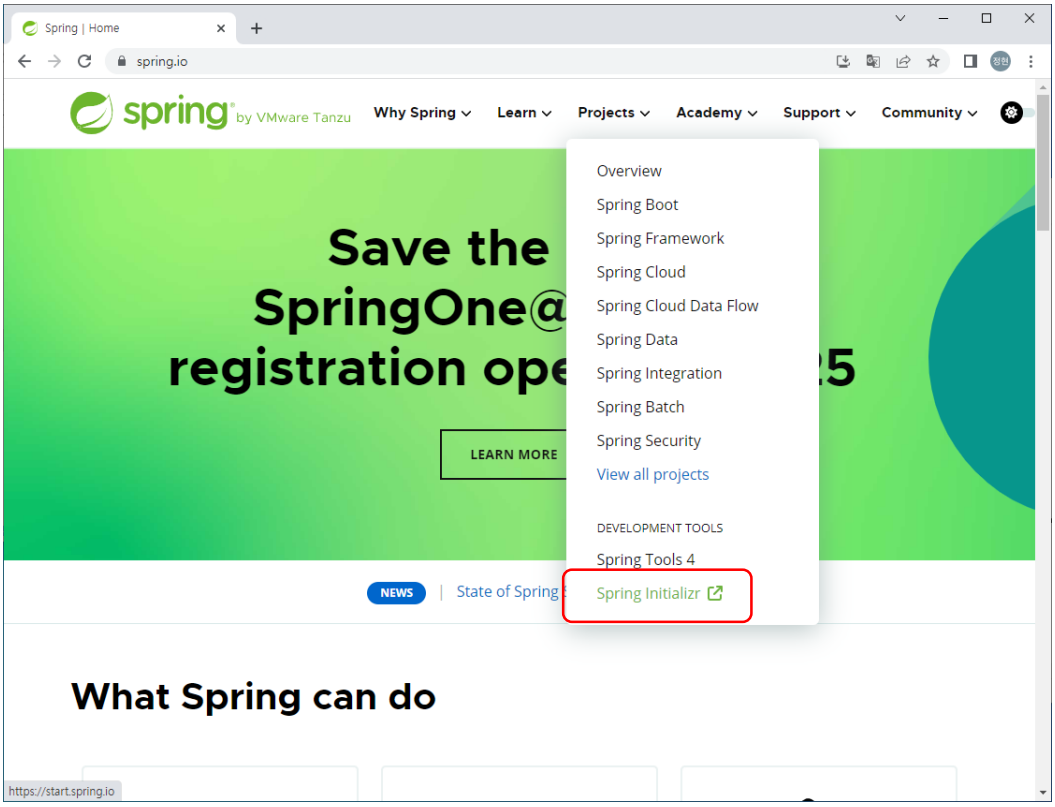
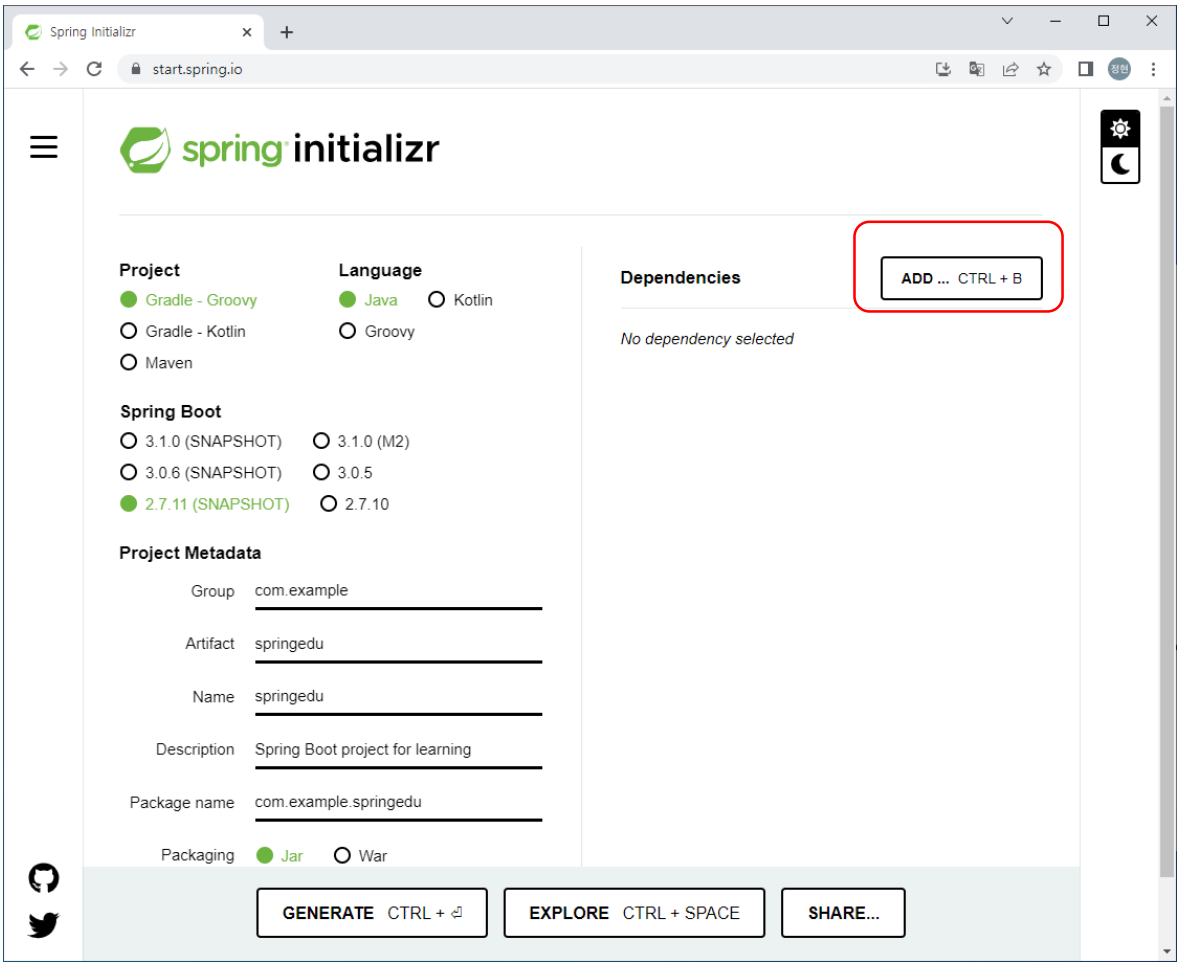
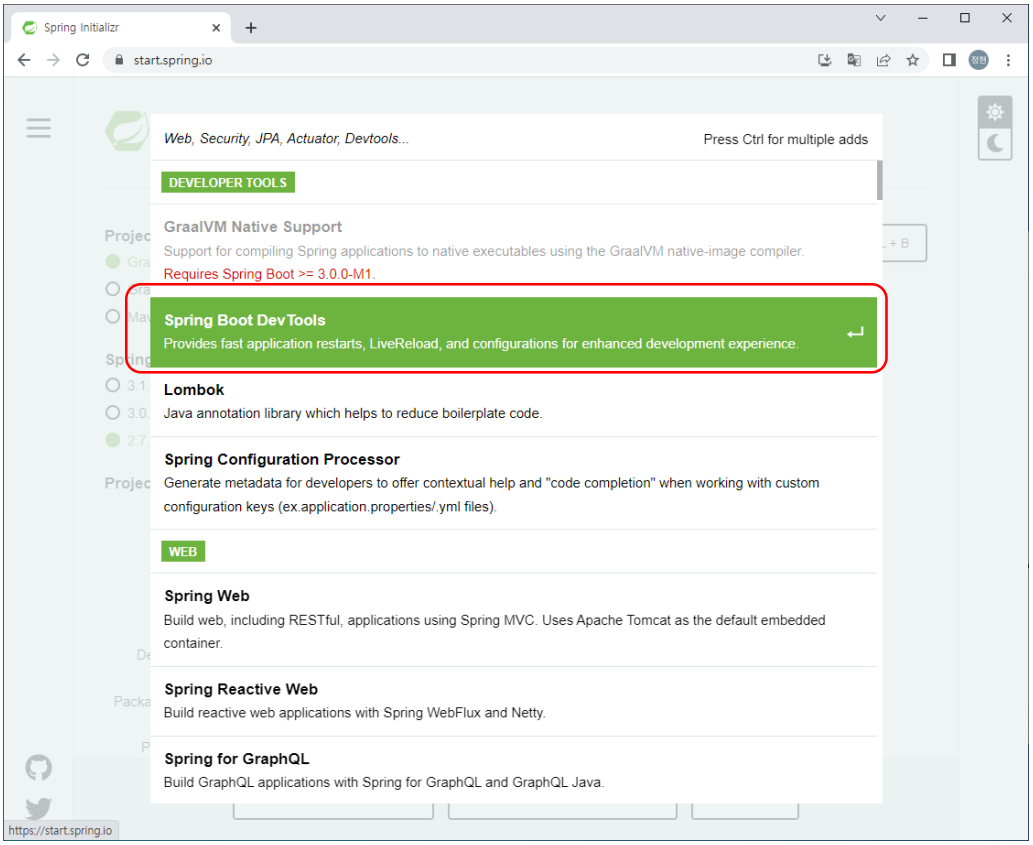
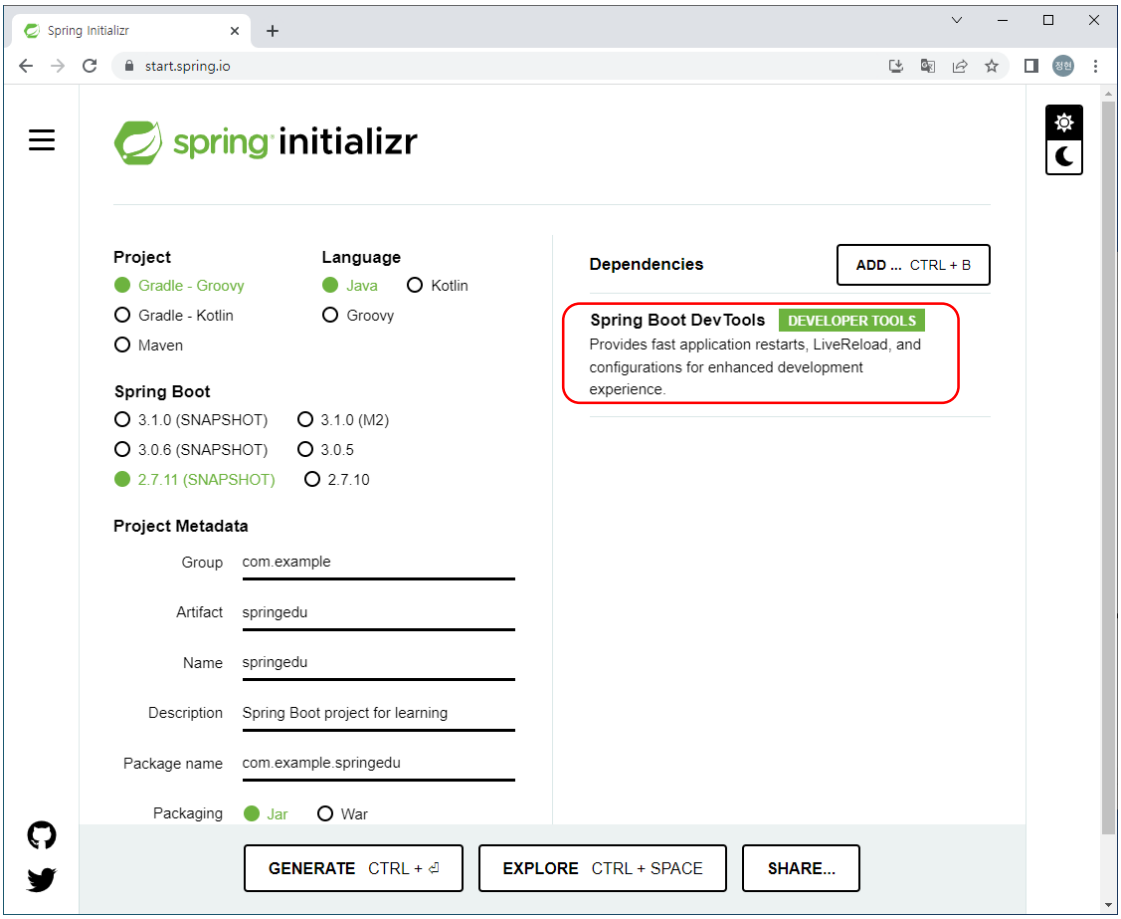
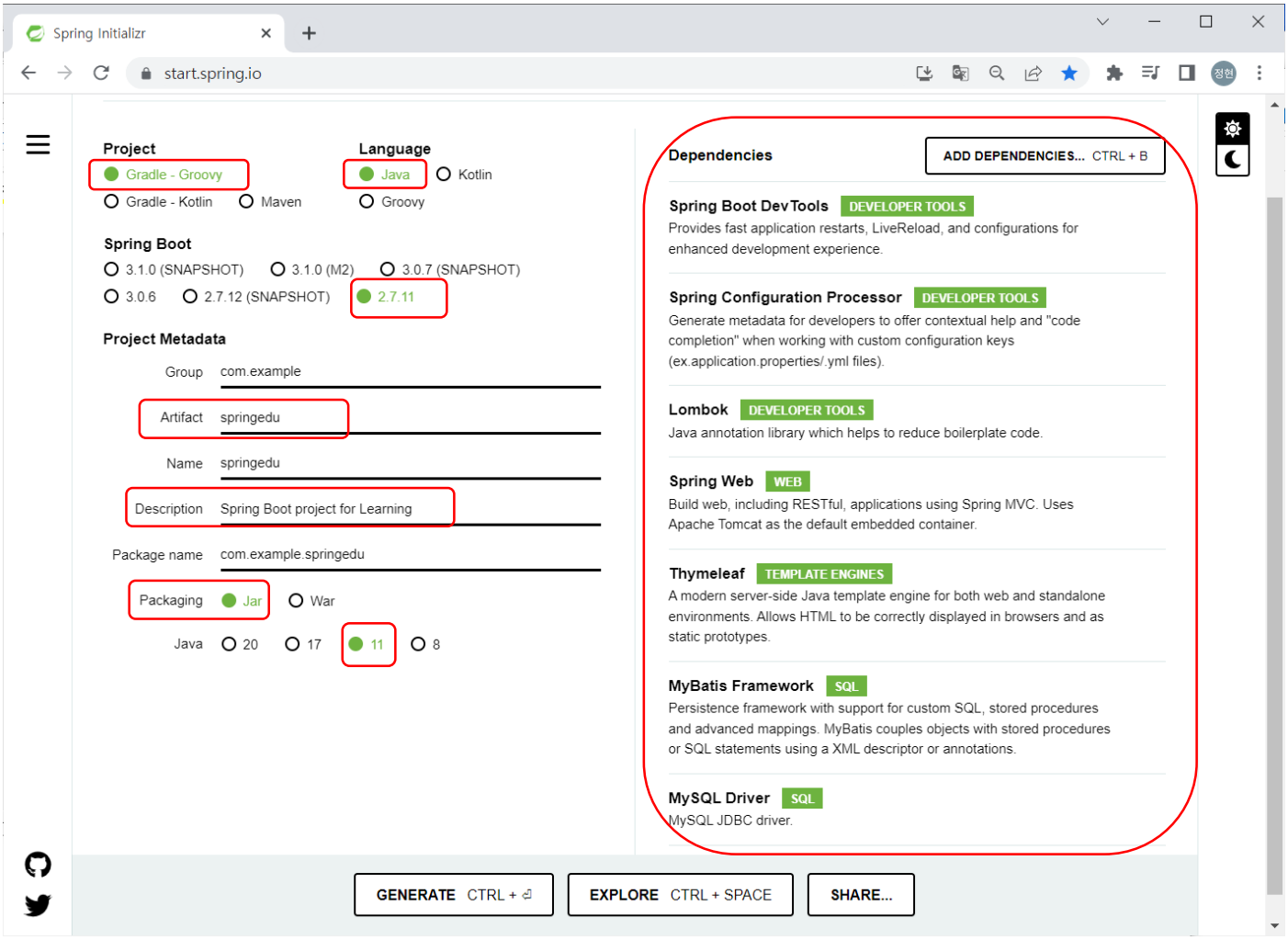
[ 스프링 사이트에서 제공하는 Spring Initializer 를 통한 스프링 부트용 프로젝트 만들기 ]




Spring Initializr
start.spring.io
Web, Security, JPA, Actuator, Devtools...
Press Ctrl for multiple adds
DEVELOPER TOOLS
GraalVM Native Support
Support for compiling Spring applications to native executables using the GraalVM native-image compiler.
Requires Spring Boot >= 3.0.0-M1.
Spring Boot DevTools
Provides fast application restarts, LiveReload, and configurations for enhanced development experience.
Lombok
Java annotation library which helps to reduce boilerplate code.
Spring Configuration Processor
Generate metadata for developers to offer contextual help and "code completion" when working with custom configuration keys (ex.application.properties/.yml files).
WEB
Spring Web
Build web, including RESTful, applications using Spring MVC. Uses Apache Tomcat as the default embedded container.
Spring Reactive Web
Build reactive web applications with Spring WebFlux and Netty.
Spring for GraphQL
Build GraphQL applications with Spring for GraphQL and GraphQL Java.
https://start.spring.io


Spring Initializr
start.spring.io
spring initializr
Project
Gradle - Groovy
Gradle - Kotlin
Maven
Language
Java
Kotlin
Groovy
Spring Boot
3.1.0 (SNAPSHOT)
3.1.0 (M2)
3.0.6 (SNAPSHOT)
3.0.5
2.7.11 (SNAPSHOT)
2.7.10
Project Metadata
Group
com.example
Artifact
springedu
Name
springedu
Description
Spring Boot project for learning
Package name
com.example.springedu
Packaging
Jar
War
Dependencies
ADD ... CTRL + B
Spring Boot DevTools
DEVELOPER TOOLS
Provides fast application restarts, LiveReload, and configurations for enhanced development experience.
GENERATE CTRL + ⏎
EXPLORE CTRL + SPACE
SHARE...


