

Mac 환경에서 OpenJDK 및 Eclipse 설치

자바 프로그래밍

OpenJDK 17 버전 다운로드 #1

- 구글에서 "Open JDK download" 검색
- 아래 웹사이트로 이동
 - <https://openjdk.java.net/>
 - <https://jdk.java.net/17/>

Google search results for "Open JDK download". The search bar shows "Open JDK download" and the results list includes "openjdk.java.net > install", "Download and install - OpenJDK", and "OpenJDK 설치하기 - 금소니의 삶 - 티스토리". A red box highlights the "openjdk.java.net" result.



OpenJDK FAQ
Installing
Contributing
Sponsoring
Developers' Guide
Vulnerabilities
JDK GA/EA Builds
Mailing lists
Wiki - IRC
Bylaws - Census
Legal
JEP Process
Source code
Mercurial
GitHub
Tools
Mercurial
Git
JRebel harness
Groups
(overview)
Adoption
Build
Client Libraries
Compatibility &
Specification
Review
Compiler
Conformance
Core Libraries
Governing Board
HotSpot
IDE Tooling &
Support
Internationalization
JMX
Members
Networking
Porters
Quality
Security
Serviceability
Vulnerability
Web
Projects
(overview)
Amber
Annotations Pipeline
2.0
Audio Engine
Build Infrastructure
C/C++

OpenJDK



What is this? The place to collaborate on an open-source implementation of the Java SE Platform, Edition, and related projects.



Download and install Oracle's free, GPL-licensed, production-ready OpenJDK JDK 17 binaries for Linux, macOS, and Windows are available at jdk.java.net/17/. Oracle's commercially-licensed JDK 17 binaries, based on the same code, are here.



Learn about the key active Projects in the Community including Amber (high-productivity language features), Loom (lightweight concurrency), Panama (foreign functions and foreign data), Valhalla (primitive types and specialized generics), and, of course, the next version of Java and the JDK.

If you want to learn how to use the Java that's available today, head over to dev.java.



Hack on the JDK itself, right here in the OpenJDK Community: Browse the code on the web, clone a repository to make a local copy, and contribute a patch to fix a bug, enhance an existing component, or define a new feature.

클릭

OpenJDK 17.0.2 다운로드

- 사용하고 있는 운영체제에 맞는 OpenJDK 다운로드

jdk.java.net

GA Releases
JDK 17
JMC 8
Early-Access Releases
JDK 19
JDK 18
Loom
Metropolis
Panama
Valhalla
Reference Implementations
Java SE 17
Java SE 16
Java SE 15
Java SE 14
Java SE 13
Java SE 12
Java SE 11
Java SE 10
Java SE 9
Java SE 8
Java SE 7
Feedback
Report a bug
Archive

JDK 17.0.2 General-Availability Release

This page provides production-ready open-source builds of the Java Development Kit, version 17, an implementation of the Java SE 17 Platform under the GNU General Public License, version 2, with the Classpath Exception.

Commercial builds of JDK 17.0.2 from Oracle, under a non-open-source license, can be found at the Oracle Technology Network.

Documentation

- Features
- Release notes
- API Javadoc

Builds

Linux/AArch64	tar.gz (sha256)	185776417 bytes
Linux/x64	tar.gz (sha256)	187033144
macOS/AArch64	tar.gz (sha256)	182209404
macOS/x64	tar.gz (sha256)	184480668
Windows/x64	zip (sha256)	186216309

Notes

- The Alpine Linux build of this page was removed because it was not production-ready because it hasn't been considered a GA build. If you have any feedback, please contact us at download_help_w@oracle.com.

다양한 운영체제를 지원하는 OpenJDK

jdk.java.net

GA Releases
JDK 15
JMC 7
Early-Access Releases
JDK 17
JDK 16
JMC 8
Lanai
Loom
Metropolis
Panama
Valhalla
Reference Implementations
Java SE 16
Java SE 15
Java SE 14
Java SE 13
Java SE 12
Java SE 11
Java SE 10
Java SE 9
Java SE 8
Java SE 7
Feedback
Archive

Archived OpenJDK General-Availability Releases

This page is an archive of previously released builds of the JDK licensed under the GNU General Public License, version 2, with Classpath Exception.

WARNING: These older versions of the JDK are provided to help developers debug issues in older systems. They are not updated with the latest security patches and are not recommended for use in production.

Releases

15.0.1 (build 15.0.1+9)	Windows	64-bit	zip (sha256)	187M
	Mac	64-bit	tar.gz (sha256)	184M
	Linux/AArch64	64-bit	tar.gz (sha256)	163M
	Linux/x64	64-bit	tar.gz (sha256)	187M
		Source	Tags are jdk-15.0.1+9, jdk-15.0.1-ga	

15 GA (build 15+36)	Windows	64-bit	zip (sha256)	187M
	Mac	64-bit	tar.gz (sha256)	184M
	Linux/AArch64	64-bit	tar.gz (sha256)	163M
	Linux/x64	64-bit	tar.gz (sha256)	187M
		Source	Tags are jdk-15+36, jdk-15-ga	

14.0.2 (build 14.0.2+12)	Windows	64-bit	zip (sha256)	190M
		64-bit	tar.gz (sha256)	185M
		64-bit	tar.gz (sha256)	190M
		Source	Tags are jdk-14.0.2+12, jdk-14.0.2-ga	

		64-bit	zip (sha256)	190M
		64-bit	tar.gz (sha256)	185M
		64-bit	tar.gz (sha256)	190M
		Source	Tags are jdk-14.0.1+7, jdk-14.0.1-ga	

14 GA (build 14+36)	Windows	64-bit	zip (sha256)	190M
	Mac	64-bit	tar.gz (sha256)	185M
	Linux	64-bit	tar.gz (sha256)	190M
		Source	Tags are jdk-14+36, jdk-14-ga	

13.0.2 (build 13.0.2+8)	Windows	64-bit	zip (sha256)	187M
	Mac	64-bit	tar.gz (sha256)	182M
	Linux	64-bit	tar.gz (sha256)	187M

Archive 메뉴:
이전 버전의 JDK
다운로드

Mac 환경: macOS/x64 다운로드 및 복사

- OpenJDK 17.0.2 버전 다운로드

- 파일명: openjdk-17.0.2_macos-x64_bin.tar.gz

- 파일이 있는 곳으로 이동 후 압축 해제

- 터미널에서 압축 해제하는 경우

```
$ tar xvf openjdk-17.0.2_macos-x64_bin.tar.gz
```

- jdk-17.0.2.jdk 폴더가 생성됨
 - 하위 폴더에 압축 해제된 파일들이 저장됨

- 압축 해제된 폴더를 JDK가 저장된 폴더로 이동

- JDK가 저장된 폴더: `/Library/Java/JavaVirtualMachines/`
- 별도의 설치 과정이 필요 없고 해당 폴더에 복사

```
$ sudo mv jdk-17.0.2.jdk /Library/Java/JavaVirtualMachines/
```

Mac 환경: Java (JDK) 버전 변경

- 현재 JDK 버전 확인

```
$ java -version  
  
openjdk version "11.0.6" 2020-01-14  
OpenJDK Runtime Environment (build 11.0.6+8-b765.1)  
OpenJDK 64-Bit Server VM (build 11.0.6+8-b765.1, mixed mode)
```

- 설치되어 있는 Java Virtual Machines 목록 확인

```
$ /usr/libexec/java_home -V
```

```
$ /usr/libexec/java_home -V
```

```
Matching Java Virtual Machines (3):
```

```
17.0.2, x86_64: "OpenJDK 17.0.2" /Library/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home  
16.0.1, x86_64: "OpenJDK 16.0.1" /Library/Java/JavaVirtualMachines/jdk-16.0.1.jdk/Contents/Home  
1.8.0_211, x86_64: "Java SE 8" /Library/Java/JavaVirtualMachines/jdk1.8.0_211.jdk/Contents/Home
```

Mac 환경: 기본 JDK 설정하기

■ 기본 JDK 설정 과정

- Mac 환경 변수에 JAVA_HOME 추가
- PATH에 JAVA_HOME/bin 경로 추가

■ .zshrc 파일 변경

- JAVA_HOME 및 PATH 설정
 - bash를 사용하는 경우에는 .bashrc 또는 .bash_profile 을 수정함

```
$ vi .zshrc
```

