Spring Framework

Content

Spring Core

Spring Data Integration

Spring WEB

Spring Other Important Modules

Prerequisite of course

Core java

JDBC

Servlet & JSP

Important Web and Database related terms

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Wha spring ng?

What is Spring?

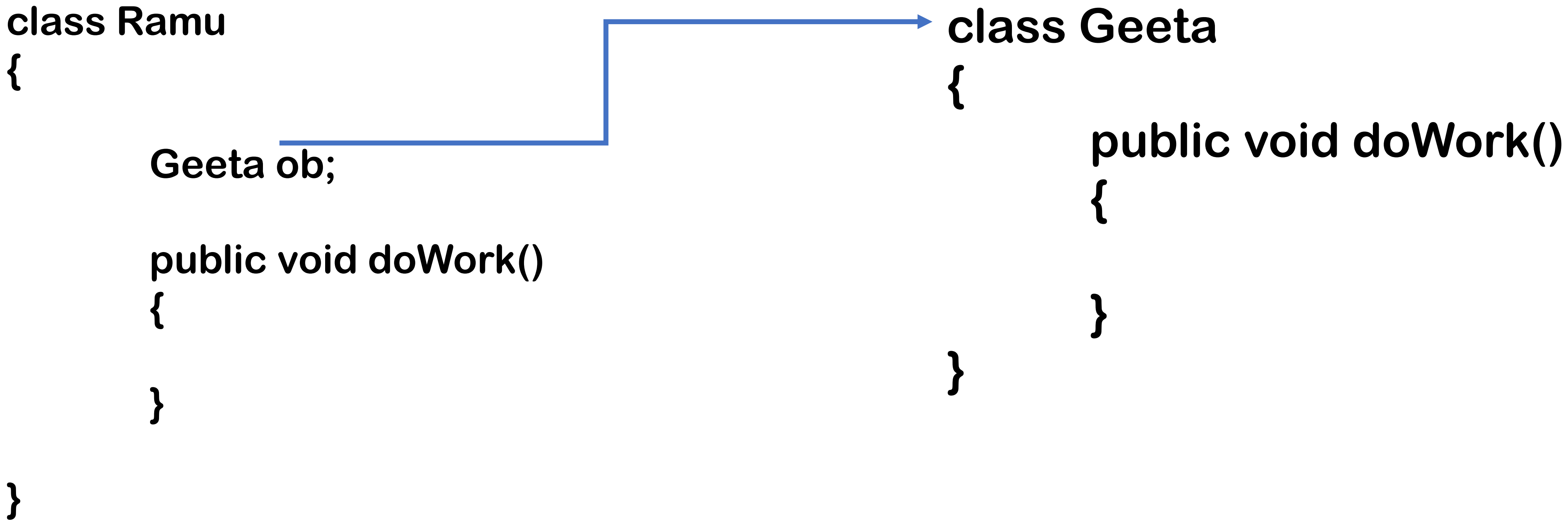
Spring is a Dependency Injection framework to make java application loosely coupled.

Spring framework makes the easy development of JavaEE application.

