## [Course Overview](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942)

### [Course Overview](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942)

[Hi everyone. My name is Bryan Hansen, and welcome to my](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=null) [course, Building Applications Using Spring JDBC.](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=8.735294117647058) [I'm the Director of Development at Software Technology Group](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=13.5) [and now a seasoned author on Pluralsight.](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=16.875) [Interacting with the database has always been harder than it should be in Java.](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=19.5) [Spring and the Spring JDBC framework give us a great alternative](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=24.5) [and make it quite easy to access our data.](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=28.899999999999984) [In this course, we're going to set up a database in a framework to](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=32.5) [fully utilize Spring JDBC for accessing our data tier.](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=36.69999999999996) [Some of the major topics we will cover are all of the CRUD](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=39.5909090909091) [functions of data access and retrieval,](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=44.31818181818187) [as well as batch operations and exception handling and transactions.](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=46.5) [By the end of this course, we will know how to](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=52.5) [effectively use Spring JDBC in our application.](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=56.77777777777774) [Before beginning this course, you should be familiar with Java](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=59.5) [and an IDE such as Spring STS or Eclipse.](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=63.71052631578945) [I hope you'll join me on this journey of learning how to Build Applications Using Spring JDBC, at Pluralsight.](https://app.pluralsight.com/course-player?clipId=828043a7-361c-4bcc-80ac-846e3ae41942&startTime=67.5)

## [Introduction](https://app.pluralsight.com/course-player?clipId=d9147005-524c-424d-8087-6f98acc17faf)

### [Version Check](https://app.pluralsight.com/course-player?clipId=d9147005-524c-424d-8087-6f98acc17faf)

### [Introduction](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b)

[With Hibernate, JPA, JDBC and other persistence frameworks available in Java,](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=0) [are you wondering why you would use Spring JDBC?](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=6.875) [Maybe you know why you want to use it, but aren't sure where to start.](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=11.473684210526315) [Hello,](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=17) [I'm Bryan Hansen and welcome to my course on Building](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=17.41176470588235) [Applications Using Spring JDBC on Pluralsight.](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=21.529411764705866) [In this course we are going to be learning about](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=24) [integrating a data layer using Spring JDBC.](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=26.941176470588225) [We will discuss why you would want to use Spring JDBC over](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=29) [some of the alternatives and we will deep dive into](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=32.428571428571416) [configuration and various CRUD functions,](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=35.4) [as well as cover how to handle exceptions gracefully while using the Spring JDBC framework.](https://app.pluralsight.com/course-player?clipId=dddcaeb5-6c97-4883-a7cf-fd9e0e169f7b&startTime=37.39999999999999)

### [What Is Spring JDBC?](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d)

[Spring JDBC is a framework for working with the](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=2.14) [standard JDBC API that Java provides.](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=5.44) [JDBC by itself is very error prone and not really user friendly.](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=9.74) [Spring JDBC is also pattern‑based,](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=15.14) [relying heavily on the template method pattern where you just need to focus on](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=17.7) [the portions of the code that deal with the business logic.](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=21.88) [Spring JDBC also builds on top of Spring and its dependency](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=25.84) [injection libraries. Templates that we create can be injected](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=29.48) [into other classes very easily.](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=33.66) [It's also an ORM, much like Hibernate and JPA.](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=36.34) [Using Spring JDBC still encourages the use of an object.](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=41.34) [I would argue that one of the best reasons,](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=45.37) [though,](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=47.35) [for using it is that it works very well with existing database structures](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=47.5) [where many of the other ORM tools struggle in this regard. Let's look at some of the particular problems that Spring JDBC solves.](https://app.pluralsight.com/course-player?clipId=fbd25f5c-5a5e-45c6-a9a8-f508893bf05d&startTime=51.82)

### [The Problem](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29)

[What problem is Spring JDBC trying to solve?](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=0) [Whenever I'm going to introduce another framework or tool into my code base,](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=3.906352941176471) [I want to look and see what this is actually buying me.](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=9.551) [These are the big questions I ask, what is it trying to solve for me?](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=13.301) [Well Spring JDBC fixes quite a few problems over standard JDBC and is](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=18.301) [simpler to work with than an ORM like Hibernate and JPA.](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=22.0152857142857) [The biggest thing it fixes, and for me this is reason enough to use it,](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=25.300999999999995) [is the reduced complexity of my code base.](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=30.300999999999977) [Spring JDBC code is much simpler than standard JDBC.](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=34.15814285714285) [And although not a full featured ORM like Hibernate,](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=39.301) [it still encourages the use of object oriented programming in its design.](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=42.30100000000002) [Since it's written using the Spring framework,](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=46.70100000000001) [configuration information is injected into our application,](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=49.96766666666669) [making our application more portable.](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=53.367666666666665) [And overall I like the simplicity it brings and allows you to focus on the](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=56.03433333333332) [business needs and not the extraneous code of closing and opening connections or dealing with various JDBC problems.](https://app.pluralsight.com/course-player?clipId=7df33f3f-e575-415b-b64e-3eb722da9d29&startTime=63.24836842105262)

### [Business Focus](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8)

[I used this exact same example in my Spring fundamentals course,](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=1.701) [but let's talk about business focus for a minute.](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=5.58335294117647) [If you've ever done much database development in Java, you've used JDBC.](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=9.100999999999999) [And JDBC at first glance doesn't look that bad,](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=14.701) [but then you really start picking it apart and it's really not pretty.](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=17.401000000000007) [Look at all this extra stuff we have in our code,](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=21.401000000000003) [just to do a simple select statement.](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=25.25100000000002) [We have connections and prepared statements and result sets,](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=27.701) [and then we have this try catch finally block and we have a driver manager.](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=30.70099999999999) [We have all of this stuff in there and look at that](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=35.61009090909092) [great big finally block of if rs = null,](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=39.42827272727276) [if statement = null, if connection = null,](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=42.519181818181835) [and then we also have these empty curly braces just catching exceptions.](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=45.42827272727277) [There's a big bunch of just code in here when really all of our business](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=49.751000000000005) [cares about is this single line right here where we say select whatever](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=55.001000000000026) [fields are in the CAR table where this ID = whatever,](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=60.20099999999997) [and then we only grab the other line that our business really cares about,](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=64.701) [and that is the actual string, and store it in a Java object and return it.](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=70.30100000000007) [Now this may look like a great selling point for](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=75.70052380952376) [Hibernate instead of Spring JDBC,](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=78.70004761904752) [but I'm actually going to show you that Spring JDBC](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=80.78947368421052) [handles this example really well.](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=85.26315789473682) [So all these places that we're assigning things and](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=87.5) [handling stuff and closing all these connections can easily be handled by Spring JDBC for us.](https://app.pluralsight.com/course-player?clipId=7e5e136e-1c2f-4182-bcf5-1174fdda12a8&startTime=90.75000000000003)

### [The Solution](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a)

[So the solution we're looking to get out of Spring JDBC is that](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=1.535) [we can remove configuration code or lookup code and developers](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=6.4873809523809545) [can focus on the business needs.](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=10.011190476190475) [Like I said,](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=11.439761904761898) [that's a big one for me is that the business doesn't care that I have](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=12.15404761904761) [a try catch block or how I handle this exception,](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=15.898636363636367) [they care that when we ask for a CAR we get that CAR back.](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=18.6259090909091) [Our code can also focus on testing.](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=23.53499999999999) [So on that previous slide,](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=26.535) [it really wasn't that testable as far as I have things hard coded in there,](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=28.285000000000007) [I have a driver manager that I'm getting a connection,](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=33.535) [where's that connection coming from and that type of information.](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=36.868333333333354) [Spring JDBC is built on top of Spring so we also indirectly have](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=40.334999999999994) [the power of Spring using dependency injection.](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=45.534999999999975) [If we want to annotate our code rather than having so](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=48.20166666666667) [much configuration code in there, Spring can help us with this as well.](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=51.86833333333336) [So make things easier to test, make things focused on what the business needs,](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=56.08045454545456) [and remove the configuration lookup code through doing](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=60.535) [annotations or XML based development. Let's look at that JDBC code again and compare it with what it could be.](https://app.pluralsight.com/course-player?clipId=1469b64b-a928-47f4-840d-bf61b9a08a6a&startTime=64.8426923076923)

### [Business Focus Revisited](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2)

[Let's look at that business focus slide again. That JDBC code that we](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=1.64) [looked at earlier has all of this getConnection and DriverManager,](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=6.52) [prepareStatement information, that huge finally block that essentially does](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=11.97) [nothing but close connections for us, and now here's what our code could](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=16.41) [look like using Spring JdbcTemplate.](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=20.56) [Notice that nowhere in here is it mentioned that we have a connection or](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=24.64) [a result set or a prepared statement, DriverManager,](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=29.78) [it doesn't talk about closing stuff or how we handle any of that extra](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=33.97) [code surrounding us doing that select statement.](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=39.41) [We have our basic find method and return statement, and that's it.](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=42.94) [This is a great example of the template method pattern and how Spring](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=49.05) [JdbcTemplate utilizes that template method pattern to interact with our code](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=53.43) [This may scare some of you that there is a black box with Spring and Spring](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=59.54) [JdbcTemplate, and I hope to alleviate some of those concerns, but look at how](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=63.74) [much smaller and more concise this code is,](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=68.7) [and it really is just doing what we want to do.](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=71.42) [There's no reason we should have to rewrite what's on the left for every query we need to make on the right.](https://app.pluralsight.com/course-player?clipId=c82c674f-e729-44c5-b590-01a74403c1e2&startTime=74.34)

### [Summary](https://app.pluralsight.com/course-player?clipId=8e3ac61e-bf46-4e83-96ad-987a2a786d51)

[In this short module we talked about what Spring JDBC is,](https://app.pluralsight.com/course-player?clipId=8e3ac61e-bf46-4e83-96ad-987a2a786d51&startTime=1.069) [the problems that we're trying to solve with it,](https://app.pluralsight.com/course-player?clipId=8e3ac61e-bf46-4e83-96ad-987a2a786d51&startTime=4.919) [and what the solution is, what we're essentially getting out of using it.](https://app.pluralsight.com/course-player?clipId=8e3ac61e-bf46-4e83-96ad-987a2a786d51&startTime=8.069) [We also took a before and after look at the business focus.](https://app.pluralsight.com/course-player?clipId=8e3ac61e-bf46-4e83-96ad-987a2a786d51&startTime=13.069) [Business focus is what you are going to see me drive](https://app.pluralsight.com/course-player?clipId=8e3ac61e-bf46-4e83-96ad-987a2a786d51&startTime=16.887181818181816) [towards in all of the examples that we do,](https://app.pluralsight.com/course-player?clipId=8e3ac61e-bf46-4e83-96ad-987a2a786d51&startTime=20.307095238095236) [how this enables us to get what the business wants done faster. Let's get the project set up now and dive into using Spring JDBC.](https://app.pluralsight.com/course-player?clipId=8e3ac61e-bf46-4e83-96ad-987a2a786d51&startTime=22.44995238095237)

## [Setting up the JDBC Project](https://app.pluralsight.com/course-player?clipId=6a2429bd-ca22-4de6-b52c-fc71eb11556f)

### [Introduction](https://app.pluralsight.com/course-player?clipId=6a2429bd-ca22-4de6-b52c-fc71eb11556f)

[In this module we are going to walk though the environment installation and](https://app.pluralsight.com/course-player?clipId=6a2429bd-ca22-4de6-b52c-fc71eb11556f&startTime=0) [get everything ready for the remainder of the course.](https://app.pluralsight.com/course-player?clipId=6a2429bd-ca22-4de6-b52c-fc71eb11556f&startTime=5.7777777777777795) [By the end of this module we will have installed a database, created a schema, and configured our IDE and project for development.](https://app.pluralsight.com/course-player?clipId=6a2429bd-ca22-4de6-b52c-fc71eb11556f&startTime=9.473684210526315)

### [Prerequisites](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc)

[There are a few prerequisites you'll need to do the examples in](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=0.74) [this course. I am using Java 11. Java 11 is the most recent](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=4.31) [long‑term supported, or LTS, version.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=10.29) [There have been other releases since then,](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=13.76) [but 11 is the most current LTS. With Spring 5,](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=16.17) [you're required to use Java 11 or later,](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=21.07) [but most, if not all, developers are now using it for Java](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=24.22) [development. I am assuming that you already know how to install](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=27.72) [Java, so we won't be covering that in this course.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=31.19) [I'm also going to use Maven in this course. I've been asked about](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=34.74) [Spring Boot and I like it for a lot of situations,](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=38.24) [the feedback that we often receive though is it's too much of a](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=41.01) [black box for developers learning new technologies.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=43.41) [Once you know how the underlying pieces work, it's a great tool.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=47.04) [Spring no longer offers up a way, though, to just download the JARs and you're](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=51.06) [forced to use Maven or Gradle to download those dependencies.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=55.36) [There is a Pluralsight course on Maven. If you have more questions about that,](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=60.04) [you can go research and follow it.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=64.41) [The next thing you'll need is an IDE. I'm using Spring STS,](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=66.92) [which is just a flavor of Eclipse.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=70.72) [In fact, it's just rebranded Eclipse.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=72.74) [If you're already using Eclipse,](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=75.44) [you can go ahead and just keep that and it'll work just fine, but I like](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=78.13) [Spring STS because it has a lot of the common plugins installed and you don't](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=81.87) [have very many, if any at all, configuration issues.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=86.34) [The steps for Eclipse and Spring STS should be nearly identical, if](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=90.18) [not the same. For our web container, we're going to use Tomcat 9.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=94.07) [At the time of writing this course,](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=98.85) [10 is still a release candidate, so 9 is the stable version. And](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=100.83) [lastly for our database, we're going to use MySQL. MySQL has great tooling and is pretty user friendly.](https://app.pluralsight.com/course-player?clipId=96fe5f55-3d70-4b64-bd1b-7b65bc718adc&startTime=105.47)

### [Demo Outline](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb)

[For our next few demos we're going to walk through and show](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=2.034) [you how to get the source code in your IDE.](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=6.397636363636362) [There are samples in the exercise files and samples in GitHub.](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=10.034) [They are identical and if you're not familiar with GitHub,](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=14.922888888888892) [you can go ahead and download the exercise files and we'll talk more about that.](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=19.200666666666667) [The app that we're going to be building is a microservice based](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=25.034) [application that is fairly a headless app with some client code](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=30.086631578947383) [to show you how to make those calls.](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=34.55780952380952) [We have chose this approach in case you might be wiring up your application](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=37.605428571428554) [with a UI like Angular or React to talk to microservices.](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=43.2215) [And then lastly for our demo we're going to walk through the database setup and show you how to get MySQL and a schema created.](https://app.pluralsight.com/course-player?clipId=0d8b5055-bb31-4c02-bebf-acf7450779fb&startTime=48.034)

### [Exercise Files](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c)

[Because not everyone is comfortable with GitHub and](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=2.017) [downloading source code that way,](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=4.840529411764705) [I'm going to first talk about that you can now download all of](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=6.605235294117644) [the exercise files right from Pluralsight.](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=11.617000000000003) [Pluralsight subscriptions now include access to everyone that was](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=14.017) [previously only available to premium subscribers.](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=18.517) [You can download the exercise files by visiting the page for this](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=21.40588888888889) [curse and clicking the link for Exercise files.](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=26.07255555555556) [Setup instructions are included in the download and](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=29.35033333333333) [you won't need to work with GitHub.](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=32.905888888888875) [But if you prefer GitHub and want to track your own](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=36.017) [changes as you go through it,](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=39.11756521739131) [I will show you an alternative and download the course with GitHub](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=40.80878260869566) [if you're already comfortable with that approach and possibly want](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=44.447176470588246) [to go through tracking your own revisions as you go through the changes of this course.](https://app.pluralsight.com/course-player?clipId=73afde56-5033-461b-97e9-c3bac576114c&startTime=47.692470588235324)

### [Github](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41)

[As we just mentioned,](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=2.351) [I was going to show you two ways to get the project and the first](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=3.0782727272727266) [way was just going through and downloading the exercise files from](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=5.8055454545454515) [the Pluralsight course Exercise Files section and the second method](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=11.493857142857141) [is downloading from GitHub.](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=16.61415789473684) [I will let you choose which approach you want to take,](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=17.877315789473677) [but the end result will be the same.](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=21.351) [To set up the project from GitHub,](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=23.532818181818186) [you first need to fork the project to your own repository.](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=25.4419090909091) [Second, I have made a shortened URL for you to access the project,](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=28.807952380952386) [that will take you to the fully built out project on GitHub,](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=33.54304761904763) [and once you've done that we'll walk through the setup of the project. Let's dive into that demo now.](https://app.pluralsight.com/course-player?clipId=04e59867-5f83-459b-82f9-5e542d7e4d41&startTime=37.800380952380976)

