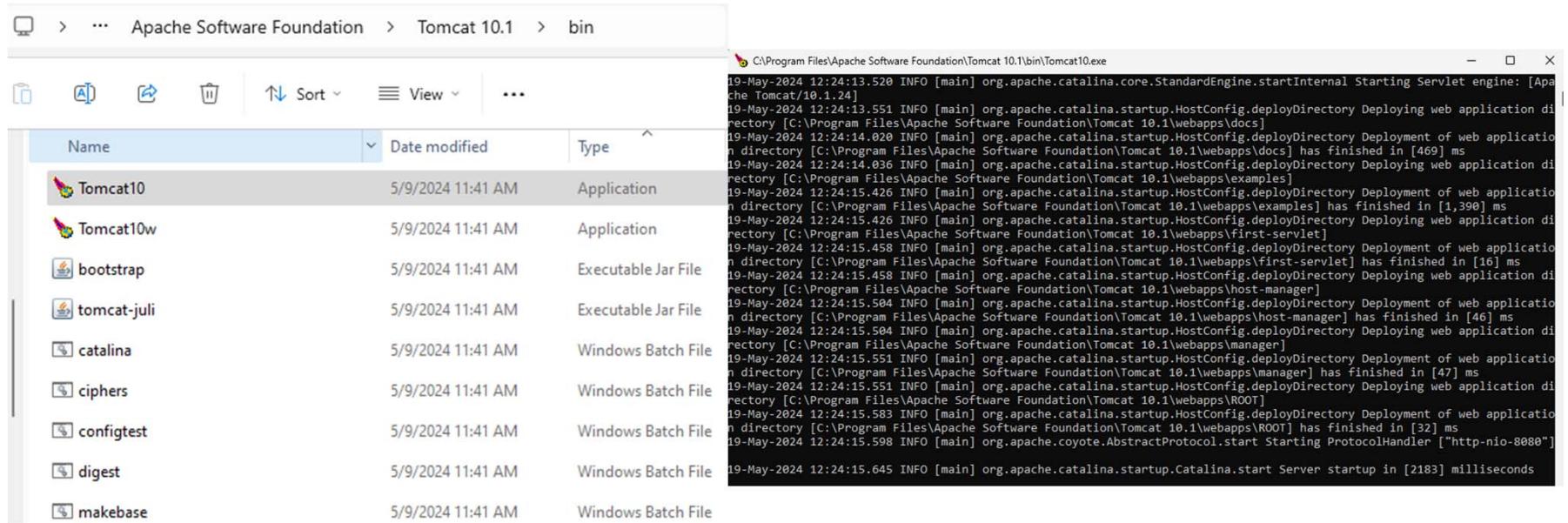
# Apache Tomcat Test



An IDE interface showing the 'welcome.html' file from the 'first-servlet' web application. The code is as follows:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Hi Tomcat</title>
</head>
<body>
    <h1>Bienvenido !!!</h1>
    <p>Hola</p>
</body>
</html>
```

# Apache Tomcat Test



# Apache Tomcat Test

The screenshot shows a Java IDE interface with two code editors and a browser preview.

**Code Editor 1 (Left):** Displays the JSP file `hi.jsp`. The code includes a JSP directive `<%@page info="Ejemplo JSP" contentType="text/html" pageEncoding="UTF-8"%>`, a `<head>` section with meta tags, a `<title>JSP Page</title>`, a `<body>` section containing a `<%@ include file="saludo.html" %>` directive, and a table with two columns. The table has one row with two cells, the first of which contains a non-breaking space (`&nbsp;`).

**Code Editor 2 (Right):** Displays the HTML output of the JSP file. It includes the DOCTYPE declaration, `<html lang="en">`, `<head>` with meta charset and viewport tags, a title `<title>Saludo JSP</title>`, a `<body>` section with a `<h2>Hola JSP !!! :D </h2>` heading, and a table identical to the one in the JSP file.

**Browser Preview:** Shows the rendered HTML output: `Hola JSP !!! :D` followed by the table with the text `Hola, Mundo!`.

```
EXPLORER          ...  hi.jsp  saludo.html
first-jsp > hi.jsp > ? > html > body > ?
1  <%@page info="Ejemplo JSP" contentType="text/html" pageEncoding="UTF-8"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
6          <title>JSP Page</title>
7      </head>
8      <body>
9          <%@ include file="saludo.html" %>