Spring Initializr
start.spring.io
Project
Gradle - Groovy
Gradle - Kotlin
Maven
Language
Java
Kotlin
Groovy
Spring Boot
3.1.0 (SNAPSHOT)
3.1.0 (M2)
3.0.7 (SNAPSHOT)
3.0.6
2.7.12 (SNAPSHOT)
2.7.11
Project Metadata
Group com.example
Artifact springedu
Name springedu
Description Spring Boot project for Learning
Package name com.example.springedu
Packaging Jar War
Java 20 17 11 8
Dependencies
ADD DEPENDENCIES... CTRL + B
Spring Boot DevTools DEVELOPER TOOLS
Provides fast application restarts, LiveReload, and configurations for enhanced development experience.
Spring Configuration Processor DEVELOPER TOOLS
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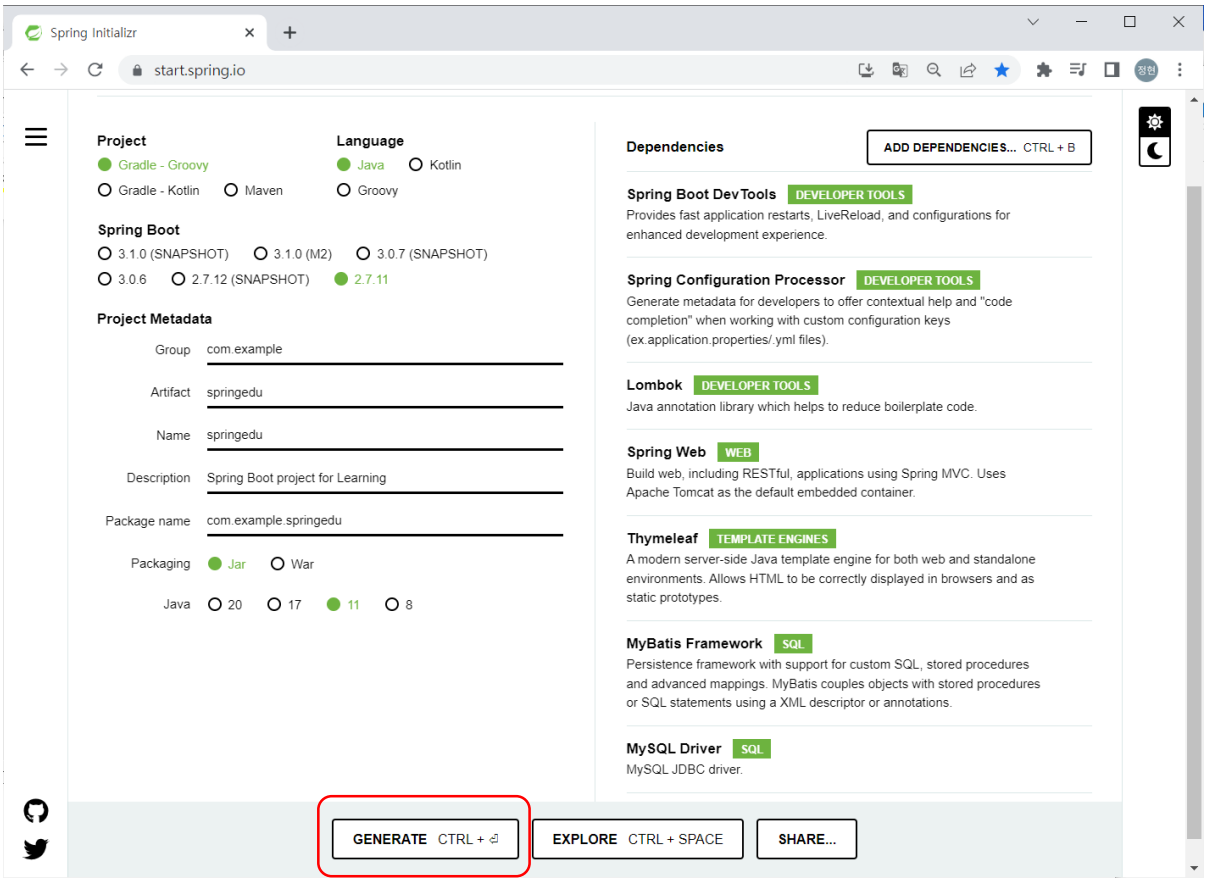
Lombok DEVELOPER TOOLS
Java annotation library which helps to reduce boilerplate code.
Spring Web WEB
Build web, including RESTful, applications using Spring MVC. Uses Apache Tomcat as the default embedded container.
Thymeleaf TEMPLATE ENGINES
A modern server-side Java template engine for both web and standalone environments. Allows HTML to be correctly displayed in browsers and as static prototypes.
MyBatis Framework SQL
Persistence framework with support for custom SQL, stored procedures and advanced mappings. MyBatis couples objects with stored procedures or SQL statements using a XML descriptor or annotations.
MySQL Driver SQL
MySQL JDBC driver.
GENERATE CTRL + ⏎
EXPLORE CTRL + SPACE
SHARE...


Spring Initializr
start.spring.io
Project
Gradle - Groovy
Gradle - Kotlin
Maven
Language
Java
Kotlin
Groovy
Spring Boot
3.1.0 (SNAPSHOT)
3.1.0 (M2)
3.0.7 (SNAPSHOT)
3.0.6
2.7.12 (SNAPSHOT)
2.7.11
Project Metadata
Group com.example
Artifact springedu
Name springedu
Description Spring Boot project for Learning
Package name com.example.springedu
Packaging Jar War
Java 20 17 11 8
Dependencies
ADD DEPENDENCIES... CTRL + B
Spring Boot DevTools DEVELOPER TOOLS
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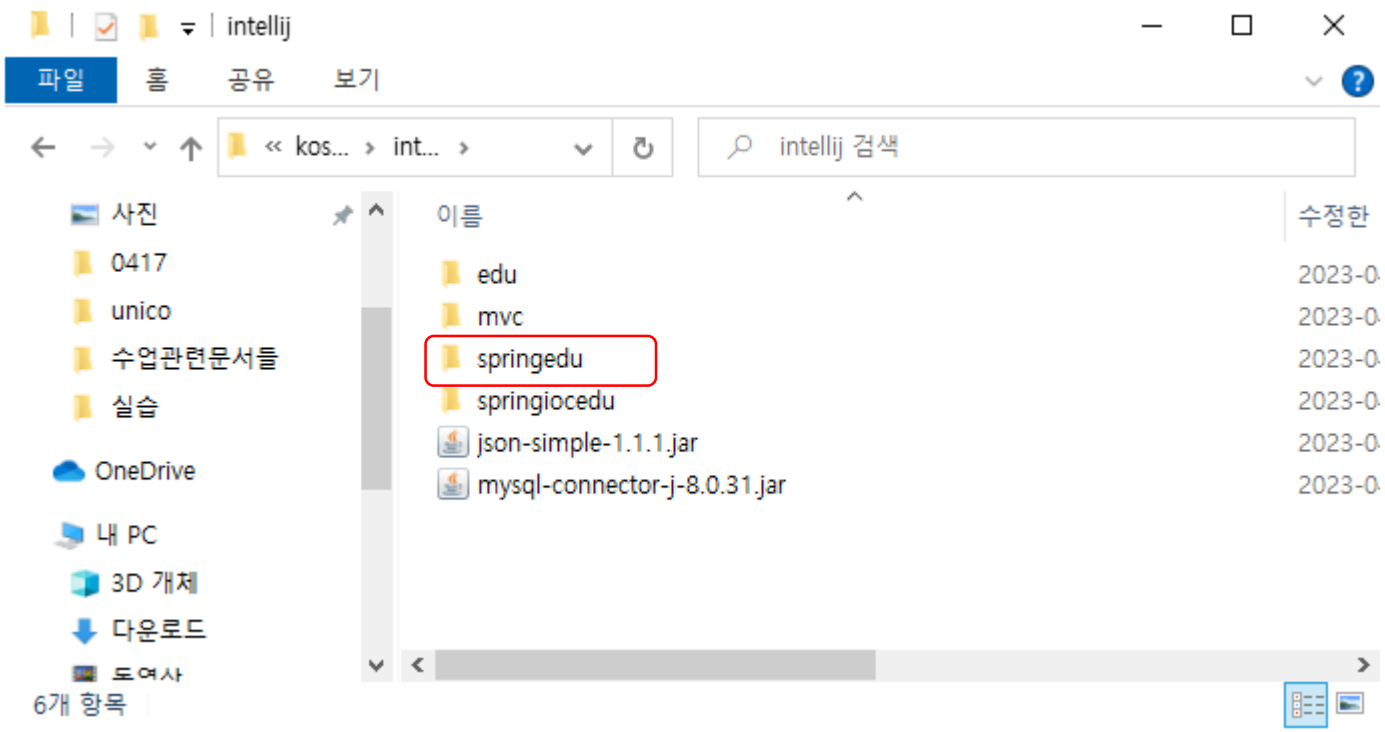
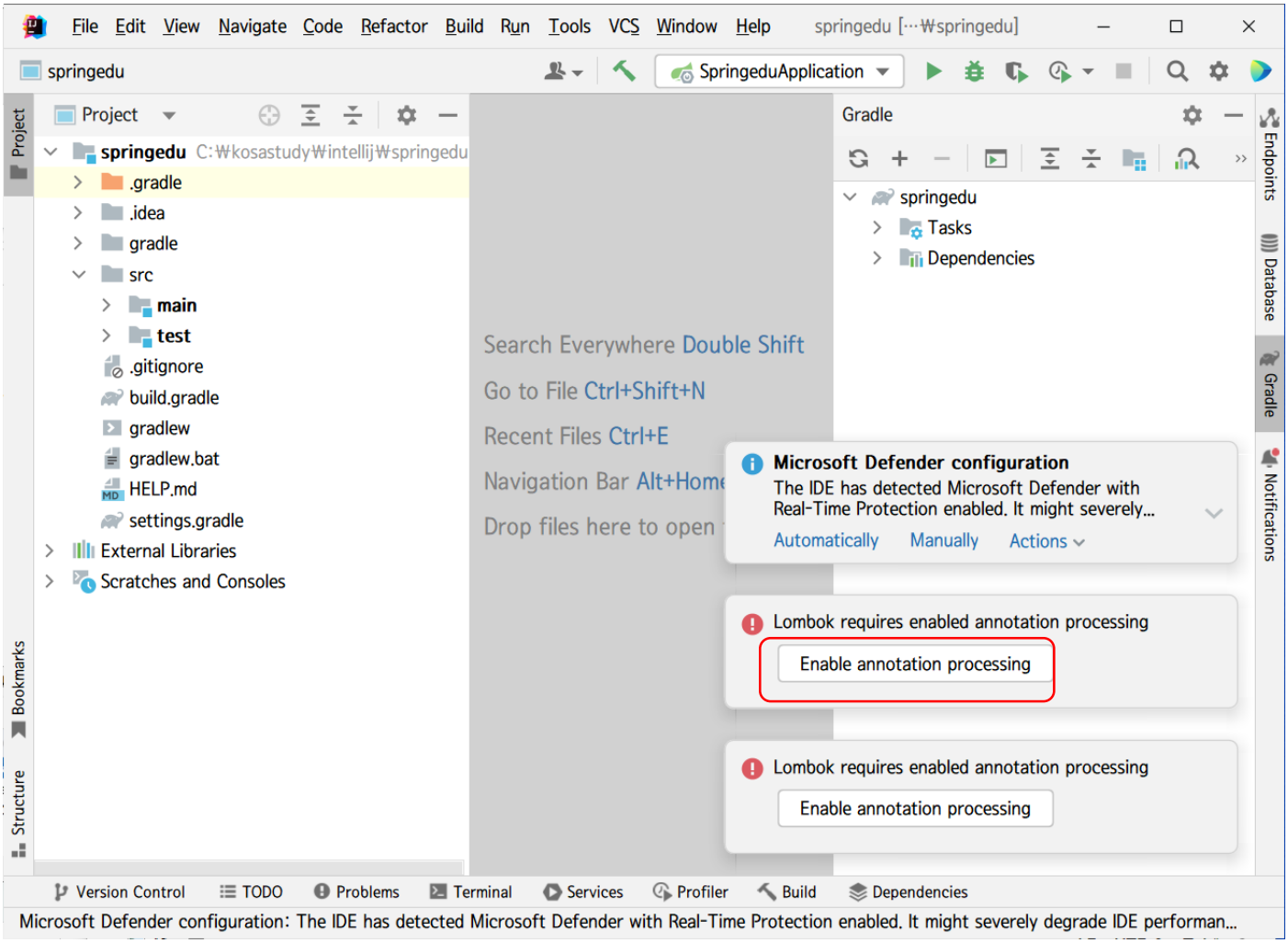
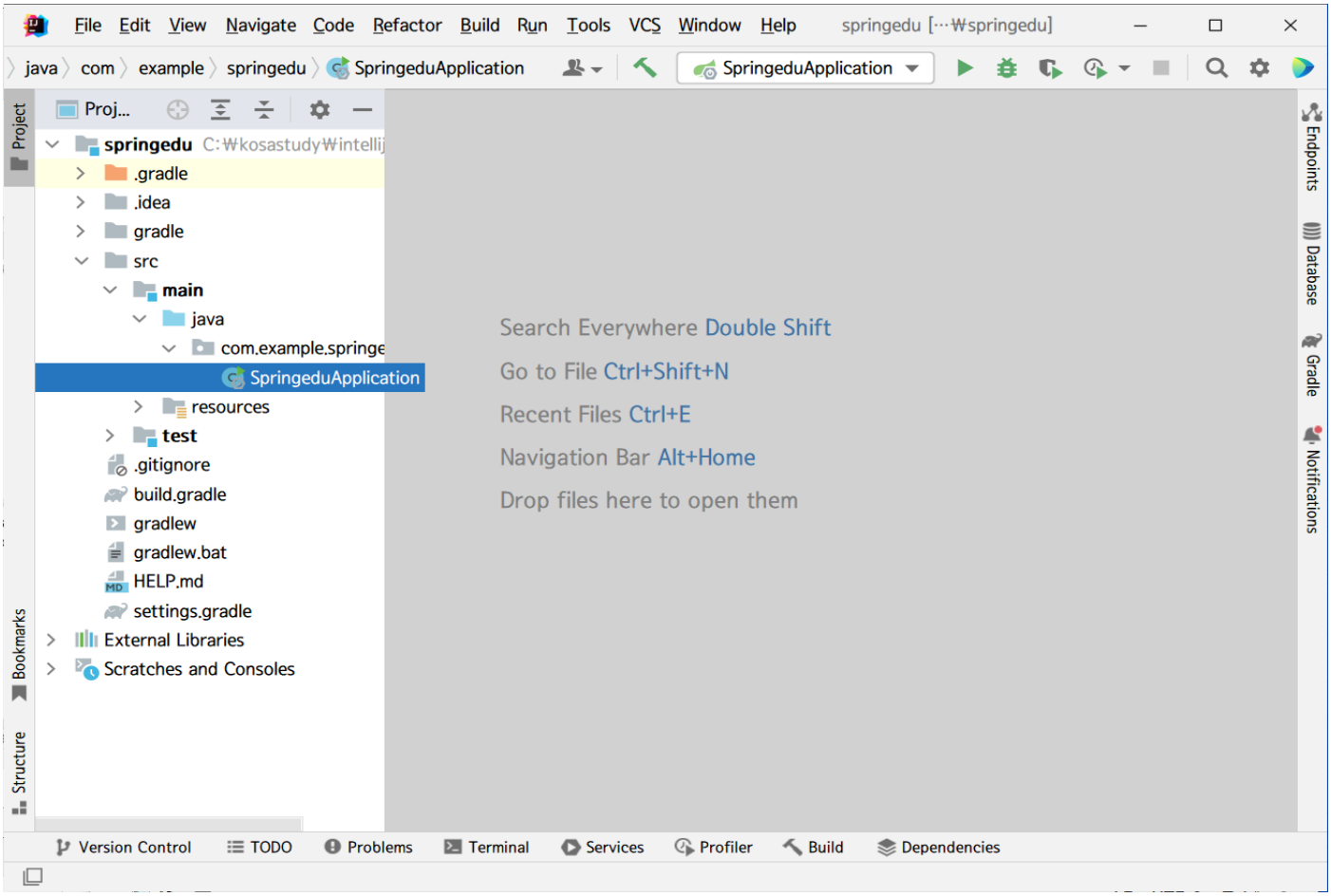
MySQL Driver SQL
MySQL JDBC driver.
GENERATE CTRL + ⏎
EXPLORE CTRL + SPACE
SHARE...

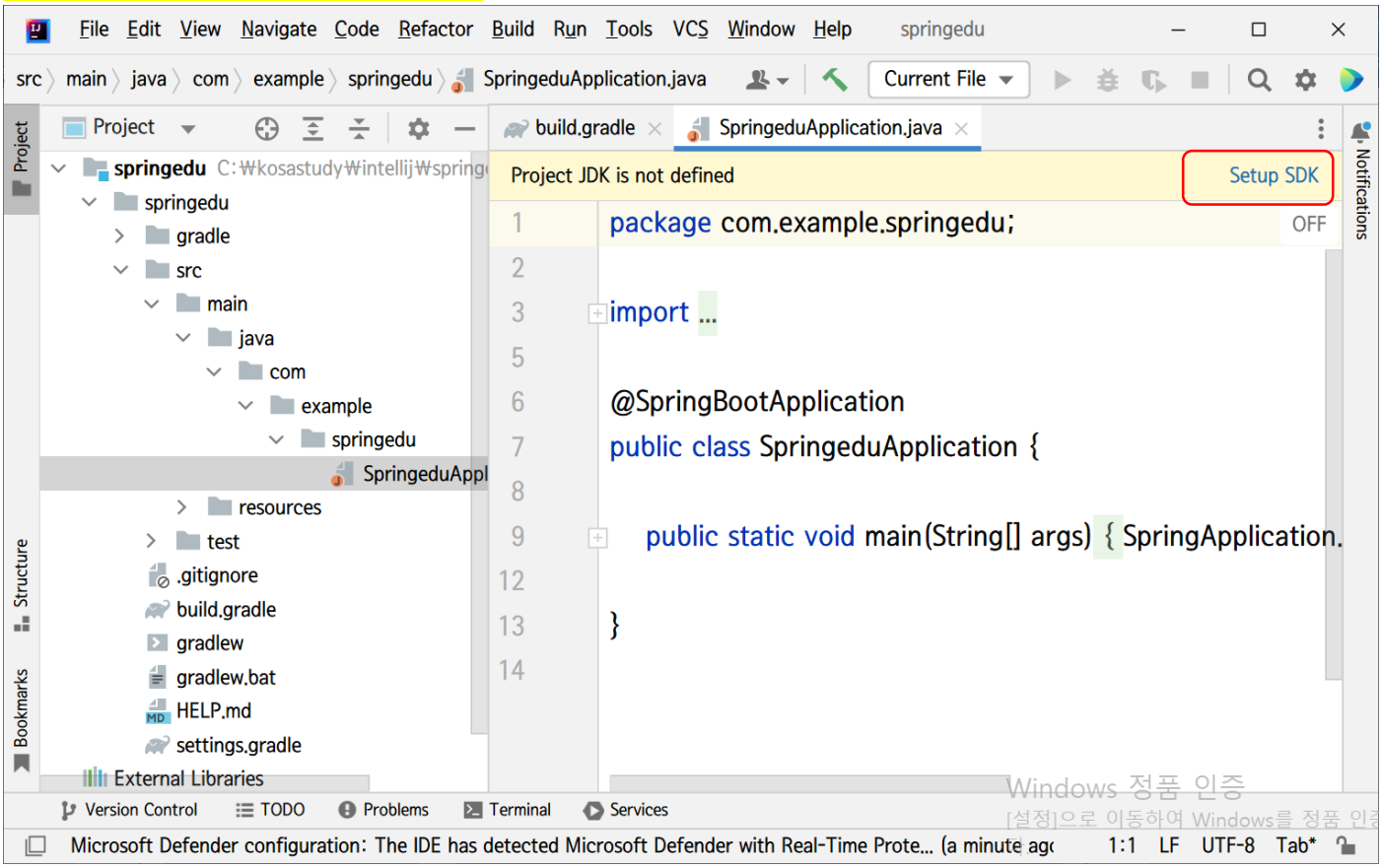

intellij
파일
홈
공유
보기
kos... › int... ›
intellij 검색
사진
0417
unico
수업관련문서들
실습
OneDrive
내 PC
3D 개체
다운로드
이름
수정한
edu
mvc
springedu
springiocedu
json-simple-1.1.1.jar
mysql-connector-j-8.0.31.jar
2023-0
6개 항목