### [Github Demo](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6)

[To get started downloading the project from GitHub,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=1.74) [I've gone ahead and navigated in my browser to github.com.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=5.45) [In the previous slide I gave you a shortened URL,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=10.64) [and this is the place that it resides at,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=13.81) [github.com/bh5k/ride\_tracker.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=16.72) [Now,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=21.33) [you will want to go ahead and fork this to your own](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=23.79) [repository so you can track your changes with it,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=27.06) [and then from there go ahead and clone it.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=29.93) [So I'm going to grab the clone URL and I'm going to go ahead and go](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=33.04) [to the GitHub client and add a new repository.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=41.01) [Now because I have this synced over to my repository,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=47.79) [it's here available for me to already clone.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=51.68) [If you don't, you're going to have to go ahead and enter the URL.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=54.6) [So I'm going to click ride\_tracker and I'm going to tell us](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=57.94) [the directory that I want this to go to.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=63.64) [I like to put my projects under C:\dev\workspace,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=66.1) [so I'm going to navigate to that,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=70.74) [and I'm going to go ahead and click OK. Now it has](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=75.44) [my project all synced in there.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=81.28) [We can minimize this, and now I can open up the Spring STS instance. As this](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=84.74) [loads, it's going to ask us for that C:\dev\workspace again.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=94.07) [And now when I come in my project, it will go ahead and be able](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=98.04) [to import that project from my file system.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=104.15) [There's a bunch of different ways you can do this.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=107.44) [I like using the external source tool for GitHub that shows](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=109.74) [you the changes that you have in there.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=115.2) [You can do this directly from inside of Spring STS, but I can now go](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=117.05) [ahead and say Import, Existing Project into Workspace through Maven,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=121.68) [so an existing Maven project, and it will ask us for the root](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=127.34) [directory. We're going to look for our C:\dev\workspace\ride\_tracker,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=133.71) [and we'll see that it finds our POM and asks us if we want to go ahead](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=141.94) [and import that.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=146.01) [We'll click Yes. As this goes through, yours may take a minute](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=146.89) [the very first time it does this because it will have to download](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=151.86) [some libraries and things that your Maven library and repository](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=155.37) [hasn't been updated with.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=161.26) [But once you have this set up, you should have a src/main/java](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=163.24) [directory, src/main/resources directory,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=166.71) [a src/test/java directory, as well as a src/main/webapp and](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=169.79) [WEB‑INF directory for configurations. From here, we can go](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=175.79) [ahead and create our server. Now,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=180.37) [all of this I have covered in previous courses in my Spring MVC course](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=184) [and Spring Fundamentals course, so I'm not going through all the step](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=188.55) [by step of it because you should be familiar with that at this point in](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=192.12) [this course. Let's go ahead and add a new server, and I'm going to](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=195.5) [choose a Tomcat 8 Server,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=200.5) [click Next, and add my ride\_tracker application to this and click Finish.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=203.74) [From this point, our application should be ready to be deployed and ran. I](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=212.43) [can go ahead and click the Start server button.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=219.93) [We can verify that everything inside of here looks good.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=224.44) [I'm going to make this full screen for a minute to see. I don't see any](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=227.49) [errors in here, so it looks like it's deployed correctly. And I have](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=230.94) [created a small test under src/test/java for this RestController. Inside of](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=235.96) [here, this just does a basic call that's currently not connected to our](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=244.66) [database to verify that our localhost is returning a get on our](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=248.91) [RidesController. So it's going to go through and pull this back and pull](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=257.24) [back any rides we have, and right now I just have some hard coded](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=261.34) [information inside of here.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=263.76) [So let's go ahead and run this as a unit test.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=265.34) [We can just right‑click on it and say Run As and JUnit Test should](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=267.89) [be one of the options that comes up for you.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=273.52) [Once I do this,](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=276.34) [you'll go through and see that it's loading up this runtime JAR the first](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=278.04) [time, and our output should come back green just as it did.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=281.68) [If this is the first time you've ran your application and it times out for](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=288.34) [whatever reason, you may need to run this unit test again because it does](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=292.32) [have a timeout built in there of 1 full second. And my console will show that](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=296.56) [it returned the ride named Corner Canyon.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=302.03) [We'll dive into what this functionality is, but our application is](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=304.84) [now downloaded from GitHub, imported into our local Git repo, and](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=309.36) [imported into our application as a Maven project now. So everything](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=314.9) [should be configured here.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=319.9) [Now let's set up our database and get things tied to this so we](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=321.53) [can start building out our connection pool, as well as our first instances of our create statements.](https://app.pluralsight.com/course-player?clipId=90374f3a-3d8b-4bad-9c06-2039c45862a6&startTime=325.16)

### [MySQL](https://app.pluralsight.com/course-player?clipId=b50f13f6-ea5e-4d66-91e0-930b780e21be)

[Now that we have the source code configured,](https://app.pluralsight.com/course-player?clipId=b50f13f6-ea5e-4d66-91e0-930b780e21be&startTime=1.04) [we're going to install the MySQL database and then the MySQL Workbench.](https://app.pluralsight.com/course-player?clipId=b50f13f6-ea5e-4d66-91e0-930b780e21be&startTime=3.68) [There are a lot of databases to choose from, and for this course](https://app.pluralsight.com/course-player?clipId=b50f13f6-ea5e-4d66-91e0-930b780e21be&startTime=10.04) [we chose MySQL. MySQL is available on every cloud hosting service](https://app.pluralsight.com/course-player?clipId=b50f13f6-ea5e-4d66-91e0-930b780e21be&startTime=13.23) [that I've ever used and is a great,](https://app.pluralsight.com/course-player?clipId=b50f13f6-ea5e-4d66-91e0-930b780e21be&startTime=18.82) [full‑featured database. This course is not a how‑to on MySQL though,](https://app.pluralsight.com/course-player?clipId=b50f13f6-ea5e-4d66-91e0-930b780e21be&startTime=21.16) [but if you don't have experience with it,](https://app.pluralsight.com/course-player?clipId=b50f13f6-ea5e-4d66-91e0-930b780e21be&startTime=27.22) [don't worry, we will cover everything that we need to so that you can be successful while using it.](https://app.pluralsight.com/course-player?clipId=b50f13f6-ea5e-4d66-91e0-930b780e21be&startTime=29.51)

### [MySQL Install Demo](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7)

[To install MySQL, you're going to want to open up a](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=2.84) [browser and navigate to www.mysql.com.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=5.9) [You're going to see a landing page like this.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=10.84) [The first thing we want to do is go to the Downloads tab and](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=13.94) [scroll to the bottom of there past their commercial offerings to](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=17.86) [the GPL edition, or the Community edition.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=22.04) [I'm going to select that and go to the MySQL Community Server.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=25.64) [There's various offerings that they have, such as their](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=30) [clustering capabilities and fabric and router.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=32.73) [We just want the MySQL Community Server.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=36.26) [Now there's a few options or ways that you can download MySQL, and we're](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=40.14) [going to use the MySQL Installer that's web‑based. You'll see options to](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=45.08) [download the complete bundle. We're just going to choose this MySQL](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=49.97) [Installer, and it will take us to two options,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=53.3) [the 1.7 MB version and the 386 MB version.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=57.47) [If you're choosing the web version, you know you're going to be connected,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=63.34) [which is what I'm going to do, then look for the smaller download.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=67.44) [It may change in size with a future release, but right now that's 1.7](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=70.92) [MB for me. I'm going to click Download, and it's going to try to get me](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=75.67) [to sign up for a free account or log in if I have an existing account.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=80.1) [You can do this if you want updates and notifications or access to](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=84.43) [their forums, but I'm just going to go ahead and say no thanks and](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=88.73) [start my download.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=91.87) [This will go ahead and download that web installer, which since](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=95.94) [it's small it's a relatively fast install.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=99.33) [We're going to go ahead and choose Run, and when this](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=102.1) [comes up it will give us the option to install just the](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=106.72) [custom installation that we want.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=112.21) [The developer default isn't bad, but the custom installation will allow us](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=114.01) [to choose just the couple of pieces that we care about.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=118.78) [So I'm going to choose Custom and Next, and then I'm going to](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=121.73) [navigate down to the SQL instance of just the server, so MySQL](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=125.31) [Server 5.7.17, and add that, and then I'm going to add the MySQL](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=131.4) [Connector and only the MySQL Connector/J.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=137.9) [And then underneath Applications, we want the Workbench as well.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=143.64) [So I'm going to choose the MySQL Workbench.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=148.04) [So those three files, the MySQL Server 5.7, MySQL Workbench 6.3, and the](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=150.83) [MySQL Connector/J 5.1, and go ahead and click Next.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=157.74) [It will go through and download these.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=163.44) [It'll take it a second.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=165.7) [MySQL Server is the largest of the downloads so it'll probably](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=167.54) [the last one to finish, but once this is done we can then go](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=171.46) [ahead and start installing these and configuring them to run](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=175.06) [inside of our application.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=179) [The configuration for these will also prompt you if you have a](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=183.54) [previous version installed so that you don't potentially write over](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=188.04) [any databases that you may have out there.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=192.02) [Once MySQL is done installing,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=195.54) [we'll click Next and it will ask us if we want to configure this instance,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=198.94) [which we do.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=203.83) [So we're going to click Next. Now, I'm going to choose the defaults here.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=204.53) [The configuration type is Development Machine and the port number is 3306.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=209.57) [If you do not want to run on that port for some reason,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=215.74) [make sure you write it down because when we create](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=219.06) [our data source in the next demo, you will need to know that port.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=222.07) [So I'm going to leave it as the default of 3306 and click Next, and then I'm](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=227.56) [going to add a root password of just password. Since this is a development](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=232.87) [machine and it doesn't have any sensitive data on there,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=237.67) [I'm just going to use password and password.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=240.72) [I know it's weak. It's fine because there's nothing sensitive in there.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=242.85) [I'll click Next. Then it will allow me to choose this to be ran as a](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=246.91) [Windows service and to start that service at system startup,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=251.68) [which I'm going to click Next on that as well.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=255.67) [I don't want to use this as a document store, so I'm going to leave that](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=258.44) [unchecked, and click Next and Execute. Now that this is completed I'll](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=261.46) [click Finish, and it will allow me to go through and start the MySQL](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=269.77) [Workbench after setup. We'll click Finish. And this will go through and](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=276.68) [launch a local instance for me, and if you've used the MySQL Workbench](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=284.37) [in the past, this has changed quite a bit recently. It has this Local instance,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=289.25) [I'm going to click on it, and it will bring me into the Workbench. From here,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=293.76) [I can go over in the Schemas navigator and right‑click and say Create](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=300.07) [Schema, and I'm going to create one called ride\_tracker.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=304.64) [You can choose different collations.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=311.24) [If you are aware of what those collations are, then you already](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=313.4) [know what you're looking for, but you can choose if you want](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=317.22) [UTF‑8 or some other character set.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=319.17) [I'm going to leave it as the server default and click Apply, and](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=322.33) [it will create that schema for me. Click Finish. And for now,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=326.97) [there's no tables inside of here.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=331.08) [I can click on all these, but they're all empty.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=333.16) [So I have ride\_tracker and Tables, Views,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=335.25) [Stored Procedures, Functions, but there's nothing in those.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=339.99) [If you used a different name other than ride\_tracker, just like that port,](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=343.14) [you'll want to write that down because as we go through and](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=348.57) [configure our JDBC URL in the next demo, you're going to need that information as well.](https://app.pluralsight.com/course-player?clipId=892f1d03-1af1-48cd-a5b8-5acc4c10bef7&startTime=351.01)

### [Configuration](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46)

[Now that we have our database downloaded and installed and the Workbench,](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=1.24) [we've also downloaded the code sample from either GitHub or the exercise files,](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=6.94) [we can now go through and configure the rest of our application.](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=13.37) [We're going to start with adding a couple of Maven dependencies, the](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=17.39) [spring‑jdbc JAR and the mysql‑connector‑java JAR.](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=21.8) [From there,](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=27.14) [we're going to go through and edit the jdbc‑config.xml by](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=27.86) [adding a dataSource and the JdbcTemplate.](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=32.24) [And then finally,](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=35.97) [we can go through and update our RideRepositoryImpl to](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=36.96) [include an autowired reference to our JdbcTemplate that we created in our jdbc‑config.](https://app.pluralsight.com/course-player?clipId=4af1a9f5-a8e3-4f37-ac73-0e594e48da46&startTime=41.84)

### [JdbcTemplate Configuration Demo](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba)

[Now that we have downloaded our application from either GitHub or from](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=0.64) [the exercise files underneath the URL for this course,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=5.31) [we can open up our pom.xml file and select the Dependencies tab at the bottom.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=9.57) [We need to add two dependencies inside of our application here.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=16.44) [Let's give it a group ID of org.springframework and](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=21.54) [an artifact ID of spring‑jdbc.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=28.74) [The version should match your spring‑webmvc version of 5.2.7.RELEASE.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=34.34) [And click Save on that or OK,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=42.11) [depending on if you're on a Windows machine or an OS X or Linux box,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=47.45) [and that will automatically download that JAR for you.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=54.24) [We're going to add one more dependency inside of here.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=58.94) [We can click the Add button again and give it a group ID of mysql and an](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=62.54) [artifact ID of mysql‑connector‑java and a version of 6.0.5.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=70.37) [Click OK.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=82.61) [Both of those resources should now be downloaded automatically for you,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=86.84) [and you can double check that by looking at your Maven](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=90.64) [Dependencies and see that we have the connectors and JDBC](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=93.13) [pieces inside of our application.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=99.75) [It will take it a minute to download if you haven't looked at yours yet.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=103.64) [That's why it's always a good idea to check this.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=107.51) [And so now we have all of those features inside of our dependencies.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=109.31) [We can now begin configuring the XML to talk to our database.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=113.12) [I'm going to close the pom.xml file and even minimize the Maven Dependencies](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=118.44) [portion and open up the src/main/resources jdbc‑config file.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=124.55) [I'm going to create two XML beans inside of here.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=130.64) [I'm going to make this full screen so you can see it a little bit](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=135.25) [better. And it's a lot of typing. You can grab yours out of the](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=137.28) [XML section inside of the exercise files or out of GitHub, or you](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=141.51) [can type it in as well.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=147.92) [I'm going to type it in and and explain to you what these two beans are.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=149.64) [The first bean is a dataSource, and that's what ties us to our](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=153.94) [DriverManagerDataSource or our database connection.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=159.44) [They're kind of synonymous for one another.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=164.04) [We give an ID of dataSource and the class is case sensitive,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=166.74) [org.springframework.jdbc.datasource.DriverManagerDataSource. And it](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=171.83) [has four properties inside of there, the class name of](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=178.42) [com.mysql.jdbc.driver, the URL to our database.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=181.03) [If you look at the end of that URL, localhost:3306/ride\_tracker,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=186.02) [that is the schema we created in the previous demo.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=190.79) [It has a username and password of root and password. And then on to the second](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=196.74) [bean. It's called jdbcTemplate, and this is the bean we're going to inject in](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=202.88) [our code and use inside of our code from here on out.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=206.7) [And it has a property by name of dataSource where we](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=209.81) [pass in the reference of dataSource.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=213.69) [That is the dataSource we just created just up above here.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=215.84) [So, those two beans reference one another.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=219.37) [Let's walk through our application though and finally run a test.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=224.04) [We can exit out of full screen mode on our jdbc‑config, and when you downloaded](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=228.14) [the source code you had a couple of packages inside of here.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=232.84) [We've already started going into them.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=235.51) [We've got our controller, model, repository, and service packages.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=237.05) [We start with our controller. We're going to see that we have our](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=243.04) [RideController, and this is the entry point for our application.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=247.12) [It's where our URL is going to go and hit. And this has](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=250.06) [injected into it a RideService, and that RideService is where](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=255.48) [our business logic should reside.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=262.58) [So we have an interface and an implementation.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=264.53) [Let's open up the implementation, and you'll also see inside of here that](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=266.64) [there is a repository that gets injected inside of here.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=270.93) [If we open up our repository, we're going to see the same thing,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=274.52) [the interface and the implementation. And inside of our implementation, this](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=279.34) [is where we will put the SQL to interact with our database, but we can start](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=285.53) [by injecting that template that we just created.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=289.96) [So I'm going to add an @Autowired private JdbcTemplate,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=293.52) [Jdbc camelCase'd template object inside of here. And I'll save](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=298.84) [this, we're not going to use this just yet,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=303.75) [but it's set up to talk to our database.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=306.24) [We literally just need to start writing our JdbcTemplate queries](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=307.93) [here, and that's what we're going to do in the next module, but](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=312.01) [let's run a unit test against this.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=314.25) [So, everything's up and running here.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=316.08) [We can make sure our server is started, and mine is up and running,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=318.48) [and we can go to our src/test/java RestControllerTest, and if we](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=323.14) [right‑click on this and say Run As, JUnit Test,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=329.26) [which should be one of your options, you can see that it will go](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=334.13) [through and run and it executes and comes back to the screen and](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=338.09) [the Ride name: Corner Canyon is there,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=341.3) [which is exactly what's being returned from our ride repository.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=343.09) [So we just did a bunch of stuff there.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=346.98) [Let's look at that really quick.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=348.81) [Let's kind of recap what we've gone over.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=350.58) [So, we started off by adding some dependencies to our POM and we had our](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=352.94) [Spring JDBC dependency, as well as our MySQL connector.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=361.34) [From there, we went to our jdbc‑config and added a](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=366.04) [dataSource and our jdbcTemplate beans.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=370.44) [We walked through our controller, which has the RideService autowired into](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=374.34) [it, the service, which has the repository wired into it, and then we added](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=378.04) [our JdbcTemplate to our rideRepository as well.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=383.03) [And then we went ahead and executed our unit test, and that went](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=387.64) [through all of the tiers of our application,](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=390.65) [it went clear through our web service and our web front end, clear to the](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=393.47) [back end and back out to our unit test and made that roundtrip. Successful](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=398.69) [roundtrip, whether it was localhost or hosted on a remote server, we actually made that complete roundtrip lifecycle.](https://app.pluralsight.com/course-player?clipId=bd24ecaa-ae70-4638-ac7b-91a354feb4ba&startTime=403.23)