10         <table>
11             <tr>
12                 <td width=150> &nbsp; </td>
13                 <td width=250 align=right>
14                     <h1>Hola, Mundo!</h1> </td>
15             </tr>
16         </table>
17     </body>
18 </html>

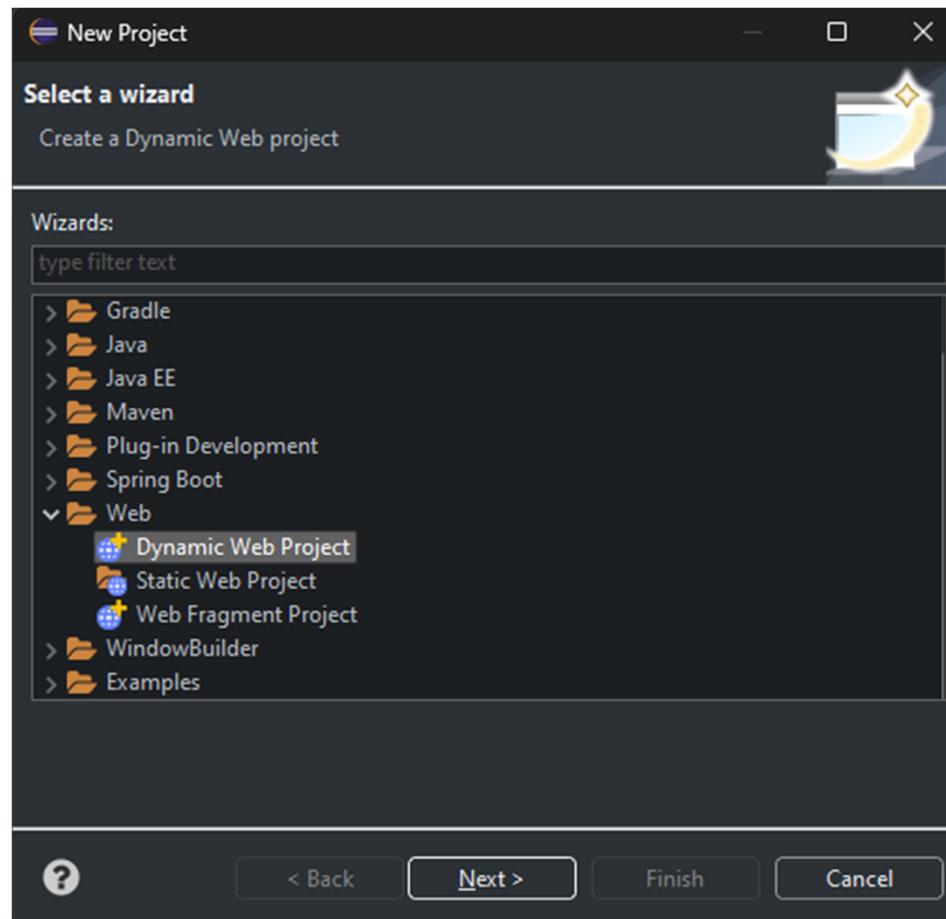
EXPLORER          ...  hi.jsp  saludo.html
first-jsp > saludo.html > html > body > h2
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>Saludo JSP</title>
7  </head>
8  <body>
9      <h2>Hola JSP !!! :D </h2>
10 </body>
11 </html>

Line wrap □
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
5          <title>JSP Page</title>
6      </head>
7      <body>
8          <!DOCTYPE html>
9          <html lang="en">
10         <head>
11             <meta charset="UTF-8">
12             <meta name="viewport" content="width=device-width, initial-scale=1.0">
13             <title>Saludo JSP</title>
14         </head>
15         <body>
16             <h2>Hola JSP !!! :D </h2>
17         </body>
18     </html>
19
20     <table>
21         <tr>
22             <td width=150> &nbsp; </td>
23             <td width=250 align=right>
24                 <h1>Hola, Mundo!</h1> </td>
25         </tr>
26     </table>
27 </body>
28 </html>
```

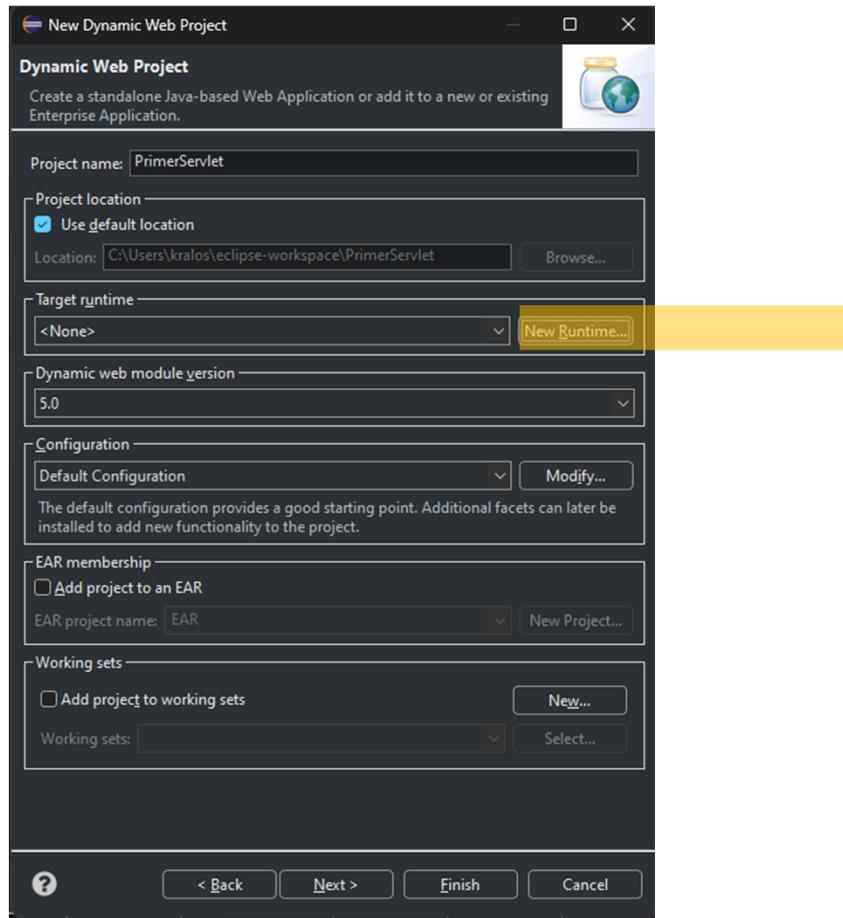
# Tecnología JSP (JavaServer Pages)

- La tecnología JavaServer Pages permite generar contenido Web dinámico como, por ejemplo, archivos HTML, DHTML, XHTML y XML, para incluirlos en una aplicación Web.
- Cuando se despliega un archivo JSP en un contenedor de servlets, este se procesa previamente. Esto contrasta con JavaScript™ en el lado del cliente (dentro de códigos <SCRIPT>), que se ejecuta en un navegador.

