

# Exercises

## Summary

Copy your work from last class (told you you needed to do it!), then rework and rebuild it using Lombok!

## Step 1

Copy ex22\_injectionAndIoC to ex31\_lombok. Literally copy and paste. Most things should carry over, though obviously, be careful copying entire projects and **ALWAYS ONLY EVER** copy **YOUR OWN** work. There are easy ways to spot other people's code, and offenders will be prosecuted.

Right click your new project in the Project Explorer → Spring → Add Starters. Select Lombok to add it to our now slowly growing list of dependencies. Copy over all required changes, and Bam! A new dependency added to an existing project on the fly!

## Step 2

Add `@Data`, `@NoArgsConstructor`, and `@AllArgsConstructor` above your Course bean.

Remove any getters, setters, toStrings, and constructors from your Course bean. You won't need them, and as we've said, Lombok is only so good at figuring out what's needed and what's not.

Add `@Data` to your CourseListImpl bean – below the `@Component` annotation.

Remove the `getCourseList` and `setCourseList` methods. Your CourseList class need only contain the private `courseList` property and the `emptyList` method!

As a bit of foreshadowing, do not change your CourseList interface. We still need it intact and as is for now!

Navigate to your CourseController class. Make sure it is still working as planned! Run your code and navigate to <http://localhost:8080> ! Wow!

## Step 3

Replace `@NoArgsConstructor` and `@AllArgsConstructor` in your Course bean with an `@Builder`.

Type `@NonNull` above the id property. Note: the import should come from `lombok.NonNull` if you're asked.

This is not to be confused with `@NotNull`.. there's a difference! We want `@NonNull!!!` Most folks make this mistake at least once per term even after hearing it here, so please be careful.

Now, back in your CourseController, use a Builder Pattern, instead of a constructor call, to set the properties of your course object. However, leave out the name property! What happens?

Try leaving out id. What happens?

Fix it so you have a working version! Awesome!

Submit a screenshot of your Builder Pattern in your code and the output in your console below in a JPEG or PNG named using your name as the filename! Great stuff! 😊