### [Summary](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0)

[In this module we set up everything to build out the rest of the course.](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0&startTime=2.8) [We downloaded the source and got the project set up,](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0&startTime=8.8) [we showed an alternative to download it from GitHub and](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0&startTime=12.484210526315788) [walked through setup using that approach.](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0&startTime=16.3) [We downloaded MySQL and MySQL Workbench and finally we created the](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0&startTime=19.3) [remaining configuration by adding dependencies,](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0&startTime=25.072727272727274) [adding our jdbcTemplate configuration and injecting](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0&startTime=28.254545454545458) [the template that we created.](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0&startTime=31.43157894736842) [The next step is going to be creating records in the database, and this will be the start of the CRUD functions for our application.](https://app.pluralsight.com/course-player?clipId=410ca2cf-2795-47a8-a396-a9dec7da7bf0&startTime=33.01052631578948)

## [Creating Records in the Database](https://app.pluralsight.com/course-player?clipId=35c0ea67-ca6e-4834-b7b4-765285117d86)

### [Introduction](https://app.pluralsight.com/course-player?clipId=35c0ea67-ca6e-4834-b7b4-765285117d86)

[In this module we are going to walk through creating records in the database.](https://app.pluralsight.com/course-player?clipId=35c0ea67-ca6e-4834-b7b4-765285117d86&startTime=0) [We are going to create a unit test,](https://app.pluralsight.com/course-player?clipId=35c0ea67-ca6e-4834-b7b4-765285117d86&startTime=6) [modify our controller service and repository tier, and then use the JDBC template API to insert records into the database.](https://app.pluralsight.com/course-player?clipId=35c0ea67-ca6e-4834-b7b4-765285117d86&startTime=9.368421052631575)

### [CRUD](https://app.pluralsight.com/course-player?clipId=c21b9a6d-3edf-4407-8661-6bfbbb665104)

[In this module we are focusing on the C of the CRUD functions or the Create.](https://app.pluralsight.com/course-player?clipId=c21b9a6d-3edf-4407-8661-6bfbbb665104&startTime=0.934) [There are a couple of ways in which we can create records using Spring JDBC.](https://app.pluralsight.com/course-player?clipId=c21b9a6d-3edf-4407-8661-6bfbbb665104&startTime=7.934) [We can execute an Insert statement using the Update method of the JdbcTemplate.](https://app.pluralsight.com/course-player?clipId=c21b9a6d-3edf-4407-8661-6bfbbb665104&startTime=12.934) [The JdbcTemplate looks just like a database insert that you would](https://app.pluralsight.com/course-player?clipId=c21b9a6d-3edf-4407-8661-6bfbbb665104&startTime=18.934) [execute from a SQL Workbench or another SQL editor,](https://app.pluralsight.com/course-player?clipId=c21b9a6d-3edf-4407-8661-6bfbbb665104&startTime=22.600666666666655) [or another option is the SimpleJdbcInsert.](https://app.pluralsight.com/course-player?clipId=c21b9a6d-3edf-4407-8661-6bfbbb665104&startTime=26.110470588235298) [Using the simple insert we don't actually write SQL, but rather setup the call.](https://app.pluralsight.com/course-player?clipId=c21b9a6d-3edf-4407-8661-6bfbbb665104&startTime=29.63988235294119) [It is a little more code, but it acts a lot more like an ORM. We will look at both approaches and you can see which one you prefer.](https://app.pluralsight.com/course-player?clipId=c21b9a6d-3edf-4407-8661-6bfbbb665104&startTime=36.684000000000005)

### [Demo Outline](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f)

[This demo is going to be broken into four parts.](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=1.868) [We're going to start off by creating the database table in our MySQL database.](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=4.8679999999999986) [Then we're going to create a unit test and a method that](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=9.140727272727274) [the test will call in our controller.](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=12.958909090909094) [Next we're going to create the call in our service tier and finally](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=15.268) [we're going to create the call in our repository where we will interact](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=20.467999999999986) [with the database tier using Spring JDBC.](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=25.368000000000002) [I did the demo this way on purpose so that you could refer back to these](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=27.868) [examples independently of one another in the future.](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=32.43942857142856) [Specifically you can just view the video where we create the](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=34.81536842105264) [database table or the actual repository call by itself. Let's look at creating our table now.](https://app.pluralsight.com/course-player?clipId=a5bbfb1c-788f-4723-aa27-e927425b210f&startTime=38.289052631578976)

### [Create Database Table](https://app.pluralsight.com/course-player?clipId=3fc77e37-bd5e-4d82-9ae7-05fd0dd35c56)

[To create the database table,](https://app.pluralsight.com/course-player?clipId=3fc77e37-bd5e-4d82-9ae7-05fd0dd35c56&startTime=1.74) [we are going to use the MySQL Workbench Table Editor.](https://app.pluralsight.com/course-player?clipId=3fc77e37-bd5e-4d82-9ae7-05fd0dd35c56&startTime=3.62) [All the editor really does, though,](https://app.pluralsight.com/course-player?clipId=3fc77e37-bd5e-4d82-9ae7-05fd0dd35c56&startTime=7.54) [is help us through a wizard approach create the](https://app.pluralsight.com/course-player?clipId=3fc77e37-bd5e-4d82-9ae7-05fd0dd35c56&startTime=9.36) [script similar to what I have here. Let's open up my SQL Workbench now and begin creating our database table.](https://app.pluralsight.com/course-player?clipId=3fc77e37-bd5e-4d82-9ae7-05fd0dd35c56&startTime=12.19)

### [Create Database Table Demo](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90)

[To create our database table, let's go ahead and open up MySQL Workbench.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=1.069) [I wanted to do it from a fresh start-up,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=6.069) [so in case you'd forgot how to navigate to that workbench.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=8.769) [I'm going to go down to my Start button and click MySQL Workbench.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=12.069) [And it will pull up this workspace desktop and inside of here you'll have one](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=17.069) [called local instance that doesn't really look like a button,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=22.90233333333334) [but you can click on it and it will actually launch you into that workbench.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=25.978090909090913) [Once we're inside of the workbench,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=30.069) [just for good measure and in case you hadn't set yours before,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=31.869000000000003) [right click on your ride\_tracker schema and say set as default,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=35.46899999999997) [and you'll know it's default if the name of that schema is bolded,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=39.219000000000015) [such as mine under ride\_tracker.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=43.95788888888889) [From here we can right click on the Table item](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=46.1801111111111) [underneath ride\_tracker and say Create Table.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=50.62455555555553) [And this is going to bring up this editor for us.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=52.944) [First let's start by naming our Table Name ride.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=57.069) [And then underneath here we can start adding columns.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=61.569) [I'm going to add three columns.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=66.069) [The first one is id,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=68.93856521739131) [and we'll go ahead and say that this is a primary](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=71.32986956521741) [key and it's auto incrementing,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=76.59073913043481) [so they don't do a great job of telling you what these](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=78.12163157894734) [checkboxes are without hovering over them.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=81.27952631578937) [So we're going to check the primary key column,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=83.11899999999999) [the not null column, and the auto incrementing field or AI column.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=86.26899999999993) [The next column we want to add is the name of our ride.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=90.7160588235294) [So we'll call this name and it's defaulting to a VARCHAR,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=96.069) [so we can go ahead and edit the size of that and say that](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=99.06899999999993) [we want to do a VARCHAR to a size 100 and we'll also](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=103.29627272727272) [select that as being not null.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=108.6144545454545) [Then we're going to add a third column and we'll call this one duration,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=111.069) [it's just the duration of what our ride is,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=114.569) [and we'll make this one an INT.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=117.3547142857143) [We can use the dropdown, choose INT,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=120.35471428571431) [and then we'll also set that one as not null.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=123.35471428571432) [Now that we have everything defined in here,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=127.67769565217394) [we can go ahead and click the Apply button and it](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=131.15595652173917) [will create this schema for us,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=135.5907391304348) [and really all this does is take that schema and execute it behind the scenes,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=137.15595652173923) [but we can go ahead and click the Apply button right here.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=141.069) [You'll see a successful message saying that that script was](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=146.1216315789475) [ran and it was applied to our database.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=150.01636842105265) [We can go ahead and click Finish now.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=152.5426842105264) [Now we can close that Table editor and you'll notice](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=155.069) [underneath here that we have a ride table and you can go](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=158.40233333333342) [inspect the columns if you want to.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=162.37334782608696) [You can also go ahead and do a select statement](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=164.50378260869573) [here using a select \* if you want,](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=167.5472608695654) [but suffice it to say your table was now created inside your MySQL instance.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=170.65723529411764) [Now let's go ahead and start writing the code to do our unit test and call our controller.](https://app.pluralsight.com/course-player?clipId=3f3e25a1-9c32-4f65-97e2-92a4f2299e90&startTime=178.069)

### [Create Test](https://app.pluralsight.com/course-player?clipId=a7bcef25-6a52-4b58-9337-55b317c868ff)

[Using the RestTemplate in Spring, it is quite easy for us to build a](https://app.pluralsight.com/course-player?clipId=a7bcef25-6a52-4b58-9337-55b317c868ff&startTime=1.64) [test that calls our RESTful service in our controller.](https://app.pluralsight.com/course-player?clipId=a7bcef25-6a52-4b58-9337-55b317c868ff&startTime=6.43) [This test on this slide will create a ride object and then call our controller,](https://app.pluralsight.com/course-player?clipId=a7bcef25-6a52-4b58-9337-55b317c868ff&startTime=10.44) [passing the ride in. The template automatically handles](https://app.pluralsight.com/course-player?clipId=a7bcef25-6a52-4b58-9337-55b317c868ff&startTime=16.12) [the object by issuing a put call.](https://app.pluralsight.com/course-player?clipId=a7bcef25-6a52-4b58-9337-55b317c868ff&startTime=20.54) [Let's open up our IDE and create both the test and the endpoint for our test to call.](https://app.pluralsight.com/course-player?clipId=a7bcef25-6a52-4b58-9337-55b317c868ff&startTime=23.34)

### [Create Test and Controller Demo](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f)

[To create our test, I want to go ahead and open up the](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=1.84) [unit test that we have underneath our src/test/java](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=4.94) [directory called RestControllerTest.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=8.48) [Currently we have our GetRides test that we had in here from before.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=12.34) [I'm going to go ahead and just add another one inside of here.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=17.32) [So, I'm going to start off by just grabbing this code and](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=21.44) [copying it in here and paste it for us to have a starting](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=25.61) [point for our testCreateRide method.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=29.98) [I want to walk you through the RestTemplate for doing a put to here so you](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=35.14) [can see the object that we're passing in so you more conceptually](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=40.12) [understand the whole test that we're trying to write.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=44.24) [So the first thing I'm going to do is, just like our other one,](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=47.24) [create an instance of the RestTemplate here.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=50.57) [The difference this time is that we're going to create an instance of a ride.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=53.05) [So we're going to say Ride ride = new Ride, and we're just going to use the](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=56.47) [default no arguments constructor, and then we're going to go ahead and say](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=63.66) [ride.setName, and we'll call this the Bobsled Trail Ride.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=68.55) [And then we also want to set a duration,](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=79.14) [so we'll say ride.setDuration, and we'll say that it took us 35](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=80.95) [minutes to do. So I just put a 35 in there.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=86.26) [Now, we can call the RestTemplate's put method.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=90.24) [So we'll say restTemplate and we just want to put, and we're](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=93.87) [going to enter in our URL. So we'll put in a string here and say](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=100.43) [http://localhost:8080/ride\_tracker.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=105.65) [Now if you named your project something different,](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=115.97) [you'll want to change this context, of course, and](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=118.9) [then we'll call the ride controller.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=121.77) [Then the next thing we're going to do is pass in our ride object](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=125.04) [and the put will automatically call that for us.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=129.77) [Now we currently don't have this endpoint in there, we need to](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=133.44) [go ahead and modify our controller to do so.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=136.69) [So I'm going to go ahead and open up our RideController.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=140.64) [And right now it's quite simple,](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=145.04) [we just go ahead and have our get for all of the rides in there.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=147) [I'm going to paste in this code that I have written previously](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=153.44) [just so you don't need to watch me type all of this in, and](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=157.21) [we'll walk through what it does.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=160.67) [So, I have a request mapping for /ride and a method type of PUT, and we](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=162.94) [go ahead and we call this and it takes a request body in, which is the](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=169.97) [object that we passed in from our test.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=174.09) [Currently this just returns null, but it's going to](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=178.24) [eventually call our service and return an object.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=181.74) [So let's save this. To test this, we can go ahead and start our server back up,](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=185.24) [make sure that there's no deployment errors there, everything looks fine, and](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=191.76) [we can go into our test that we've now created and right‑click on](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=197.43) [testCreateRide and say Run As, JUnit Test, and we should see that the server](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=201.81) [then gets the call for deploying it and we have our unit test that also gets](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=209.17) [ran. And we can check that by looking at the tab for the unit test and see that](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=213.42) [it came back green.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=217.38) [Let's go ahead and now write the code to talk to our service tier that will eventually call our repository now.](https://app.pluralsight.com/course-player?clipId=d21ebb06-4b67-4c5f-bb78-1a8fd3b4862f&startTime=219.44)

### [Modify Service and Repository Demo](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448)

[To flesh out the rest of our code through the various tiers, I'm going](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=2.14) [to start with first going to our RideController.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=6.38) [Inside of our RideController we're currently returning null.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=9.84) [I want to go ahead and say rideService.createRide and pass in our ride object.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=13.74) [Now you're going to get a red squiggly line because](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=23.86) [this method currently does not exist.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=26.09) [So let's go ahead and open up our RideService interface.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=28.74) [You may want to stop your server if it's going to continue to try and redeploy](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=33.24) [that context. I've stopped mine. I'm going to go into my interface now and say](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=37.18) [Ride createRide Ride, and pass in that instance.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=43.62) [Now I want to mention again, because I get asked this quite](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=51.14) [frequently, and this is why I walked through these steps, do I](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=54.03) [have to have this service tier?](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=57.27) [The answer is no, you do not have to.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=59.78) [We could go right from our RideController and go right to our ride repository.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=62.34) [We could honestly even pass in our JdbcTemplate to our controller.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=69.94) [Do I recommend that?](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=74.2) [No. You want those multiple tiers inside of your application so that we have](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=75.97) [some flexibility, as well as coding to an interface as you'll see in a more](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=81.46) [complex example we're going to do later in this course.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=86.43) [Let's go into our RideService.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=90.34) [We have our interface now created for Ride createRide, and you'll](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=93.44) [see you have a red x under your RideServiceImpl.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=97.9) [We're going to do the same thing and go into our RideServiceImpl and](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=101.04) [add an @Override and create this method. We'll just say public Ride](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=105.76) [createRide and pass in that ride instance.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=113.26) [And we're going to do this exact same thing for now.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=118.54) [And you're saying, why would I want to just do the same thing over and over?](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=120.96) [Because we're going to expand this example later. We'll say return](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=124.68) [rideRepository.createRide, and it's going to error out on us because](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=129.74) [we don't have that method currently created.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=137.13) [We can save this and then go ahead and open up our RideRepository and create the](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=139.84) [same method signature there that we did in our RideService.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=145.43) [And when we save this, it will transfer that error to our RideRepositoryImpl.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=150.74) [Now inside of here we're going to do the same thing, but this is](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=156.34) [where we're going to finally go through and begin editing our](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=161.07) [database where we're going to incorporate the JdbcTemplate that you](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=165.33) [can see we've created right above.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=168.48) [So let's go ahead and say @Override public Ride createRide,](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=170.15) [pass in that ride instance again.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=178.34) [And in here, for now we're just going to return null.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=181.64) [We'll go through all the JdbcTemplate features here in just a second.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=185.16) [But we should be able to go back and start our application server](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=189.74) [up and now go to our unit test and right‑click Run As, Unit Test](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=193.71) [and start this, look at our test results, and you'll see that we](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=204.04) [have a green bar still.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=208.32) [So we went ahead and created the test that called our endpoint in](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=210.64) [our controller of the createRide that's going to go ahead and](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=217.12) [interact with our service tier through the interface and then](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=223.37) [through the implementation,](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=226.19) [which ultimately ends up calling the RideRepository for](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=227.46) [this createRide method that we're now going to go ahead and utilize the JdbcTemplate in.](https://app.pluralsight.com/course-player?clipId=0091ca11-bd1a-4122-ac2d-b98ca5be4448&startTime=231.8)

