

List of Annotations used

=====

- a. @Component
- b. @Service
- c. @Repository
- d. @Primary
- e. @Lazy
- f. @Value
- g. @PropertySource
- h. @Autowired
- i. @Qualifier
- j. @Required
- k. @Scope
- l. @Controller

xml

==

```
<context:component-scan basepackage=""/>
<context:property-placeholder location=""/>
<context:annotation-config/>
```

SpringBean LifeCycle

=====

1. Java class Life cycle
 - a. static block
 - b. instance block
 - c. constructor
 - d. setter
 - e. using the created object, make a call to methods and execute Business logic.
 - f. Destroy the Object.

2. Spring bean life cycle

```
***Start the container*****
a. static block
b. object instantiation
c. custom init method(@PostConstruct) if successful then step d,e will
be executed or else it won't execute.
d. Business logic method
e. custom destroy method(@PreDestroy)
***Stop the container*****
```

refer:: IOCProject-27-SpringBeanLifeCycleActionApp

@PostConstruct and @PreDestroy annotations are supplied from jdk, so these annotations are deprecated in jdk9 and above version, so to use these annotations in spring framework we need to add a special jar as shown below.

<https://mvnrepository.com/artifact/javax.annotation/javax.annotation-api/1.3.2>

Advantages

=====

1. Makes spring bean as non-invasive.[working to a company without bond]
2. no need to configure spring bean life cycle methods anywhere, based on annotation automatically they will be executed.

DisAdvantage

=====

1. We cannot use this approach for third party supplied pre-defined classes.

100%Code driven SpringApp development/Java Config Approach of SpringApp development

Advantages

- XMLBased cfg can be avoided in maximum cases
- Improves the readability
- Debugging becomes easy
- Foundation to learn SpringBoot

ThumbRule

1. Configure userDefined classes as Springbean using Stereotype annotations(@Component) and link them with Configuration class alternative to SpringBean cfg file(xml file) using @ComponentScan
note: Java class that is annotated with @Configuration automatically becomes Configuration class

2. Configure PreDefined class as Spring beans using @Bean methods(method that is annotated with @Bean) of @Configuration class.

3. use AnnotationConfigApplicationContext class to create an IOC container having @Configuration class as the input classname

Note: @Configuration class is internally a Spring bean becoz @Configuration internally contains @Component.

AppConfig.java(Alternative to XML)

```
package in.ineuron.cfg;
```

```
import java.time.LocalDateTime;
```

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

```
@Configuration
```

```
@ComponentScan(basePackages = "in.ineuron")
```

```
public class AppConfig {
```

```
    static {  
        System.out.println("AppConfig.class file is loading...");  
    }
```

```
    public AppConfig() {  
        System.out.println("AppConfig object is created:: Zero param  
constructor...");  
    }
```

```
    @Bean(name = "dt")  
    public LocalDateTime getSysDateTime() {  
        System.out.println("AppConfig.getSysDateTime()");  
        LocalDateTime date = LocalDateTime.now();  
        return date;  
    }
```

```
}
```

```

Test.java
=====
package in.ineuron.main;

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

import in.ineuron.cfg.AppConfig;
import in.ineuron.comp.WishMessageGenerator;

public class TestApp {

    public static void main(String[] args)throws Exception {

        ApplicationContext factory = new
AnnotationConfigApplicationContext(AppConfig.class);
        System.out.println("*****Container started*****\n");

        WishMessageGenerator wmg = factory.getBean(WishMessageGenerator.class);
        System.out.println(wmg);

        String msg = wmg.greetMessage("kohli");
        System.out.println(msg);

        ((AbstractApplicationContext) factory).close();
        System.out.println("\n*****Container closed*****");

    }

}

```

```

Test.java
=====
package in.ineuron.main;

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

import in.ineuron.cfg.AppConfig;
import in.ineuron.comp.WishMessageGenerator;

public class TestApp {

    public static void main(String[] args)throws Exception {

        ApplicationContext factory = new
AnnotationConfigApplicationContext(AppConfig.class);
        System.out.println("*****Container started*****\n");

        WishMessageGenerator wmg = factory.getBean(WishMessageGenerator.class);
        System.out.println(wmg);

        String msg = wmg.greetMessage("kohli");
        System.out.println(msg);

        ((AbstractApplicationContext) factory).close();
        System.out.println("\n*****Container closed*****");

    }

}

```

```
}
```

Usage of @Import(In 100%purejava code configuration)

=====

```
@Import(Resource = {Persistence.class, Service.class, Controller.class})
@Configuration
public class AppConfig{
```

```
}
```

How to load data from properties file into SpringBean?

- a. Using application.properties file ==> @PropertyResource(value="location of properties file") and binding it to @Value("\${}") of field
- b. Using application.properties file ==> Environment(I) ==> Inside bean call environment.getProperty("")

refer:: IOCPProject-29-RealTimeDI-100%SpringAnnotationsCRUDAPP