

Instructions for setting up the environment for java web PRJ301

<https://drive.google.com/drive/folders/1xiCiEzj-yFSPkkmBm7ZaliV8KsPewezQ?usp=sharing>

To develop and deploy a java web application on **WINDOW**, you need to follow 6 below instructions:

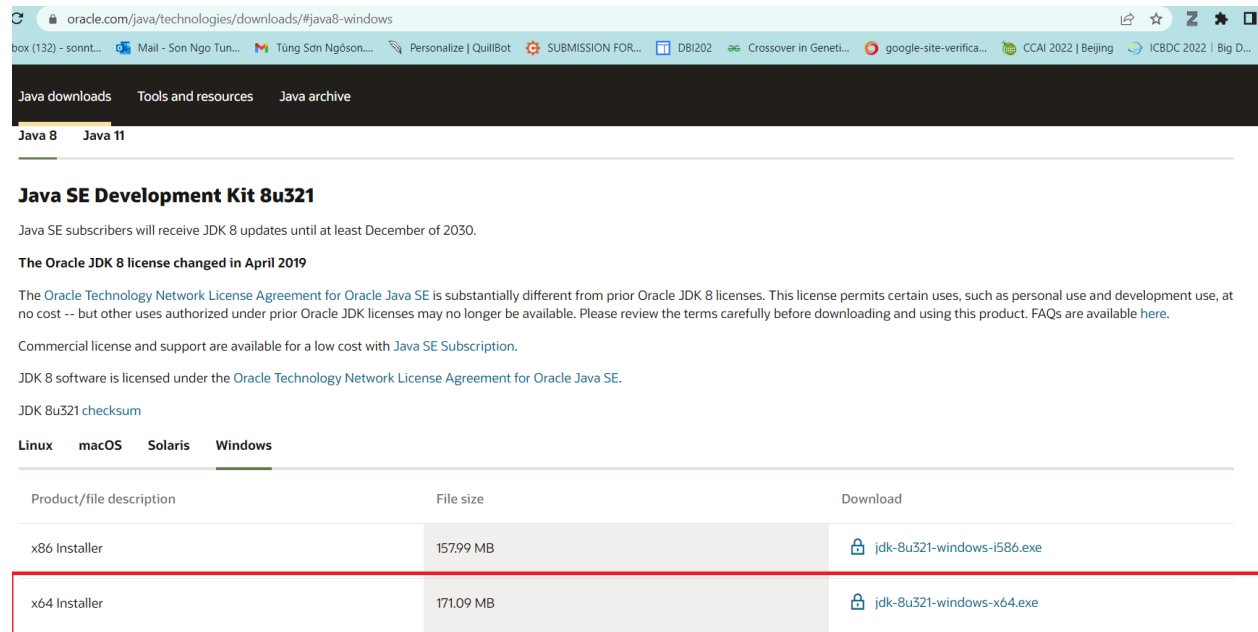
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1> Installing JDK 8u321

Page: <https://www.oracle.com/java/technologies/downloads/>

Scroll down to find the version you need.



The screenshot shows the Oracle Java Downloads page for JDK 8u321 on Windows. The page has a dark header with navigation links: "Java downloads", "Tools and resources", and "Java archive". Below the header, there are tabs for "Java 8" and "Java 11", with "Java 8" selected. The main content area is titled "Java SE Development Kit 8u321". It includes a note that Java SE subscribers will receive JDK 8 updates until at least December of 2030. Below this, there is a section titled "The Oracle JDK 8 license changed in April 2019" which explains that the Oracle Technology Network License Agreement for Oracle Java SE is substantially different from prior Oracle JDK 8 licenses. It also mentions that commercial license and support are available for a low cost with Java SE Subscription. The page then states that JDK 8 software is licensed under the Oracle Technology Network License Agreement for Oracle Java SE. A link for "JDK 8u321 checksum" is provided. At the bottom, there is a table with columns for "Linux", "macOS", "Solaris", and "Windows". The "Windows" column is selected, and it shows two rows: "x86 Installer" with a file size of 157.99 MB and a download link "jdk-8u321-windows-i586.exe", and "x64 Installer" with a file size of 171.09 MB and a download link "jdk-8u321-windows-x64.exe". The "x64 Installer" row is highlighted with a red border.

Product/file description	File size	Download
x86 Installer	157.99 MB	jdk-8u321-windows-i586.exe
x64 Installer	171.09 MB	jdk-8u321-windows-x64.exe

After installing, let check the installation folder:

Normally it will be located at: C:\Program Files\Java. It contains 2 folders JDK and JRE.

📁 jre1.8.0_321

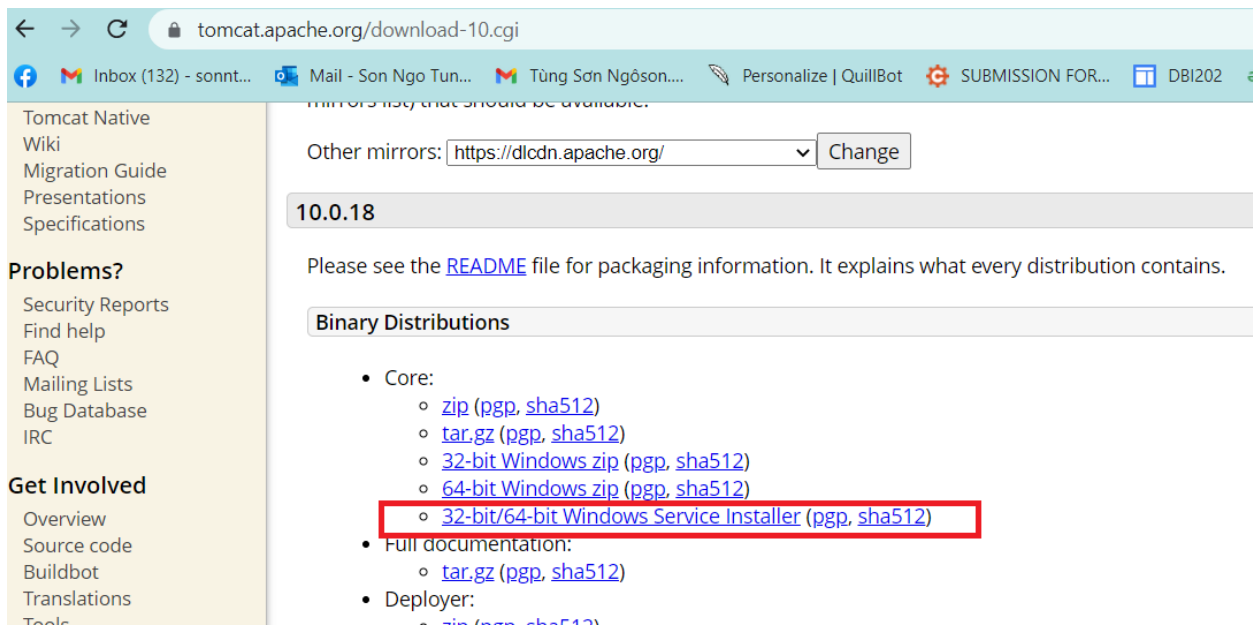
📁 jdk1.8.0_321

If you see these folders, it is ok for now.

For more details, you can read <https://www.oracle.com/java/technologies/javase-jdk8-doc-downloads.html>

