

---

# 수행과제 1

---

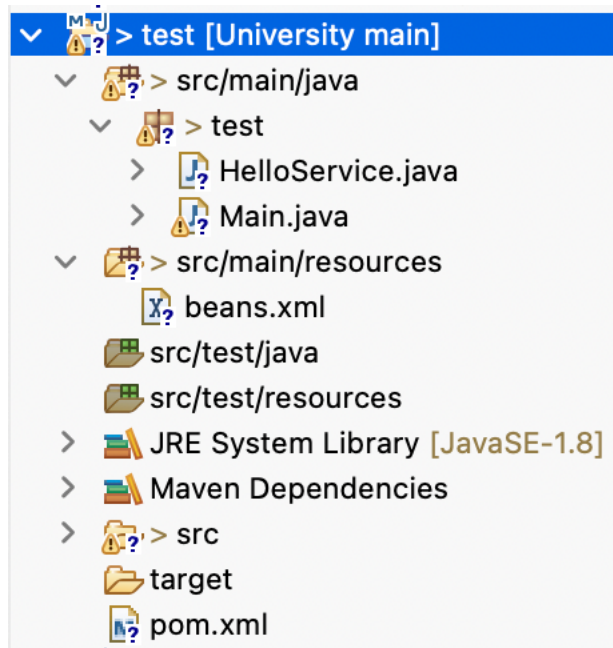


과 목 명	웹프레임워크활용
교 수 명	김 은 주
학 번	20237107
작 성 자	하 태 영
제 출 일	2025.09.21

한림대학교

# BeanFactory 컨테이너 사용(1)

## 파일구조



## 소스코드

```
package test;

public class HelloService {
    void sayHello() {
        System.out.println("Hello, Spring BeanFactory");
    }
}
```

```
package test;

import org.springframework.context.ApplicationContext;

public class Main {

    public static void main(String[] args) {
        ApplicationContext factory = new ClassPathXmlApplicationContext("beans.xml");
        HelloService service = (HelloService)factory.getBean("helloService");
        service.sayHello();
    }
}
```

beans.xml

```
<?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.springframework.org/schema/beans/spring-beans.xsd">

    <bean id="helloService" class="test.HelloService"/>

</beans>
```

## 소스코드

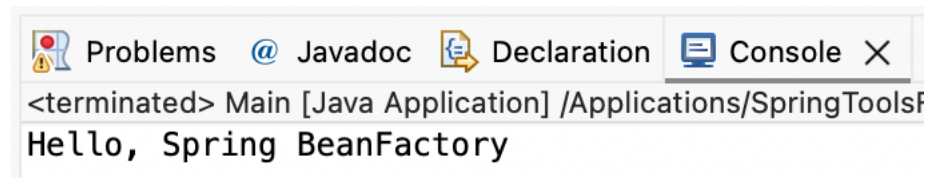
pom.xml

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>hallym</groupId>
  <artifactId>test</artifactId>
  <version>0.0.1-SNAPSHOT</version>

  <dependencies>
    <!--
https://mvnrepository.com/artifact/org.springframework/spring-
context -->
    <dependency>
      <groupId>org.springframework</groupId>
      <artifactId>spring-context</artifactId>
      <version>7.0.0-M8</version>
    </dependency>
  </dependencies>
</project>
```

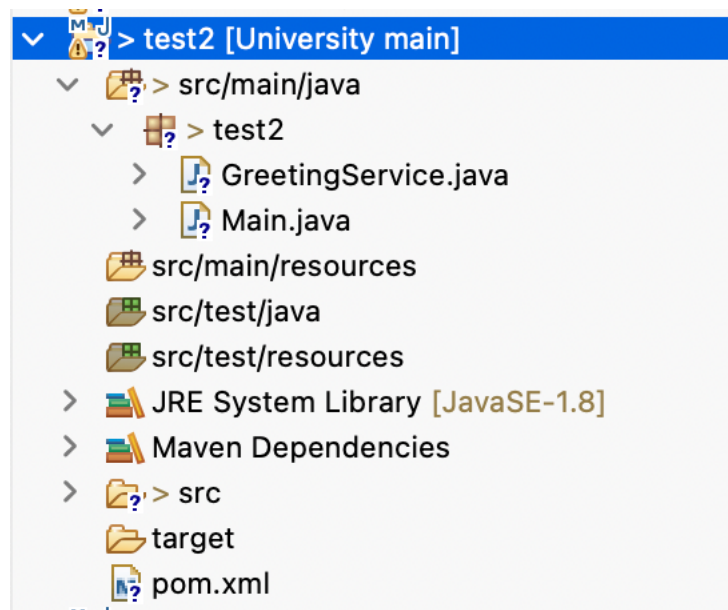
---

## 실행결과



# BeanFactory 컨테이너 사용(2)

## 파일구조



## 소스코드