### [JdbcTemplate Insert Demo](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5)

[We are now to a point where we can modify our](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=1.14) [RideRepository to utilize Spring JdbcTemplate.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=4.71) [Let's start off by giving ourselves a little whitespace, and I'm](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=9.04) [going to leave that return null down below because we're going to](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=12.31) [change that out later with a select statement.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=15.67) [I'm always caught off guard a little bit by Spring JdbcTemplate](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=19.54) [in that we use the update method to insert,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=22.84) [update, and delete records.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=28.49) [The only thing we don't utilize it for is reading records back.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=30.71) [So we're going to go ahead and create some basic SQL inside of here](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=36.19) [and say insert into ride, and we're going to pass in name and](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=40.45) [duration, and then we'll say values ?,?, and this uses the standard](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=47.29) [prepared statement approach of substituting in values into those](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=61.54) [question mark fields.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=66.03) [And we'll pass in var args here by saying , ride.getName and ,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=68.24) [ride.getDuration, and now we've actually created everything that we](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=77.95) [need to to insert a record into our database.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=84.97) [If our SQL is all correct and our object gets populated correctly,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=89.29) [everything is here to insert that record into our database.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=93.52) [Let's go ahead and test that now. I'm going to save this code, I'm going to](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=96.95) [exit full screen. Make sure your server is started up.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=101.83) [Once that's up and running,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=108.94) [I'm going to go ahead and go to my RestControllerTest and we'll](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=110.46) [right‑click on that createRide method, Run as, Unit Test.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=116.03) [Once this completes, we come back with our green bar, we should](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=121.34) [have a record into our database. Now we can test that by going to](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=127.97) [our MySQL Workbench and saying select \* from Ride and execute that,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=132.66) [and we should see that we have the Bobsled Trail Ride in there with](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=142.36) [a duration of 35.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=147.04) [If you want to test that again,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=149.34) [we can go back to our IDE, go into that unit test and](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=151.06) [change this name to something else.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=154.66) [So we'll say the Willow Trail Ride, and it was a duration of 30,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=156.68) [save that. We can right‑click on that test,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=164.14) [Run As, Unit Test.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=168.44) [Once that's finished running, we can go back to our database,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=170.94) [execute that statement again, and you will see that Willow](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=174.83) [Trail Ride with a duration of 30 is in there.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=178.48) [Now if your IDs don't look exactly the same as mine, that's because it's an](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=182.14) [auto‑incrementing field and if you've ran it a few times and deleted a few](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=185.98) [records, that auto‑incrementing field will continue to increase regardless of](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=189.97) [whether you've deleted those rows out.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=194.4) [So, on mine you'll see that the Willow Trail Ride has an ID of 4, and](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=196.04) [that's just because I ran this a couple of times testing it.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=200.95) [So, now you have an end‑to‑end example of our code that will call our database.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=204.44) [Really from beginning to end we have our unit test here that calls the](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=212.6) [RestTemplate and does a put with an object of the Willow Trail Ride with a](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=217.8) [duration of 30 that goes through our controller and our service tier and our](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=222.42) [repository until it finally gets to our createRide method where we then pass in](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=226.47) [our values into this prepared statement using the Spring JdbcTemplate of insert](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=235.04) [into ride, name, duration, these two values, and this is just using var arg](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=241.99) [syntax to say ride.getName and ride.getDuration, and it inserts those in there.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=246.92) [Very slick, very clean,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=253.94) [very succinct code. I am going to show you how to use the simple JdbcTemplate,](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=256.2) [but I will tell you up front that this is the approach I like to use.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=263.04) [This is the smallest amount of code and it feels like you're just in the](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=268.46) [database and you can get done exactly what you need to.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=272.45) [The other approach does feel a little bit more like an](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=275.7) [ORM and maybe that's appealing to you, but this is my default and my first choice when I'm doing this type of work.](https://app.pluralsight.com/course-player?clipId=1ba10688-55d9-49b7-bfcf-47757d4697a5&startTime=278.59)

### [SimpleJdbcInsert Demo](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c)

[To show you the SimpleJdbcInsert,](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=0.84) [I am actually going to comment out the tdbcTemplate example](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=3.94) [that we had done earlier because I'm going to revert our code](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=8.06) [back to that after we're done.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=11.6) [If you are using GitHub,](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=13.84) [maybe you want to branch this example and do it in a separate branch and you](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=15.77) [can save it and look at it later or revert back to it,](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=20.81) [whatever you choose, just for this example I'm going to comment it out.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=24.35) [Now there are a few reasons that I want to show you the SimpleJdbcInsert.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=28.69) [It's an alternative, and it acts like an ORM more than a straight database call.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=34.94) [So we're going to start off by creating a new instance of the new](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=42.56) [SimpleJdbcInsert, and this takes a jdbcTemplate in here.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=46.83) [So it's built upon the JdbcTemplate.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=55.11) [Now there's a lot more set up with this, but if you're](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=58.24) [going to use this in multiple places,](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=61.17) [you can create one SimpleJdbcInsert and set some of](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=63.51) [these values up per repository.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=68.23) [You don't have to do this in every method.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=70.53) [I'm going to go ahead and now create our list of columns.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=74.04) [So you have to tell this what to work with as far](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=78.24) [as the columns in your database.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=82.75) [So it's a little more verbose upfront with some of the configuration.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=85.74) [So we'll say columns and then we're going to make a new ArrayList, and then we](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=90.24) [want to go ahead and add what our column names are in here.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=100.21) [So we'll say columns.add, and we're just going to pass a string](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=103.45) [in here of name, and then we want to do columns.add, pass](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=109.62) [another string in here for duration.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=118.08) [So these are the columns in our database. Just like we had](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=120.98) [created in our simple select statement up above, we're going to](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=125.59) [now map this object to that database.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=128.97) [The next thing that we need to do is we need to set our table name.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=132.74) [So we'll say insert.setTableName, and our table name](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=137.15) [is ride, and insert.setColumns.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=145.28) [So we'll set our column names in there and we just called our columns.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=153.24) [Now, we're finally down to where we can start putting the data in here.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=159.14) [We want to create a map, and this is going to go through a simple map](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=165.14) [instance with a string and an object for the key and value pair. We'll](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=170.72) [call this data = new HashMap, and inside of here we can start putting](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=179.17) [our data in there. So we'll say data.put, and for the key it's going to](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=189.64) [be our column name.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=195.27) [So for the name we're going to put in the value of ride.getName, and for the](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=196.47) [duration we'll say data.put and we'll give it a name of duration and the](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=208.97) [parameter we're going to pass in is ride.getDuration.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=218.94) [And we're almost ready to run this.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=225.54) [We've got to do one more thing.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=227.07) [One of the benefits of using the SimpleJdbcInsert is that we can return the](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=230.94) [key that was created automatically from the database.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=236.88) [So if you'll remember when we created that table we had an id column and it was](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=240.97) [an autoincrementing field. In one call we can get back that ID. So we can say](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=244.78) [insert.setGeneratedKeyName and we can pass in that it was the column name id.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=250.43) [Now we're ready to say Number key = insert.executeAndReturnKey and pass in that](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=261.95) [data that we had just created. Just to show that the key is getting a return,](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=276.04) [I'm going to go ahead and throw a System.out.println for a test value here](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=281.91) [until we replace that return null and pass in the key value to it and see what](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=289.06) [happens. Now if your server is still running, it should automatically redeploy,](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=295.22) [but if it doesn't, you may want to restart your server. Once that's up and](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=299.67) [running, we can go ahead and open up our unit test and go back to our](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=306.73) [CreateRide unit test, and I'm going to change this to another trail ride name](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=312.95) [that I like called Round Valley, one of my favorite rides here locally, and](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=318.41) [change it to 38 minutes and save that just so we have another data point](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=323.41) [getting added to our database.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=329.79) [Right‑click and say Run As, JUnit Test.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=331.61) [Once this completes, we should see that our](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=335.64) [testCreateRide completed successfully.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=340.77) [If we switch back to our console, you'll see that ID number 5 was](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=344.23) [printed out on that System.out.println, and we can verify that by going](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=348.52) [to our workbench and running that execute statement again for the select](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=352.44) [\*, and ID number 5 was in fact created with the Round Valley Ride with a](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=357.08) [duration of 38 minutes.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=362.53) [So we've looked at that alternative way of using that](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=364.54) [SimpleJdbcInsert, which isn't bad,](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=368.2) [it's just not my favorite because of the amount of prep work that](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=372.58) [you have to do to get it ready to use. We have to define the](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=377.41) [SimpleJdbcInsert, we have to list the columns,](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=381.4) [set the table, we have to bind all of our data to a hash map and pass](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=384.23) [it in, but I do like the option of getting that key back in one call](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=389.62) [using the executeAndReturnKey approach.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=394.67) [So there's a few tradeoffs, and as I mentioned also you can create one](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=397.62) [SimpleJdbcInsert and utilize that throughout your repository.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=402.29) [So maybe you only do this in the setup of the object one time](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=407.86) [and use it throughout all of your methods.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=413.08) [I am going to uncomment our SimpleJdbcTemplate update from before and](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=415.74) [comment out the code that we just did using the SimpleJdbcInsert so](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=422.07) [that my method is just using the JdbcTemplate and not the](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=428.79) [SimpleJdbcInsert because the other methods we're going to use just use the JdbcTemplate approach.](https://app.pluralsight.com/course-player?clipId=20e3df0b-e1e2-4387-b8ea-16b281f53f0c&startTime=434)

### [Summary](https://app.pluralsight.com/course-player?clipId=df3b41e4-9082-4f62-a38d-5f8945e27580)

[In this module,](https://app.pluralsight.com/course-player?clipId=df3b41e4-9082-4f62-a38d-5f8945e27580&startTime=2.34) [we created a unit test and modified our controller, we](https://app.pluralsight.com/course-player?clipId=df3b41e4-9082-4f62-a38d-5f8945e27580&startTime=3.5) [stubbed out our service and repository tier,](https://app.pluralsight.com/course-player?clipId=df3b41e4-9082-4f62-a38d-5f8945e27580&startTime=8.54) [and then finally inserted a record using the JdbcTemplate](https://app.pluralsight.com/course-player?clipId=df3b41e4-9082-4f62-a38d-5f8945e27580&startTime=12.27) [and then again using the SimpleJdbcInsert.](https://app.pluralsight.com/course-player?clipId=df3b41e4-9082-4f62-a38d-5f8945e27580&startTime=16.84) [The next step is going to be reading records from the](https://app.pluralsight.com/course-player?clipId=df3b41e4-9082-4f62-a38d-5f8945e27580&startTime=21.44) [database so that we aren't returning that null from our create method in the repository tier.](https://app.pluralsight.com/course-player?clipId=df3b41e4-9082-4f62-a38d-5f8945e27580&startTime=23.95)

## [Reading Records from the Database](https://app.pluralsight.com/course-player?clipId=a33cf06a-5311-4a51-aa77-bd0ac040e214)

### [Introduction](https://app.pluralsight.com/course-player?clipId=a33cf06a-5311-4a51-aa77-bd0ac040e214)

[In this module we're going to walk through reading records from the database.](https://app.pluralsight.com/course-player?clipId=a33cf06a-5311-4a51-aa77-bd0ac040e214&startTime=0) [In previous examples we had a Create method that](https://app.pluralsight.com/course-player?clipId=a33cf06a-5311-4a51-aa77-bd0ac040e214&startTime=6) [did an insert into the database.](https://app.pluralsight.com/course-player?clipId=a33cf06a-5311-4a51-aa77-bd0ac040e214&startTime=9) [We're now going to make that return an object using the Read methods in Spring JDBC.](https://app.pluralsight.com/course-player?clipId=a33cf06a-5311-4a51-aa77-bd0ac040e214&startTime=11)

### [CRUD](https://app.pluralsight.com/course-player?clipId=da7c93bc-7c31-40b3-a7c1-38cab851f4d1)

[We are focusing on the R of the CRUD functions, the Read.](https://app.pluralsight.com/course-player?clipId=da7c93bc-7c31-40b3-a7c1-38cab851f4d1&startTime=1.067) [There are a couple of ways in which we can read records using Spring JDBC.](https://app.pluralsight.com/course-player?clipId=da7c93bc-7c31-40b3-a7c1-38cab851f4d1&startTime=4.885181818181819) [We can execute a read statement using the JdbcTemplate](https://app.pluralsight.com/course-player?clipId=da7c93bc-7c31-40b3-a7c1-38cab851f4d1&startTime=10.172263157894735) [and one of the mapping techniques, such as the primarily used RowMapper.](https://app.pluralsight.com/course-player?clipId=da7c93bc-7c31-40b3-a7c1-38cab851f4d1&startTime=13.961736842105257) [Similar to the Create methods that used a SimpleJdbcInsert,](https://app.pluralsight.com/course-player?clipId=da7c93bc-7c31-40b3-a7c1-38cab851f4d1&startTime=20.0045) [we will also look at an alternative option with the SimpleJdbcCall.](https://app.pluralsight.com/course-player?clipId=da7c93bc-7c31-40b3-a7c1-38cab851f4d1&startTime=25.067) [Using the SimpleJdbcCall we will still need to use a](https://app.pluralsight.com/course-player?clipId=da7c93bc-7c31-40b3-a7c1-38cab851f4d1&startTime=30.067) [RowMapper to map the result sets to objects. Let's look at both approaches.](https://app.pluralsight.com/course-player?clipId=da7c93bc-7c31-40b3-a7c1-38cab851f4d1&startTime=34.51144444444443)

### [Demo Outline](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0)

[This demo is going to be broken into multiple parts.](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=2.401) [We are going to start off with the easier read call to remove the](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=5.258142857142856) [hard coded getRides call from our application.](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=9.506263157894736) [Then we're going to work on the read functions of our CreateRecord](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=12.085210526315787) [call by modifying the test that we have for the Create to look for an](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=16.258142857142857) [object rather than just a successful call.](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=20.543857142857128) [We will also use a RowMapper to map our return statements from the database.](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=23.17877777777777) [Then we will create a standalone Read method that we can utilize in our Create](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=29.401) [call to return the newly created object from our database.](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=34.40100000000001) [To select all records from the database we need to use a query](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=40.401) [method to issue the select statement and then we use a RowMapper](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=44.506263157894765) [to map the object to the result set.](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=48.54385714285713) [It might not be clear to you at first glance,](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=51.401) [but you can see in this example by these two points that we are](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=54.25814285714285) [using an anonymous inner class to do this.](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=58.34836842105264) [It's not uncommon for you to just implement an anonymous](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=60.87468421052634) [inner class to map these result sets. Let's make these changes to our code now.](https://app.pluralsight.com/course-player?clipId=480f027f-ea99-40ed-85f9-b34d36059fd0&startTime=65.40100000000001)

### [Read All Demo](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a)

[As you may recall from our first demo, in our RestController we had a](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=2.94) [method to retrieve all of the rides from our system.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=8.56) [So we had this testGetRides that would eventually get a](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=13.44) [list of rides returned from that response.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=17.78) [It went end to end in our application clear to our](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=21.94) [RideRepositoryImpl that if you scroll to the bottom of this,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=25.52) [you'll see that getRides method that has our hard coded array list in there.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=30.1) [Before we modify this, let's open up our Ride object in our model and add one](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=37.04) [member variable and a getter and setter for it in here.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=44.52) [Let's add a private Integer id in here, and if we scroll down,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=48.64) [give ourselves some whitespace, we can right‑click and say Source,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=56.04) [Generate Getters and Setters, and create the getter](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=60.76) [and setter for that id field.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=64.62) [We can save this.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=67.24) [Now let's go back to our RideRepositoryImpl and we're going to](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=69.04) [eliminate that hard coded information in here.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=73.49) [And I'm just going to eliminate everything but the return statement, and](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=76.74) [we'll say List an import and java util list of type Ride, and let's name](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=85.59) [this rides that will match our return statement that we left there, and](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=94.29) [we can say jdbcTemplate.query.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=99.37) [Now we want to add a basic query here where we can just put some standard](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=105.94) [SQL where we can say select \* from ride. And that will actually suffice](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=112.78) [for what we want to do with this select all.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=120.33) [Now, we're going to bind that using that anonymous inner class](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=123.64) [that we talked about by saying new RowMapper, Ctrl+spacebar to](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=128.31) [import that, and give it a type of Ride.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=134.61) [And if you haven't used the syntax of anonymous inner class before,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=139.64) [it looks a little confusing at first, but it's not bad.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=143.52) [Start with open/close parenthesis and then open/close](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=146.74) [curly brace and close off that line.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=150.76) [Now, you will get an error at this point because it's telling](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=154.74) [you that we have to add unimplemented methods,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=157.2) [so I'm going to go in between those curly braces and just give myself some](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=159.81) [whitespace to work with. So I just took that curly brace,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=163.97) [closing parenthesis,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=167.44) [semicolon down to a new line, and then I can hit Ctrl+spacebar](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=168.49) [and it will ask for the mapRow declaration. So I can go ahead](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=172.95) [and select that one, and you'll notice we've gotten rid of all](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=178.97) [of our errors at this point.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=181.93) [If you are still seeing errors,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=183.27) [you've possibly missed a step. From here, I can now implement this mapRow](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=185) [method, and this is just a template method pattern.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=191.86) [If you're not familiar with this approach,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=194.88) [I encourage you to go out and look at what a template method pattern is in one](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=197.04) [of the design patterns courses out here on Pluralsight. But suffice it to say,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=202.34) [we can go ahead and now create our ride object,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=208.08) [say Ride ride = new Ride,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=212.7) [and we can begin filling this Ride object up with the result set that was](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=218.14) [returned from our query. So we can say ride.setId and use an rs from the](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=223.56) [result set .getInt and we can just give it a column name,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=232.15) [which this one is going to be id. We'll do the same thing for the other](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=238.9) [member variables here. We'll say ride.setName, and we want to use an](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=244.05) [rs.getString for the name, and this column is named name, and then we'll](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=251.12) [do a ride.setDuration, and we'll do an rs.getInt again on this and pass](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=259.03) [in duration. And then make sure you don't miss this last step of changing](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=269.82) [that return null,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=276.57) [which it defaults to to return ride. This is all we had to do](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=277.63) [to change this to now use our database.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=284.13) [A couple things are going on here.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=287.58) [Since this is a template method pattern,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=289.52) [all we have to define is our mapRow method,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=291.8) [which takes these items from our result set and enables us to store](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=296.49) [them in a Ride object. Behind the scenes, it adds this to an array list](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=303.04) [and returns that out of our query to our list of rides, and then we can](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=308.76) [return our rides array list at the bottom of this method. Let's save](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=314.55) [this and get out of full screen and start our server back up if yours](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=322.02) [is stopped.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=326.97) [Once this starts up,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=329.64) [we can go ahead and go back to our RestControllerTest and go to our](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=331.3) [testGetRides, right‑click, and say Run As, JUnit Test, and this should return](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=337.75) [all of our lists, so our test was green, and we can see all of our rides](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=348.21) [returned from that list of our Bobsled Trail Ride,](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=354.73) [our Willow Trail Ride, and our Round Valley Trail Ride.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=358.29) [Those were the three rides that we have stored in our database.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=360.53) [So again, really simple.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=363.94) [All we had to do was go through and we added that id to our Ride](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=366.07) [object, which was just a basic integer ID, and that's so we could](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=370.74) [return it to our UI, and then changed our getRides from being hard](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=375.99) [coded to use that query and RowMapper to map that object and return that list of rights.](https://app.pluralsight.com/course-player?clipId=2178d8d9-ddd9-4a40-a411-f0122d406b4a&startTime=381.21)