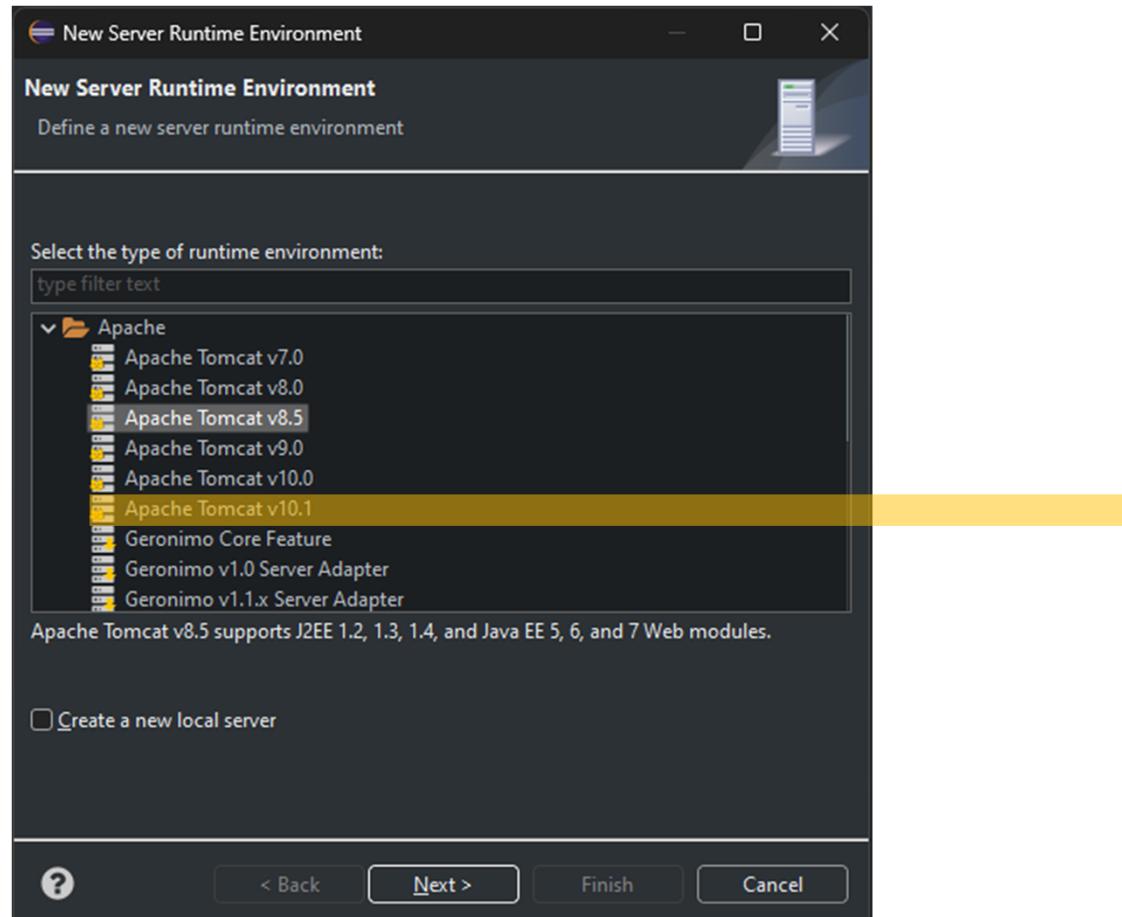
# Primer Servlet {IDE Eclipse}



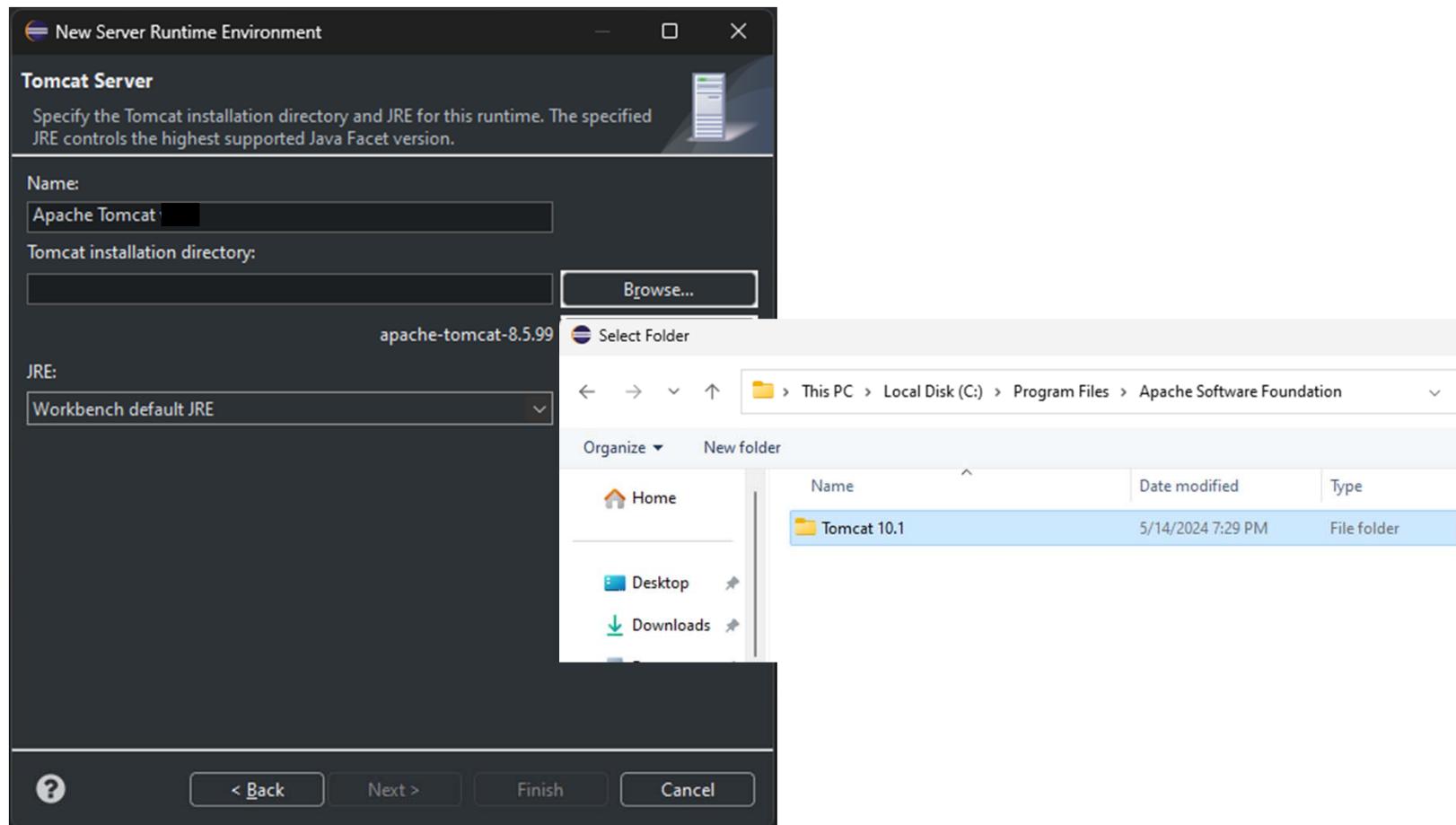
# Primer Servlet {IDE Eclipse}



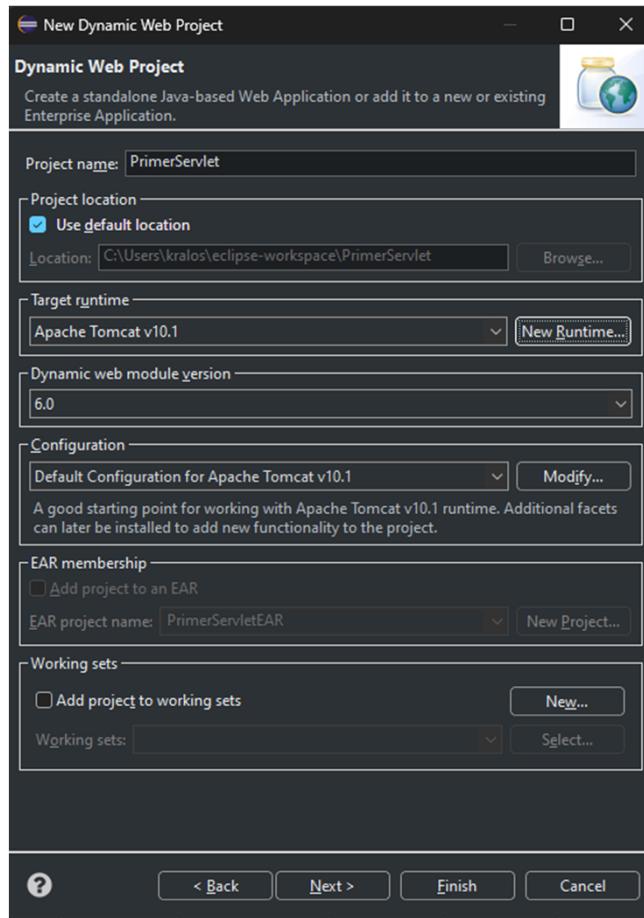
