

SPRING CORE CHEAT SHEET

Container, Dependency and IOC



Spring **5.3.21+** - Date : **August 2022**

WHAT IS SPRING ?

- **Open source** (Apache 2 licence, sources on [github](https://github.com))
- **Light**
 - Doesn't force to use an application server
 - Not invasive
- **Container**
 - Application objects doesn't have to look for their dependencies
 - Handles objects life cycle
- **Framework**
 - Ease integration and communication with third-party libraries

MINIMAL DEPENDENCIES

```
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-context</artifactId>
</dependency>
```

APPLICATION CONFIGURATION

- Java
- Annotations
- XML (still available but heavy)

```
@ComponentScan("fr.sii.cheatsheet.spring")
public class MyApp {

    public static void main(String[] args) {
        ApplicationContext app = new
        AnnotationConfigApplicationContext(MyApp.class);

        DummyService helloWorld =
        app.getBean(DummyService.class);
        helloWorld.getMessage();
    }
}
```

Prefer use of a configuration class

```
@Configuration
public class MyAppConfig {
    // @Bean, ...
}
```

DEPENDENCY INJECTION

Define a bean : **@Bean**

```
@Configuration
public class MyAppConfig {
    @Bean
    public DummyService dummyService(){
        return new DummyServiceImpl();
    }
}
```

Define a bean : **@Component**

@Component specializations :

- **@Service** : Heart of an app
- **@Repository** : Handles data persistence
- **@Controller** : Handles requests and responses

```
@Component
public class DummyServiceImpl implements
DummyService {
}
```

Dependency injection : **@Autowired**

- Via a class field
- Via a setter
- Via the constructor (*prefer for easy test*)

```
@Component
public class FooServiceImpl implements FooService
{

    @Autowired
    private DummyService service;

    @Autowired
    public FooServiceImpl(DummyService
dummyService) {
        this.service = dummyService;
    }

    @Autowired
    public DummyService
setDummyService(DummyService dummyService) {
        this.service = dummyService;
    }
}
```



BEANS SCOPES

Scope	Description
singleton	(default) A single bean instance
prototype	A bean instance per usage
request	A bean instance per HTTP request
session	A bean instance per HTTP session
application	A bean instance per Servlet Context
websocket	A bean instance per WebSocket

CUSTOMIZING A BEAN

Initialization method

```
@PostConstruct
```

Destroy method

```
@PreDestroy
```

SPEL : SPRING EXPRESSION LANGUAGE

Access a system properties

```
@Value("#{ systemProperties['user.home'] }")
private String defaultHome;
```

Access a bean property

```
@Value("#{myBean.myValue}")
private String myValue;
```

Parse a string

```
@Value("#{myBean.myValue.substring(0,1)}")
private String myValue;
```

Operations

```
@Value("#{myBean.myValue.length() > 2}")
private String myValue;
```

PROPERTIES

```
/**
 * File 'foo.properties' loaded by Spring
 */
@Configuration
@PropertySource("classpath:foo.properties")
public class MyAppConfig {

    /**
     * Property max in file foo.properties.
     */
    private Integer max;

}
```

Use a property : `@Value("${message}")`

```
@Value("${message:Default message}")
private String message;
```

GO DEEPER

- <https://spring.io/guides>
- <https://spring.io/projects/spring-framework>
- [Spring Core documentation](#)
- [Spring Boot cheat sheet](#)