



## ❖ JSP

자바 서버 페이지(**JavaServer Pages, JSP**)는 HTML내에 자바 코드를 삽입하여 웹 서버에서 동적으로 웹 페이지를 생성하여 웹 브라우저에 돌려주는 서버 사이드 스크립트 언어이다.

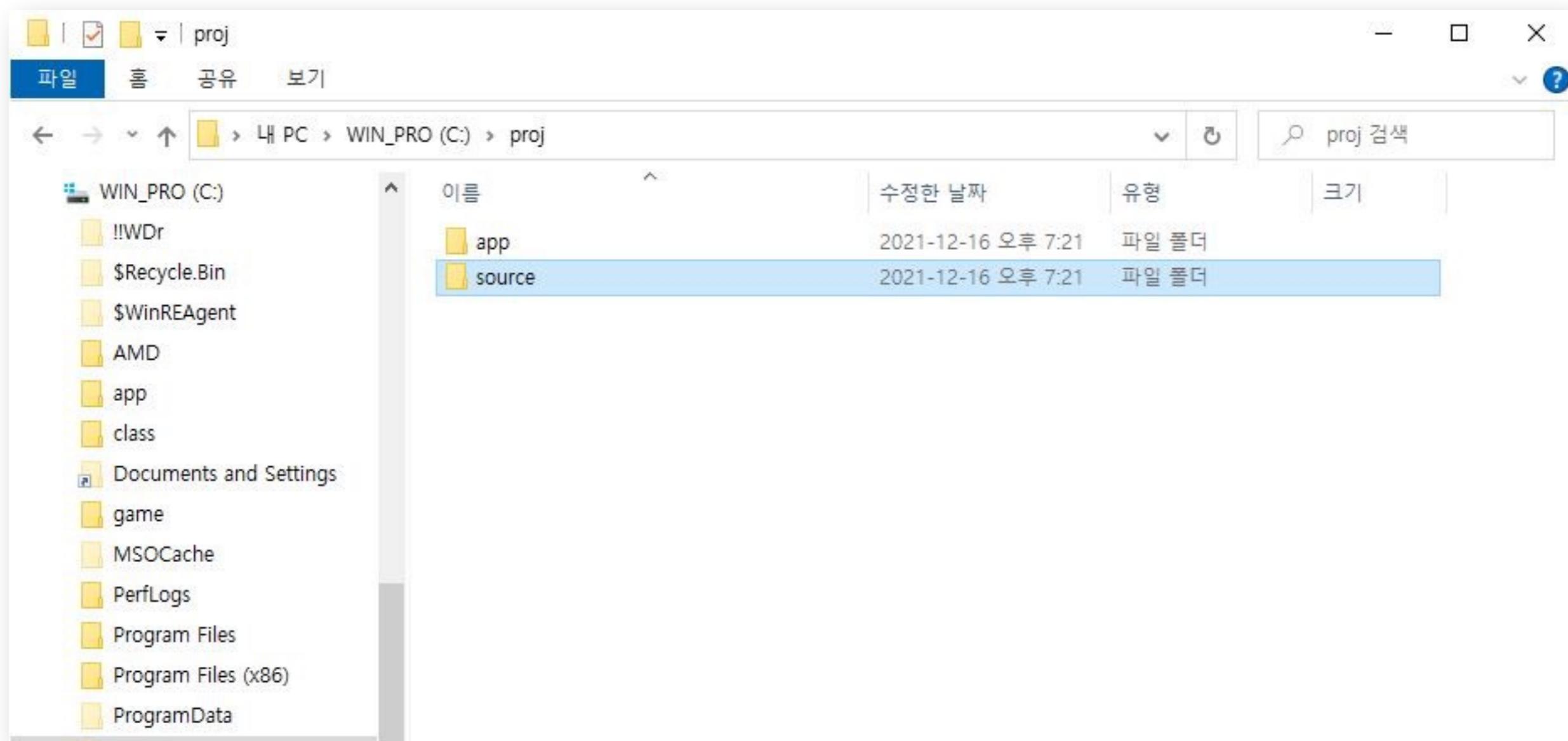
Java EE 스펙 중 일부로 웹 애플리케이션 서버에서 동작한다.

자바 서버 페이지는 실행시에는 자바 서블릿으로 변환된 후 실행되므로 서블릿과 거의 유사하다고 볼 수 있다.  
하지만, 서블릿과는 달리 HTML 표준에 따라 작성되므로 웹 디자인하기에 편리하다.

1999년 썬 마이크로시스템즈에 의해 배포되었으며 이와 비슷한 구조로 PHP, ASP, ASP.NET 등이 있다.  
아파치 스트럿츠나 자카르타 프로젝트의 JSTL 등의 JSP 태그 라이브러리를 사용하는 경우에는  
자바 코딩없이 태그만으로 간략히 기술이 가능하므로 생산성을 높일 수 있다.

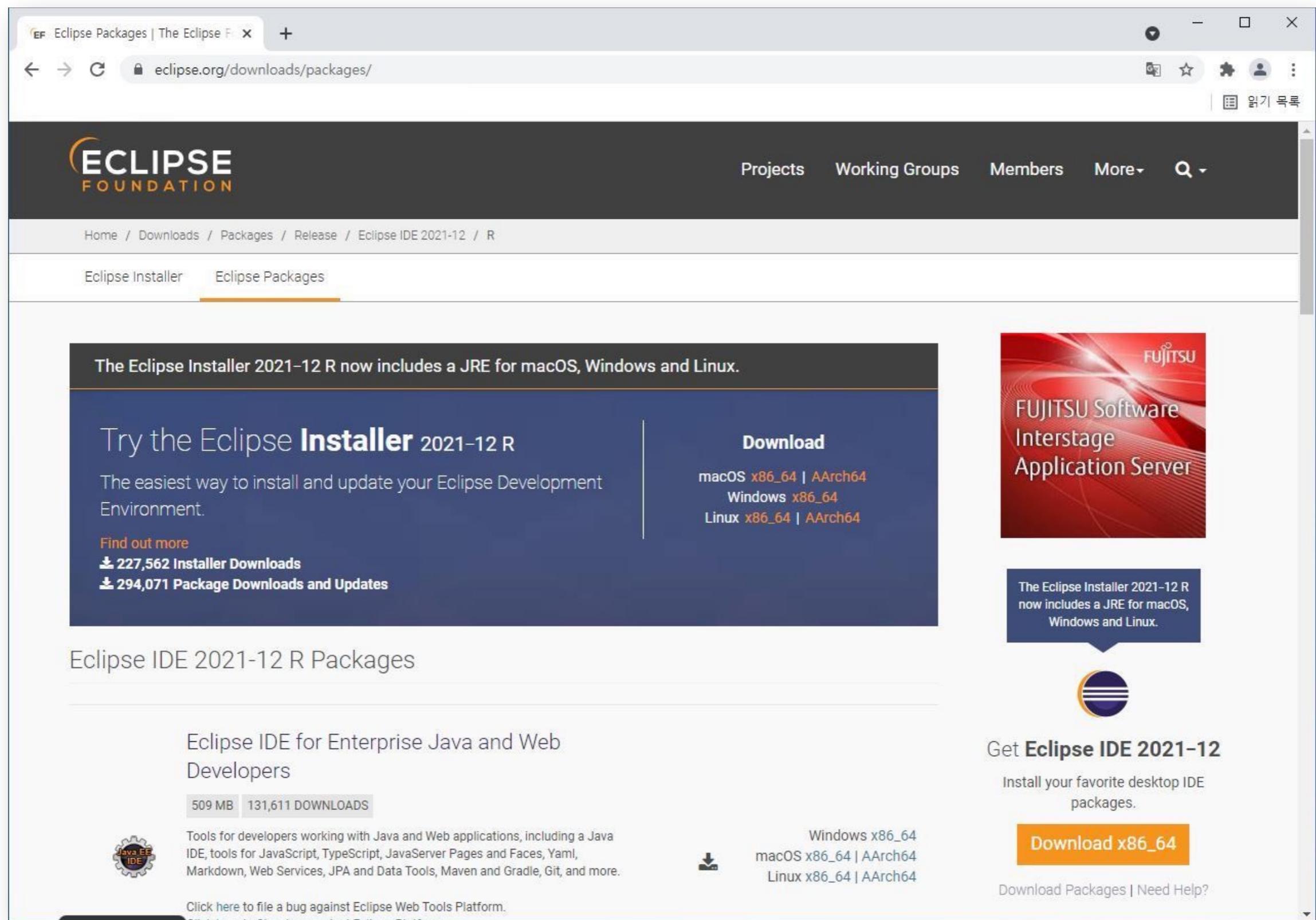
# JSP 프로젝트 만들기

- ❖ 하드디스크 적당한 곳에 프로젝트 폴더를 만든다.  
우리의 경우 c:\proj라는 폴더를 만들어서 진행하기로 한다.  
내부에 app, source폴더도 준비해둔다.



## ❖ 이클립스 사이트로 이동한다.

<http://www.eclipse.org/downloads/packages/>



The screenshot shows the Eclipse Packages page at <http://www.eclipse.org/downloads/packages/>. The page features the Eclipse Foundation logo and a navigation bar with links for Projects, Working Groups, Members, and More. Below the navigation is a breadcrumb trail: Home / Downloads / Packages / Release / Eclipse IDE 2021-12 / R. The main content area highlights the Eclipse Installer 2021-12 R, noting it includes a JRE for macOS, Windows, and Linux. It offers links to the Eclipse Installer and Eclipse Packages. A sidebar for FUJITSU Software Interstage Application Server is present. The page also displays download statistics for the Eclipse IDE 2021-12 R Packages, including 227,562 Installer Downloads and 294,071 Package Downloads and Updates. A large section for the Eclipse IDE 2021-12 R Packages is shown, featuring the Java EE IDE logo, file size (509 MB), download count (131,611 DOWNLOADS), and a description of tools for Java and Web application development. A download button for Windows x86\_64 is available. At the bottom, there's a link to file bugs against the Eclipse Web Tools Platform and Eclipse Platform.

## ❖ 우측 베너에서 Eclipse 2020-06 을 클릭한다.

Eclipse Packages | The Eclipse Foundation

eclipse.org/downloads/packages/

**Eclipse IDE for C/C++ Developers**  
335 MB 18,460 DOWNLOADS  
An IDE for C/C++ developers.

**Eclipse IDE for Eclipse Committers**  
389 MB 6,526 DOWNLOADS  
Package suited for development of Eclipse itself at Eclipse.org; based on the Eclipse Platform adding PDE, Git, Marketplace Client, source code and developer documentation.  
Click here to file a bug against Eclipse Platform.  
Click here to file a bug against Eclipse Git team provider.

**Eclipse IDE for PHP Developers**  
258 MB 4,190 DOWNLOADS  
The essential tools for any PHP developer, including PHP language support, Git client, Mylyn and editors for JavaScript, TypeScript, HTML, CSS and XML.  
Click here to report an issue against Eclipse PHP Development Tools.  
Click here to file a bug against Eclipse Web Tools Platform.  
Click here to file a bug against Eclipse Platform.  
Click here to report an issue against Eclipse Wild Web Developer (incubating).

**Eclipse IDE for Java and DSL Developers**  
380 MB 2,883 DOWNLOADS  
The essential tools for Java and DSL developers, including a Java & Xtend IDE, a DSL Framework (Xtext), a Git client, XML Editor, and Maven integration.

**Eclipse IDE for Embedded C/C++ Developers**  
357 MB 2,286 DOWNLOADS  
An IDE for Embedded C/C++ developers. It includes managed cross build plug-ins.

**MORE DOWNLOADS**

- Other builds
- Eclipse 2021-12 (4.22)
- Eclipse 2021-09 (4.21)
- Eclipse 2021-06 (4.20)
- Eclipse 2021-03 (4.19)
- Eclipse 2020-12 (4.18)
- Eclipse 2020-09 (4.17)
- **Eclipse 2020-06 (4.16)**
- Older versions

**HINT**

You will need a Java runtime environment (JRE) to use Eclipse (Java SE 11 or greater is recommended). Some of the packages come with a JRE. All downloads are provided under the terms and conditions of the Eclipse Foundation Software User Agreement unless otherwise specified.

클릭

❖ 이동한 페이지에서 Eclipse IDE for Enterprise Java Developers 를 찾고 Windows x86\_64 를 클릭한다.

The screenshot shows a web browser window with the URL [eclipse.org/downloads/packages/release/2020-06/r](https://eclipse.org/downloads/packages/release/2020-06/r). The page displays the Eclipse IDE 2020-06 R Packages. On the left, there's a section for the Eclipse Installer 2020-06 R, which includes a download button for Windows x86\_64. On the right, there's an advertisement for Sirius modeling tools. The main content area shows the Eclipse IDE packages, with a red circle highlighting the 'Windows x86\_64' download link under the 'Eclipse IDE for Enterprise Java Developers' section. The text '1. 확인' is written above this highlighted link, and '2. 클릭' is written next to the 'Windows x86\_64' link.

ECLIPSE FOUNDATION

Projects Working Groups Members More

Home / Downloads / Packages / Release / Eclipse IDE 2020-06 / R

Eclipse Installer Eclipse Packages

Try the Eclipse **Installer** 2020-06 R

The easiest way to install and update your Eclipse Development Environment.

[Find out more](#)  
65,361 Installer Downloads  
1,702,721 Package Downloads and Updates

Eclipse IDE 2020-06 R Packages

**1. 확인**

Eclipse IDE for Enterprise Java Developers

391 MB 595,814 DOWNLOADS

Tools for developers creating Java Enterprise and Web applications, including a Java IDE, tools for Web Services, JPA and Data Tools, JSF, Mylyn, Maven and Gradle, Git, and more.

Click here to file a bug against Eclipse Web Tools Platform.  
Click here to file a bug against Eclipse Platform.  
Click here to file a bug against Maven integration for web projects.  
Click here to report an issue against Eclipse Wild Web Developer (incubating).

Installation of stable release of node.js is strongly recommended.

Download

macOS x86\_64  
Windows x86\_64  
Linux x86\_64

Sirius

The Easiest Way to Get Your Own Modeling Tool

DOWNLOAD NOW

The Eclipse Installer 2021-12 R now includes a JRE for macOS, Windows and Linux.

Get Eclipse IDE 2021-12

Install your favorite desktop IDE packages.

Download x86\_64

Download Packages | Need Help?

❖ 이동한 페이지에서 Eclipse IDE for Enterprise Java Developers 를 찾고 Windows x86\_64 를 클릭해서 압축파일을 다운 받는다.

The screenshot shows a web browser window with the URL [eclipse.org/downloads/packages/release/2020-06/r](https://eclipse.org/downloads/packages/release/2020-06/r). The page displays the Eclipse IDE 2020-06 R Packages. On the left, there's a section for the Eclipse Installer 2020-06 R, which includes a download link for Windows x86\_64. On the right, there's an advertisement for Sirius modeling tools. The 'Windows x86\_64' link is circled in red, indicating it should be clicked to download the IDE.

ECLIPSE FOUNDATION

Projects Working Groups Members More

Home / Downloads / Packages / Release / Eclipse IDE 2020-06 / R

Eclipse Installer Eclipse Packages

Try the Eclipse **Installer** 2020-06 R

The easiest way to install and update your Eclipse Development Environment.

[Find out more](#)  
↓ 65,361 Installer Downloads  
↓ 1,702,721 Package Downloads and Updates

Download

macOS x86\_64  
Windows x86\_64  
Linux x86\_64

Sirius

The Easiest Way to Get Your Own Modeling Tool

DOWNLOAD NOW

The Eclipse Installer 2021-12 R now includes a JRE for macOS, Windows and Linux.

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Download x86\_64

Eclipse IDE 2020-06 R Packages

**1. 확인**

Eclipse IDE for Enterprise Java Developers

391 MB 595,814 DOWNLOADS

Tools for developers creating Java Enterprise and Web applications, including a Java IDE, tools for Web Services, JPA and Data Tools, JSF, Mylyn, Maven and Gradle, Git, and more.

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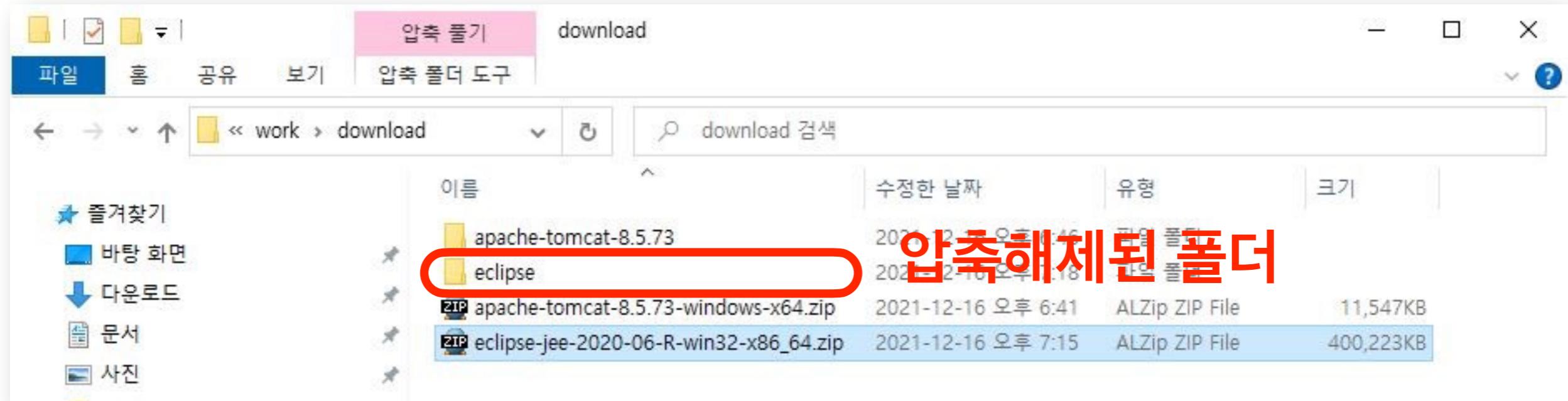
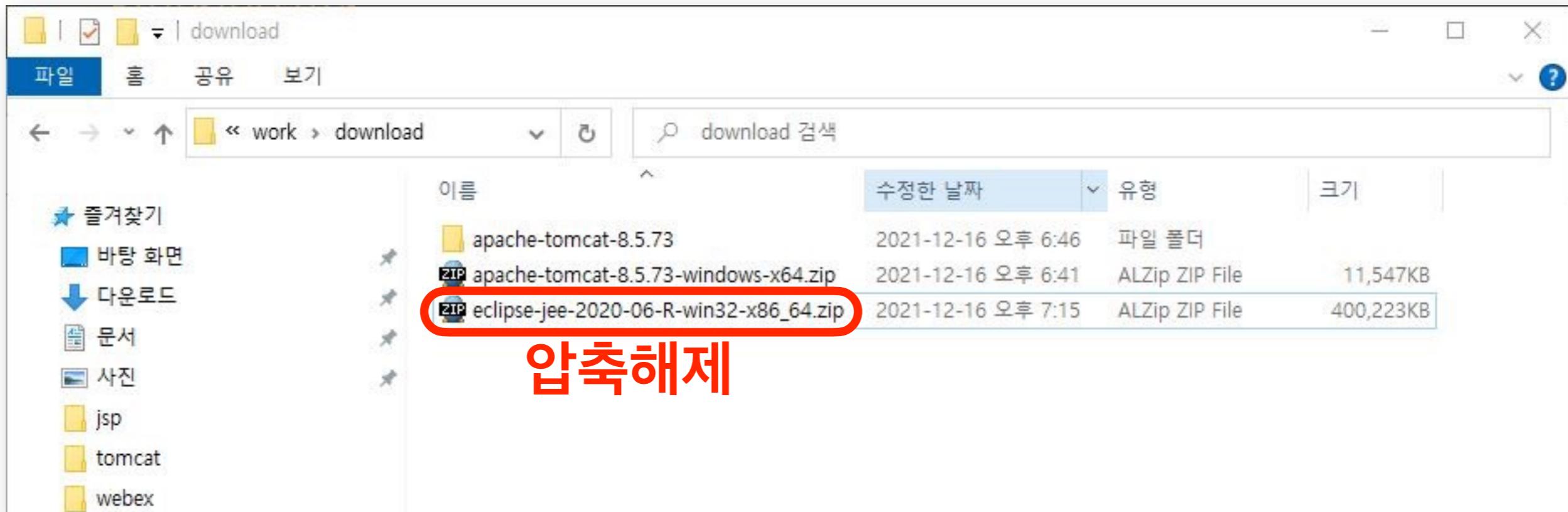
Installation of stable release of node.js is strongly recommended.