- .zshrc 파일의 마지막 부분에 아래 내용 추가

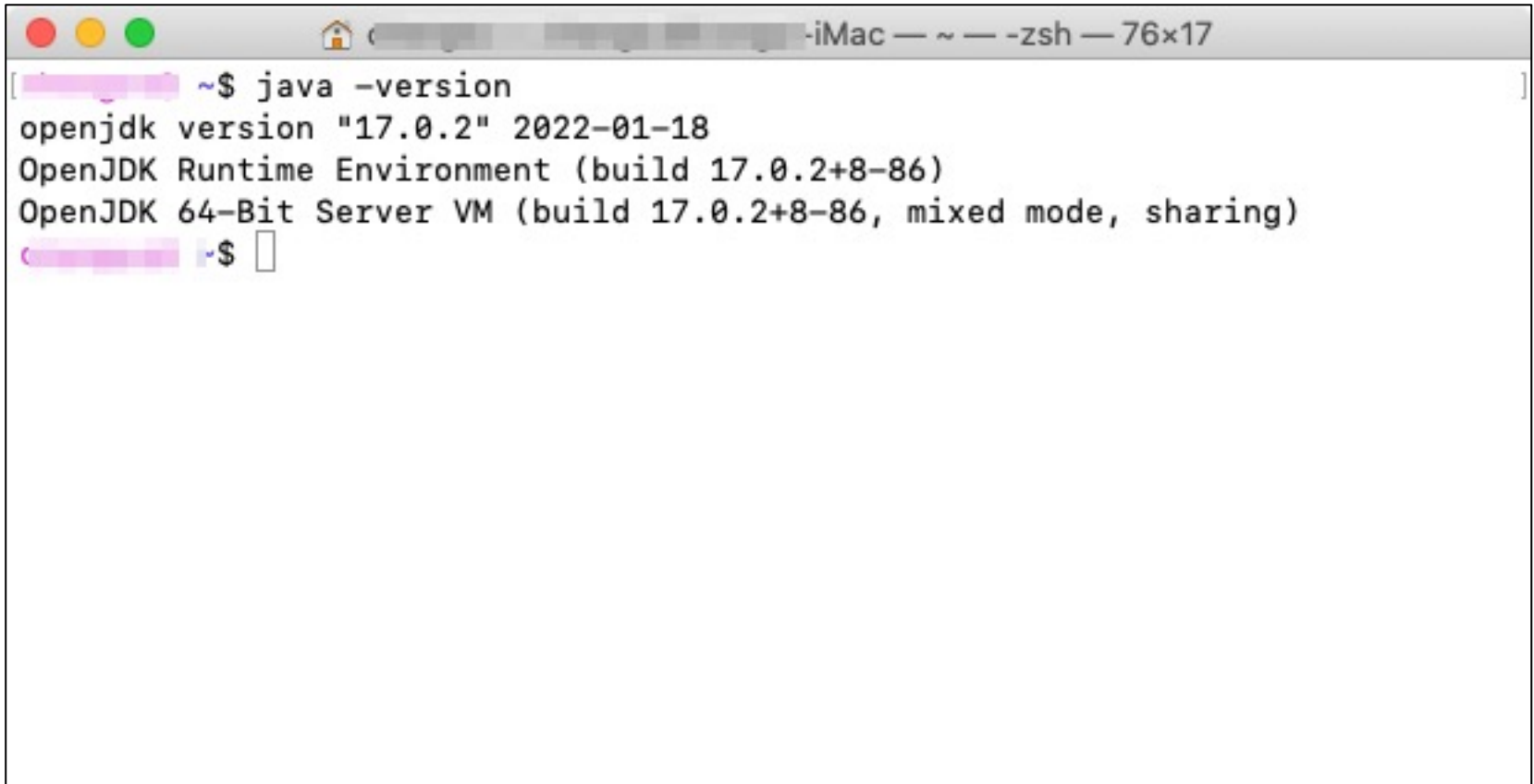
```
# Java 17.0.2
export JAVA_HOME=$(/usr/libexec/java_home -v 17.0.2)
export PATH=${PATH}:${JAVA_HOME}/bin:
```

■ 변경 내용 적용

```
$ source ~/.zshrc
```

Mac 환경: JDK 버전 확인하기

- \$ java -version

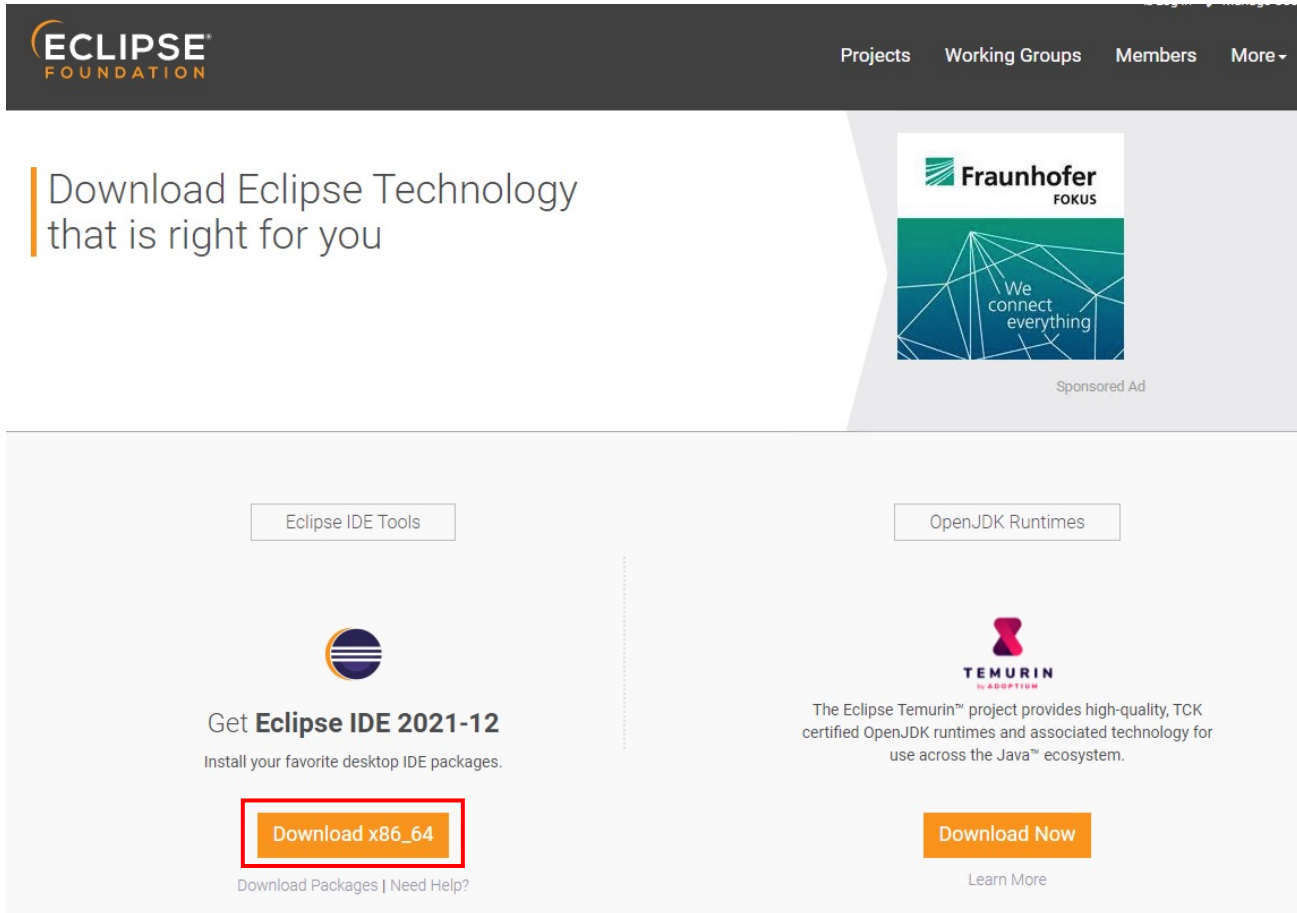


```
~$ java -version
openjdk version "17.0.2" 2022-01-18
OpenJDK Runtime Environment (build 17.0.2+8-86)
OpenJDK 64-Bit Server VM (build 17.0.2+8-86, mixed mode, sharing)
~$
```

The image shows a macOS terminal window titled "-iMac — ~ — -zsh — 76x17". The user has entered the command `java -version`. The output displays the OpenJDK version "17.0.2" with a build date of 2022-01-18, the runtime environment details (build 17.0.2+8-86), and the 64-bit server VM details (build 17.0.2+8-86, mixed mode, sharing). The prompt `~$` is visible at the end of the output.

Eclipse 다운로드

- "Eclipse download"로 검색
 - <https://www.eclipse.org/downloads/>



The screenshot shows the Eclipse Foundation website. At the top is a dark navigation bar with the Eclipse Foundation logo on the left and links for Projects, Working Groups, Members, and More on the right. Below the navigation bar is a large white section with the text "Download Eclipse Technology that is right for you". To the right of this text is a sponsored advertisement for Fraunhofer FOKUS, which features a blue and green geometric design and the text "We connect everything". Below the main heading, there are two main download sections. The left section is titled "Eclipse IDE Tools" and features the Eclipse logo, the text "Get Eclipse IDE 2021-12", and "Install your favorite desktop IDE packages." Below this is a red button labeled "Download x86_64", which is highlighted with a red rectangle. At the bottom of this section are links for "Download Packages" and "Need Help?". The right section is titled "OpenJDK Runtimes" and features the Temurin logo, the text "The Eclipse Temurin™ project provides high-quality, TCK certified OpenJDK runtimes and associated technology for use across the Java™ ecosystem.", and a red button labeled "Download Now". Below this button is a link for "Learn More".

Eclipse IDE Tools

OpenJDK Runtimes

Get **Eclipse IDE 2021-12**
Install your favorite desktop IDE packages.

Download x86_64

Download Packages | Need Help?