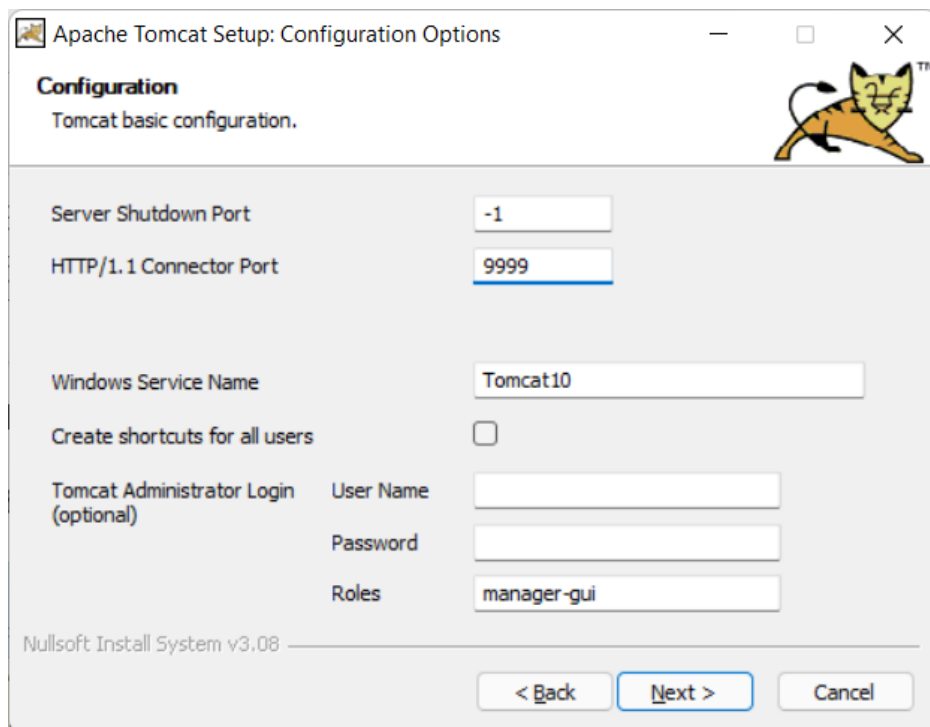
2> Installing Apache Tomcat 10.0.18

Download page: <https://tomcat.apache.org/download-10.cgi>



The screenshot shows the Apache Tomcat 10.0.18 download page. The browser address bar displays `tomcat.apache.org/download-10.cgi`. The left sidebar contains navigation links such as "Tomcat Native", "Wiki", "Migration Guide", "Presentations", "Specifications", "Problems?", "Security Reports", "Find help", "FAQ", "Mailing Lists", "Bug Database", "IRC", "Get Involved", "Overview", "Source code", "Buildbot", "Translations", and "Tools". The main content area features a "mirrors" section with a dropdown menu set to `https://dldn.apache.org/` and a "Change" button. Below this, the version "10.0.18" is highlighted. A message states: "Please see the [README](#) file for packaging information. It explains what every distribution contains." Under the "Binary Distributions" section, a list of options is provided: "Core:" (with sub-options for zip, tar.gz, 32-bit Windows zip, 64-bit Windows zip, and 32-bit/64-bit Windows Service Installer), "Full documentation:" (with tar.gz), and "Deployer:". The "32-bit/64-bit Windows Service Installer (pgp, sha512)" option is highlighted with a red rectangle.

Open the installer file then click “Next” button, until you see the below screen:

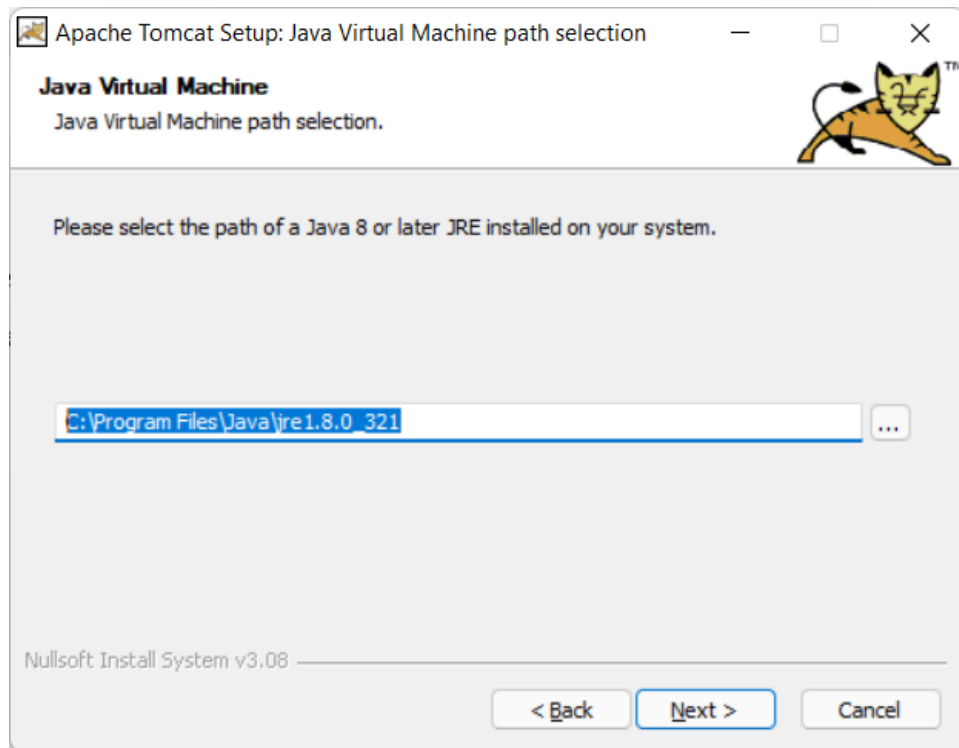


The screenshot shows the "Apache Tomcat Setup: Configuration Options" dialog box. The title bar includes the Apache Tomcat logo. The "Configuration" section is titled "Tomcat basic configuration." and features a list of settings: "Server Shutdown Port" (set to -1), "HTTP/1.1 Connector Port" (set to 9999), "Windows Service Name" (set to Tomcat10), "Create shortcuts for all users" (unchecked), "Tomcat Administrator Login (optional)" (with fields for User Name, Password, and Roles set to manager-gui). The "Nullsoft Install System v3.08" logo is visible at the bottom left. At the bottom right, there are three buttons: "< Back", "Next >" (highlighted with a blue border), and "Cancel".

By default, the HTTP port is set as 8080, but I prefer to change it to 9999. You can keep it as 8080 or change it as you desire. Same for Window Service Name.

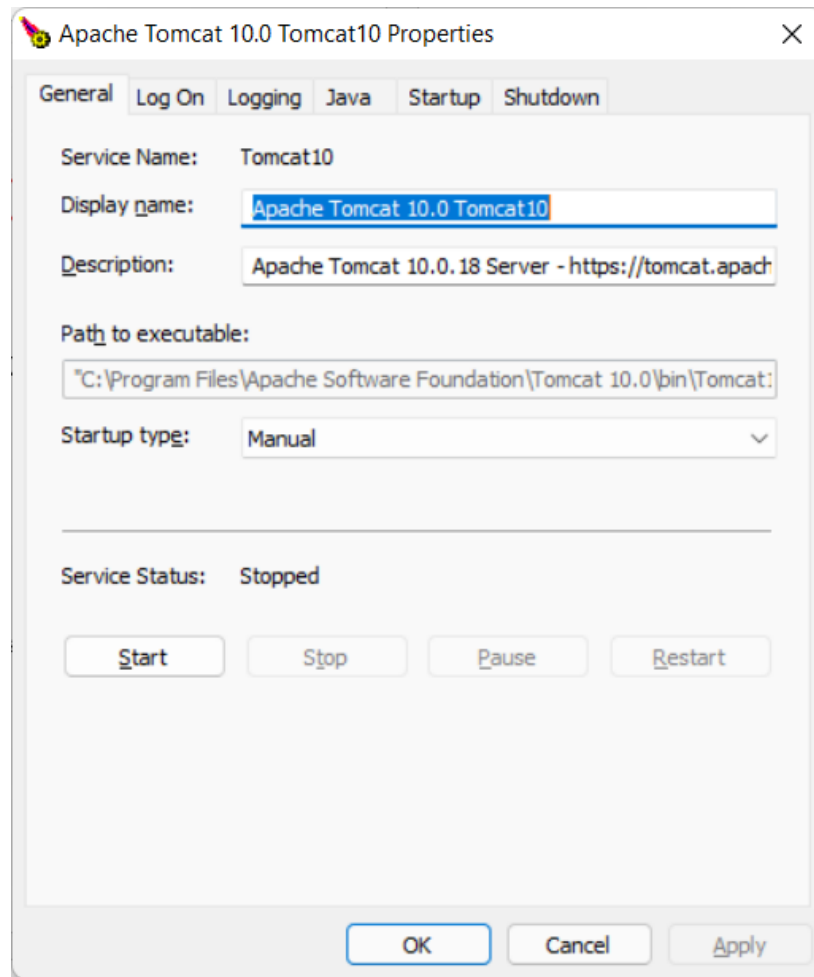
You can also set username and password at this step, but it is an optional and you can do it later.

Click “Next”, then the installer will ask you for JRE folder. Basically, the installer can automatically detect JRE folder, but in the case it cannot, you can add it manually.



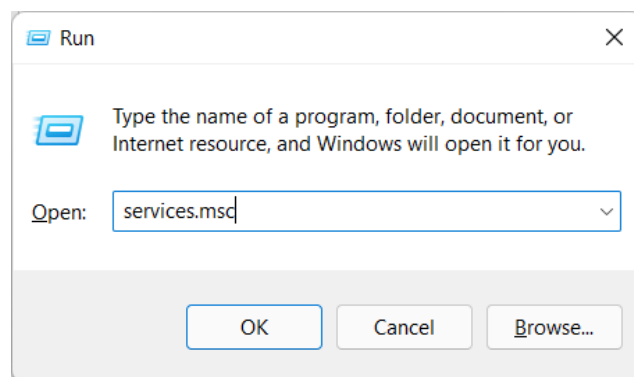
Click “Next” Again then “Finish”.