**2. 클릭**

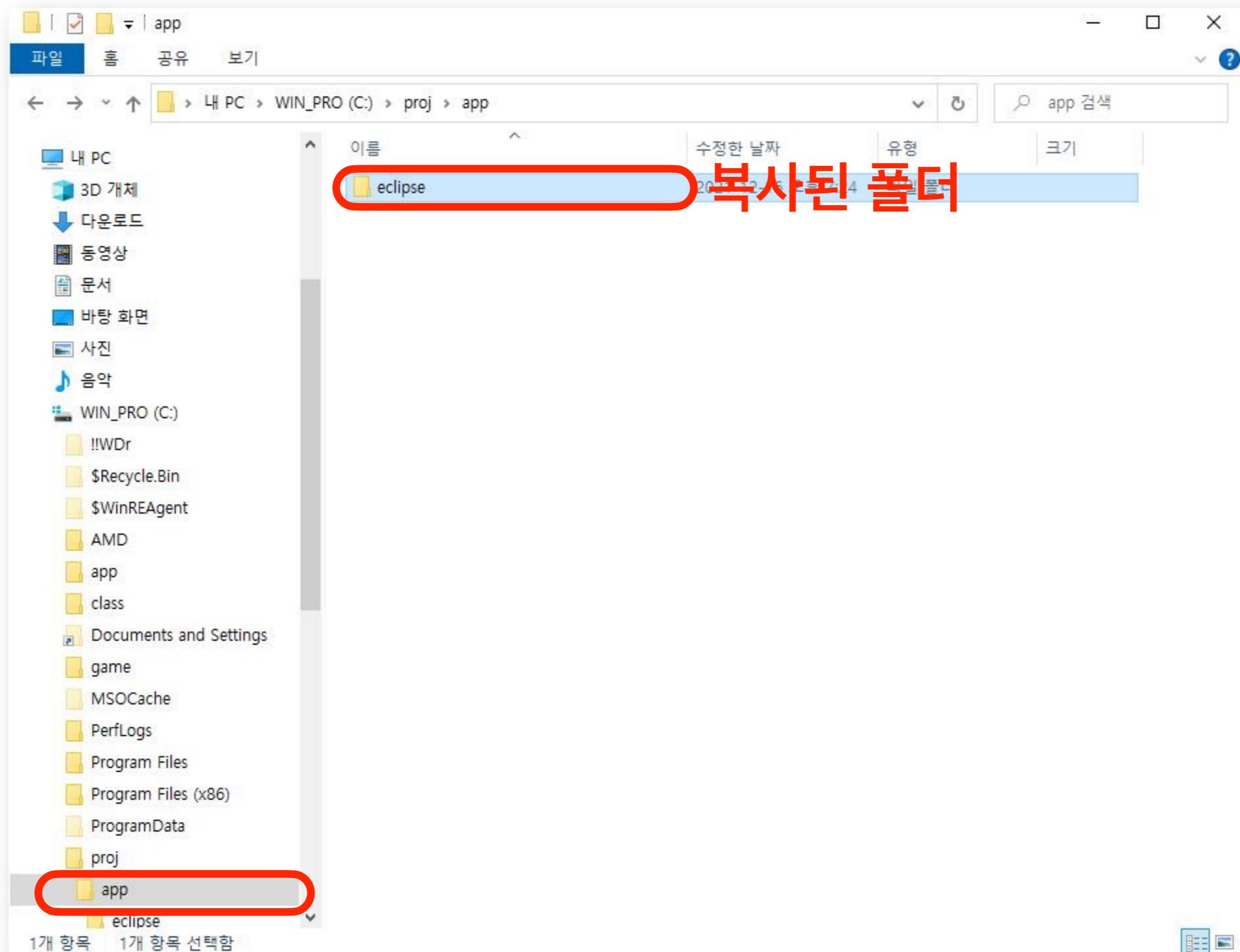
Windows x86\_64  
macOS x86\_64  
Linux x86\_64

Download Packages | Need Help?

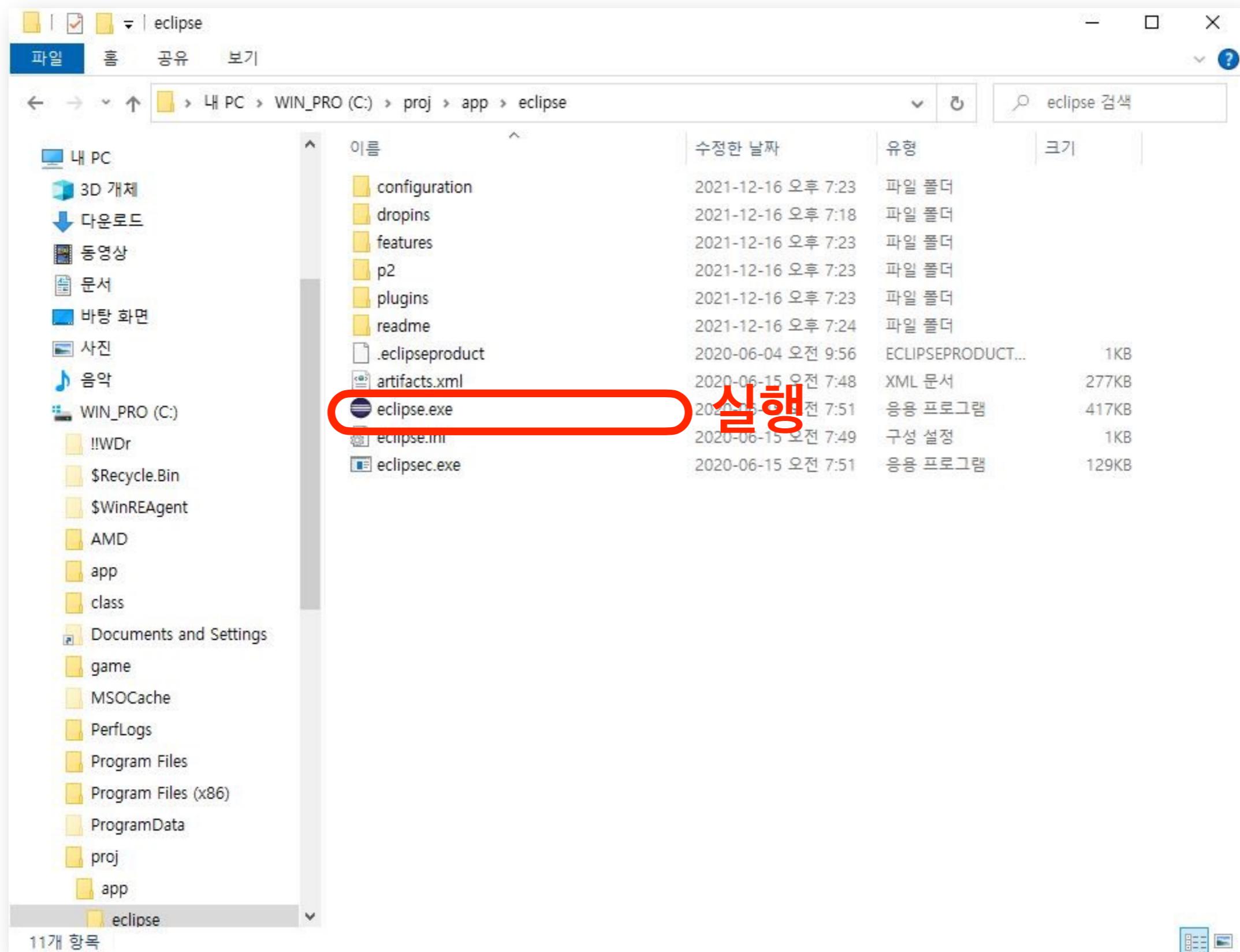
## ❖ 다운로드받은 파일을 압축해제한다.



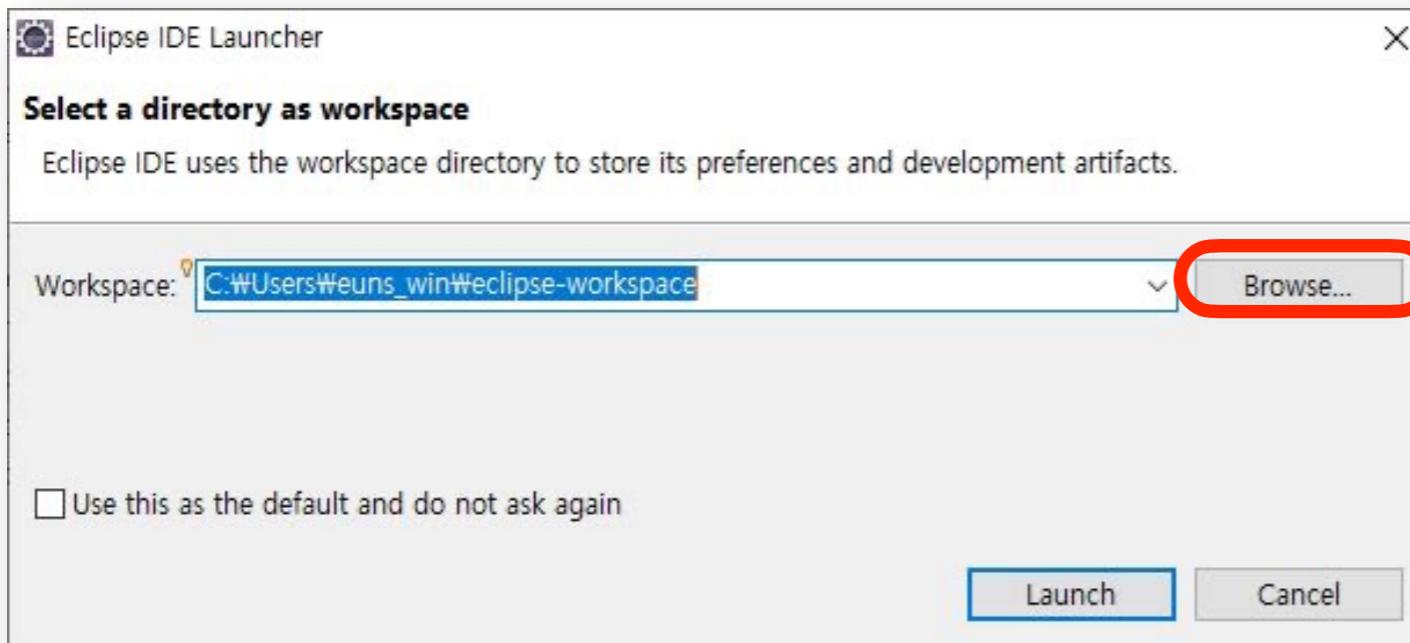
❖ 압축해제된 폴더를 c:\proj\app 폴더 하위에 복사한다.



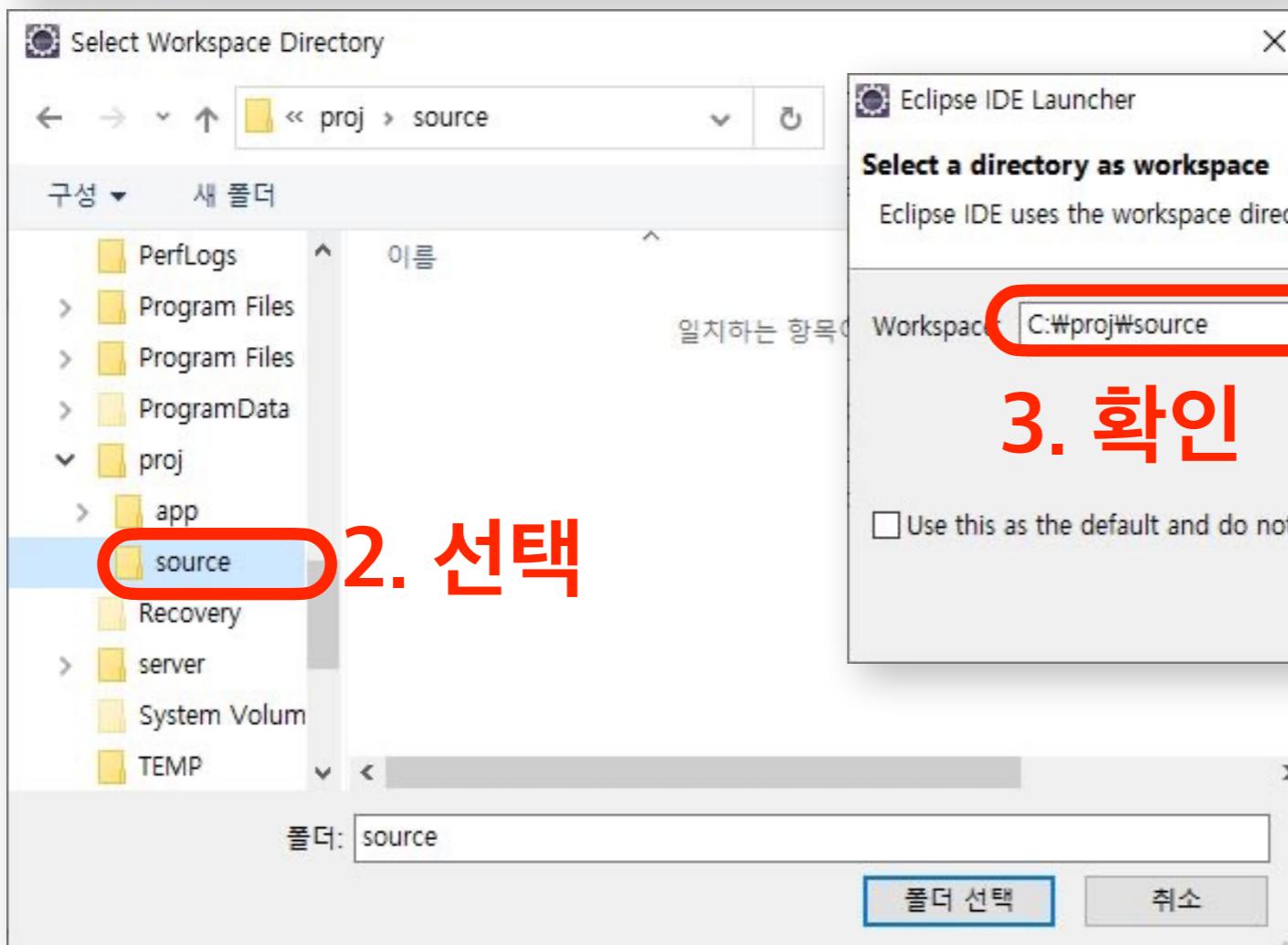
## ❖ 복사된 eclipse폴더에 들어가서 eclipse.exe파일을 실행한다.



❖ 프로젝트 작업 경로는 c:\proj\source 폴더를 선택한다.