# Primer Servlet {IDE Eclipse}



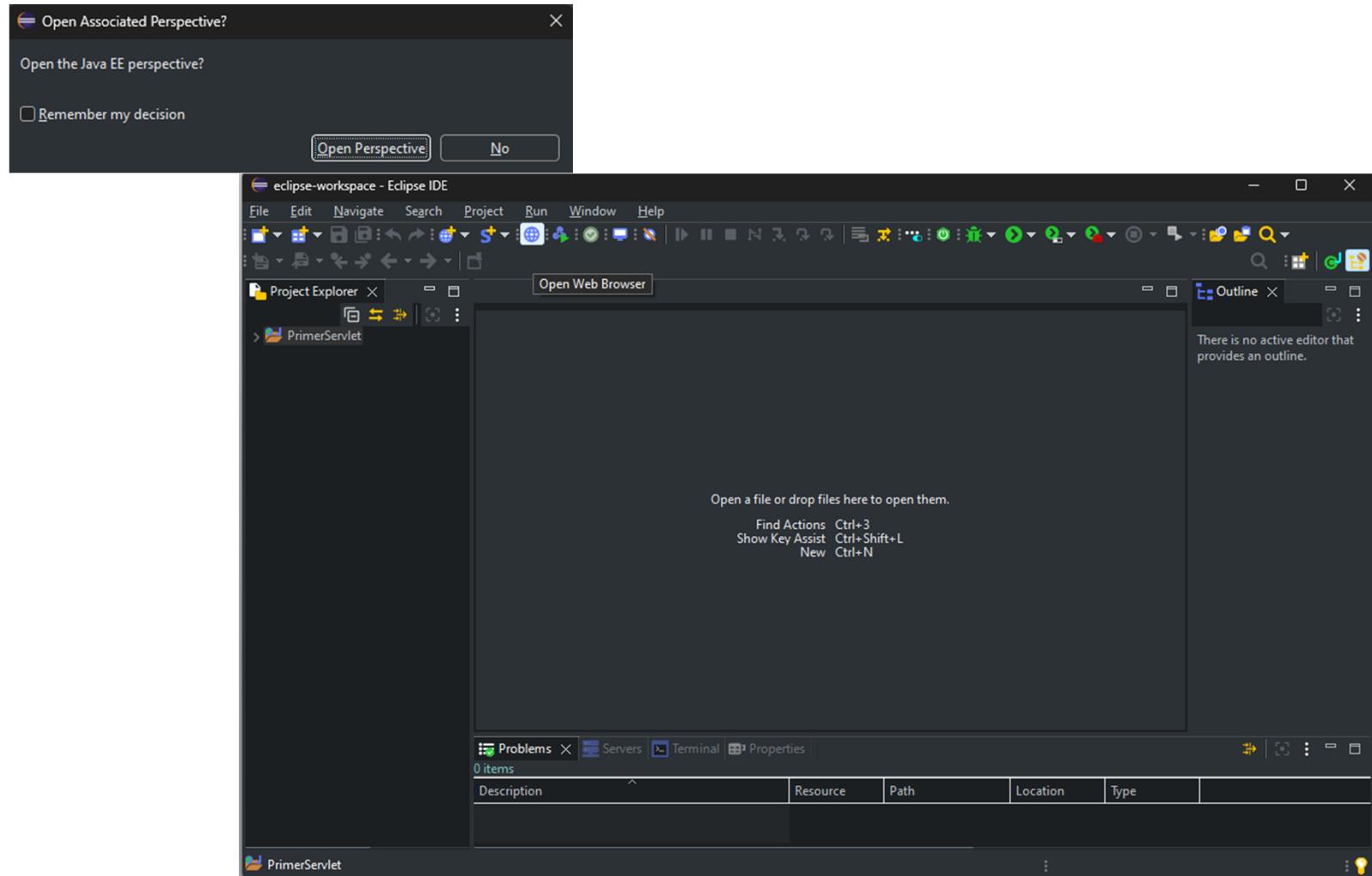
# Primer Servlet {IDE Eclipse}



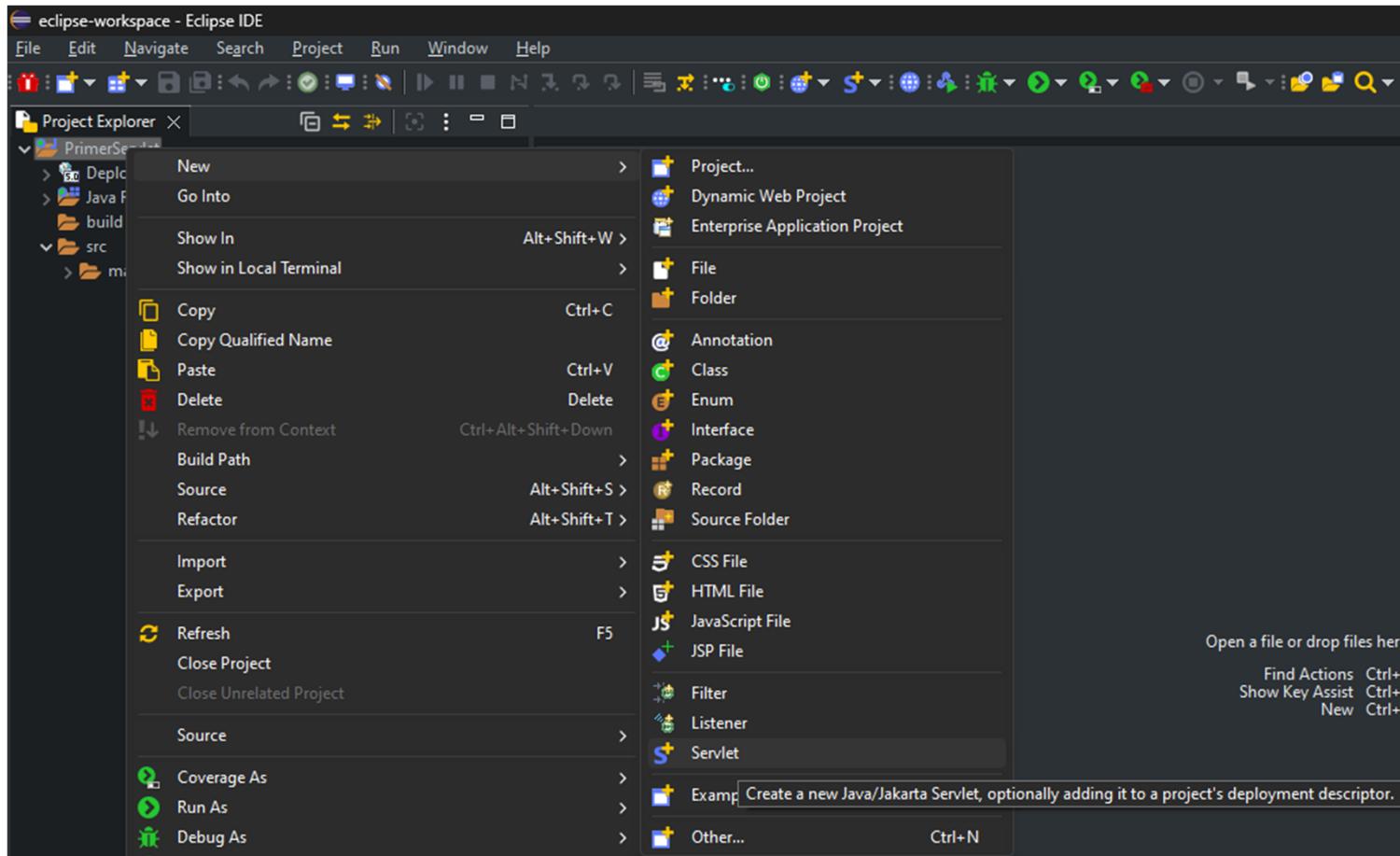
# Primer Servlet {IDE Eclipse}



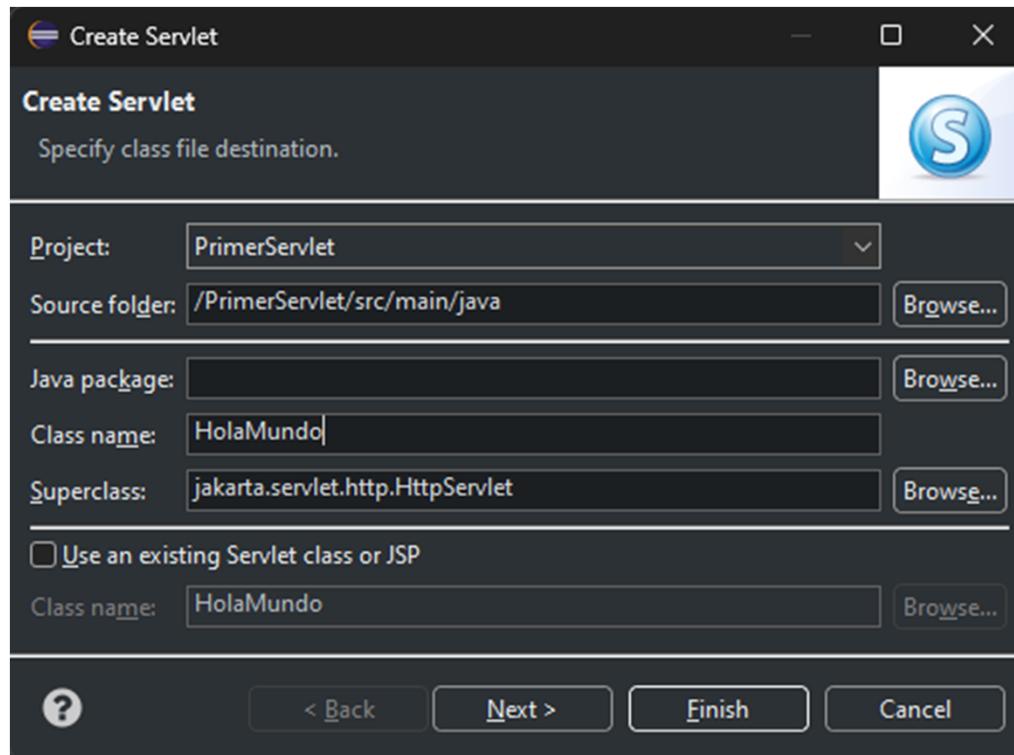