Normally, you are going to see the below window app displayed:

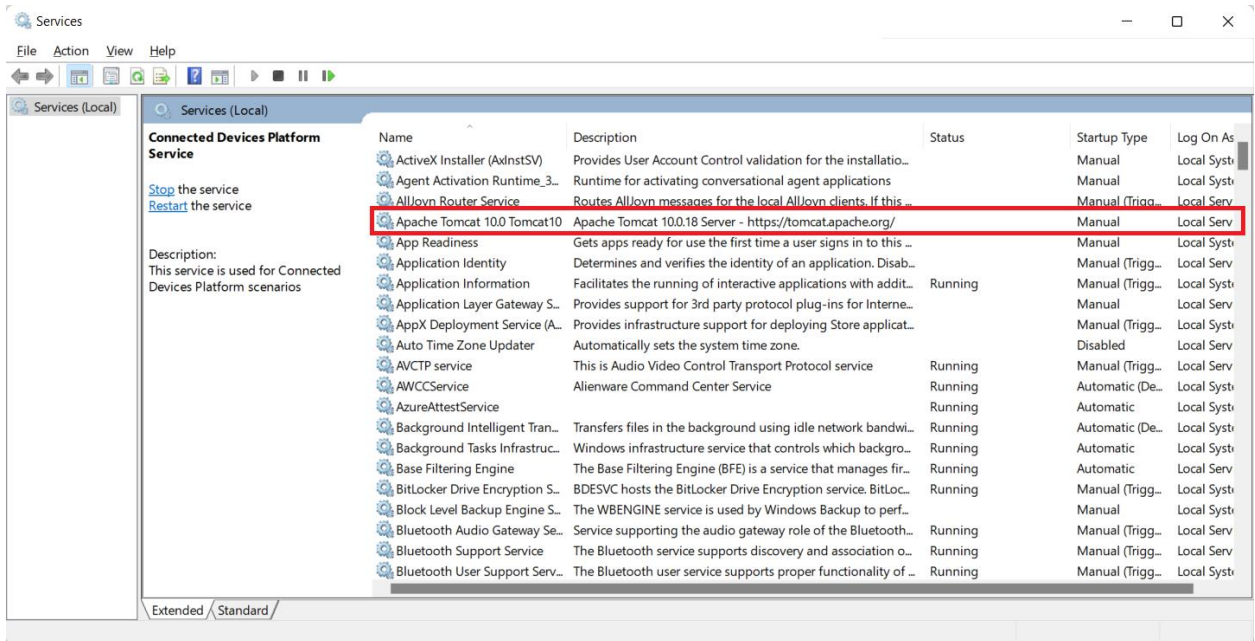


It is ok, this application used to control your TOMCAT webserver, but if you do not see it, do not worry. I recommend you follow below instructions:

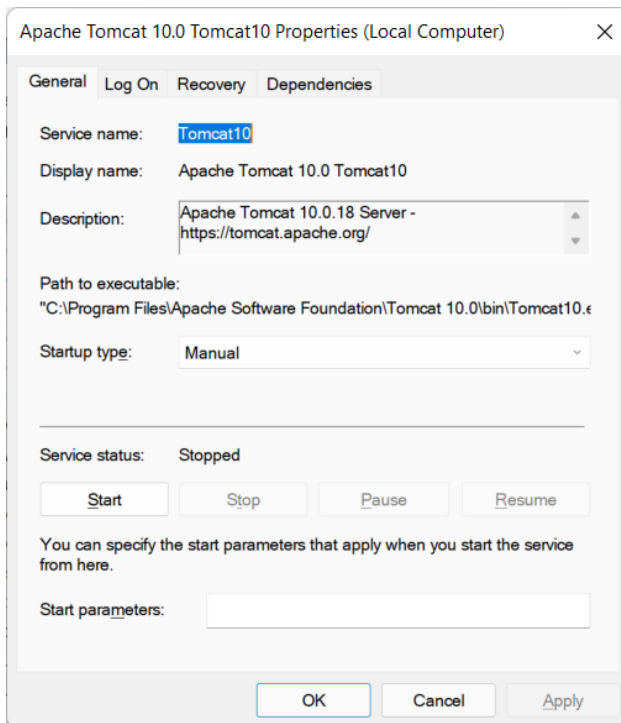
1. TOMCAT now is installed as a Window Service (It is a software, but it does not have a graphic user interface).
2. To work with Window Service, press window+R, fill service.msc



3. Find the TOMCAT service in the list:

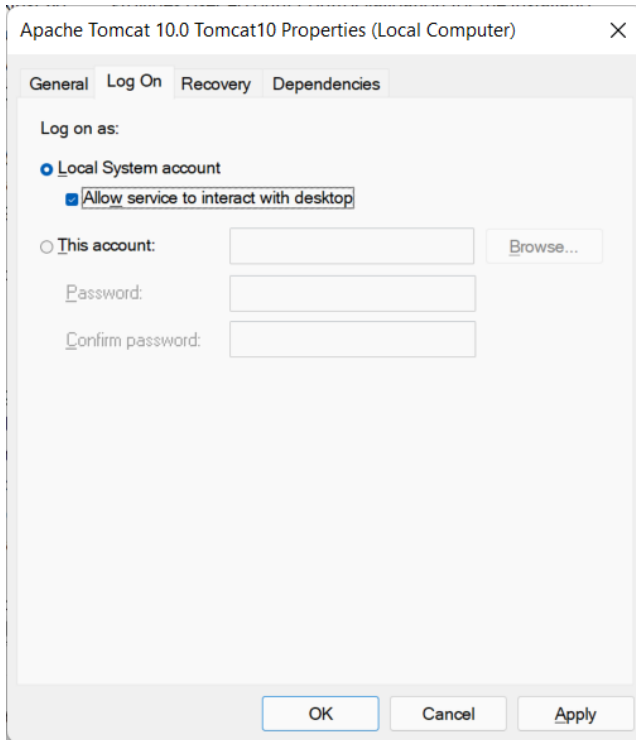


Right click -> properties ->



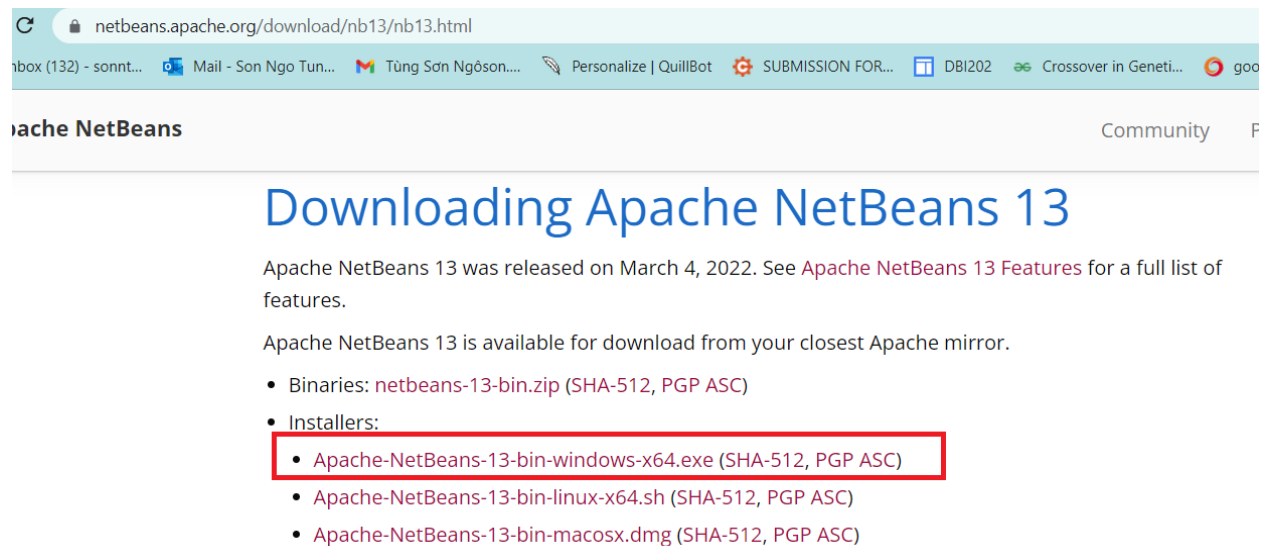
Now you can start/stop the TOMCAT service. Just make sure it is running before use.

You can grant permission for TOMCAT to run with Local System account on the same dialog.



3> Installing Apache NetBeans IDE 13.

Download: <https://netbeans.apache.org/download/nb13/nb13.html>



The screenshot shows the Apache NetBeans 13 download page. The browser's address bar displays the URL `netbeans.apache.org/download/nb13/nb13.html`. The page header includes the Apache NetBeans logo and a 'Community' link. The main heading is 'Downloading Apache NetBeans 13'. Below this, a paragraph states that Apache NetBeans 13 was released on March 4, 2022, and refers to the 'Apache NetBeans 13 Features' page for a full list of features. Another paragraph mentions that the IDE is available for download from the closest Apache mirror. A list of download options is provided, categorized into 'Binaries' and 'Installers'. The 'Installers' section is highlighted with a red box, containing three entries: 'Apache-NetBeans-13-bin-windows-x64.exe (SHA-512, PGP ASC)', 'Apache-NetBeans-13-bin-linux-x64.sh (SHA-512, PGP ASC)', and 'Apache-NetBeans-13-bin-macosx.dmg (SHA-512, PGP ASC)'.