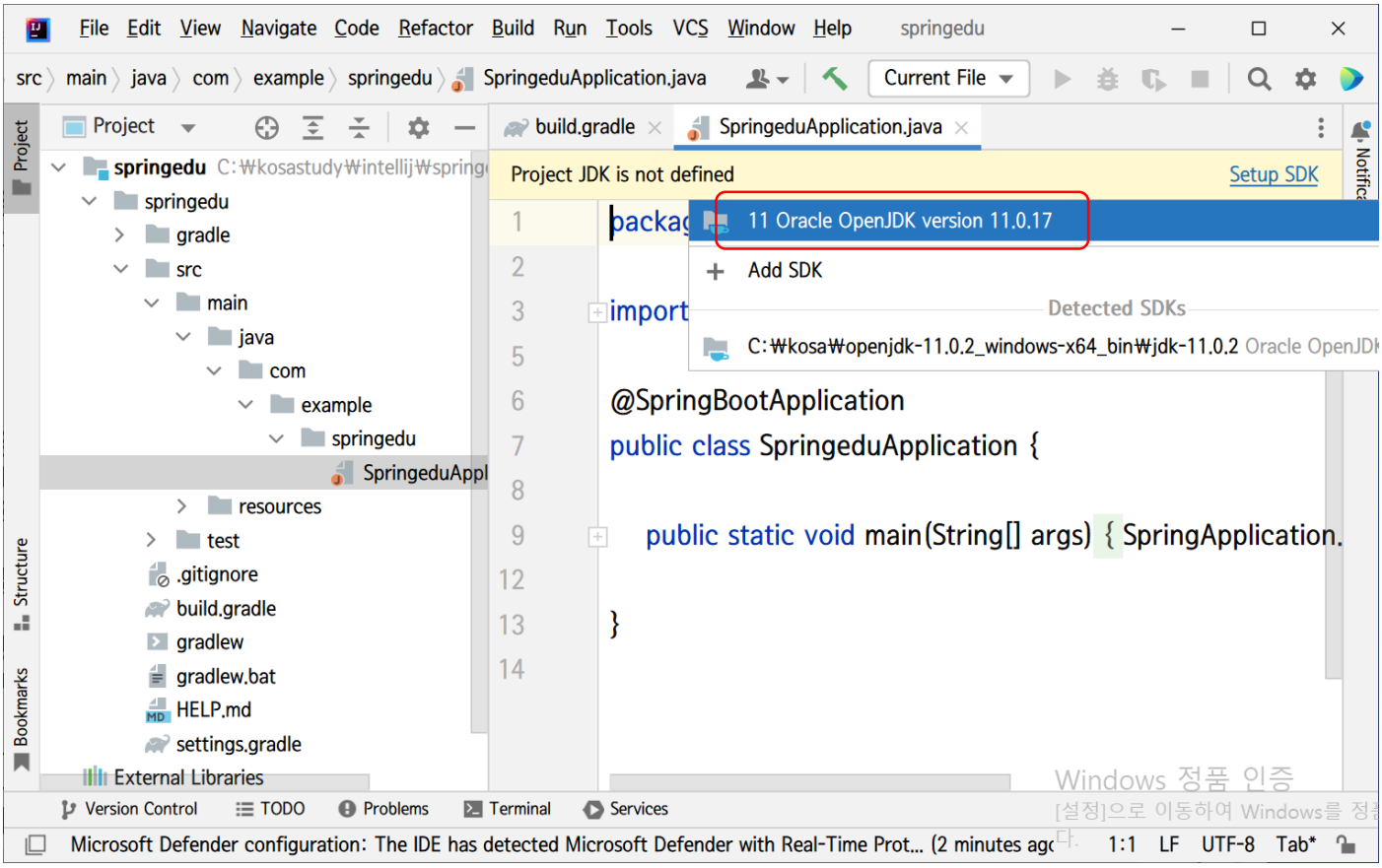

File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
springedu [···₩springedu]
springedu
SpringeduApplication
Project
springedu C:₩kosastudy₩intellij₩springedu
.gradle
.idea
gradle
src
main
test
.gitignore
build.gradle
gradlew
gradlew.bat
HELP.md
settings.gradle
External Libraries
Scratches and Consoles
Gradle
springedu
Tasks
Dependencies
Search Everywhere Double Shift
Go to File Ctrl+Shift+N
Recent Files Ctrl+E
Navigation Bar Alt+Home
Drop files here to open
Microsoft Defender configuration
The IDE has detected Microsoft Defender with Real-Time Protection enabled. It might severely...
Automatically
Manually
Actions
Lombok requires enabled annotation processing
Enable annotation processing
Lombok requires enabled annotation processing
Enable annotation processing
Endpoints
Database
Gradle
Notifications
Bookmarks
Structure
Version Control
TODO
Problems
Terminal
Services
Profiler
Build
Dependencies
Microsoft Defender configuration: The IDE has detected Microsoft Defender with Real-Time Protection enabled. It might severely degrade IDE performan...

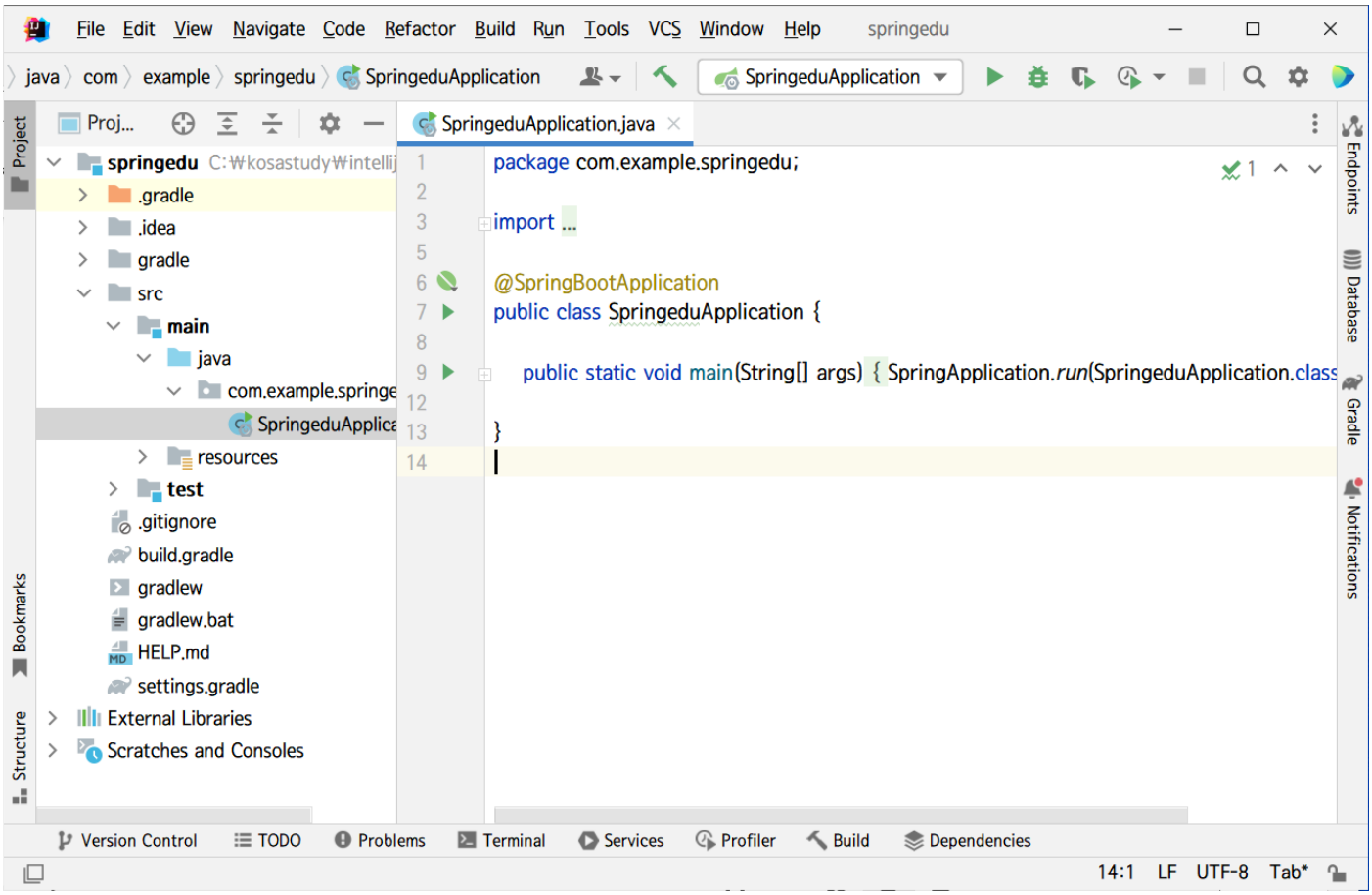



JDK 가 2개 이상 설치된 시스템이라면 JDK를 제대로 못 찾아 발생할 수 있다.

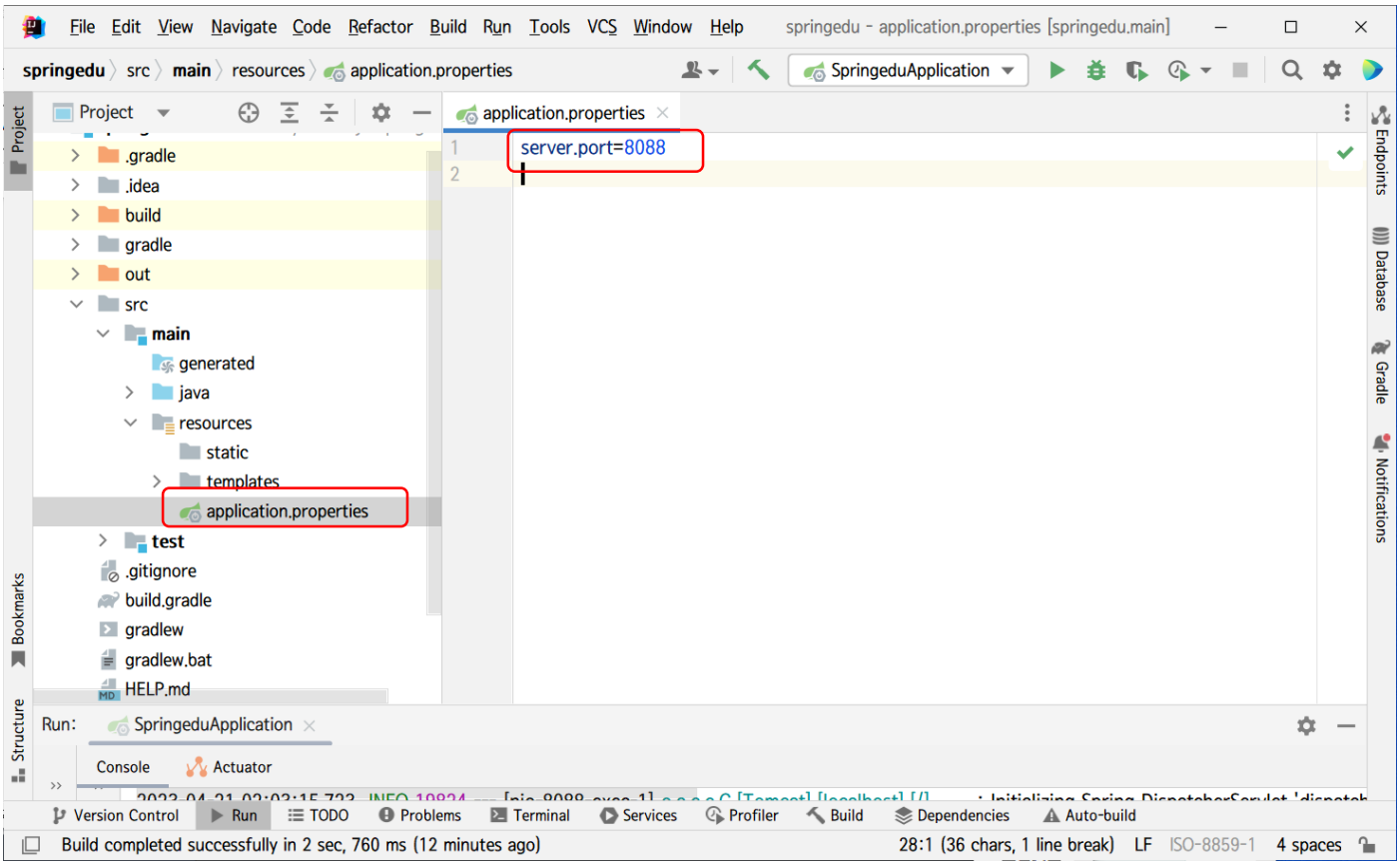
오류가 없다면 7페이지로 넘어간다.



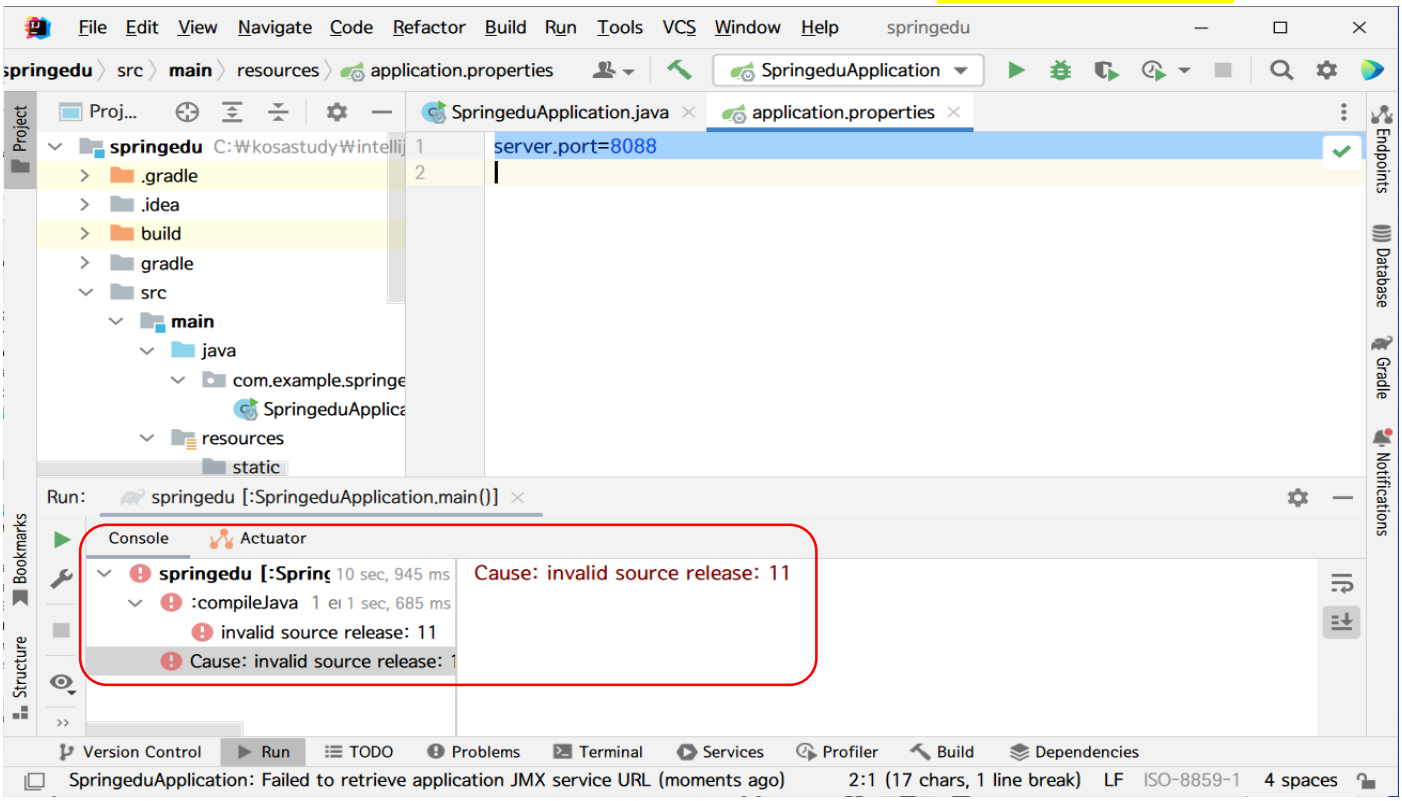

File Edit View Navigate Code Refactor Build Run Tools VCS Window Help springedu
src main java com example springedu SpringeduApplication.java
Current File
Project
springedu C:₩kosastudy₩intellij₩spring
springedu
gradle
src
main
java
com
example
springedu
SpringeduAppl
resources
test
.gitignore
build.gradle
gradlew
gradlew.bat
HELP.md
settings.gradle
External Libraries
build.gradle
SpringeduApplication.java
Project JDK is not defined
Setup SDK
11 Oracle OpenJDK version 11.0.17
Add SDK
Detected SDKs
C:₩kosa₩openjdk-11.0.2_windows-x64_bin₩jdk-11.0.2 Oracle OpenJDK
@SpringBootApplication
public class SpringeduApplication {
public static void main(String[] args) { SpringApplication.
}
Version Control
TODO
Problems
Terminal
Services
Microsoft Defender configuration: The IDE has detected Microsoft Defender with Real-Time Prot... (2 minutes ago
1:1
LF
UTF-8
Tab*