1. 클릭

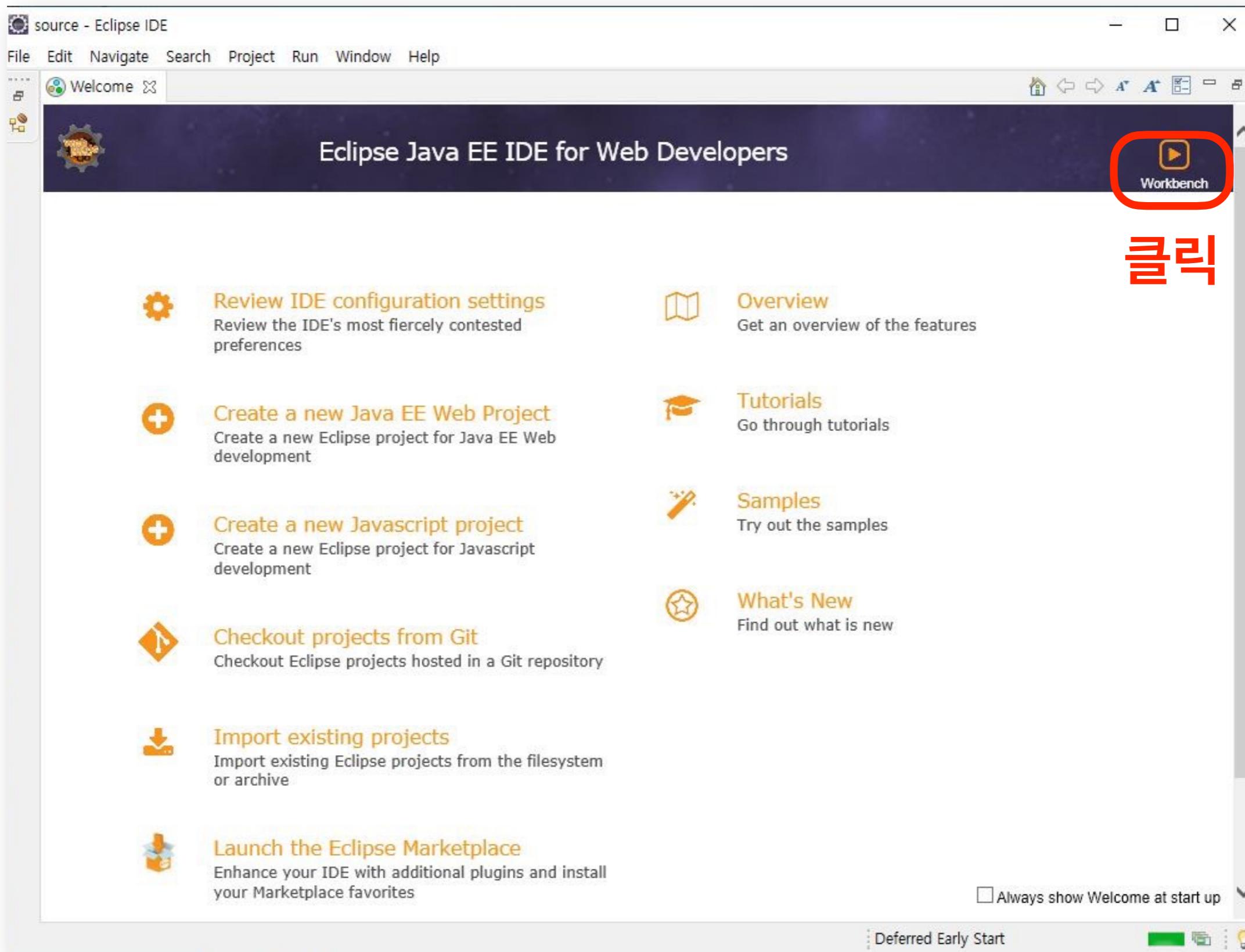


2. 선택

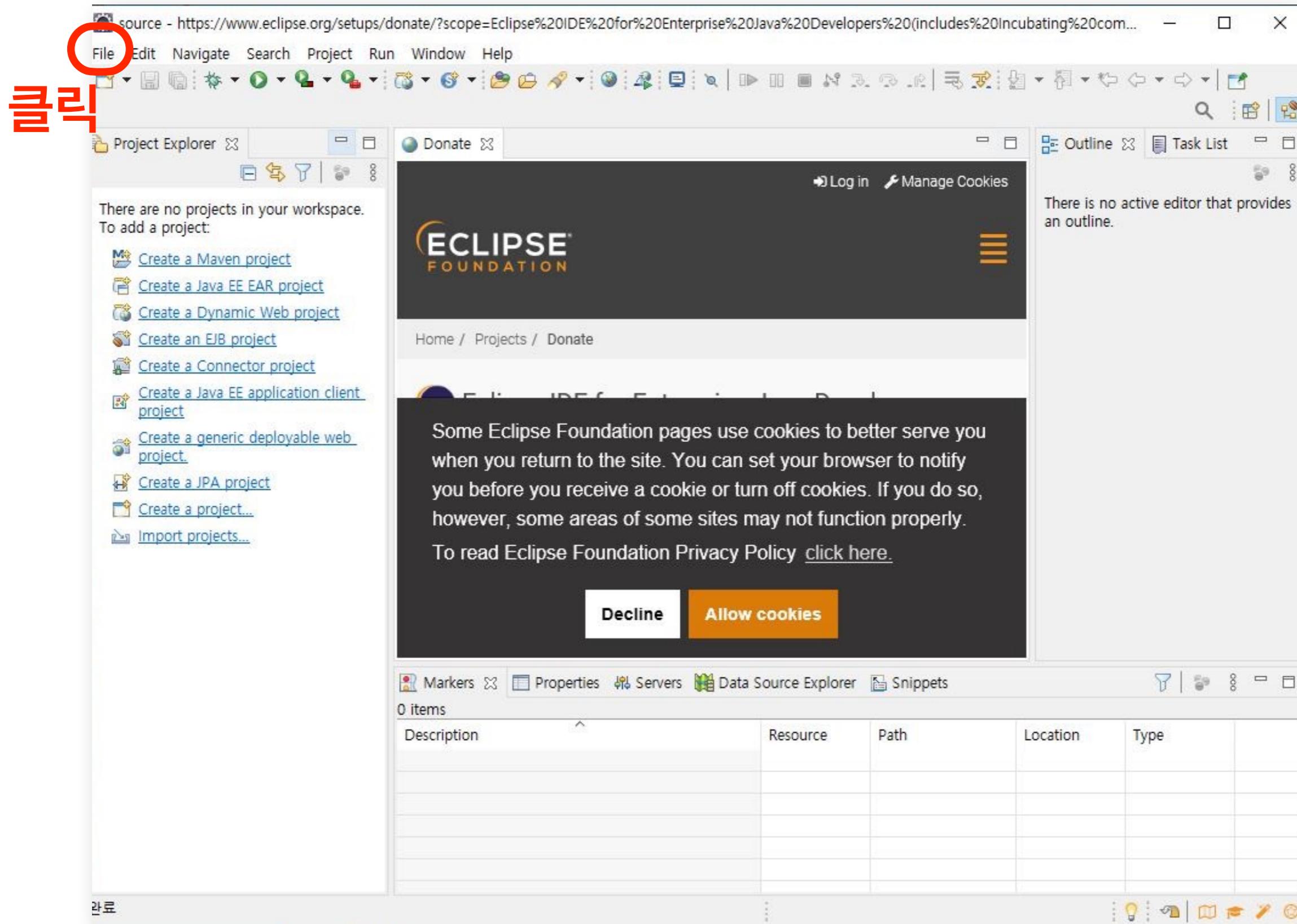
3. 확인

4. 클릭

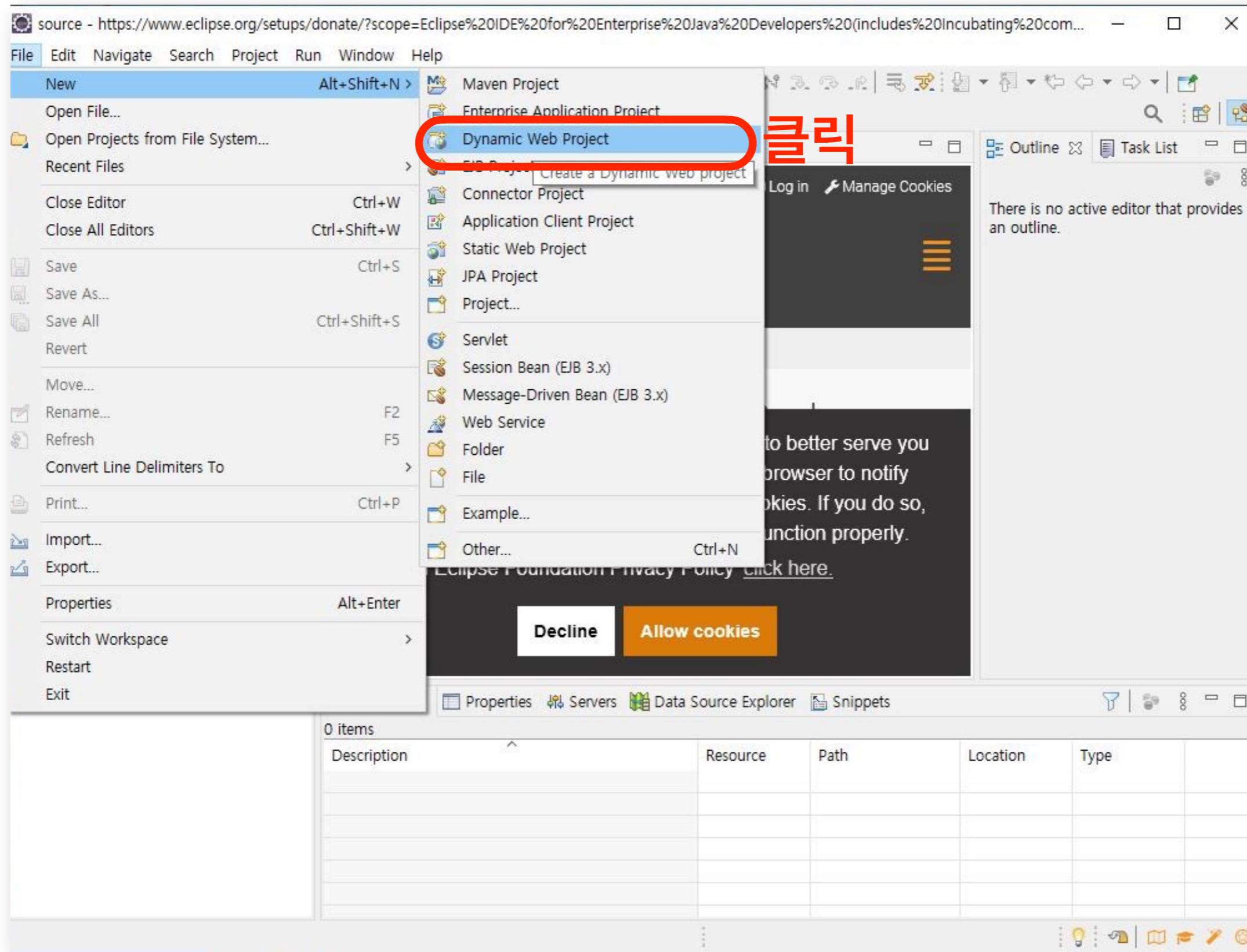
❖ Welcome창이 띄워지면 우측 상단의 Workbench 를 클릭한다.



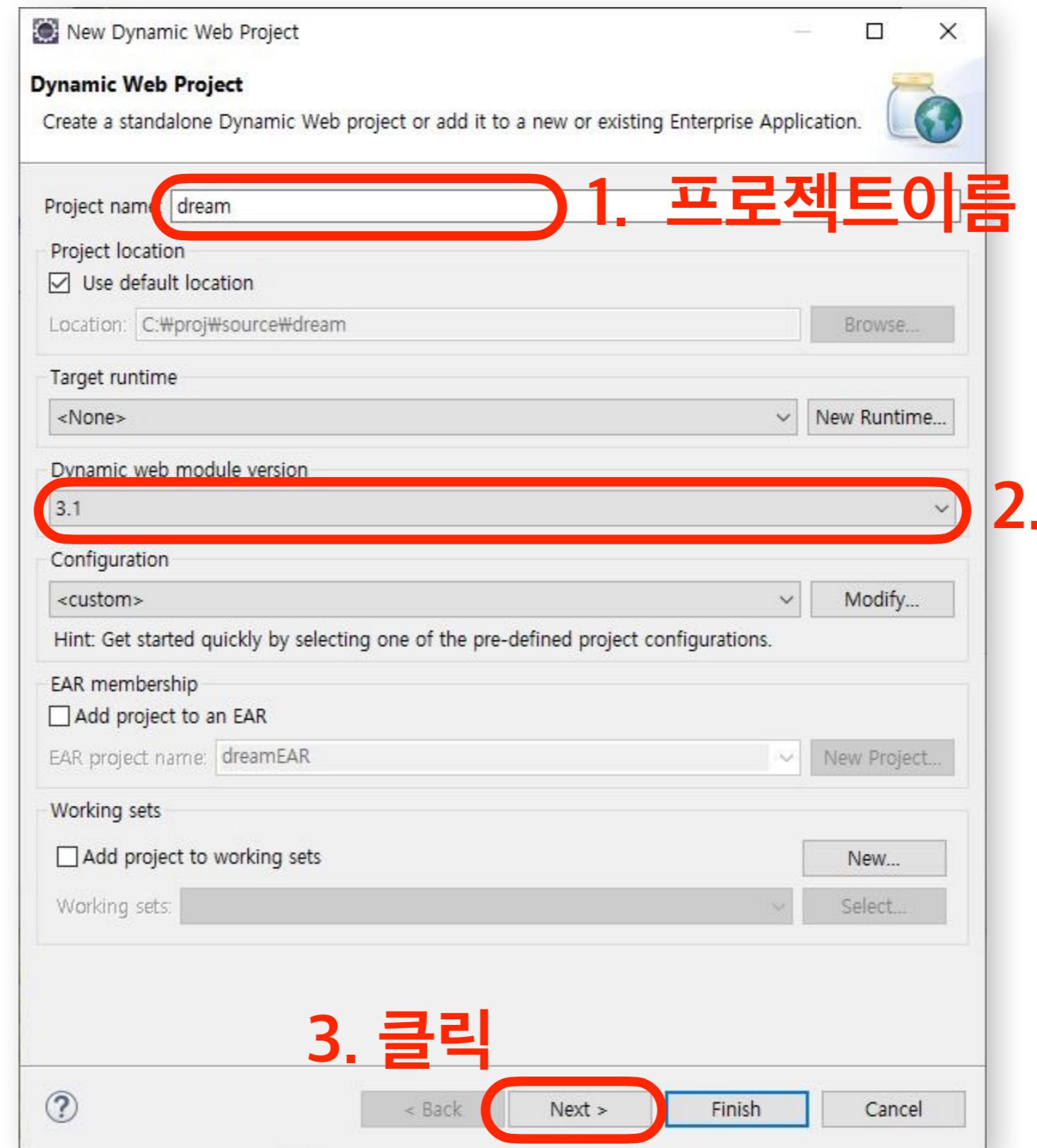
## ❖ 작업창이 띄워지면 File메뉴를 클릭한다.



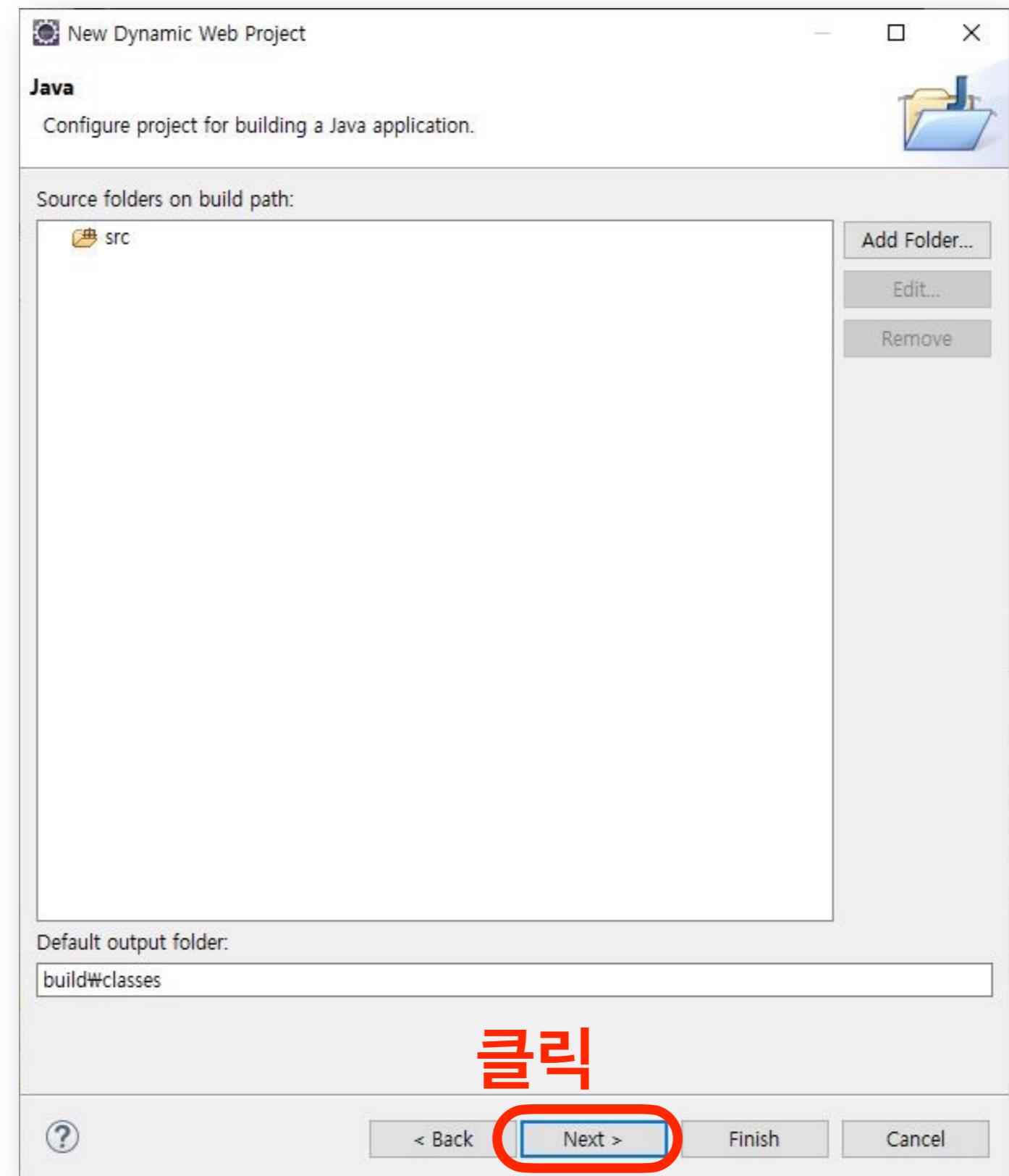
## ❖ File메뉴에서 New를 선택하고 Dynamic Web Project 를 선택한다.



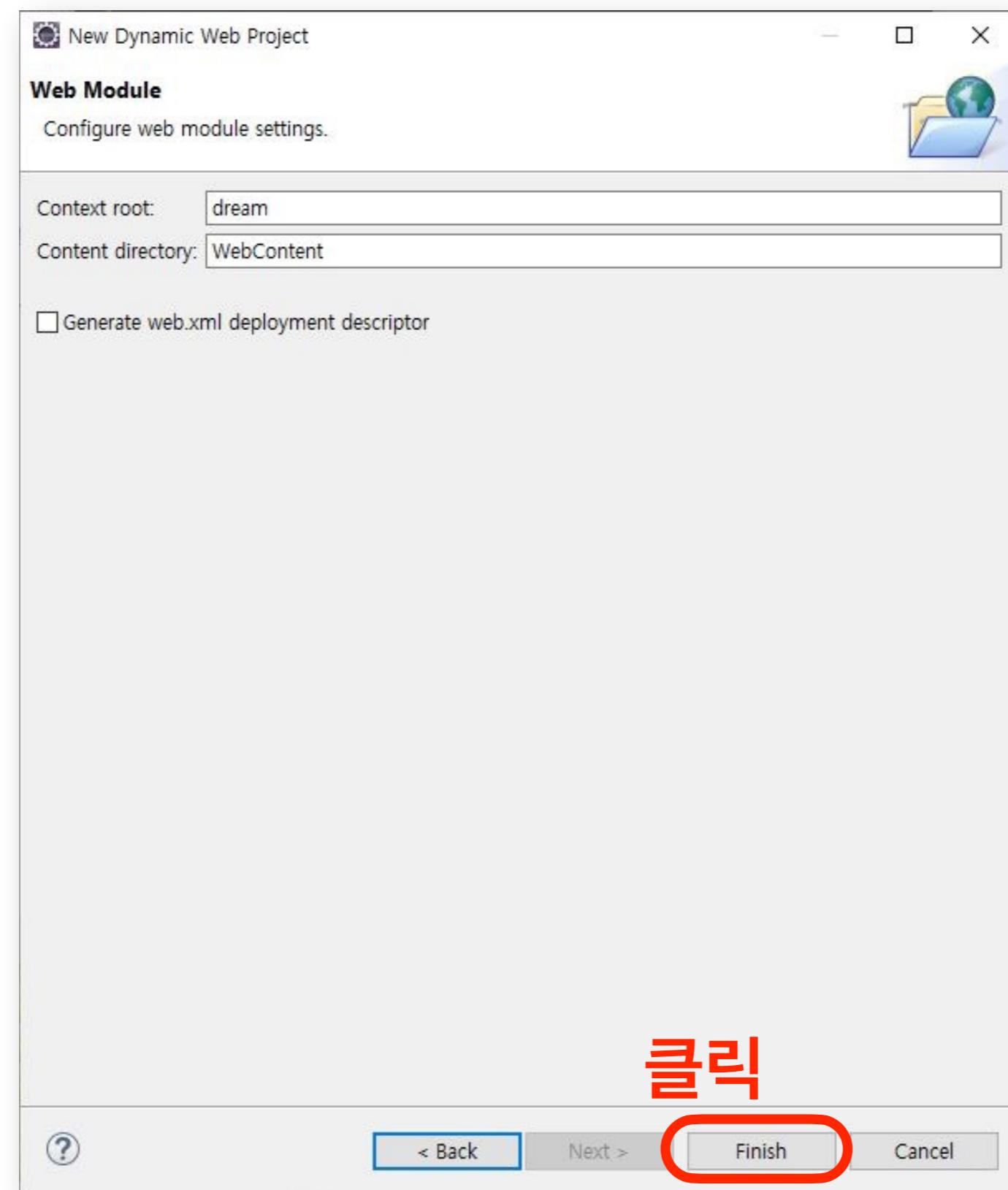
- ❖ 프로젝트 이름과 Dynamic web module version 을 설정하고 next 버튼을 클릭한다.



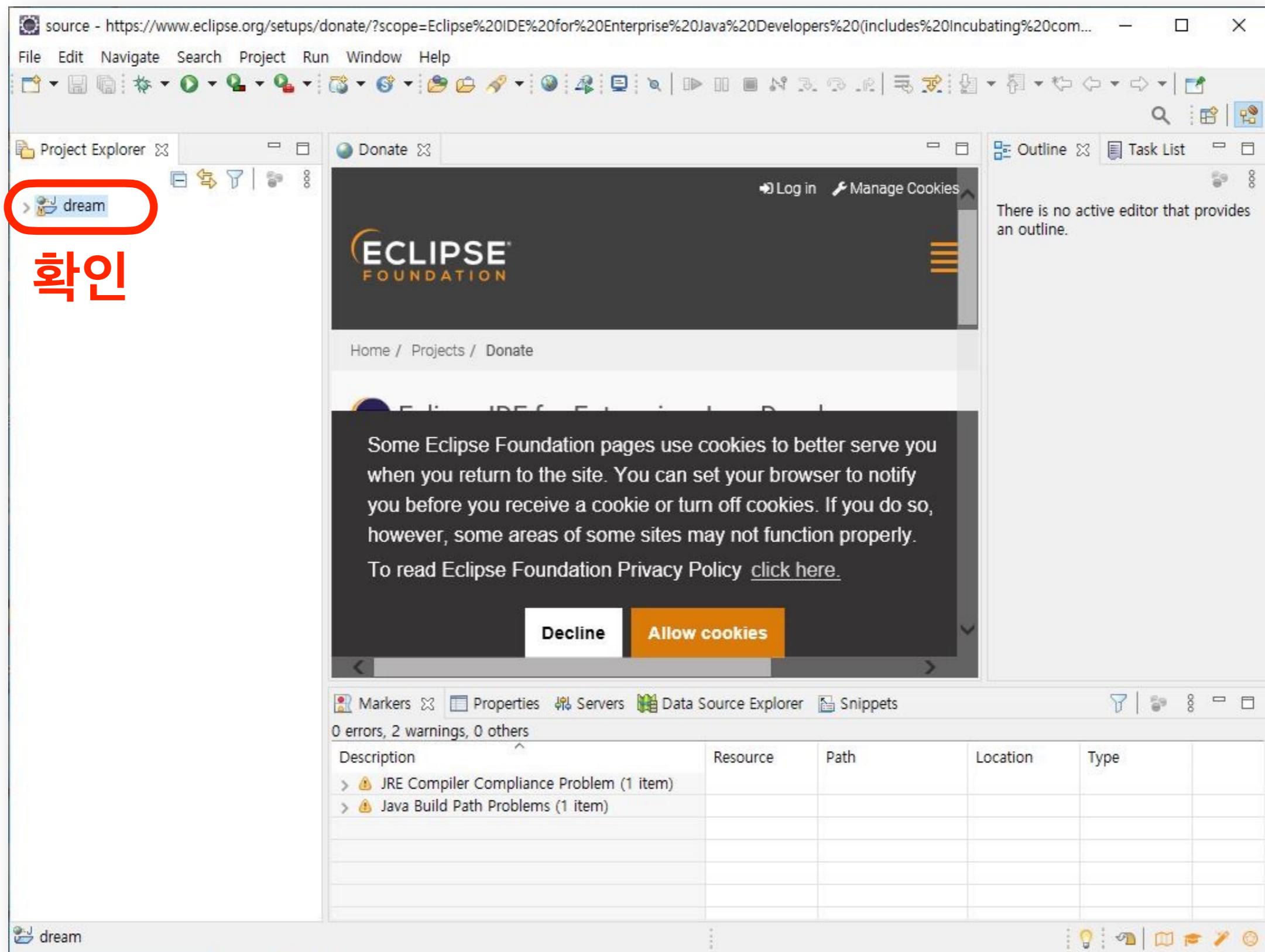
❖ Next 버튼을 클릭한다.