### [Modify Test](https://app.pluralsight.com/course-player?clipId=7070adc8-4bdd-44c7-8d2a-3755fda80127)

[In our CreateRide test and controller,](https://app.pluralsight.com/course-player?clipId=7070adc8-4bdd-44c7-8d2a-3755fda80127&startTime=1.74) [we used a put method since in the rest definitions it is acceptable for both](https://app.pluralsight.com/course-player?clipId=7070adc8-4bdd-44c7-8d2a-3755fda80127&startTime=5.96) [creating and updating records. In the RestTemplate API though,](https://app.pluralsight.com/course-player?clipId=7070adc8-4bdd-44c7-8d2a-3755fda80127&startTime=11.48) [we must use a post if we want to return an object. Let's modify our](https://app.pluralsight.com/course-player?clipId=7070adc8-4bdd-44c7-8d2a-3755fda80127&startTime=16.42) [test and controller to use and accept a post, and then we will be able to return our newly created Ride object.](https://app.pluralsight.com/course-player?clipId=7070adc8-4bdd-44c7-8d2a-3755fda80127&startTime=22.06)

### [Modify Test Demo](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b)

[I'm going to stop my server just so it doesn't continue to auto deploy my](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=2.54) [code while we make our changes to our test and controller.](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=6.7) [Then I'm going to open up our RestController and scroll down to our](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=11.24) [TestCreate method where you can see we have this line of](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=15.44) [restTemplate.put for our object to this URL.](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=19.27) [I'm going to change this to say ride = restTemplate.postForObject.](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=25.34) [And the syntax for this method signature is a little bit](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=35.14) [different than the other in that we say that we want to post for](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=38.68) [a specific object and then we pass the type of that object in,](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=42.65) [so I have to say Ride.class.](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=46.22) [Now we have everything we need in here to accept an object and return that](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=49.84) [back rather than get a null response back for this ride.](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=54.79) [Now we can go to our controller, and inside of our controller](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=59.94) [change our request method type from a PUT to a POST.](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=67.78) [Now everything is in place for us to now go ahead and modify our](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=76.04) [CreateRide. Let's look at what we're going to do to change that to return that object for this create method.](https://app.pluralsight.com/course-player?clipId=c5ecd304-49ac-43ef-a1f6-b15f1fe9f12b&startTime=81.01)

### [RowMapper](https://app.pluralsight.com/course-player?clipId=100170f7-1469-4c44-9808-c464202a9b05)

[In our select all,](https://app.pluralsight.com/course-player?clipId=100170f7-1469-4c44-9808-c464202a9b05&startTime=2.24) [we used an anonymous inner class for the RowMapper.](https://app.pluralsight.com/course-player?clipId=100170f7-1469-4c44-9808-c464202a9b05&startTime=3.58) [Although this is a common use,](https://app.pluralsight.com/course-player?clipId=100170f7-1469-4c44-9808-c464202a9b05&startTime=7.44) [you oftentimes will have the same RowMapper in a repository or](https://app.pluralsight.com/course-player?clipId=100170f7-1469-4c44-9808-c464202a9b05&startTime=9.27) [across repositories that you will want to utilize.](https://app.pluralsight.com/course-player?clipId=100170f7-1469-4c44-9808-c464202a9b05&startTime=12.95) [Let's refactor our select all to use an external RowMapper because we are going to also use it in our RowMapper for our getSingleRide.](https://app.pluralsight.com/course-player?clipId=100170f7-1469-4c44-9808-c464202a9b05&startTime=16.54)

### [Externalize RowMapper Demo](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b)

[To create our RowMapper I'm going to first exit full screen](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=0.701) [and make sure that my server has stopped.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=4.753631578947367) [Then I'm going to right click on our com.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=7.701) [Pluralsight.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=12.501) [repository and say New Package.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=13.034333333333333) [These don't have to be in their own package,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=15.701) [but to reduce clutter I like to put a util package underneath my repository,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=18.272428571428566) [so that'll be com.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=23.085615384615387) [Pluralsight.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=25.85484615384616) [repository.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=26.547153846153854) [util and we'll click Finish.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=27.239461538461548) [Now from here we can go ahead and say New Class and we can put in a](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=30.701) [name of RideRowMapper and we can add an interface.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=38.860999999999954) [And we want to use the RowMapper interface and make](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=43.112764705882356) [sure you choose the one from org.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=47.230411764705906) [springframework.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=50.14544444444444) [jdbc.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=50.589888888888886) [core.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=51.03433333333333) [You'll oftentimes have two show up, as you can see here on my screen,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=51.47877777777777) [one for swing and one for jdbc.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=57.701) [core.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=61.43433333333332) [We want to use the jdbc.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=61.96766666666665) [core.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=65.16766666666665) [Let's click OK and click Finish and now it's going to](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=65.701) [ask us what type we want in here.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=70.33257894736839) [Let's change that to Ride.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=73.701) [And rather than type all of this out,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=76.70099999999996) [we can actually go into our RideRepositoryImpl and copy this](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=81.50099999999992) [out of the code that we had just created.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=87.201) [So we have our @Override method that we can copy in](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=91.701) [here and that's just in our getRides,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=97.58988888888888) [and go back to our RideRowMapper and paste that in.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=103.81211111111108) [It should automatically do all of our imports for us and you can see it](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=112.701) [looks just like the anonymous inner class that we did.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=116.110090909091) [Now we can go back and change our RideRepository to use this RowMapper.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=119.3885) [So we can come down here and after that comma delete everything but that](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=126.701) [closing parenthesis and semicolon and say new RideRowMapper,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=135.2565555555556) [and since it is in a separate package you will have to import it,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=139.41528571428566) [and it should add the parenthesis on the end,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=145.4152857142855) [if not you'll need to do that,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=148.5270869565218) [and then save that and you'll see that we have our open close parenthesis on](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=150.65752173913057) [there that has now changed our implementation from an anonymous inner class](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=155.75982352941173) [to an external class for that RideRowMapper.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=160.701) [Now we can exit full screen, start our server up,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=164.70100000000008) [once that starts ups we can go back to our RideControllerTest,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=170.41528571428591) [scroll down to our GetRides, right click on it,](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=175.56463636363634) [and say Run As Unit Test again and see that our unit test came](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=179.2464545454545) [back successful and we can verify that by looking at the results](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=184.97372727272725) [and that we have our green code.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=189.88281818181812) [Now let's go ahead and work on changing our create ride to now](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=193.0819523809524) [return an object rather than just what we had originally defined not coming from the database.](https://app.pluralsight.com/course-player?clipId=a3bd3c68-70dc-4dc1-bff5-25c98dcf028b&startTime=199.27242857142866)

### [Modify Create Ride](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a)

[I debated on changing the CreateRide when we were in the create module](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=2.34) [to be able to return the object that we had created the database out of](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=9.74) [that function, but opted to do it in this read module because if you](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=15.01) [don't care about it being returned,](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=20.27) [this is a lot of extra work that you may or may not need.](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=23.54) [So if you care about reading that as you return it,](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=27.31) [I've opted to do it here. To be able to retrieve the record that we](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=30.05) [just created from the database, specifically the ID, we need to modify](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=35.28) [our create statement to utilize a keyholder.](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=39.88) [This is not a shortcoming of Spring JDBC, but rather JDBC itself.](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=43.14) [Spring has a decent workaround though,](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=49.07) [and let's implement this in our code now and return an object rather than null from our method.](https://app.pluralsight.com/course-player?clipId=5b51603d-4f73-412a-bd53-e432e342e37a&startTime=51.61)

### [Create Ride Read Demo](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030)

[To change our CreateRide method,](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=1.44) [I'm going to first start by making sure that my server has](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=4.3) [stopped so it doesn't try to auto deploy our code while](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=7.75) [we're making changes to it,](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=11.91) [and then I'm going to go ahead and go to my RideRepository.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=13.39) [Inside of our RideRepositoryImpl,](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=18.04) [you may remember we have all of this commented out code.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=19.66) [I'm going to go ahead and remove that commented out code and paste it into a](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=24.14) [text file to save it for later because we're going to use it later and I don't](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=31.24) [want to have to go through and retype all of that.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=35.86) [So I'll paste that into this notes.txt that I have in my project,](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=38.54) [and it can just live out there while we make changes to our RideRepository.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=42.58) [So now inside of our RideRepository,](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=47.64) [I'm actually going to also comment out this jdbcTemplate.update because](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=49.85) [we're going to compare what we had before to what we have now and also be](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=54.92) [able to utilize that same insert statement.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=60.34) [We want to start off by creating a KeyHolder and the](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=64.24) [KeyHolder is what stores the key that gets retrieved from](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=68.26) [our database while we do an insert.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=72.55) [And we want to use a Generated KeyHolder, and a Generated](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=76.74) [KeyHolder is because we have an autoincrementing field that's](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=81.69) [automatically generated for us.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=85.83) [The next thing that we want to do is also use a udbcTemplate update again, and](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=88.34) [that will enable us to use the PreparedStatementCreator.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=96.25) [So, we'll say new PreparedStatementCreator, and if I use Ctrl+spacebar to](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=102.54) [choose this type, it says it's an anonymous inner type and it will](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=110.84) [automatically add our method that it needs to be generated through that](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=114.89) [IntelliSense. Now I can come down inside of here and get rid of that TODO,](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=120.12) [and inside of here I want to say PreparedStatement and this is just a](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=126.56) [prepared statement from java.sql, we'll say ps = con.prepareStatement, and](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=136.95) [here's where we get to utilize that same string that we had up above here.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=148.23) [That's why I didn't just delete this out of here. We'll copy that and we will](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=152.04) [paste that in here. And now we're going to do something a little bit](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=157.44) [different. Instead of us putting in the var args like we had before in here,](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=161.67) [we can actually say comma new string, and it's an array, and we'll pass in an](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=166.7) [array syntax of id, and this is referring to the column in the database that](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=177.33) [we're going to return as a generated key. So yours should look something like](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=185.61) [this. It should say new String [] {} with an id in there for that array](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=190.55) [syntax.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=198.18) [Now we can populate that string and say ps.setString, we're just going to fill](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=199.64) [those values in our PreparedStatement. And we'll say at position 1 we want to](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=206.82) [do ride.getName and we'll do ps.setInt, and say at position 2 we want to do](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=212.37) [ride.getDuration, and then make sure you change that return null to say return](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=222.18) [ps for our PreparedStatement.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=230.01) [So now that we have our PreparedStatement set up, again we added](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=233.44) [that array syntax on to the end of it, we want to go ahead and now](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=237.39) [say , keyHolder on the end of that anonymous inner class, and this](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=242.52) [is what tells our insert statement to store that generated ID back](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=254.53) [in this keyHolder.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=261.73) [Now, we can go down here and say Number id = keyHolder.getKey, and](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=263.64) [it will store that key into a number for us.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=275.73) [And we can replace this return statement with a](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=278.6) [method that we're going to create.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=282.64) [It currently does not exist. We'll say getRide id.intValue and say that](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=284.09) [now we can go below this method and create a new method,](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=292.74) [say public Ride getRide, and it's going to take an Integer id, and](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=297.04) [we'll just say Ride ride = jdbcTemplate.queryForObject.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=306.77) [And this is a new query statement that we haven't](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=316.93) [used out of JdbcTemplate just yet.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=320.01) [And inside of here we can do a select \* from ride where id = ?, and](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=323.24) [the syntax is a little bit different here. We're going to use that](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=335.96) [externalized RowMapper that we created.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=340.64) [So we'll say new Ride RowMapper and then we'll just pass in our ID as a](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=342.85) [var arg and then return our ride at the end of it.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=353.04) [So we'll say return ride, and save that.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=358.24) [Now all the pieces are in place with that PreparedStatementCreator and the](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=364.48) [KeyHolder to now query our database and get the object that we just created and](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=371.2) [return that back to our UI. So let's exit full screen, start up our server. Now](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=376.62) [that that's running, we can go into our RideControllerTest and I'm going to](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=388.52) [change this to another name just so we can see that it did in fact execute](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=393.62) [against our database and our ride is going to return our Ride object down below](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=398.91) [here, we can go ahead and right‑click on testCreateRide and say Run As, Unit](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=404.28) [Test, and once this runs, we can see that it created a ride and our unit test](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=414.19) [was of course successful, but now we can come up and test our GetRides and see](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=422.13) [that it did in fact insert that into the database.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=429.2) [So let's right‑click on GetRides and say Run As, JUnit Test,](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=431.34) [and you can see that the fourth one that had entered in down](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=436.52) [there is the Sagebrush Trail.](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=439.39) [So now we have changed our RideRepository to utilize that](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=443.14) [PreparedStatementCreator to get that key back. Again, I didn't show this in](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=448.72) [the create method because it's a little bit more complex and you really](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=454.37) [only care about it if you want to retrieve that object that you just](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=458.92) [created out of the database with its ID, and this is the only way that you](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=462.56) [can grab that ID using this approach. Let's look at an alternative approach that you may find a little bit simpler](https://app.pluralsight.com/course-player?clipId=4362a23a-530d-4fbd-b630-1e1b26e20030&startTime=467.9)

### [Read SimpleJdbcInsert Demo](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238)

[If you didn't like using that KeyHolder to obtain the](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=2.24) [ID of our newly inserted record,](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=5.93) [there is one other option, and that is to use the](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=8.84) [SimpleJdbcInsert that we had earlier.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=12.55) [I'll let you decide which one you like better. I'm comfortable with](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=15.23) [anonymous inner classes, but a lot of people aren't. First, let's start off](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=18.87) [by stopping our server so it's not trying to redeploy as we make these](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=23.07) [changes. And when we go into our RideRepository,](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=27.24) [that keyHolder that we just created down to the number](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=32.64) [ID, let's just comment that out.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=36.51) [You can compare on your own as to which one you like better.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=39.1) [I'm going to go into the notes.txt that I had mentioned earlier that we](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=43.14) [pasted in and grab that code now. We'll come back over and paste that in](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=47.55) [below and uncomment it, and you can see here that we have a](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=54.19) [SimpleJdbcInsert, it's exactly what we had written before, and we had to set](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=64.94) [up our GeneratedKeyName and map our columns,](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=70.63) [map our data, call set on it, but it does have that one helper function](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=74.31) [of executeAndReturnKey that we can see down here.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=80.1) [Now we can save that,](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=85.34) [go back to our RestController and change this to another name,](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=88.16) [we'll say the Yellow Fork Trail, and save it.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=94.89) [We'll start our server back up.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=100.94) [Now we can right‑click on our testCreateRide,](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=106.04) [Run As, JUnit Test, and see that it was successful.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=109.44) [Run our testGetRides again and see that it now has our](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=117.74) [Yellow Fork Trail down there as well.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=124.21) [So, not a lot of code changes saved as far as one over the other,](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=127.94) [but you do eliminate that anonymous inner class inside of your code and](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=132.97) [you're just dealing with these maps to swap data in and out.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=139.77) [You don't have any SQL, it acts more like an ORM, so it's really which is more](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=143) [beneficial to you for what you would like to do. If your inserts are always](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=150.34) [going to return this and you like the ORM syntax,](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=154.41) [maybe you'll go with this approach. If you don't](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=157.16) [mind that anonymous inner class, you have this approach as well.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=159.49) [Both work well,](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=163.99) [it's all a matter of which is easier for you. In terms of](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=165.64) [efficiency, they're both prepared statements so they get both compiled and ran with the same efficiency.](https://app.pluralsight.com/course-player?clipId=42decdfc-e1e1-4150-9be3-52be94b64238&startTime=170.25)