# Primer Servlet {IDE Eclipse}



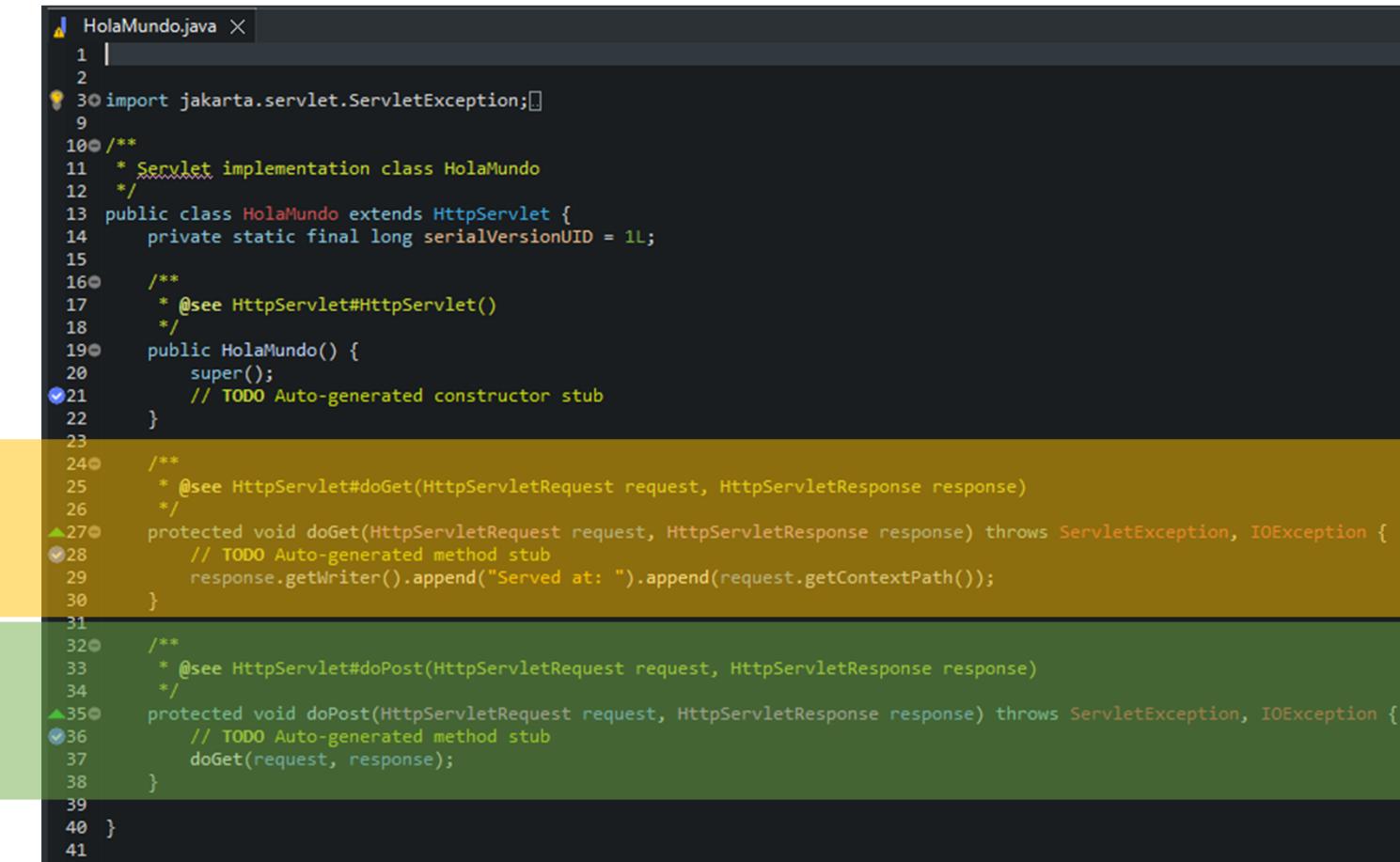
# Primer Servlet {IDE Eclipse}



# Primer Servlet {IDE Eclipse}



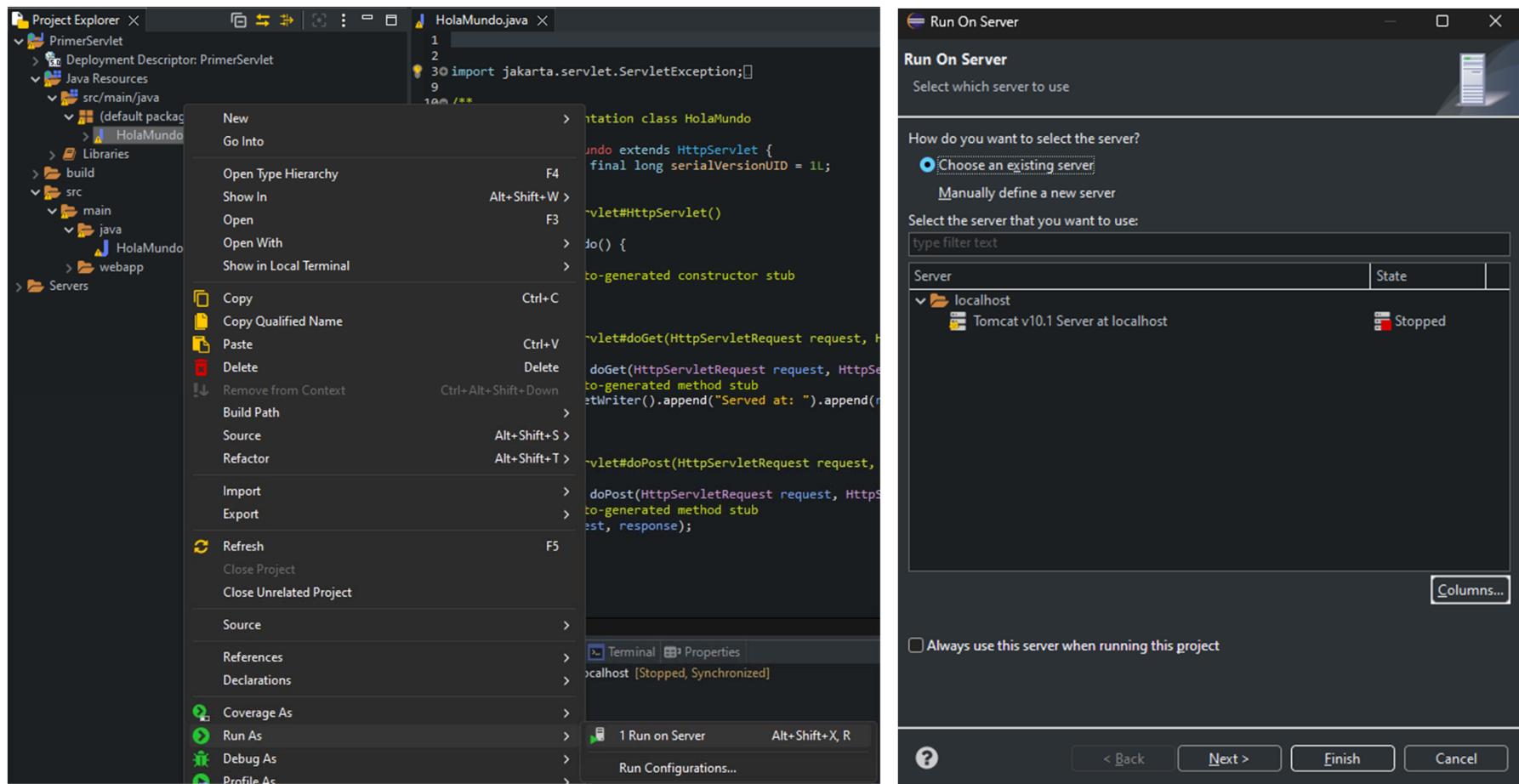
# Primer Servlet {IDE Eclipse}



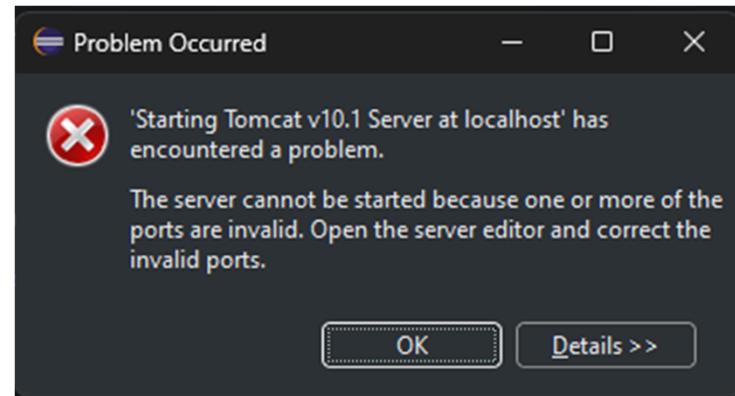
