

< JAVA Framework >

개발자에게 봄은 오는가?

Spring framework

*made by Yu Hyun-Seok
mechi00@daum.net*

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9. 테스트 지원

Spring framework 소개

스프링(Spring)은 간단히 말하면 **엔터프라이즈 어플리케이션에서 필요로 하는 기능을 제공하는 프레임워크**이다.

1. **경량 컨테이너이다. (light container)**
2. **DI (Dependency Injection) pattern 지원**
3. **AOP (Aspect Oriented Programming) 을 지원**
4. **스프링은 POJO (Plain Old Java Object) 를 지원**
5. **트랜잭션 처리를 위한 일관된 방법을 제공한다.**
6. **영속성과 관련된 다양한 API 지원**
7. **다양한 API에 대한 연동을 지원**

Spring framework 소개

스프링 download , 설치 , 모듈 구성

1. download : <http://www.springframework.org/download> 에서
spring-framework-2.5.6-with-dependencies.zip
또는 책 CD의 **spring-framework-2.0.8-with-dependencies.zip**

2. 주요폴더

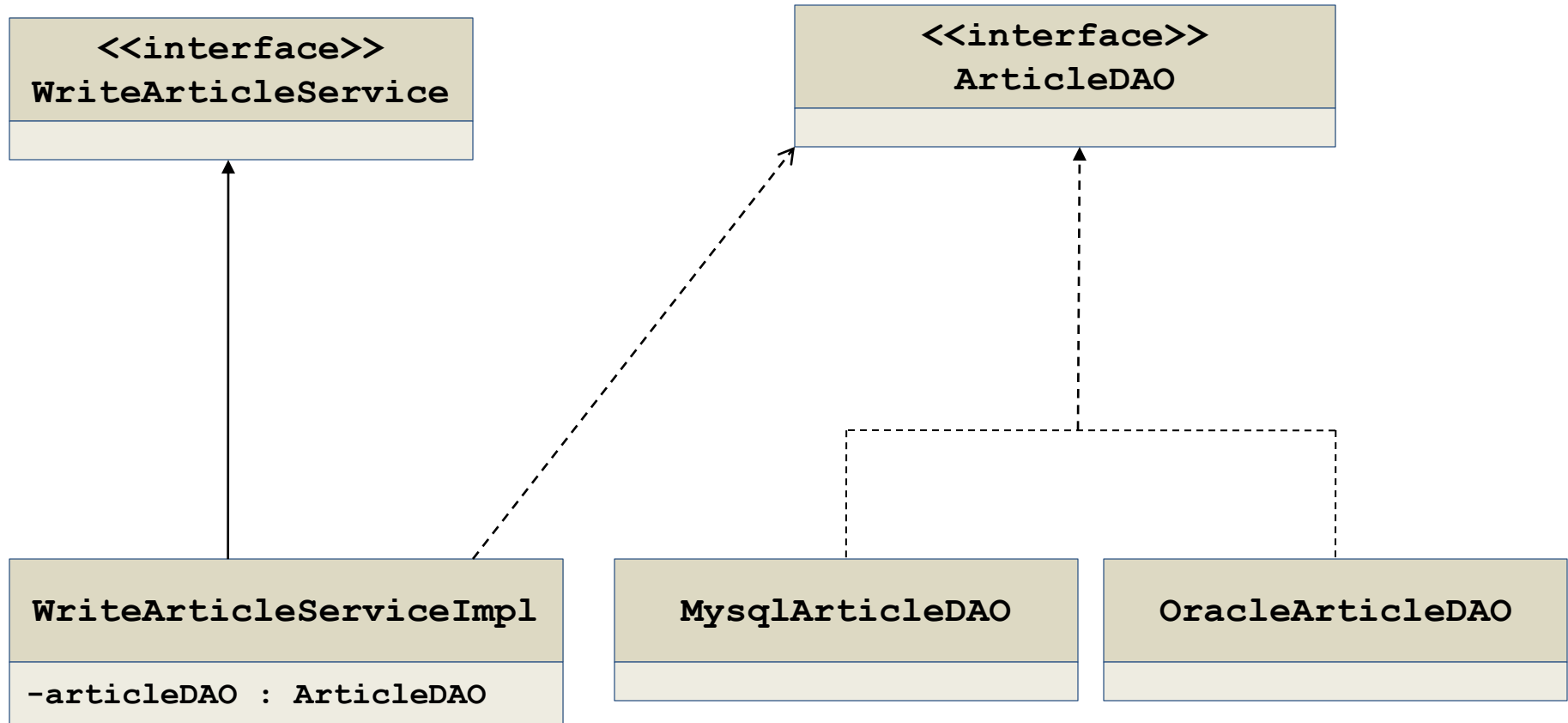
- dist : 스프링 jar 파일 포함
- lib : 스프링을 사용하는데 필요한 모든 외부 lib
- docs : 스프링 reference 및 API javadoc을 포함

처음에 사용할때는 대부분의 모듈이 포함되어 있는 **spring.jar** 사용
-spring-framework-2.5.6-with-dependencies/dis/spring.jar
-구체적인 모듈 구성 [p27~p30 참고]

3. 설치는 압축을 풀고 해당 jar파일을 해당 프로젝트에 추가
여기서는 웹기반 프로젝트를 중심으로 진행

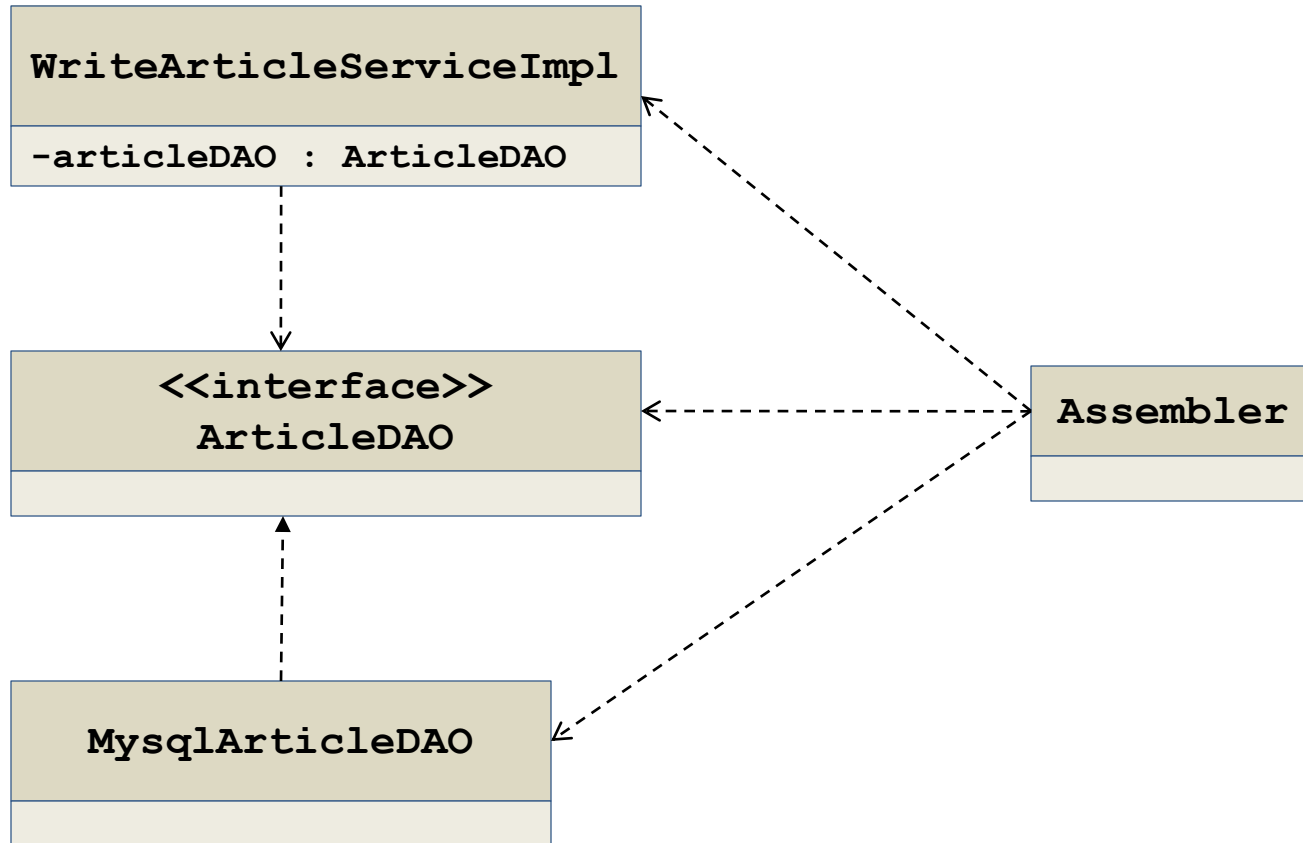
Spring DI (Dependency Injectioin)

DI패턴 미적용



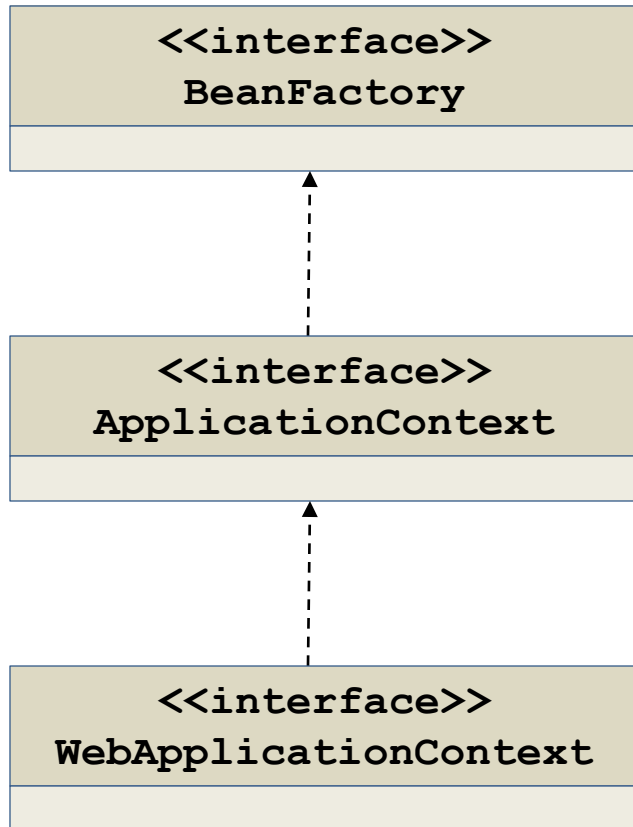
Spring DI (Dependency Injection)

Spring에서 DI패턴 적용



Spring DI (Dependency Injection)

Spring Container의 주요 interface



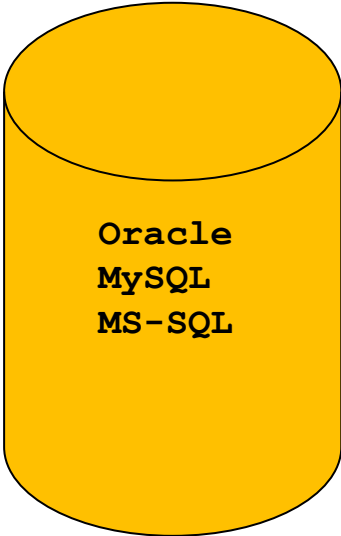
빈 객체를 관리, Bean객체간의 의존관계를 설정

```
Resource resource = new FileSystemResource();  
XmlBeanFactory factory = new XmlBeanFactory(resource);  
ParseFactory factory = factory.getBean("parserFactory");
```

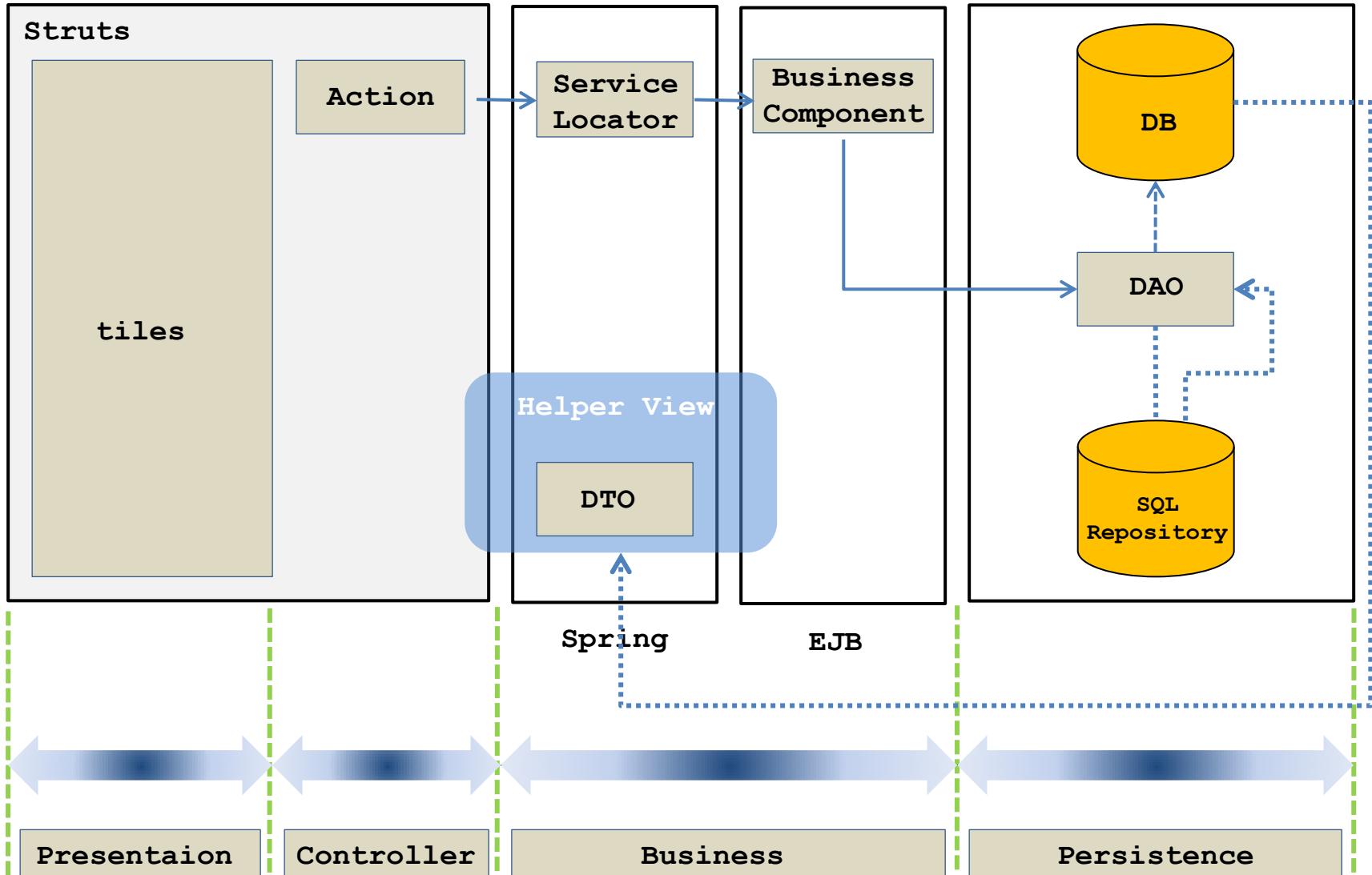
자원처리 추상화, 메시지 지원 및 국제화 지원,
이벤트 지원

웹 어플리 케이션을 위한 ApplicationContext
- ServletContext 하나당 ApplicationContext

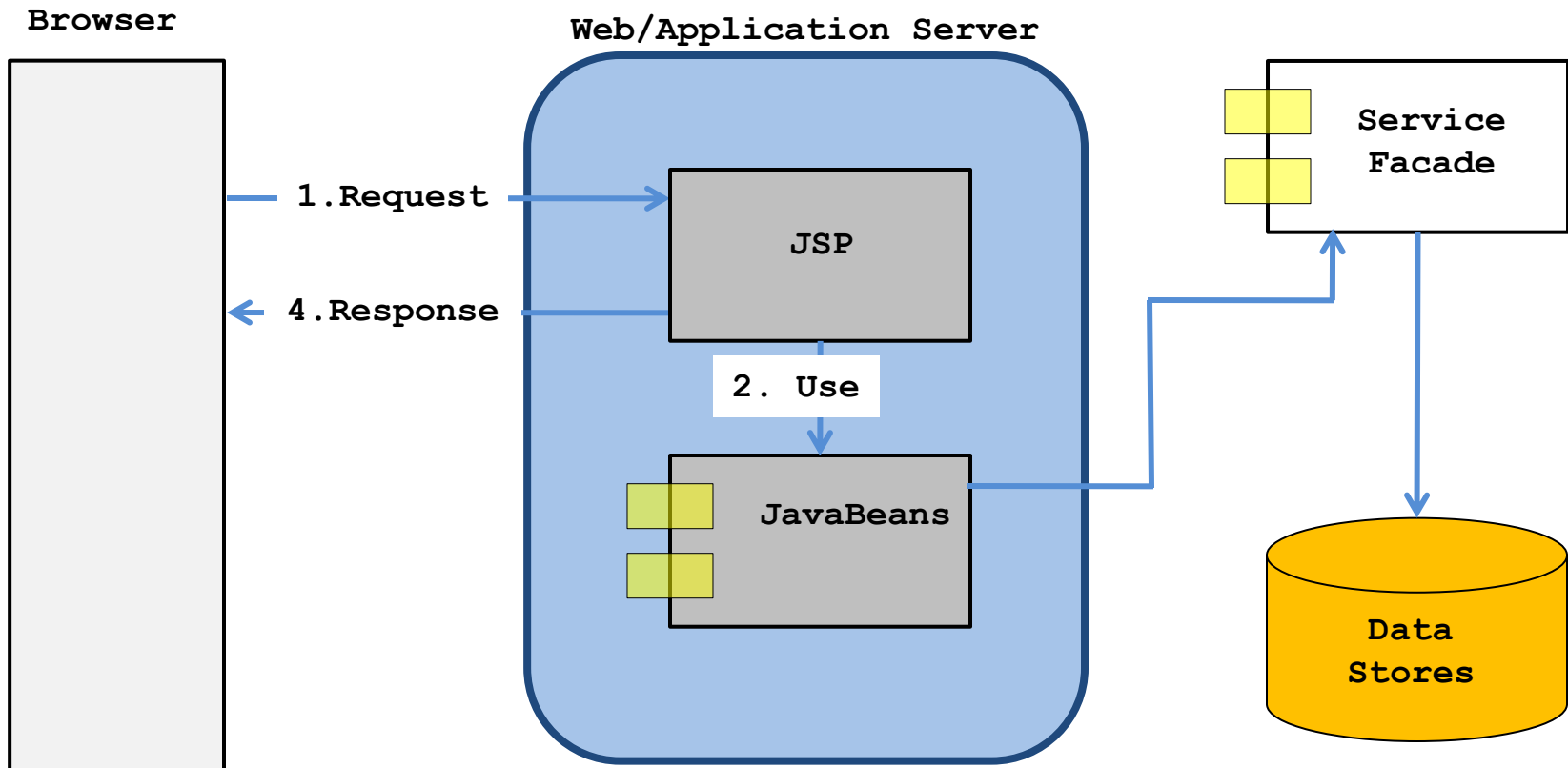
Tier/Layer

Tier	Client	Server			EIS
구성	HTML JS CSS	JSP Servlet XML설정	EJB Service	SQL 관련작업	 Oracle MySQL MS-SQL
기본 프레임 워크	Ajax Flex	Struts Spring MVC webwork velocity JSF	EJB Spring	Hibernate DAO MyBatis	
Layer	Presentation		Business	Persistence	
MVC	View controller		Model		
기능	표시	HTML생성 리소드 계층	비즈니스 로직처리	Data처리 관련	
				Data저장	