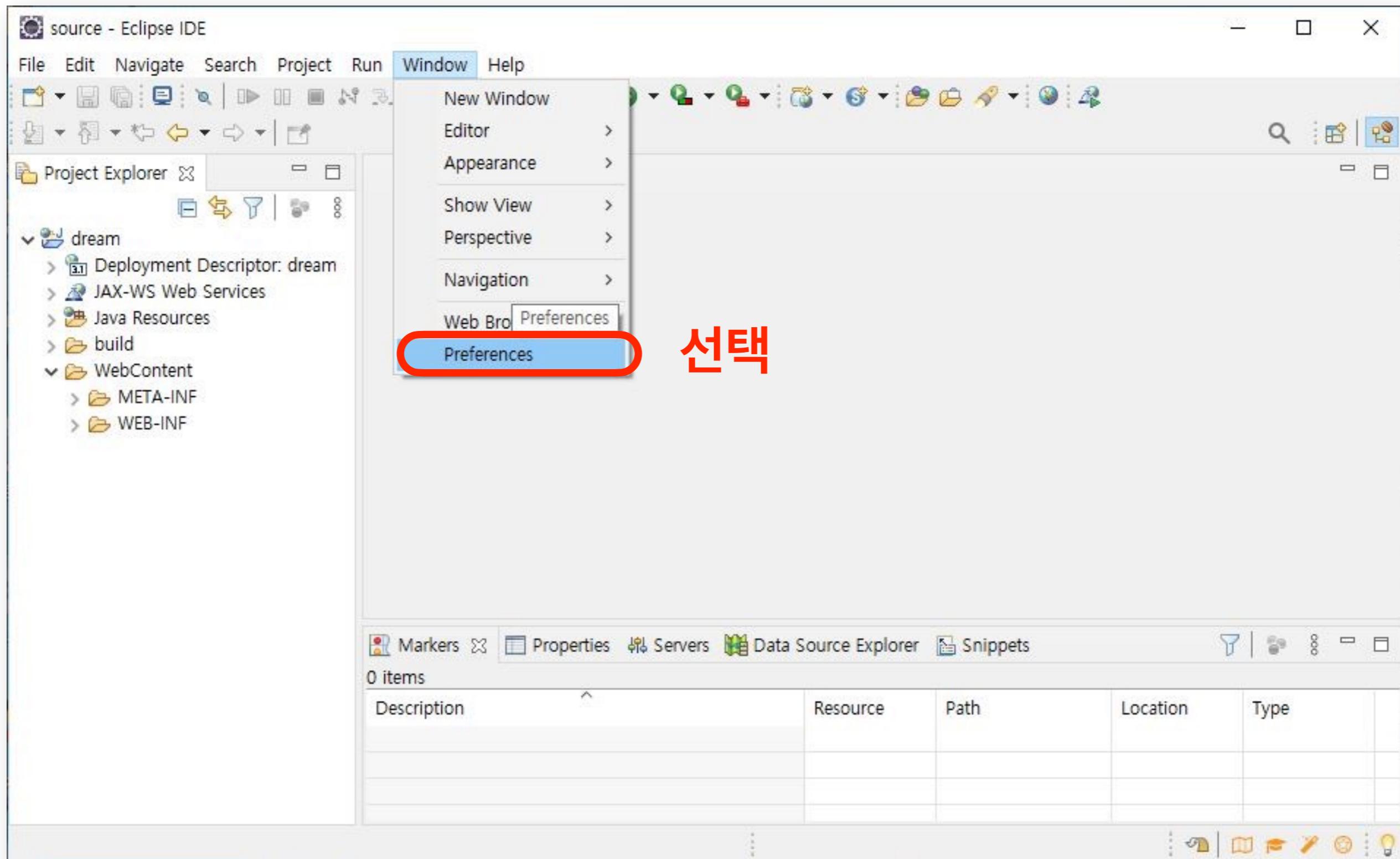
❖ Finish 버튼을 클릭한다.



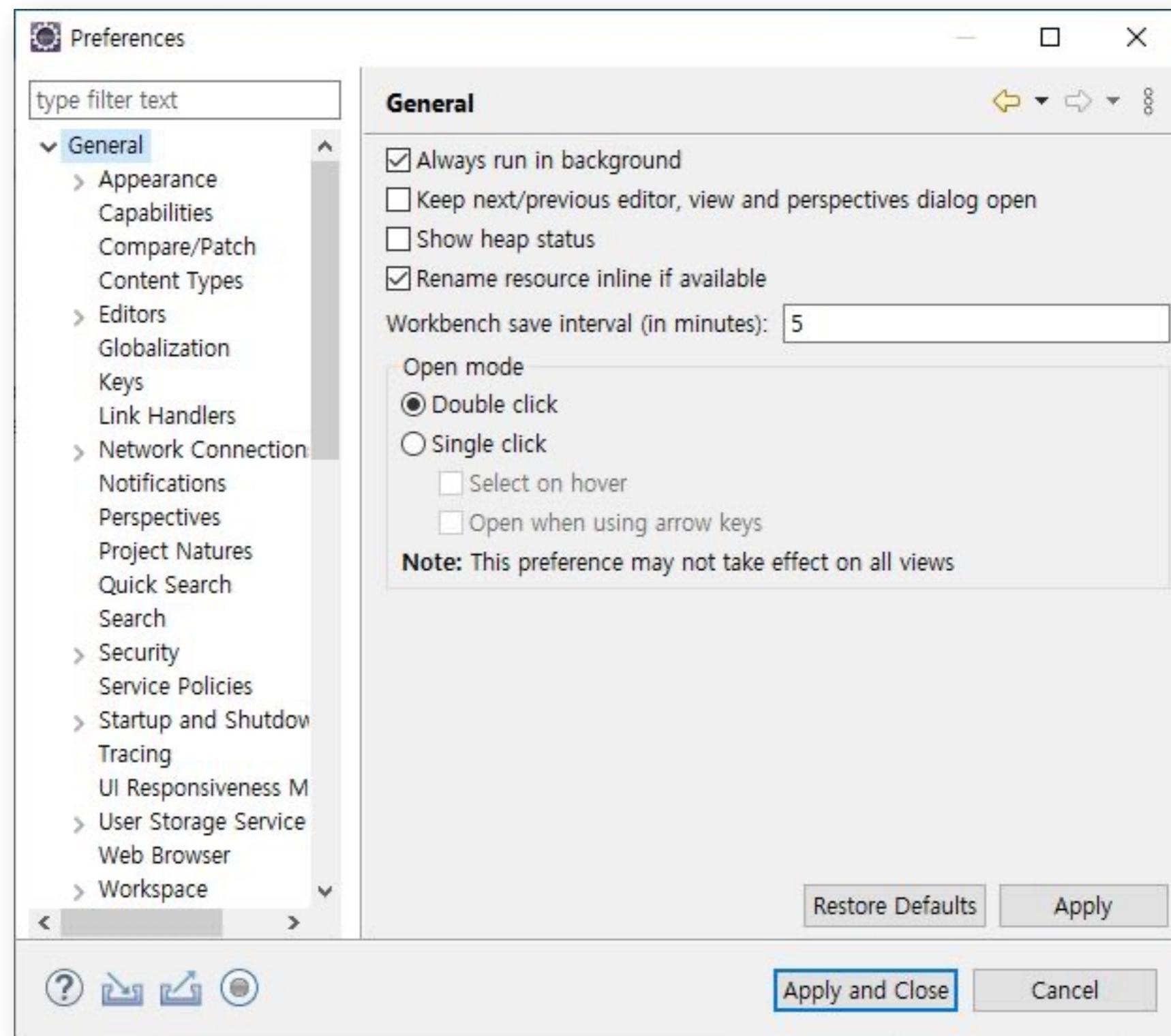
## ❖ dream 이라는 프로젝트가 만들어졌다.



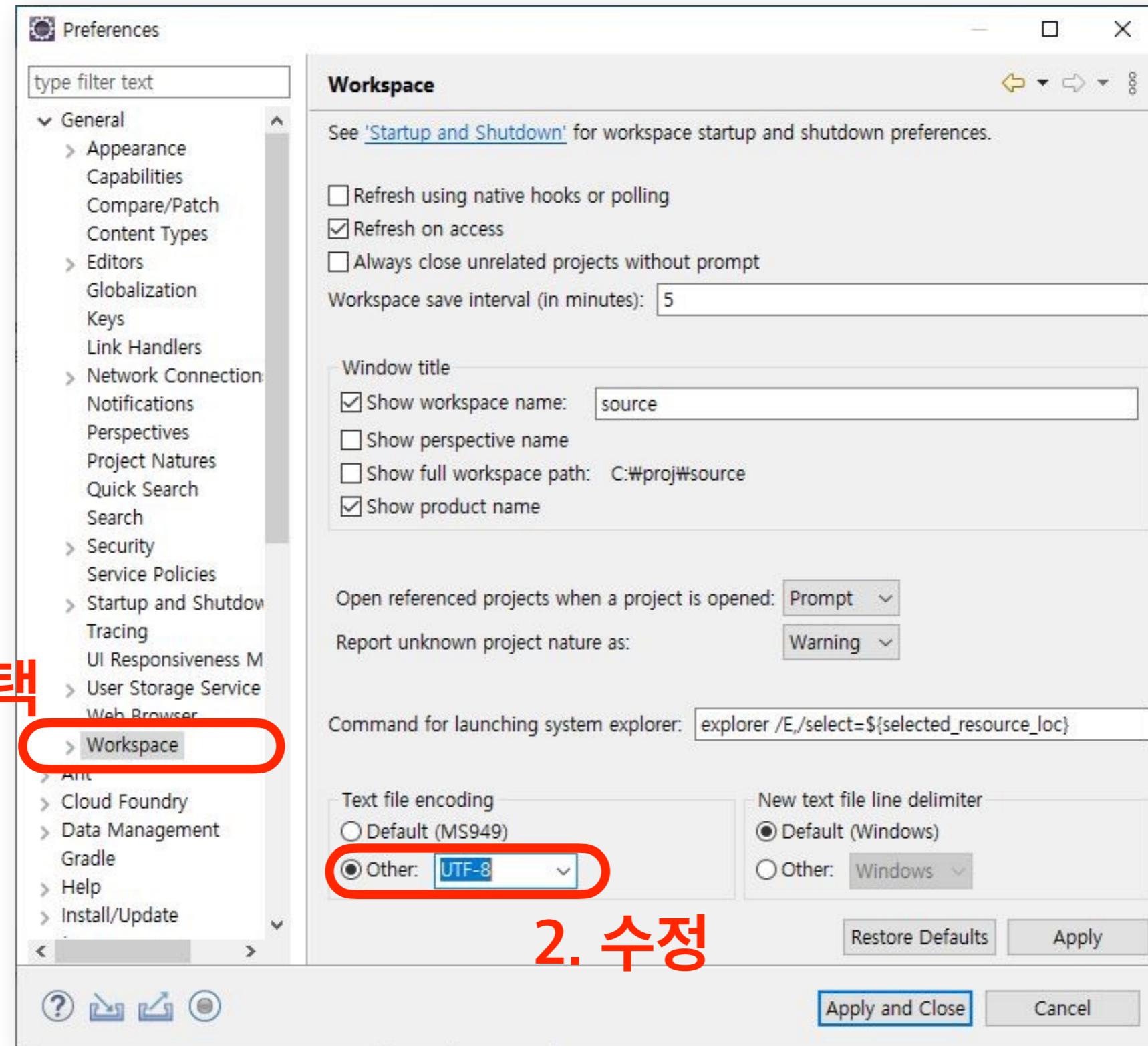
❖ 상단 Window 메뉴의 Preferences 메뉴를 선택한다.



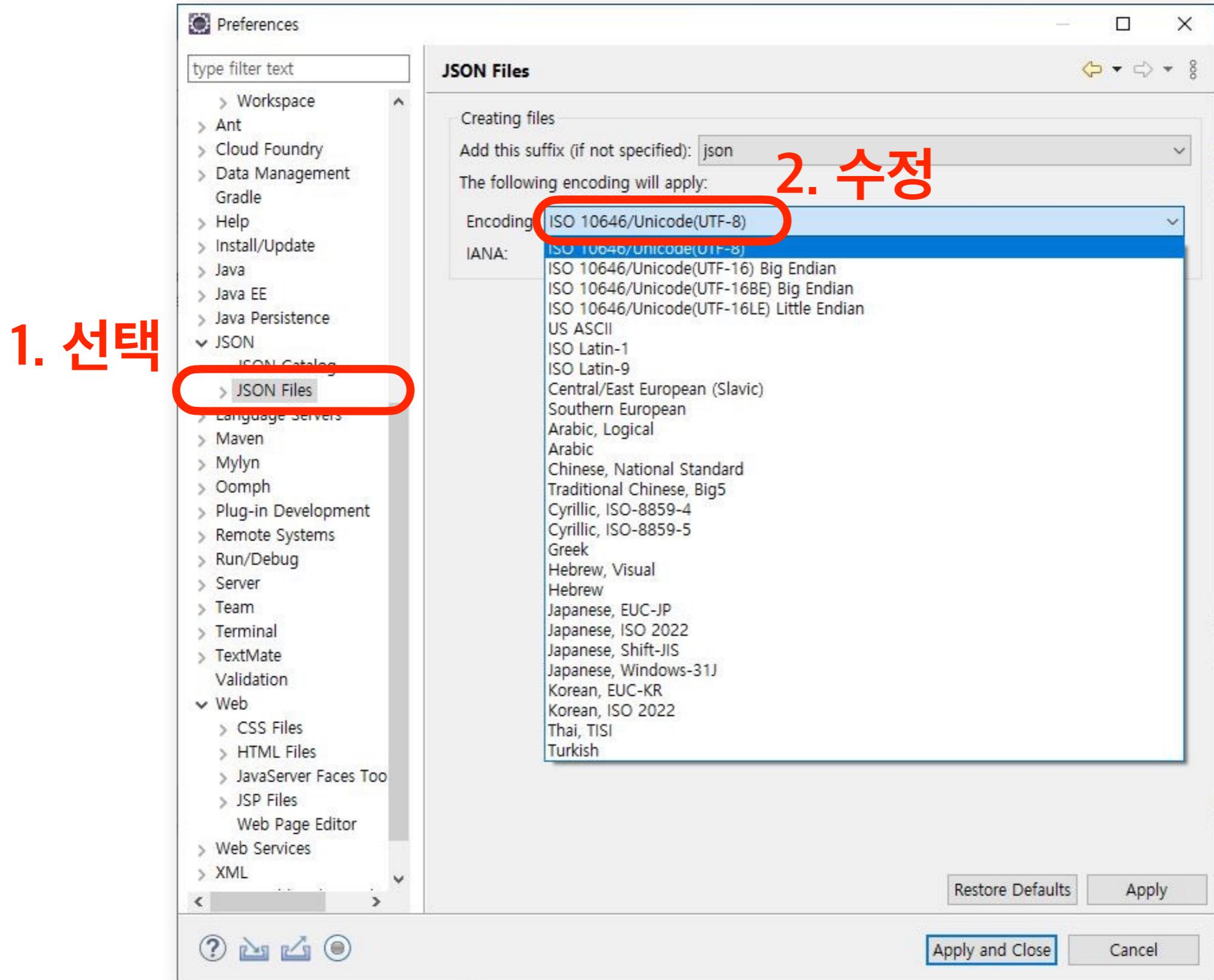
❖ 상단 Window 메뉴의 Preferences 메뉴를 선택한다.



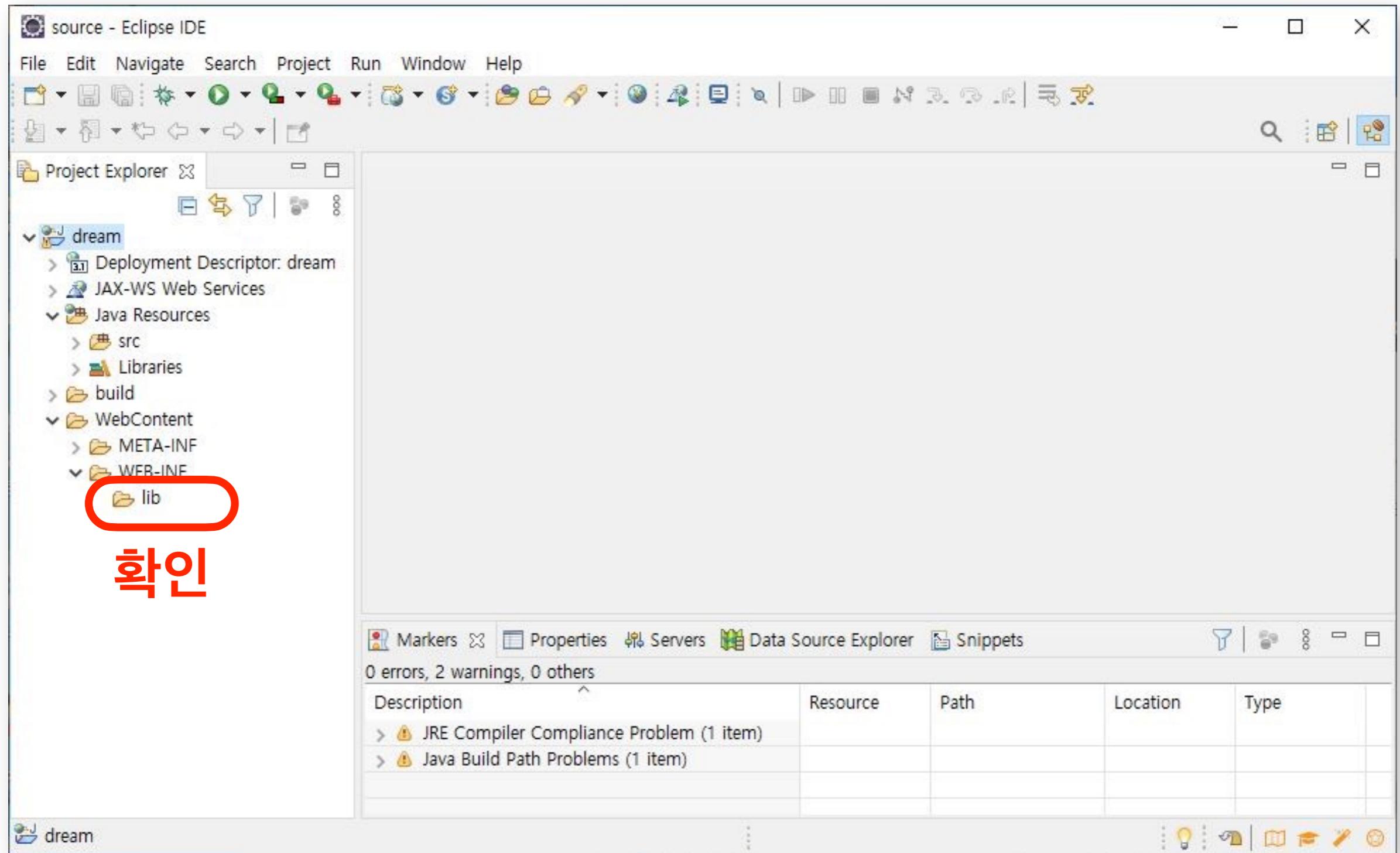
## ❖ General 항목의 Workspace 항목을 선택하고 인코딩을 설정한다.