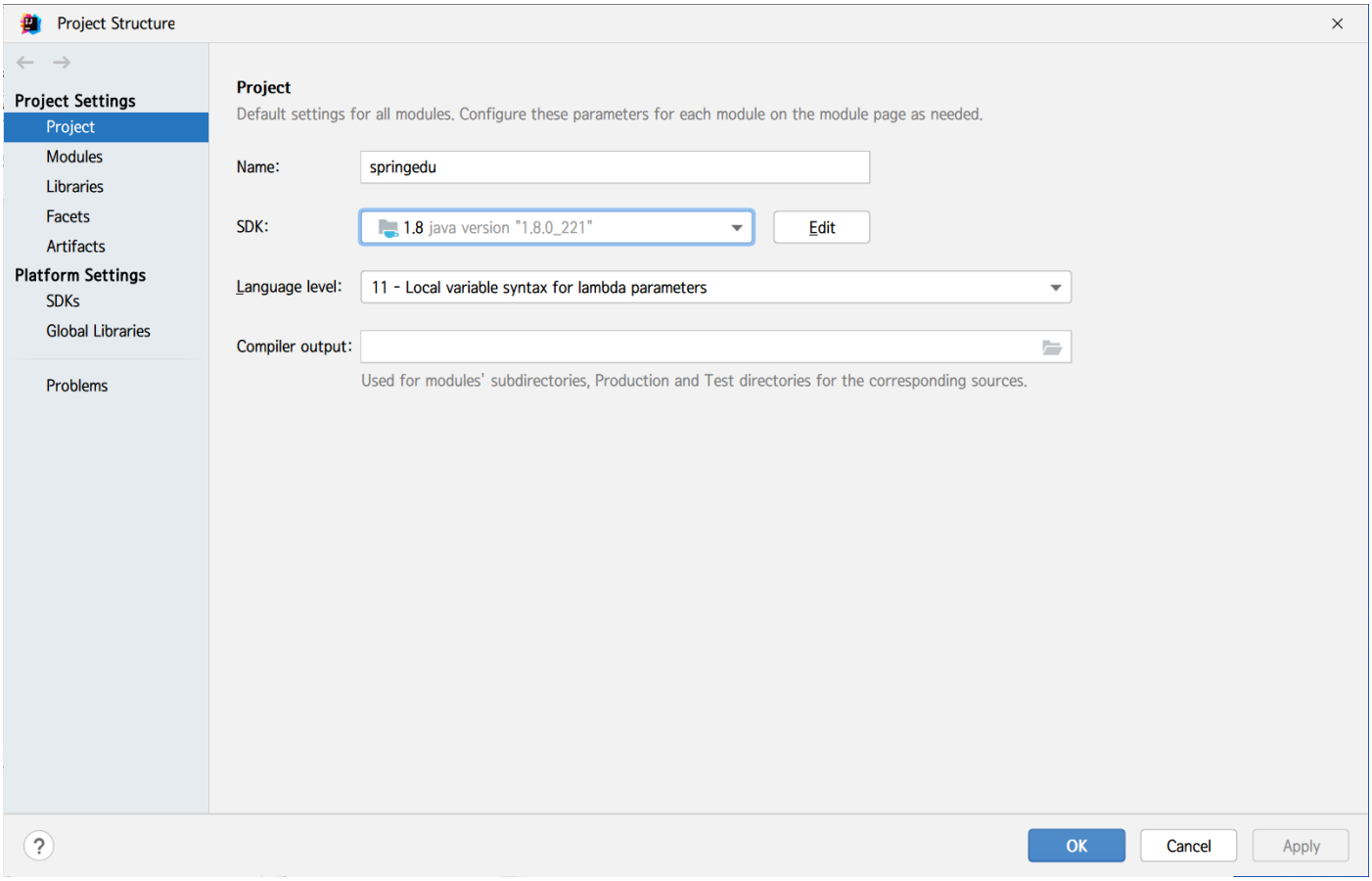

File Edit View Navigate Code Refactor Build Run Tools VCS Window Help springedu
java com example springedu SpringeduApplication
SpringeduApplication
springedu C:₩kosastudy₩intellij
.gradle
.idea
gradle
src
main
java
com.example.springe
SpringeduApplica
resources
test
.gitignore
build.gradle
gradlew
gradlew.bat
HELP.md
settings.gradle
External Libraries
Scratches and Consoles
SpringeduApplication.java
package com.example.springedu;
import ...
@SpringBootApplication
public class SpringeduApplication {
public static void main(String[] args) { SpringApplication.run(SpringeduApplication.class
}
Endpoints
Database
Gradle
Notifications
Version Control
TODO
Problems
Terminal
Services
Profiler
Build
Dependencies
14:1
LF
UTF-8
Tab*

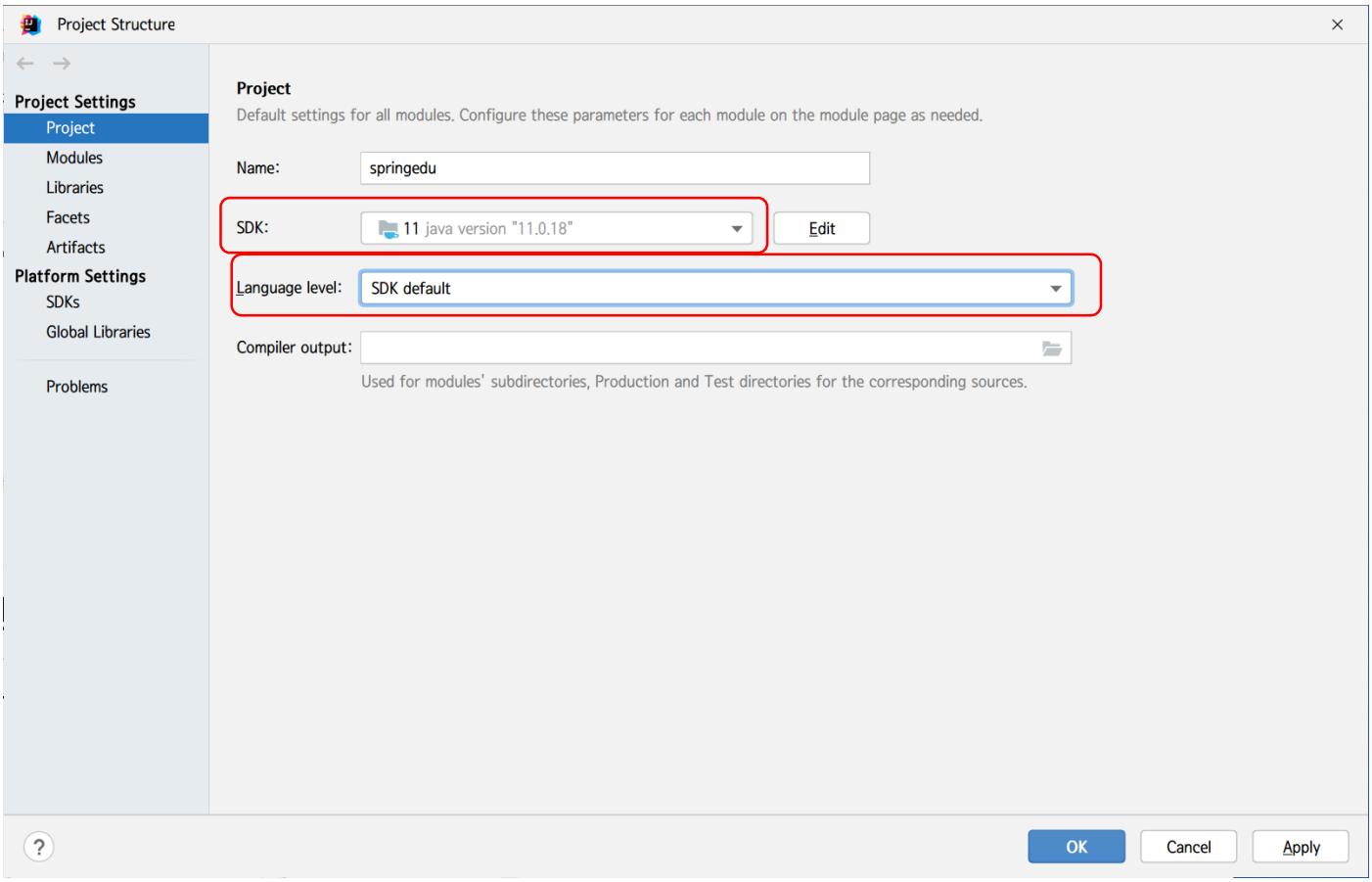
스프링 부트는 서버(WAS, Tomcat)를 내장한다. 포트번호는 8088로 통일한다.

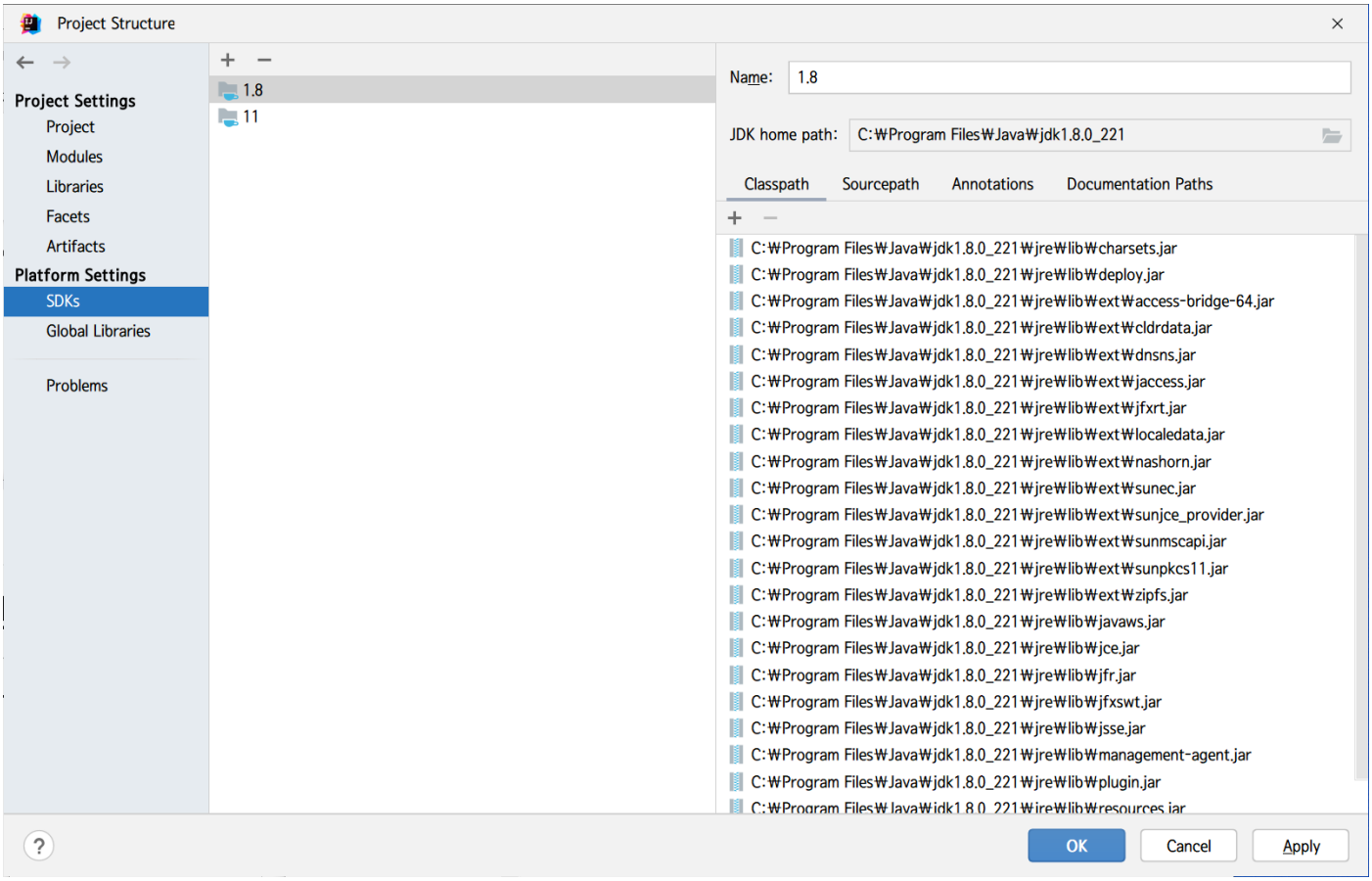


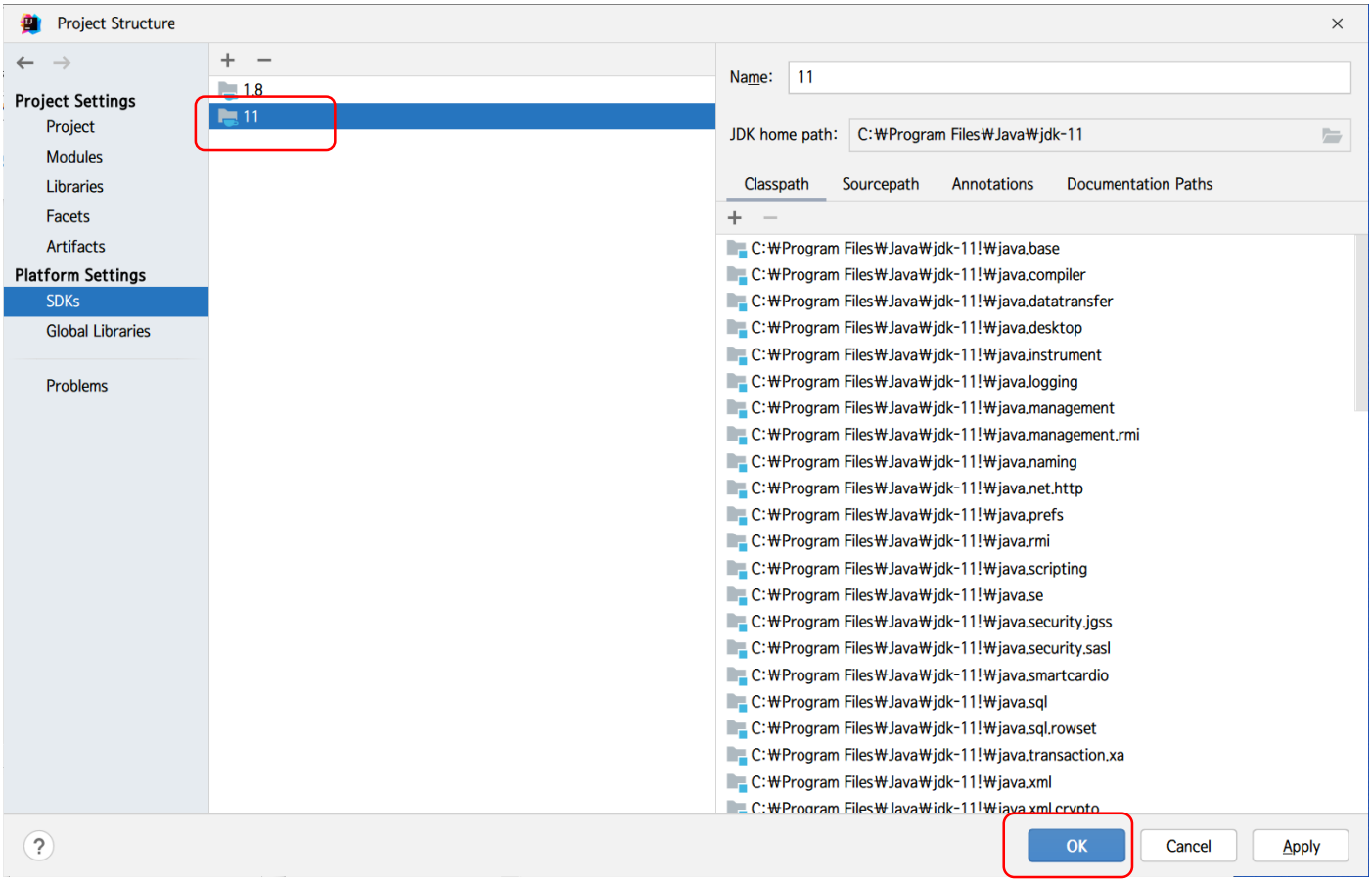

SpringeduApplication.java 를 실행시키면 내장 톰캣도 기동하면서 스프링 컨테이너가 기동된다. 만일 다음과 같은 메시지가 발생한다면 프로젝트에 설정된 JDK 버전과 사용 가능 버전에 차이가 있어서 이다. 8~9페이지의 내용을 채크하고 진행한다. 오류가 없다면 11페이지로 넘어간다.



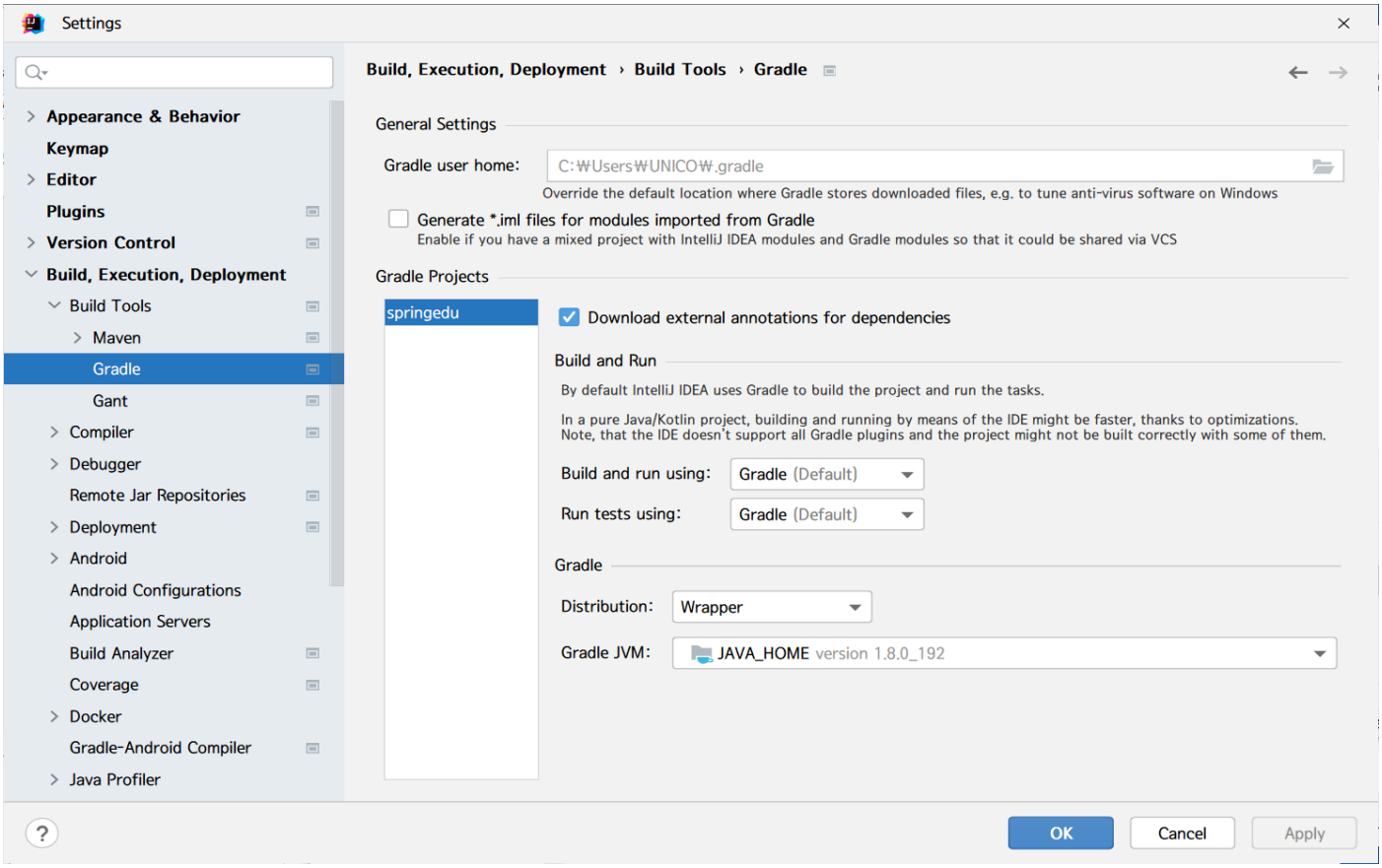

Project Structure
Project Settings
Project
Modules
Libraries
Facets
Artifacts
Platform Settings
SDKs
Global Libraries
Problems
Project
Default settings for all modules. Configure these parameters for each module on the module page as needed.
Name:
springedu
SDK:
1.8 java version "1.8.0_221"
Edit
Language level:
11 - Local variable syntax for lambda parameters
Compiler output:
Used for modules' subdirectories, Production and Test directories for the corresponding sources.
OK
Cancel
Apply


Project Structure
Project Settings
Project
Modules
Libraries
Facets
Artifacts
Platform Settings
SDKs
Global Libraries
Problems
Project
Default settings for all modules. Configure these parameters for each module on the module page as needed.
Name:
springedu
SDK:
11 java version "11.0.18"
Edit
Language level:
SDK default
Compiler output:
Used for modules' subdirectories, Production and Test directories for the corresponding sources.
OK
Cancel
Apply