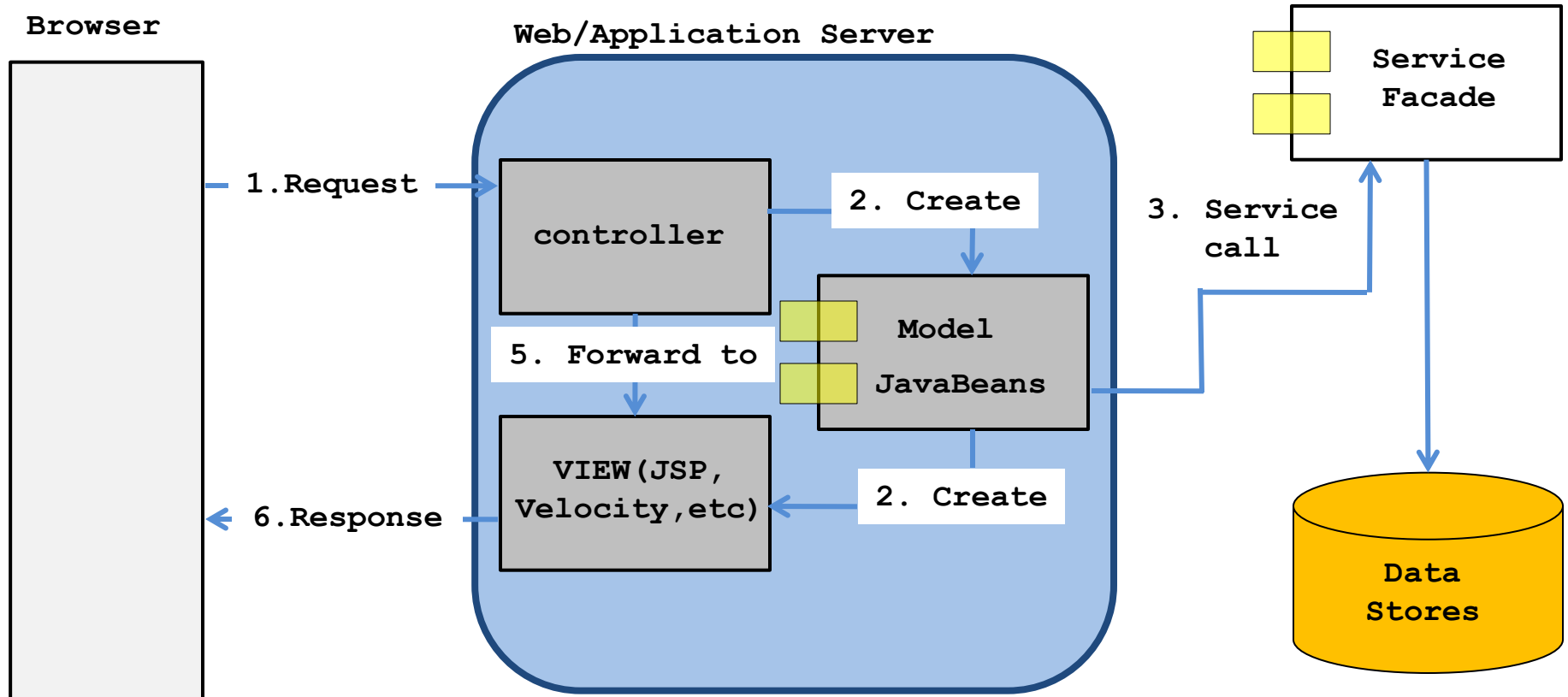
----- Data 흐름
————— 실제 메서드 호출



MVC Model one architecture



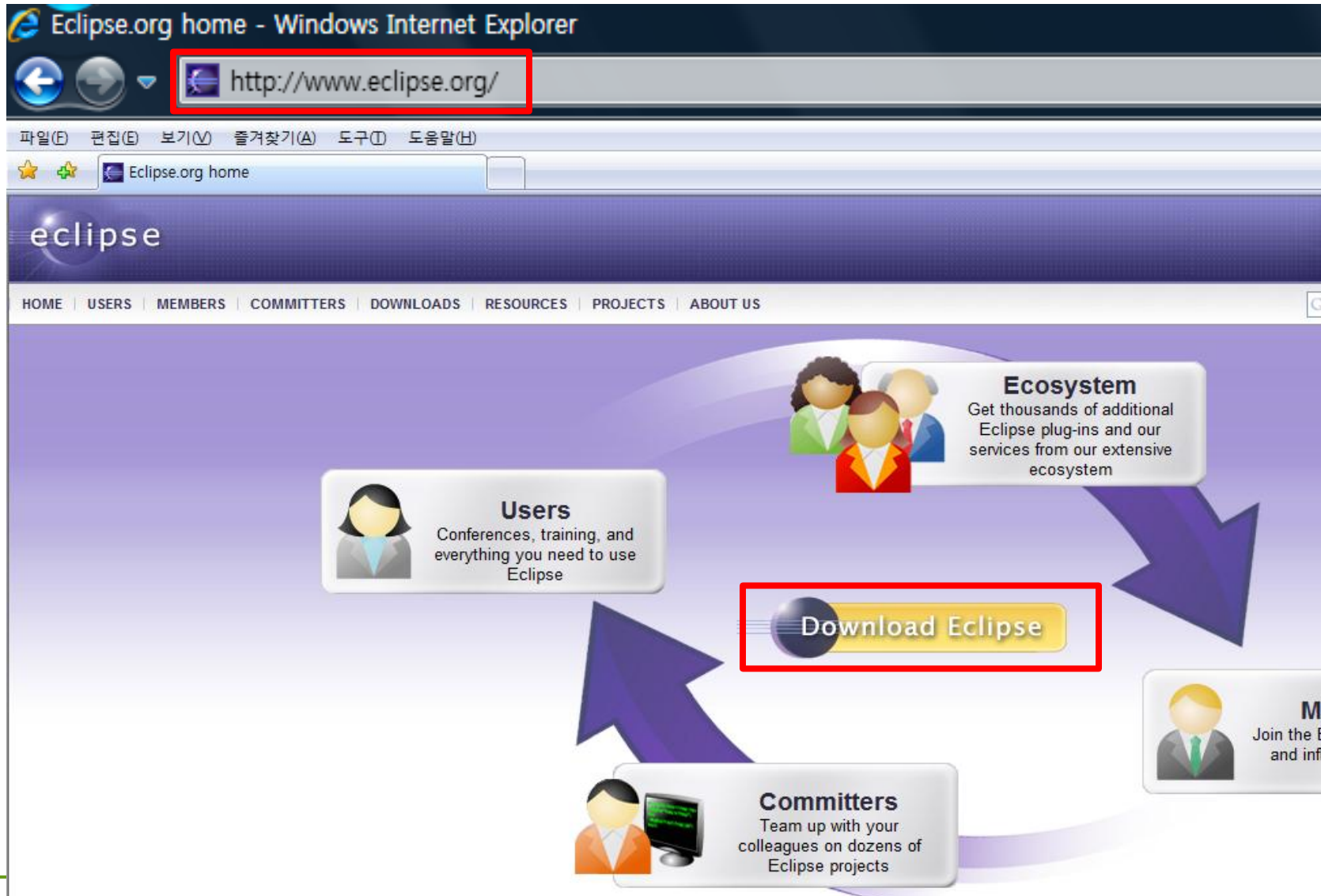
MVC Model two architecture



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download하기 위해 eclipse site로 이동

<http://www.eclipse.org>



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download

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

Eclipse Downloads - Windows Internet Explorer

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

파일(F) 편집(E) 보기(V) 즐겨찾기(A) 도구(T) 도움말(H)

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eclipse

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Ganymede Packages (based on Eclipse 3.4.1) - Compare Packages

Eclipse IDE for Java EE Developers (163 MB)
Tools for Java developers creating JEE and Web applications, including a Java IDE, tools for JEE and JSF, Mylyn and others. [More...](#)
Downloads: 233,479

Windows
Mac OS X
Linux 32bit
Linux 64bit

Windows

Eclipse downloads - mirror selection - Windows Internet Explorer

<http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/ganymede...>

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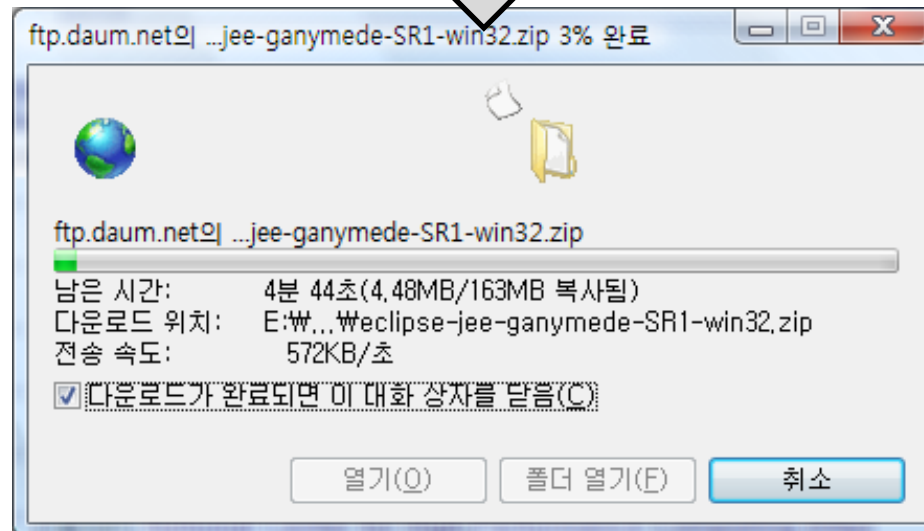
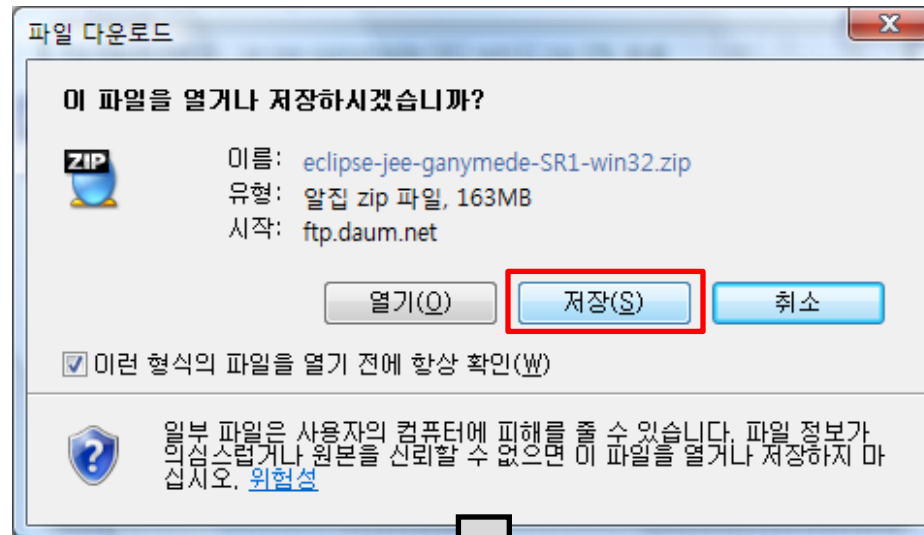
Asia

→ [Korea, Republic Of] KAIST (h...)

→ [Korea, Republic Of] **Daum Communications Corp. (ftp)**

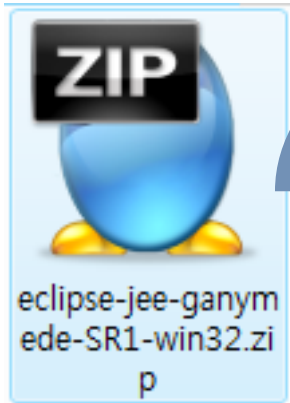
eclipse3.4 download

eclipse[3.4 GANYMEDE] save

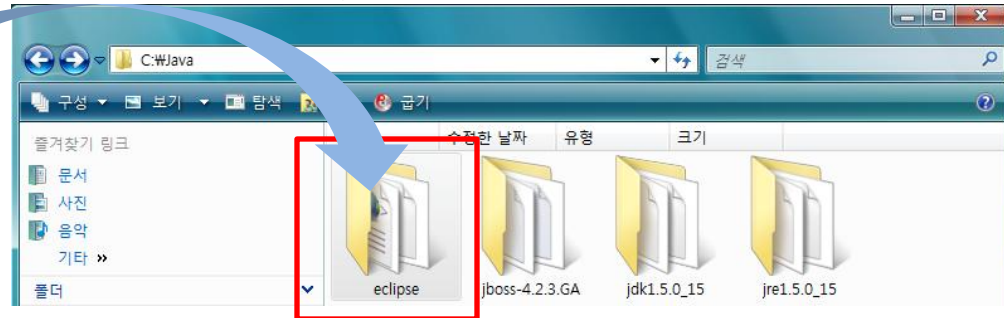


eclipse3.4[ganymede] install

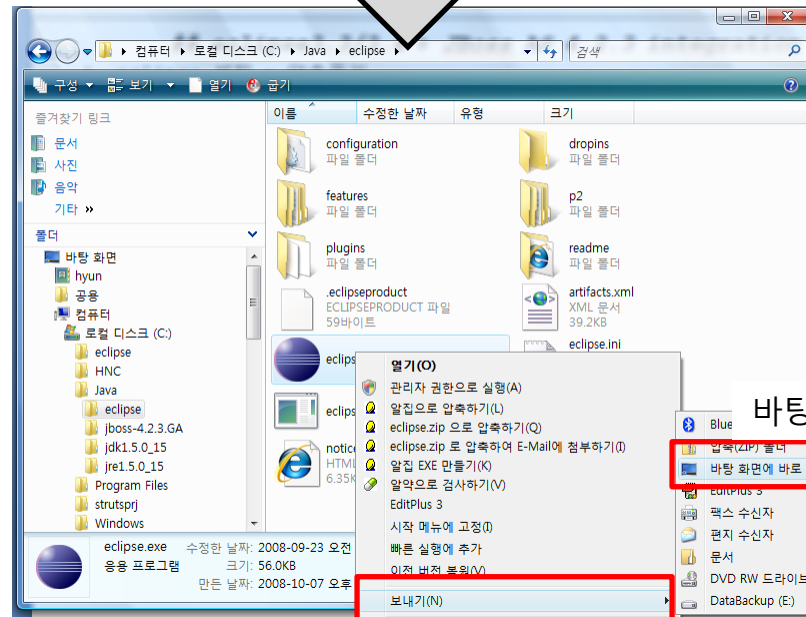
1. 압축해제



C:\Java



2. C:\Java\eclipse 이동



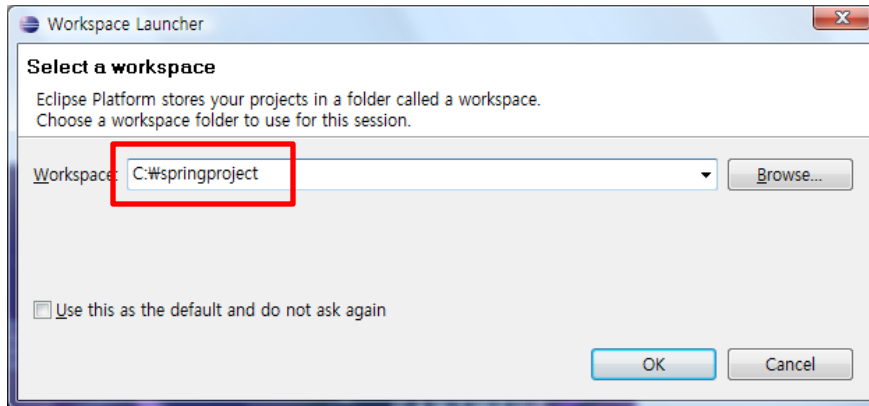
바탕화면에 바로가기 만들기

eclipse3.4 [ganymede] 실행 (run)

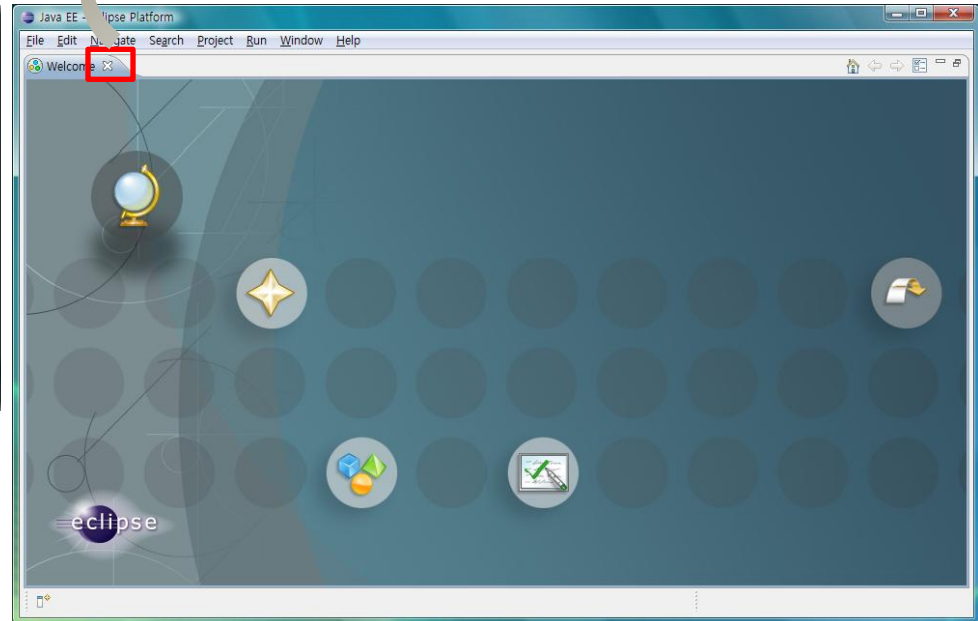
3. 바탕화면에서 eclipse 아이콘 더블클릭!!