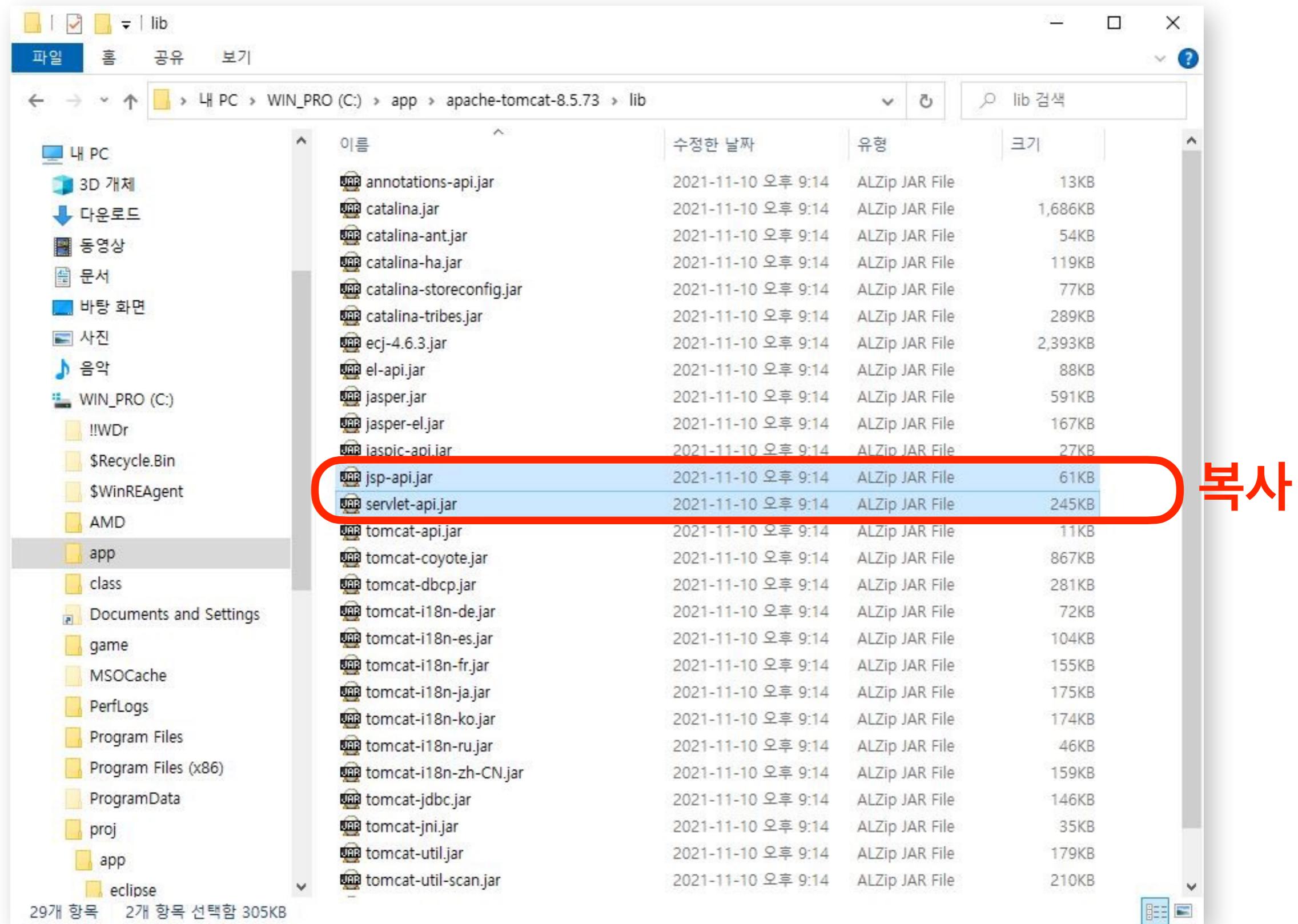
- ❖ JSON 파일 인코딩 설정을 한다.  
CSS Files, HTML Files, JSP Files도 동일한 방법으로 인코딩 설정을 해준다.



- ❖ 프로젝트 트리를 펼쳐서 WebContent폴더 하위의 WEB-INF 폴더를 찾고 그 하위의 lib 폴더를 찾는다.



- ❖ 톰캣이 설치된 폴더를 찾아서 하위의 lib폴더내의 jsp-api.jar, servlet-api.jar 파일을 복사해서 이클립스 작업창의 lib폴더에 복사한다.



❖ 메이븐 저장소 사이트(<https://mvnrepository.com/>)에 접속해서 jstl 을 검색한다.

The screenshot shows the Maven Repository search results page for the query 'jstl'. A red box highlights the search bar containing 'jstl' and the search button. The results list several artifacts related to JSTL:

- Payara Embedded All**: fish.payara.extras » payara-embedded-all » 5.2021.10. 23 usages. Last Release on Jun 17, 2021.
- Alchemist Interfaces**: it.unibo.alchemist » alchemist-interfaces » 12.1.3. 40 usages. Interfaces of core and model components of Alchemist. Last Release on Dec 15, 2021.
- Alchemist Implementation Base**: it.unibo.alchemist » alchemist-implementationbase » 12.1.3. 37 usages. Abstract, incarnation independent implementations of the Alchemist's interfaces. Provides support for those who want to write incarnations. Last Release on Dec 15, 2021.
- Alchemist Core Engine**: it.unibo.alchemist » alchemist-engine » 12.1.3. 18 usages. Alchemist core simulation engine. Last Release on Dec 15, 2021.
- Alchemist Loading**: it.unibo.alchemist » alchemist-loading » 12.1.3. 18 usages. Alchemist Machinery to load from files. Last Release on Dec 15, 2021.
- Alchemist Maps**: it.unibo.alchemist » alchemist-maps » 12.1.3. 14 usages.

On the left sidebar, there is a graph titled 'What's New in Maven' showing the number of projects over time, and a list of 'Popular Categories' including Aspect Oriented, Actor Frameworks, Application Metrics, Build Tools, Bytecode Libraries, Command Line Parsers, Cache Implementations, Cloud Computing, Code Analyzers, Collections, Configuration Libraries, Core Utilities, Date and Time Utilities, Dependency Injection, Embedded SQL Databases, HTML Parsers, HTTP Clients, I/O Utilities, JDBC Extensions, JDBC Pools, JPA Implementations, JSON Libraries, JVM Languages, and Logging Frameworks.

On the right sidebar, there are sections for 'Indexed Repositories (1351)' (Central, Sonatype, Atlassian, Hortonworks, Spring Plugins, Spring Lib M, JCenter, Atlassian Public, JBossEA, BeDataDriven) and 'Popular Tags' (amazon, android, apache, api, application, assets, aws, build, build-system, camel, client, clojure, cloud, config, data, database, eclipse, example, extension, framework, github, gradle, groovy, http, io, jboss, library, logging, maven, module, osgi, persistence, platform, plugin, repository, rest, rlang, scala, sdk, security, server, service, spring, starter).

## ❖ 검색된 결과중 두번째를 선택한다.

mvnrepository.com/search?q=jstl

MVNREPOSITORY jstl Search

**Repository**

- Central 84
- Sonatype 18
- Spring Lib M 15
- Spring Plugins 12
- Redhat GA 8
- JCenter 6
- Mulesoft 6
- IBiblio 5

**Group**

- com.github 14
- org.apache 10
- javax.servlet 8
- org.glassfish 7
- io.github 5
- org.beigesoft 5
- maven-repository.org 4
- org.eclipse 4

**Category**

- Java Spec 9
- JSP Tag Library 4
- Maven Archetype 4
- Web App 4
- Expression Lang 1

**License**

- Apache 61
- GPL 25

**Found 120 results**

Sort: [relevance](#) | [popular](#) | [newest](#)

**1. JSTL**  
javax.servlet.jsp.jstl » jstl  
JSTL  
Last Release on May 14, 2015  
**8 usages**  
GPL CDDL

**2. JSTL**  
javax.servlet » jstl  
JSTL  
Last Release on Jun 23, 2011  
**1,841 usages**  
GPL CDDL

**3. JSTL**  
jstl » jstl  
JSTL  
Last Release on May 12, 2006  
**277 usages**

**4. JavaServer Pages(TM) Standard Tag Library**  
javax.servlet.jsp.jstl » jstl-api  
JavaServer Pages(TM) Standard Tag Library  
Last Release on Jun 15, 2011  
**117 usages**  
GPL GPL CDDL

**5. JavaServer Pages (TM) TagLib Implementation**  
org.glassfish.web » jstl-impl  
JavaServer Pages (TM) TagLib Implementation  
Last Release on Jun 15, 2011  
**284 usages**  
GPL GPL CDDL

1. 클릭

2. 클릭

## ❖ 상세페이지에서 1.2를 클릭한다.

The screenshot shows the Maven Repository page for the JSTL artifact. The URL in the address bar is [mvnrepository.com/artifact/javax.servlet/jstl](http://mvnrepository.com/artifact/javax.servlet/jstl). The page displays the following information:

- Indexed Artifacts (24.8M)**: A chart showing the number of projects indexed over time from 2006 to 2016.
- JSTL**: The artifact name.
- License**: CDDL | GPL 2.0
- Categories**: Java Specifications
- Tags**: servlet | javax | specs | standard
- Used By**: 1,841 artifacts

A note indicates that the artifact was moved to `javax.servlet.jsp.jstl > jstl`.

The central table lists versions of the artifact:

Version	Repository	Usages	Date
1.2	Central	1,379	Jun, 2011
1.1.2	Central	400	Nov, 2005
1.1.x	Central	10	Nov, 2005
1.1.1	Central	30	Nov, 2005
1.1.0	Central	30	Nov, 2005
1.0.6	Central	39	Nov, 2005
1.0.5	Central	3	Nov, 2005
1.0.4	Central	0	Nov, 2005
1.0.x	Central	2	Nov, 2005
1.0.3	Central	13	Nov, 2005
1.0.2	Central	0	Nov, 2005
1.0.1	Central	0	Nov, 2005
1.0	Central	17	Nov, 2005

A red circle highlights the '1.2' version in the table. To the right of the table, the Korean word '클릭' (Click) is written in red.

On the right side of the page, there are two Microsoft 365 advertisements:

- Microsoft 365**: 안전한 클라우드 서비스로 비즈니스 운영 (Business operations with a safe cloud service)
- Microsoft 365**: 수기업용으로 가격 책정된 (Priced for business)

## ❖ Files 항목의 jar를 클릭해서 다운로드받는다.

The screenshot shows a browser window displaying the Maven Repository page for the artifact `javax.servlet:jstl:1.2`. The page includes a search bar, navigation links, and a sidebar with popular categories. A red circle highlights the `jar (404 KB)` link under the **Files** section. A large red arrow points to this link with the Korean text **클릭** (Click). Below the files section, there is a code snippet for Maven dependency declaration and a checkbox for including comments. The right side of the page features three Microsoft 365 advertisements.

Maven Repository: javax.servlet

mvnrepository.com/artifact/javax.servlet/jstl/1.2

**MVNREPOSITORY**

Indexed Artifacts (24.8M)

Projects (millions) Year

JSTL » 1.2

License: CDDL, GPL 2.0

Categories: Java Specifications

Date: (Jun 23, 2011)

Files: pom (356 bytes), **jar (404 KB)**, View All

Repositories: Central, EBI Public, Redhat GA, WSO2 Dist

Used By: 1,841 artifacts

Maven Gradle Gradle (Short) Gradle (Kotlin) SBT Ivy Gape Leiningen Buildr

```
<!-- https://mvnrepository.com/artifact/javax.servlet/jstl -->
<dependency>
    <groupId>javax.servlet</groupId>
    <artifactId>jstl</artifactId>
    <version>1.2</version>
</dependency>
```

Include comment with link to declaration

**Compile Dependencies (0)**

Category/License	Group / Artifact	Version	Updates
------------------	------------------	---------	---------

**Provided Dependencies (1)**

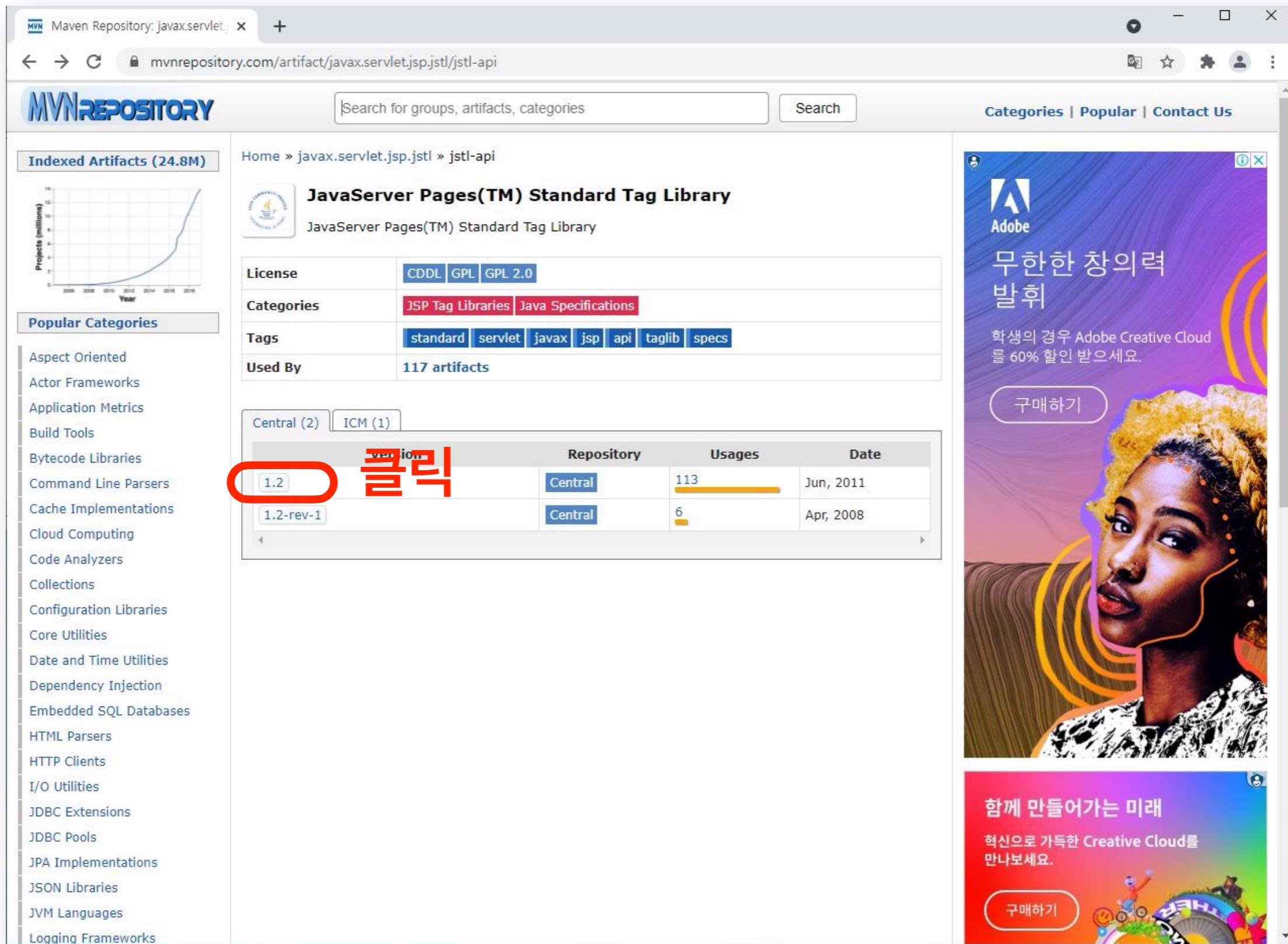
Category/License	Group / Artifact	Version	Updates
------------------	------------------	---------	---------

**Microsoft 365** 안전한 클라우드 서비스로 비즈니스 운영 협업, 일정 예약, 계획, 의사소통 등

**Microsoft 365** 올인원 협업 허브 제공 비디오, 통화, 채팅, 파일 공유 등

**Microsoft 365** 수기 인용으로 가격 책정되

## ❖ Standard Tag Library 도 같은 방법으로 다운로드 받는다.



The screenshot shows the Maven Repository page for the JavaServer Pages(TM) Standard Tag Library. The URL in the address bar is [mvnrepository.com/artifact/javax.servlet.jsp.jstl/jstl-api](http://mvnrepository.com/artifact/javax.servlet.jsp.jstl/jstl-api). The page displays the following information:

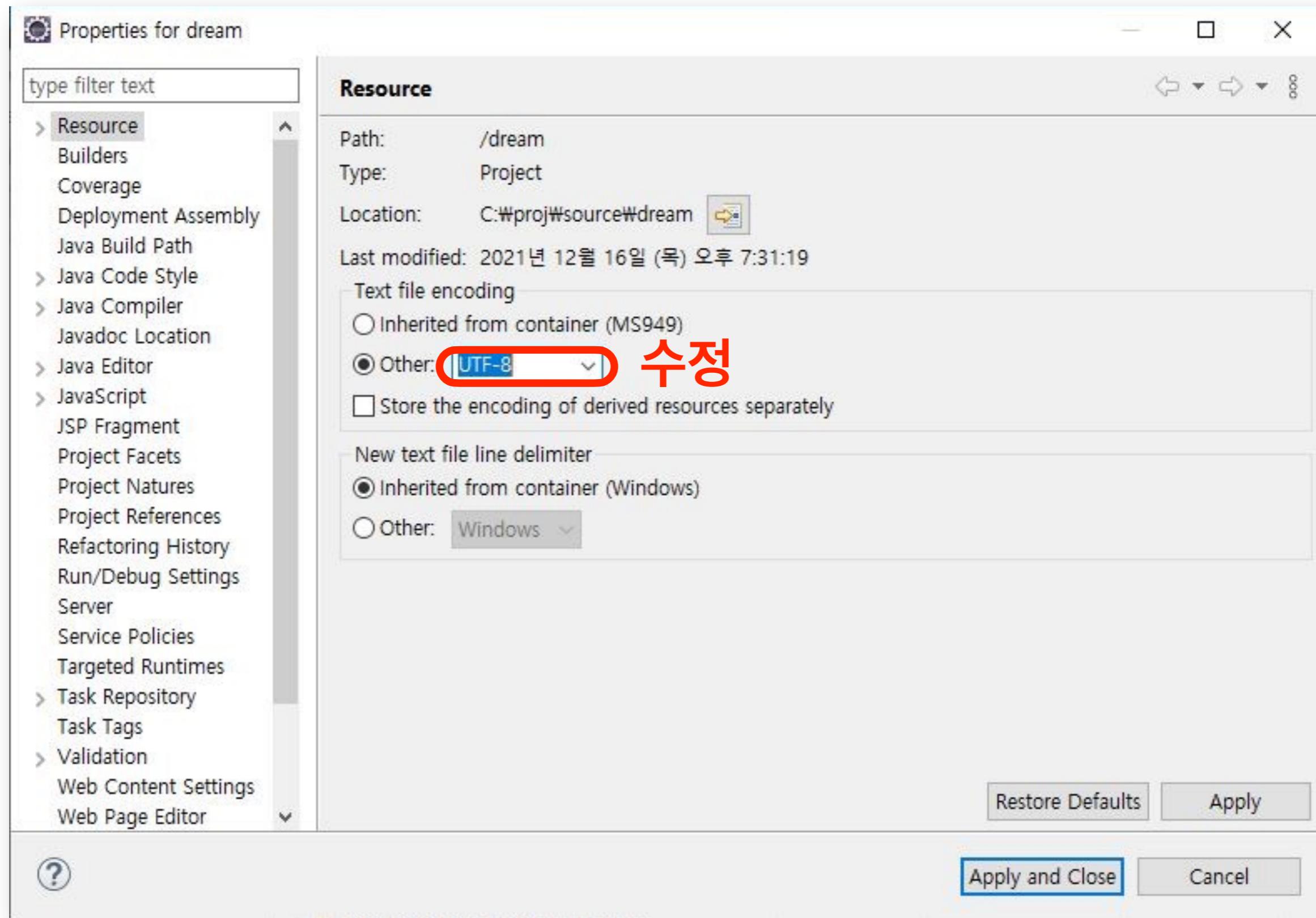
- Indexed Artifacts (24.8M)**: Includes a graph showing the number of projects over time from 2008 to 2016.
- Popular Categories**: Lists various software categories such as Aspect Oriented, Actor Frameworks, Application Metrics, Build Tools, Bytecode Libraries, Command Line Parsers, Cache Implementations, Cloud Computing, Code Analyzers, Collections, Configuration Libraries, Core Utilities, Date and Time Utilities, Dependency Injection, Embedded SQL Databases, HTML Parsers, HTTP Clients, I/O Utilities, JDBC Extensions, JDBC Pools, JPA Implementations, JSON Libraries, JVM Languages, and Logging Frameworks.
- JavaServer Pages(TM) Standard Tag Library**: Main title and subtitle.
- License**: CDDL, GPL, GPL 2.0.
- Categories**: JSP Tag Libraries, Java Specifications.
- Tags**: standard, servlet, javax, jsp, api, taglib, specs.
- Used By**: 117 artifacts.
- Central (2) ICM (1)**: Repository statistics table:

version	Repository	Usages	Date
1.2	Central	113	Jun, 2011
1.2-rev-1	Central	6	Apr, 2008