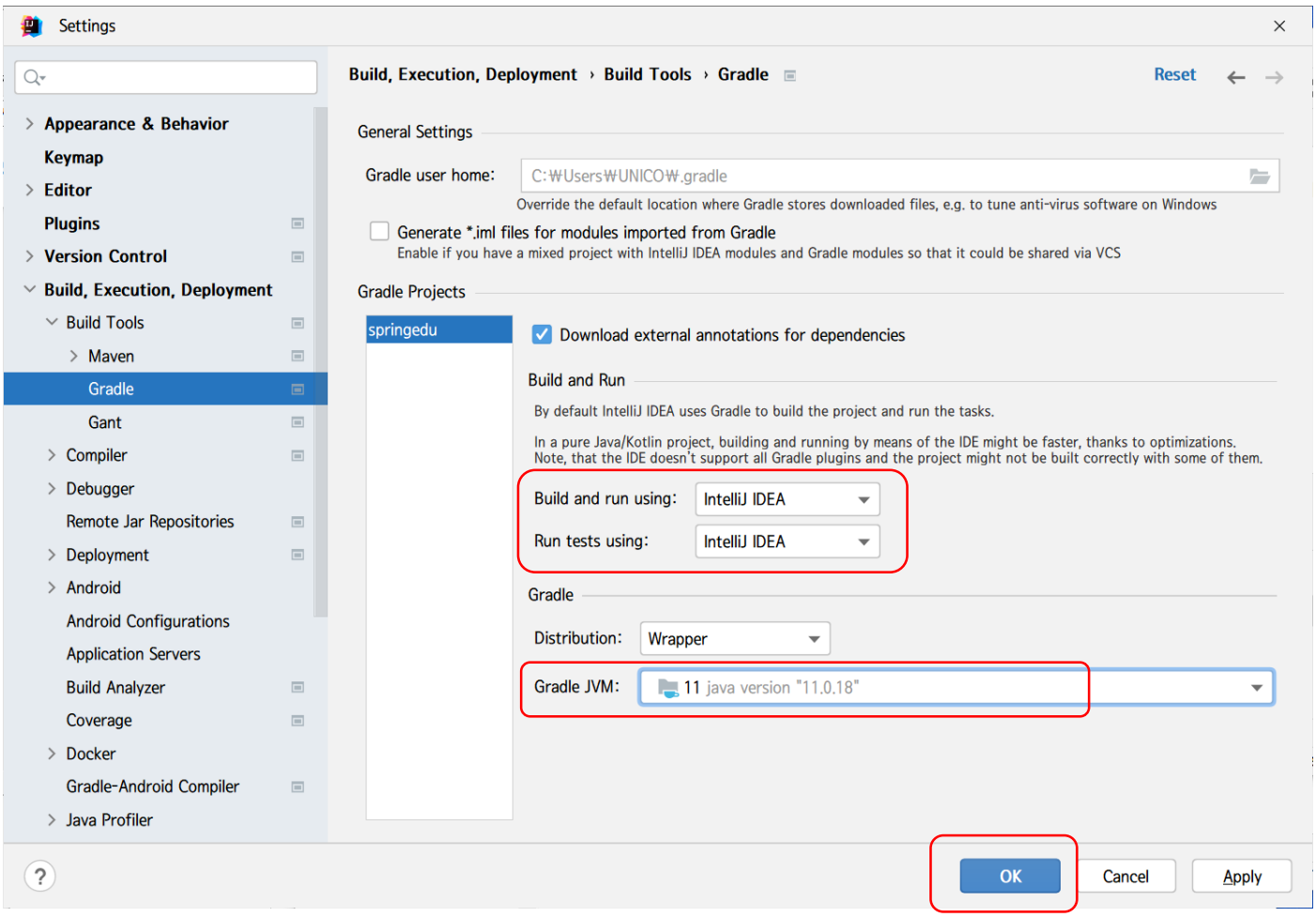

Project Structure
Project Settings
Project
Modules
Libraries
Facets
Artifacts
Platform Settings
SDKs
Global Libraries
Problems
1.8
11
Name: 1.8
JDK home path: C:₩Program Files₩Java₩jdk1.8.0_221
Classpath
Sourcepath
Annotations
Documentation Paths
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩charsets.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩deploy.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩access-bridge-64.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩cldrdata.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩dnsns.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩jaccess.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩jfxrt.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩localedata.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩nashorn.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩sunec.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩sunjce_provider.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩sunmscapi.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩sunpkcs11.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩ext₩zipfs.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩javaws.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩jce.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩jfr.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩jfxswt.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩jsse.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩management-agent.jar
C:₩Program Files₩Java₩jdk1.8.0_221₩jre₩lib₩plugin.jar
OK
Cancel
Apply


Project Structure
Project Settings
Project
Modules
Libraries
Facets
Artifacts
Platform Settings
SDKs
Global Libraries
Problems
1.8
11
Name: 11
JDK home path: C:₩Program Files₩Java₩jdk-11
Classpath
Sourcepath
Annotations
Documentation Paths
C:₩Program Files₩Java₩jdk-11!₩java.base
C:₩Program Files₩Java₩jdk-11!₩java.compiler
C:₩Program Files₩Java₩jdk-11!₩java.datatransfer
C:₩Program Files₩Java₩jdk-11!₩java.desktop
C:₩Program Files₩Java₩jdk-11!₩java.instrument
C:₩Program Files₩Java₩jdk-11!₩java.logging
C:₩Program Files₩Java₩jdk-11!₩java.management
C:₩Program Files₩Java₩jdk-11!₩java.management.rmi
C:₩Program Files₩Java₩jdk-11!₩java.naming
C:₩Program Files₩Java₩jdk-11!₩java.net.http
C:₩Program Files₩Java₩jdk-11!₩java.prefs
C:₩Program Files₩Java₩jdk-11!₩java.rmi
C:₩Program Files₩Java₩jdk-11!₩java.scripting
C:₩Program Files₩Java₩jdk-11!₩java.se
C:₩Program Files₩Java₩jdk-11!₩java.security.jgss
C:₩Program Files₩Java₩jdk-11!₩java.security.sasl
C:₩Program Files₩Java₩jdk-11!₩java.smartcardio
C:₩Program Files₩Java₩jdk-11!₩java.sql
C:₩Program Files₩Java₩jdk-11!₩java.sql.rowset
C:₩Program Files₩Java₩jdk-11!₩java.transaction.xa
C:₩Program Files₩Java₩jdk-11!₩java.xml
OK
Cancel
Apply

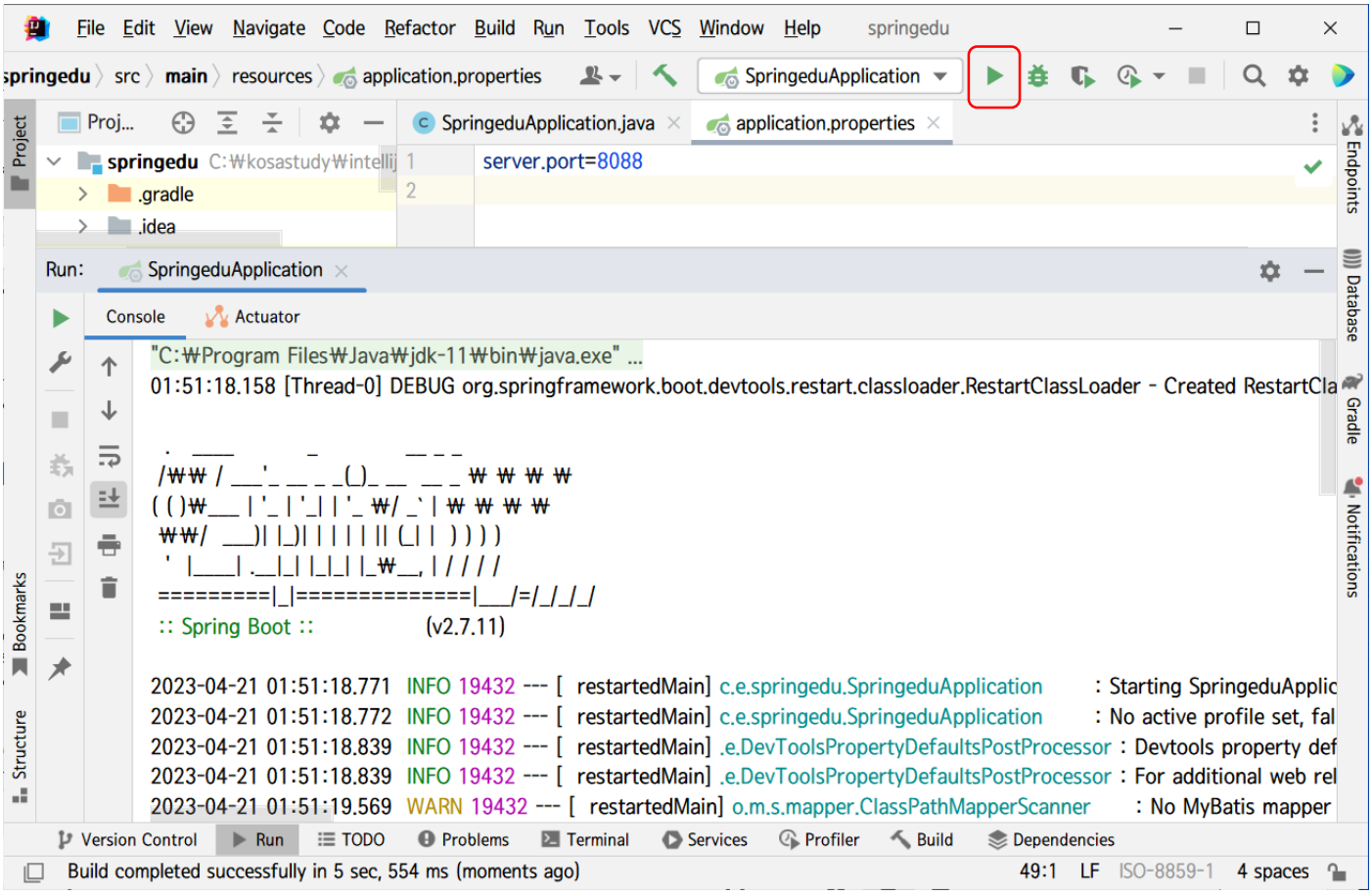
File>Settings>Build,Execution,Deployment>Gradle 을 선택한다. 다음의 윈도우가 출력된다.



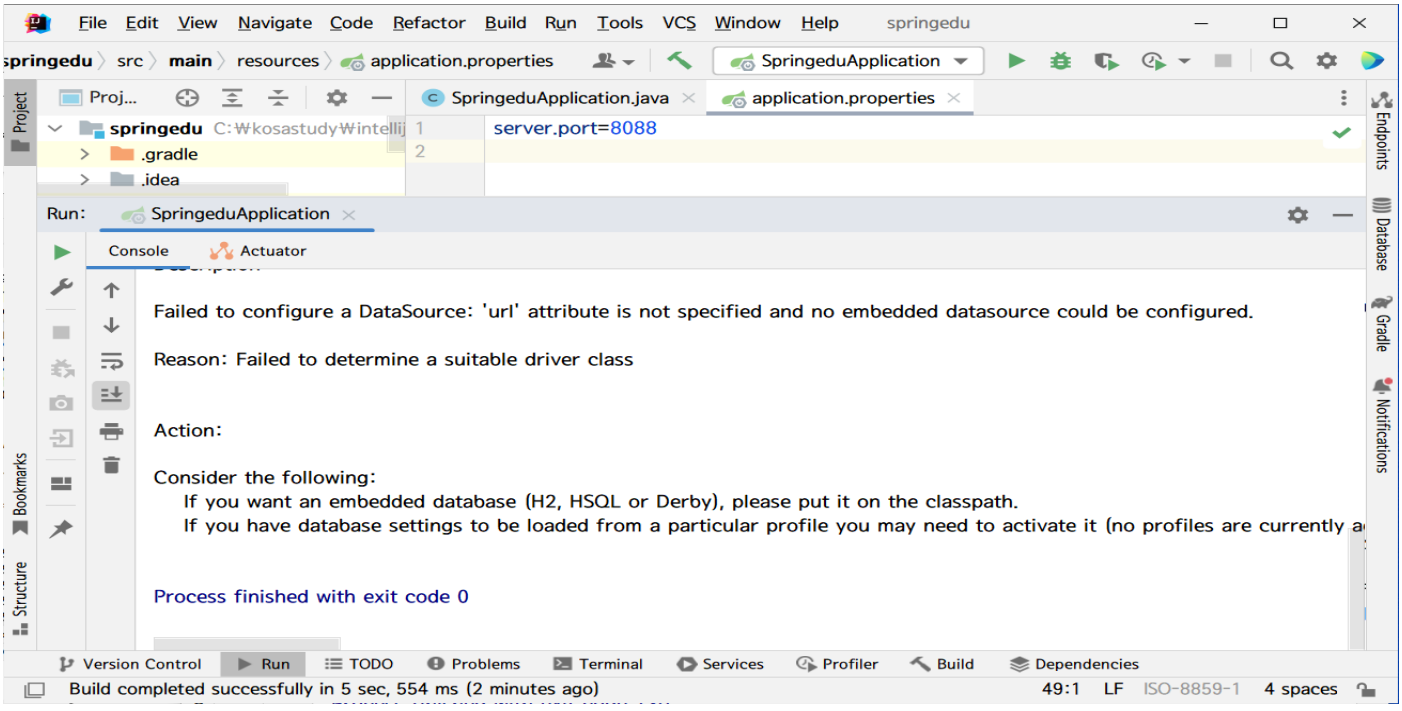

다음에 제시된 빨간 박스의 영역의 내용으로 변경하거나 채크한다.



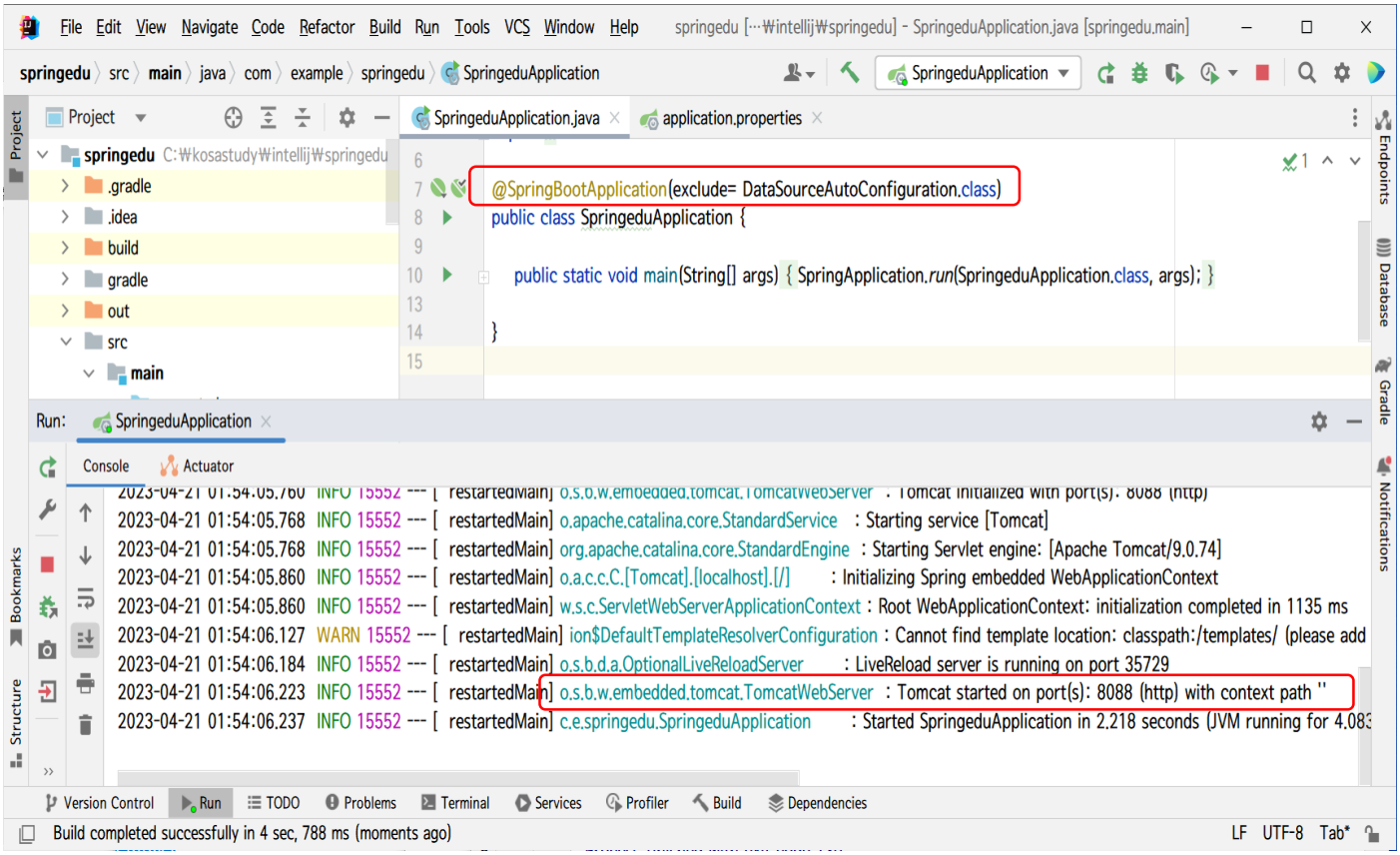
환경적인 오류가 없다면 SpringeduApplication.java 를 실행시켰을 때 다음과 같이 내장 톰캣도 기동하면서 스프링 컨테이너가 초기화 되고  기동된다.