4. Workspace창에 'C:\springproject' 입력 후 [OK] 버튼 클릭

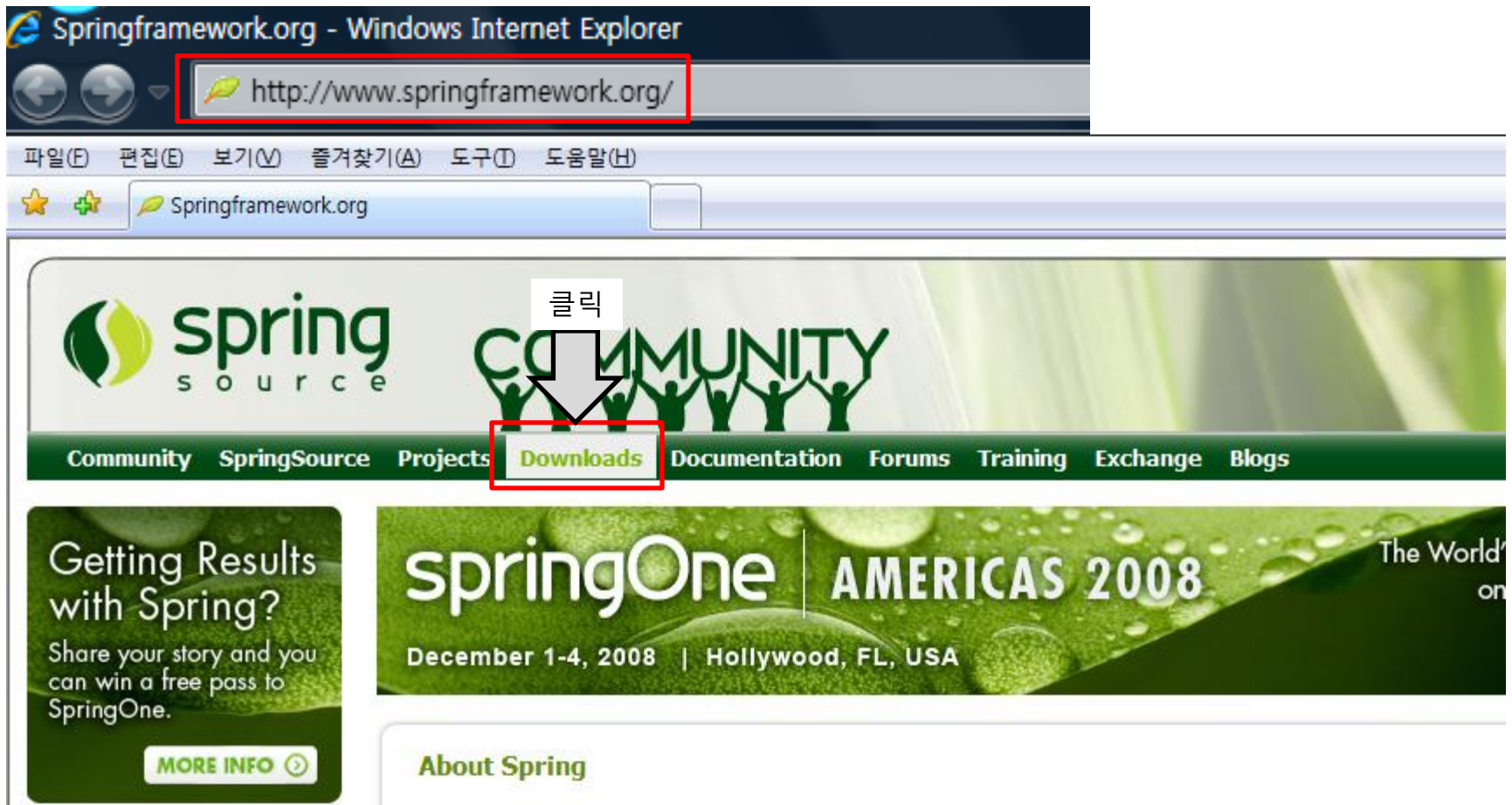


5. Welcome 화면 닫기



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spring 2.5.6 download





Community | SpringSource | Projects | Downloads | Documentation | Forums | Training | Exchange | Blogs

Getting Results with Spring?

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Spring Downloads

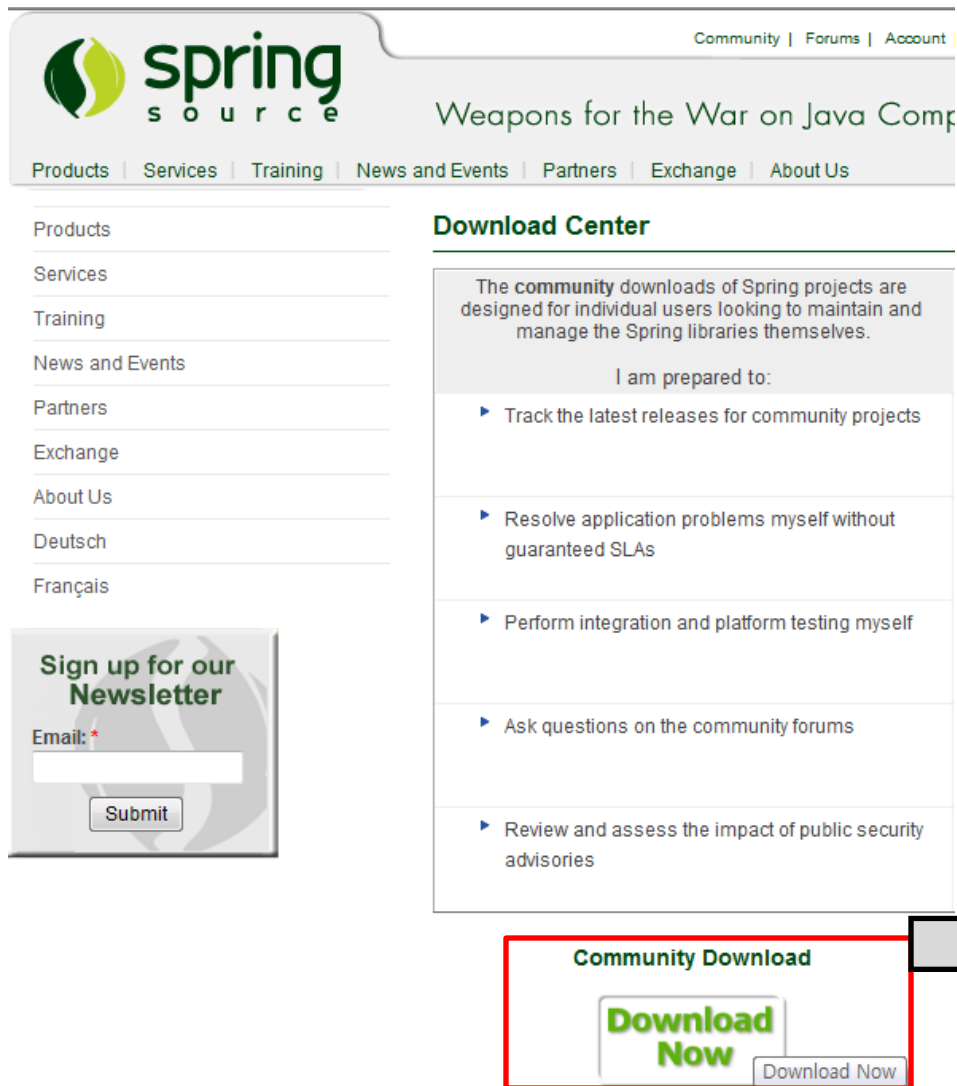
The Spring projects are all available from the SpringSource **Download Center**.

Get the latest Spring releases here

For all Spring Framework releases, the basic release contains only the binaries while the -with-dependencies release contains plus all third-party dependencies, buildable source trees, and sample applications.

- Spring Framework **2.5.6** is the current production release (requires Java 1.4+)
 - [Download](#) | [Changelog](#)
- Spring Framework **2.0.8** is the latest Spring 2.0.x release (compatible with Java 1.3+)
 - [Download](#) | [Changelog](#) | [Announcement](#)
- Spring Framework **nightly snapshots** are available for testing and development purposes
 - [Download](#)

SPRING framework



The screenshot shows the Spring Source website. At the top, the Spring Source logo is on the left, and navigation links for Community, Forums, and Account are on the right. Below the logo, the tagline 'Weapons for the War on Java Comp' is visible. A horizontal menu contains links for Products, Services, Training, News and Events, Partners, Exchange, and About Us. On the left side, there is a vertical menu with the same links. Below this menu is a 'Sign up for our Newsletter' form with an email input field and a 'Submit' button. The main content area is titled 'Download Center' and contains a paragraph about community downloads, a list of five tasks users can perform, and a 'Community Download' section with a 'Download Now' button. A red box highlights the 'Download Now' button, and a grey arrow points from it to a Windows file download dialog box on the right.

spring
source

Community | Forums | Account

Weapons for the War on Java Comp

Products | Services | Training | News and Events | Partners | Exchange | About Us

Products
Services
Training
News and Events
Partners
Exchange
About Us
Deutsch
Français

Sign up for our Newsletter

Email: *

Submit

Download Center

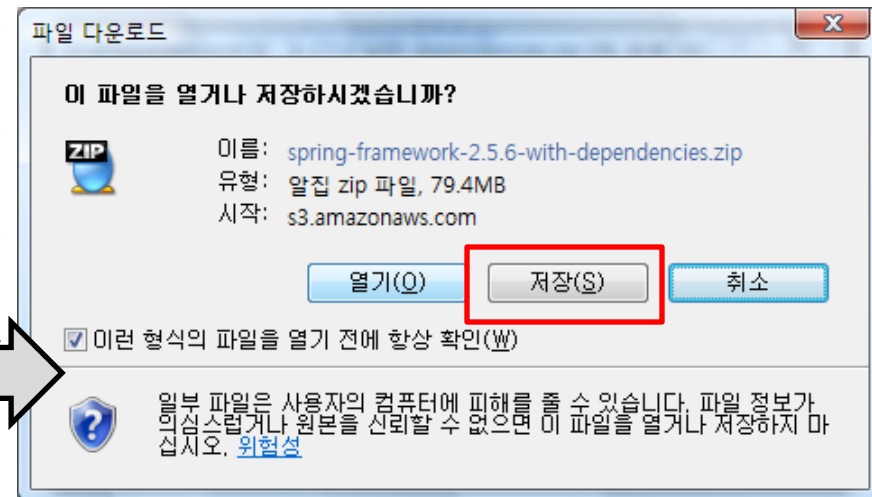
The **community** downloads of Spring projects are designed for individual users looking to maintain and manage the Spring libraries themselves.

I am prepared to:

- ▶ Track the latest releases for community projects
- ▶ Resolve application problems myself without guaranteed SLAs
- ▶ Perform integration and platform testing myself
- ▶ Ask questions on the community forums
- ▶ Review and assess the impact of public security advisories

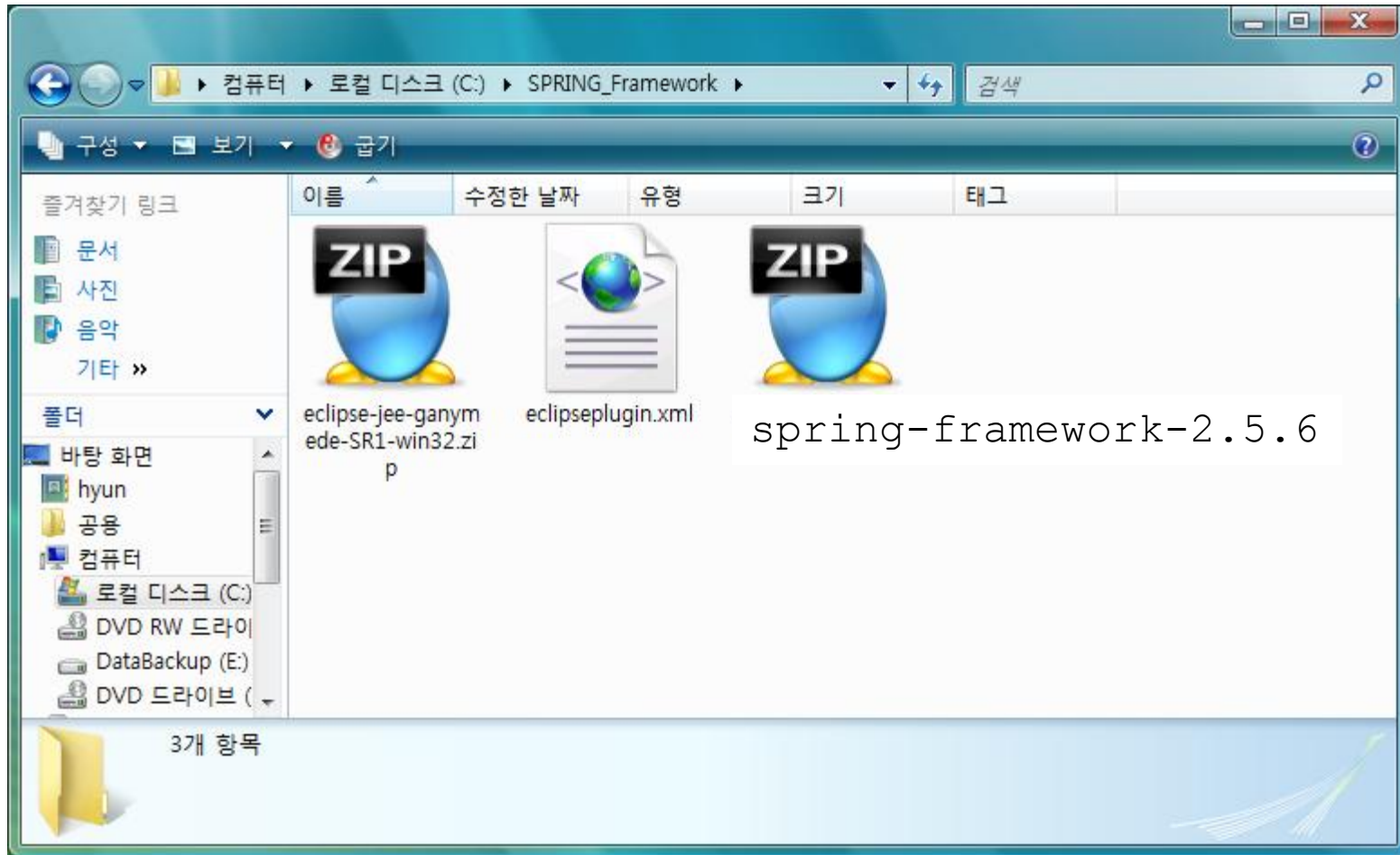
Community Download

Download Now Download Now

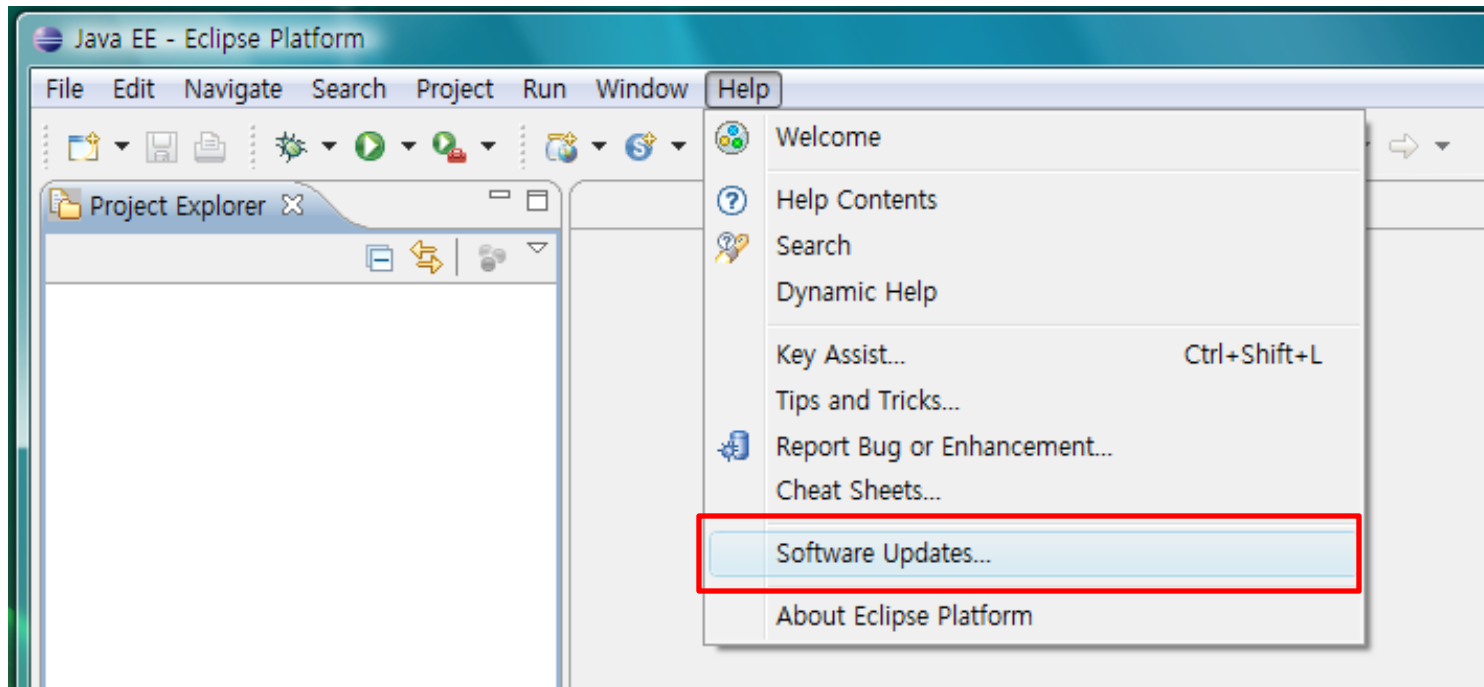


SPRING framework

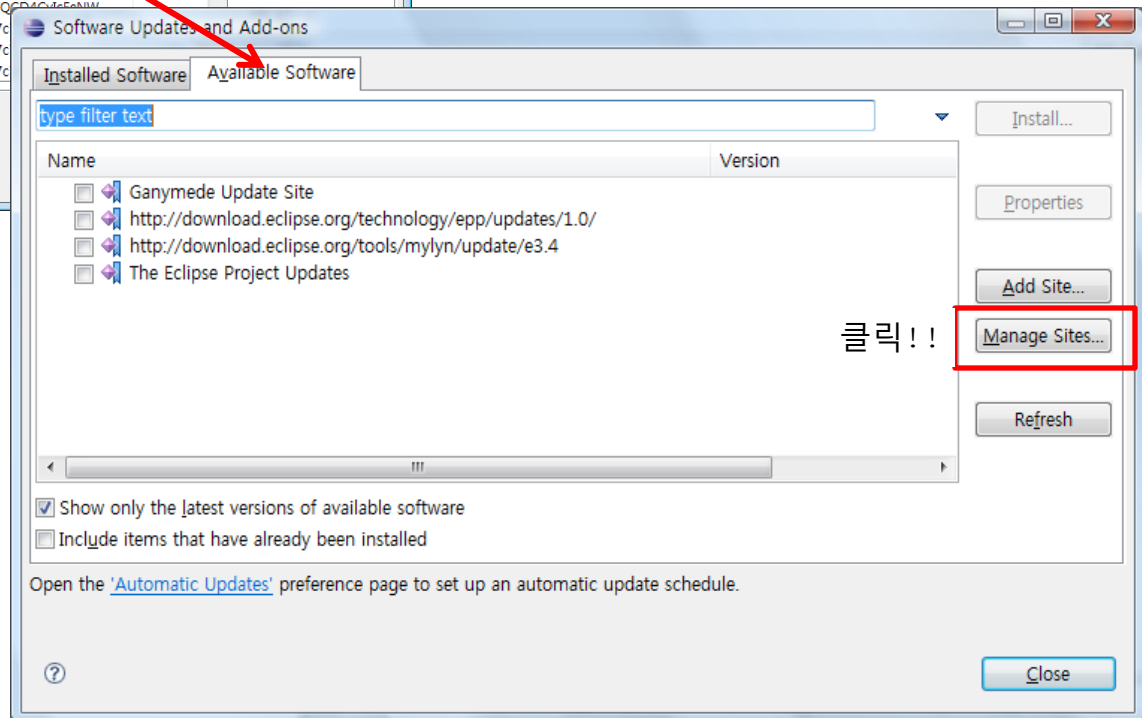
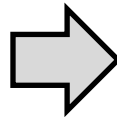
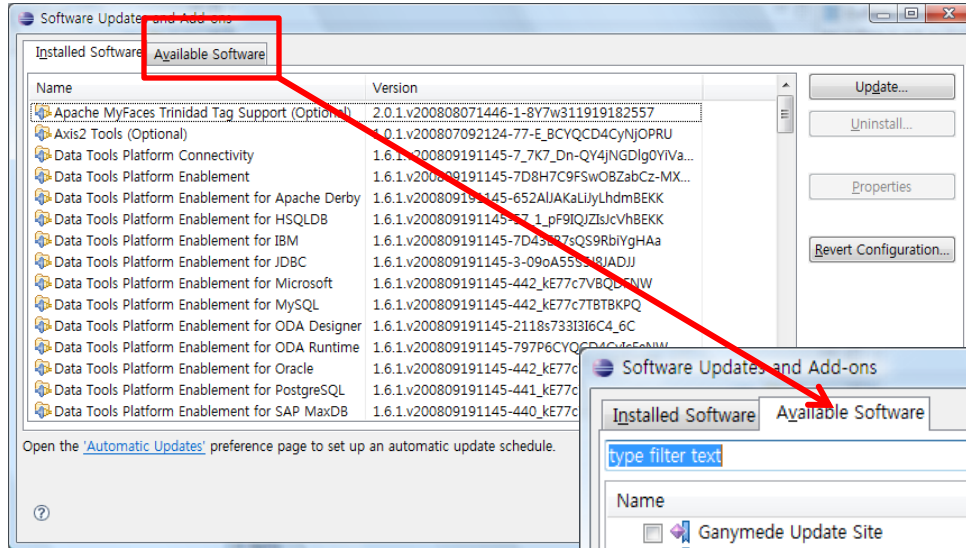
spring framework 실습하기 위한 파일구성