```
package test2;

public class GreetingService {
    public void greet() {
        System.out.println("Hello from GreetingService!");
    }
}

package test2;

import org.springframework.beans.factory.support.DefaultListableBeanFactory;
import org.springframework.beans.factory.support.RootBeanDefinition;

public class Main {
    public static void main(String[] args) {
        // BeanFactory 생성
        DefaultListableBeanFactory factory = new DefaultListableBeanFactory();

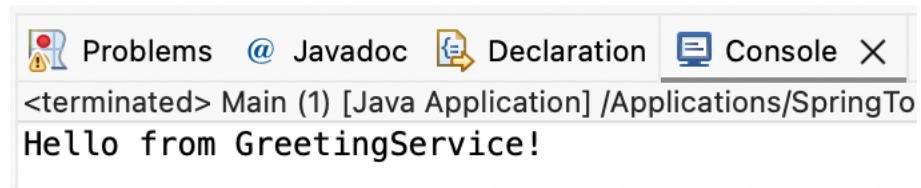
        // Bean 정의 등록
        factory.registerBeanDefinition("greetingService", new RootBeanDefinition(GreetingService.class));

        // Bean 조회 및 사용
        GreetingService service = (GreetingService) factory.getBean("greetingService");
        service.greet();
    }
}
```

## pom.xml

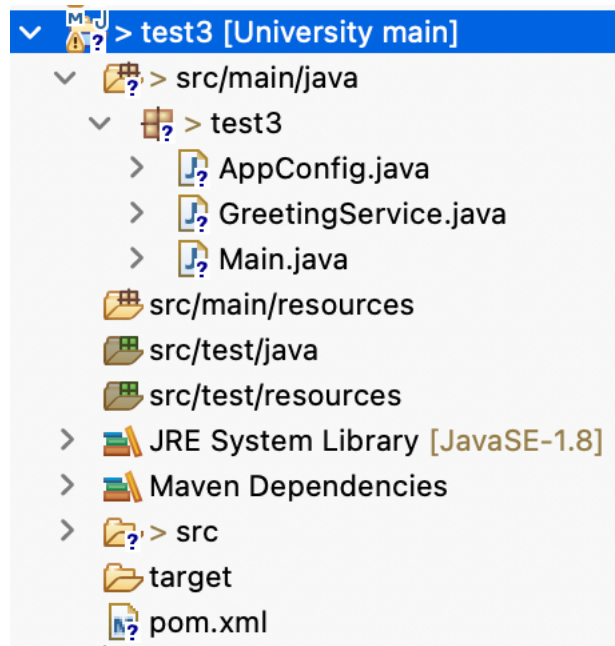
```
<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
    <modelVersion>4.0.0</modelVersion>
    <groupId>hallym</groupId>
    <artifactId>test2</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <dependencies>
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-context</artifactId>
            <version>5.3.31</version>
        </dependency>
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-beans</artifactId>
            <version>5.3.31</version>
        </dependency>
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-core</artifactId>
            <version>5.3.31</version>
        </dependency>
    </dependencies>
</project>
```

## 실행결과



# ApplicationContext 컨테이너 사용

## 파일구조





## 소스코드