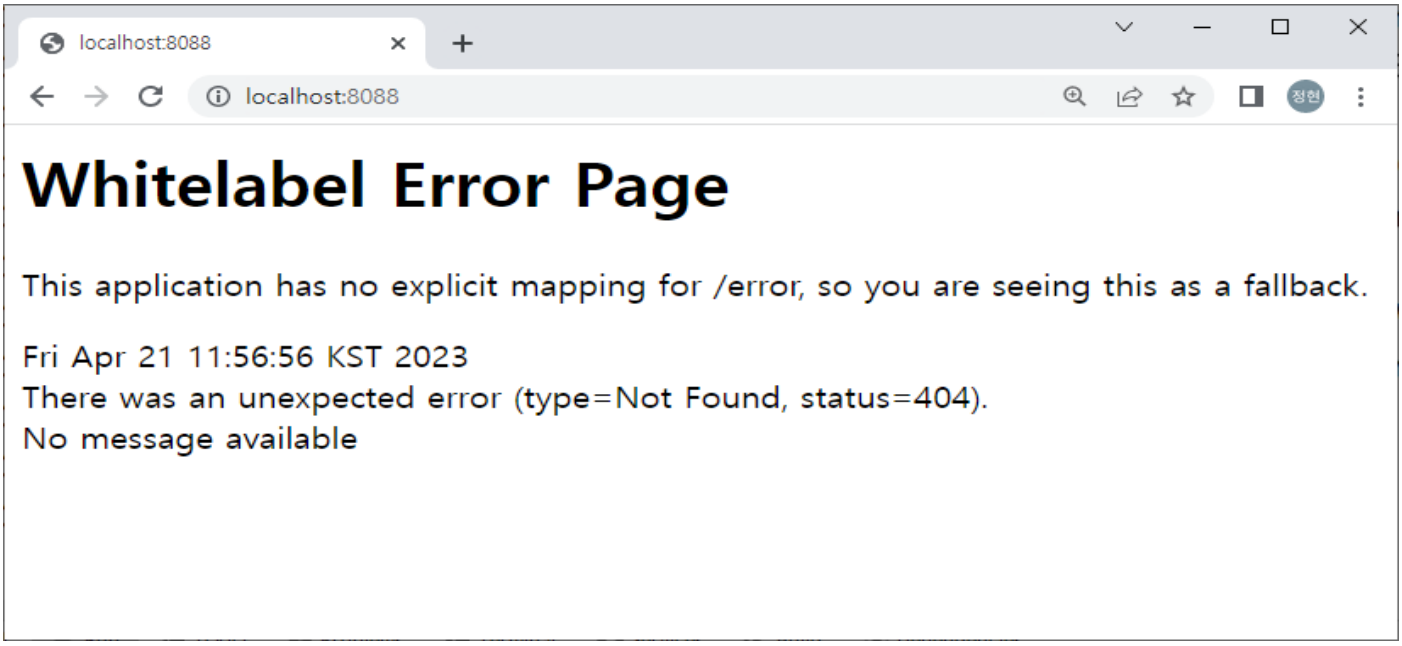

그런데 마지막에 다음과 같이 DataSource 관련 오류가 발생한다. 발생 원인은 DB 관련 설정이 없기 때문이다.



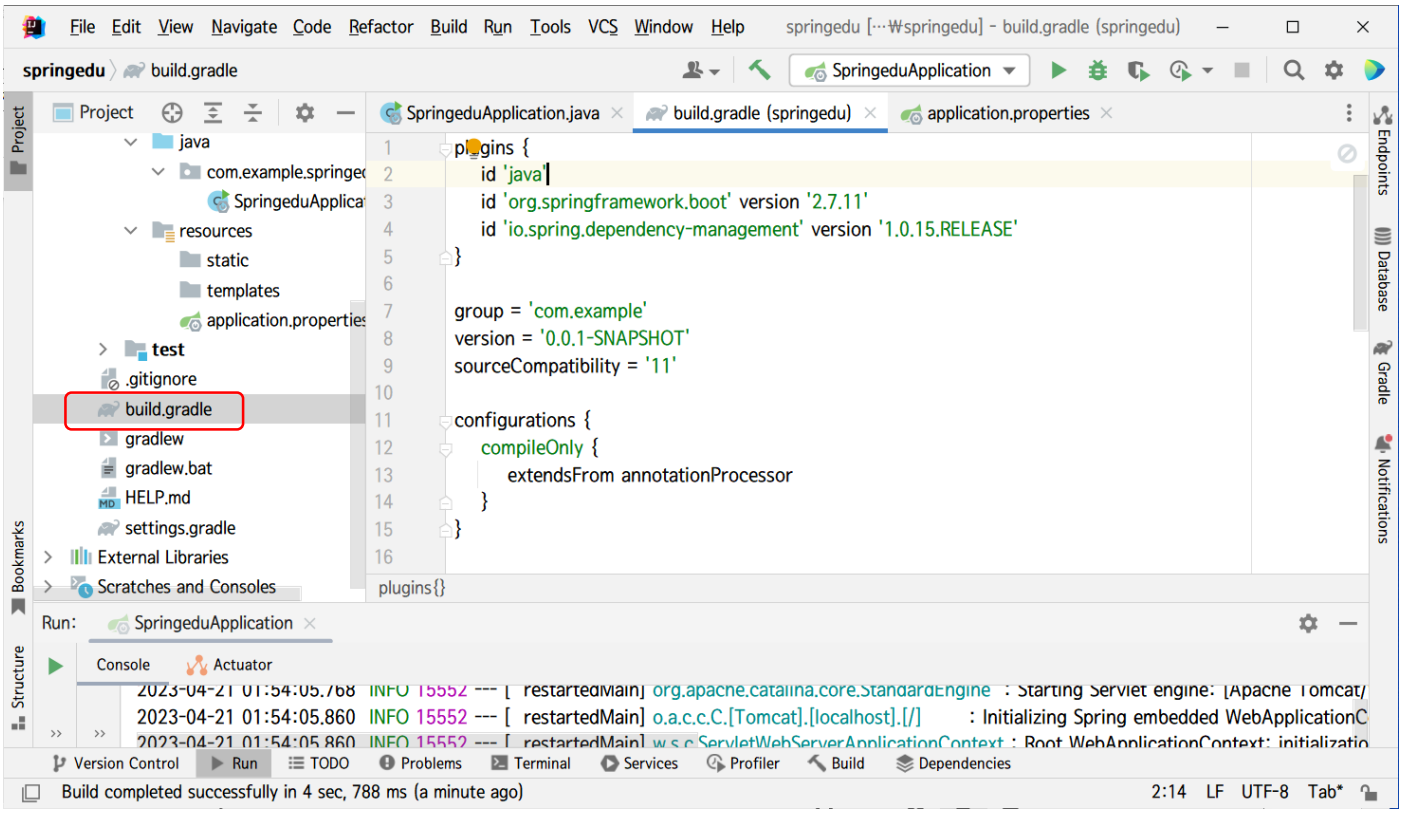
우선은 다음과 같이 @SpringBootApplication 뒤에 (exclude= DataSourceAutoConfiguration.class) 을 추가한 후에 재실행 한다. 이제는 정상적으로 기동된다. 내장 톰캣이 8088 포트 번호로 잘 기동된다.

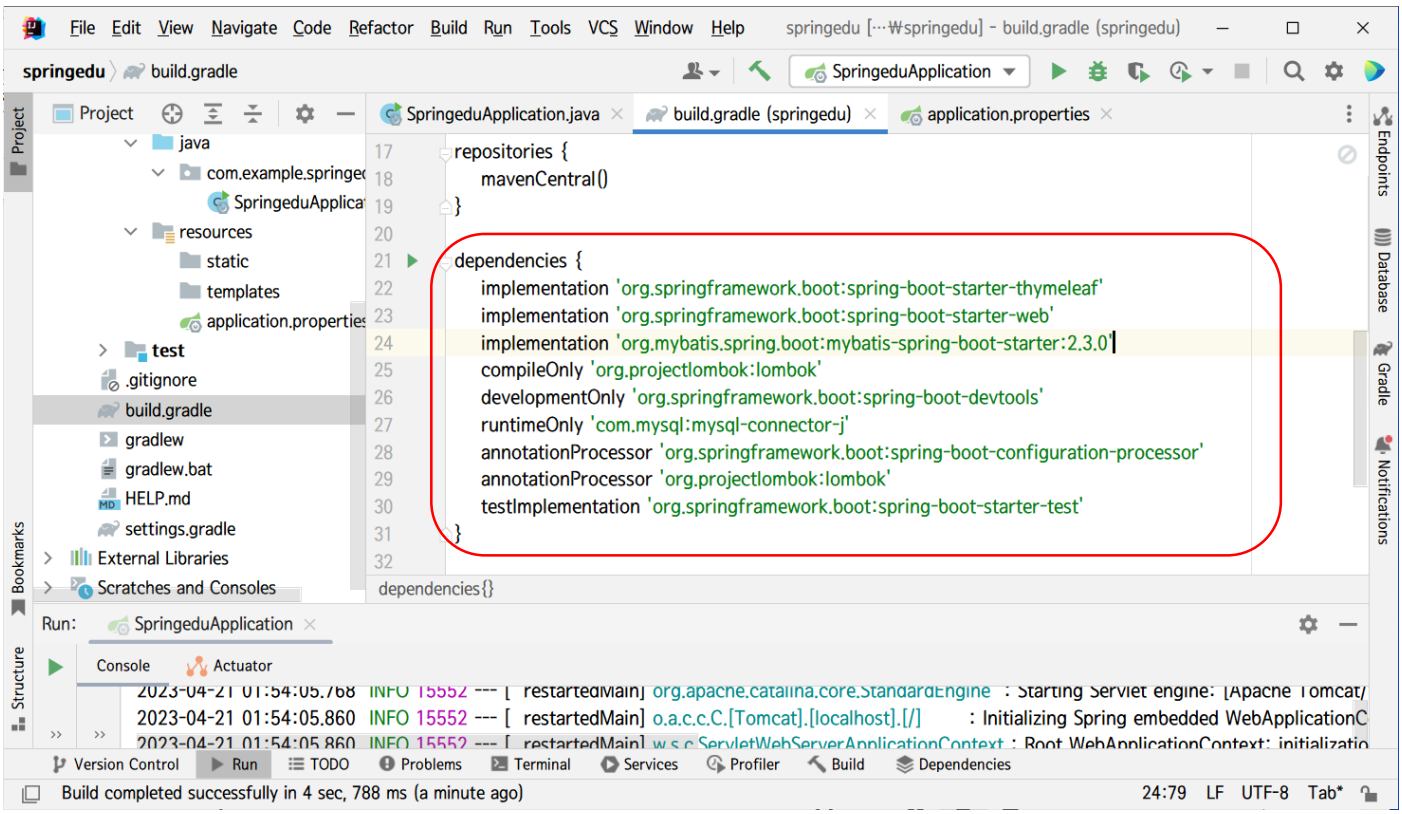



브라우저에서 http://localhost:8088/ 을 요청했는데 다음과 같이 출력된다면 서버 기동을 잘 된 것이다.

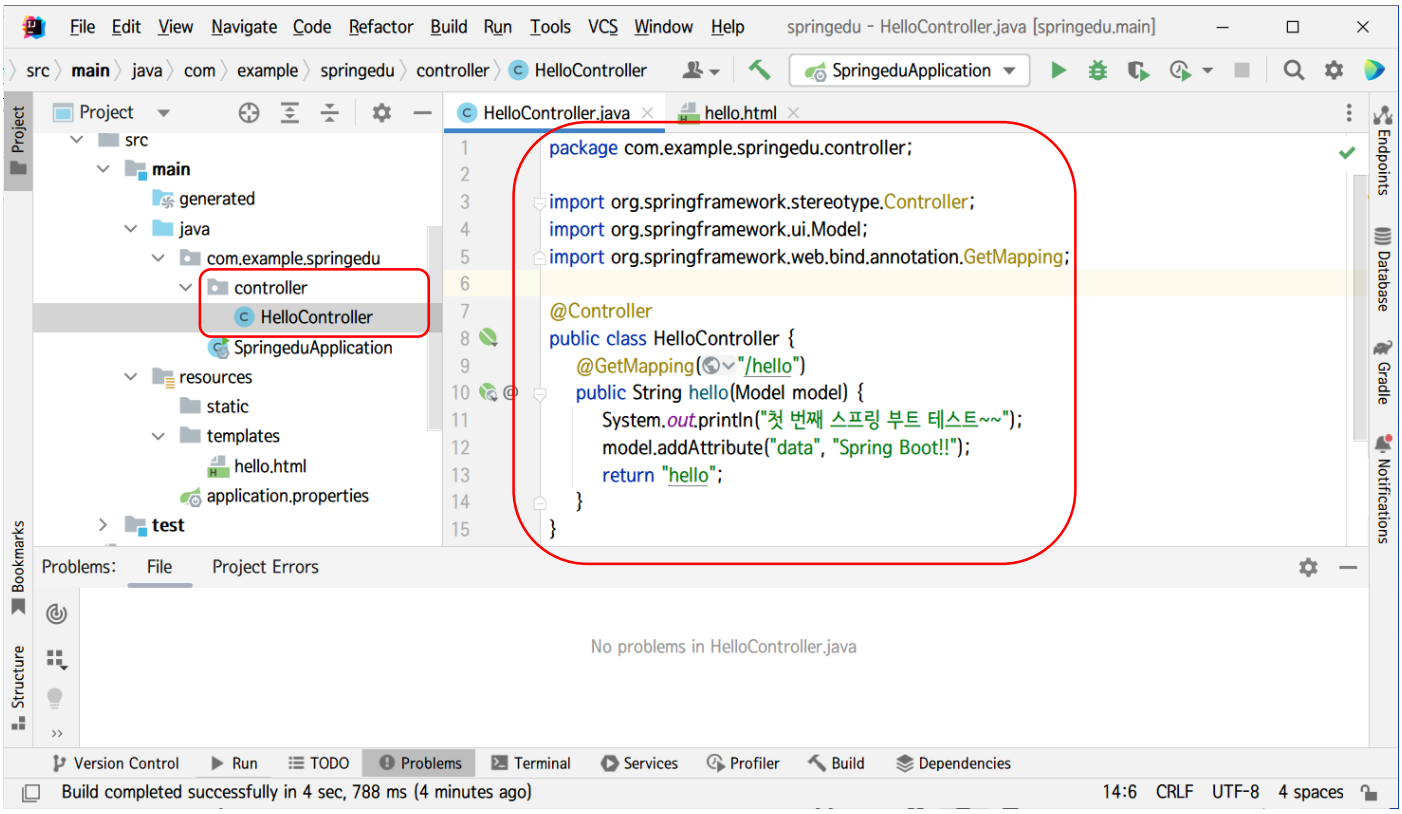


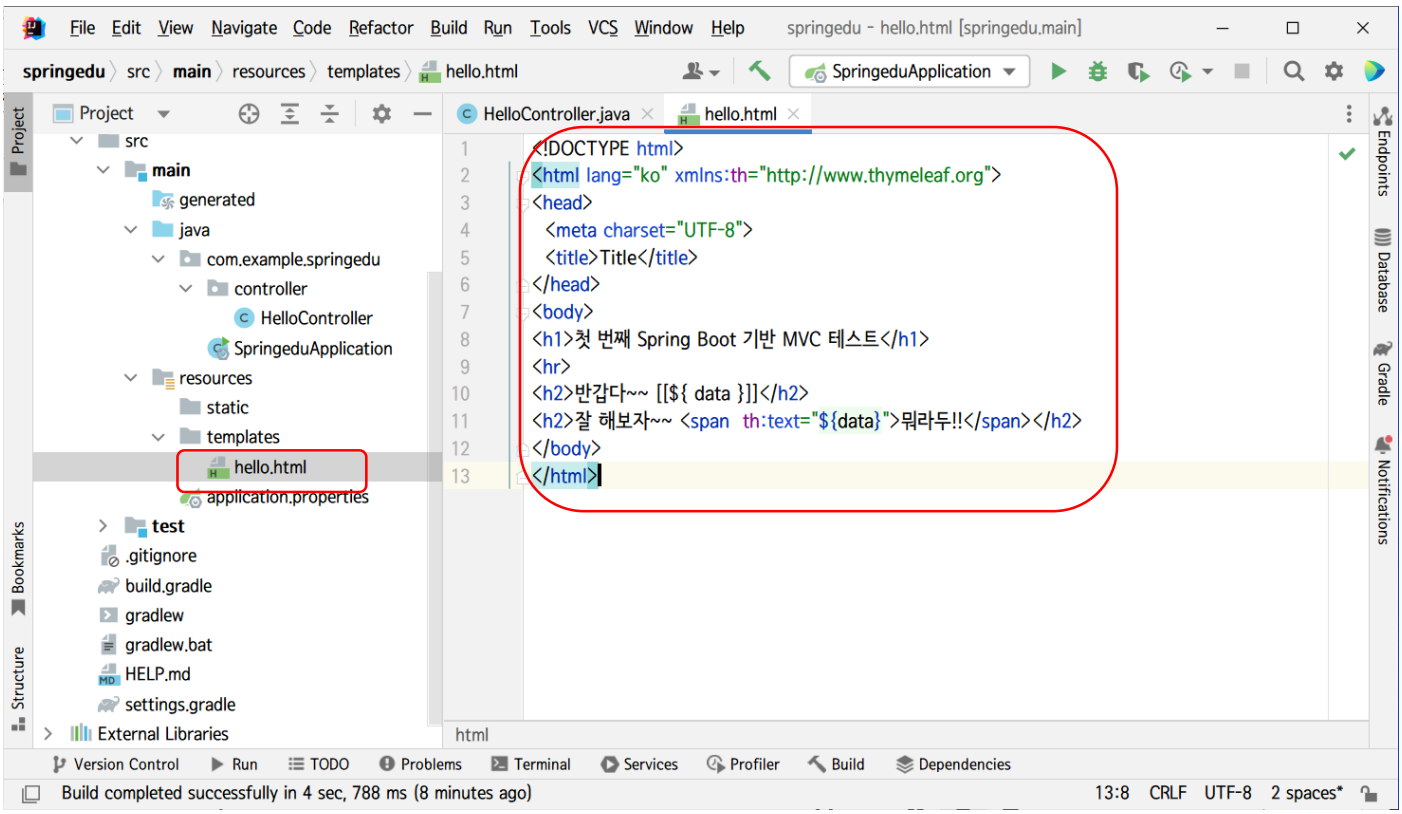
# [ gradle.build 파일 ]

