Bộ môn: Kỹ Thuật Phần Mềm

Lập trình WWW *Java*

Spring IoC (Inversion of Control)

Java Annotation

» **Special labels/markers** that added to Java classes

» **Provide meta-data** about **the class**

» Processed at **compile time** or **run-time** for special processing

Why Spring configuration with annotations?

» **XML configuration** can be **very verbose** for **very large projects**

» Annotations **minimize** the **XML configuration**

Spring Scan for Component Classes

» **Spring will scan** your **java classes** for **special annotations**

» **Automatically register** the **beans** in **Spring container**

Development Process

» Enable **component scanning** in **Spring config file**

» Add the **@Component Annotation** to **your classes**

» Retrieve **bean** from **Spring container**

Step 1: Enable component scanning in Spring config file

File: *applicationContext.xml*

```xml
<beans..>

    <context:component-scan base-package="com.se.annotation.libs" />

</beans>
```

Spring will scan this package and all its sub packages for components/beans

spring

File: *TennisCoach.java*

```java
@Component("thatSillyCoach") //bean id
public class TennisCoach implements Coach {
    @Override
    public String getDailyWorkout() {
        return "Pratice your backhand volley";  }
}
```
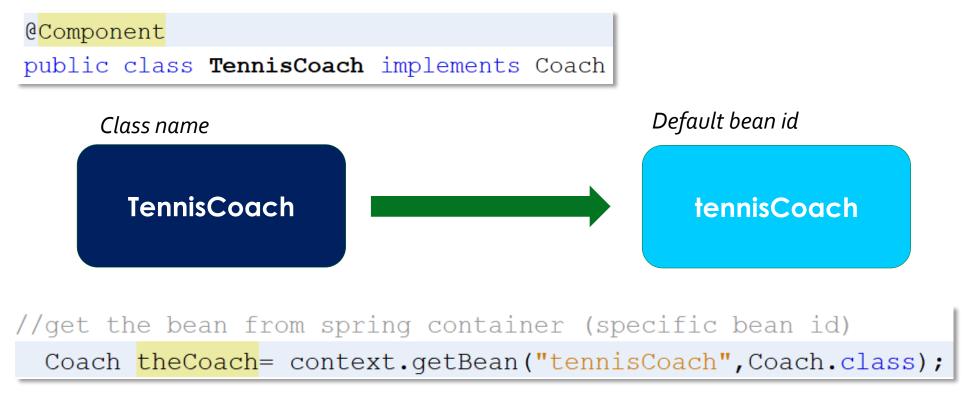
Step 3: Retrieve bean from Spring container

File: *AnnotationDemoApp.java*

```java
public static void main(String[] args) {
// read spring config file
    ClassPathXmlApplicationContext context =
        new ClassPathXmlApplicationContext("applicationContext.xml");
//get the bean from spring container (specific bean id)
    Coach theCoach= context.getBean("thatSillyCoach",Coach.class);
//call method on the bean
    System.out.println(theCoach.getDailyWorkout());
    context.close();
}
```

@Component Default Bean ID

» **Default bean ID**: the **class name**; *Make **first letter lower-case***

```
@Component
public class TennisCoach implements Coach
```

Class name

TennisCoach → Default bean id

tennisCoach

```
//get the bean from spring container (specific bean id)
Coach theCoach = context.getBean("tennisCoach", Coach.class);
```

QUESTIONS