Apache NetBeans 13 was released on March 4, 2022. See [Apache NetBeans 13 Features](#) for a full list of features.

Apache NetBeans 13 is available for download from your closest Apache mirror.

- Binaries: [netbeans-13-bin.zip](#) (SHA-512, PGP ASC)
- Installers:
 - [Apache-NetBeans-13-bin-windows-x64.exe](#) (SHA-512, PGP ASC)
 - [Apache-NetBeans-13-bin-linux-x64.sh](#) (SHA-512, PGP ASC)
 - [Apache-NetBeans-13-bin-macosx.dmg](#) (SHA-512, PGP ASC)

During your installation, remember to select JDK 1.8 (just in case, you have more than one version of Java).

After installation, run netbeans 13, File > New Project > Java with Ant > Select Web Application (It is disabled by default, just select it, netbeans will automatically enable the project template).

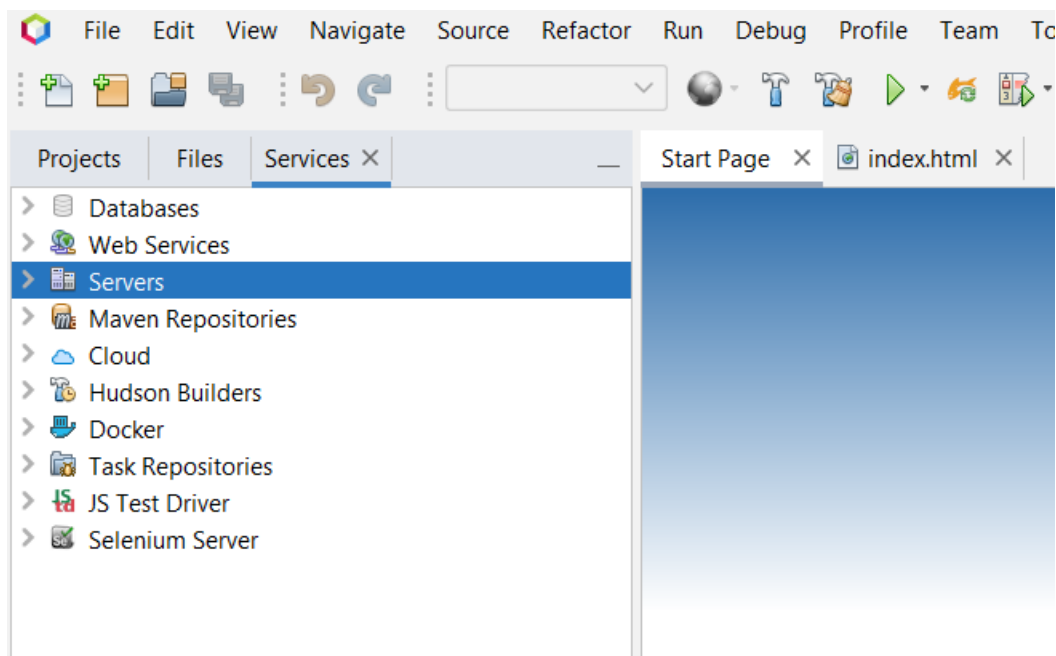
4> Integrating Apache NetBeans IDE 13 with Apache Tomcat.

+ First, open the Apache Tomcat folder:

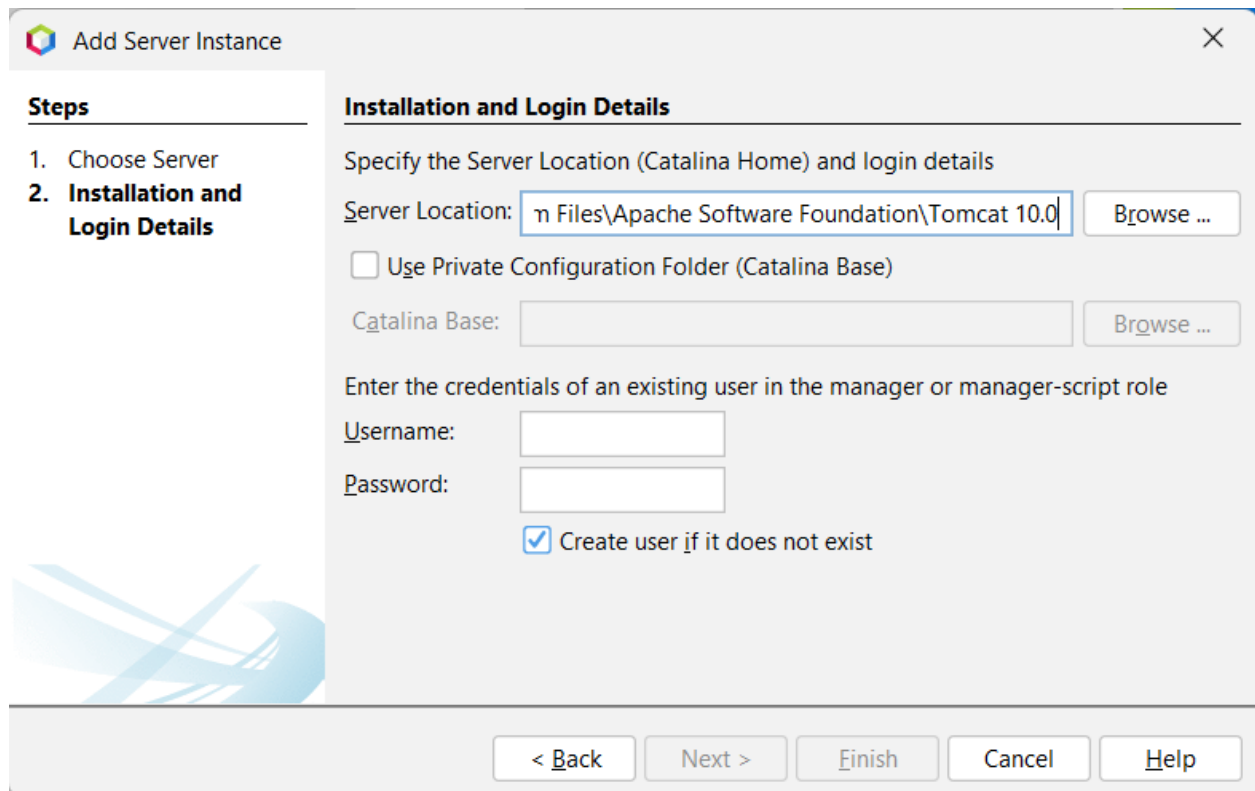
By default, it is located at: C:\Program Files\Apache Software Foundation\Tomcat 10.0

The system may ask you to grant permission, just click “Yes” button. This step aims to allow your account to access the Apache Tomcat folder for further tasks.

+ Open netbeans, on the menu bar, Window > Service (ctrl + 5) > select Service panel as following:



Server > Right click > Add Server > Apache Tomcat and TomEE >



The image shows a 'Add Server Instance' dialog box with a sidebar on the left and a main content area on the right. The sidebar contains a 'Steps' section with two items: '1. Choose Server' and '2. Installation and Login Details', with the second item being selected. The main content area is titled 'Installation and Login Details' and contains the following fields and controls:

- A text field for 'Server Location' containing the path 'n Files\Apache Software Foundation\Tomcat 10.0', with a 'Browse ...' button to its right.
- An unchecked checkbox labeled 'Use Private Configuration Folder (Catalina Base)'.
- A text field for 'Catalina Base' with a 'Browse ...' button to its right.
- A section titled 'Enter the credentials of an existing user in the manager or manager-script role' containing:
 - A text field for 'Username'.
 - A text field for 'Password'.
 - A checked checkbox labeled 'Create user if it does not exist'.

