



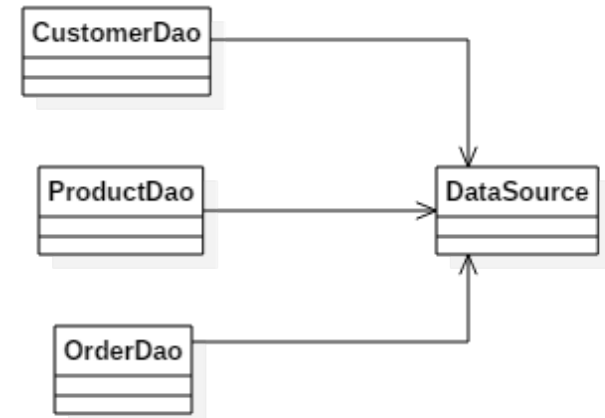
CS544 EA  
Spring

DI Features: Inheritance

# Inheritance and DI

- Consider the following (no inheritance)

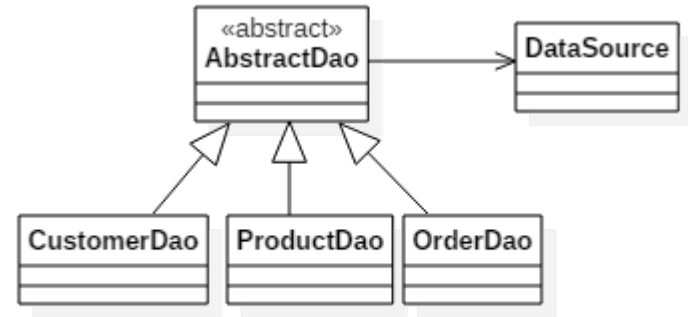
```
<bean id="dataSource" class="cs544.spring23.di.inherit.DataSource" />
<bean id="customerDao" class="cs544.spring23.di.inherit.CustomerDao">
  <property name="dataSource" ref="dataSource"/>
</bean>
<bean id="productDao" class="cs544.spring23.di.inherit.ProductDao">
  <property name="dataSource" ref="dataSource"/>
</bean>
<bean id="orderDao" class="cs544.spring23.di.inherit.OrderDao">
  <property name="dataSource" ref="dataSource"/>
</bean>
```



# With Inheritance

```
public abstract class AbstractDAO implements IDAO{  
    protected DataSource datasource;  
  
    public void setDatasource(DataSource datasource) {  
        this.datasource = datasource;  
    }  
  
    public abstract void persist();  
}
```

```
public class CustomerDAO extends AbstractDAO{  
    public void persist() {  
        datasource.insert();  
    }  
}
```



# Inheritance XML Config

Abstract indicates:  
no bean of this type  
can be made  
(It is an abstract class)

```
<bean id="dataSource" class="cs544.spring24.di.inherit.DataSource" />
<bean id="abstractDao" class="cs544.spring24.di.inherit.AbstractDao" abstract="true">
  <property name="dataSource" ref="dataSource"/>
</bean>
<bean id="customerDao" class="cs544.spring24.di.inherit.CustomerDao" parent="abstractDao" />
<bean id="productDao" class="cs544.spring24.di.inherit.ProductDao" parent="abstractDao" />
<bean id="orderDao" class="cs544.spring24.di.inherit.OrderDao" parent="abstractDao" />
```

Parent indicates:  
anything injected on parent  
should be injected on  
this bean as well

# Annotation Config

```
package cs544.spring24.di.inherit;

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

@Configuration
@ComponentScan("cs544.spring24.di.inherit")
public class Config {
}
```

```
package cs544.spring24.di.inherit;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Component;

@Component
public abstract class AbstractDao {
    @Autowired
    private DataSource dataSource;

    public DataSource getDataSource() {
        return dataSource;
    }

    public void setDataSource(DataSource dataSource) {
        this.dataSource = dataSource;
    }
}
```

```
package cs544.spring24.di.inherit;

import org.springframework.stereotype.Repository;

@Repository
public class CustomerDao extends AbstractDao{
}
```