TEMURIN
an ADOPTION

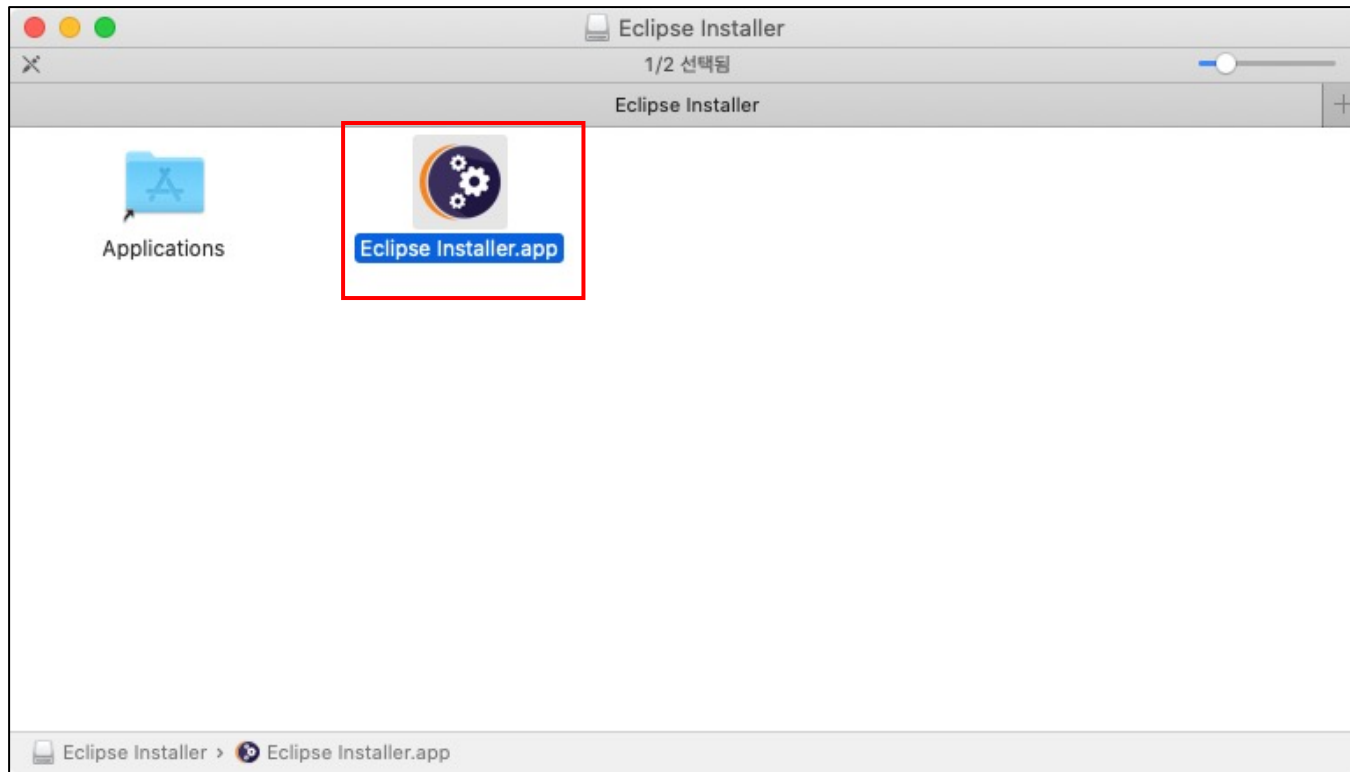
The Eclipse Temurin™ project provides high-quality, TCK certified OpenJDK runtimes and associated technology for use across the Java™ ecosystem.

Download Now

Learn More

Eclipse Installer 실행

- Eclipse Installer.app 실행
 - eclipse-inst-jre-mac64.dmg



Eclipse 설치 #1

■ Eclipse IDE for Java Developers 선택

The image shows two screenshots of the Eclipse Installer application. The left screenshot displays a list of IDE options, with 'Eclipse IDE for Java Developers' highlighted by a red box. A black arrow points from this selection to the right screenshot, which shows the configuration screen for the selected IDE. In the right screenshot, the 'Java 11+ VM' dropdown is set to '/Library/Java/JavaVirtualMachines/jdk-17.0.1.jdk/Contents/Home', highlighted by a red box. An orange callout bubble with the text 'jdk-17.0.2 확인' (Check jdk-17.0.2) points to this dropdown. The 'Installation Folder' is set to '/Users/changsu/eclipse/java-2021-12'. The 'INSTALL' button is also highlighted by a red box.

eclipseinstaller by Oomph

type filter text

Eclipse IDE for Java Developers
The essential tools for any Java developer, including a Java IDE, a Git client, XML Editor, Mylyn, Maven and Gradle integration

Eclipse IDE for Enterprise Java Developers
Tools for Java developers creating Enterprise Java and Web applications, including a Java IDE, tools for Enterprise Java, JPA, JSF, Mylyn, Maven, Git and...

Eclipse IDE for C/C++ Developers
An IDE for C/C++ developers with Mylyn integration.

Eclipse IDE for JavaScript and Web Developers
The essential tools for any JavaScript developer, including JavaScript, HTML, CSS, XML languages support, Git client, and Mylyn.

Eclipse IDE for PHP Developers
The essential tools for any PHP developer, including PHP language support, Git client, Mylyn and editors for JavaScript, HTML, CSS and XML.

Eclipse IDE for Eclipse Committers
Package suited for development of Eclipse itself at Eclipse.org; based on the Eclipse Platform, adding RDT, Git, Modest, Client, source code and...

eclipseinstaller by Oomph

Eclipse IDE for Java Developers [details](#)

The essential tools for any Java developer, including a Java IDE, a Git client, XML Editor, Maven and Gradle integration.

jdk-17.0.2 확인

Java 11+ VM: /Library/Java/JavaVirtualMachines/jdk-17.0.1.jdk/Contents/Home

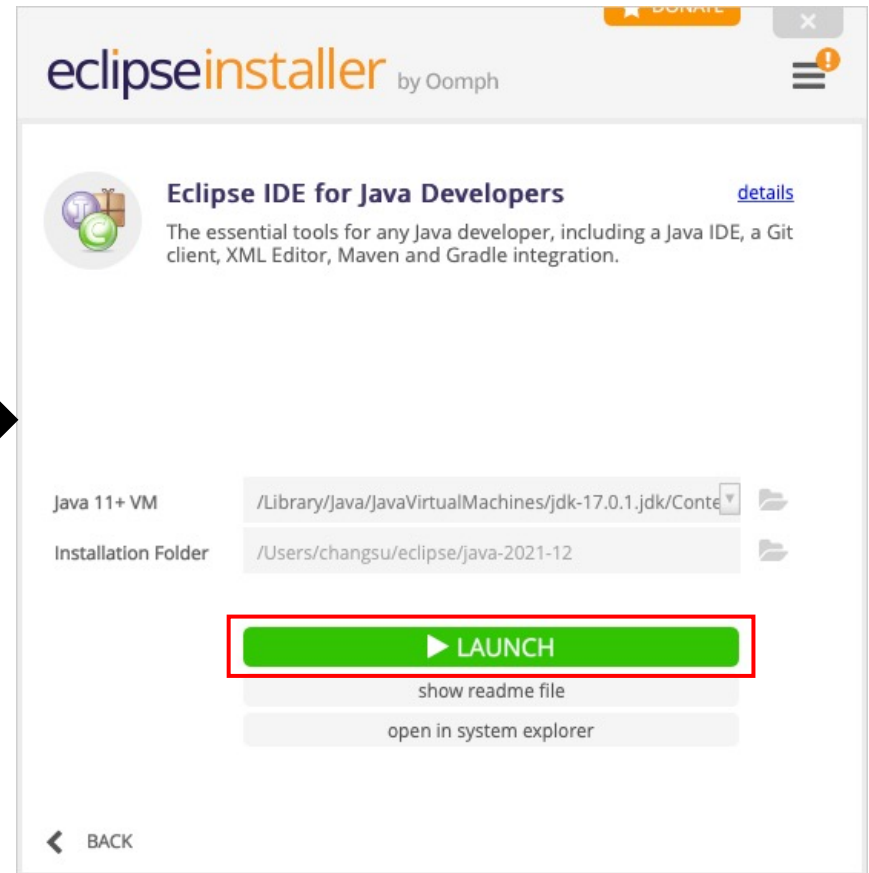
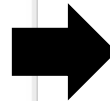
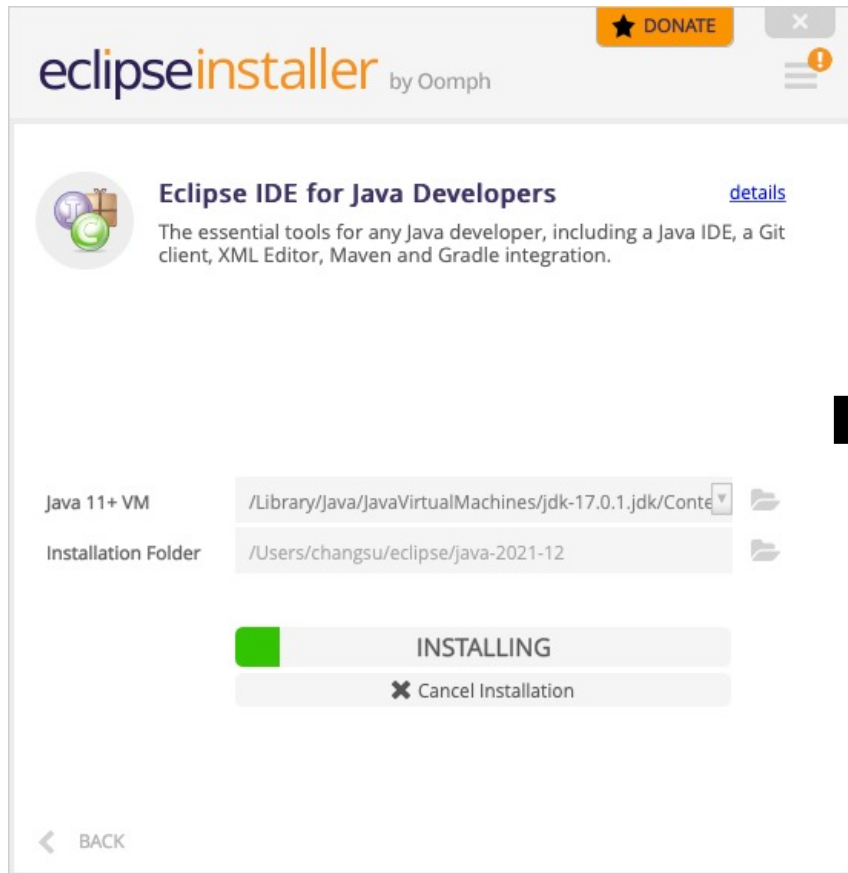
Installation Folder: /Users/changsu/eclipse/java-2021-12