At the bottom of the dialog are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

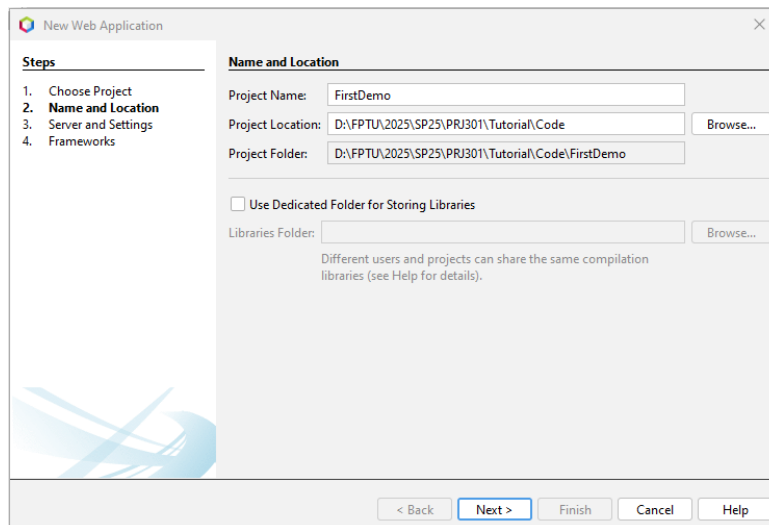
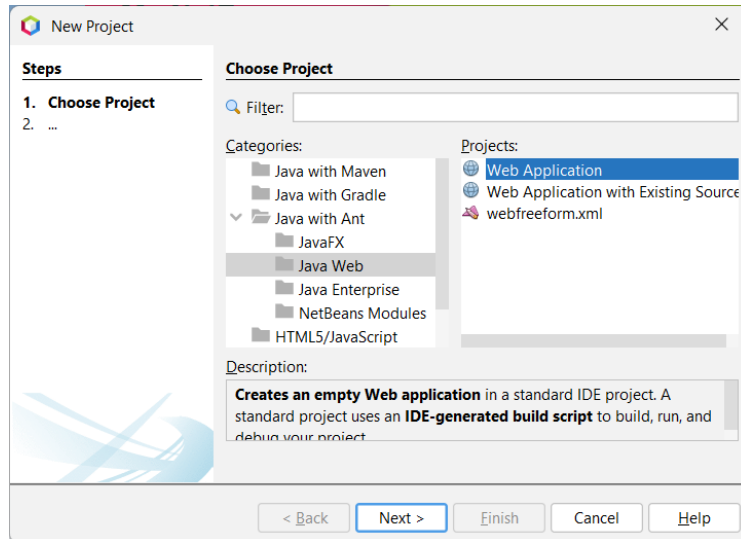
Here you can create your username and password, then finish. Now you can work with Java Web project in netbeans 13.

If you get an error related to “CATALINA_base is Invalid”, check the first step.

Errors related to Tomcat will be logged to “C:\Program Files\Apache Software Foundation\Tomcat 10.0\logs”, check the catalina**** file for the detail logs.

5> Create Java Web project, Servlet and Debug.

To create a new java web project: File > New Project > Java with Ant> Java Web > Web Application (See the below figure)



New Web Application

Steps

1. Choose Project
2. Name and Location
3. **Server and Settings**
4. Frameworks

Server and Settings

Add to Enterprise Application: <None>

Server: Apache Tomcat or TomEE Add...

Java EE Version: Java EE 7 Web

Context Path: /new

< Back Next > Finish Cancel Help

New Web Application

Steps

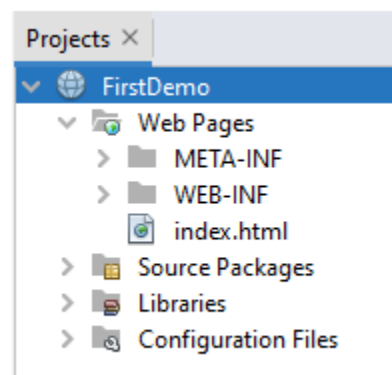
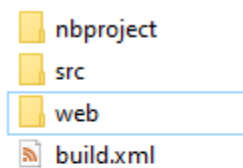
1. Choose Project
2. Name and Location
3. Server and Settings
4. **Frameworks**

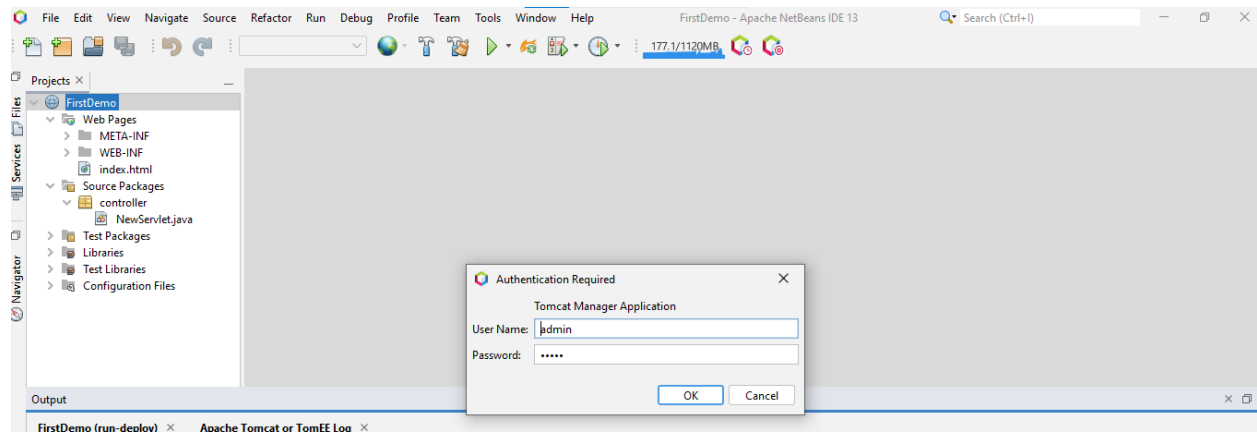
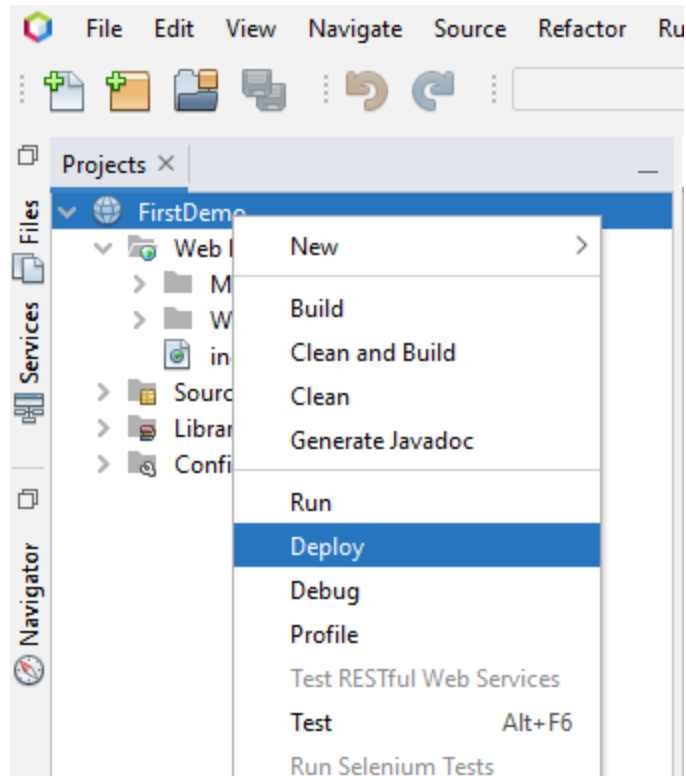
Frameworks