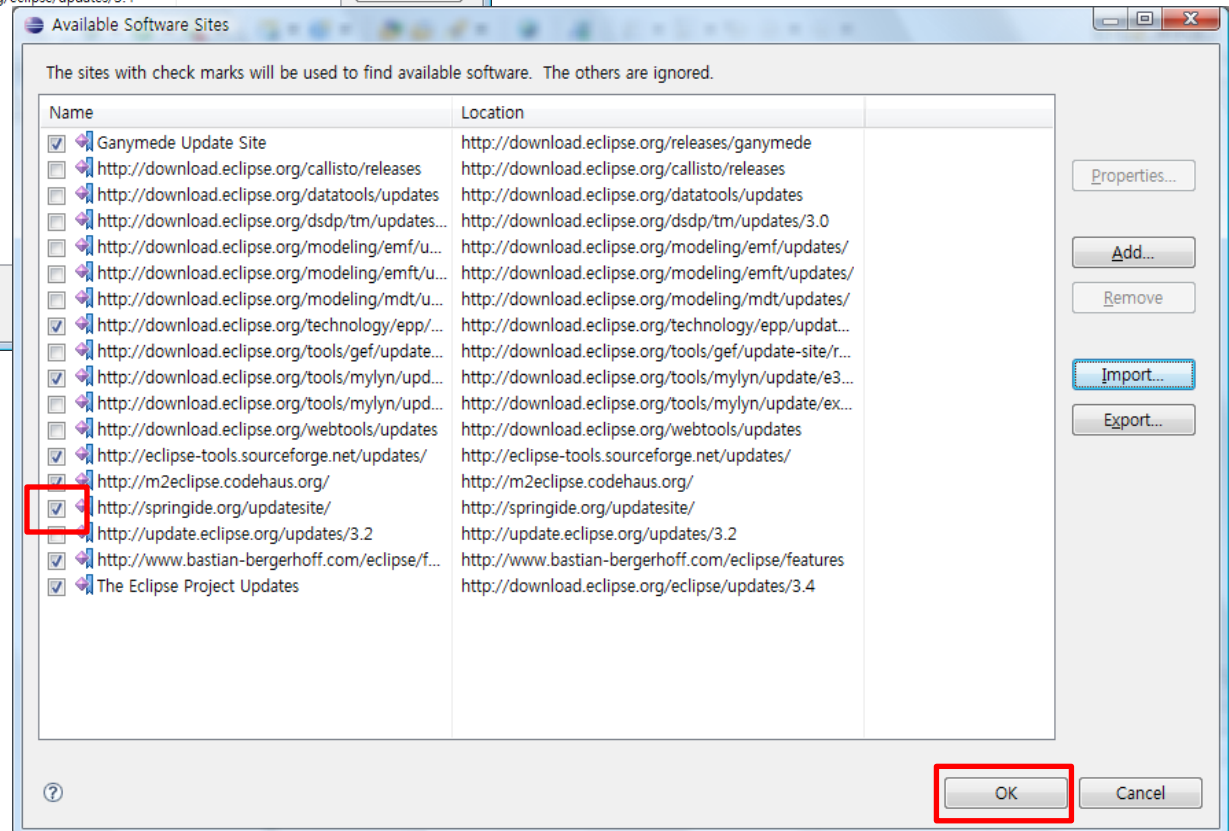
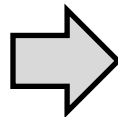
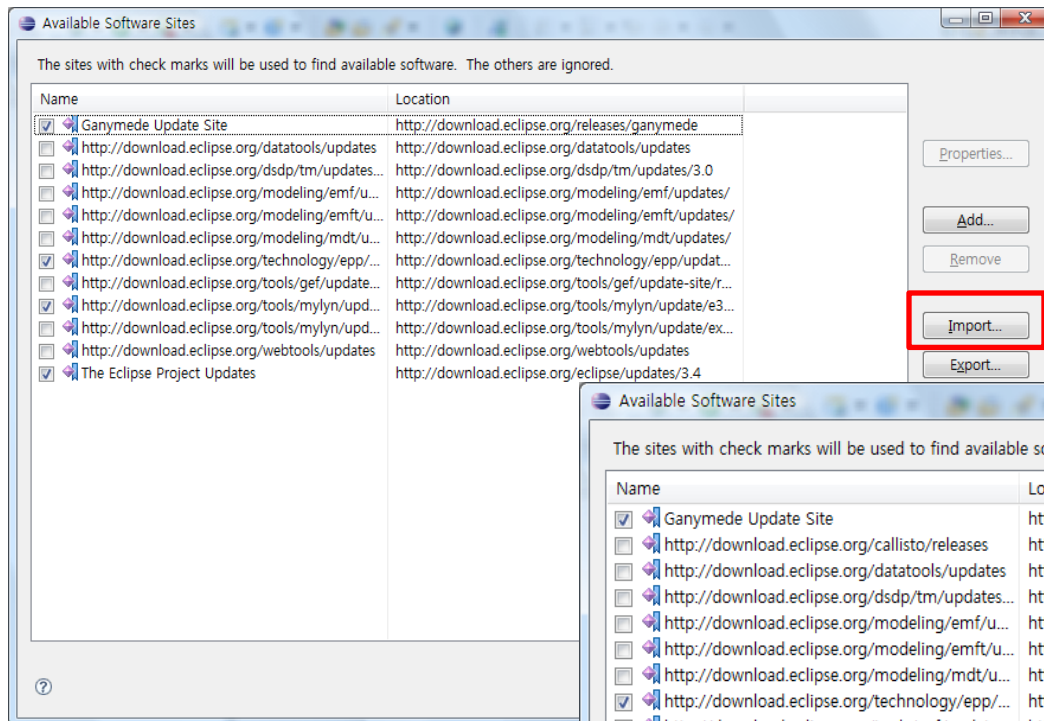
SPRING framework - spring IDE



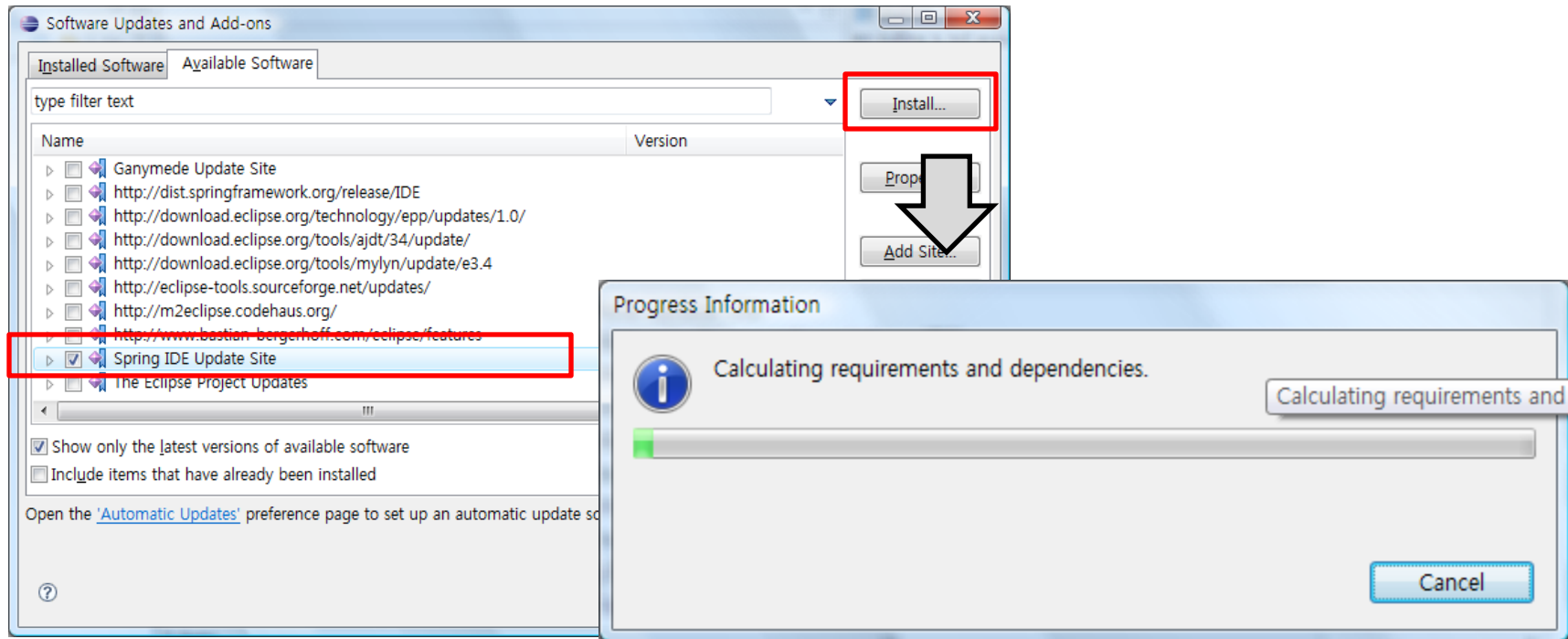
SPRING framework - spring IDE



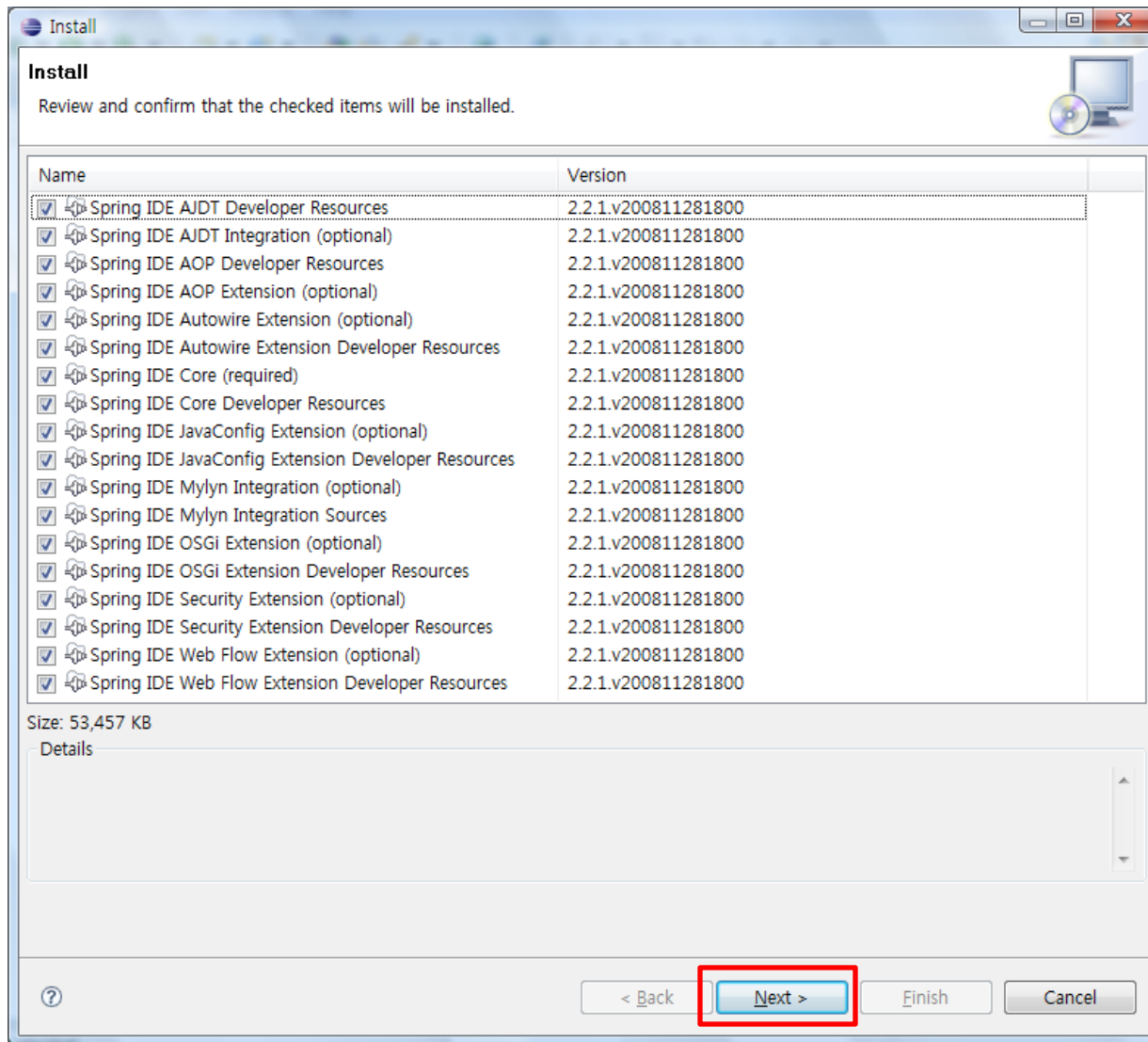
SPRING framework - spring IDE



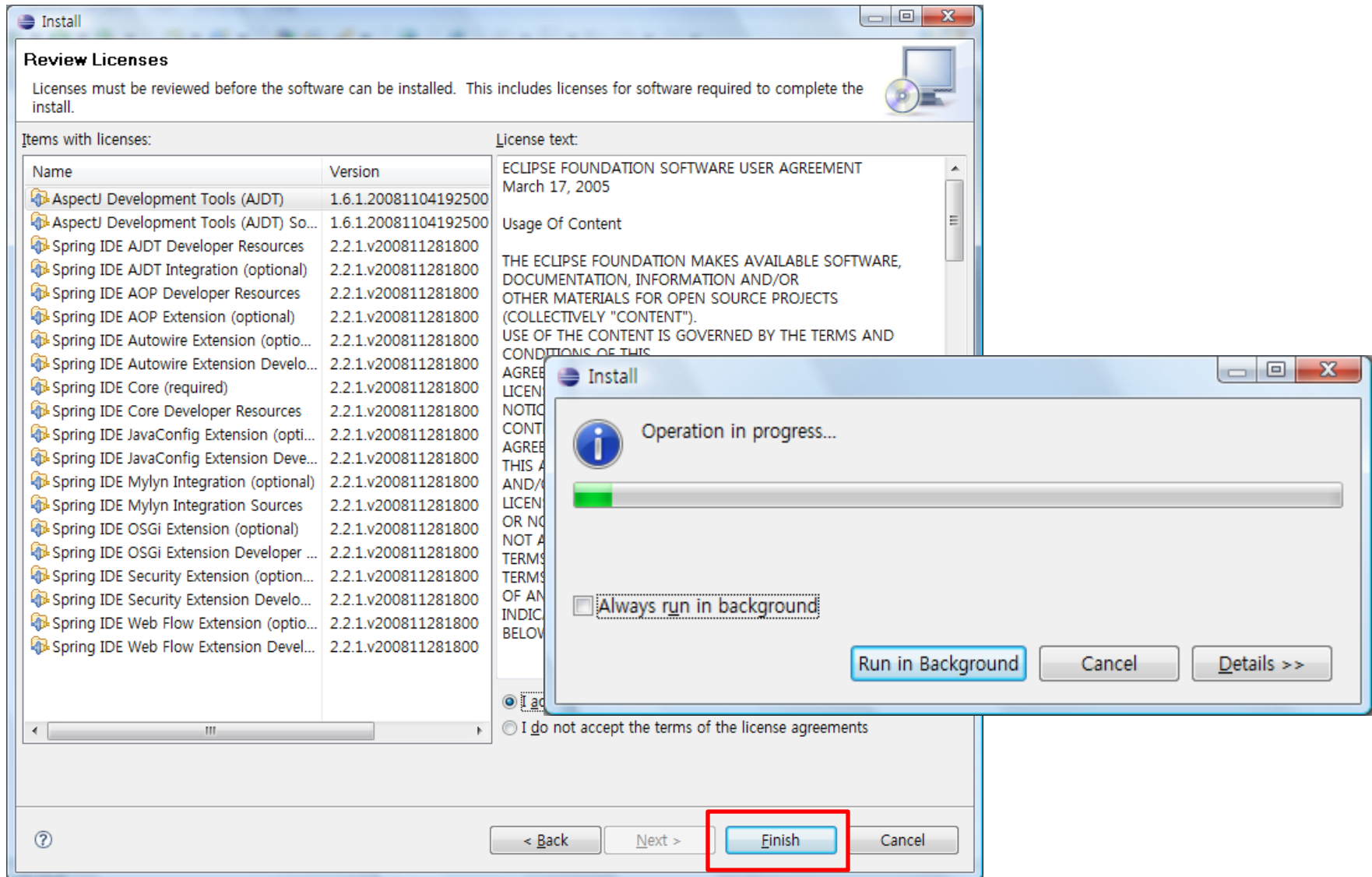
SPRING framework - spring IDE



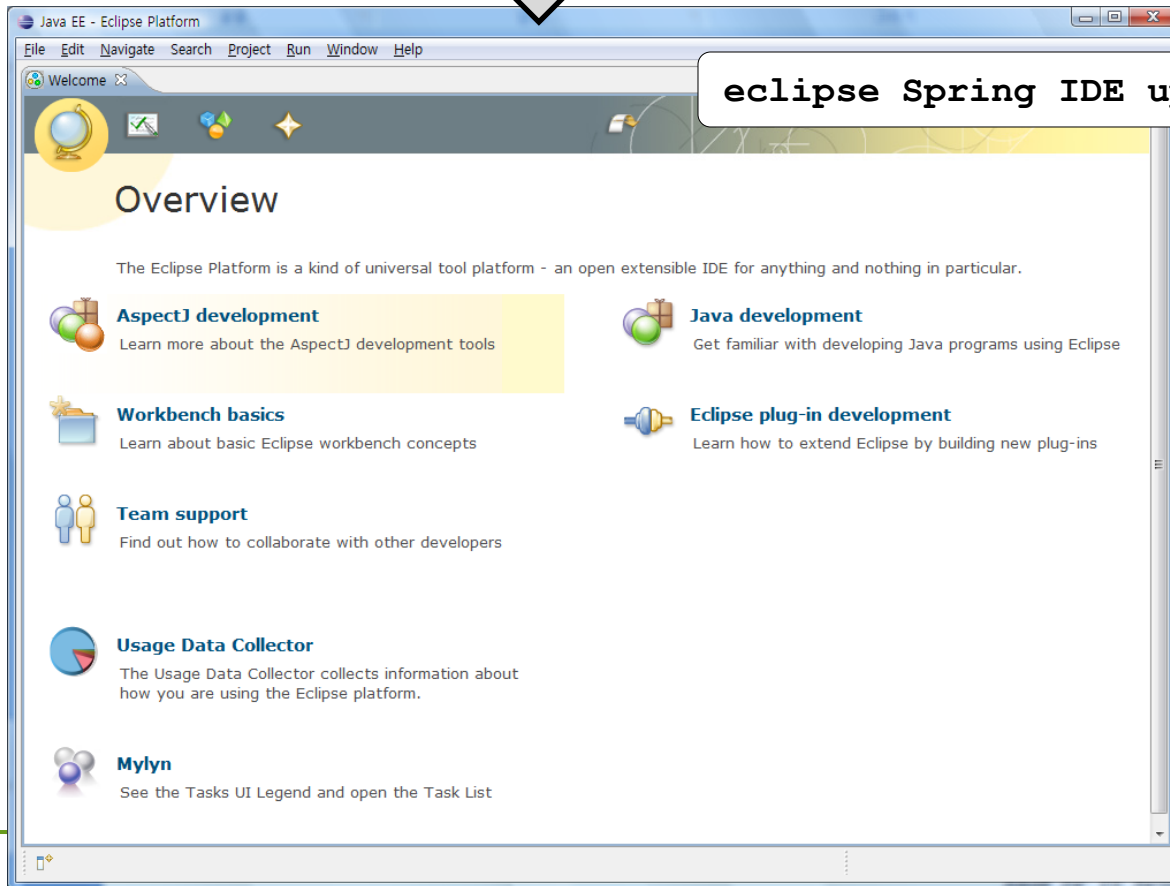
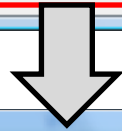
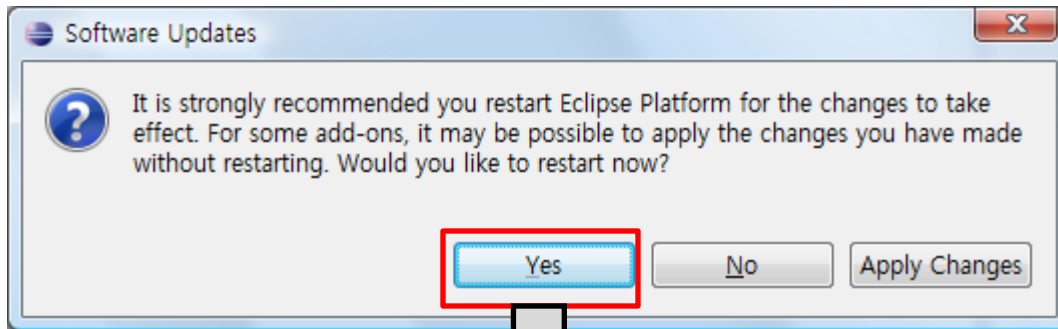
SPRING framework - spring IDE