It was developed by Rod Johnson in 2003

Dependency Injection

It is design pattern

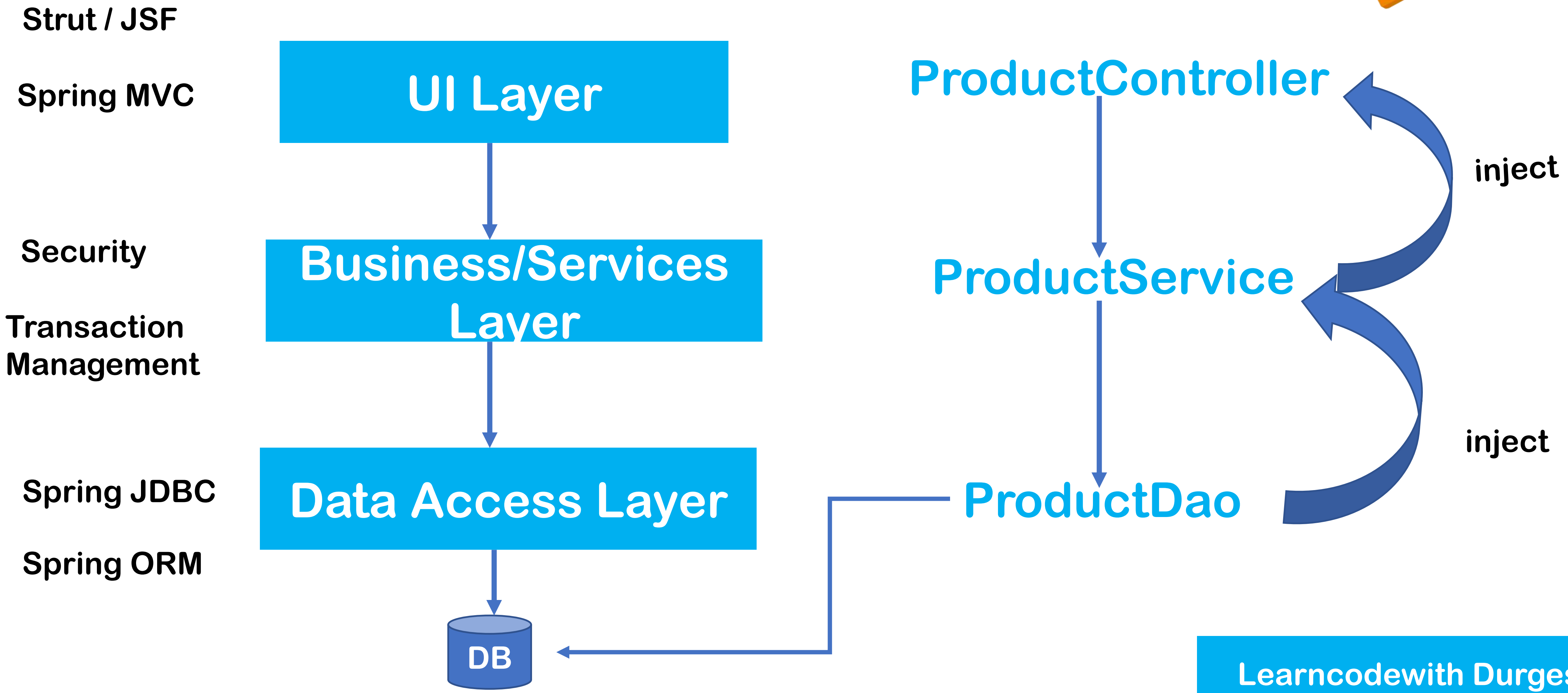


```
class Ramu
{

        Geeta ob;

        public void doWork()
        {

        }

}
```

```
class Geeta
{
        public void doWork()
        {

        }
}
```

Inversion Of Control (IOC)