```
package test3;

public class GreetingService {
    public void sayHello() {
        System.out.println("Hello from ApplicationContext!");
    }
}
```

```
package test3;

import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;

@Configuration
public class AppConfig {

    @Bean
    public GreetingService greetingService() {
        return new GreetingService();
    }
}
```

```
package test3;

import org.springframework.context.ApplicationContext;
import org.springframework.context.annotation.AnnotationConfigApplicationContext;

public class Main {
    @SuppressWarnings("resource")
    public static void main(String[] args) {
        ApplicationContext context = new AnnotationConfigApplicationContext(AppConfig.class);

        GreetingService service = context.getBean(GreetingService.class);
        service.sayHello();
    }
}
```

## 소스코드

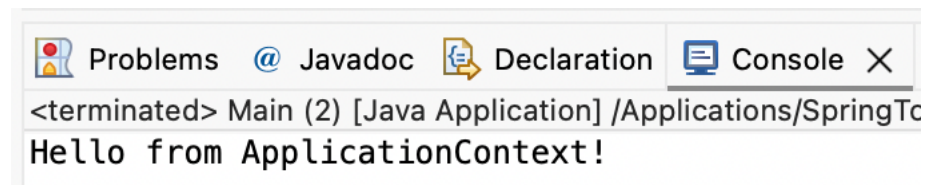
pom.xml

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>hallym</groupId>
  <artifactId>test</artifactId>
  <version>0.0.1-SNAPSHOT</version>

  <dependencies>
    <!--
https://mvnrepository.com/artifact/org.springframework/spring-
context -->
    <dependency>
      <groupId>org.springframework</groupId>
      <artifactId>spring-context</artifactId>
      <version>7.0.0-M8</version>
    </dependency>
  </dependencies>
</project>
```

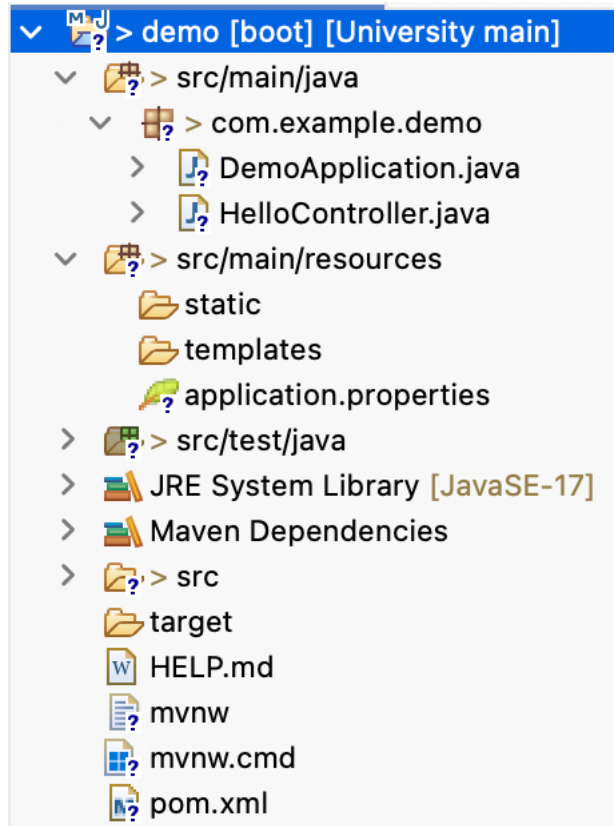
---

## 실행결과



# WebApplicationContext 컨테이너

## 파일구조



## 소스코드

```
package com.example.demo;

import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class HelloController {

    @GetMapping("/do")
    public String hello() {
        return "Hello from WebApplicationContext!";
    }

}
```

---

```
package com.example.demo;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class DemoApplication {

    public static void main(String[] args) {
        SpringApplication.run(DemoApplication.class, args);
    }

}
```

pom.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd
```

```

    <licenses>
        <license/>
    </licenses>
    <developers>
        <developer/>
    </developers>
    <scm>
        <connection/>
        <developerConnection/>
        <tag/>
        <url/>
    </scm>
    <properties>
        <java.version>17</java.version>
    </properties>
    <dependencies>
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-
web</artifactId>
            </dependency>