INSTALL

BACK

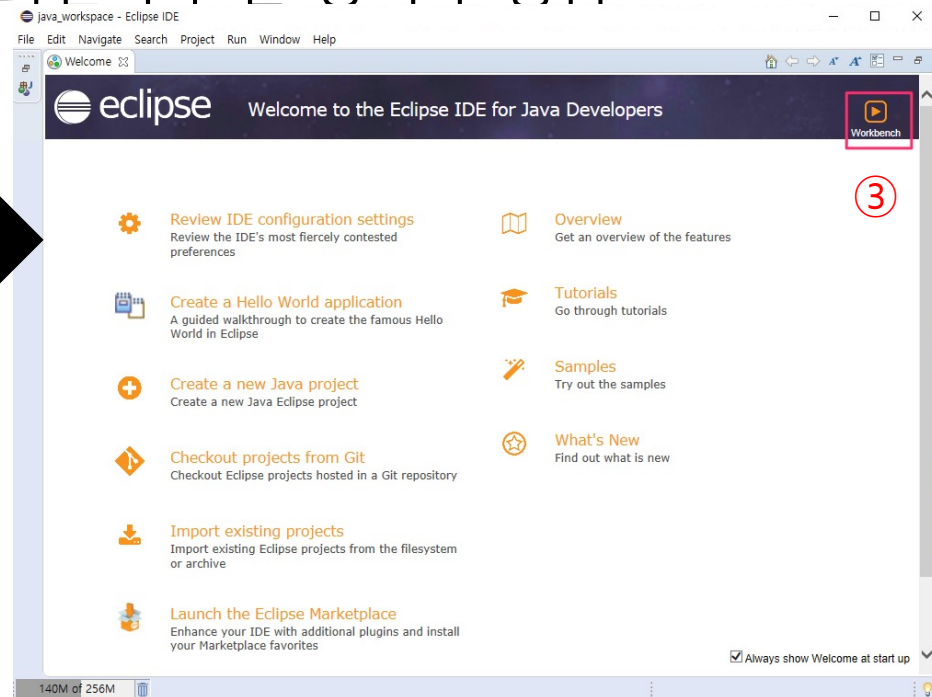
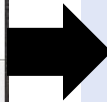
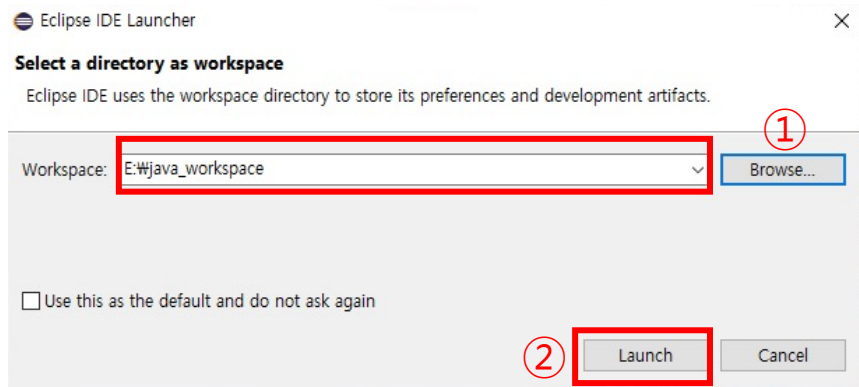
Eclipse 설치 #2

설치가 종료되면 **LAUNCH** 버튼 클릭



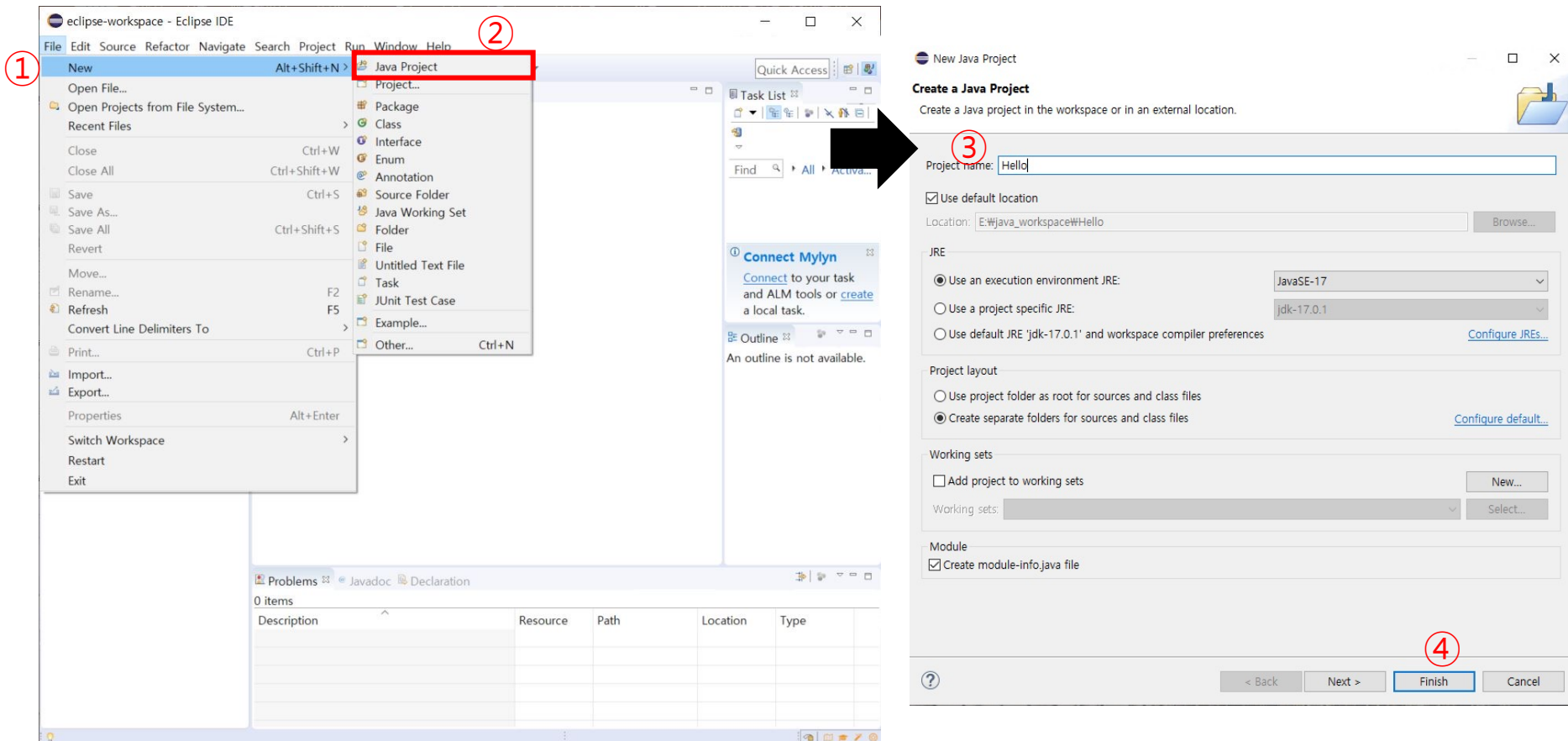
Eclipse 실행

- Workspace 폴더 생성
 - C 드라이브가 아닌 드라이브에 별도의 폴더를 생성해서 프로젝트 workspace로 설정함
 - D:\java_workspace
 - 프로그램 작성 후 소스 코드를 찾기 쉬운 폴더를 설정
- Eclipse를 최초 실행하면 아래 화면과 같은 창이 실행됨
 - Workbench 버튼을 클릭함



