

DepIn-O: Java Spring Instantiation Diagram

Cleisson Santos Guterres

¹Appendix to “DepIn-O: an Ontology on Dependency Injection Software Frameworks”

This appendix presents an instantiation of DepIn-O’s Catalog of Concepts employing the Java framework Spring, with code followed by an instantiation diagram for clarity.

Listing 1. Dependency Injection Compositions in Spring.

```

1 public interface DependencyA {}
2
3 @Component
4 public class ConsumerCI {
5     DependencyA dep;
6
7     public ConsumerCI(DependencyA da) { // Constructor Injection Point
8         dep = da;
9     }
10 }
11
12 @Component
13 public class ConsumerMI {
14     public void someMethod(DependencyA da) {} // Method Injection Point
15 }
16
17 @Component
18 public class ConsumerPI {
19     @Autowired DependencyA dep; // Property Injection Point
20 }

```

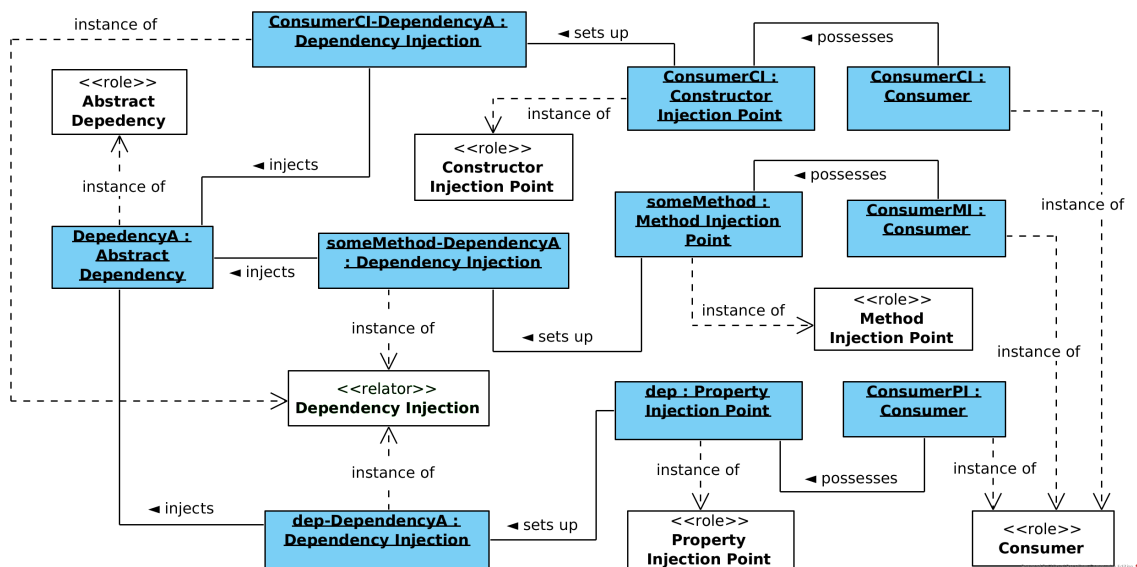


Figure 1. Instantiation Diagram for Composition Module in Spring

Listing 2. Decorator as Primary Dependency and Consumer of Qualified Dependency in Spring.

```

1 @Component @Primary // is the primary dependency
2 public class DecoratorA implements DependencyA {
3     @Autowired @Qualifier("Impl") DependencyA dep; // invokes a qualified dependency
4 }
5
6 @Component @Qualifier("Impl") // qualified dependency
7 public class DependencyImpl implements DependencyA {}

```

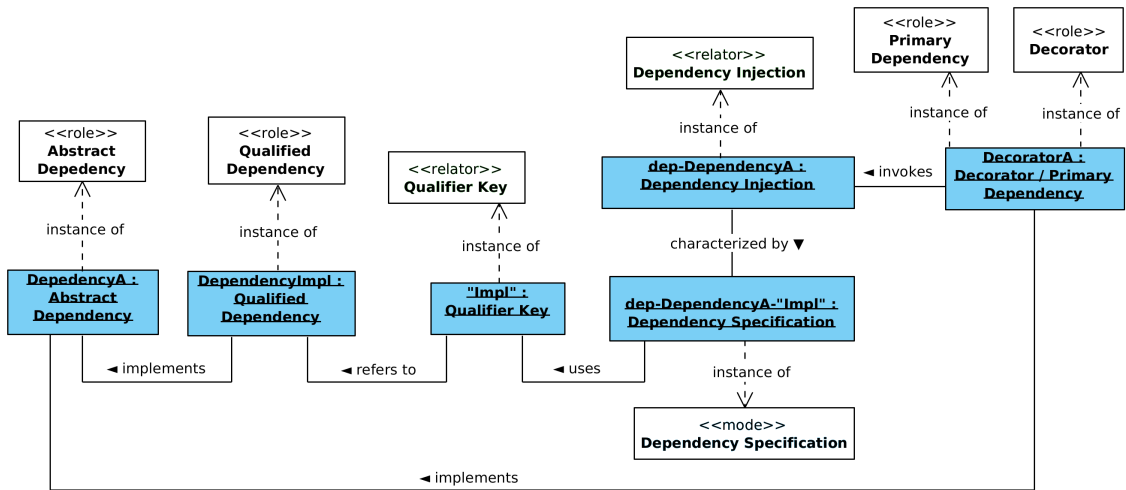


Figure 2. Instantiation Diagram for Specification Module in Spring

Listing 3. Singleton, Dependent and Web Scoped Dependencies in Spring.

```

1 @Component @Scope("singleton")
2 public class DependencySing {}
3
4 @Component @Scope("prototype")
5 public class DependencyDep {}
6
7 @Component @RequestScope
8 public class DependencyReq {}
9
10 @Component @SessionScope
11 public class DependencySes {}
12
13 @Component @ApplicationScope
14 public class DependencyApp {}

```

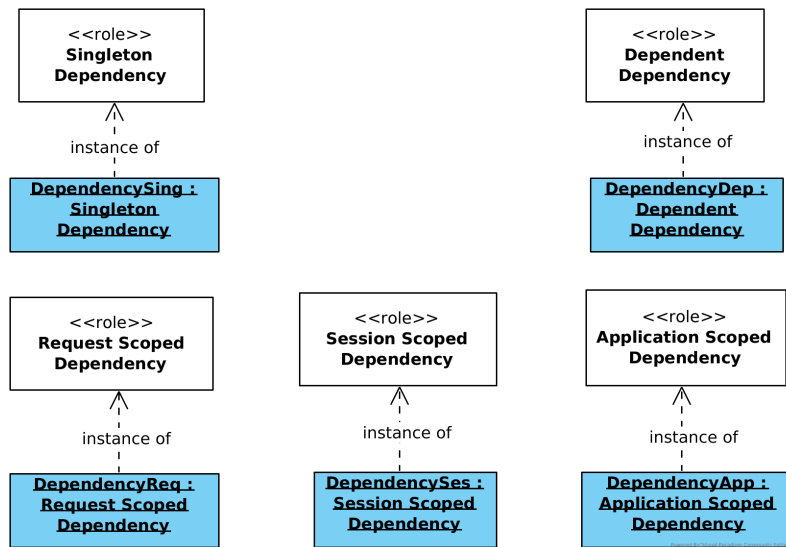


Figure 3. Instantiation Diagram for Scopes Module in Spring