SPRING framework - spring IDE



SPRING framework - spring IDE

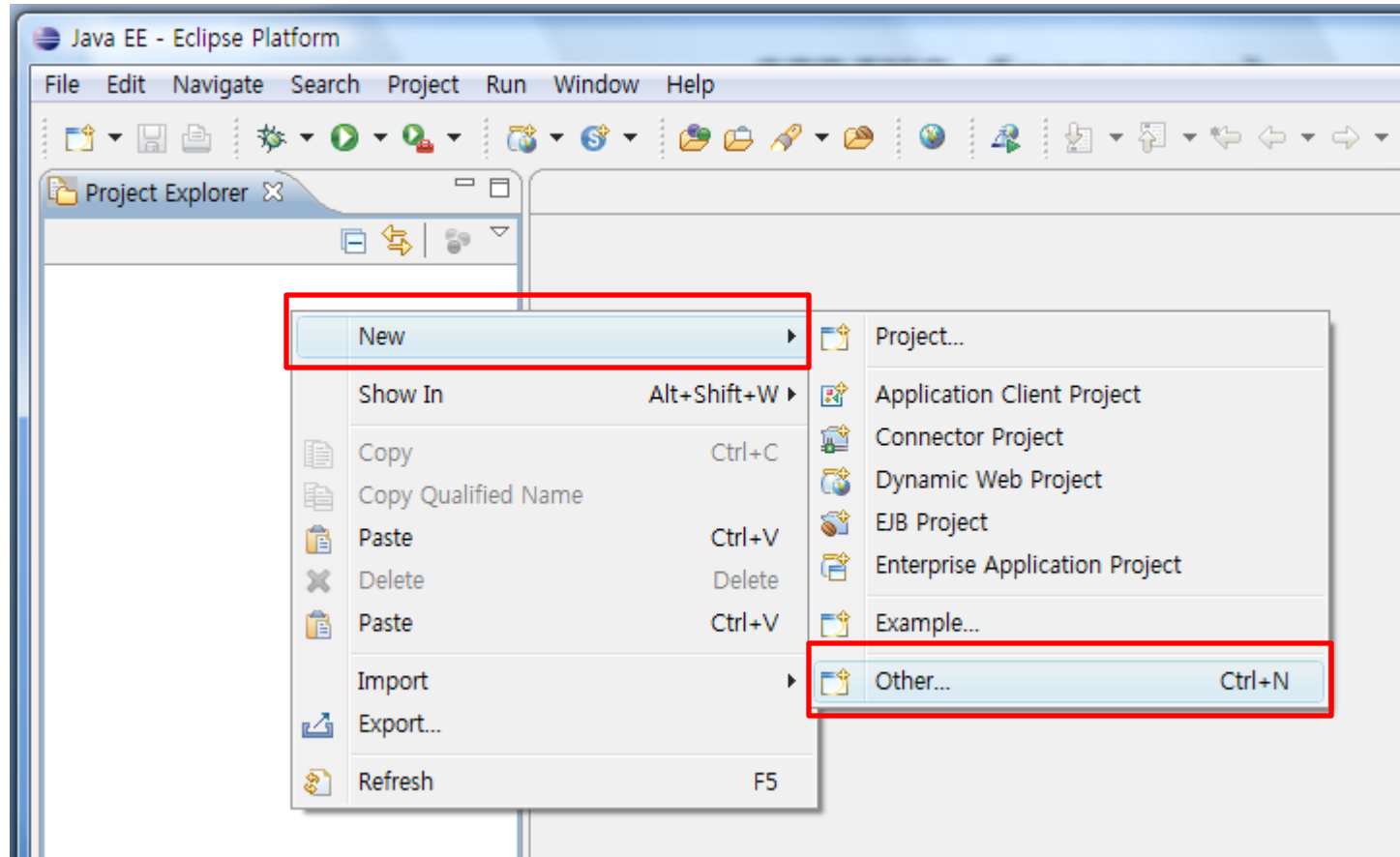


eclipse Spring IDE update 완료

SPRING framework

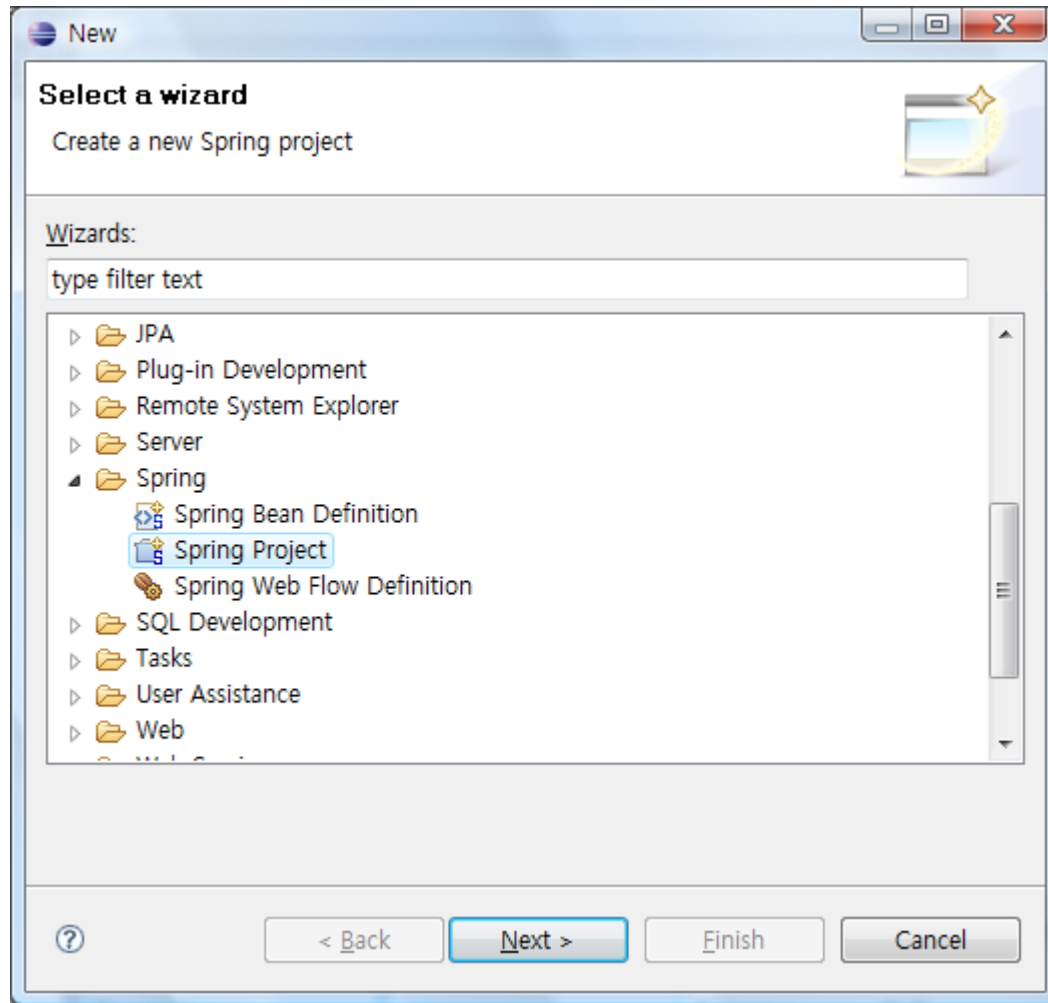
앞에 화면에서 [yes]를 눌렀다면 재시작을 한다.

Project Explorer에서 마우스 우클릭 > New > Other

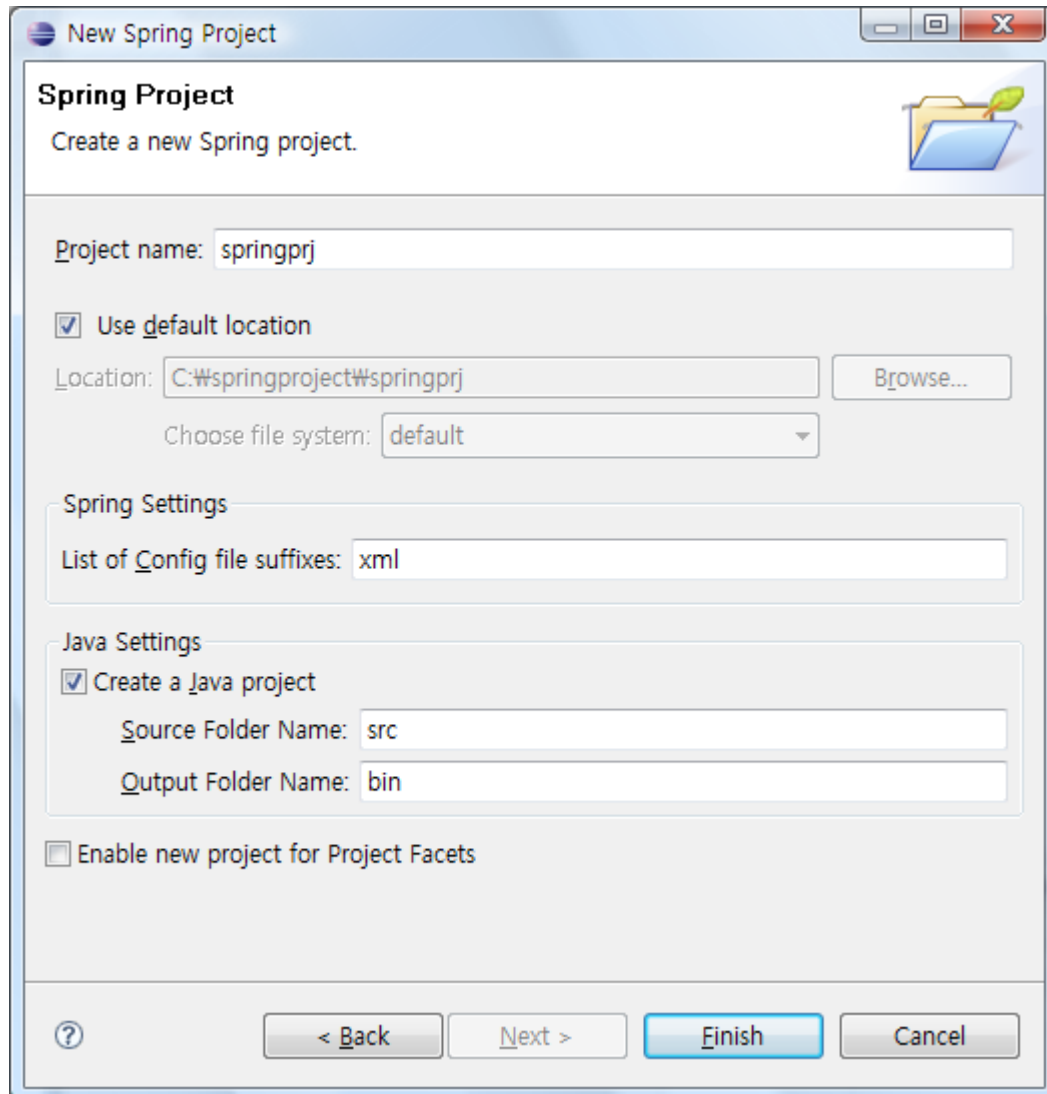


SPRING framework

Spring > Spring Project > Next 클릭



SPRING framework



New Spring Project

Spring Project
Create a new Spring project.

Project name:

☒ Use default location

Location:

Choose file system:

Spring Settings

List of Config file suffixes:

Java Settings

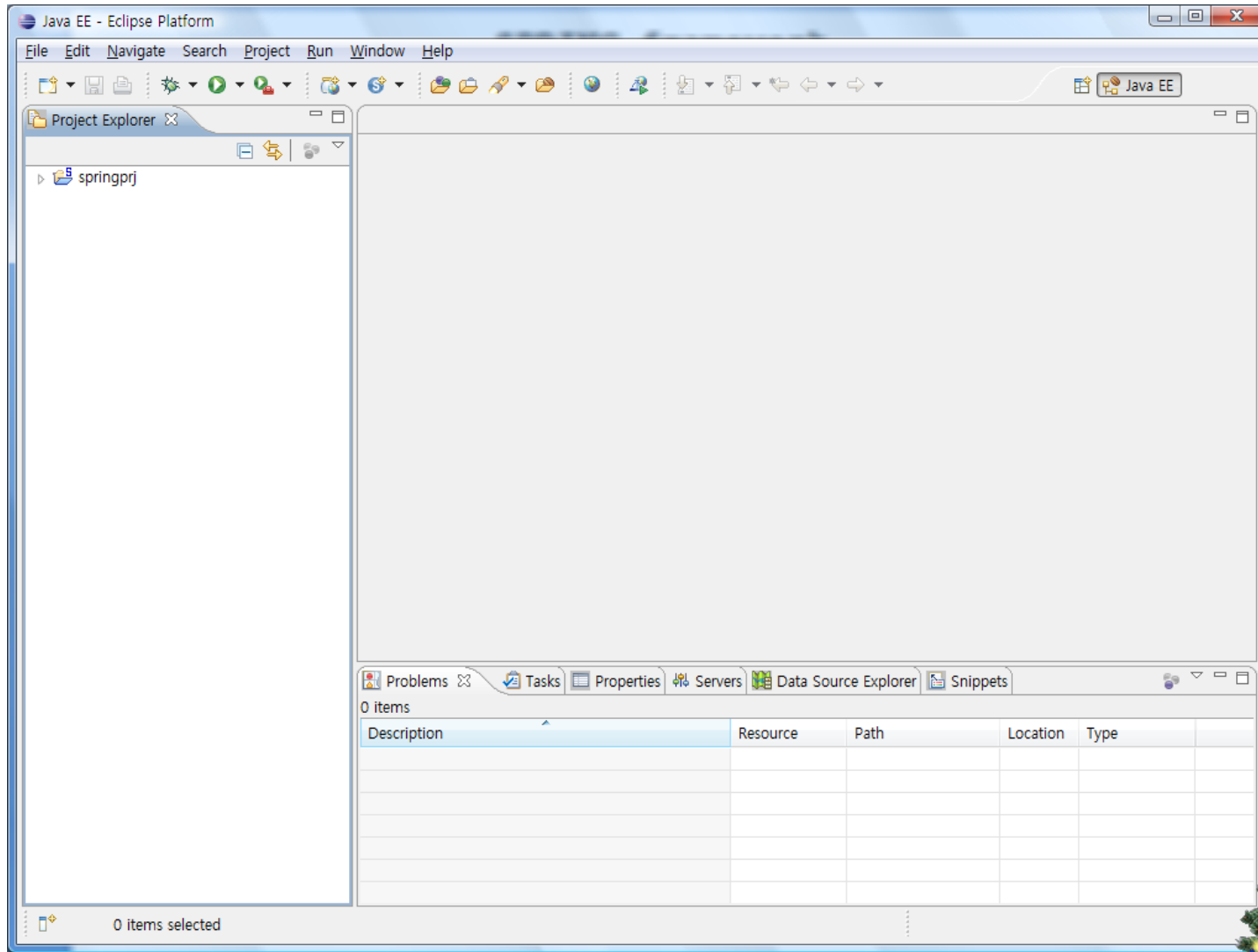
☒ Create a Java project

Source Folder Name:

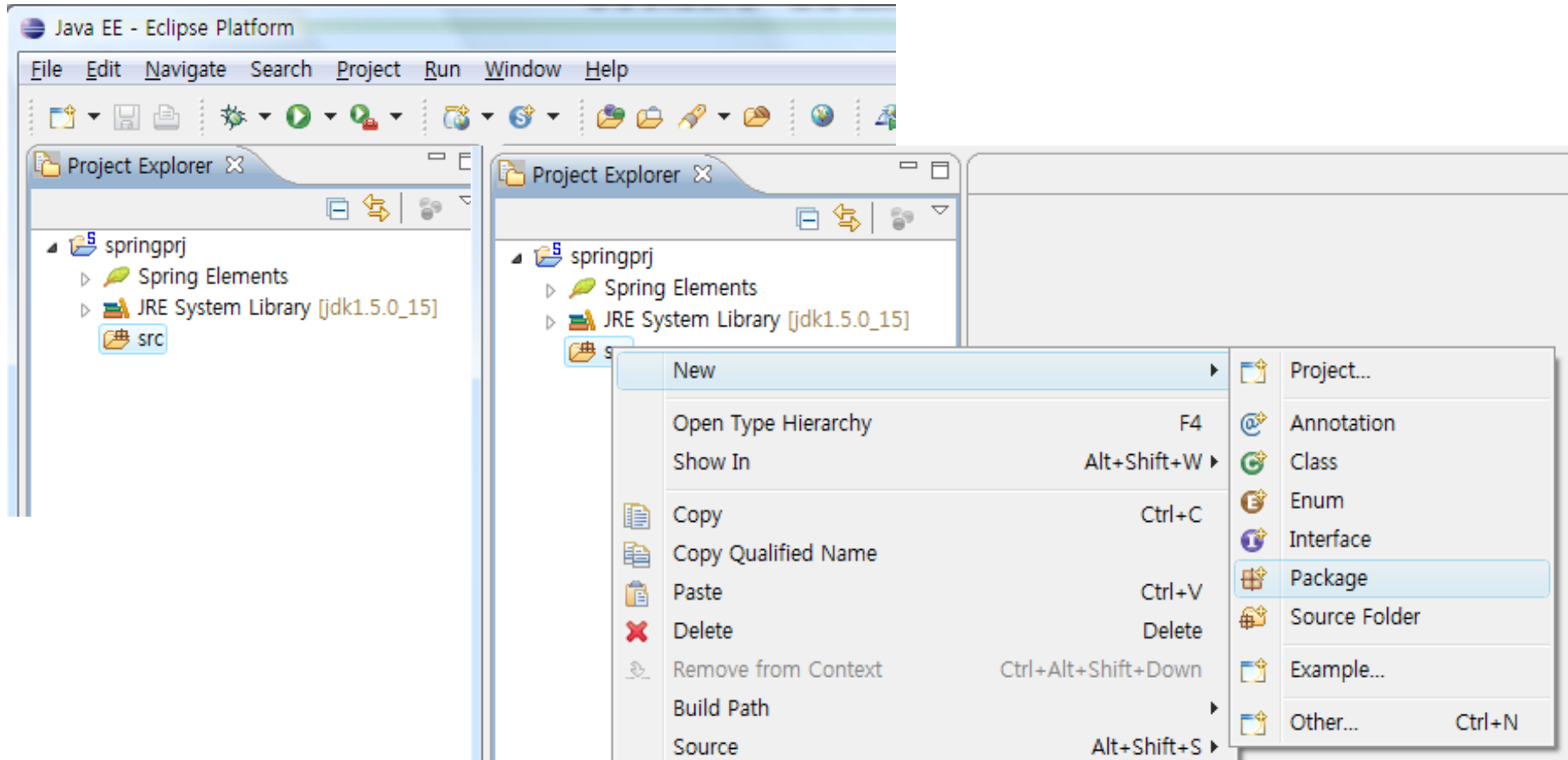
Output Folder Name:

☐ Enable new project for Project Facets

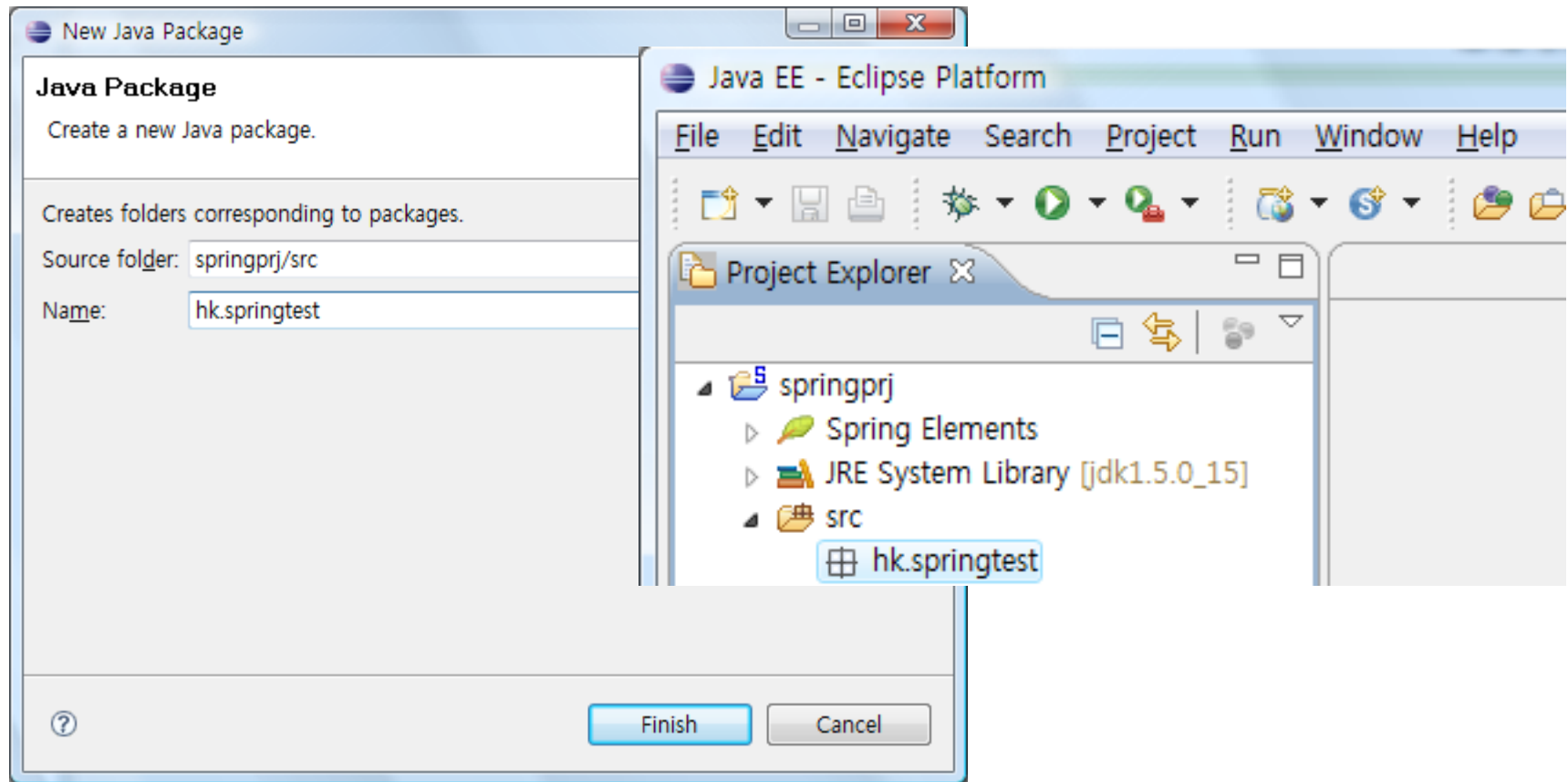
SPRING framework



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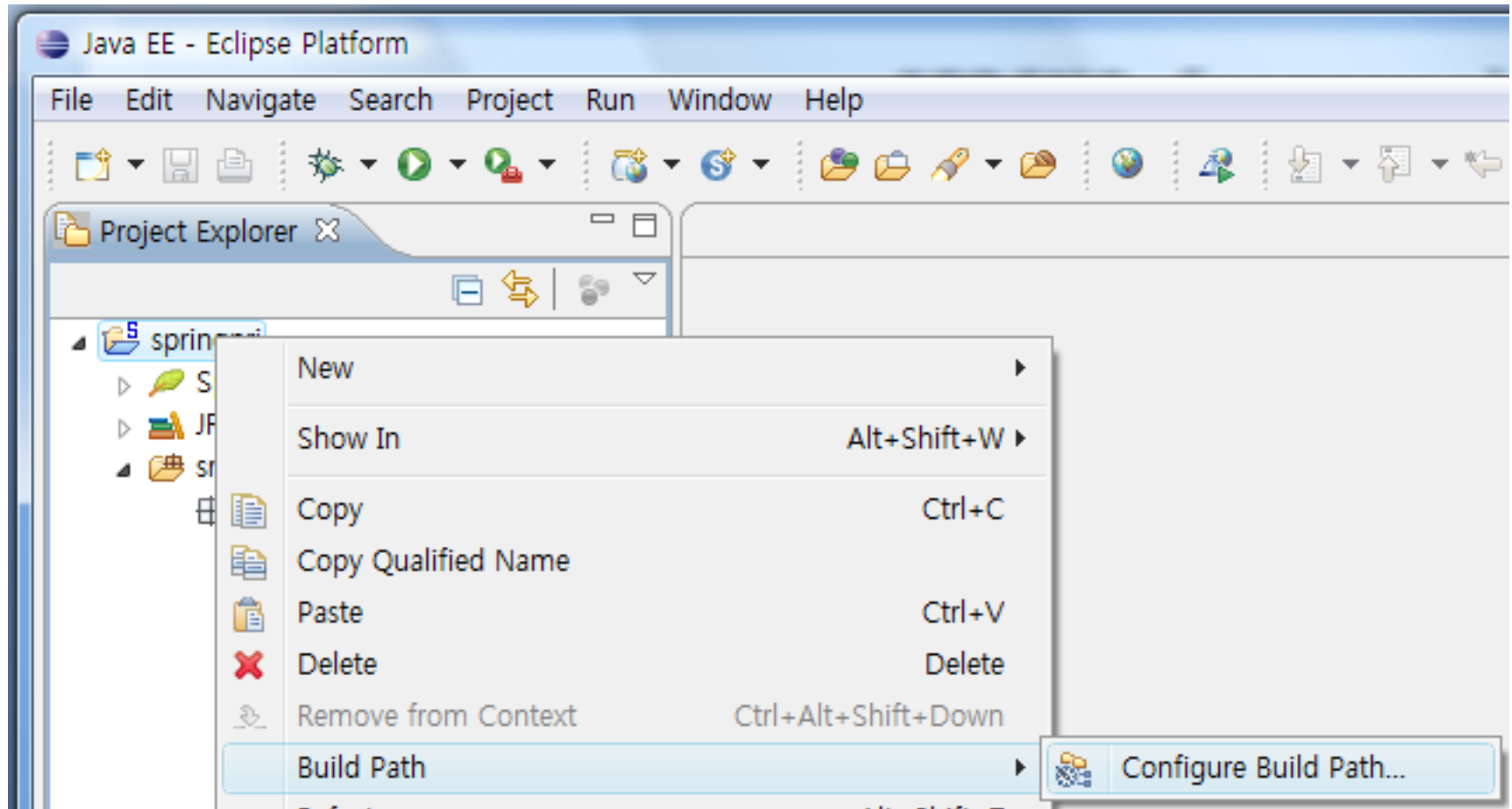


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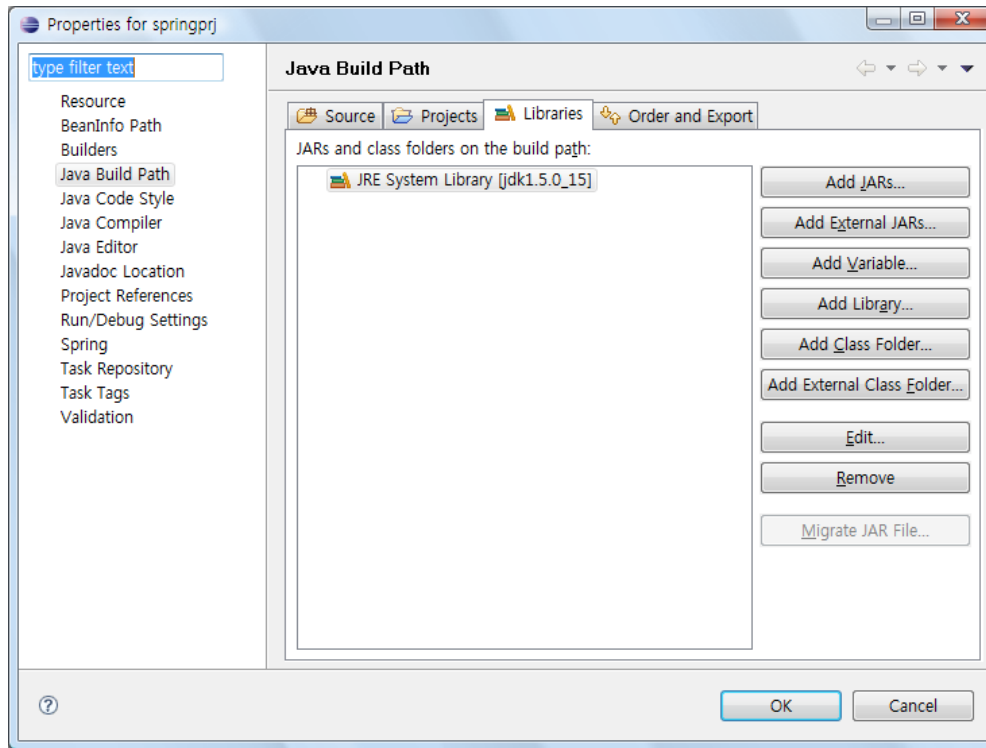


SPRING framework

build path 설정

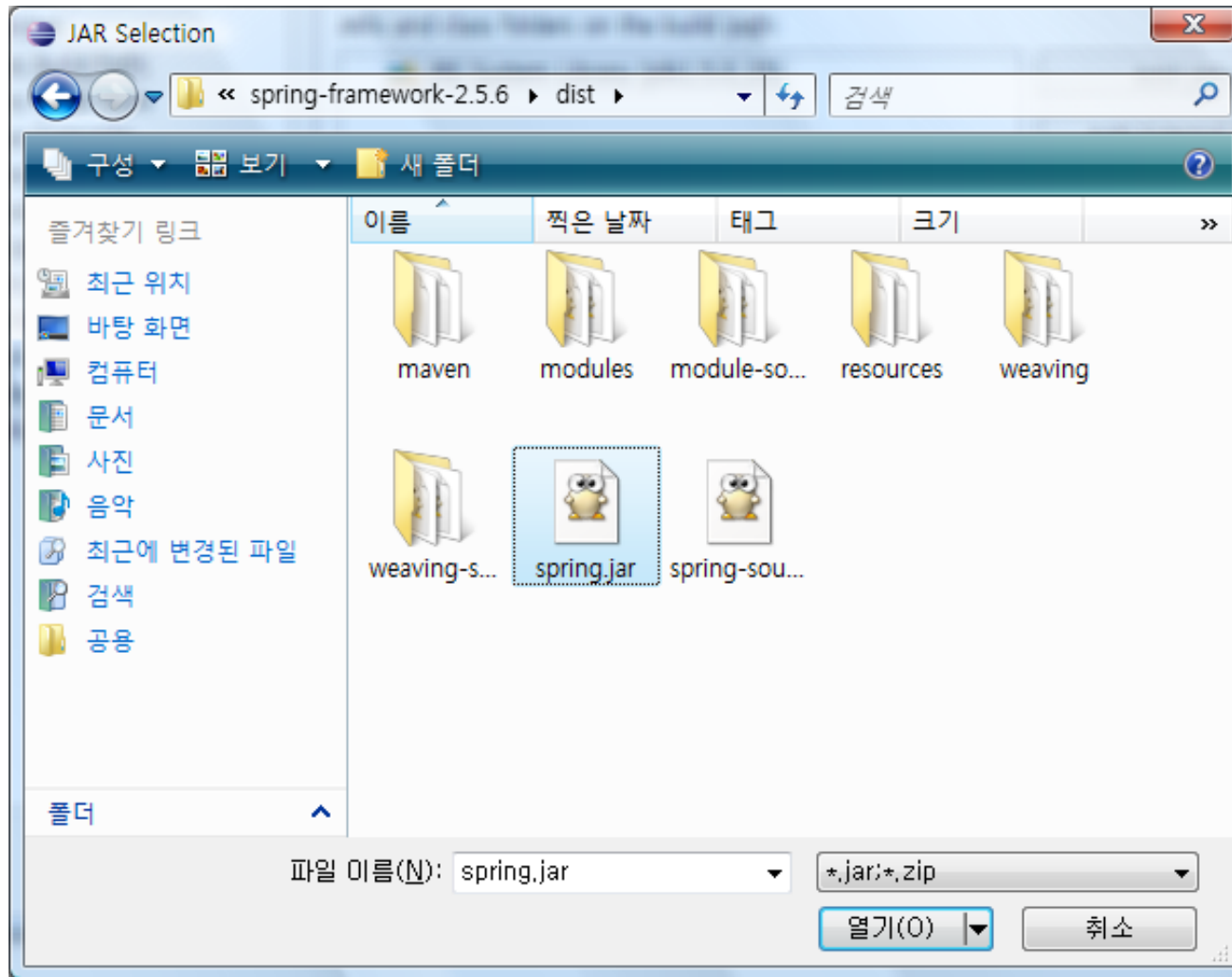


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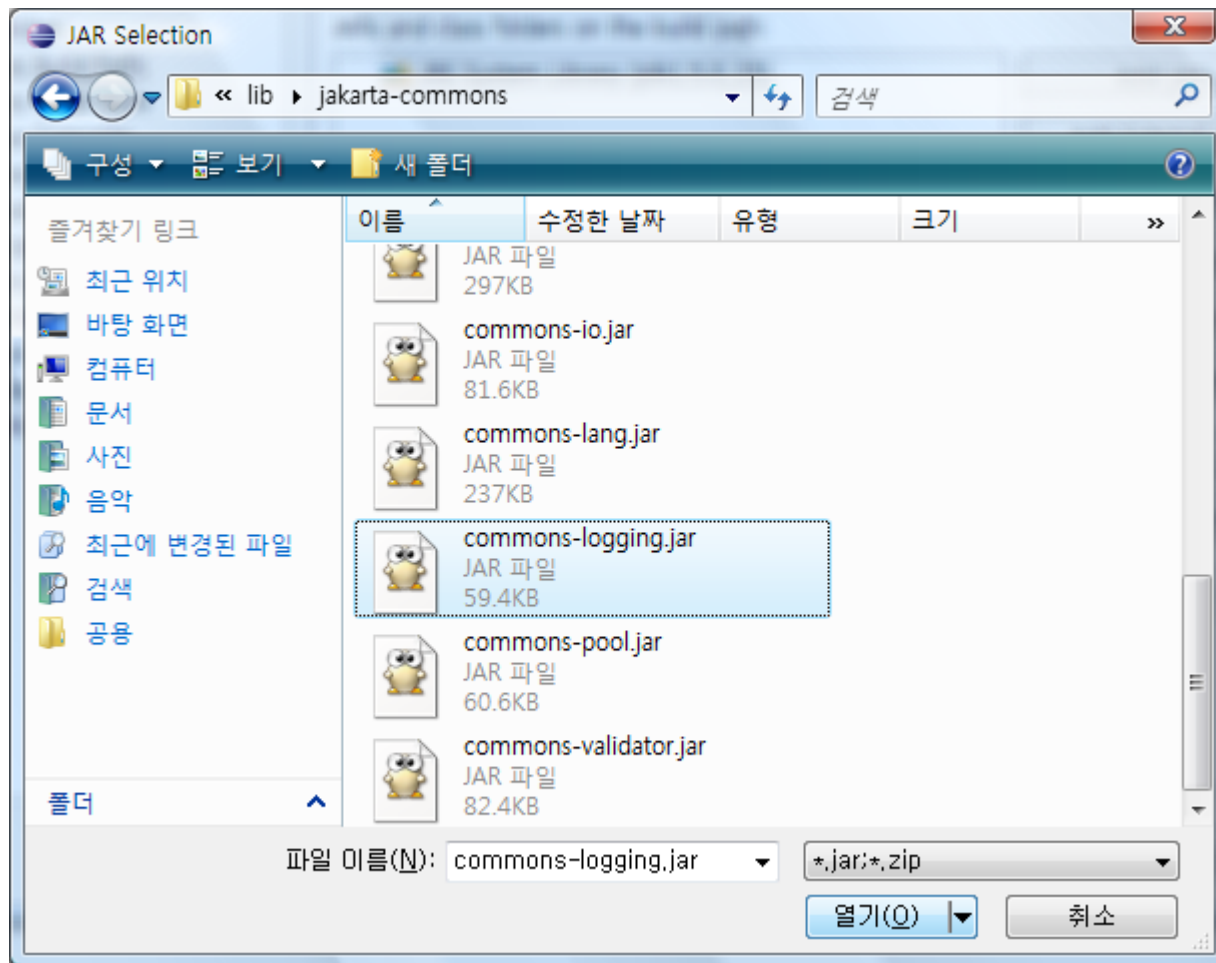
SPRING framework