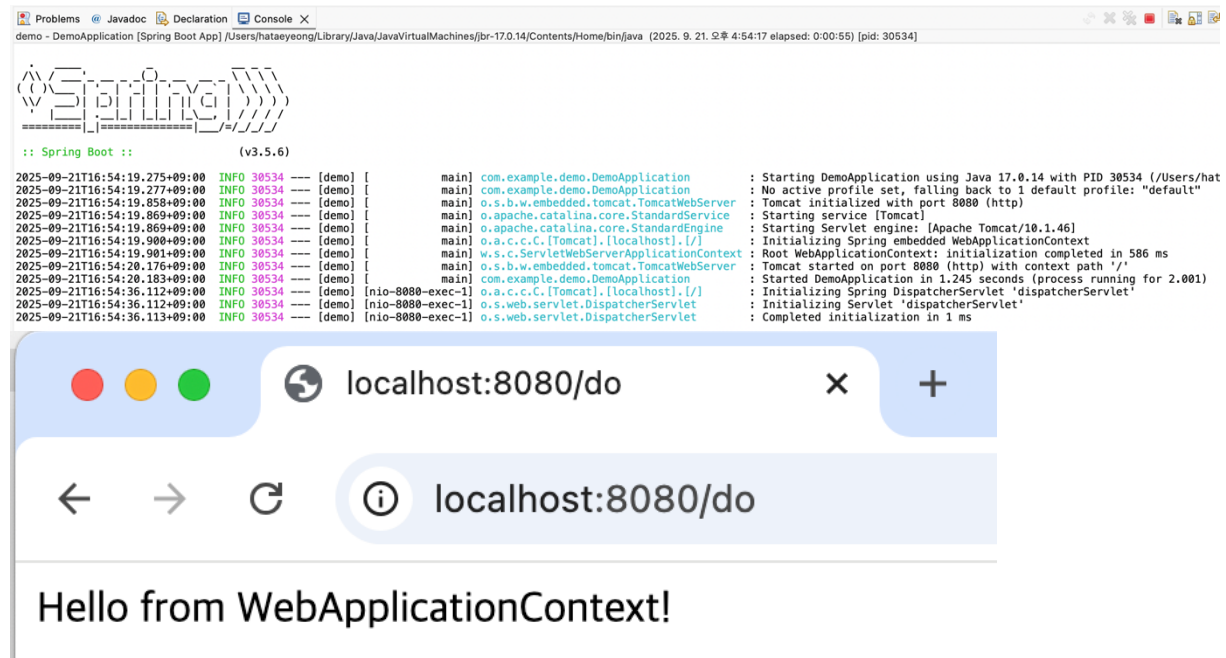
            <dependency>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-starter-
test</artifactId>
                <scope>test</scope>
            </dependency>
        </dependencies>

        <build>
            <plugins>
                <plugin>

                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-maven-
plugin</artifactId>
                </plugin>
            </plugins>
        </build>
    </project>

```

# 실행결과



The screenshot displays the execution results of a Spring Boot application. The top portion shows the IDE's console window with a log of startup messages. The bottom portion shows a web browser window displaying the application's output.

**Console Log:**

```
demo - DemoApplication [Spring Boot App] /Users/hataeyeong/Library/Java/JavaVirtualMachines/jbr-17.0.14/Contents/Home/bin/java (2025. 9. 21. 오후 4:54:17 elapsed: 0:00:55) [pid: 30534]

:: Spring Boot :: (v3.5.6)