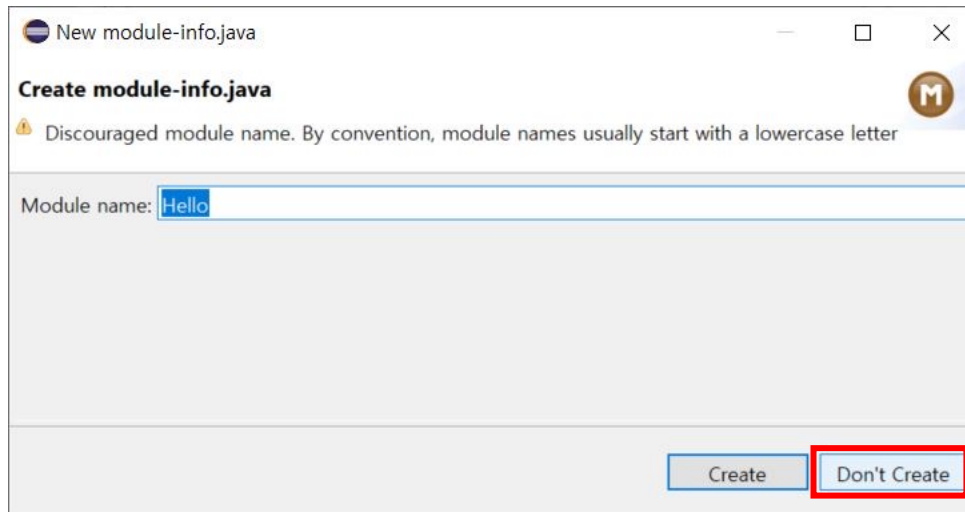
Hello 프로젝트 생성

- File > New > Java Project 선택
- Project name: Hello 입력 후 Finish 버튼 클릭



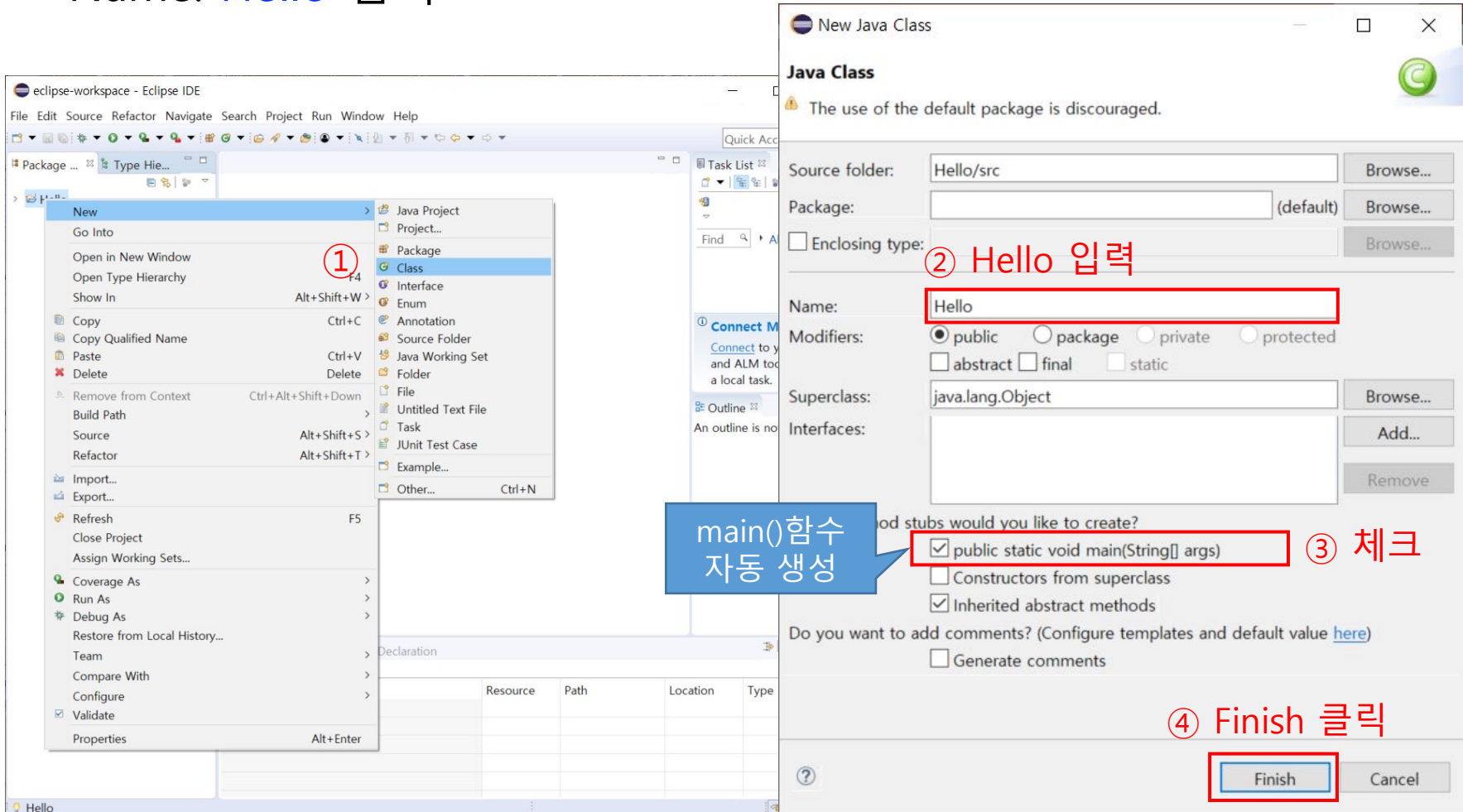
Hello 프로젝트 생성 #2

- 모듈 생성 안함
- Create module-info.java
 - Don't Create 버튼 클릭



Hello 클래스 추가

- Hello 프로젝트 오른쪽 버튼 > New > Class
- Name: Hello 입력



Hello.java

주의할 점:

- 파일 이름(**Hello.java**)과 클래스 이름(**Hello**)은 반드시 동일해야 됨

<**Hello.java**>

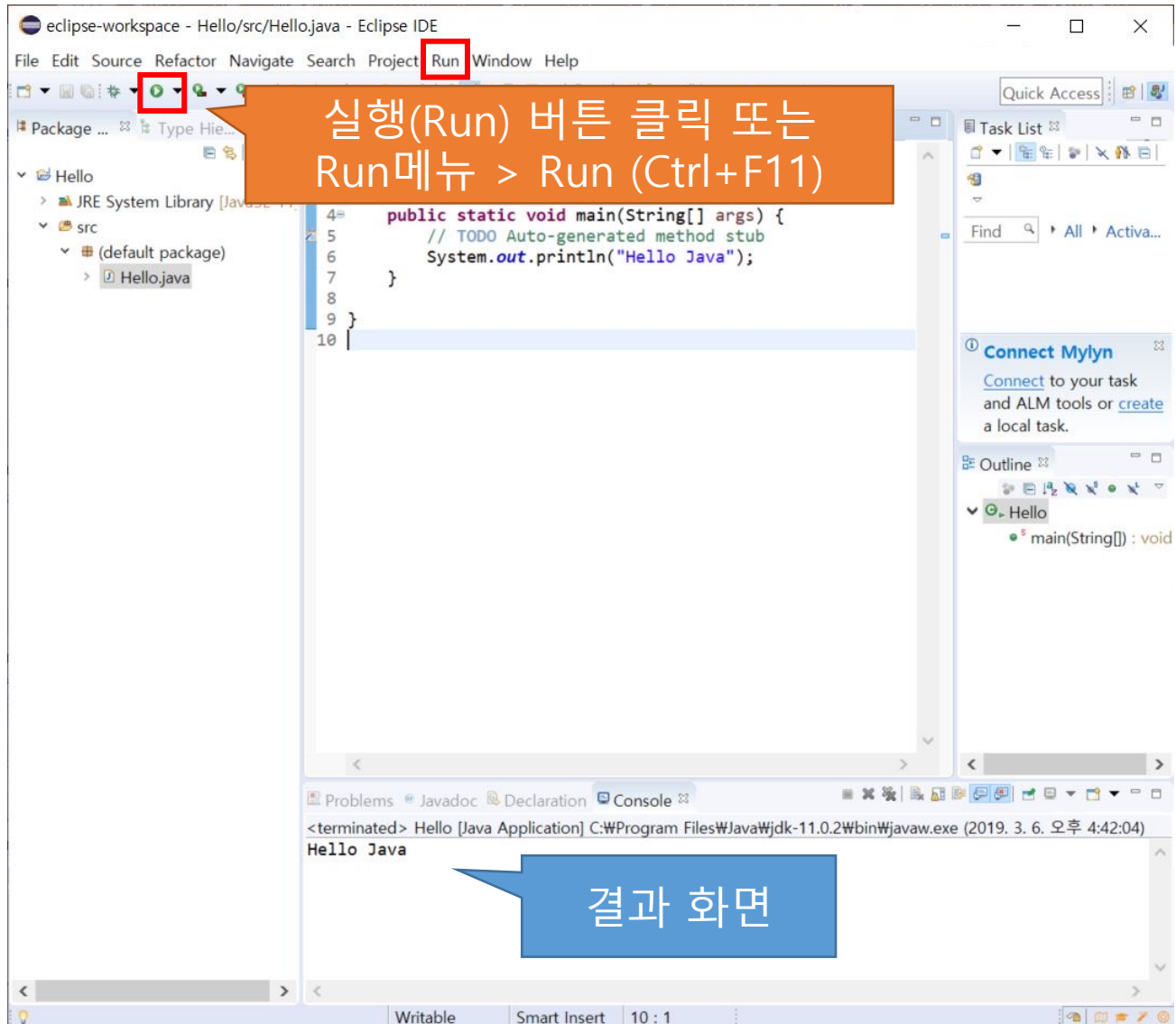
```
public class Hello {  
  
    public static void main(String[] args) {  
        // TODO Auto-generated method stub  
        System.out.println("Hello Java");  
    }  
}
```