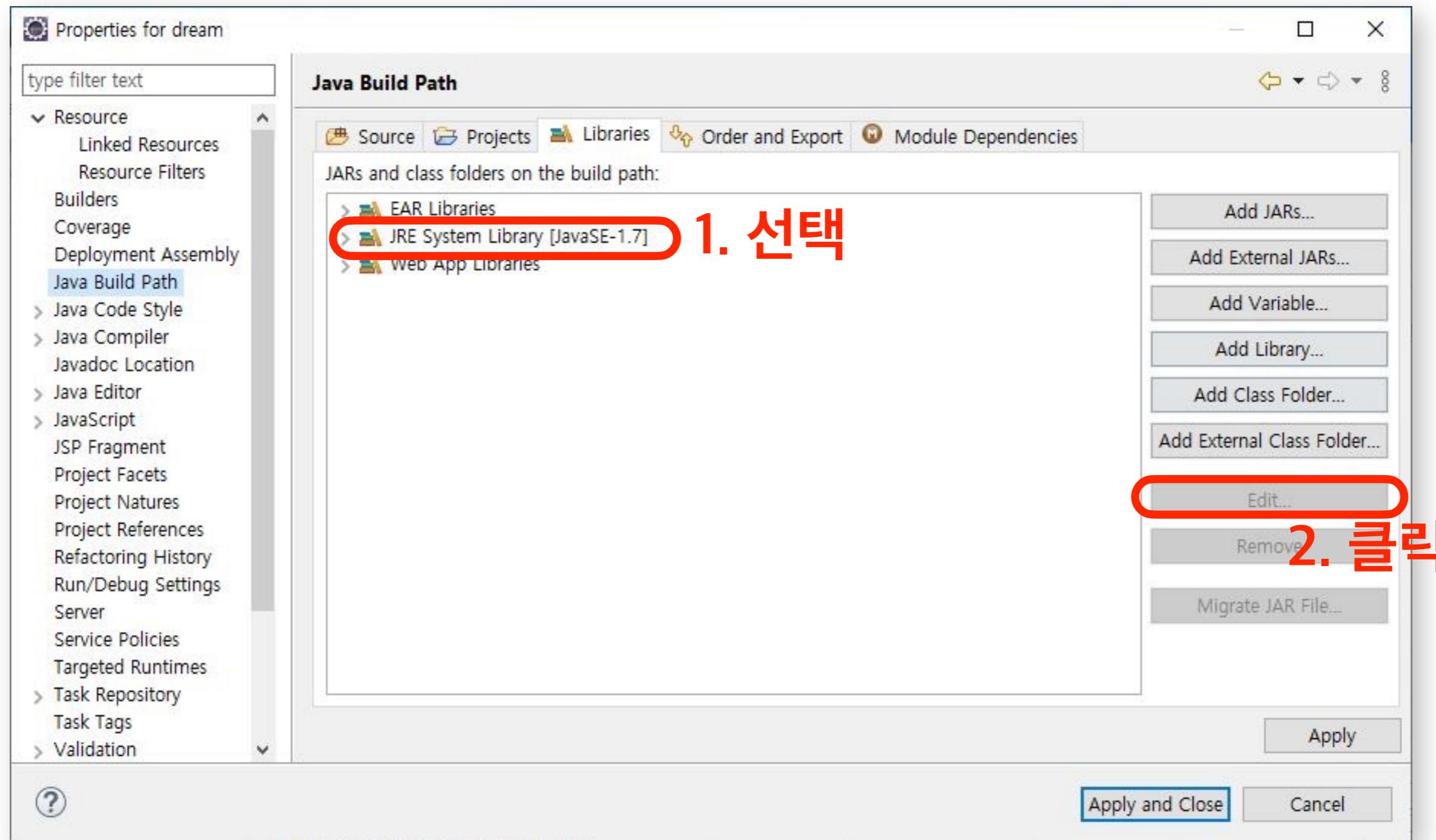
A large red circle highlights the '1.2' link in the 'version' column of the table. The word '클릭' (click) is overlaid in red text next to the circled link.

\* 다운로드 받은 두 파일 모두 이클립스 작업창의 lib폴더에 복사해서 넣는다.

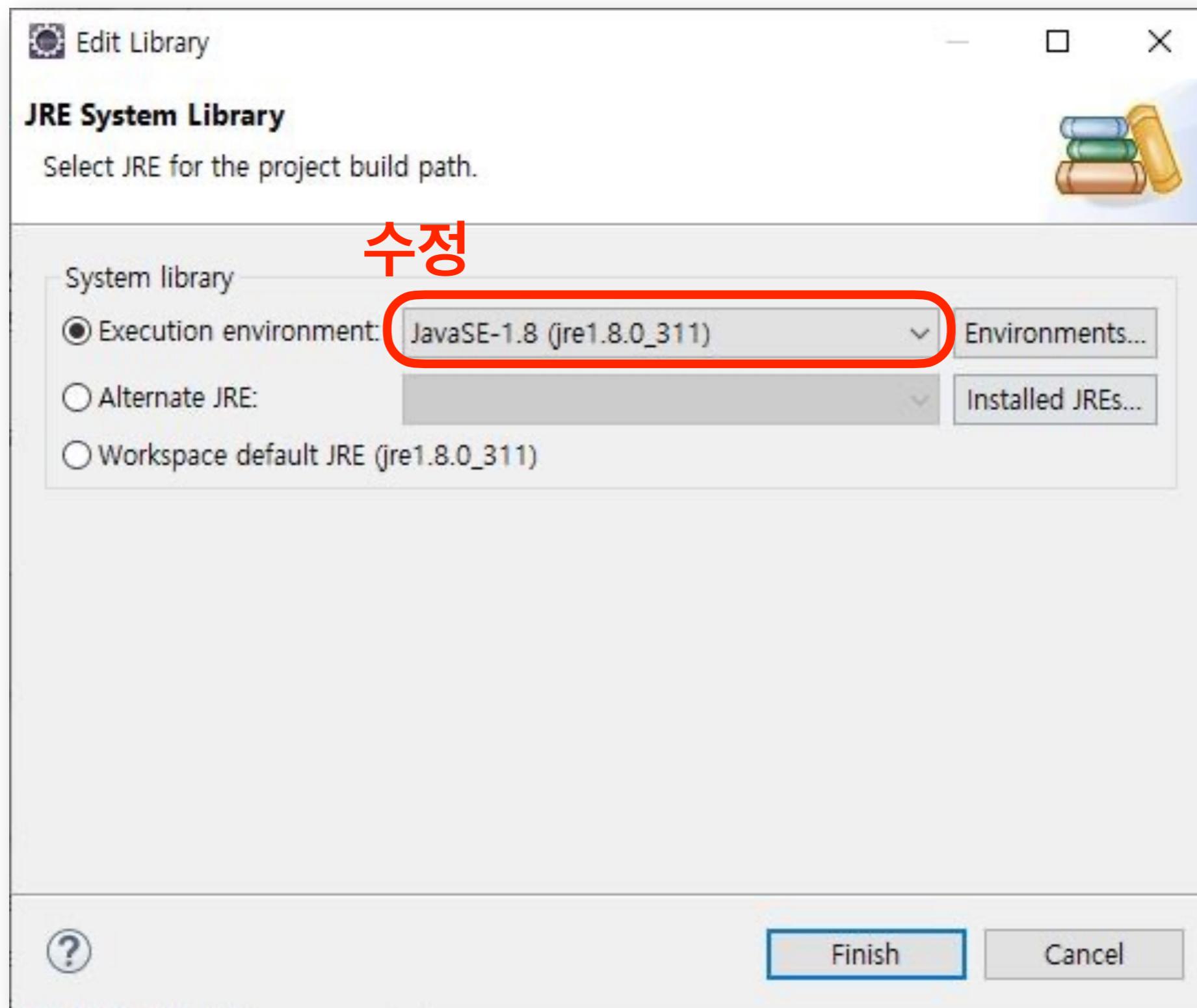
❖ 프로젝트 속성 메뉴에 들어가서 인코딩 방식을 설정한다.



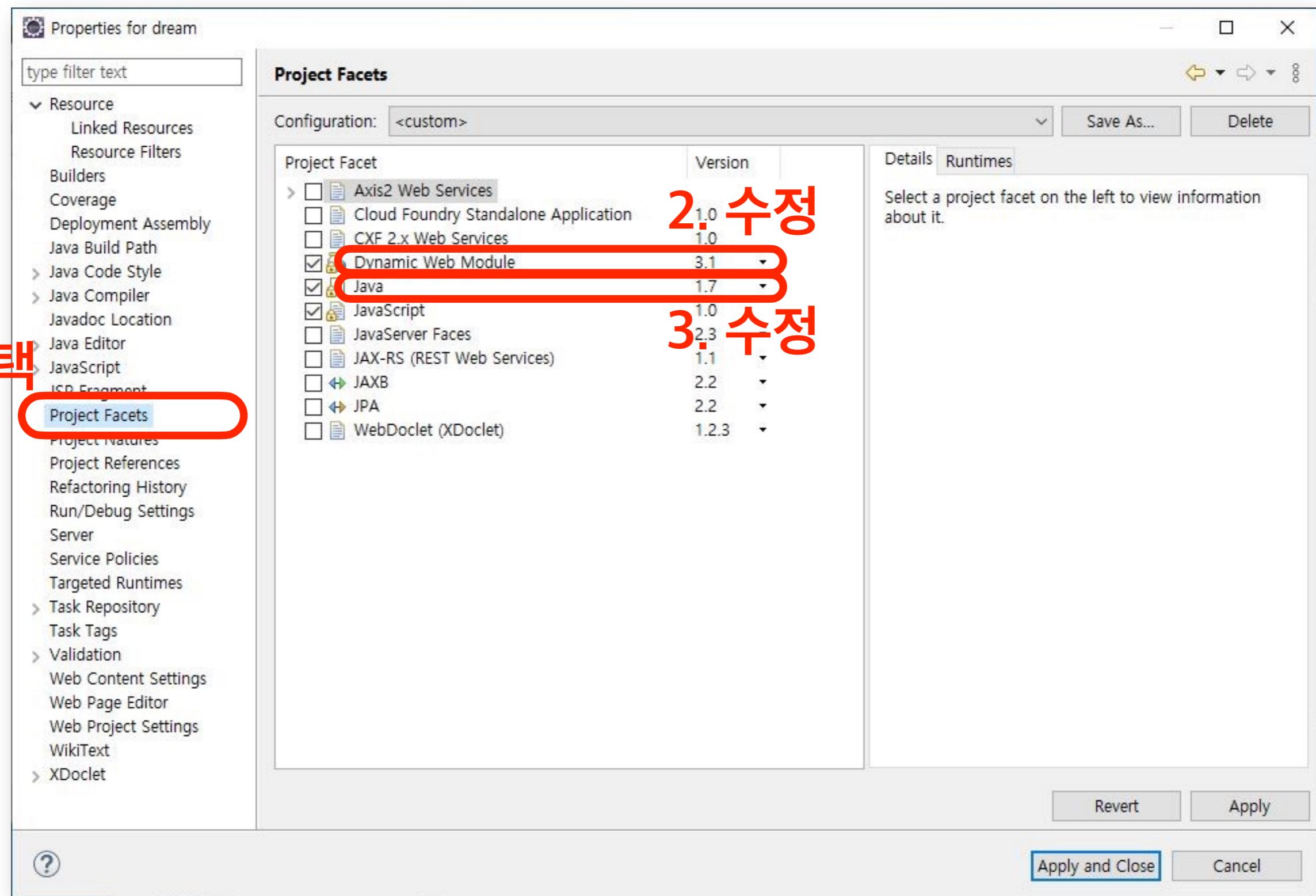
- ❖ 왼쪽의 Java Build Path메뉴를 선택하고 가운데 Libraries탭을 선택해서 JRE System Library [JavaSE-1.7] 을 선택하고 버전을 수정한다.



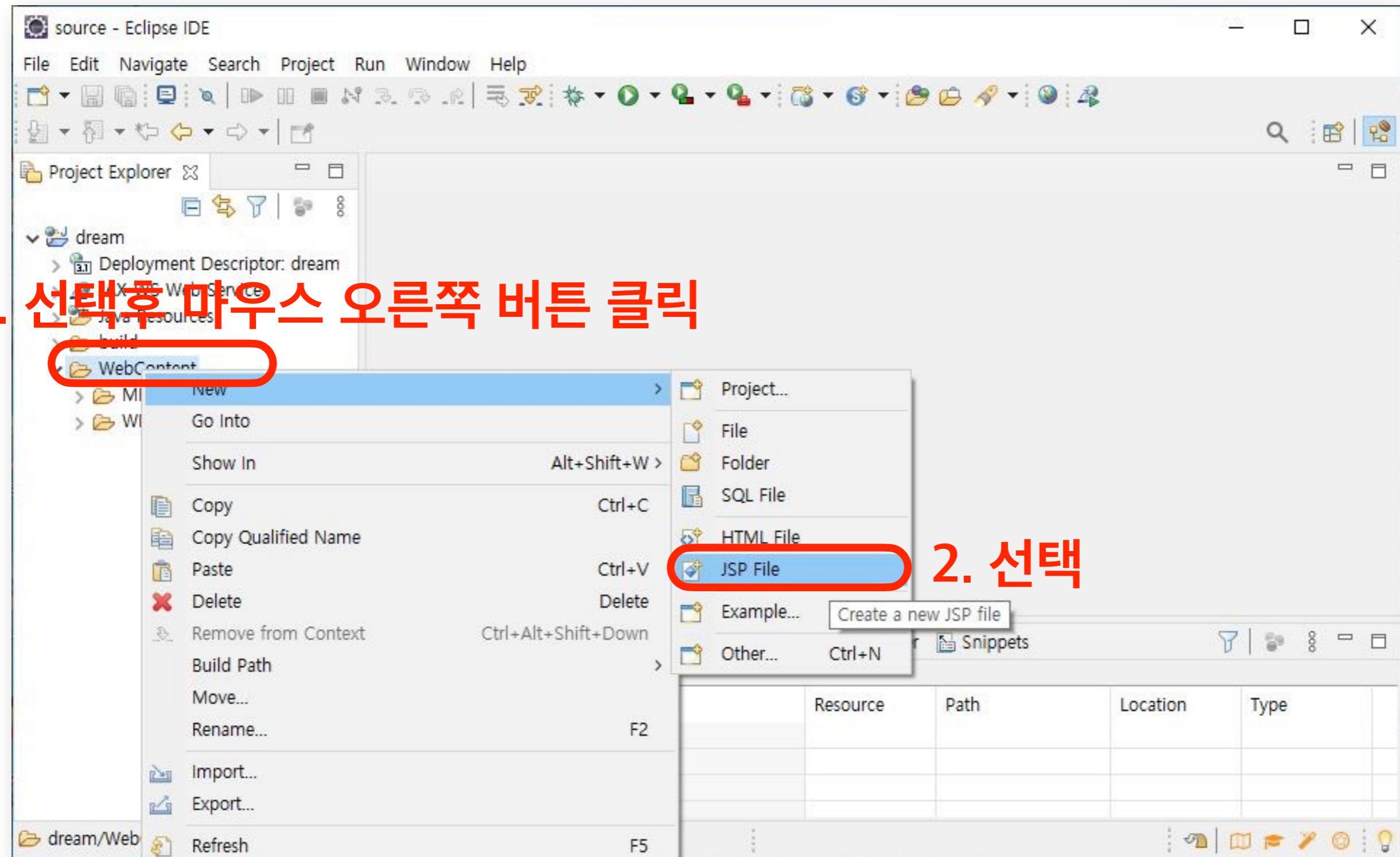
- ❖ 왼쪽의 Java Build Path메뉴를 선택하고 가운데 Libraries탭을 선택해서 JRE System Library [JavaSE-1.7] 을 선택하고 버전을 수정한다.



- ❖ 왼쪽 메뉴 항목중 Project Facets 메뉴를 선택하고 가운데 항목의 Dynamic Web Module, Java 버전을 수정한다.