Spring and JEE



Strut / JSF

Spring MVC

UI Layer

Security

Transaction Management

Business/Services Layer

Spring JDBC

Spring ORM

Data Access Layer

DB

ProductController

inject

ProductService

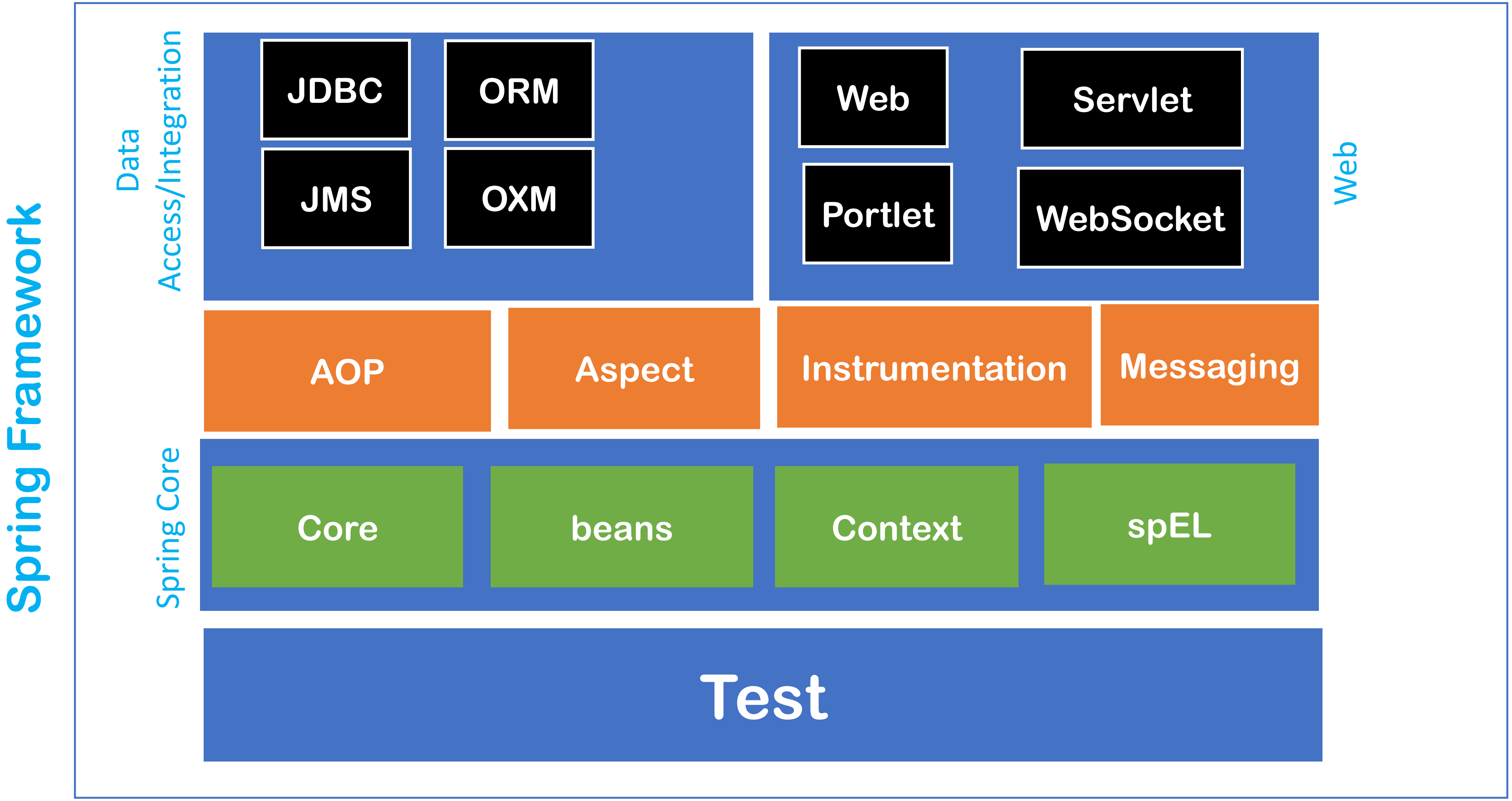
inject

ProductDao

Spri ules

spring

Spring Modules



Spring Framework

Data Access/Integration

JDBC

ORM

JMS

OXM

Web

Web

Servlet

Portlet

WebSocket

AOP

Aspect

Instrumentation

Messaging

Spring Core

Core

beans

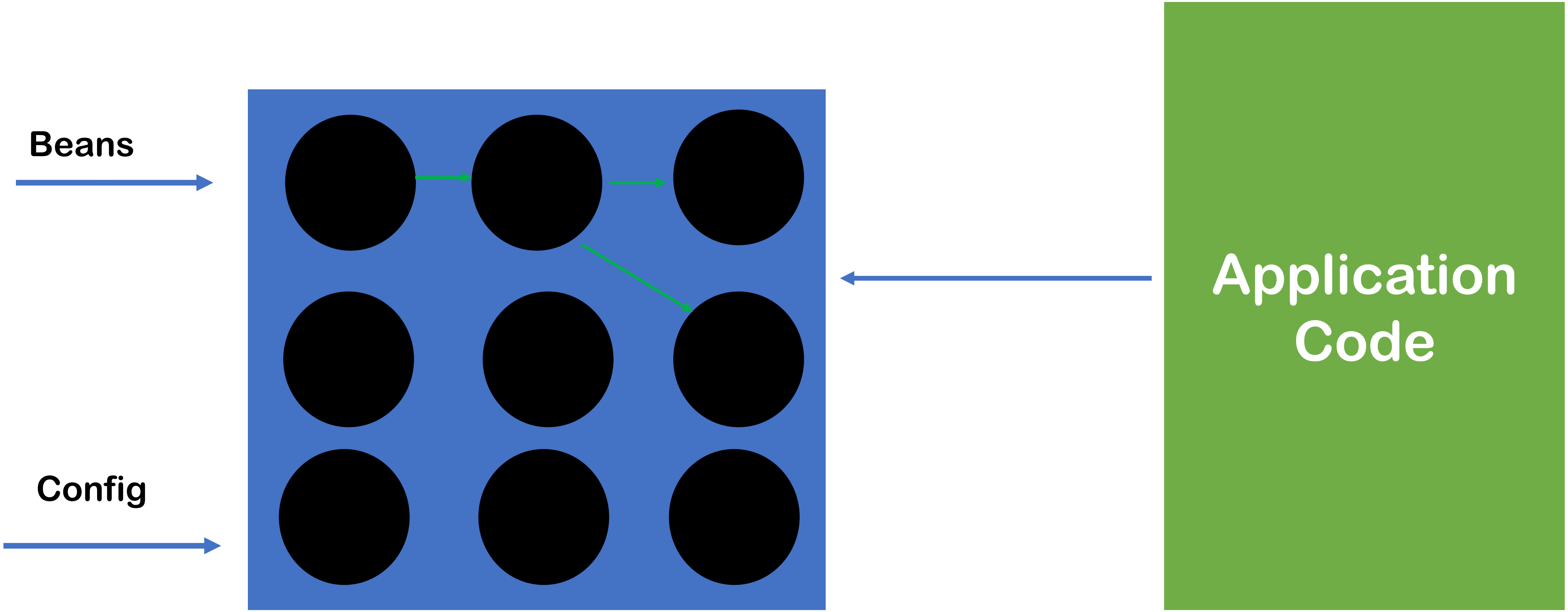
Context

spEL

Test

Sprin spring ntainer

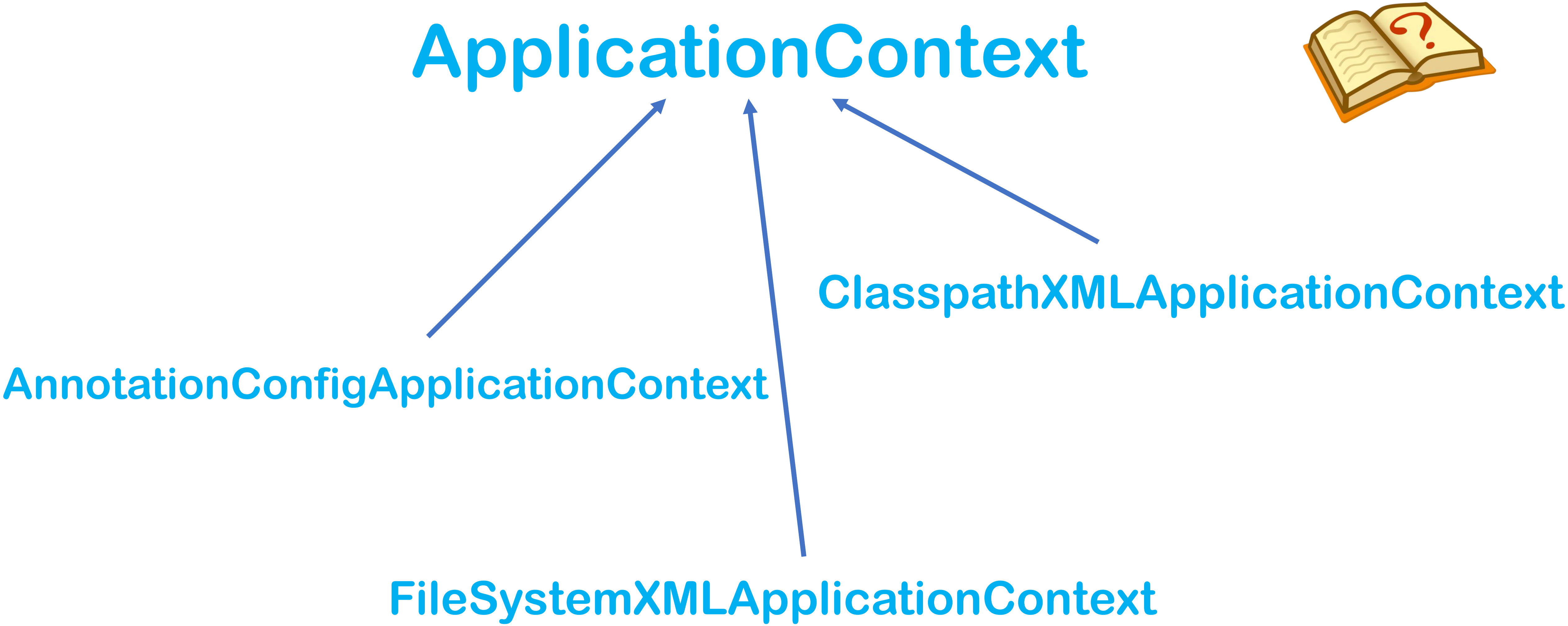
Spring IoC Container



Beans

Config

Application Code



ApplicationContext

AnnotationConfigApplicationContext

FileSystemXMLApplicationContext

ClasspathXMLApplicationContext