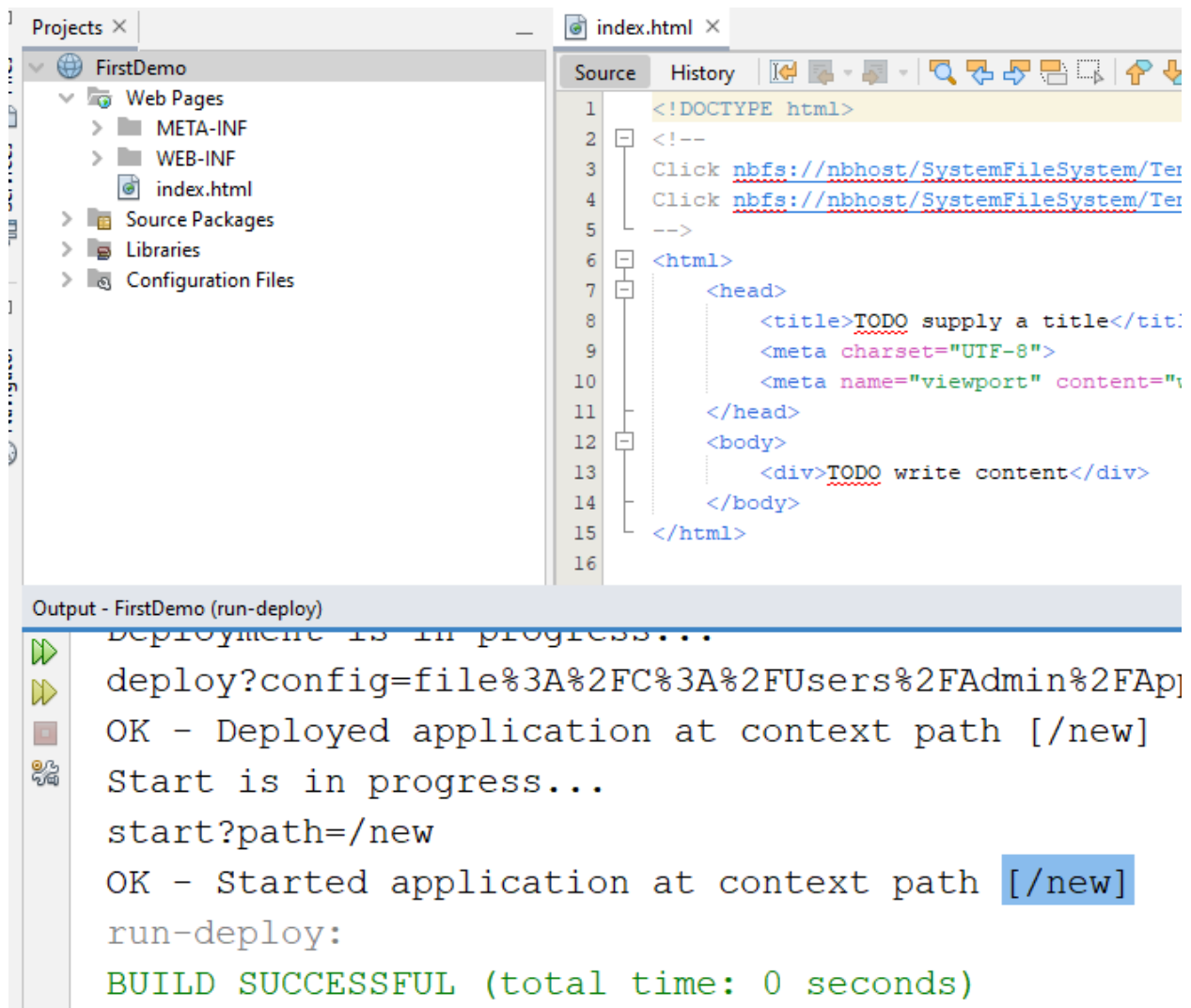
Select the frameworks you want to use in your web application.

- ☐ Spring Web MVC
- ☐ JavaServer Faces
- ☐ Struts 1.3.10

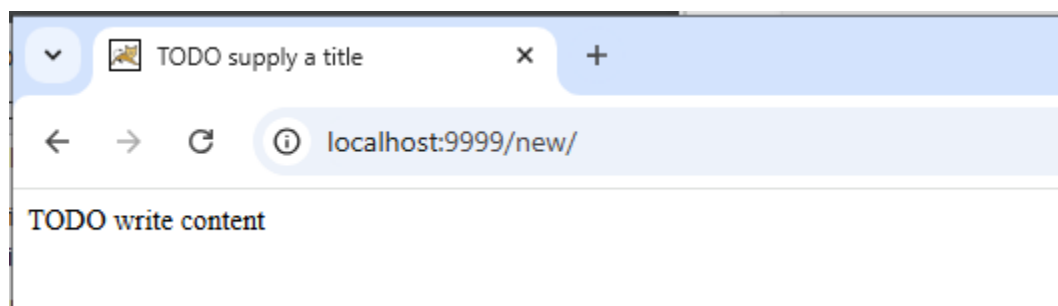
< Back Next > Finish Cancel Help



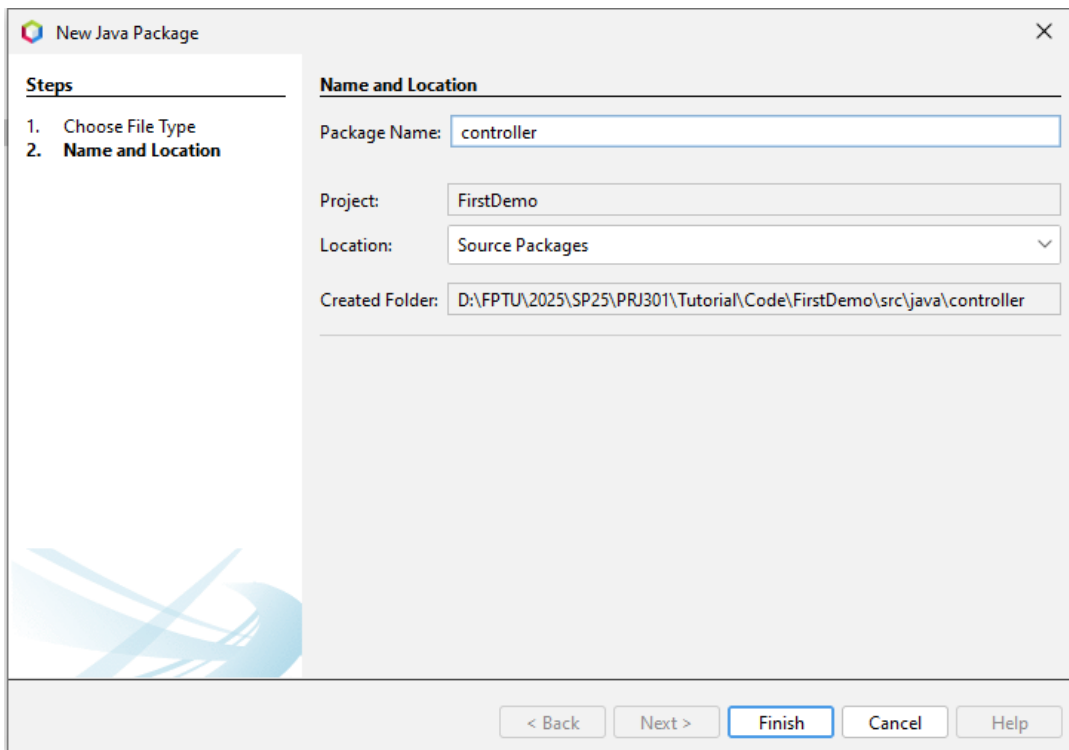
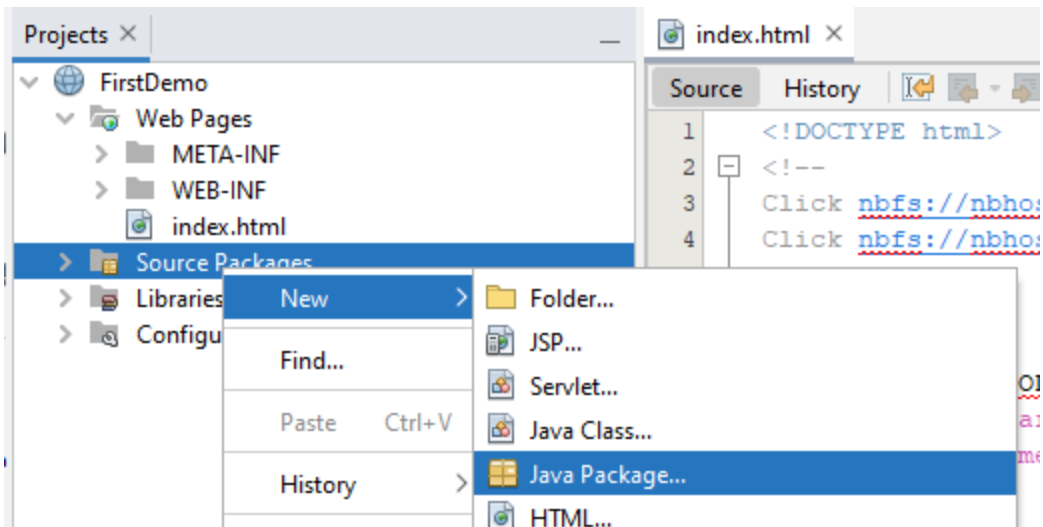