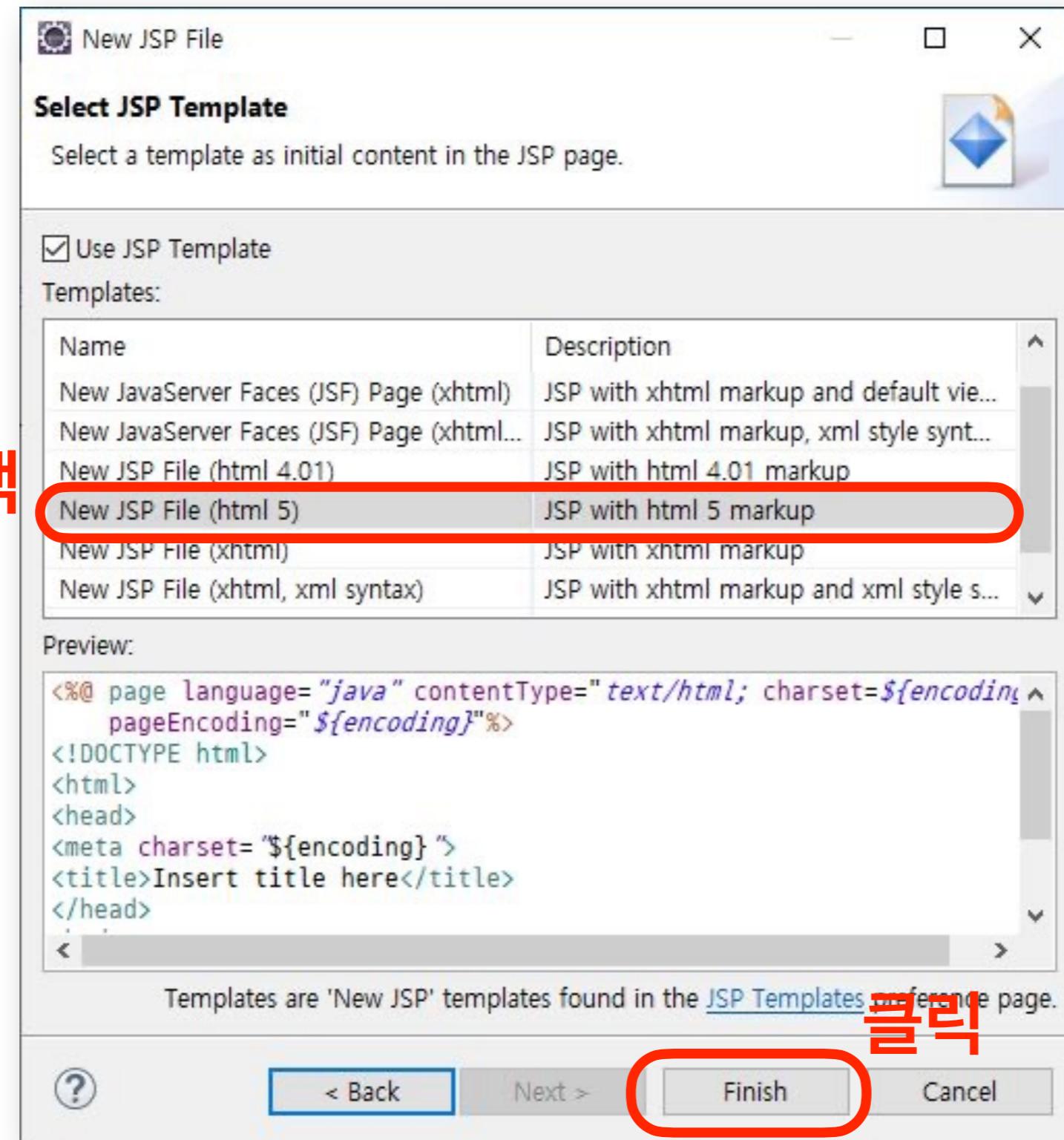


- ❖ 프로젝트 트리의 WebContent 폴더를 선택하고 마우스 오른쪽 버튼을 클릭해서 index.jsp 라는 새로운 JSP파일을 만든다.



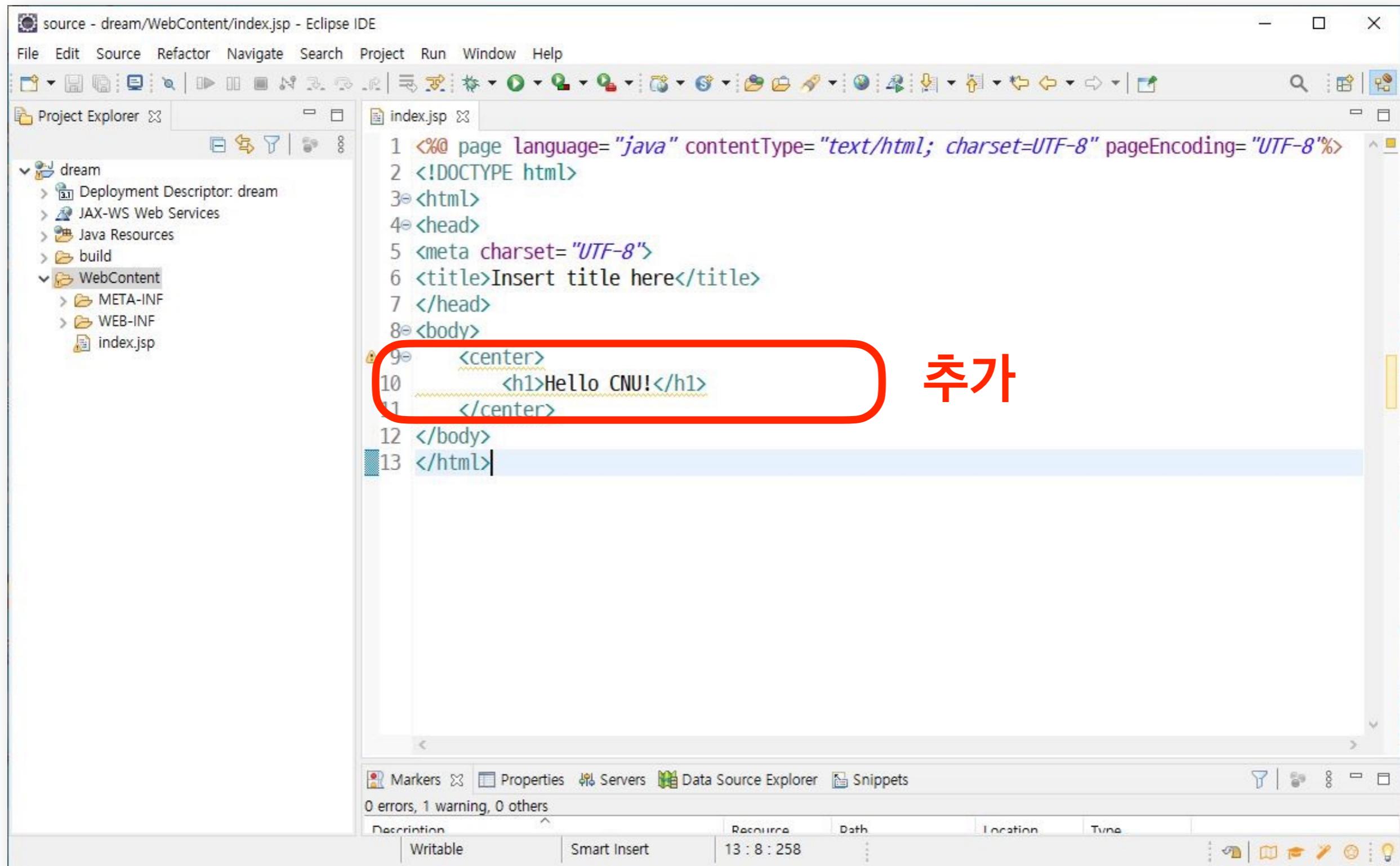
❖ New JSP File (html5) 를 선택하고 Finish 버튼을 클릭한다.

1. 선택



클릭

❖ 만들어진 파일의 body 태그에 아래 그림처럼 입력하고 저장한다.



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

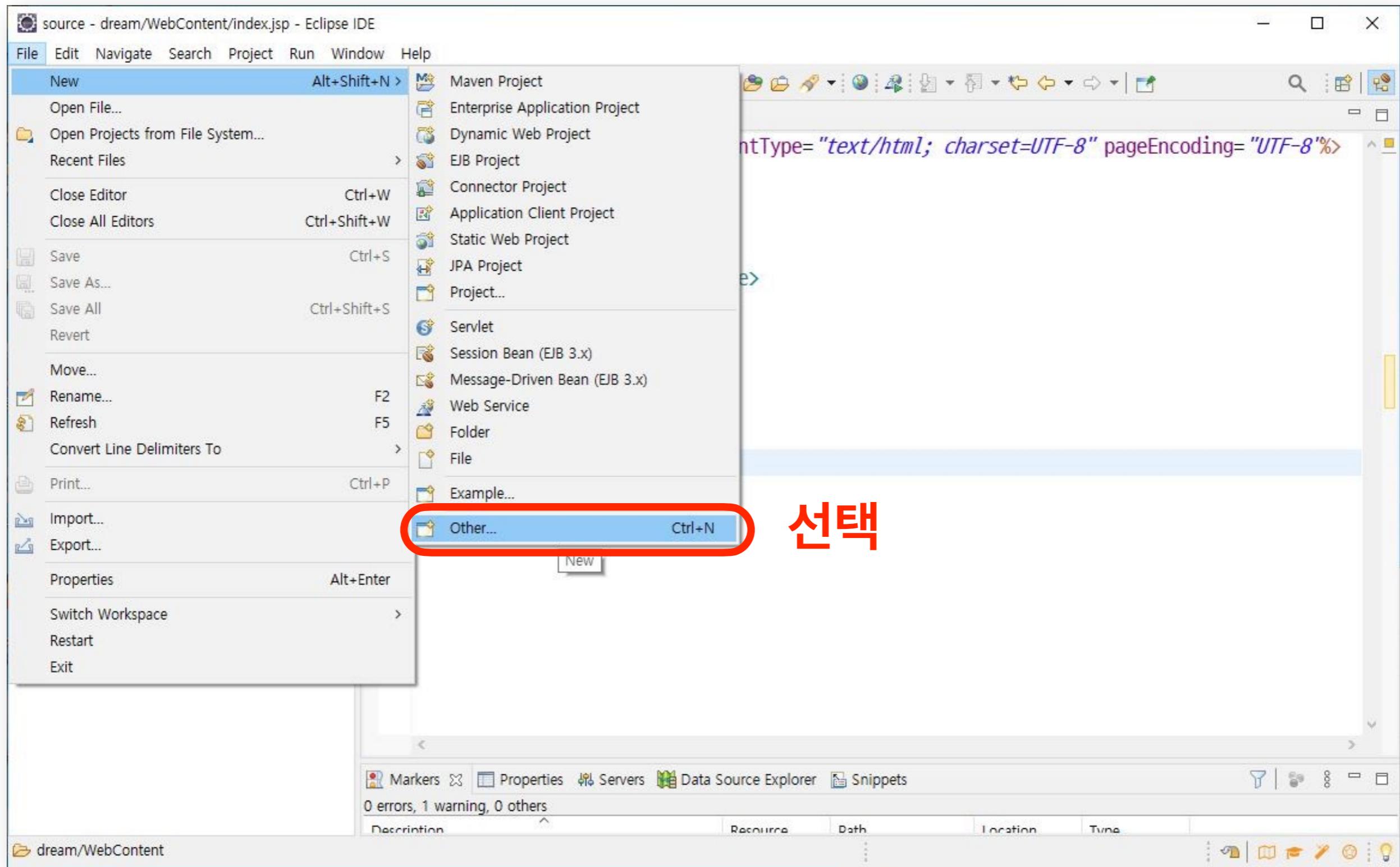
- Title Bar:** source - dream/WebContent/index.jsp - Eclipse IDE
- Menu Bar:** File Edit Source Refactor Navigate Search Project Run Window Help
- Toolbar:** Standard toolbar icons for file operations, search, and project management.
- Project Explorer:** Shows the project structure under the 'dream' project:
  - Deployment Descriptor: dream
  - JAX-WS Web Services
  - Java Resources
  - build
  - WebContent
    - META-INF
    - WEB-INF
    - index.jsp
- Editor:** The 'index.jsp' file is open in the editor. The code is as follows:

```
1 <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4 <head>
5 <meta charset="UTF-8">
6 <title>Insert title here</title>
7 </head>
8 <body>
9   <center>
10    <h1>Hello CNU!</h1>
11  </center>
12 </body>
13 </html>
```

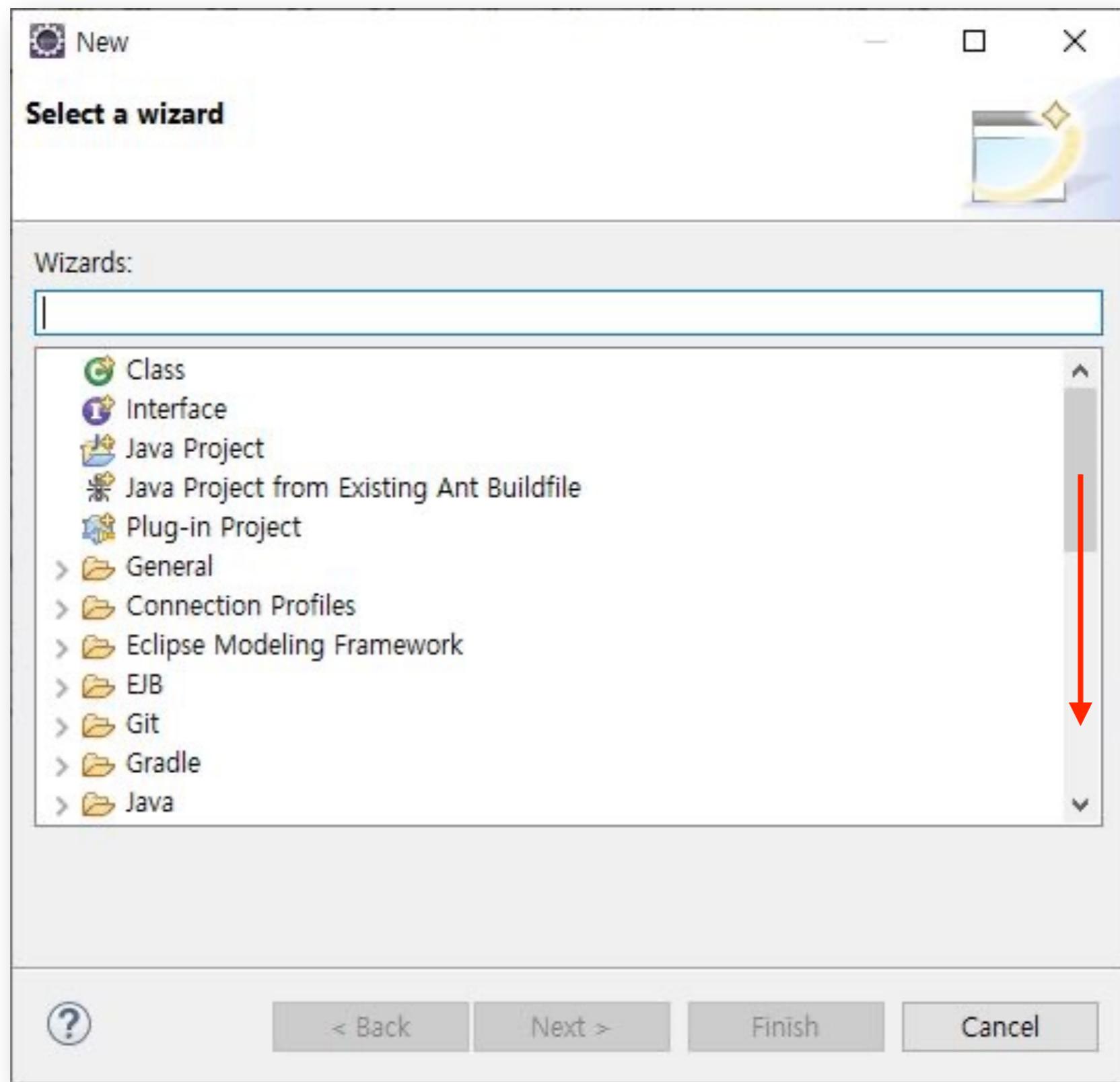
A red oval highlights the code from line 9 to line 11, specifically the <center> and <h1>Hello CNU!</h1> tags.
- Bottom Status Bar:** Shows 'Markers', 'Properties', 'Servers', 'Data Source Explorer', 'Snippets', and error/warning counts: 0 errors, 1 warning, 0 others.
- Bottom View Bar:** Shows 'Description' (Writable), 'Smart Insert', 'Resource' (13 : 8 : 258), 'Path', 'Location', and 'Type'.

추가

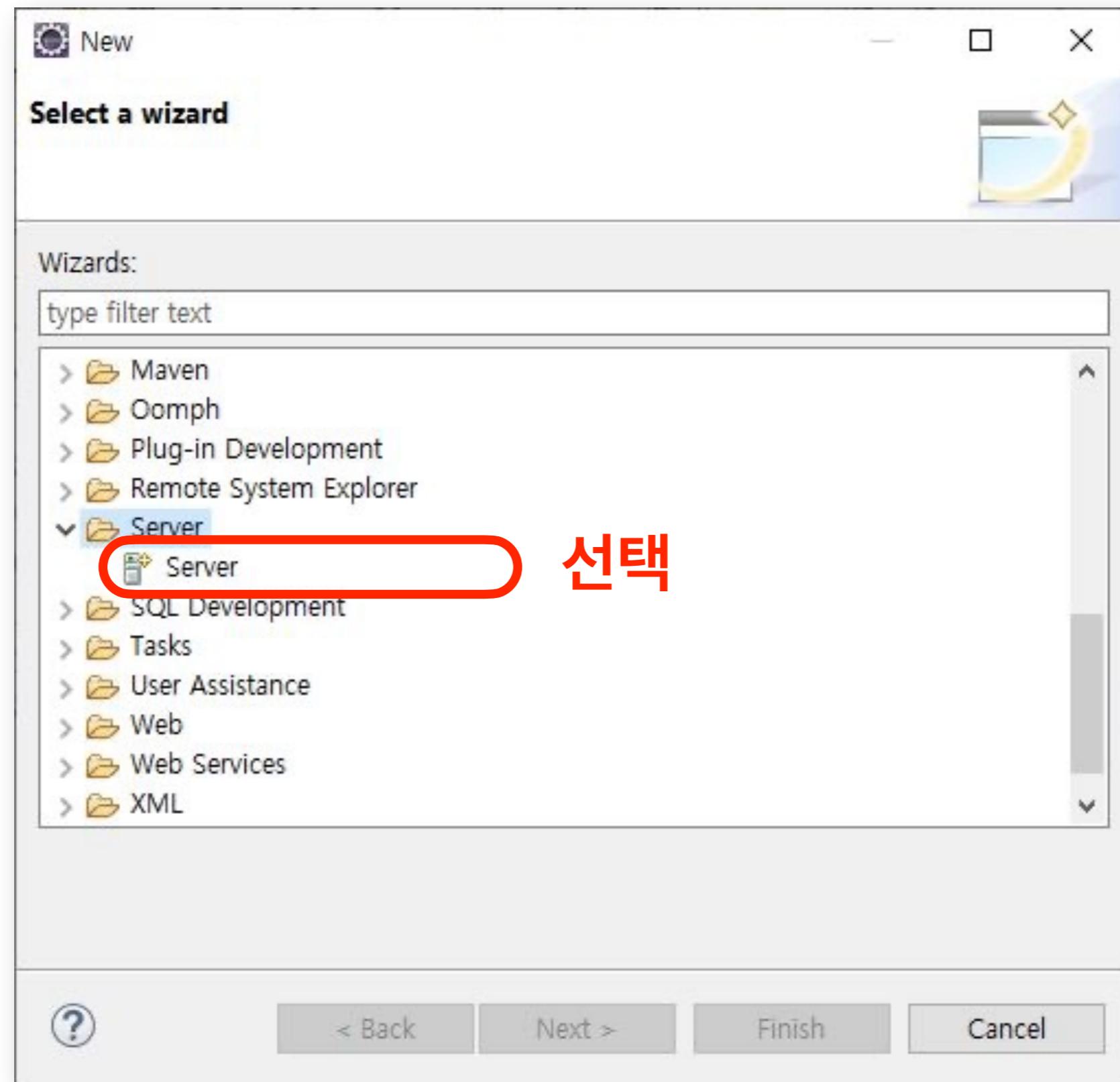
❖ 상단 File 메뉴에서 New 항목의 Other... 메뉴를 선택한다.