Deper spring njection

Dependency Injection

```
class Student
{

        int id;
        String name;
        Address address;


}
```

```
class Address
{
        String street;
        String city;
        String state;
        String country;
}
```

Dependency Injection Can be done in 2 ways

Using Setter Injection

Using Constructor Injection

Setter Injection

```
class Student
{
        id,name,address

        setId(id){ }

        setName(name){ }

        setAddress(address){ }

}
```

```
class Address
{
        street,city,state,country
         setStreet(street)
         setCity(city)
         setState(state)
         setCountry(country)
}
```

Constructor Injection

```
class Student
{
        String id,name,address;

        Student(id,name,address)
        {


        }
}
```

```
class Address
{
  String street,city,state,country;
   Address(street,city,state,country)
   {


   }

}
```

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Configuration File

Where we declare beans and its dependency

Data Types(Dependencies)

1)Primitive DataTypes

Byte , short , char , int , float , double , long , boolean

Data Types

2)Collection Type

List , Set , Map and Properties

Life Cycle Methods

Spring provide two important methods to every bean

Initialization code
Loading config,
Connecting db,
Webservice etc

public void init()

public void destroy()

Clean up code

We can change the name of these method
But signature must be same

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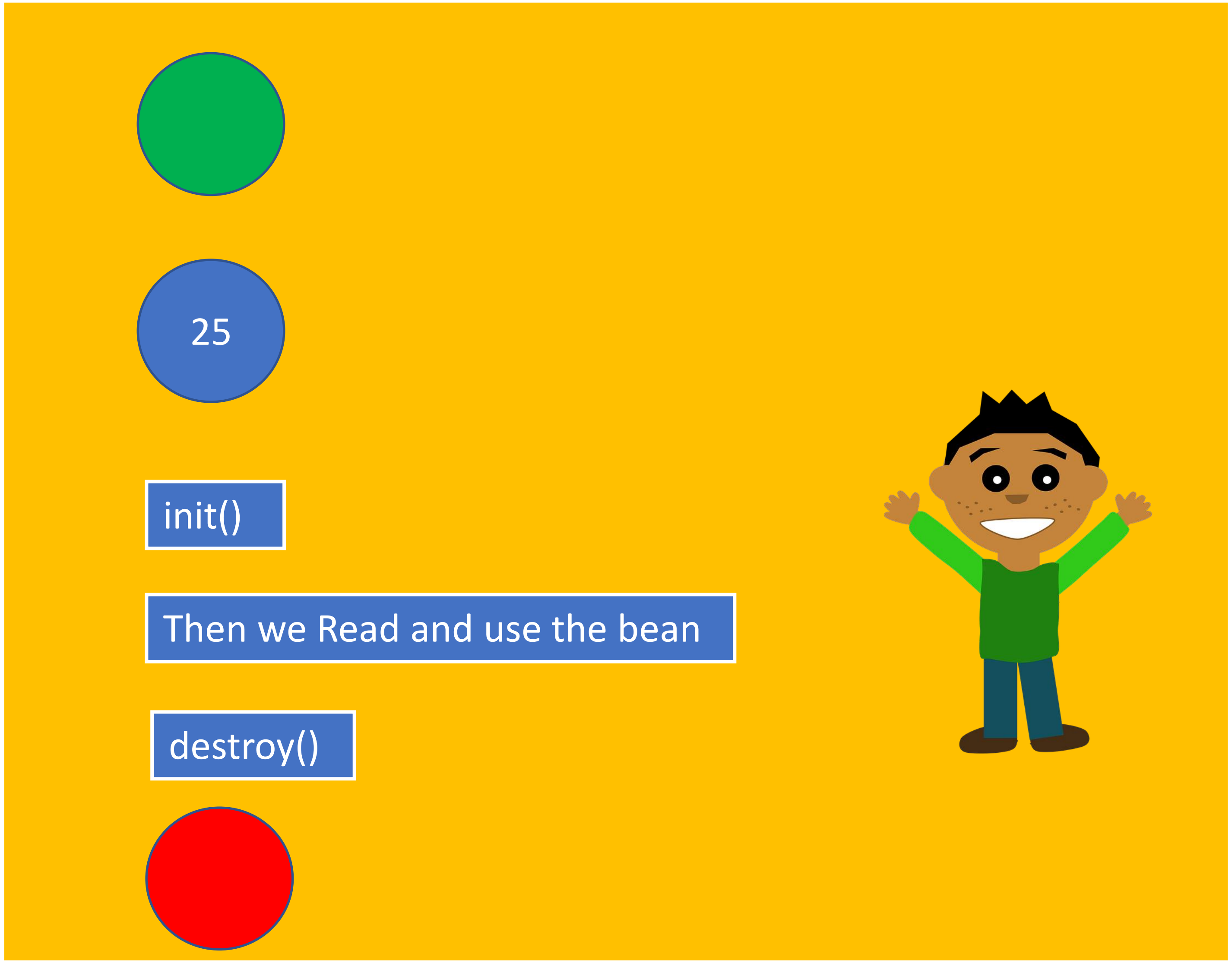
Life Cycle