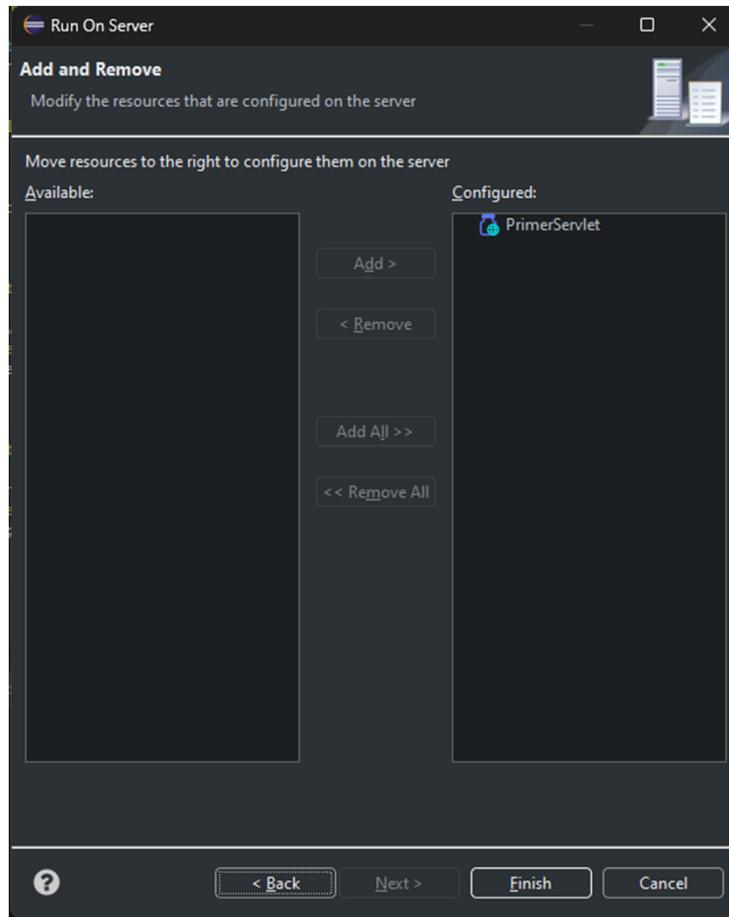
The screenshot shows the Eclipse IDE interface with the Java file 'HolaMundo.java' open. The code implements a simple HttpServlet. It includes imports for ServletException and HttpServlet, a constructor stub, and two method stubs for doGet and doPost. The code uses annotations like @see and TODO comments. The code editor has color-coded syntax highlighting and line numbers.