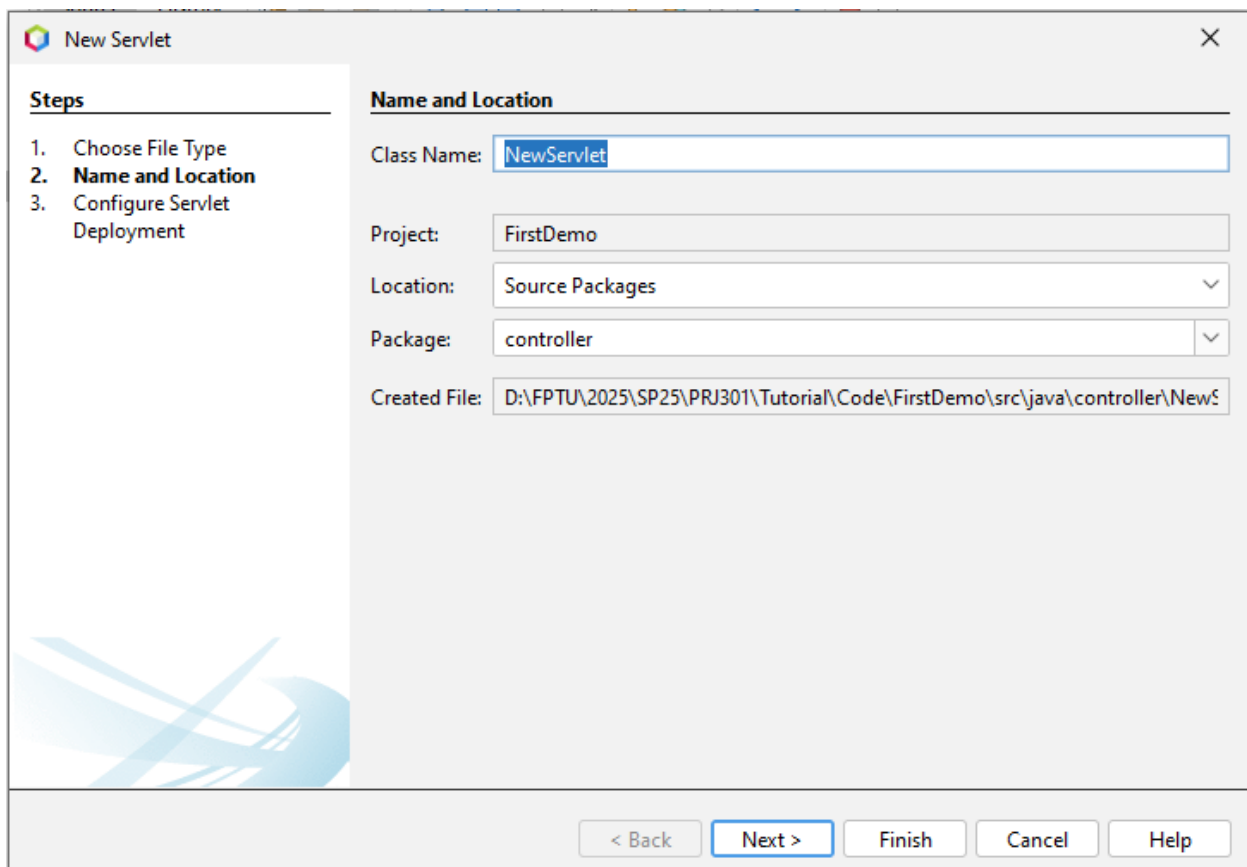
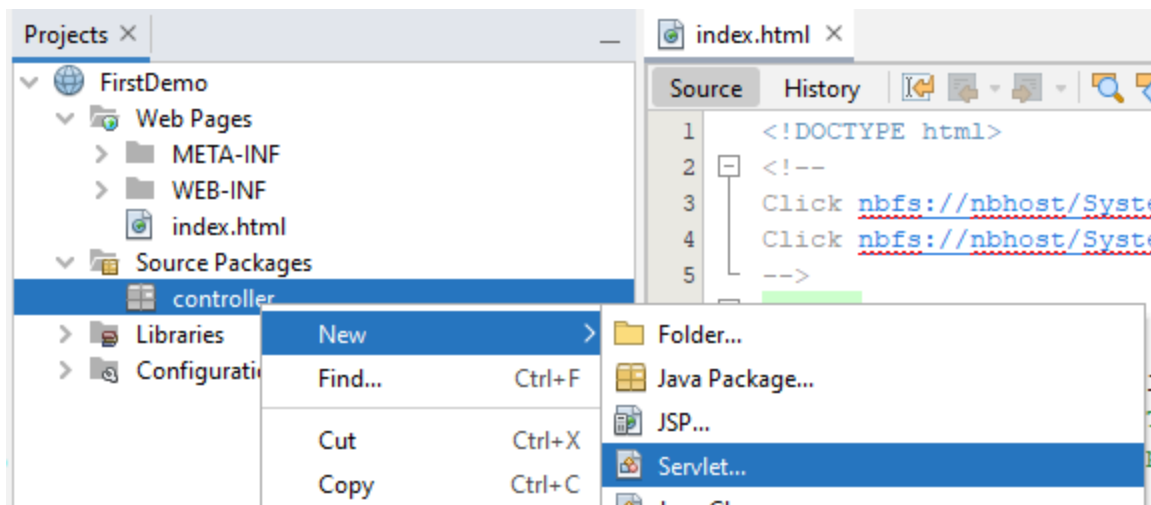


Open your browser and type <http://localhost:9999/new/>



/// LET DO IT, IN THE SESSION OF SERVLET



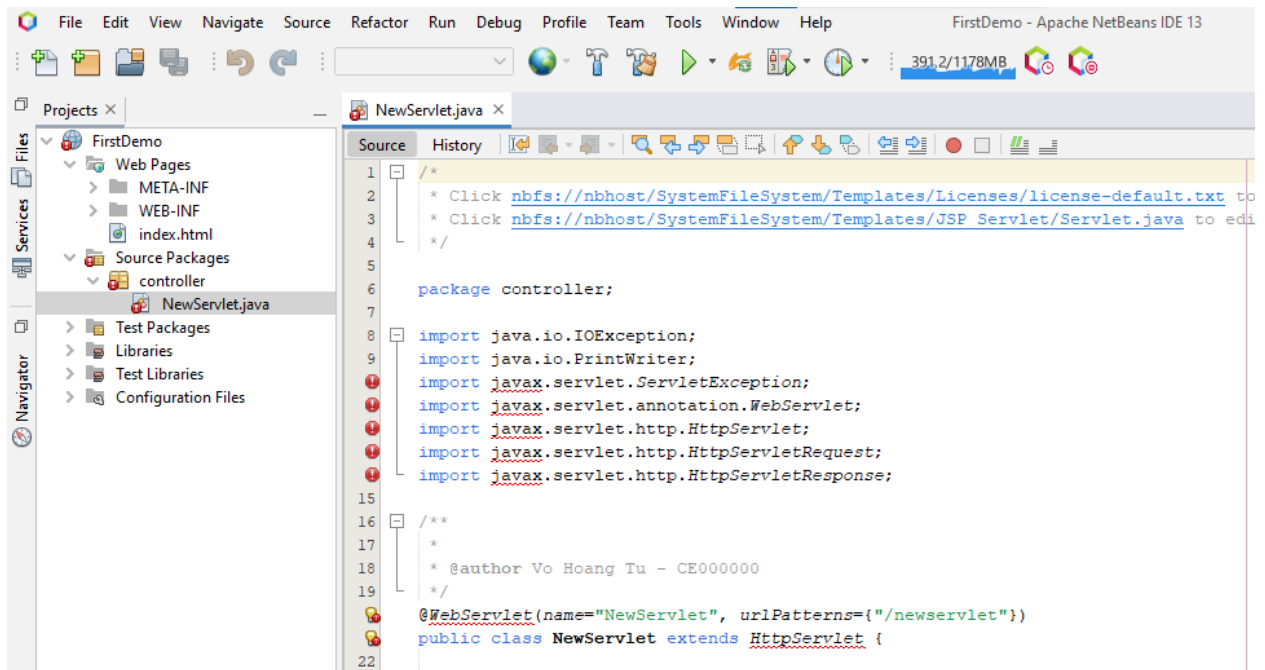


The screenshot shows the 'New Servlet' dialog box in NetBeans IDE. The 'Steps' panel on the left lists three steps: '1. Choose File Type', '2. Name and Location', and '3. Configure Servlet Deployment', with the third step being the active one. The main area is titled 'Configure Servlet Deployment' and contains the following elements:

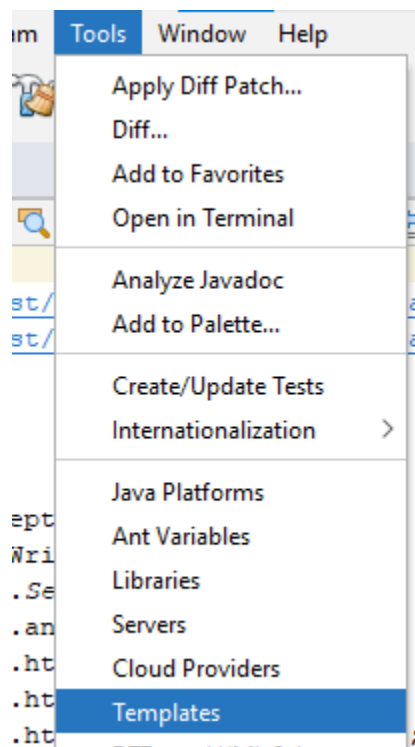
- A text instruction: 'Register the Servlet with the application by giving the Servlet an internal name (Servlet Name). Then specify patterns that identify the URLs that invoke the Servlet. Separate multiple patterns with commas.'
- An unchecked checkbox: 'Add information to deployment descriptor (web.xml)'.
- Three text input fields:
 - 'Class Name:' with the value 'controller.NewServlet'.
 - 'Servlet Name:' with the value 'NewServlet'.
 - 'URL Pattern(s):' with the value '/newservlet'.
- An 'Initialization Parameters:' section containing a table with two columns: 'Name' and 'Value'. The table is currently empty.
- Three buttons to the right of the table: 'New', 'Edit...', and 'Delete'.