### [Summary](https://app.pluralsight.com/course-player?clipId=30cb8dfc-80fa-4e5c-9cbd-57f4fb594557)

[In this module we removed the hard coded reference to our Select](https://app.pluralsight.com/course-player?clipId=30cb8dfc-80fa-4e5c-9cbd-57f4fb594557&startTime=3.403) [All request and made it return our table data.](https://app.pluralsight.com/course-player?clipId=30cb8dfc-80fa-4e5c-9cbd-57f4fb594557&startTime=7.402999999999997) [We modified our unit test and our controller to use a post so](https://app.pluralsight.com/course-player?clipId=30cb8dfc-80fa-4e5c-9cbd-57f4fb594557&startTime=10.403) [that our Create could now return an object.](https://app.pluralsight.com/course-player?clipId=30cb8dfc-80fa-4e5c-9cbd-57f4fb594557&startTime=15.355380952380958) [We converted our anonymous inner class to an externalized RowMapper](https://app.pluralsight.com/course-player?clipId=30cb8dfc-80fa-4e5c-9cbd-57f4fb594557&startTime=18.403) [to be shared across multiple requests and finally we showed how to](https://app.pluralsight.com/course-player?clipId=30cb8dfc-80fa-4e5c-9cbd-57f4fb594557&startTime=22.778) [read an object after a create using the PreparedStatementCreator and](https://app.pluralsight.com/course-player?clipId=30cb8dfc-80fa-4e5c-9cbd-57f4fb594557&startTime=27.731352941176475) [then the SimpleJdbcInsert. Next we're going to look at updates in our application.](https://app.pluralsight.com/course-player?clipId=30cb8dfc-80fa-4e5c-9cbd-57f4fb594557&startTime=31.6119411764706)

## [Updating Records in the Database](https://app.pluralsight.com/course-player?clipId=97de6d82-34f9-4fd6-b35e-e00f15d25b54)

### [Introduction](https://app.pluralsight.com/course-player?clipId=97de6d82-34f9-4fd6-b35e-e00f15d25b54)

[In this module we're going to walk through updating records in the database.](https://app.pluralsight.com/course-player?clipId=97de6d82-34f9-4fd6-b35e-e00f15d25b54&startTime=0) [In the last module we created a method to retrieve a single record,](https://app.pluralsight.com/course-player?clipId=97de6d82-34f9-4fd6-b35e-e00f15d25b54&startTime=6) [but we didn't expose it to the UI and are going to do that in this](https://app.pluralsight.com/course-player?clipId=97de6d82-34f9-4fd6-b35e-e00f15d25b54&startTime=10.023809523809527) [module and use it to retrieve records to update. We're also going to show batch update functionality.](https://app.pluralsight.com/course-player?clipId=97de6d82-34f9-4fd6-b35e-e00f15d25b54&startTime=14.617647058823536)

### [CRUD](https://app.pluralsight.com/course-player?clipId=143a7717-969b-43e9-99c7-46f89ee5cc42)

[We are focusing on the U of the CRUD functions, the Update.](https://app.pluralsight.com/course-player?clipId=143a7717-969b-43e9-99c7-46f89ee5cc42&startTime=2.134) [In this scenario, SimpleJdbcCall doesn't offer us much,](https://app.pluralsight.com/course-player?clipId=143a7717-969b-43e9-99c7-46f89ee5cc42&startTime=7.818210526315791) [so we will just use the JdbcTemplate for our updates.](https://app.pluralsight.com/course-player?clipId=143a7717-969b-43e9-99c7-46f89ee5cc42&startTime=11.578444444444445) [Oftentimes when updating records we will also want to](https://app.pluralsight.com/course-player?clipId=143a7717-969b-43e9-99c7-46f89ee5cc42&startTime=16.02288888888889) [update multiple record and we can use the batchUpdate](https://app.pluralsight.com/course-player?clipId=143a7717-969b-43e9-99c7-46f89ee5cc42&startTime=19.800666666666665) [options to help with this as well.](https://app.pluralsight.com/course-player?clipId=143a7717-969b-43e9-99c7-46f89ee5cc42&startTime=22.800666666666654) [Rather than writing a complicated SQL statement the batchUpdate](https://app.pluralsight.com/course-player?clipId=143a7717-969b-43e9-99c7-46f89ee5cc42&startTime=25.134) [will manipulate multiple rows in one call. We will update a single record as well as multiple records in this module.](https://app.pluralsight.com/course-player?clipId=143a7717-969b-43e9-99c7-46f89ee5cc42&startTime=30.1965)

### [Demo Outline](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e)

[As with our other demos, this demo will be broken into multiple parts.](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e&startTime=2.64) [We're going to start off with the recall to retrieve a](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e&startTime=8.04) [single record from the database.](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e&startTime=11.12) [We created the method in the previous module we were going to use for this call,](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e&startTime=13.13) [but we haven't exposed it through our repository](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e&startTime=17.46) [and service tiers to our UI yet.](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e&startTime=20.59) [Then we're going to work on an update function to modify a single](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e&startTime=24.04) [record. And then the last part of the demo,](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e&startTime=27.75) [we will utilize the batch update functions to modify multiple roles with one call.](https://app.pluralsight.com/course-player?clipId=af8b2122-6b9a-4453-af84-7f9d25f5a81e&startTime=30.25)

### [Select One](https://app.pluralsight.com/course-player?clipId=996753cf-1434-4ab7-afbc-f740732c1ac5)

[In the previous module we created this getRide method in our repository tier,](https://app.pluralsight.com/course-player?clipId=996753cf-1434-4ab7-afbc-f740732c1ac5&startTime=2.734) [but we didn't expose it through our service tier to our front end.](https://app.pluralsight.com/course-player?clipId=996753cf-1434-4ab7-afbc-f740732c1ac5&startTime=7.789555555555559) [For this next demo we're going to add a call to the service tier](https://app.pluralsight.com/course-player?clipId=996753cf-1434-4ab7-afbc-f740732c1ac5&startTime=12.279454545454547) [and controller as well as add a unit test exposing it clear through all of the tiers to our front end.](https://app.pluralsight.com/course-player?clipId=996753cf-1434-4ab7-afbc-f740732c1ac5&startTime=16.734)

### [Select One Demo](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87)

[Our previous demo ended up with us creating this getRide method,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=2.54) [but you'll notice that we haven't implemented the @Override](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=7.77) [annotation and exposed that through our other tiers.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=11.54) [So let's start off by changing the getRide method by adding in @Override, and](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=15.64) [this will tell us that we want to expose this to other tiers.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=23.07) [Now we're going to open up our interface,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=27.44) [go to the RideRepository, and add just the signature here of Ride getRide.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=29.94) [We're going to use an integer for the lookup, and we'll save this. And](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=38.3) [now we need to expose this through our service tier.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=45.14) [The service tier, we're going to do the same thing.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=50.24) [We want to expose a method called public Ride getRide](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=53.16) [that takes an integer and calls that method that we just](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=60.5) [created in our RideRepository.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=66.49) [So we're going to say RideRepository.getRide and pass in that ID.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=69.44) [And likewise, we'll want to go into our RideService interface and](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=75.84) [expose that through our interface as well.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=81.99) [So we'll say Ride getRide and make that take the integer as well.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=86.04) [Now that we're at this point, our controller can now expose this to](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=93.44) [our test or our UI tier, so we can open up our RideController, and](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=98.38) [I'm going to go ahead and paste in some code here that I don't go](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=105.78) [through and type this all out.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=111.21) [But I'll walk through everything it does.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=112.82) [So I'm going to grab this code that I've already written and go into](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=114.81) [our RideController and paste this at the bottom.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=119.53) [Now, this one's a little bit different than what we](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=125.94) [have done in other controller methods.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=128.06) [We're going to actually look for a path variable.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=132.23) [So we're going to say RequestMapping value ride/{id}, and this](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=136.21) [tells it it's a variable that we're going to grab.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=143.31) [And you can see down below here in our method signature,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=145.69) [we say @PathVariable value id, and it will automatically](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=149.33) [convert it into an integer,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=153.95) [passing that into the rideService.getRide that we just created.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=155.62) [Let's go ahead and now add that to our unit test.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=161.54) [So we can open up our RideControllerTest,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=166.24) [RestController, scroll to the bottom, and we can create a method to get](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=169.94) [that individual ride. And just like the controller,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=178.15) [I have some code that I've already written, but we'll walk through](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=181.25) [what it does. We'll grab this test and paste this in at the](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=184) [bottom, and this is a little bit simpler.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=192.37) [You can see here we've said testGetRide and we've created an instance of the](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=195.84) [RestTemplate, but we can now just grab this for one object.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=201.27) [So restTemplate.getForObject enables us to call this URL and you can see](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=205.3) [I'm putting on a parameter at the end of that URL of 1.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=211.23) [So I want to get that first object back, and that's](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=215.34) [referring to the ID in which is stored in the database, and](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=218.3) [it will return that to a Ride object.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=222.94) [I don't have to use a parameterized list or anything like that, it](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=225.5) [will just grab that individual object back and we can then run the](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=229.33) [test on it to see what is being returned.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=233.61) [So we'll print out the name and it should be for this example in my database,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=236.9) [the Bobsled Trail.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=240.85) [So let's go ahead and save this, start up our server.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=243.34) [Once that's up and running, we can go into our test, right‑click, Run As, Unit](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=252.24) [Test, and we should have a green bar which we've got and our console already](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=259.96) [exposed that we had Ride name: Bobsled Trail Ride.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=268.35) [So it's pretty simple.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=273.24) [All we did was go through our RideRepository and expose that](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=274.42) [through our interface and add that @Override.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=279.64) [We did the same thing in our service tier.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=283.11) [We exposed that through the interface, as well as made it](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=285.6) [available through our RideServiceImpl.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=290.67) [And then in our RideController, we created that parameterized](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=295.04) [return where it would take a URL parameter,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=299.94) [assign that to a path variable, call rideService](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=304.91) [and return that object back out.](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=307.76) [And now we're to a point that inside of our tests, since](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=309.62) [we can grab this single object back,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=313.65) [we can now use that for our updates. Rather than](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=316.24) [trying to just falsify the information,](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=318.97) [I opted to grab that object back and manipulate it. Let's look at what we're going to do for our update method now](https://app.pluralsight.com/course-player?clipId=a815b8ce-b724-494e-b905-21f2e047ee87&startTime=321.23)

### [Update One](https://app.pluralsight.com/course-player?clipId=0e2f834d-0d0c-4219-8e30-362d45b9b90c)

[Now that we have a method to retrieve a single ride we can use it to](https://app.pluralsight.com/course-player?clipId=0e2f834d-0d0c-4219-8e30-362d45b9b90c&startTime=2.201) [retrieve a ride and then change something and submit it back to the](https://app.pluralsight.com/course-player?clipId=0e2f834d-0d0c-4219-8e30-362d45b9b90c&startTime=6.374913043478262) [database using an update statement.](https://app.pluralsight.com/course-player?clipId=0e2f834d-0d0c-4219-8e30-362d45b9b90c&startTime=10.095736842105264) [Let's build a test for this and then build out the pieces](https://app.pluralsight.com/course-player?clipId=0e2f834d-0d0c-4219-8e30-362d45b9b90c&startTime=11.674684210526317) [through our controller service and repository tiers so that we can update our records in our database.](https://app.pluralsight.com/course-player?clipId=0e2f834d-0d0c-4219-8e30-362d45b9b90c&startTime=15.701)

### [Update One Demo](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c)

[To implement our update method, let's start with shutting](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=2.94) [down our server so that it doesn't continue to try to deploy](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=6.69) [our changes as we save files.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=9.85) [I'm going to open up our RestControllerTest and just go to the bottom.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=12.74) [I'm actually going to copy this testGetRide that we did and change it. Much](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=18.04) [of the code will be the same. I'm going to call this testUpdateRide, and](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=22.51) [we're going to leave the same getForObject in here that we had before and](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=32.77) [just turn around and call that for our save. So we'll say ride, and rather](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=37.5) [than hard code a value in here,](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=45.08) [I'm going to actually update one of the values that gets returned.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=47.58) [So I'm going to say ride.setDuration and call ride.getDuration +1 in here.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=52.15) [So basically taking whatever value gets returned,](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=60.11) [updating that by one, and setting it back in that object.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=64.04) [Now we can turn around and use that same RestTemplate that we already](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=68.64) [have and say restTemplate.put, and I'm going to take the URL that we have](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=72.67) [from up above here and copy that down below.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=82.32) [So we're going to call that URL with a put and then pass in our ride object.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=91.64) [So that's what that entire method looks like now. You can](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=99.24) [leave the System.out.println at the bottom,](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=103.38) [but it's going to just be outoutting to the screen what](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=105.81) [you have already retrieved from before, not what necessarily gets updated.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=110.37) [Now we can go ahead and open up our RideController and go to the bottom just](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=115.24) [like we did before and I'm going to do the same thing,](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=123.35) [copy that getRide that we have and change that to be our updateRide.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=126.58) [And inside of here, I'm going to just cut that down to /ride,](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=132.14) [change the RequestMethod to PUT, and now change the method to](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=138.14) [updateRide. And we don't need a path variable anymore and rather](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=145.83) [just the object that we're going to pass in.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=151.94) [So we'll say @RequestBody and we'll just passing](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=153.76) [the object Ride and name it ride.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=160.9) [And now we can call our rideService.updateRide. And this method](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=164.44) [won't exist yet, so it will give us an error.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=169.19) [So we'll say updateRide. And that's everything that](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=174.94) [we need inside of our controller.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=178.91) [Now there's two ways you can go about this.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=182.64) [I'm going to use the helper method by clicking on the red X](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=184.27) [that you should have over here as well and say Create method](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=188) [updateRide in type RideService.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=192.27) [So when I double‑click on that, it's going to add this signature to our](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=195.84) [RideService interface and subsequently give us that red X inside of our](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=201.16) [RideServiceImpl. Going into our RideServiceImpl, I can go to the bottom](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=206.19) [and hit Ctrl+spacebar and it will ask me to update the ride, or add our](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=213.1) [updateRide method in there, and inside of here we can do the same thing.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=220.39) [Very quickly say return rideRepository.updateRide and pass in the ride](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=225.23) [object.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=236.17) [And just like before, this method signature currently doesn't exist.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=237.04) [So I can click that red X again and say Create method](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=242.24) [updateRide in type RideRepository.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=246.94) [Once I say this, it will transfer that red X to our RideRepositoryImpl.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=252.34) [Don't worry, in the next module, we're going to use the service tier for](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=258.54) [more than just a passthrough, so you won't be wondering why we're just](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=262.83) [creating all of these passthrough methods.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=267.02) [Now let's open up our RideRepositoryImpl and likewise go to the bottom, hit](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=270.34) [Ctrl+spacebar, and it will ask us if we want to add that updateRide method. So](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=276.18) [we can double‑click on that. Now we have all the pieces in place to issue our](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=283.24) [update statement using the JdbcTemplate.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=288.72) [I'm going to go ahead and say jdbcTemplate.update, and this is pretty](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=293.64) [straightforward SQL, so we're just going to now say update ride set name](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=302.37) [= ?, and this is using the PreparedStatement syntax, say duration = ?](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=310.68) [where id = ?, and now we can close that SQL off and put in a comma, and](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=322.14) [I'm going to carry this down to the next line so that you can see it](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=332.07) [easier, say ride.getName, ride.getDuration, and ride.getId. Since this is](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=334.69) [an update,](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=353.71) [we have that ID stored in our object. And now, we'll just return ride from](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=354.3) [here. Now we can save that, and all of the pieces are in place to now run our](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=360.54) [test. So I'm going to exit full screen mode and start our server up. Everything](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=369.79) [looks like it started up fine there. I'm going to switch to our test. Now I'm](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=378.77) [going to right‑click on testUpdateRide and say Run As, Unit Test, and we can](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=385.31) [see that it ran, but let's verify that it did actually run against the values](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=392.45) [in our database. So I can switch to MySQL Workbench and just issue a select](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=397.53) [statement of select \* from Ride where id =1, and it says the duration is 37.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=403.91) [If I switch back and run that test again, say Run As, JUnit Test. It ran again.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=411.64) [If I issue that select statement again, it should say 38, and it](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=420.64) [does. So, recapping all those pieces, we went to our test and](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=424.99) [created this testUpdateRide where we retrieved an object based off](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=432.48) [of its ID and then set a duration,](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=436.91) [just took the current value that it is, added 1 to it,](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=441.67) [set that back in that object, and then called a put with that object,](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=444.47) [which in turn calls our RideController, it takes in that object, does an](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=449.06) [update right into our service tier on it, which went through the](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=456.07) [interface and then to the implementation, which passed it to our](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=459.5) [repository tier, which again is just the signature going to our update](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=463.61) [statement where we used basic PreparedStatement syntax of question marks](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=468.79) [and passed in those values through var args to issue that update](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=474.93) [statement.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=478.85) [Pretty straightforward, not too complex. Let's look at doing the same thing using batch updates.](https://app.pluralsight.com/course-player?clipId=8bb77564-ff98-4515-8557-d831940d2f8c&startTime=479.84)