```
1 | 
2 | 
3 ⚠ import jakarta.servlet.ServletException;[]
4 | 
5 /**
6  * Servlet implementation class HolaMundo
7  */
8 | 
9 public class HolaMundo extends HttpServlet {
10    private static final long serialVersionUID = 1L;
11 | 
12    /**
13     * @see HttpServlet#HttpServlet()
14     */
15    public HolaMundo() {
16        super();
17        // TODO Auto-generated constructor stub
18    }
19 | 
20    /**
21     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
22     */
23    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
24        // TODO Auto-generated method stub
25        response.getWriter().append("Served at: ").append(request.getContextPath());
26    }
27 | 
28    /**
29     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)
30     */
31    protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
32        // TODO Auto-generated method stub
33        doGet(request, response);
34    }
35 | 
36    /**
37     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
38     */
39    }
40 }
41 }
```

# Primer Servlet {IDE Eclipse}



# Primer Servlet {IDE Eclipse}



# Primer Servlet {IDE Eclipse}

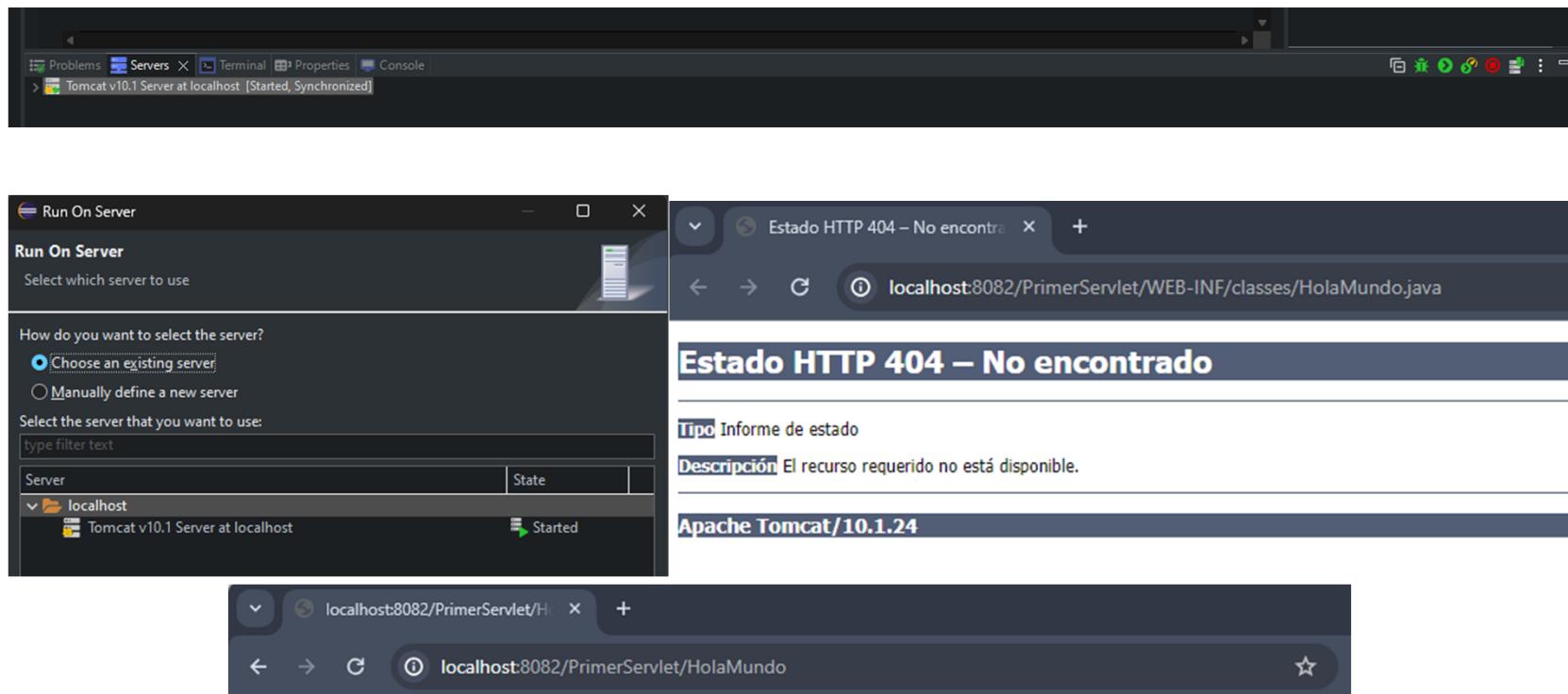
The screenshot shows the Eclipse IDE interface with the following components:

- Java Editor:** Displays a portion of a Java file named `HolaMundo.java` containing the following code:

```
35@    protected void doPost(HttpServletRequest request, HttpServletResponse response) {  
36@        // TODO Auto-generated method stub  
37@        doGet(request, response);  
38@    }  
39@  
40@ }  
41@
```
- Servers View:** Shows a Tomcat v10.1 Server at localhost [Stopped, Synchronized].
- Ports Table:** A small table showing port mappings.

Port Name	Port Number
Tomcat admin port	8081
HTTP/1.1	8082
- Server Configuration Overview:** A detailed configuration dialog for the Tomcat v10.1 Server at localhost.
  - General Information:** Set Server name to Tomcat v10.1 Server at localhost, Host name to localhost, and Runtime Environment to Apache Tomcat v10.1.
  - Ports:** Shows the same port mappings as the small table above, with the entry for port 8080 highlighted in yellow. An orange arrow points from the highlighted row in the small table to the corresponding row in the large table.
  - MIME Mappings:** A section for defining MIME types for various file extensions.

# Primer Servlet {IDE Eclipse}



Hola Mundo

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20 - 21 - 22 - 23 - 24 - 25 - 26 - 27 - 28 - 29 - 30 - 31  
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# Referencias

- Marijan, B. (2022, February 17). How to install Apache Tomcat on Windows. Knowledge Base by phoenixNAP; phoenixNAP. <https://phoenixnap.com/kb/install-tomcat-windows>
- *Que es un Contenedor de Servlets. Instalación Apache Tomcat.* (n.d.). Edu4java.com. Retrieved May 19, 2024, from <http://www.edu4java.com/es/servlet/servlet1.html>
- *Crear un Servlet.* (2019, August 5). Tutoriales de programación; Rosa. <https://rosamarfil.es/tutoriales/programacion/crear-un-servlet/>