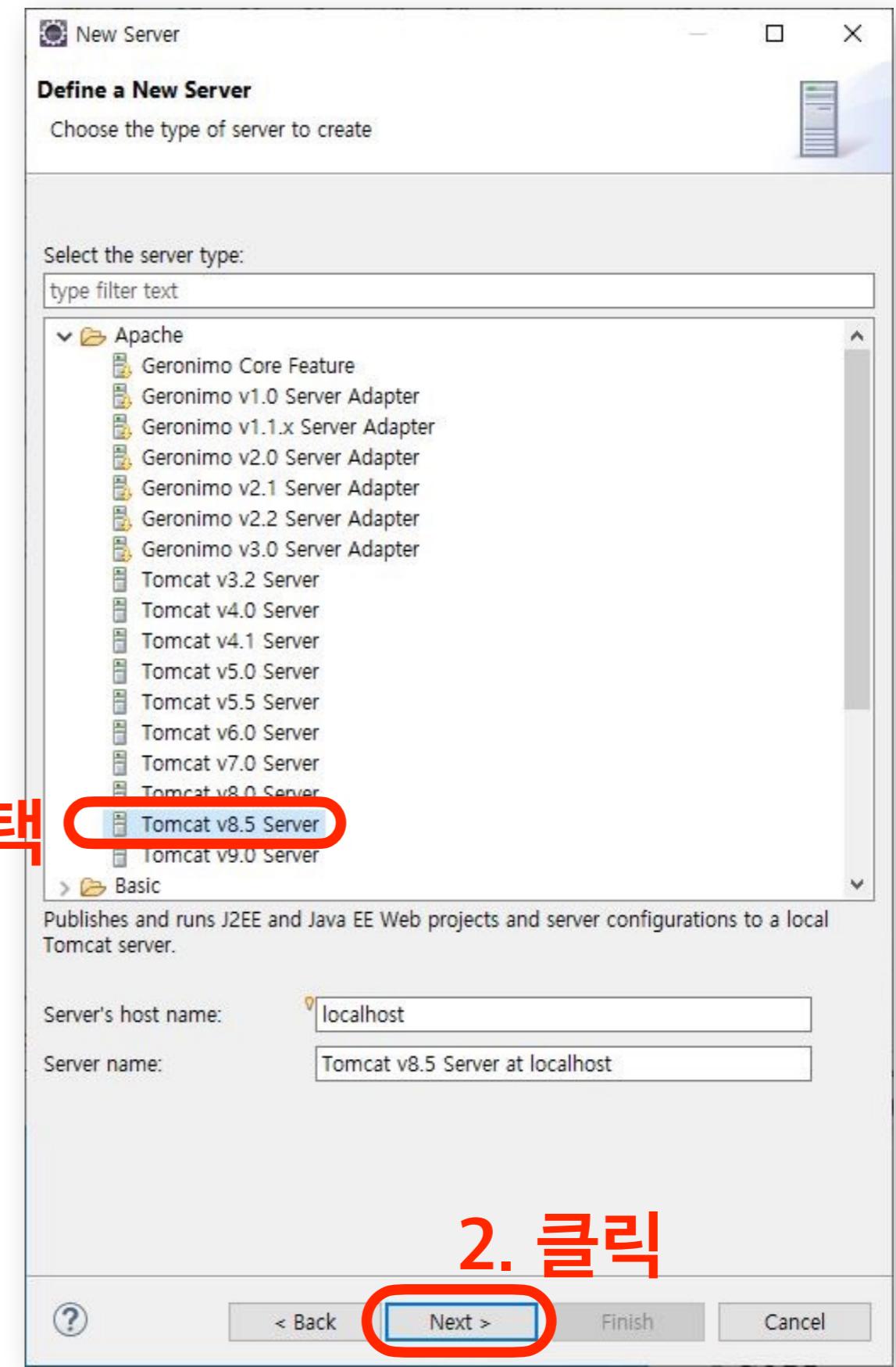
## ❖ Server 항목을 찾는다.



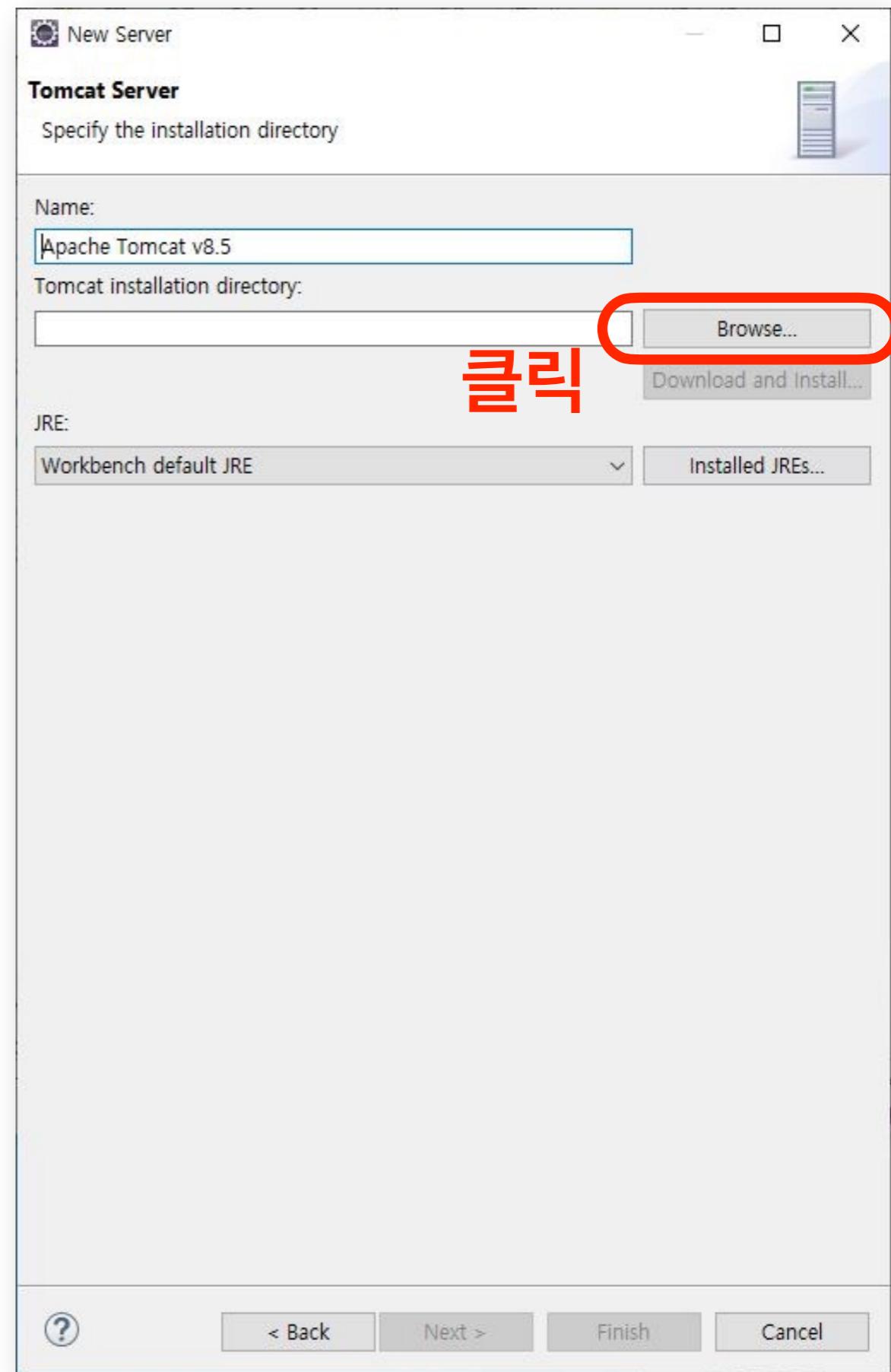
❖ Server 를 선택한다.



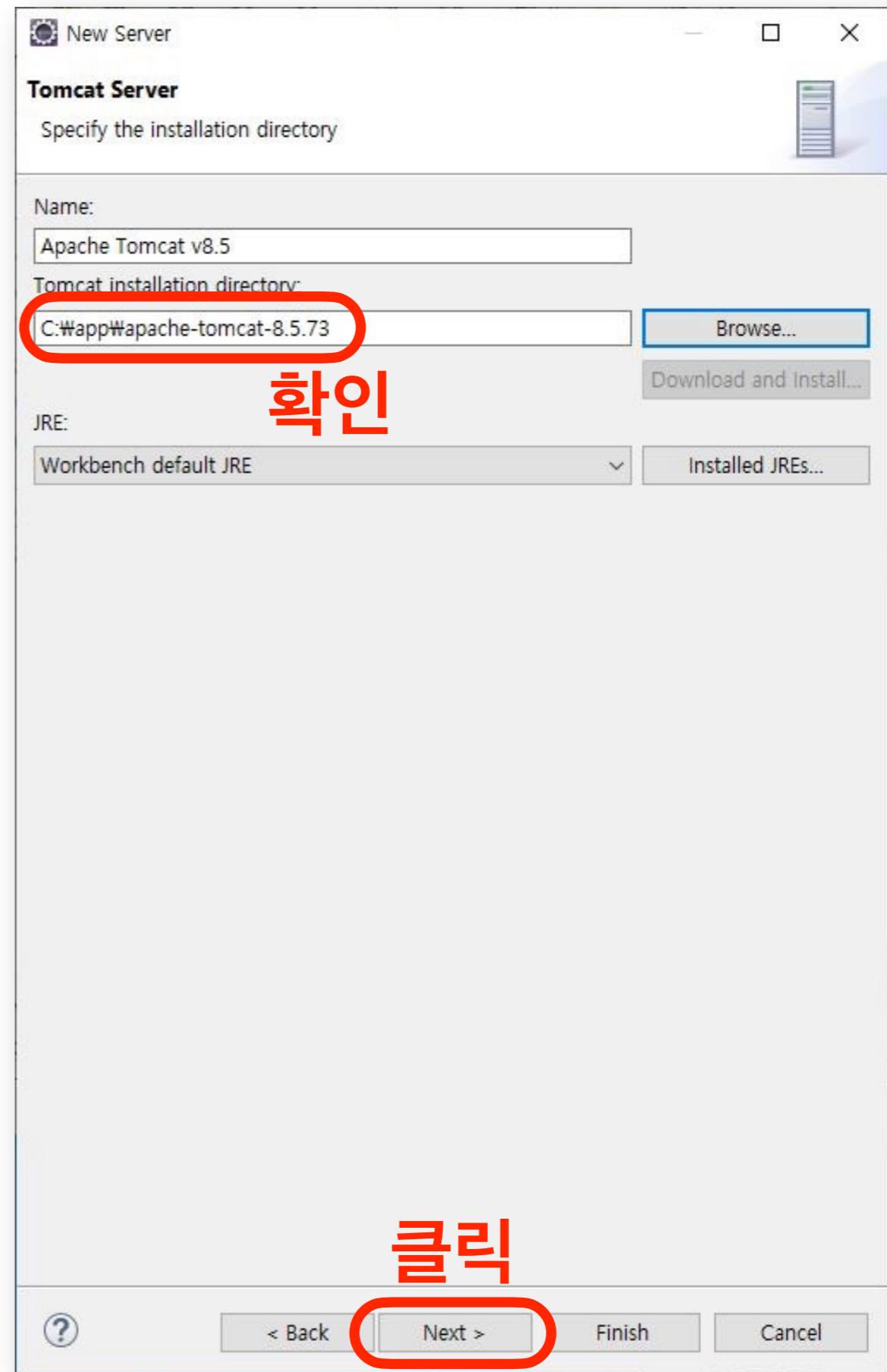
- ❖ Apache항목을 선택하고 하위의 Tomcat v8.5 Server를 선택한다.



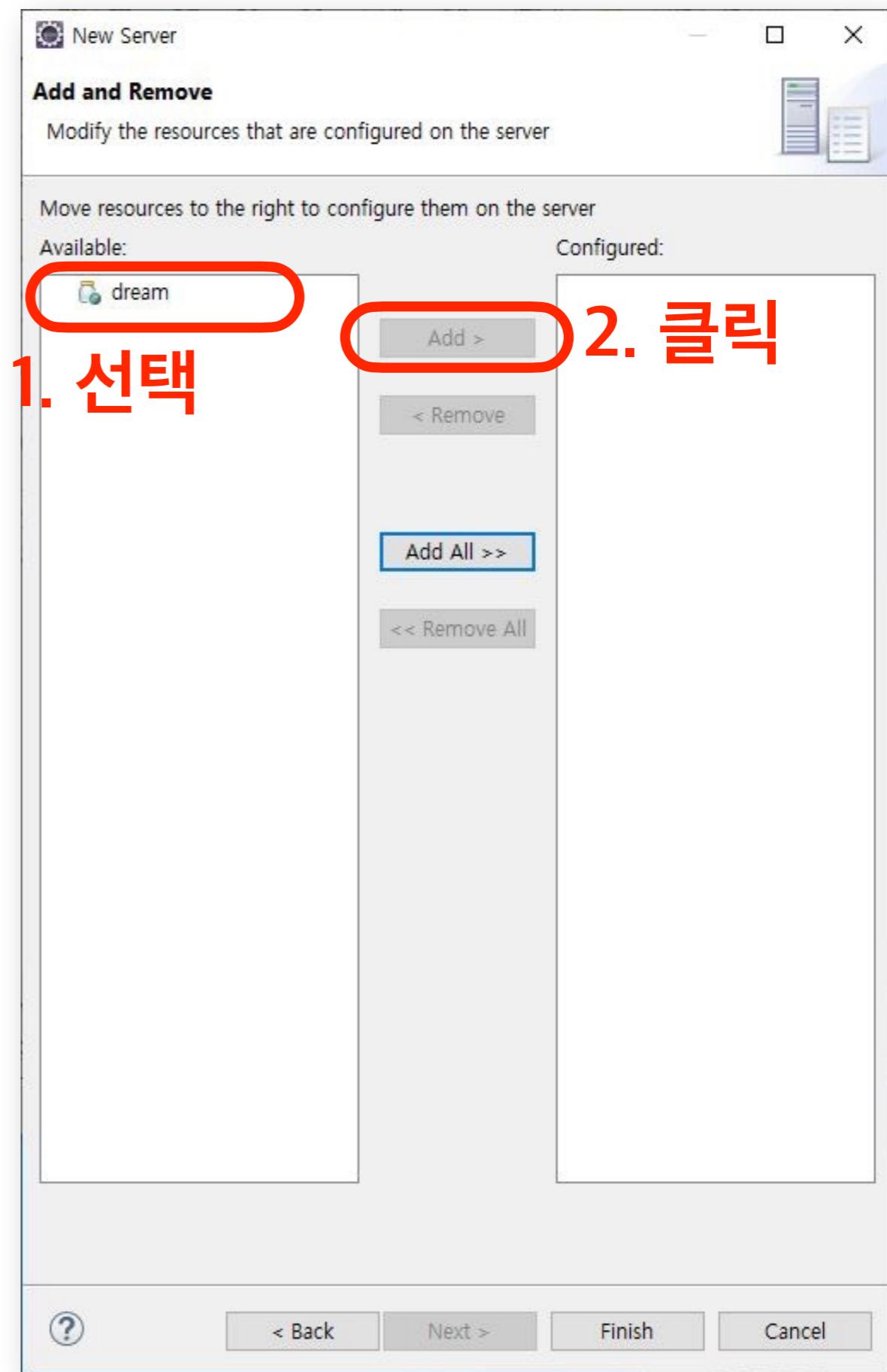
## ❖ Tomcat이 설치된 경로를 찾아준다.



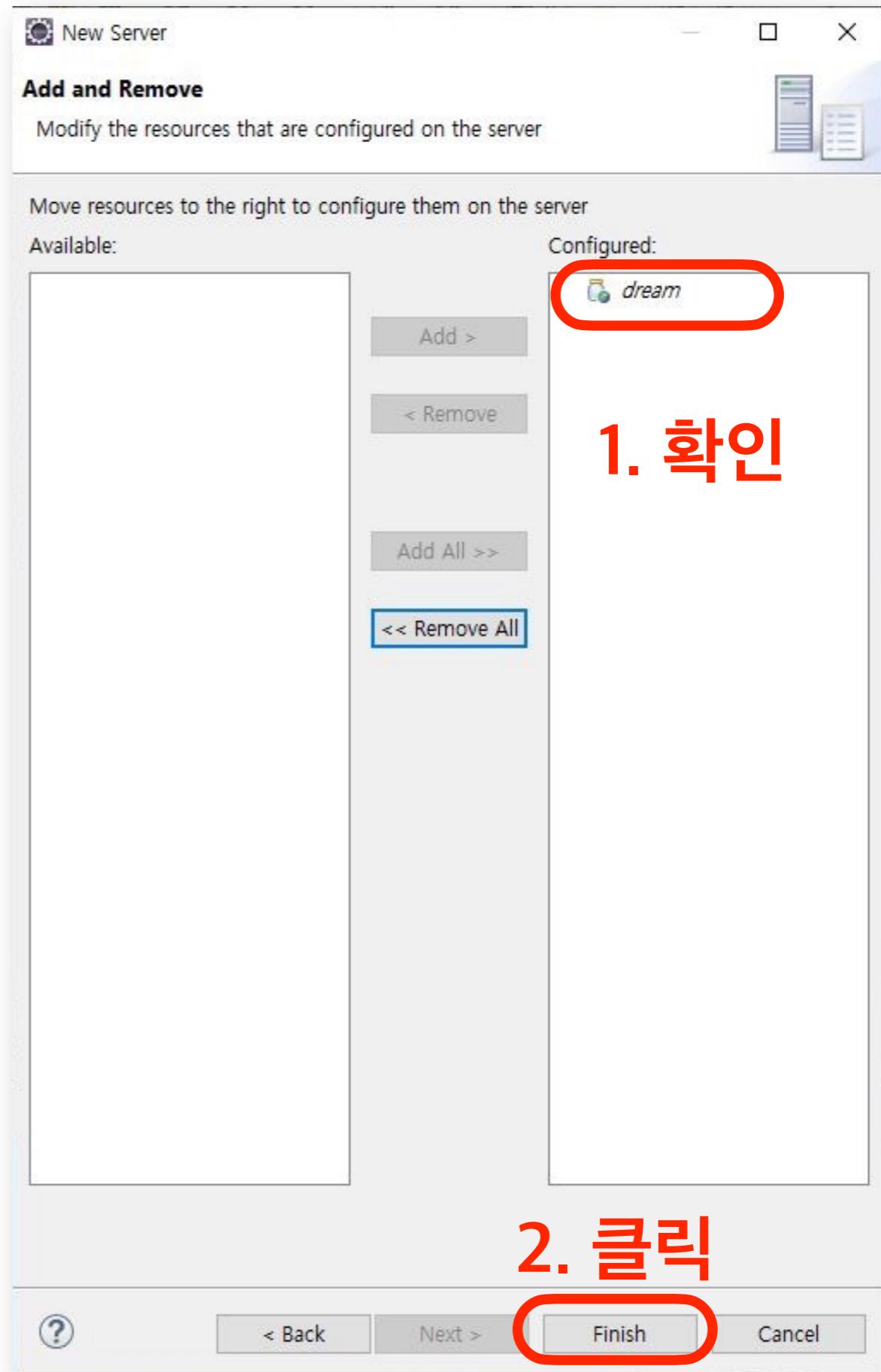
❖ Tomcat이 설치된 경로를 찾아준다.



- ❖ 서버에 추가할 프로젝트를 선택하고 가운데 Add 버튼을 클릭한다.



## ❖ Tomcat이 설치된 경로를 찾아준다.



## 1. server.xml 설정

```
56<!-- A "Connector" represents an endpoint by which requests are received  
57     and responses are returned. Documentation at :  
58     Java HTTP Connector: /docs/config/http.html  
59     Java AJP Connector: /docs/config/ajp.html  
60     APR (HTTP/AJP) Connector: /docs/apr.html  
61     Define a non-SSL/TLS HTTP/1.1 Connector on port 8081  
62-->  
63<Connector URIEncoding="UTF-8" connectionTimeout="20000" port="80" protocol="HTTP/1.1" redirectPort="8443"/>  
64<!-- A "Connector" using the shared thread pool-->  
65<!--  
66<Connector executor='tomcatThreadPool'  
67     port="8080" protocol="HTTP/1.1"  
68     connectionTimeout="20000"  
69     redirectPort="8443" />  
70-->
```

1. 포트번호 수정

2. 추가

## 2. web.xml 설정 - encoding이라는 단어로 문서내를 검색해서 찾는다.

```
463
464    <!-- A filter that sets character encoding that is used to decode -->
465    <!-- parameters in a POST request -->
466    <filter>
467        <filter-name>setCharacterEncodingFilter</filter-name> 1. 주석처리 해제
468        <filter-class>org.apache.catalina.filters.SetCharacterEncodingFilter</filter-class>
469        <init-param>
470            <param-name>encoding</param-name>
471            <param-value>UTF-8</param-value>
472        </init-param>
473        <!--
474            <async-supported>true</async-supported> 2. 주석처리
475        -->
476    </filter>
477
```

```
560
561    <!-- The mapping for the Set Character Encoding Filter -->
562    <filter-mapping>
563        <filter-name>setCharacterEncodingFilter</filter-name>
564        <url-pattern>/*</url-pattern>
565    </filter-mapping>
566    <!--
567    -->
568
```