Spring bean

Configuration Xml File



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init()

Then we Read and use the bean

destroy()

Configure Technique

- Xml
- Spring Interface
- Annotation

Using Interfaces

InitializingBean

DisposableBean

Using Annotations

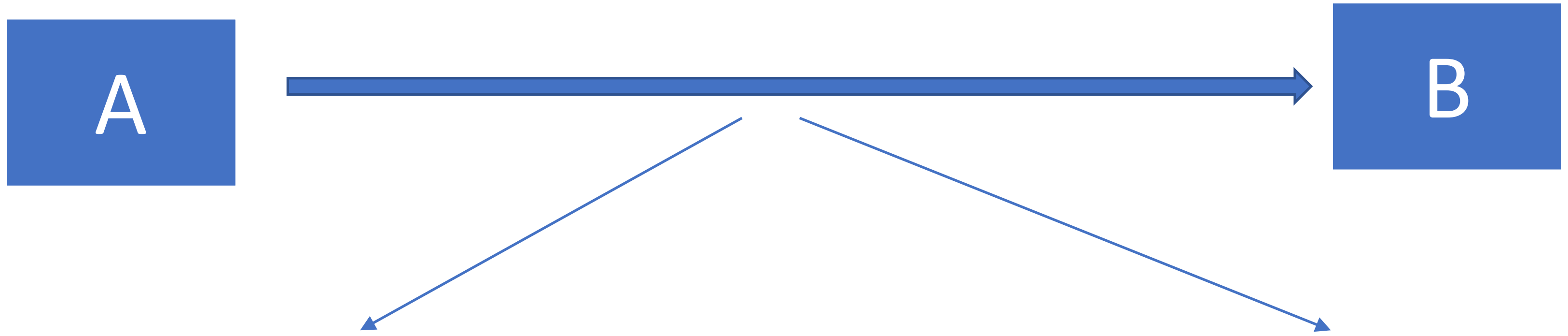
@PostConstruct

@PreDestory

Autowiring in Spring

- Feature of spring Framework in which spring container inject the dependencies automatically .

- Autowiring can't be used to inject primitive and string values. It works with reference only.