C:\spring-framework-2.5.6\dist\spring.jar



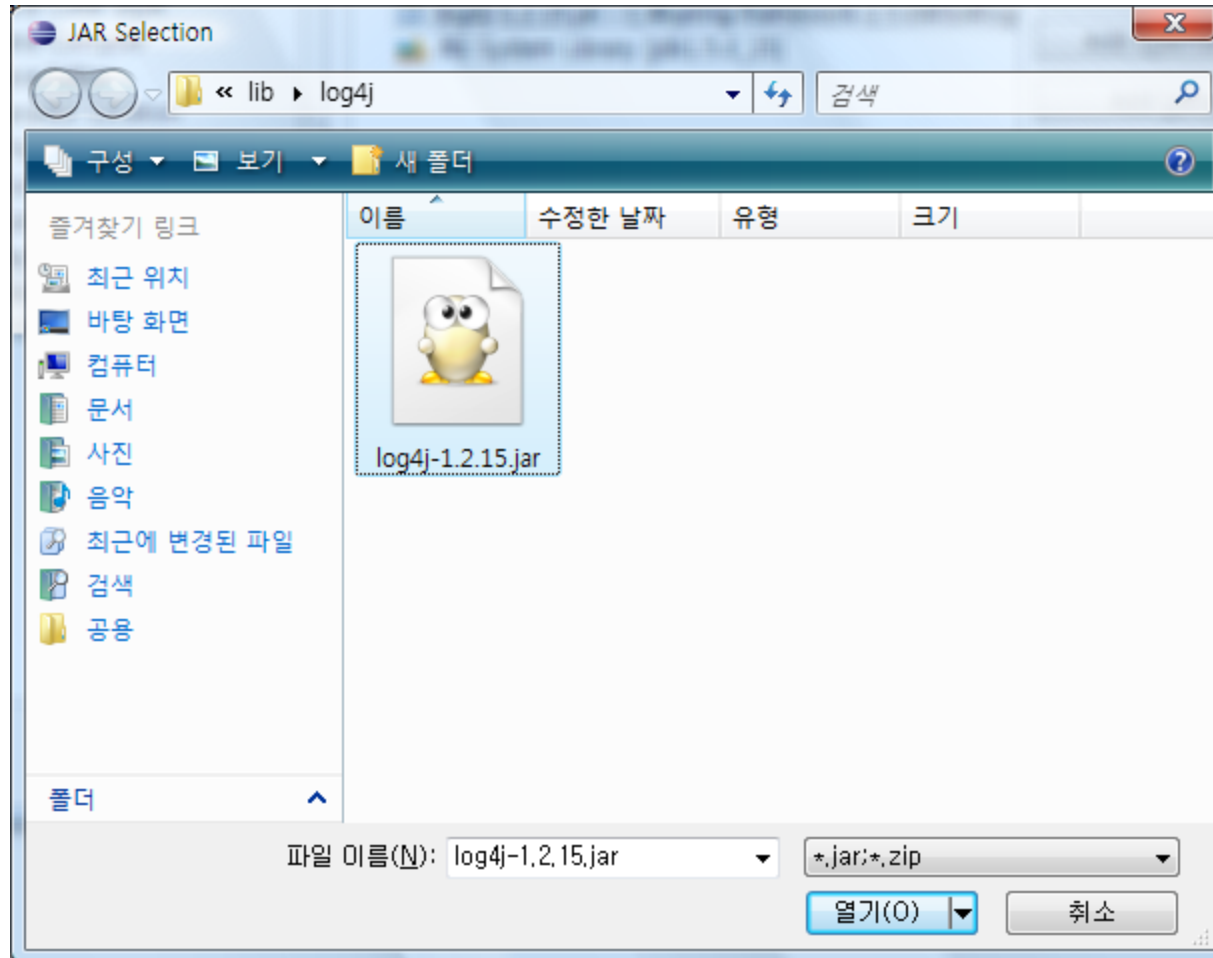
SPRING framework

C:\spring-framework-2.5.6\lib\jakarta-commons\commons-logging.jar

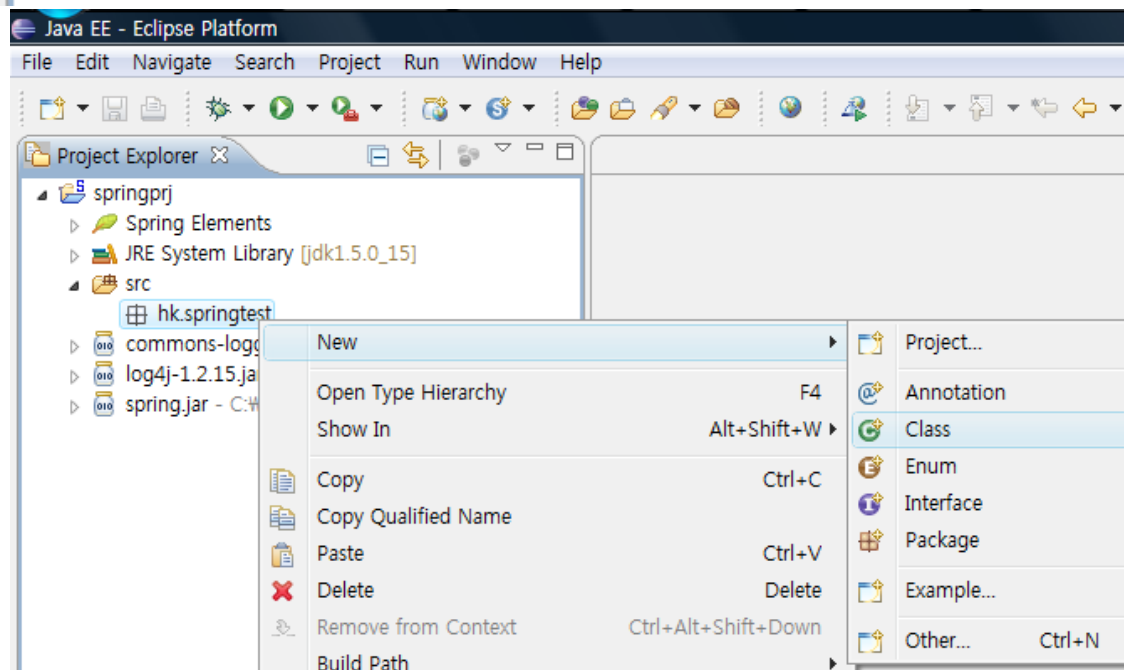
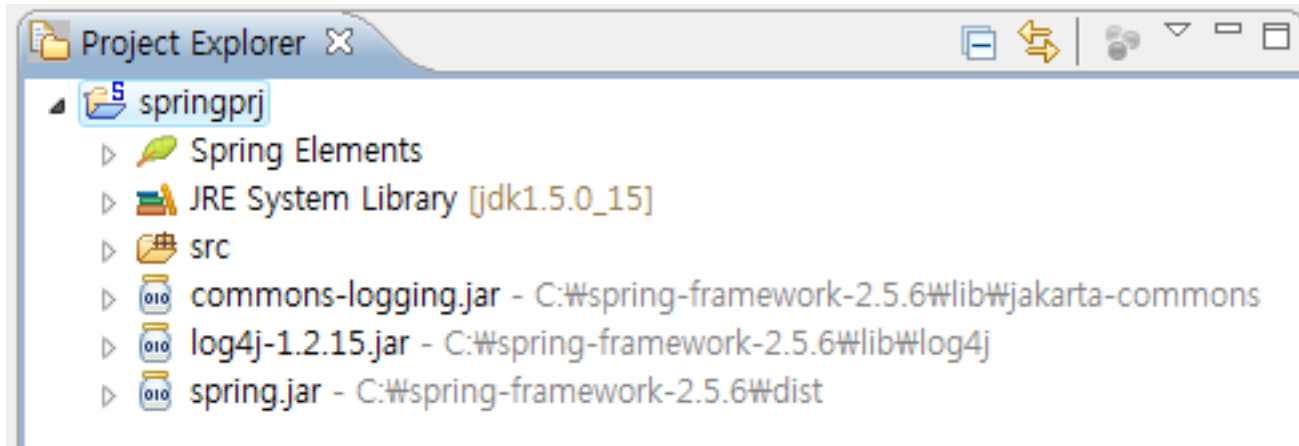


SPRING framework

C:\spring-framework-2.5.6\log4j\log4j-1.2.15.jar



SPRING framework



SPRING framework

New Java Class

Java Class
Create a new Java class.

Source folder:

Package:

☐ Enclosing type:

Name:

Modifiers: ☒ public ☐ default ☐ private ☐ protected
☐ abstract ☐ final ☐ static

Superclass:

Interfaces:

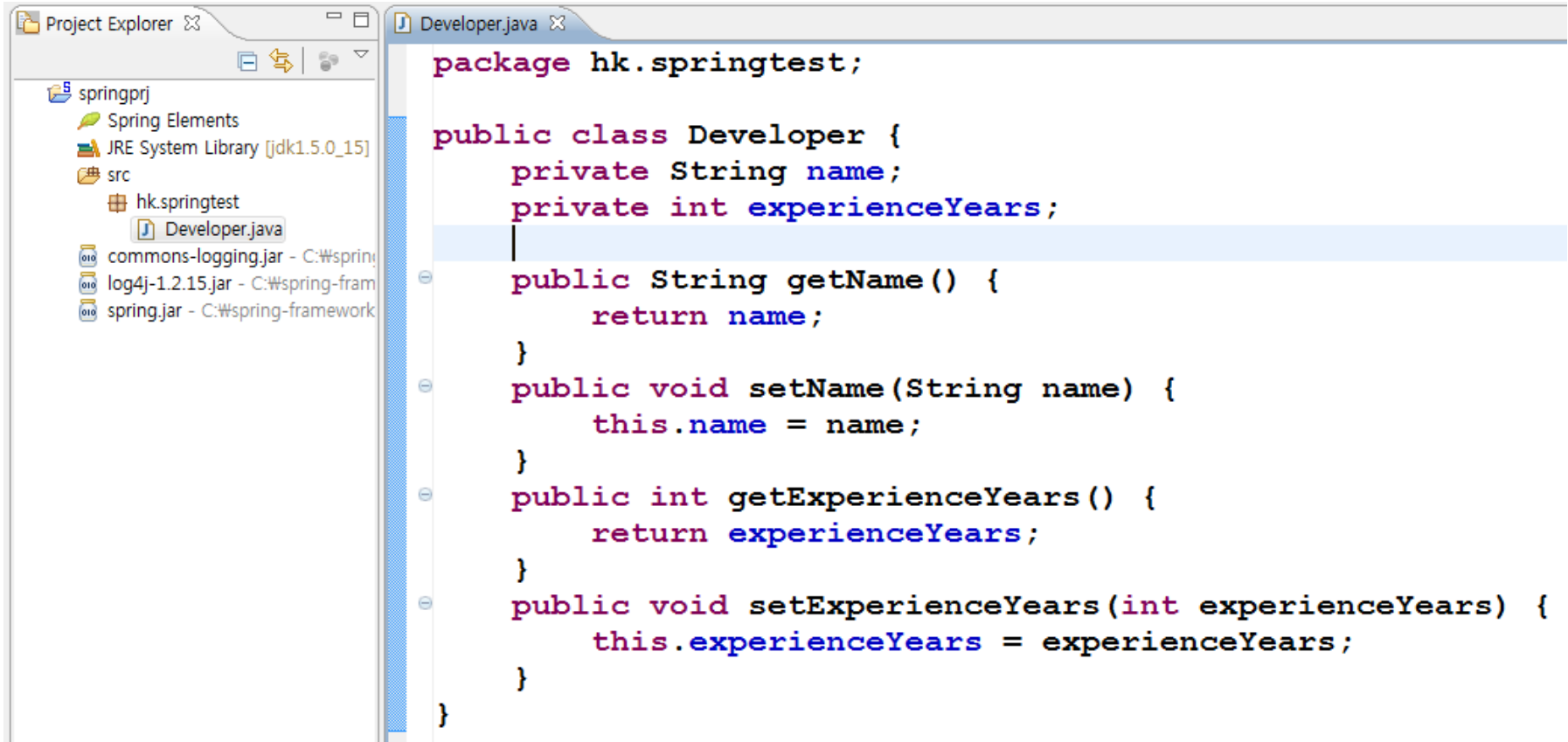
Which method stubs would you like to create?

☐ public static void main(String[] args)
☐ Constructors from superclass
☒ Inherited abstract methods

Do you want to add comments? (Configure templates and default value [here](#))
☐ Generate comments

SPRING framework

Developer.java



The screenshot shows an IDE with two panels. The left panel is the Project Explorer, showing a project named 'springprj' with the following structure:

- Spring Elements
- JRE System Library [jdk1.5.0_15]
- src
 - hk.springtest
 - Developer.java
- commons-logging.jar - C:\spring
- log4j-1.2.15.jar - C:\spring-fram
- spring.jar - C:\spring-framework

The right panel shows the code for 'Developer.java'.

```
package hk.springtest;

public class Developer {
    private String name;
    private int experienceYears;

    public String getName() {
        return name;
    }

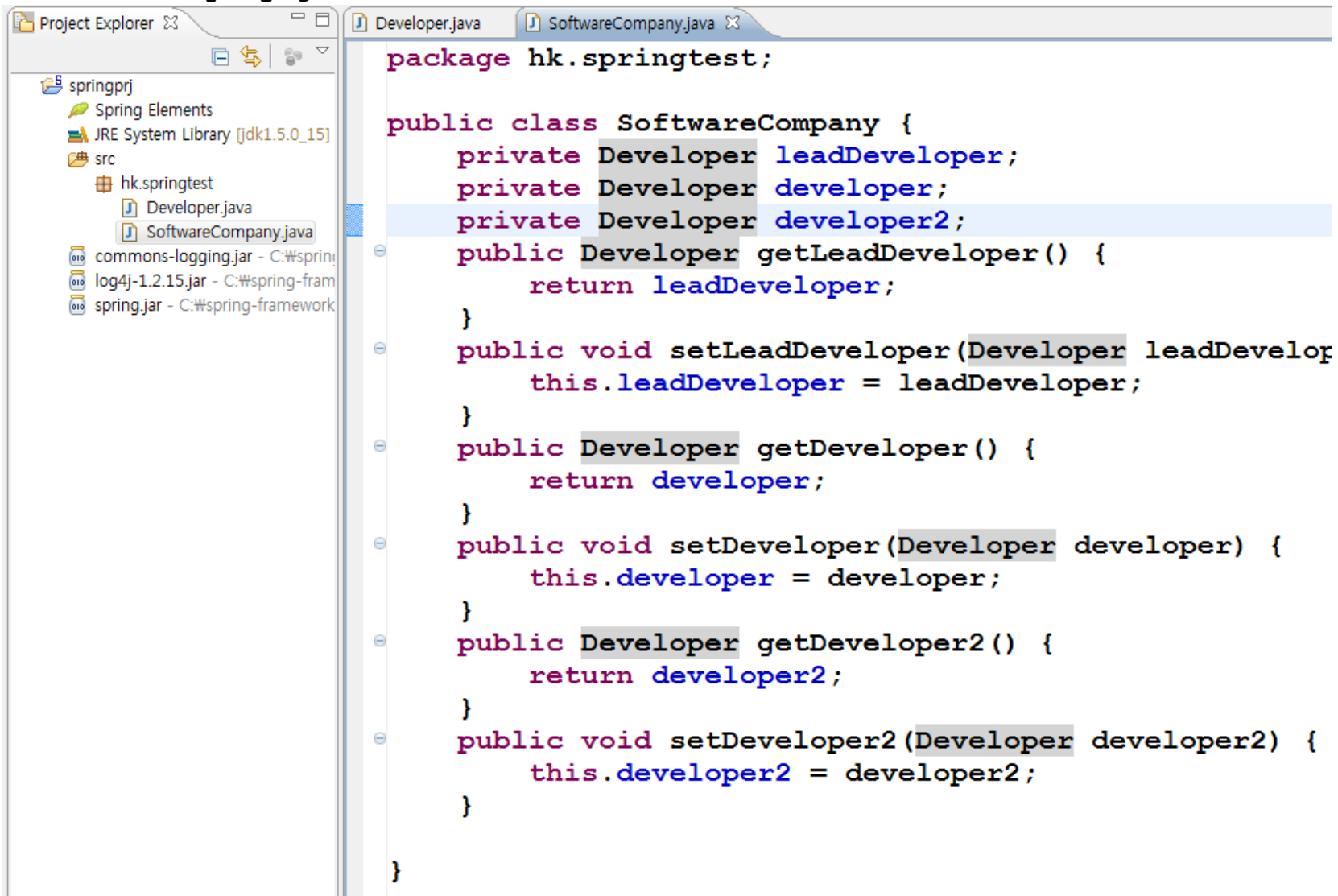
    public void setName(String name) {
        this.name = name;
    }

    public int getExperienceYears() {
        return experienceYears;
    }

    public void setExperienceYears(int experienceYears) {
        this.experienceYears = experienceYears;
    }
}
```

SPRING framework

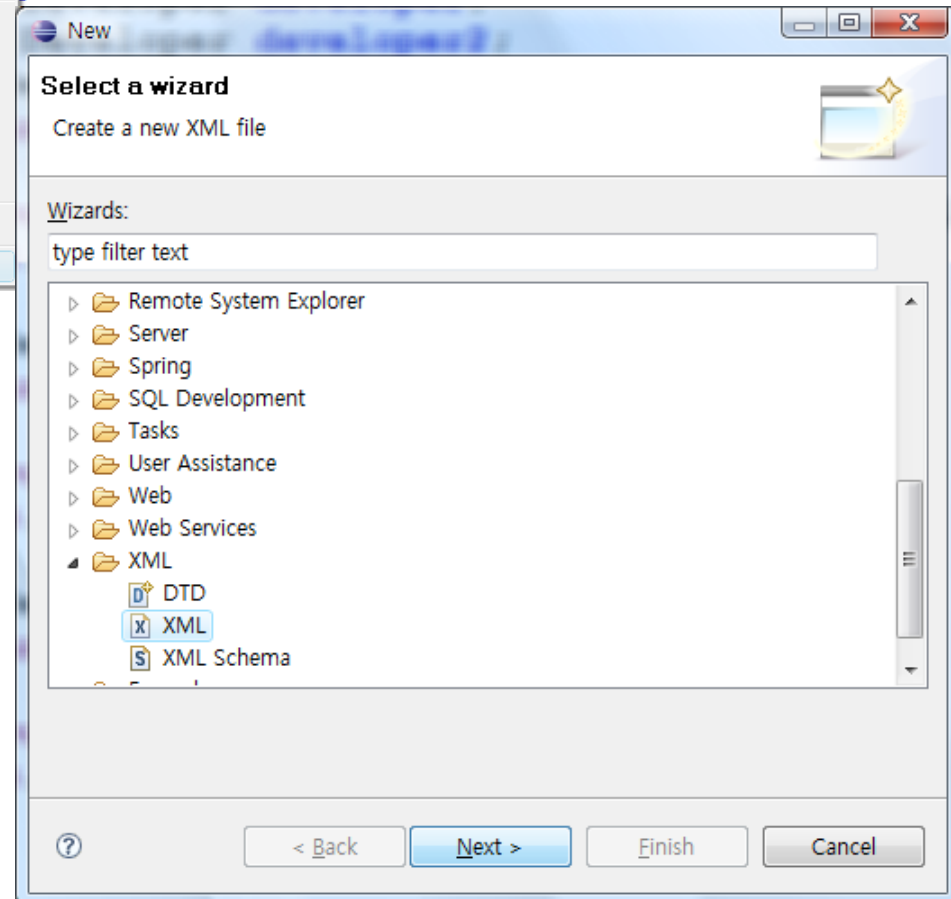
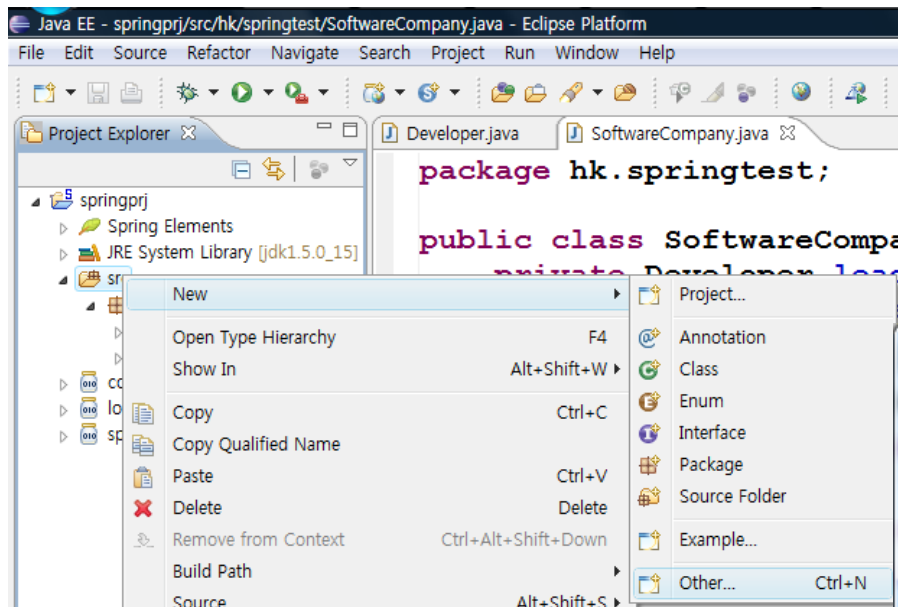
SoftwareCompany.java