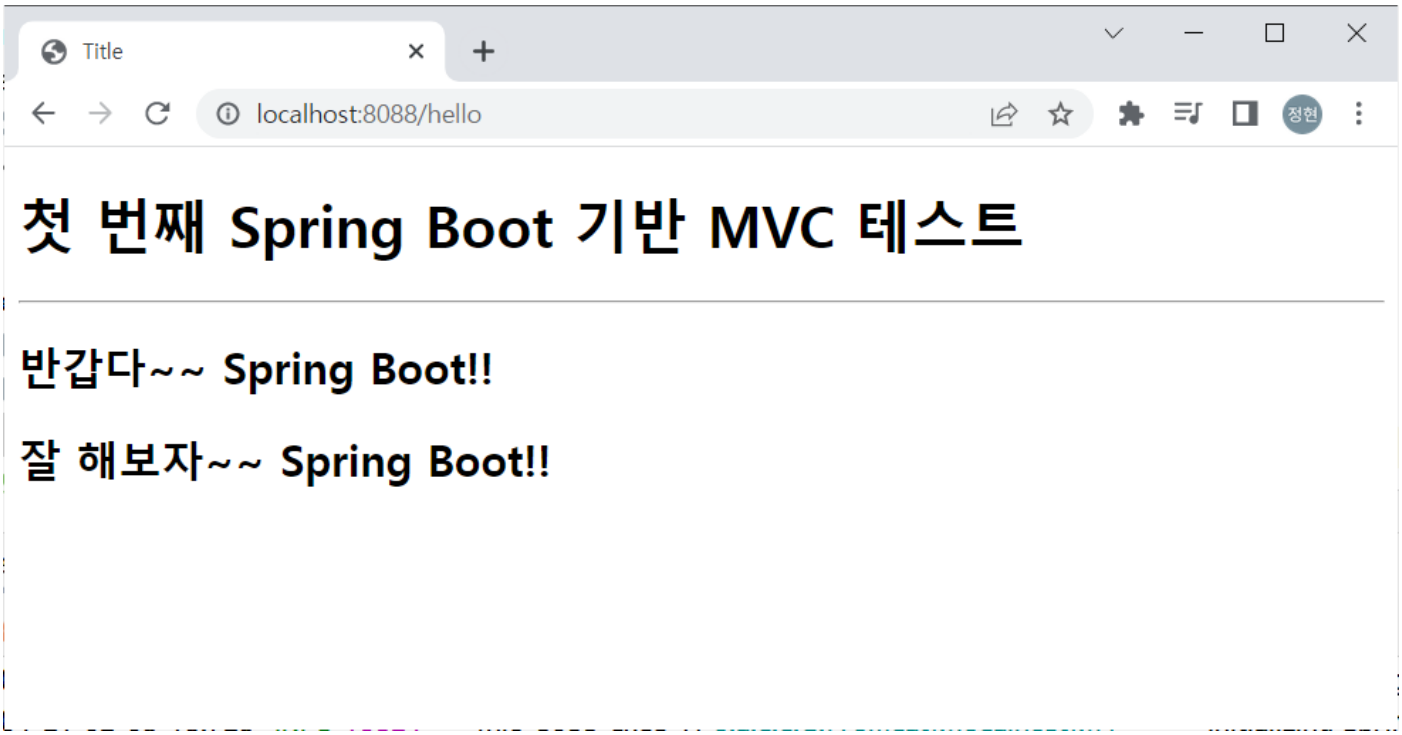


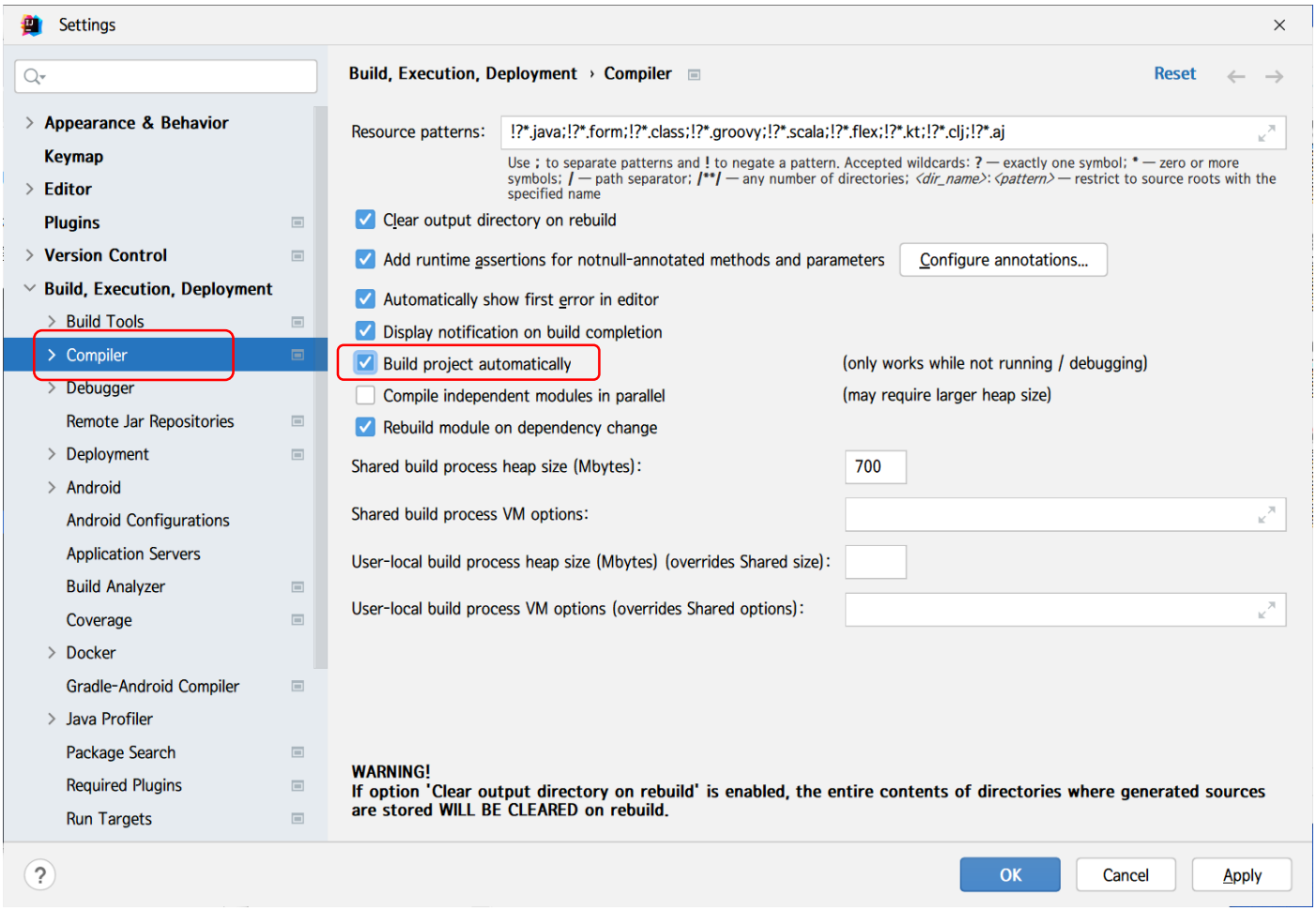
# [ 맛보기용 샘플 만들어 보기 ]

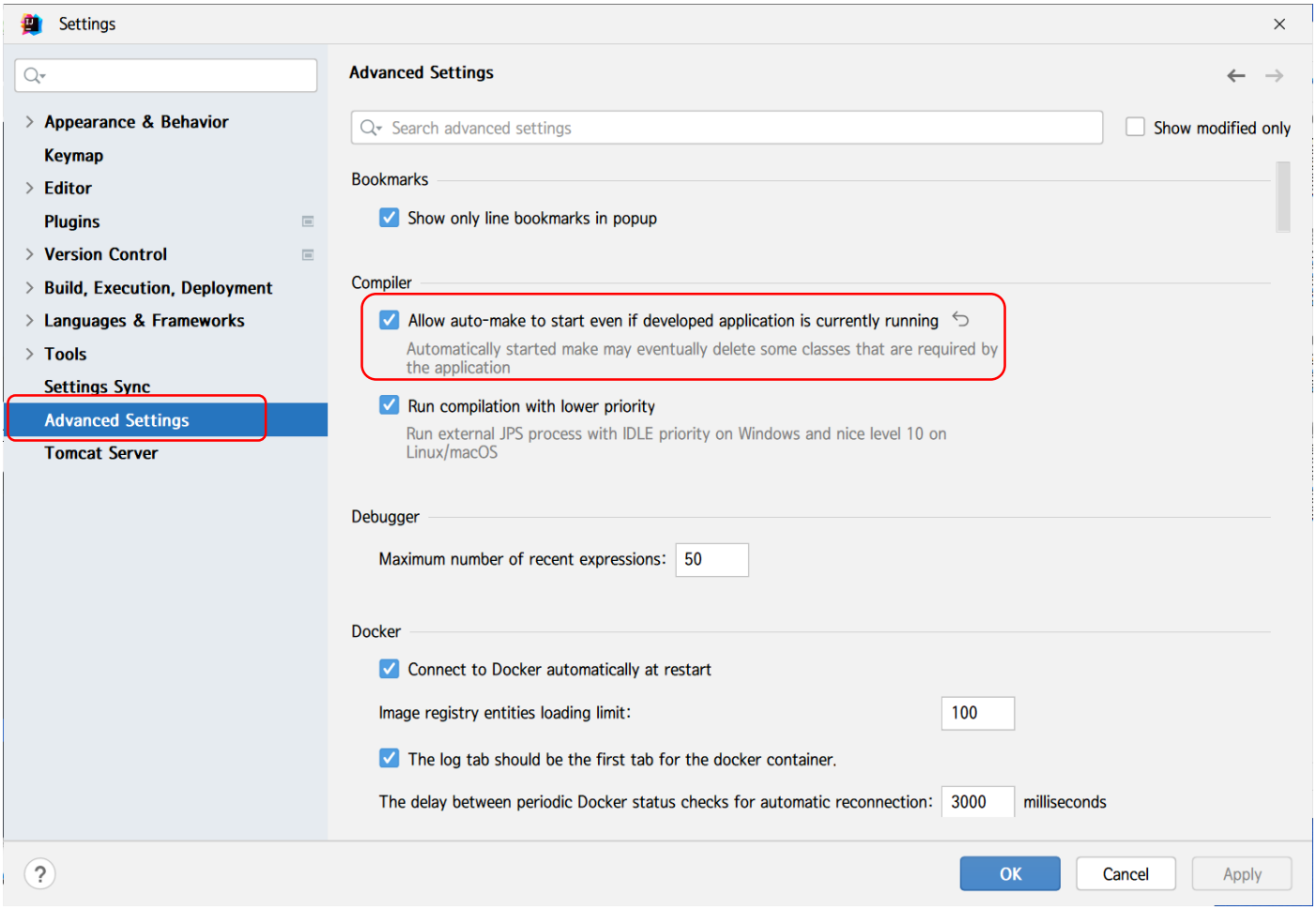


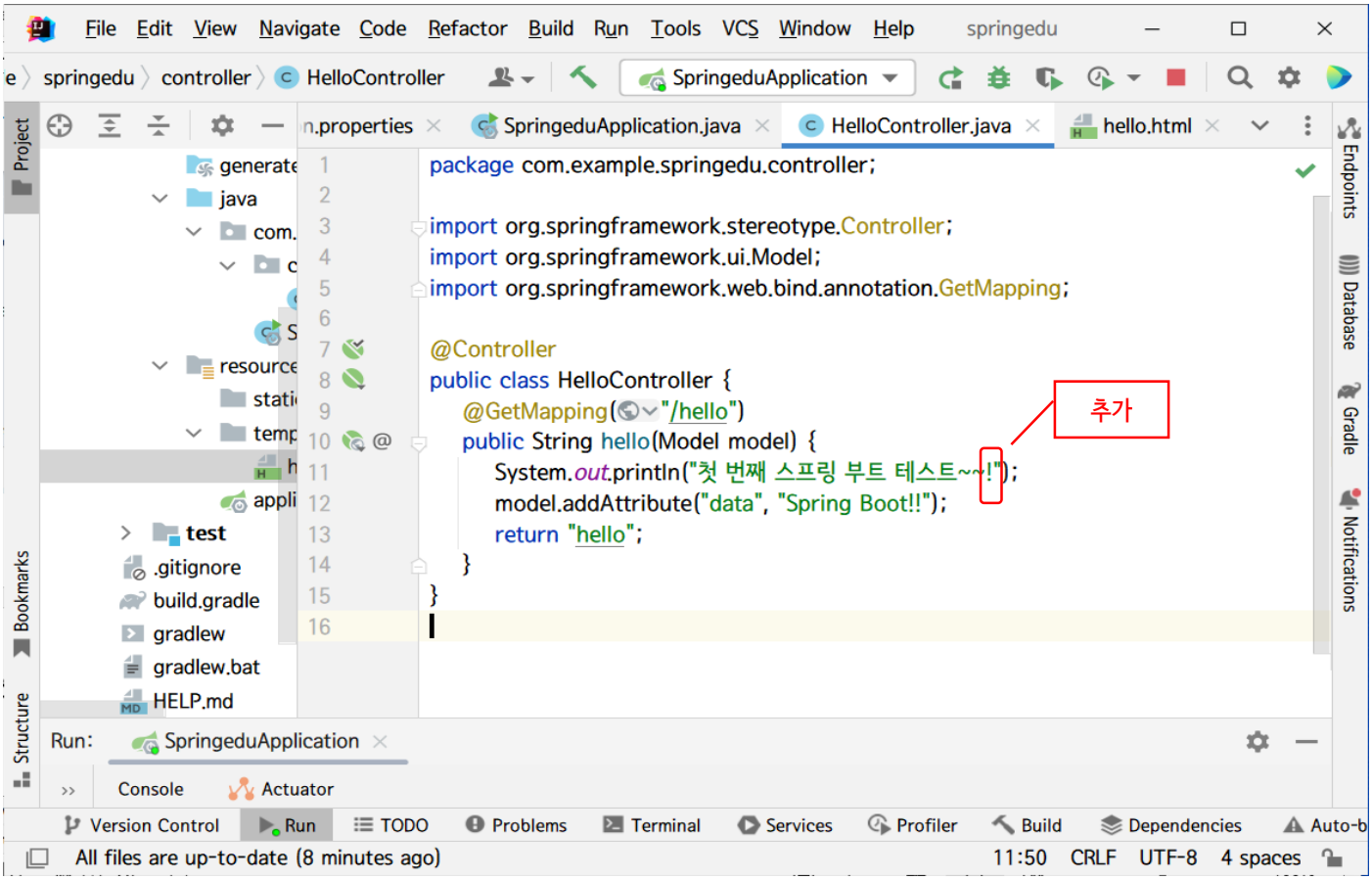


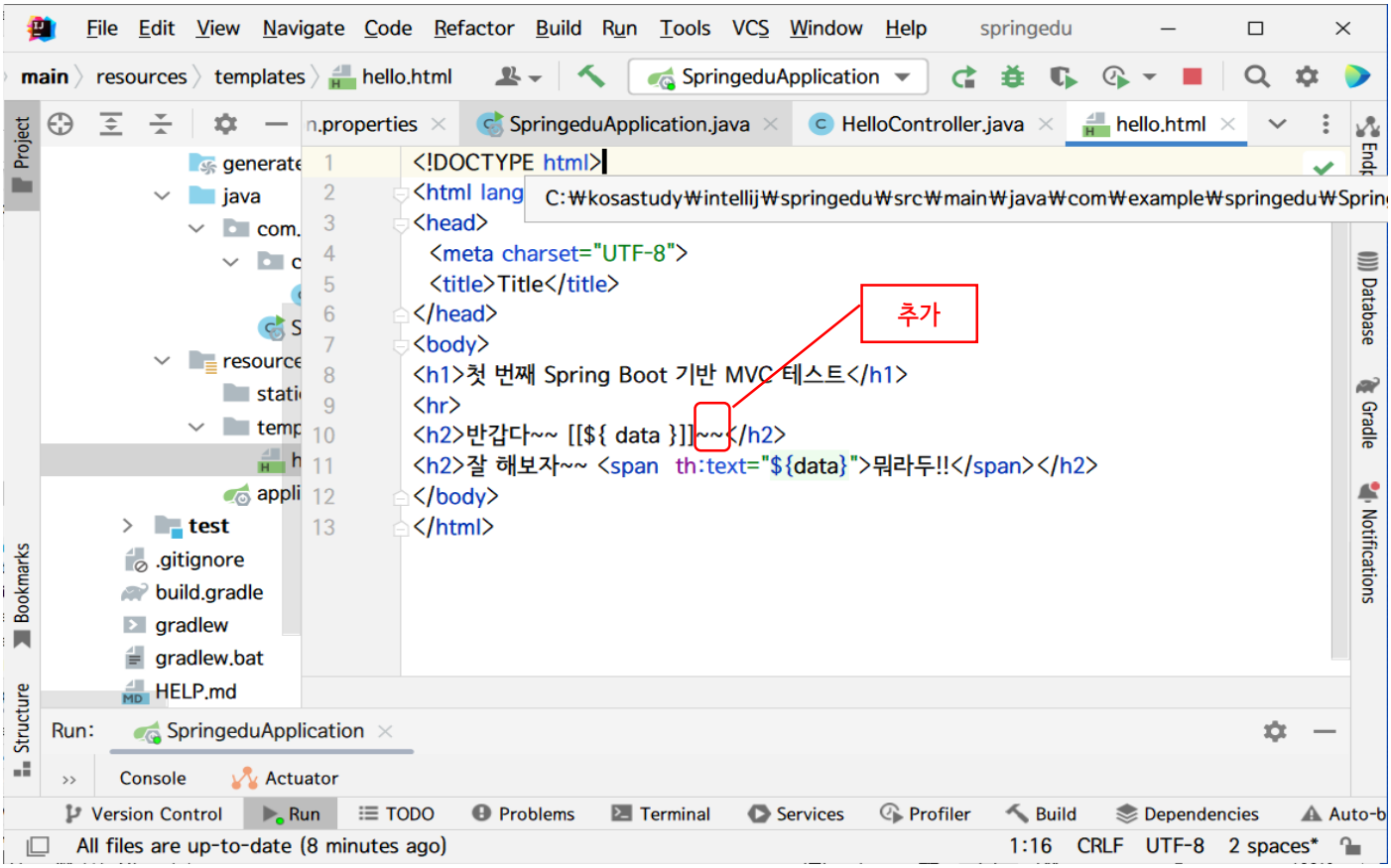

[ 자바 소스나 템플릿(타임리프)가 변경시 자동리로드 처리 ]