내용 추가

<Hello.c>

```
#include <stdio.h>  
  
int main(int argc, const char * argv[]) {  
    printf("Hello, World!\n");  
    return 0;  
}
```


Hello.java 실행: Run 메뉴



자바 프로그램의 구조: Hello.java #2

```
public class Hello {  
    String name;
```

클래스 선언

```
    public Hello() {  
        name = "Hello Java Version 2";  
    }
```

클래스 생성자

```
    public void printName() {  
        System.out.println(name);  
    }
```

클래스 멤버 함수
(메소드)

```
    public static void main(String[] args) {  
        Hello hello = new Hello();  
        hello.printName();  
        //System.out.println("Hello Java");  
    }
```

main()함수

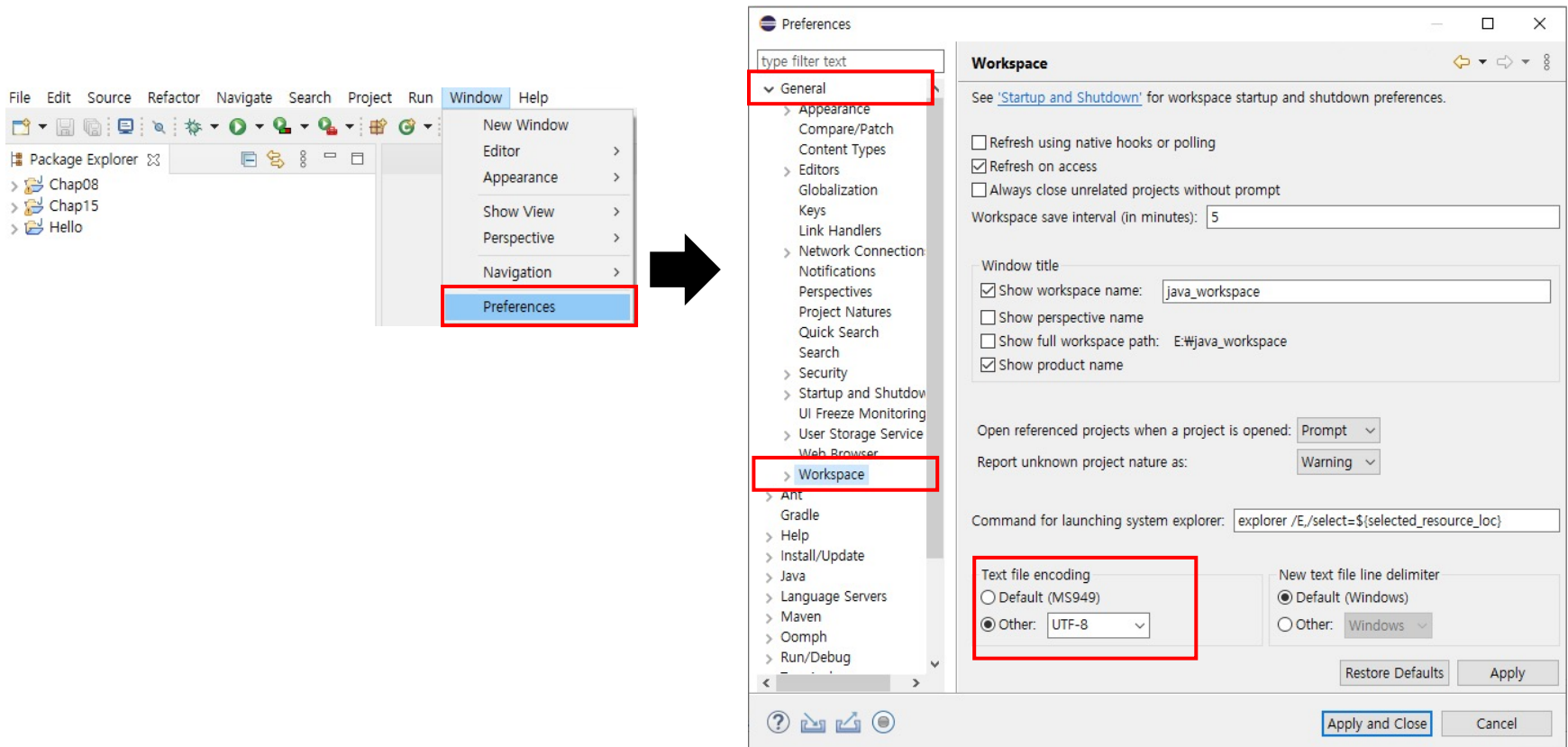
- 하나의 프로젝트에는 단 하나의 main함수만 존재
- 프로젝트가 실행되면 가장 먼저 실행되는 함수

```
}
```

한글 인코딩 방식: UTF-8 설정 #1

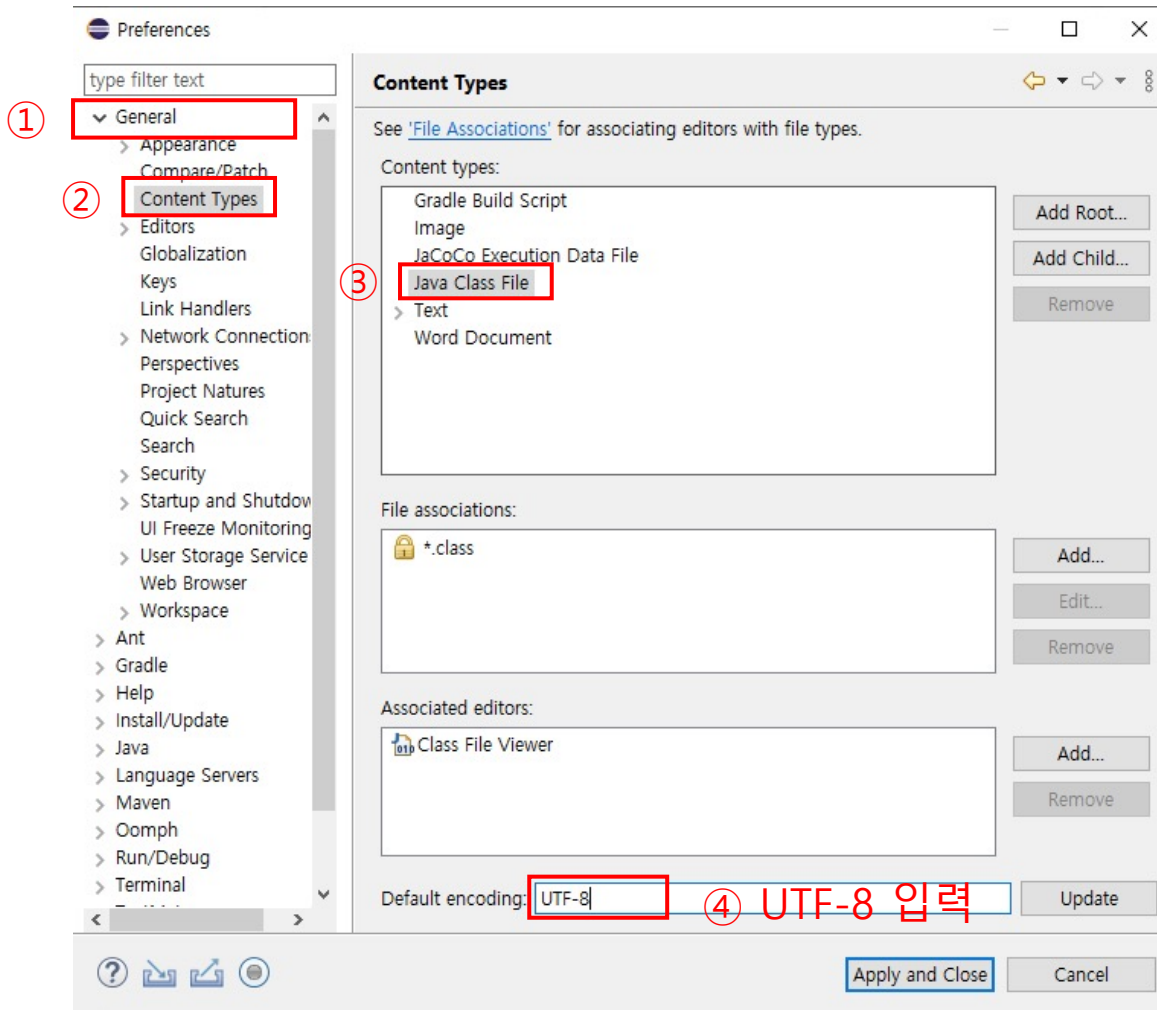
■ 한글 인코딩 방식

- 국제표준 규격인 UTF-8로 소스 코드 인코딩 방식 변경
- Eclipse Window 메뉴 > Preferences 항목 선택
- General > Workspace에서 Text file encoding을 UTF-8로 변경



