# Advanced Data Centric Web Applications

## Lab 5 Annotations

### Question 1

Create a new Maven project as described in Lab 1 and add the latest spring-core, spring-beans and spring-context modules to the project.

Create a class called *Address* with the following attributes and a *toString()* method:

* private String town;
* private String county;

Create a class called *Person* with the following attributes and a *toString()* method:

* private String name;
* private Address address;

Create one bean with an id = addr of type *Address* which uses constructor-args to set the attributes.

Create another bean of type *Person* but don’t set any attributes in the beans XML file.

Use the @Autowired annotation on the *address* attribute of *Person*.

* What value will *address* have when the application is run, and why?

Create another bean with an id = addr1 of type *Address* which uses constructor-args to set the attributes.

* What value will *address* have when the application is run, and why?

Create a third bean with an id = address of type *Address* which uses constructor-args to set the attributes.

* What value will *address* have when the application is run, and why?

### Question 2

Update the application from Question 1 which has the following beans:

* Address bean addr
* Address bean addr1
* Address bean address

to have a new method as follows:

* Add the following method to *Person*

**public** **void** setAddress(Address address) {

**this**.address = **new** Address("Athlone", "Co. Westmeath");

}

* What value will *address* have when the application is run, and why?
* Remove the @Autowired annotation from the *address* attribute and put it on the *setAddress* method.
* What value will *address* have when the application is run, and why?
* Add two new methods as follows:

@Autowired

**public** **void** setAddr(Address address) {

**this**.address = **new** Address("Tullamore", "Co. Offaly");

}

@Autowired

**public** **void** setAddress1(Address address) {

**this**.address = **new** Address("Moate", "Co. Westmeath");

}

* What value will *address* have when the application is run, and why?

### Question 3

Create a new Maven project as described in Lab 1 and add the latest spring-core, spring-beans and spring-context modules to the project.

* Create a class called *Address* with the following attributes and a *toString()* method:
  + private String town;
  + private String county;
* Create a class called Person with the following attributes and a toString() method:
  + private String name;
  + private Address address;
* Create two Address beans:
  + One with id=”addressHardcoded” which uses constructor-args to set the *town* and *county*; and has a qualifier called “hardcoded”.
  + One with id=”addressDynamic” which uses a factory-method to take in a *town* and *county* from the console; and has a qualifier called “dynamic”.
* Create one *Person* bean:
  + Which uses a factory-method to take in the person’s *name* from the console.
* Set the *Person*’s *address* attribute to Autowired and run the application.

What happens and why?

* Set the Qualifier of the *address* attribute to “addressHardcoded”.

What happens and why?

* Set the Qualifier of the *address* attribute to “dynamic”.

What happens and why?