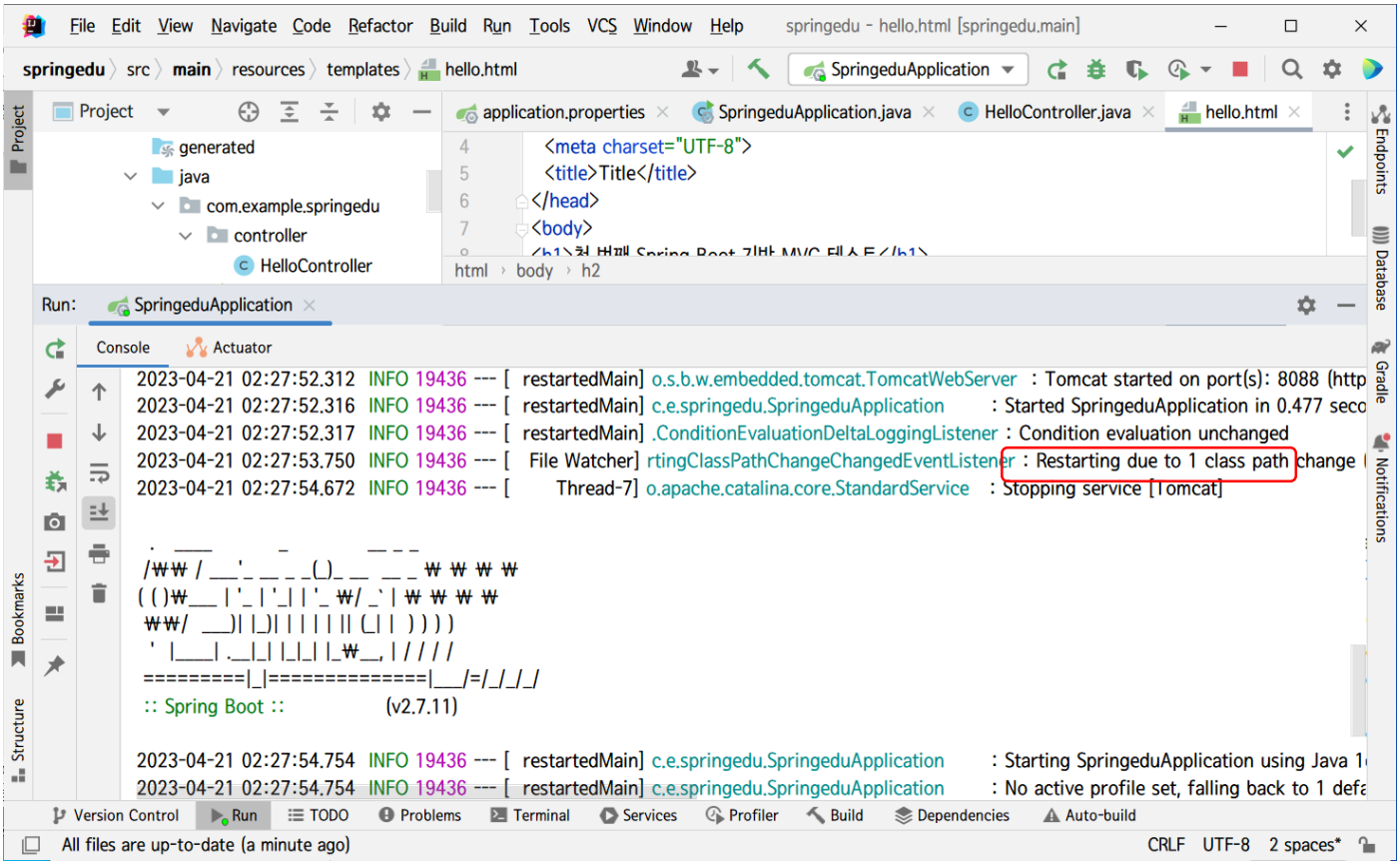



## [ 자동리로드를 확인하기 위한 컨트롤러 소스와 템플릿 소스 변경 ]

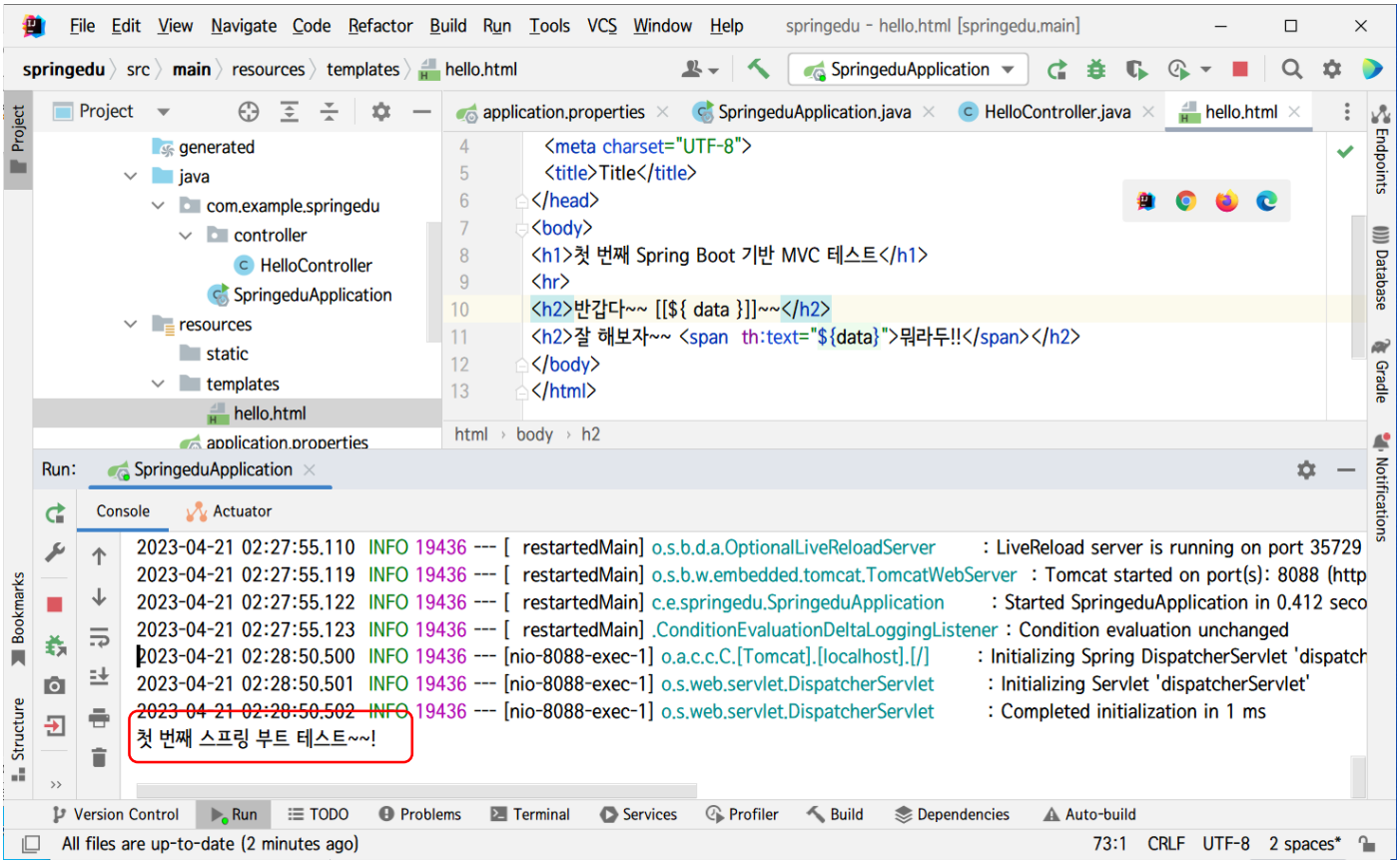


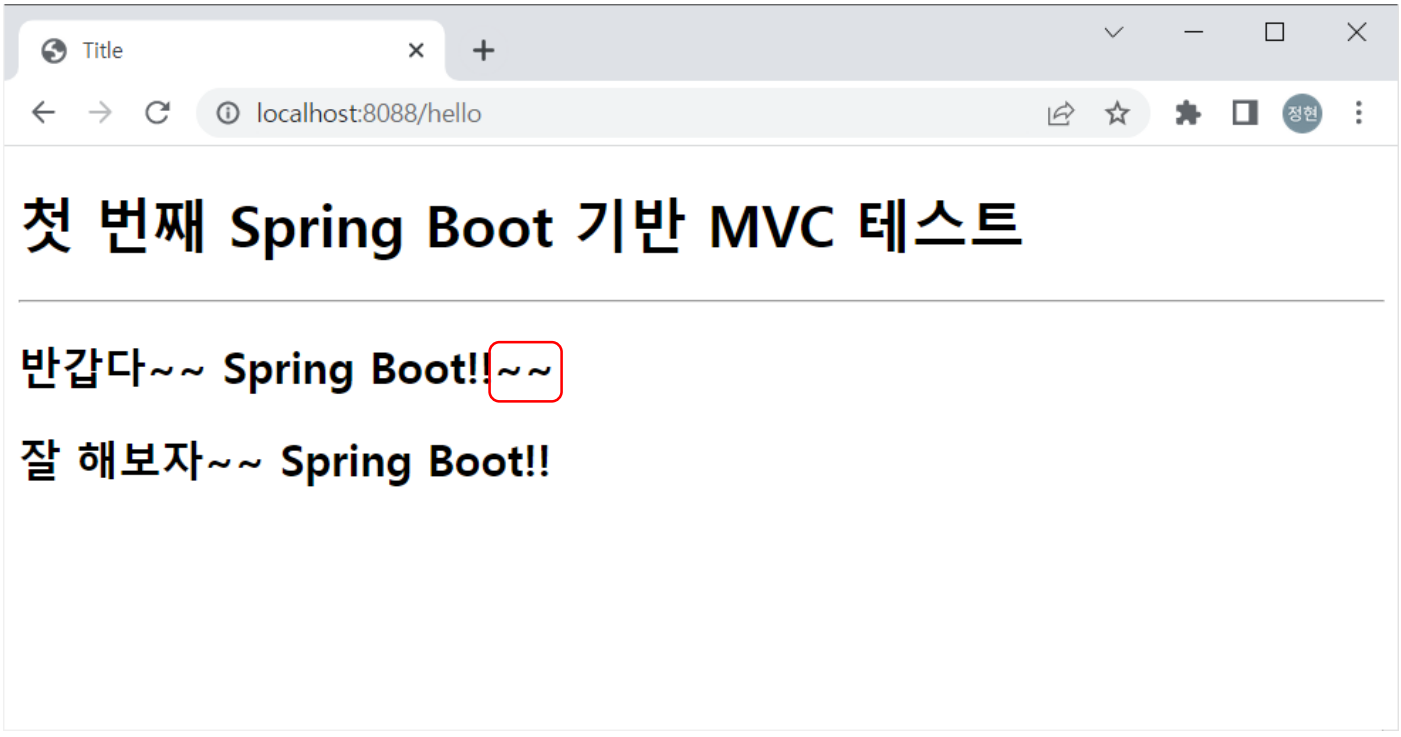



소스의 수정을 인식하고 내장 서버가 자동으로 재시작되는 것을 스프링 부트 콘솔에서 볼 수 있다.

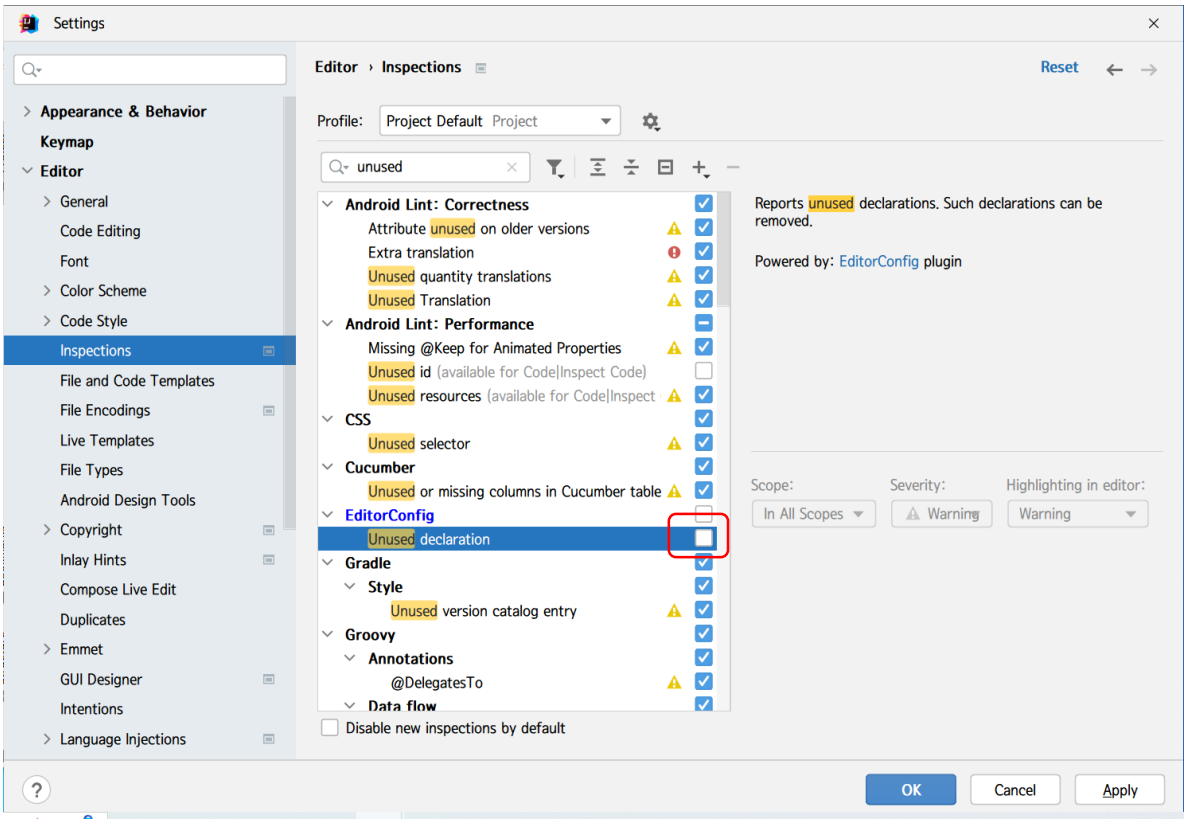


브라우저에서 재요청하면 컨트롤러 소스의 변경과 템플릿 파일의 변경이 자동으로 반영되는 것을 확인할 수 있다.



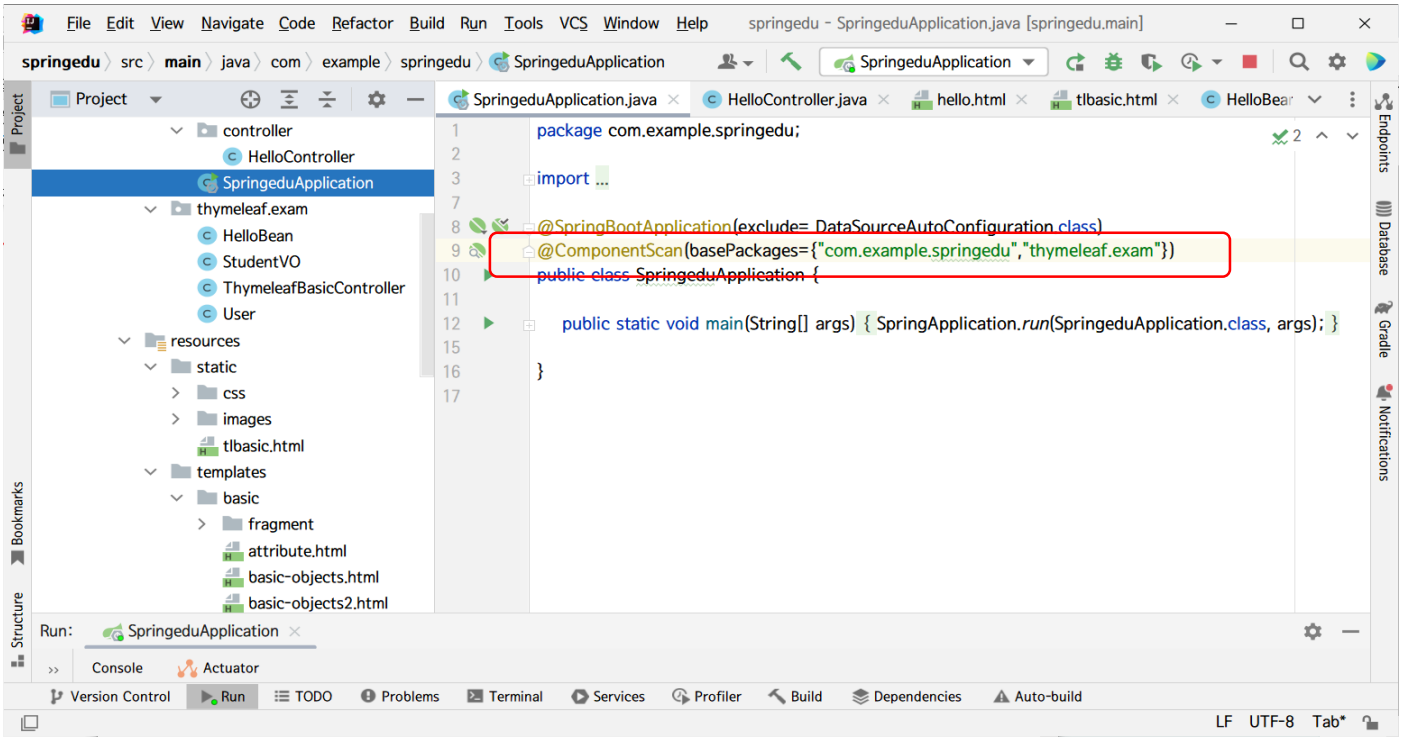



(*) 다음 설정은 community 버전 친구들의 경우 수행해야할 수도 있음

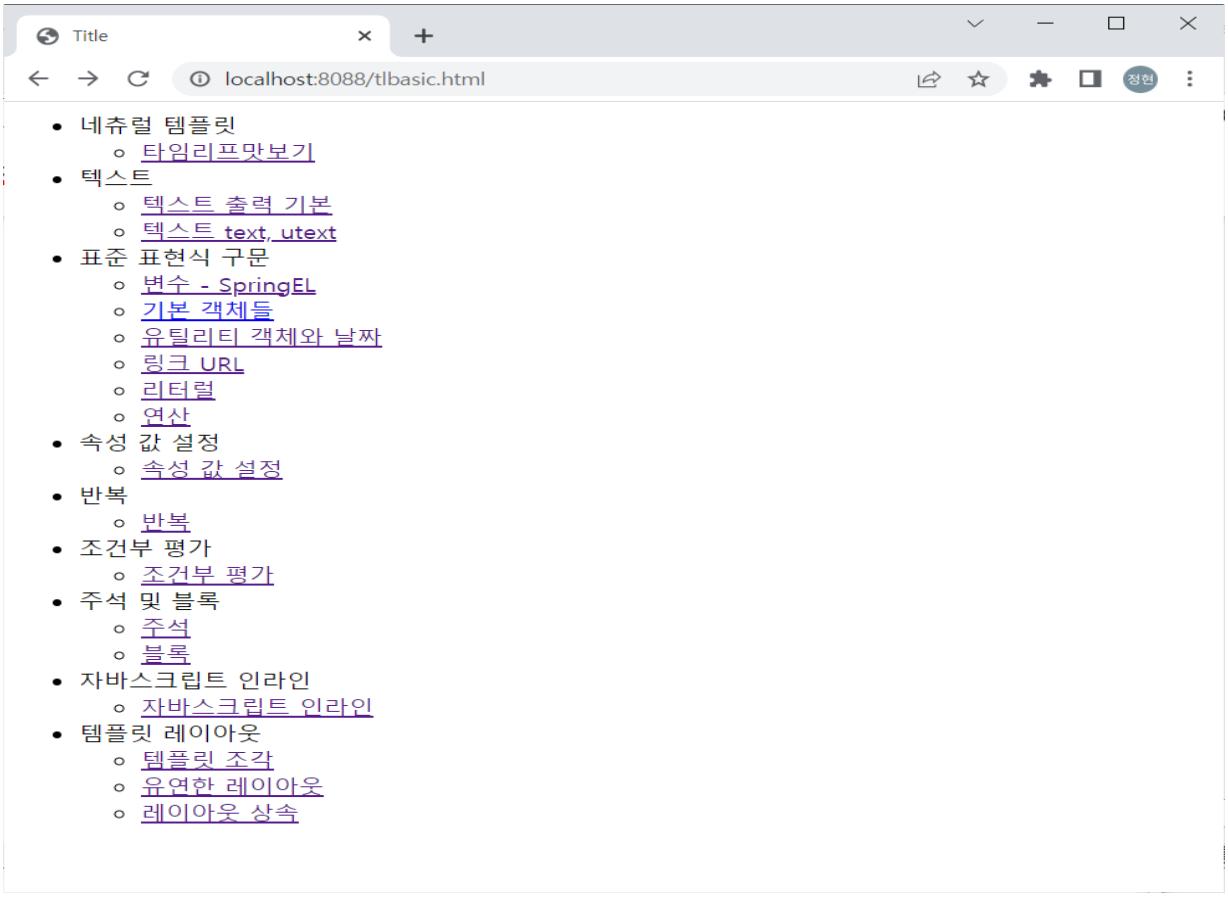



Web 기반의 스프링 부트 프로젝트에서 자동으로 인식되는 패키지는 @SpringBootApplication이 설정된 자바 소스가 작성된 패키지이다. - com.example.springedu

다른 패키지 폴더에 애노테이션이 설정되는 자바소스를 작성하고자 한다면 다음과 같이 @ComponentScan(basePackages={"com.example.springedu","thymeleaf.exam"}) 을 추가해야 한다.



resources/static 폴더에 있는 HTML 파일 요청(http://localhost:8088/tlbasic.html )




resources/static/images 폴더에 있는 이미지 파일 요청

(http://localhost:8088/images/muzicon.jpg)