### [Batch Update](https://app.pluralsight.com/course-player?clipId=8d936d1c-0835-4f9f-824a-0967eac0f493)

[Up until this point we have been working with only a single row in the](https://app.pluralsight.com/course-player?clipId=8d936d1c-0835-4f9f-824a-0967eac0f493&startTime=1.919) [database and that includes both creating and updating records.](https://app.pluralsight.com/course-player?clipId=8d936d1c-0835-4f9f-824a-0967eac0f493&startTime=6.418999999999998) [Spring JDBC has a convenient way, using a batch update,](https://app.pluralsight.com/course-player?clipId=8d936d1c-0835-4f9f-824a-0967eac0f493&startTime=9.696777777777777) [to pass in parameters and have it execute across multiple rows.](https://app.pluralsight.com/course-player?clipId=8d936d1c-0835-4f9f-824a-0967eac0f493&startTime=14.141222222222224) [To demonstrate this functionality we're going to add a](https://app.pluralsight.com/course-player?clipId=8d936d1c-0835-4f9f-824a-0967eac0f493&startTime=18.80135294117646) [column for ride\_date to our database and then use the batch functionality to update it.](https://app.pluralsight.com/course-player?clipId=8d936d1c-0835-4f9f-824a-0967eac0f493&startTime=22.507235294117624)

### [Batch Update Demo](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d)

[To execute the batch functionality, I'm going to start off by](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=1.94) [adding a column to our database table that's going to give us](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=5.98) [something to update with our batch statement.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=9.53) [So I'm going to switch to our MySQL Workbench and I'm going to execute this](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=12.94) [SQL statement to alter the table and add a ride\_date column to the table](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=18.23) [after the duration column. So I'm going to select that field and execute](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=27.08) [the statement underneath that cursor.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=31.74) [You can see that it executed green down below in our log statement, but](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=33.68) [I'm going to double check that by saying select \* from ride and execute](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=37.98) [that statement, and we can see that we have a column, ride\_date, that has](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=43.95) [all null values inside of that table.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=53.26) [So it added our column, but we didn't populate that with anything.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=56.59) [Let's switch back over to our IDE and go into our](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=60.54) [RestControllerTest. From here, we're going to execute a](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=65.79) [call to trigger that batch statement.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=71.8) [Now I will tell you that passing an array list of variables across a](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=75.14) [RESTful call is outside the scope of this course, and we're just going to](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=81.38) [shortcut that by grabbing our get from up above and using that to call our](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=86.44) [URL. So let's go up and grab our getRide and take a copy of that and paste](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=93.16) [it down below. And I'm going to call this testBatchUpdate. And from here,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=101.36) [we can go through and say restTemplate.getForObject, and we're not going to](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=111.98) [store this to anything because we really don't care that it grabs an object,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=116.78) [we're just going to use it to call the URL batch. So I'm going to](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=120.96) [change that URL to batch. And say that it just returns an](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=124.91) [Object.class, and save that. So, our testBatchUpdate method looks](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=129.92) [just like that. Very simple,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=137.56) [I'm going to call this URL, we really just want to get it.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=140.05) [We could even trigger that from just a browser call and](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=143.01) [have it issue the statement as well.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=146.84) [Now we can switch over to our RideController and we're](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=149.84) [going to create a batch request down here.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=154.73) [I'll grab our getRide from up above again and paste](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=159.34) [that down below. And the same thing,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=166.38) [I'm going to change that URL to batch, I'm going to leave the request](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=168.63) [method type as GET, the response body is going to just be Object because](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=174.61) [we don't care about it, we're actually going to throw it away, and we're](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=180.57) [going to change the name to batch and just give it an empty set of](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=184.14) [arguments that we call in there.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=192.8) [Now inside of here,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=195.04) [I'm going to just change the body of this method to return null.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=196.35) [And, then we can start by implementing our service calls that we're](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=203.27) [going to execute in our service tier.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=209.19) [So I want to start off by saying rideService.batch, and](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=211.85) [we're going to now create a method inside of our service](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=219.55) [tier that does a couple of things.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=222.75) [So let's save this method,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=224.54) [click the red X to tell it to create a method batch in type RideService.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=226.94) [It will add that to our interface.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=234.84) [Once we save this,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=237.39) [it will now tell us that we have a problem in our RideServiceImpl.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=239.28) [I can switch over to our RideServiceImpl, hit Ctrl+spacebar,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=243.64) [and it will ask us for a batch statement. Now is where we can](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=249.24) [start utilizing our services tier.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=254.44) [Inside of here,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=257.24) [I am going to now create a method to retrieve a list of rides, and we're](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=259.04) [actually going to use the method that we created up above.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=266.14) [So we'll say Ride rides = rideRepository.getRides.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=268.6) [Now this will return our list of rides for us from up above, just like we had](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=279.94) [used to return all of the rides to our test. From here,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=284.73) [I'm going to create a name value pair, and this is where it](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=289.65) [might get a little interesting for you.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=293.23) [So I'm going to create a list of object arrays, and I'm just](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=294.94) [going to call this pairs, and set that equal to a new array](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=300.53) [list. And save that. Now from here,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=304.5) [I'm going to execute a foreach statement, and this is going to iterate](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=310.86) [over the Ride objects from our rides array list.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=316.9) [So we'll save this. Now inside of here, we're going to create a name](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=324.64) [value pair, and the order of this does matter.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=329.13) [So we're going to say Object [] tmp =,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=332.44) [and we're just going to use the array syntax and say new Date and then](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=338.08) [ride.getId. Close that curly brace off. And then we'll say pairs.add, and we're](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=344.82) [going to add that object array to our array list of pairs.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=355.79) [Now we can call the rideRepository.updateRides, and we](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=362.04) [have not created this method yet.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=370.48) [We're going to, we're going to pass our pairs into it. Now we can save this,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=372.48) [click the red X, and create the method updateRides in our](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=378.63) [RideRepository. Save that, and the same thing, we will get that](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=384.04) [red X inside of our RideRepository.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=389.48) [Same pattern we've been using the last two examples. From here, we can hit](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=392.11) [Ctrl+spacebar and say updateRides, and this will add the stubbed out](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=397.31) [functionality of our updateRides method that we're going to use the batch](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=404.1) [functionality from our JdbcTemplate in. From here,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=409.5) [let's say jdbcTemplate.batchUpdate, and we're going to use the SQL of](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=414.81) [update ride set ride\_date = ? where id = ?. Again,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=426.23) [that PreparedStatement syntax. We're going to pass in that](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=440.74) [pair for the array list a pair of objects into here, and](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=445.47) [this is why that order mattered.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=450.29) [The first order it's looking for is the ride date and the second](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=452.72) [order of objects it's looking for is the ID.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=456.2) [So that object array that's inside that array list has the right setup for](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=459.14) [the order of those elements. From here, we're ready to save that, exit](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=465.68) [full screen, I'm going to start up our server,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=474.09) [everything looks fine on the startup of our server, and I'm](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=479.24) [going to go to our unit test, right‑click on batchUpdate, and](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=481.98) [say Run As, JUnit Test, and once that executes on our server we](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=489.37) [can go over to our JUnit test, everything looks good there.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=496.49) [I'm going to switch back to our MySQL Workbench and execute that select \*](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=499.55) [from ride again, and we'll see that all of our ride dates are now populated](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=505.09) [with a date. Now, I get that this example may not be quite as full featured](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=512.16) [that you may be looking for because we are just taking inside of our](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=516.78) [RideServiceImpl and putting in a new date, but you see that you could put in](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=520.9) [whatever value you wanted there. We could calculate a date, or if you're](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=527.2) [using a different type of column, possibly storing some other value inside](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=531.53) [of there. For the sake of the example, we just shoved new data in here and](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=535.81) [you'll see that it populated our database. Pretty simple.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=540.37) [All we had to do was go through in our RestControllerTest and create](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=544.24) [a call to that URL, again passing those values through the JSON](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=550.31) [instance and to our controllers, really outside the scope of what](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=555.08) [we're doing inside this course.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=558.84) [But it calls the URL inside of our controller. And you can see here](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=560.34) [we're just going to call rideService.batch, which eventually calls](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=566.42) [our service tier where we go through and we can see that we're going](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=570.37) [to get all those rides back,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=574.39) [create our array list of temp items. Inside of that we](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=576.13) [have an array of those temp objects,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=581.32) [add that, and then call our batch statement, which eventually](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=584.19) [goes through and executes our updateRides. Now, it should be](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=589.7) [noted that the batchUpdate will work with both updating rows,](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=595.96) [as well as inserting rows.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=602.31) [So maybe you had 20 rides you wanted to insert into this database at once, you](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=604) [can use the insert statement. It doesn't care, the batch update will just](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=610.08) [execute whatever you have based off that array list of objects that you're](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=614.22) [passing into it and execute it for each row.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=618.28) [The order of those elements does matter, though, as it does look for those question marks in a specific order.](https://app.pluralsight.com/course-player?clipId=b8ffbd42-bade-41a2-824b-1f2b1f10317d&startTime=621.74)

### [Summary](https://app.pluralsight.com/course-player?clipId=353babf2-8044-4d57-81c9-4d368123b112)

[In this module we exposed the getRide method,](https://app.pluralsight.com/course-player?clipId=353babf2-8044-4d57-81c9-4d368123b112&startTime=2.32) [which selects one record clear through to our UI and test tiers.](https://app.pluralsight.com/course-player?clipId=353babf2-8044-4d57-81c9-4d368123b112&startTime=5.920000000000001) [We had implemented the functionality in a previous module,](https://app.pluralsight.com/course-player?clipId=353babf2-8044-4d57-81c9-4d368123b112&startTime=11.32) [but hadn't exposed it to the rest of our application.](https://app.pluralsight.com/course-player?clipId=353babf2-8044-4d57-81c9-4d368123b112&startTime=15.109473684210522) [This in turn enabled us to implement a method to update one row in the database.](https://app.pluralsight.com/course-player?clipId=353babf2-8044-4d57-81c9-4d368123b112&startTime=19.32) [After that we implemented the functionality showing the batchUpdate](https://app.pluralsight.com/course-player?clipId=353babf2-8044-4d57-81c9-4d368123b112&startTime=25.32) [features available in Spring JDBC to update multiple records. Next we're going to look at deleting records from our application.](https://app.pluralsight.com/course-player?clipId=353babf2-8044-4d57-81c9-4d368123b112&startTime=29.177142857142844)

## [Deleting Records from the Database](https://app.pluralsight.com/course-player?clipId=8617a2a3-85e6-4d5f-a92b-160870ef09d4)

### [Introduction](https://app.pluralsight.com/course-player?clipId=8617a2a3-85e6-4d5f-a92b-160870ef09d4)

[In this module we're going to walk through deleting records from the database.](https://app.pluralsight.com/course-player?clipId=8617a2a3-85e6-4d5f-a92b-160870ef09d4&startTime=0) [Deleting records is fairly straightforward, we're going to look at a few solutions to incorporate into your application.](https://app.pluralsight.com/course-player?clipId=8617a2a3-85e6-4d5f-a92b-160870ef09d4&startTime=6)

### [Demo Outline](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459)

[We are focusing on the D of the CRUD functions, the Delete.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=2.9) [Many applications are historical and don't allow deletion of data,](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=7.952631578947365) [thus making the delete functions the least used of the API.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=12.4) [Although it is quite simple with both,](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=17.9) [we will look at a JdbcTemplate and a](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=21.4) [NamedParameterJdbcTemplate to delete records from the database.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=25.4) [As with other modules, this demo will be broken into multiple parts.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=29.9) [We are going to start off with deleting a record using just the JdbcTemplate,](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=35.9) [which is very similar to what we've done with other](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=40.5666666666667) [demos using the Update method.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=44.11052631578949) [After that we're going to explore using a named parameters.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=45.952631578947404) [Named parameters aren't just for deleting,](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=49.60588235294117) [but we're going to show how you do that while using](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=51.723529411764694) [a NamedParameterJdbcTemplate.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=58.4) [As mentioned before, the delete is quite simple for us to complete,](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=61.9) [especially having done all of the other CRUD functions in our application.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=65.68947368421051) [It is executed using the Update method of the jdbcTemplate,](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=70.23333333333335) [SQL and the other values being passed in using var args.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=74.9) [To complete this demo, we will add this code into our repository,](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=79.09047619047618) [a call in our service tier and then the method in our](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=83.47142857142859) [controller and a test to call it. Let's try this now.](https://app.pluralsight.com/course-player?clipId=d98462b2-391a-48b6-8977-78c604bbb459&startTime=86.90000000000009)

### [Delete JdbcTemplate Demo](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc)

[To implement our delete functionality,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=1.84) [we're going to follow the same approach we did with our update functionality.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=3.89) [I'm going to start off by making sure that my server is stopped,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=8.44) [and then I'm going to open up our test and scroll to the](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=12.04) [bottom of it and copy one of these existing tests that we](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=16.3) [have and just paste it down below.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=22.35) [I'm going to change the name to testDelete.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=26.24) [And inside of here, the delete is actually quite simple.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=29.1) [We're just going to call the delete method with the URL](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=34.64) [of the ID that we want to delete.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=38.07) [So we're going to say /delete and the actual ID of one](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=41.74) [of the ones that we want to delete.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=46.87) [Now to figure out what that ID is,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=48.86) [I'm actually going to switch over to my MySQL Workbench](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=51.54) [really quick and run a select statement and see what the last](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=56.39) [created record I have in there is.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=60.45) [Your numbers may not be as high as mine because I have implemented the test a](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=62.74) [few extra times just to see some test data that's out there,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=66.79) [but my last created record was 16.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=70.71) [Again, it doesn't matter if yours is 9, 10, 11, whatever.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=73.59) [I'm going to grab that number 16 there and we're going to switch](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=77.42) [over and say that we want to delete that URL.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=82.46) [So localhost:8080/ride\_tracker/delete/16,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=86.7) [and 16 is going to be the ID that we catch inside of our controller.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=89.8) [So let's save this, open up our controller,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=96.24) [and inside of here we're going to go ahead and grab this](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=104.54) [getRide method that we've already created because we want to](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=109.61) [grab a path variable just like this one.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=114.53) [Same thing, we'll go down to the bottom,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=117.84) [paste that in, and instead of it being a value of /ride,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=120.57) [we're going to do /delete and grab that ID and change](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=124.29) [the request method to delete as well.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=128.48) [Now, for our return type we're going to just change this to Object,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=132.24) [and I'll explain why here in a little bit. We'll change the method](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=137.35) [name to delete, and then we can change the code that calls our service](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=142.23) [tier and our return down below.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=147.7) [Now as I mentioned a minute ago that we were going to return object type](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=150.57) [from our body, and this actually has to do with the REST service and](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=154.67) [returning a valid response versus an invalid response. And void will](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=160.03) [return a 404 error. Don't worry about it now, we're going to go into this](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=164.63) [deeper when we talk about exception handling in the next section, but](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=168.78) [we'll just say rideService.deleteRide, and this doesn't currently exist.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=172.42) [We'll pass in the ID, and then we're going to below that say return null,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=181.64) [just like we did with the batch up above.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=186.83) [Now we can save this and click on the red X over in the left‑hand](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=190.04) [column, and just like we've done in previous modules,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=195.21) [we're going to create that method deleteRide in our service tier.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=197.75) [And this is going to say void deleteRide and take an Integer id,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=201.75) [we'll save that, and now it will ask us to provide an](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=206.83) [implementation in our RideServiceImpl.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=210.65) [I'm just going to scroll down to the bottom of here, hit Ctrl+spacebar, and](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=213.84) [add the deleteRide functionality. And this will just call our](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=220.07) [rideRepository.deleteRide, and it will take the ID as well.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=225.11) [We'll save this. And same as before, we'll click that red X and say](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=236.24) [Create method deleteRide in our RideRepository.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=241.2) [Save that, and now we can add our implementation to our RideRepositoryImpl.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=245.34) [Now inside of here I'm going to scroll down to the bottom and](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=253.84) [make sure I'm inside that closing curly brace, hit Ctrl+spacebar,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=258.52) [and add the deleteRide functionality in here. And now we can call](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=263.08) [our jdbcTemplate update.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=268.94) [So we'll say jdbcTemplate.update.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=271.46) [And we're going to just pass inside of here some basic SQL of delete](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=279.74) [from ride where id = ?, close that quote off, and then we're going to](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=285.04) [pass in the id and close that statement off.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=293.55) [That's all we have to do to actually implement our delete](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=298.74) [functionality inside of our repository.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=302.23) [I'm going to exit full screen, start our server backup,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=306.14) [make sure that there's no errors on startup,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=311.18) [everything looks good there. And then I'm going to switch back to our test and](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=313.94) [make sure you've updated your ID with the correct one from your database, and](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=320.4) [then I'm going to right‑click on my testDelete and say Run As, JUnit Test, and](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=325.76) [when this is done I will see a green bar here and I can switch over to my MySQL](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=336.23) [Workbench, execute that select statement again, and record 16 has been deleted](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=342.81) [from our database.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=349.36) [It's pretty straightforward.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=351.24) [Let's walk through that again.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=352.29) [We went ahead and created that RestTemplate delete and we did URL rewriting](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=354.34) [and just tacked the ID onto the end of there. Inside of our controller, we](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=360.36) [have a delete method that we created that does URL rewriting and grabs an ID](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=366.95) [off of that and then it uses the method type of delete and grabs that ID,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=372.01) [passing it to our service tier.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=380.69) [Our service tier passes that through to our repository where we now](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=383.14) [implement our update to issue the delete statement,](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=387.55) [passing that ID in.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=391.82) [In the next section, we're going to go through and show](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=394.34) [you how to do the same thing using named parameters to get rid of that question mark.](https://app.pluralsight.com/course-player?clipId=ca6455f3-4a02-4862-bd24-ded49a15d1fc&startTime=396.8)