2025-09-21T16:54:19.275+09:00 INFO 30534 --- [demo] [main] com.example.demo.DemoApplication : Starting DemoApplication using Java 17.0.14 with PID 30534 (/Users/hat
2025-09-21T16:54:19.277+09:00 INFO 30534 --- [demo] [main] com.example.demo.DemoApplication : No active profile set, falling back to 1 default profile: "default"
2025-09-21T16:54:19.858+09:00 INFO 30534 --- [demo] [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8080 (http)
2025-09-21T16:54:19.869+09:00 INFO 30534 --- [demo] [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-09-21T16:54:19.869+09:00 INFO 30534 --- [demo] [main] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.46]
2025-09-21T16:54:19.900+09:00 INFO 30534 --- [demo] [main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2025-09-21T16:54:19.901+09:00 INFO 30534 --- [demo] [main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 586 ms
2025-09-21T16:54:20.176+09:00 INFO 30534 --- [demo] [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8080 (http) with context path '/'
2025-09-21T16:54:20.183+09:00 INFO 30534 --- [demo] [main] com.example.demo.DemoApplication : Started DemoApplication in 1.245 seconds (process running for 2.001)
2025-09-21T16:54:36.112+09:00 INFO 30534 --- [demo] [nio-8080-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring DispatcherServlet 'dispatcherServlet'
2025-09-21T16:54:36.112+09:00 INFO 30534 --- [demo] [nio-8080-exec-1] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2025-09-21T16:54:36.113+09:00 INFO 30534 --- [demo] [nio-8080-exec-1] o.s.web.servlet.DispatcherServlet : Completed initialization in 1 ms
```

**Web Browser:**

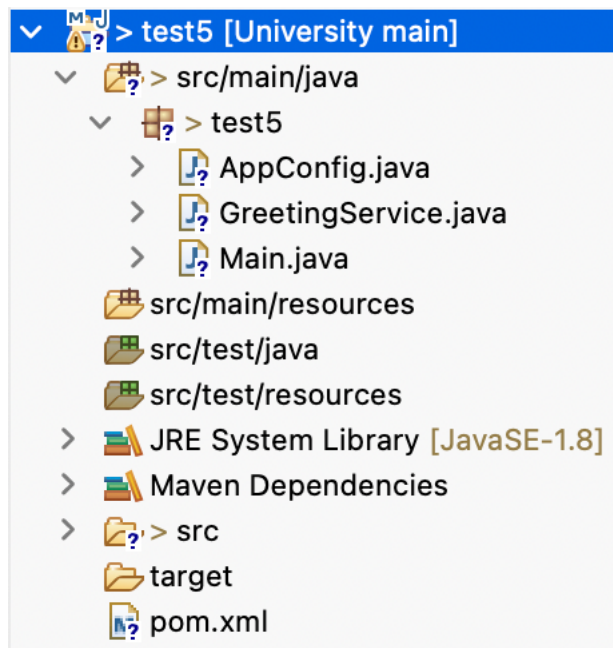
localhost:8080/do

← → ↻ ⓘ localhost:8080/do

Hello from WebApplicationContext!

# AnnotationConfigApplicationContext 컨테이너

## 파일구조



## 소스코드

```
package test5;

public class GreetingService {
    public void greet() {
        System.out.println("Hello from AnnotationConfigApplicationContext!");
    }
}

package test5;

import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;

@Configuration
public class AppConfig {
    @Bean
    public GreetingService greetingService() {
        return new GreetingService();
    }
}

package test5;

import org.springframework.context.ApplicationContext;
import org.springframework.context.annotation.AnnotationConfigApplicationContext;

public class Main {
    @SuppressWarnings("resource")
    public static void main(String[] args) {
        ApplicationContext context = new AnnotationConfigApplicationContext(AppConfig.class);

        GreetingService service = context.getBean(GreetingService.class);
        service.greet();
    }
}
```

## pom.xml

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
    <modelVersion>4.0.0</modelVersion>
    <groupId>hallym</groupId>
    <artifactId>test5</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <dependencies>
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-context</artifactId>
            <version>5.3.31</version>
        </dependency>
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-beans</artifactId>
```



```
        <version>5.3.31</version>
    </dependency>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-core</artifactId>
        <version>5.3.31</version>
    </dependency>
</dependencies>
</project>
```

## 실행결과