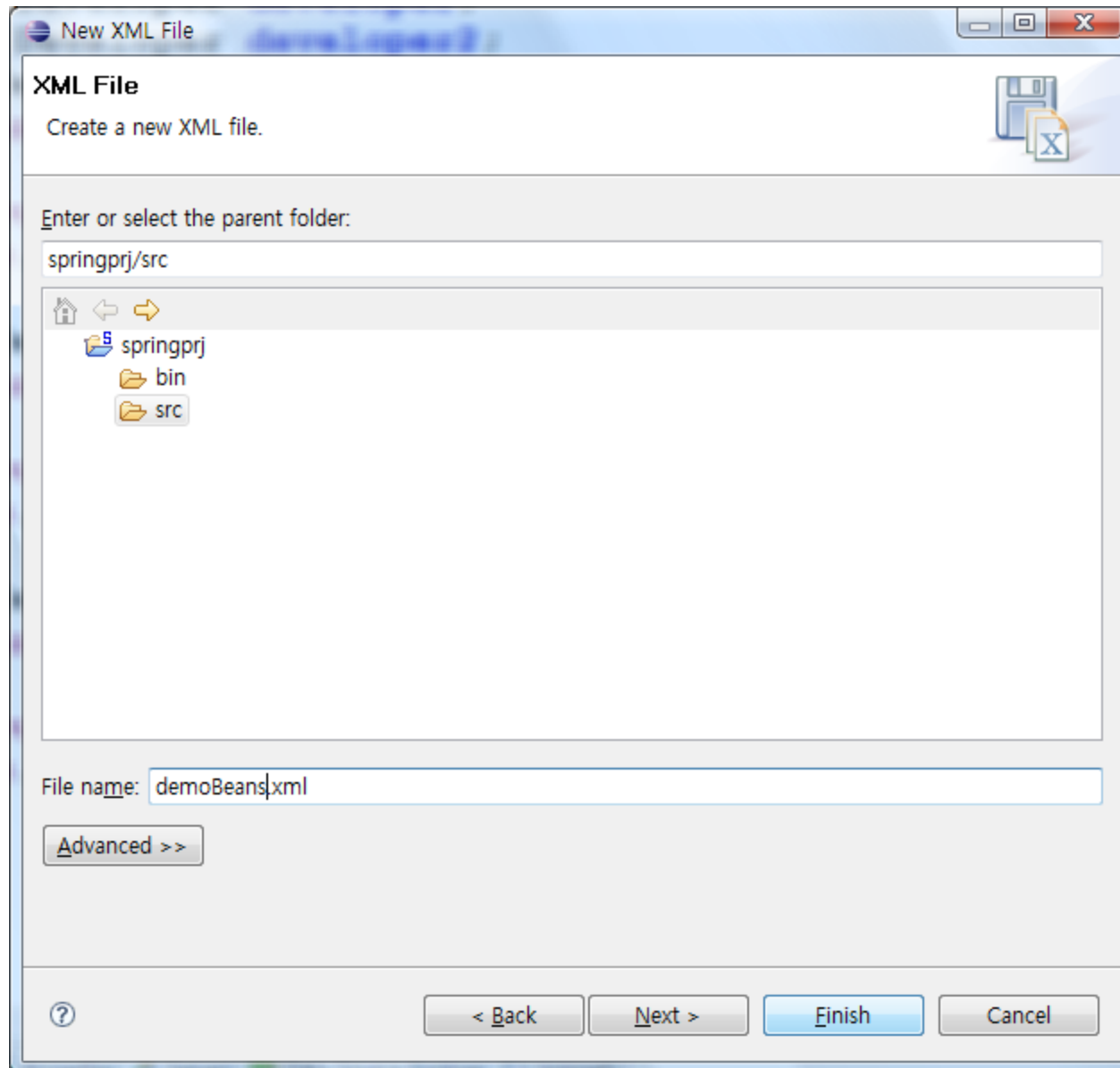
```
package hk.springtest;

public class SoftwareCompany {
    private Developer leadDeveloper;
    private Developer developer;
    private Developer developer2;
    public Developer getLeadDeveloper() {
        return leadDeveloper;
    }
    public void setLeadDeveloper(Developer leadDeveloper) {
        this.leadDeveloper = leadDeveloper;
    }
    public Developer getDeveloper() {
        return developer;
    }
    public void setDeveloper(Developer developer) {
        this.developer = developer;
    }
    public Developer getDeveloper2() {
        return developer2;
    }
    public void setDeveloper2(Developer developer2) {
        this.developer2 = developer2;
    }
}
```

SPRING framework

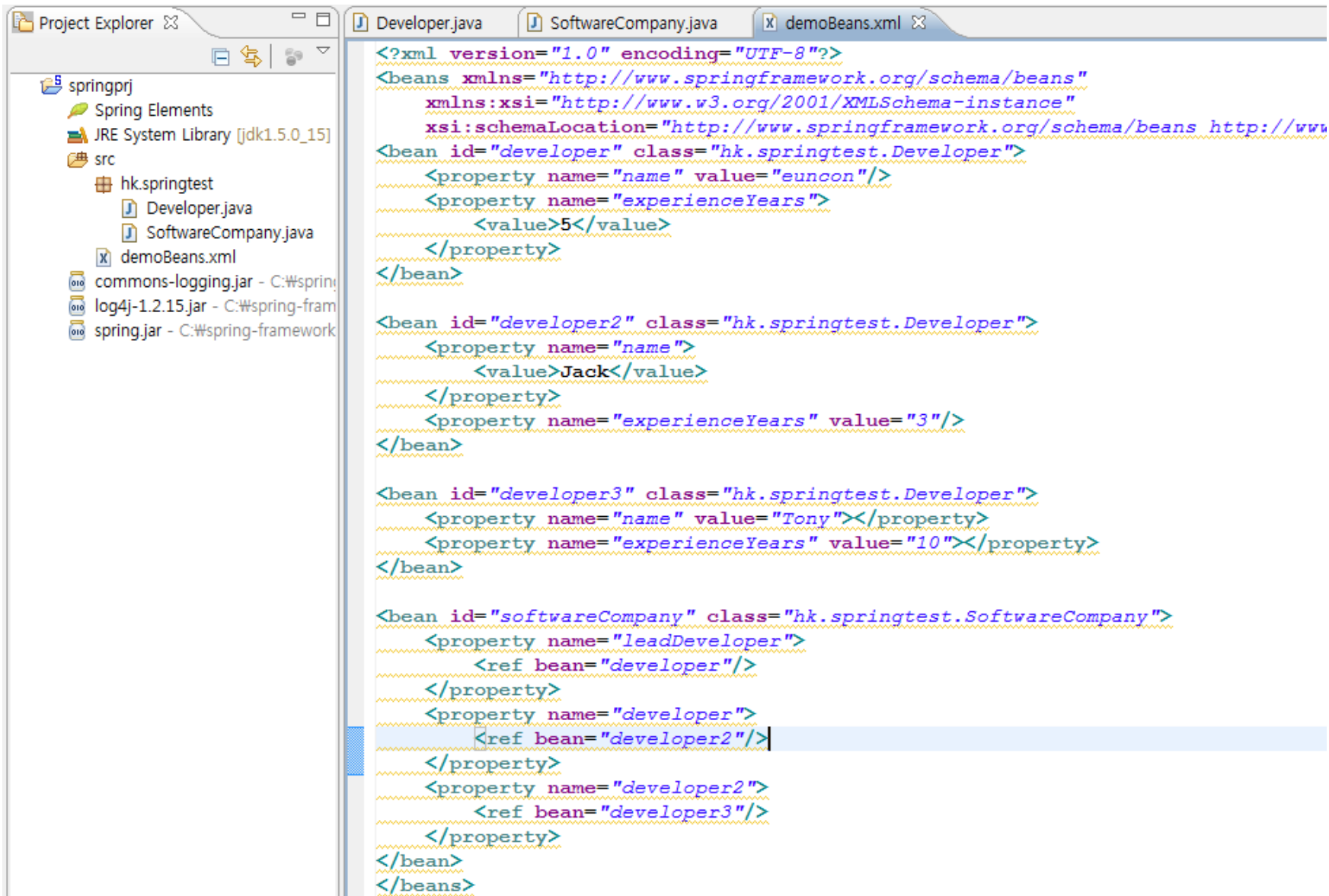


SPRING framework



SPRING framework

demoBeans.xml



The screenshot shows an IDE with the following components:

- Project Explorer:** Displays the project structure for 'springprj'. It includes 'Spring Elements', 'JRE System Library [jdk1.5.0_15]', 'src' folder, and 'hk.springtest' package containing 'Developer.java', 'SoftwareCompany.java', and 'demoBeans.xml'. External libraries like 'commons-logging.jar', 'log4j-1.2.15.jar', and 'spring.jar' are also listed.
- Editor:** Shows the 'demoBeans.xml' file with the following XML content:

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:schemaLocation="http://www.springframework.org/schema/beans http://www
<bean id="developer" class="hk.springtest.Developer">
  <property name="name" value="euncon"/>
  <property name="experienceYears">
    <value>5</value>
  </property>
</bean>

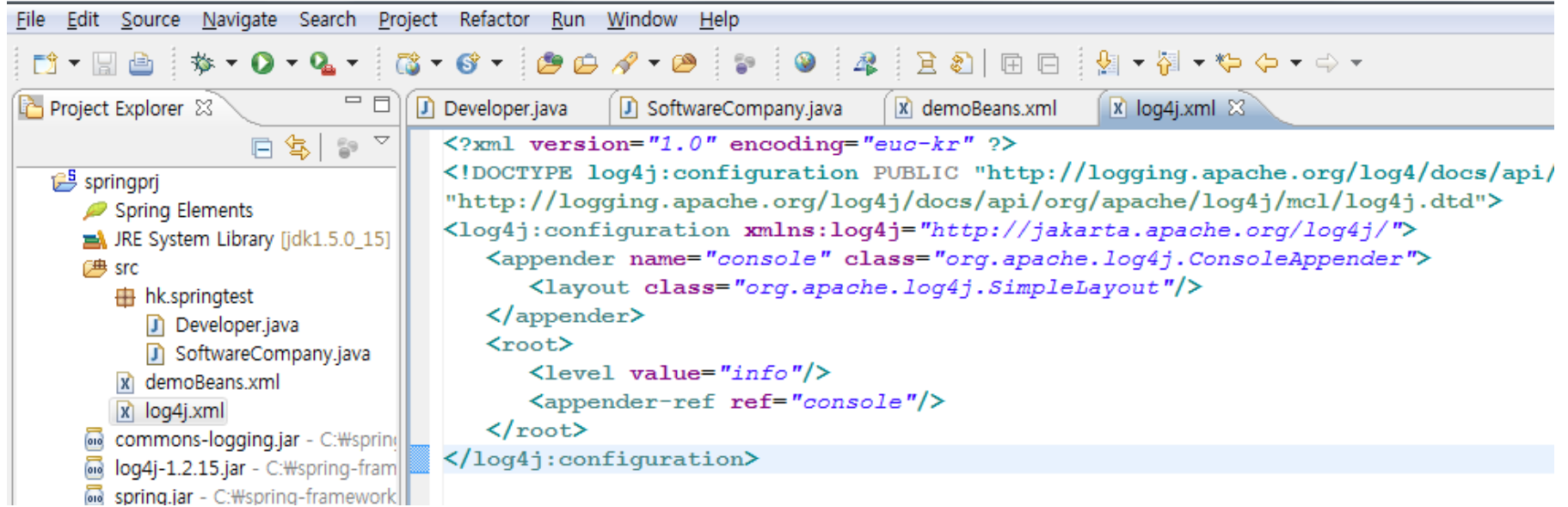
<bean id="developer2" class="hk.springtest.Developer">
  <property name="name">
    <value>Jack</value>
  </property>
  <property name="experienceYears" value="3"/>
</bean>

<bean id="developer3" class="hk.springtest.Developer">
  <property name="name" value="Tony"></property>
  <property name="experienceYears" value="10"></property>
</bean>

<bean id="softwareCompany" class="hk.springtest.SoftwareCompany">
  <property name="leadDeveloper">
    <ref bean="developer"/>
  </property>
  <property name="developer">
    <ref bean="developer2"/>
  </property>
  <property name="developer2">
    <ref bean="developer3"/>
  </property>
</bean>
</beans>
```

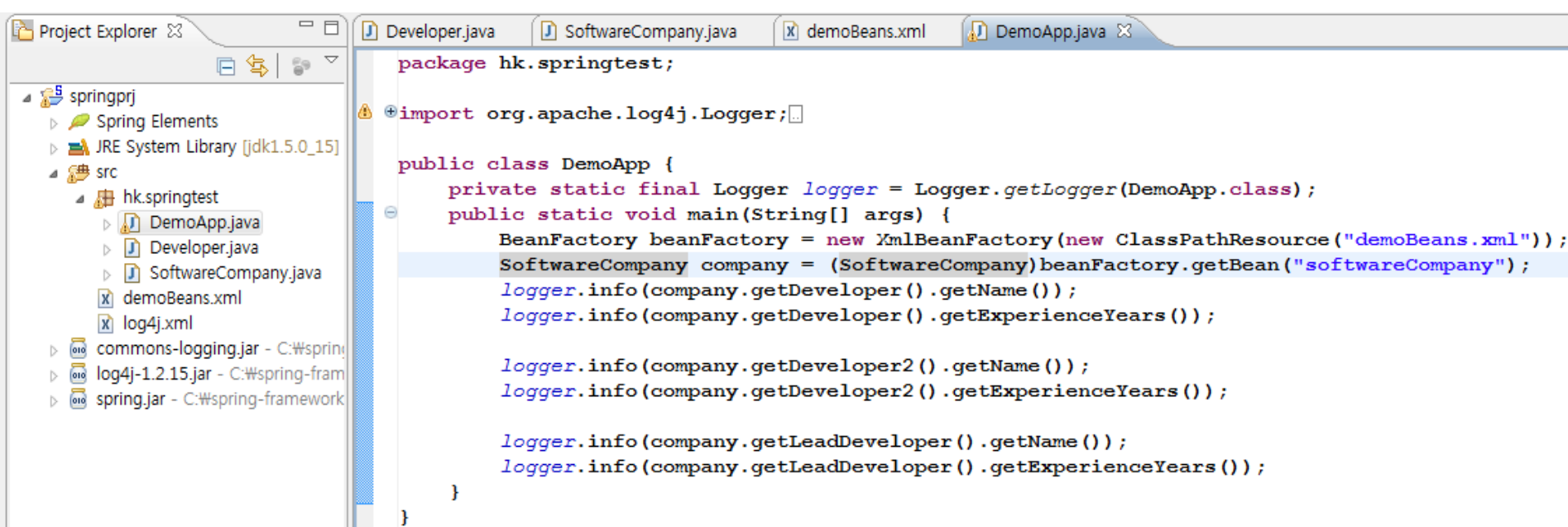
SPRING framework

log4j.xml

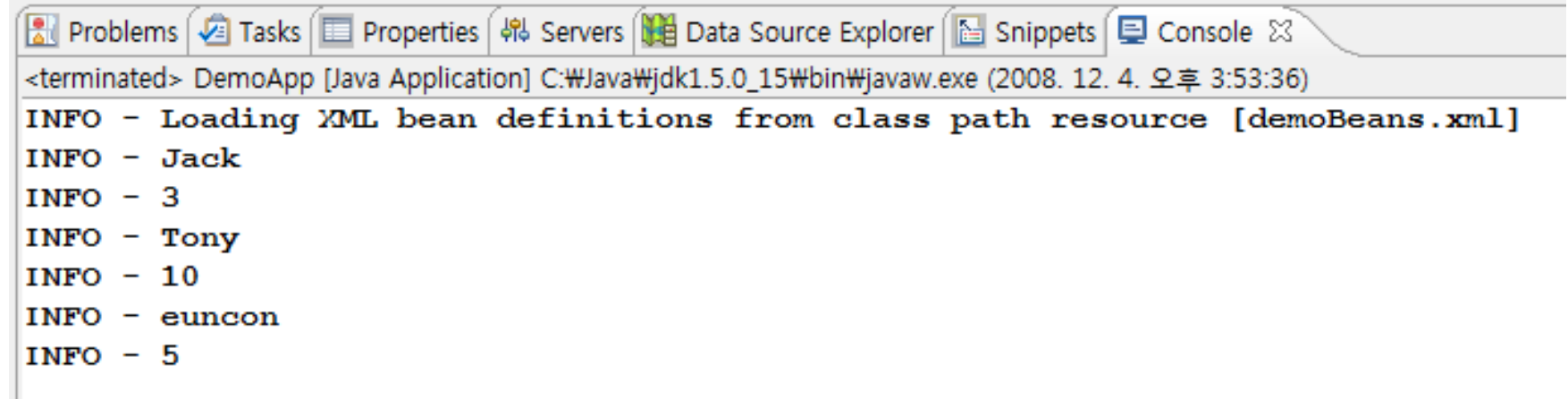
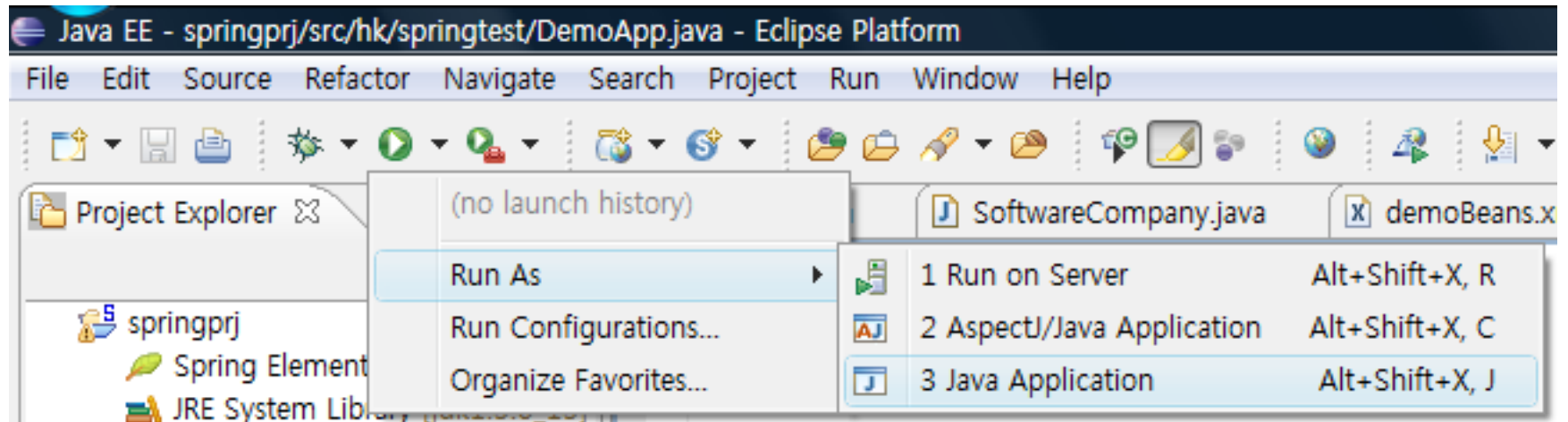


SPRING framework

DemoApp.java



SPRING framework



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