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**
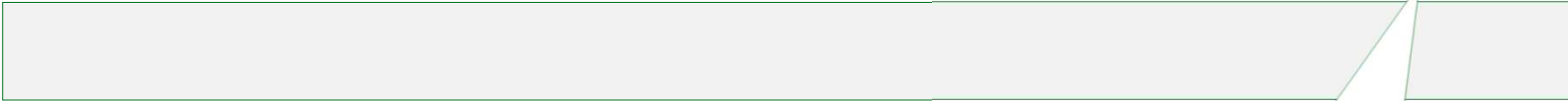
Spring Scan for Component Classes

» **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**

spring

File: *applicationContext.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

Step 2: Add the @Component Annotation to your classes

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

spring

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   *Default bean id*

TennisCoach → **tennisCoach**

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

QUESTIONS