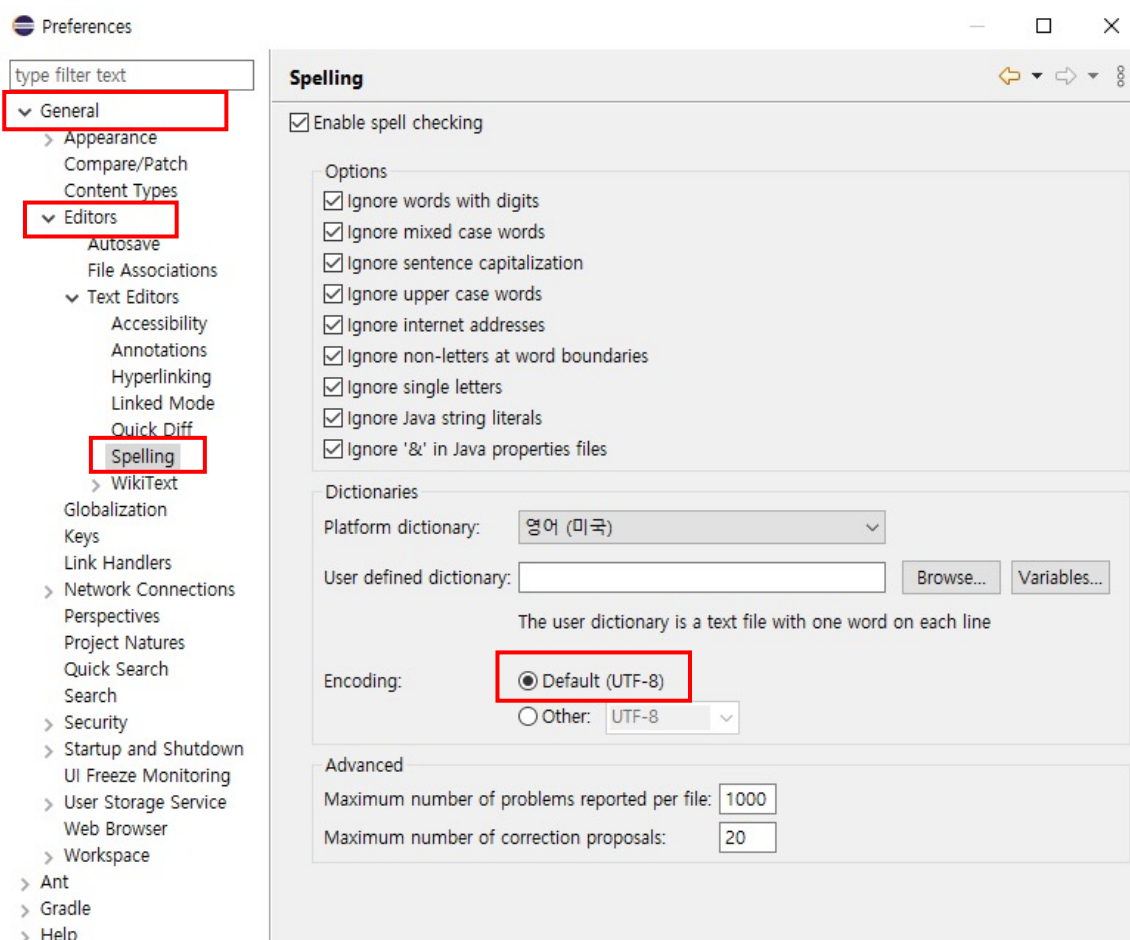
한글 인코딩 방식: UTF-8 설정 #2

- Windows > Preference > General > Content Types
 - Java Class File 선택 Default encoding: UTF-8 수동 입력



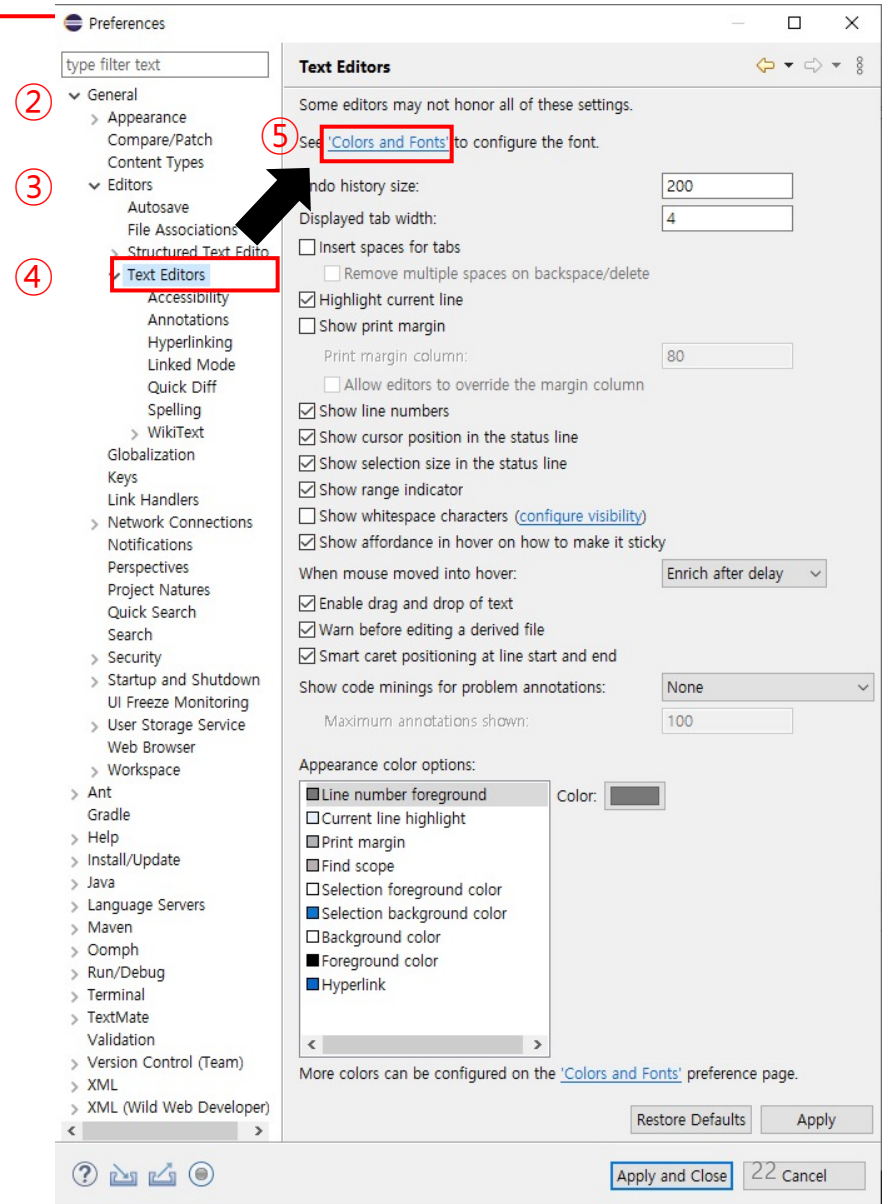
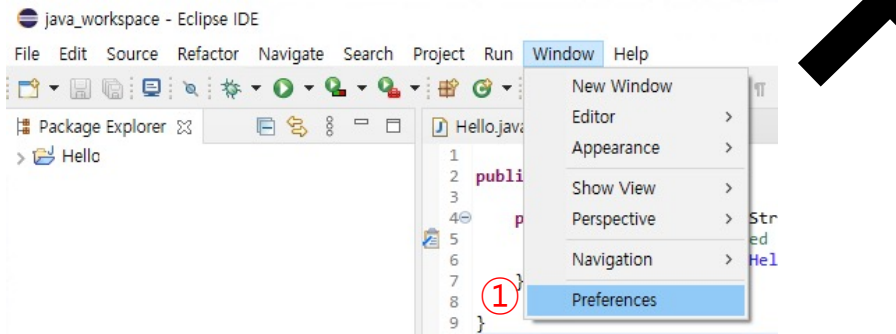
한글 인코딩 방식: UTF-8 설정 #3

- Windows > Preference > General > Editors > Text Editors
 - Spelling 항목: Encoding Default (UTF-8) 선택