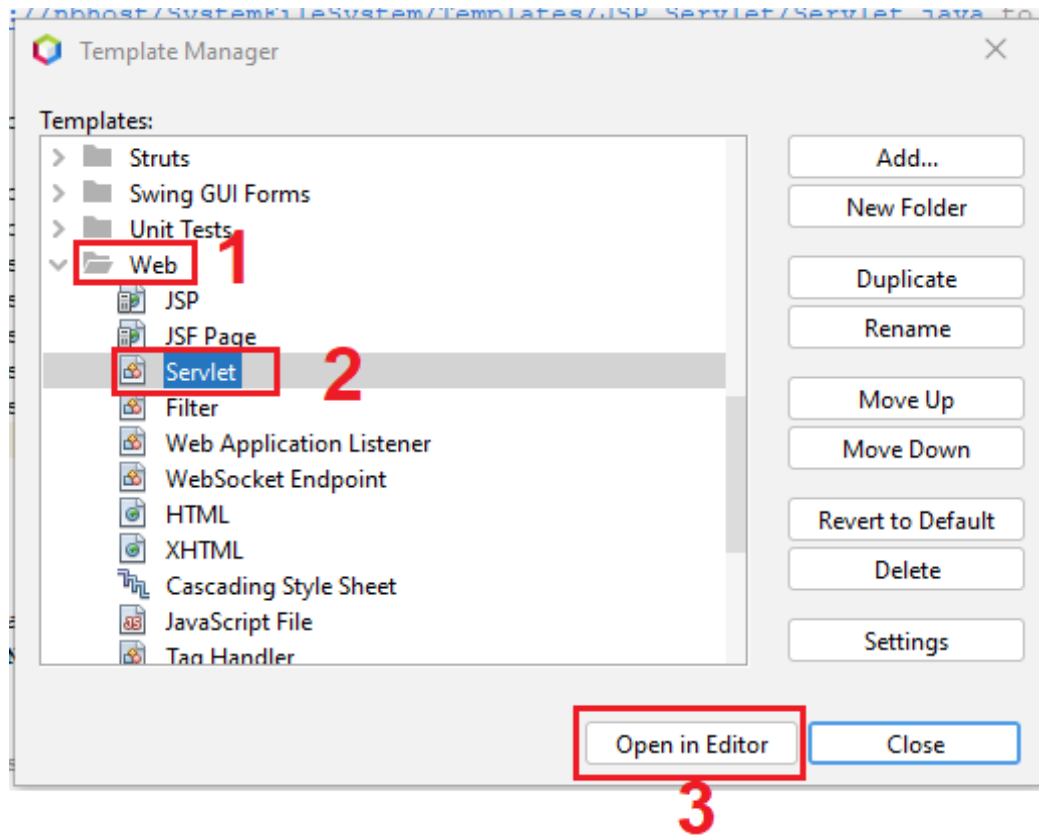
At the bottom of the dialog, there are five buttons: '< Back', 'Next >', 'Finish' (which is highlighted with a blue border), 'Cancel', and 'Help'.

Once you create new Servlet via Netbeans template file. By default, netbeans using javax, which is not included in Jarkata EE platform equipped by Tomcat 10. Just need to replace all javax by Jakarta package, then everything will be compiled.

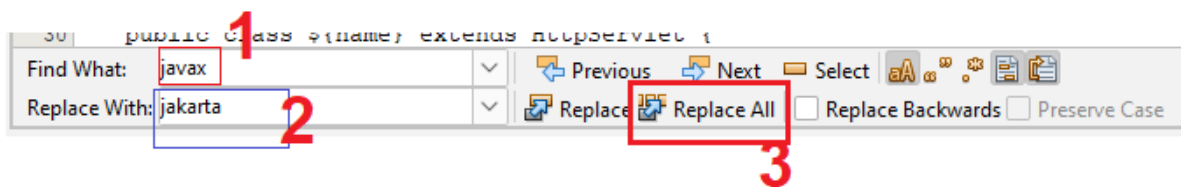
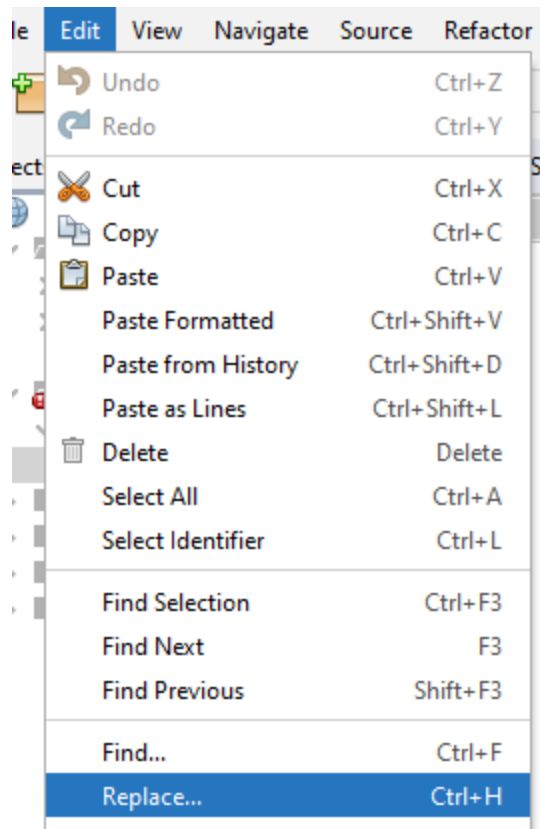


To

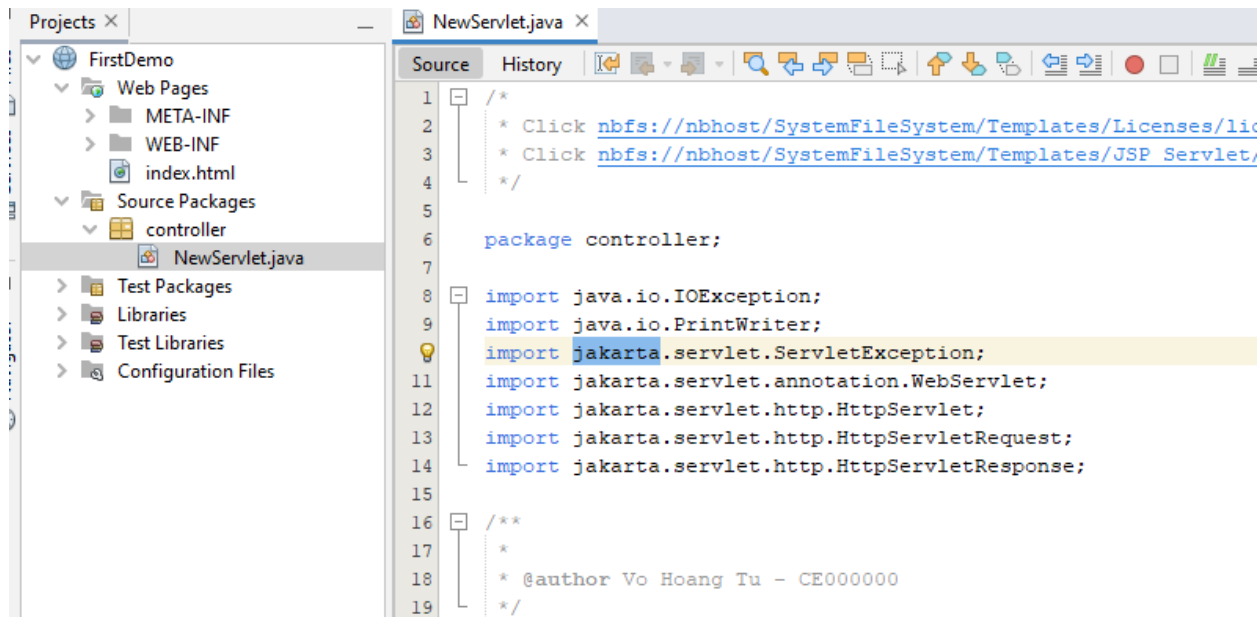




you can also edit the template file for further tasks.

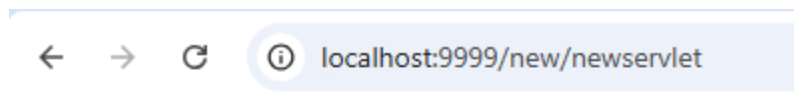


Then save it



Refer to <https://tomcat.apache.org/> for more detail

If you want to run a servlet, type: <http://localhost:9999/new/newervlet>."



Servlet NewServlet at /new

Hi, Vo Hoang Tu

When `/newervlet` is called, it will invoke `doGet()`, which in turn calls `processRequest()`