A

B

Manually

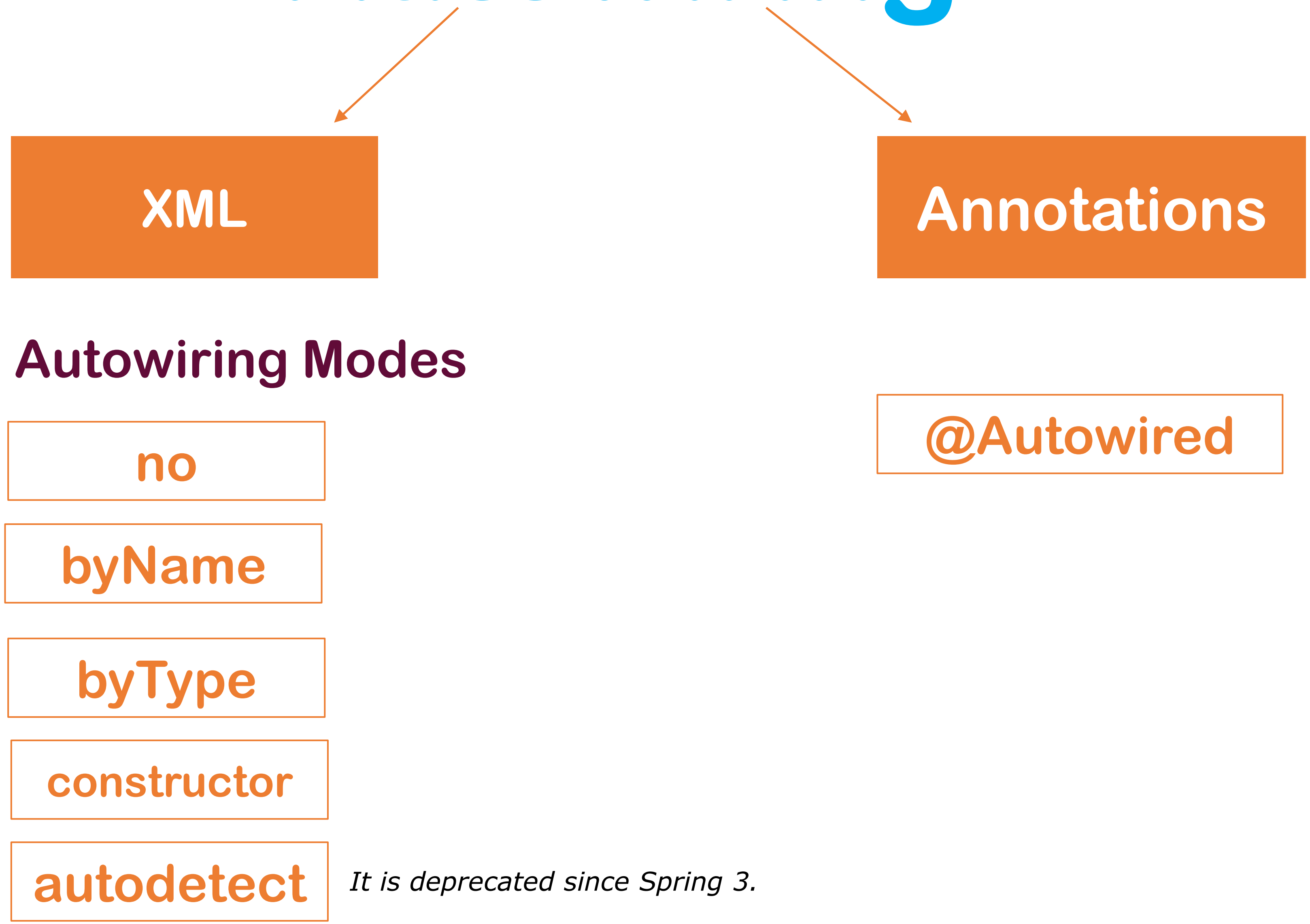
```
<ref bean=""/>
```

Programmer

Automatically

Spring container

Autowiring



XML

Annotations

Autowiring Modes

no

byName

byType

constructor

autodetect

It is deprecated since Spring 3.

@Autowired

Autowiring Advantages

- Automatic
- less code

Autowiring Disadvantages

- No control of programmer.
- It can't be used for primitive and string values.

Stereotype Annotations

- XML <bean />

```
@Component
Class Student
{


}
```

<context:component-scan base-package=“ ” />

Stereotype Annotation

```
@Component
 Class Student
 {


 }


Student student=new Student()
```

Bean Scope

Singleton

prototype

request

session

globalsession

Configure bean scope

```
<bean class=“ ” name=“ ” scope=“ ” />
```

```
@Component
@Scope( “   ”)
Class Student
{


}
```

SpEL Spring Expression Language

Supports Parsing and executing expression with the help of @Value annotations

Expression

@Value

Classes,Variable,Methods,Constructors and Objects

and symbols

char,numerics,operators,keywords and special symbols which return a value

SpEL

```
@value(“#{11+22}”)
```

```
@value(“#{ 8>6 ? 88 : 55”})
```

static methods

object methods

variables

How to invoke static method and variable?

```
T(class).method(param)

T(class).variable
```

How to create objects?

new Object(value)