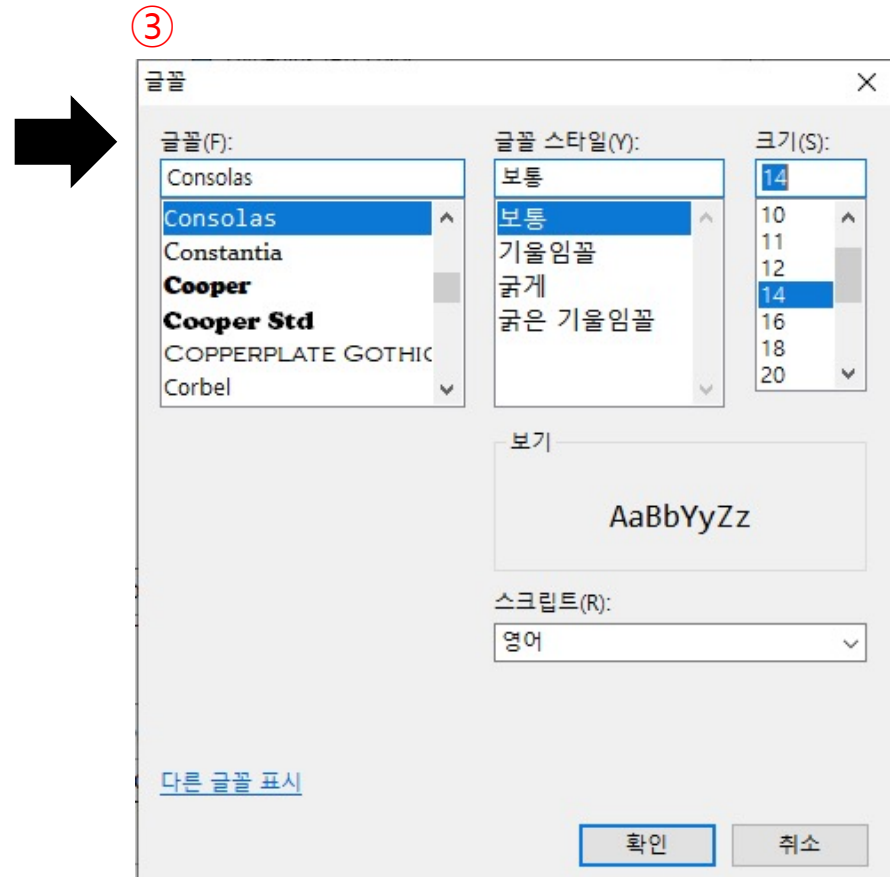
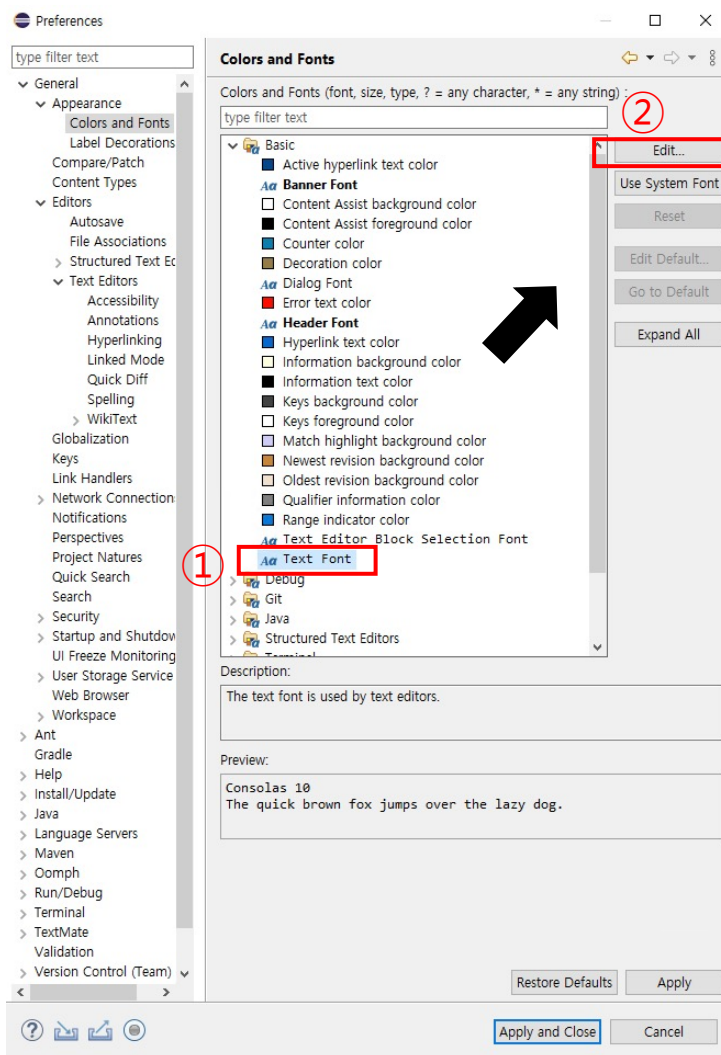
폰트 변경 #1

- Window > Preferences 메뉴
- General > Editors > Text Editors
- Colors and Fonts 선택



폰트 변경 #2

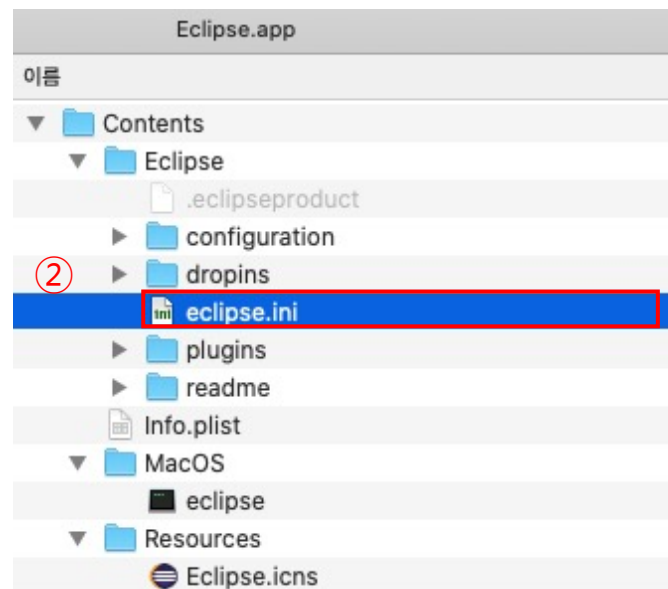
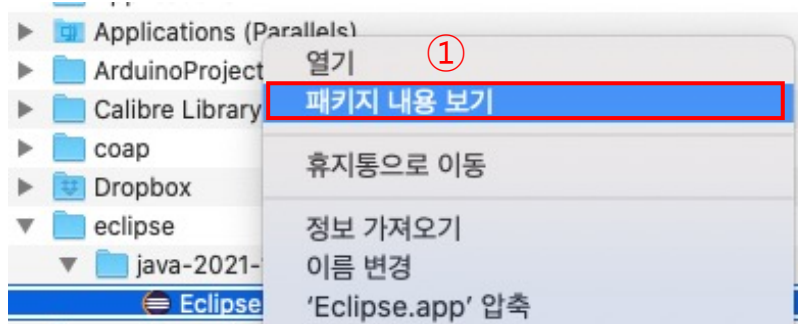
■ Colors and Fonts > Text Font



JDK 버전 변경 후 Eclipse가 실행 안될 경우 #1

▪ Eclipse가 설치된 경로 확인

- /Users/eclipse 폴더 내부에 Eclipse 파일 선택
- 마우스 오른쪽 버튼 > 패키지 내용 보기 메뉴 선택
- **Contents/Eclipse/eclipse.ini** 파일 수정 (Windows 10도 동일)



JDK 버전 변경 후 Eclipse가 실행 안될 경우 #2

- -vm 아래 부분의 JDK 버전을 새롭게 설치한 버전으로 수정

```
eclipse.ini

1 |-startup
2 |../Eclipse/plugins/org.eclipse.equinox.launcher_1.6.400.v20210924-0641.jar
3 |--launcher.library
4 |/Users/changsu/.p2/pool/plugins/
5 |org.eclipse.equinox.launcher.cocoa.macosx.x86_64_1.2.400.v20211117-0650
6 |--product
7 |org.eclipse.epp.package.java.product
8 |--showsplash
9 |/Users/changsu/.p2/pool/plugins/org.eclipse.epp.package.common_4.22.0.20211202-1200
10 |--launcher.defaultAction
11 |openFile
12 |--launcher.appendVmargs
13 |-vm
14 |/Library/Java/JavaVirtualMachines/jdk-17.0.2.jdk/Contents/Home/bin
15 |-vmargs
16 |-Dosgi.requiredJavaVersion=11
17 |-Dosgi.instance.area.default=@user.home/eclipse-workspace
18 |-Dsun.java.command=Eclipse
19 |-XX:+UseG1GC
20 |-XX:+UseStringDeduplication
21 |--add-modules=ALL-SYSTEM
22 |-XstartOnFirstThread
23 |-Dorg.eclipse.swt.internal.carbon.smallFonts
24 |-Dosgi.requiredJavaVersion=11
25 |-Dosgi.dataAreaRequiresExplicitInit=true
26 |-Dorg.eclipse.swt.graphics.Resource.reportNonDisposed=true
27 |-Xms256m
28 |-Xmx2048m
```



질문이 있는 학생들은 LMS 질의 응답 게시판에 올려주세요.