### [NamedParameterJdbcTemplate](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046)

[Since the addition of var args to the JDK,](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=1.654) [a lot of people don't know or think about using named parameters.](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=5.082571428571429) [Named parameters allow us to lose the numbering of parameters in our SQL](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=9.654) [statements and instead pass in a map of names with values.](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=14.70955555555556) [This is especially useful if you already have a map for some](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=18.5630909090909) [other reason in your application and just want to modify the](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=22.381272727272698) [database with that information.](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=27.472181818181827) [I should note that named parameters can be used for almost](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=29.654) [every function that we have done so far.](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=33.12768421052633) [So if you like this syntax better,](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=35.654) [you can use it instead of numbers in any of the SQL](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=37.653999999999996) [we've done in our repository tier. Let's change our delete to implement this now.](https://app.pluralsight.com/course-player?clipId=9cd36600-769f-431c-ad49-bc9a4f381046&startTime=41.08257142857141)

### [Delete NamedParameterJdbcTemplate Demo](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f)

[This is where we left off after the previous demo of](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=1.04) [implementing our deleteRide functionality.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=4.92) [I'm going to go ahead and give myself some whitespace down below here to](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=7.94) [create a new instance of a NamedParameterJdbcTemplate.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=12.45) [Now if you like this approach,](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=17.34) [you don't have to create this NamedParameterJdbcTemplate per](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=18.83) [method, you can create one up above and pass that in.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=24.96) [So, all we want to do is create that instance and use](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=31.84) [our NamedParameterJdbcTemplate.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=35.2) [I'll go ahead and bring this down to the next line so that you can see](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=38.94) [the whole thing. And from here, we now need to create a map with our](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=41.89) [name value pairs in it. So we'll say Map and import a java.util map,](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=50.14) [and it's a String Object pair.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=57.11) [We'll call this paramMap. And this is equal to a new HashMap.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=61.74) [And inside of here, we're going to say paramMap.put, and we'll pass in the](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=70.44) [string of id and the value of id. And now all we have to do is that similar SQL](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=79.21) [that we implemented up above, but we no longer have the parameters of question](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=89.78) [marks in here, rather named parameters. So we'll say namedTemplate.update, and I](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=93.77) [am going to grab the SQL from up above and just modify it to show you the change](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=102.56) [here. So we'll paste that in, and this is now changed to id and we pass in our](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=108.63) [paramMap.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=119.75) [This may seem like a little bit of overkill for just this one parameter,](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=122.24) [and I won't argue that it's not, but think in terms of if you had a](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=128.28) [search screen where you were maybe passing in 5,](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=132.51) [10,](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=135.84) [15 different parameters that you're trying to gather and then have that](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=136.34) [dynamically map to the SQL in the right positions.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=140.63) [This is a lot better approach than trying to use question marks](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=143.94) [and get those built the right way in there because I can just pass](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=147.19) [that map of parameterized values in.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=150.62) [Now that we've saved that, I'm going to exit full screen and](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=154.14) [switch over to my workbench to see what the last created record I](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=158.72) [have in there, and the ID is 15 for me,](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=164.06) [yours may be something different depending on how many times you've](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=166.56) [run this test. Now we can go back to our test and change the ID of](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=169.89) [the record that we want to delete.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=177.31) [I'm going to change mine to 15 because that was the last record I have in there.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=179.14) [Make sure your server is started up, and then right‑click](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=184.24) [on that test and say Run As, JUnit Test,](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=189.49) [verify that it came back green, which it did. Switch back over to](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=196.34) [our workbench, and 15 has now been deleted. And again, what we had](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=201.66) [to change there was inside of our RideRepositoryImpl to use that](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=208.15) [NamedParameterJdbcTemplate.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=213.59) [So the NamedParameterJdbcTemplate just gives us another option instead of having those question marks inside of our application.](https://app.pluralsight.com/course-player?clipId=2d5fbdba-d348-438d-bf2c-9dda31e0e97f&startTime=216.05)

### [Summary](https://app.pluralsight.com/course-player?clipId=d0954d1f-38a5-47d4-94db-28aac998abe3)

[In this module we deleted one record using the update method of](https://app.pluralsight.com/course-player?clipId=d0954d1f-38a5-47d4-94db-28aac998abe3&startTime=1.988) [the JdbcTemplate to issue our delete SQL.](https://app.pluralsight.com/course-player?clipId=d0954d1f-38a5-47d4-94db-28aac998abe3&startTime=7.040631578947366) [This is quite similar to what we have done with other functions in our code now,](https://app.pluralsight.com/course-player?clipId=d0954d1f-38a5-47d4-94db-28aac998abe3&startTime=9.988) [so it should look pretty similar.](https://app.pluralsight.com/course-player?clipId=d0954d1f-38a5-47d4-94db-28aac998abe3&startTime=14.351636363636374) [We also showed the functionality of using a NamedParameterJdbcTemplate.](https://app.pluralsight.com/course-player?clipId=d0954d1f-38a5-47d4-94db-28aac998abe3&startTime=15.988) [This is a great alterative to using the numbering scheme that](https://app.pluralsight.com/course-player?clipId=d0954d1f-38a5-47d4-94db-28aac998abe3&startTime=20.988) [we have seen so far in our application.](https://app.pluralsight.com/course-player?clipId=d0954d1f-38a5-47d4-94db-28aac998abe3&startTime=24.758105263157905) [Next we're going to look at exception handling and transactions inside of our application.](https://app.pluralsight.com/course-player?clipId=d0954d1f-38a5-47d4-94db-28aac998abe3&startTime=27.5)

## [Exceptions and Transactions](https://app.pluralsight.com/course-player?clipId=de5b8579-b142-4a65-8317-9937fc5b999f)

### [Introduction](https://app.pluralsight.com/course-player?clipId=de5b8579-b142-4a65-8317-9937fc5b999f)

[In this module we're going to talk about handling](https://app.pluralsight.com/course-player?clipId=de5b8579-b142-4a65-8317-9937fc5b999f&startTime=0) [exceptions and how to work with transactions.](https://app.pluralsight.com/course-player?clipId=de5b8579-b142-4a65-8317-9937fc5b999f&startTime=4.5) [Up until this point we have executed code,](https://app.pluralsight.com/course-player?clipId=de5b8579-b142-4a65-8317-9937fc5b999f&startTime=8) [being careful not to instigate any exceptions nor requiring](https://app.pluralsight.com/course-player?clipId=de5b8579-b142-4a65-8317-9937fc5b999f&startTime=10.82352941176471) [the need to roll back from a transaction. Let's dive into how to handle exceptions and gracefully roll back a transaction.](https://app.pluralsight.com/course-player?clipId=de5b8579-b142-4a65-8317-9937fc5b999f&startTime=14)

### [Overview](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad)

[Every interaction with the database inside of Spring has](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=1.334) [the possibility to throw an exception.](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=5.534000000000001) [Spring handles exceptions differently than you're possibly used to.](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=8.334) [They do not use checked exceptions.](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=11.334) [Spring rather handles everything through runtime exceptions.](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=15.02630769230769) [Runtime exceptions are not a checked exception and](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=19.334) [thus don't require you to catch them, but they can still be thrown by your code.](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=22.000666666666657) [Although not specific to Spring JDBC,](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=27.86031578947369) [but rather Spring and Spring Web Development,](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=30.386631578947384) [we're going to use an exception handler inside of our controller to](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=33.334) [catch any exceptions thrown by our repository tier.](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=38.00066666666663) [An ExceptionHandler is what we use to capture exceptions that are](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=43.334) [thrown from other tiers in our application and still return an](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=47.611777777777746) [acceptable message to our front end.](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=51.667333333333346) [In this code snippet we catch an exception,](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=53.66733333333336) [but still return an HttpStatus of 200 as indicated by the OK in our response entity.](https://app.pluralsight.com/course-player?clipId=ca349adb-eacd-42bc-a66d-9383d54fa9ad&startTime=56.334)

### [Demo Outline](https://app.pluralsight.com/course-player?clipId=fed34342-4f07-4082-b2ff-fe8a3be84b6f)

[Let's add exception handling to our application to catch potential](https://app.pluralsight.com/course-player?clipId=fed34342-4f07-4082-b2ff-fe8a3be84b6f&startTime=1.801) [database exceptions from being thrown to our client.](https://app.pluralsight.com/course-player?clipId=fed34342-4f07-4082-b2ff-fe8a3be84b6f&startTime=5.801000000000001) [We're going to create an ExceptionHandler in our controller,](https://app.pluralsight.com/course-player?clipId=fed34342-4f07-4082-b2ff-fe8a3be84b6f&startTime=9.389235294117647) [create a custom ServiceError class and then modify one of our methods to throw an error to test this functionality.](https://app.pluralsight.com/course-player?clipId=fed34342-4f07-4082-b2ff-fe8a3be84b6f&startTime=14.153941176470587)

### [Handling Exceptions Demo](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162)

[To simulate exception handling inside of our application,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=1.54) [I'm going to first open up our test and scroll to the bottom and](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=5.16) [copy the testDelete method and paste it below that.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=11.54) [I'm going to change the name of it to testException and we'll](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=17.95) [call a getForObject on it with a URL of test.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=24.41) [And it's going to want a return type of Ride.class,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=32.55) [which we don't really care about because it's always](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=37.7) [going to just throw an exception.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=41.12) [So this is what our method looks like.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=44.84) [To call this, let's go ahead and define that test URL inside of our application.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=46.58) [Now if I open up my src/main/java RightController,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=53.74) [I'm going to do something quite similar to what we just did there.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=60.84) [I'm going to grab this batch method that we had created](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=64.54) [and copy and paste that down below.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=71.04) [And I did the batch method because it's the closest](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=73.41) [to what we're trying to do here.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=75.9) [So I'm going to change the value of that to test,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=77.79) [and for the ResponseBody object we can leave that,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=81.34) [the name, I'm just going to leave it test as well,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=85.56) [and then inside of here I'm going to throw a new DataAccessException,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=89.03) [and it takes a string for the constructor.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=100.44) [So we'll say Testing exception thrown.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=103.99) [We'll save this.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=109.26) [Now let's go ahead and run this and see what happens.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=112.24) [So if I start my server up, make sure there's no errors upon startup,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=116.44) [and everything looks fine there,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=121.76) [I'm going to go back to the test method that we created](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=122.98) [and right‑click on it and say Run As, JUnit Test,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=126.94) [it should come back and give me a stack trace saying that it failed.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=131.65) [And this is the exact response we were expecting to get,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=136.76) [an ugly error with a stack trace that was propagated clear back to our client.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=141.14) [Let's see how we can make that a little bit better of an experience for them.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=146.66) [Now I will say there are lots of ways you can](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=150.6) [deliver messages back to the end user, and we're not going to cover all of them,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=152.75) [we're just going to show you one good way using the exception](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=157.62) [handling mechanism to give them a better error message.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=162.01) [So let's right‑click on src/main/java and say New,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=166.04) [Package, and we're going to put in here com.pluralsight.util and click Finish.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=170.24) [We're going to click on that newly created package and create a class.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=178.24) [I'm going to call this class ServiceError. I'll click Finish.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=183.44) [And this is a very simple class.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=189.34) [We're going to have two field member variables inside of here](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=191.11) [called private int code and private String message.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=195.93) [We're going to do two things inside of here.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=206.94) [First,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=209.76) [let's right‑click on these and say Source, Generate Getters and](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=210.27) [Setters, and make sure you have both of them selected, code and](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=216.3) [message, and click OK. And then the second thing we're going to do is](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=220.33) [create some constructors inside of here.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=226.17) [So we want to go ahead and say public ServiceError, and we'll just create](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=229.54) [a default no arguments constructor, and then the second one we'll do is](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=239.5) [public ServiceError that takes an int code and a String message and](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=243.05) [assigns those to our two member variables. So we'll say this.code = code](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=253.43) [and this.message = message.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=260.84) [We'll save those. And I'm going to right‑click and say Source,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=266.34) [Format, and it should clean up that for us, as well as a](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=270.94) [Source, Sort members, and click OK.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=275.48) [Now this looks like what we're expecting to see inside of our application.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=281.74) [We can go ahead and go back to our controller, and at the bottom](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=286.34) [of our application inside of our controller,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=291.68) [let's add an exception handler here.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=294.9) [So we'll say @ExceptionHandler, and this is an exception](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=296.87) [handler for any RuntimeException that is thrown.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=303.68) [Now we can generate the body of the method that we](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=312.64) [want to to handle these responses.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=316.67) [So we'll say public ResponseEntity, and this class uses](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=318.17) [generics, so we're going to pass in a ServiceError,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=325.62) [the service error that we just created, and we want to say handle and](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=328.95) [pass in the RuntimeException that we are handling, and give that a](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=338.51) [variable name of ex. Now that we've got the body,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=345.73) [let's put the meat of this exception handler in here. We'll say ServiceError.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=349.32) [And this is just the instance that we're creating to pass back to that end user.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=359.74) [So we'll say ServiceError = new ServiceError. And, you may have different](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=365.65) [types of errors that you pass back to your user. For our sample, we're](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=375.36) [just going to pass back the OK value. You could have some specific ones](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=379.99) [coded to your application, but that's really outside the scope of what](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=384.82) [we're doing for this example.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=388.67) [So we're going to say OK.value, and then we're going to say ex.getMessage.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=390.64) [Now we want to return that new ResponseEntity and we're going to pass back](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=401.14) [our error instance that we just created and an HttpStatus of ok. Now, our](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=411.64) [exception that gets thrown up above of our DataAccessException will get](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=422.28) [handled down below by our exception handler.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=426.69) [Let's try this out.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=431.44) [I'm going to exit full screen,](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=432.88) [go back to our test, and I'm going to right‑click and say Run As, JUnit Test.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=434.58) [Once this runs, we'll see we have a green bar now, and in our console we](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=444.04) [have the error message from before in there, but now when we ran there](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=449.7) [is no big stack trace that's dumped out to our application. So it](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=453.5) [gracefully handled that message, and you can go ahead and look at the](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=457.8) [response body that comes back, but that's just one way we can grab those](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=461.8) [exceptions from our database tand pass back a more user friendly to our client.](https://app.pluralsight.com/course-player?clipId=65c21277-0d7b-44d1-b31f-8abc6c7b2162&startTime=465.99)

### [Transactions](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab)

[Individual methods in our repository tier are ran in a single](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=1.402) [transaction for the lifecycle of that JdbcTemplate call.](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=5.931411764705883) [But if we want to implement transactions across multiple calls,](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=9.152) [we need to create an instance of a transactionManager like the one listed here.](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=12.902) [This transactionManager wraps our dataSource and utilizes that](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=19.735333333333344) [transaction capability of our JDBC driver that we have chosen](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=24.138842105263155) [for the platform we are using.](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=29.928315789473668) [Let's add transactions to our application.](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=33.402) [We first need to add a transaction manager to our JDBC config file.](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=35.92831578947367) [We also need to create a sample call that spans two JDBC transactions.](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=41.402) [From there we can annotate that method with @Transactional,](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=47.402) [signifying that we want to roll back if something happens. And finally, we can verify that it did complete with a rollback.](https://app.pluralsight.com/course-player?clipId=2e42d939-87e1-41f0-abe4-d7908beaa1ab&startTime=50.40200000000002)

### [Transactions Demo](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b)

[To demonstrate how a transaction can help us roll back changes](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=1.84) [if we're partially through a transaction and want to undo](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=6.6) [anything because an error occurred,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=10.53) [the first thing I'm going to do is start up my server.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=12.19) [Then we're going to go through a series of changes inside of our test](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=16.64) [just to prove out this functionality so that we don't have to write a](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=20.74) [lot of extra code just to show you this demo.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=23.98) [First inside of our test, I'm going to execute our createRide method.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=27.64) [So I'm going to right‑click and say Run As,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=32.86) [JUnit Test, and once this runs, you'll see that it's ran successfully,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=36.03) [I'm going to switch over to our database and run this select \* from Ride.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=41.81) [You see inside of here I have two rides at the bottom of my database,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=48.04) [you may only have one because you just executed it,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=53) [but notice how they have no ride data in there,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=55.81) [and that's because when we created our createRideTest,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=59.15) [we didn't have it adding the date, we updated those dates in the batch method.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=63.96) [Let's go ahead and go over to our code now and open up our service tier,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=69.54) [and inside of our service tier let's find that batchUpdate method.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=77.67) [You can see here, we have all of our code in place to get all the rides,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=84.33) [pull them back, get a name value pair of the date,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=90.11) [ride id,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=97.24) [we have this batch method where we grab all the rides and create a list of](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=100.2) [object array pairs of the date and the ID to update.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=107.9) [Let's go to the end of this method and throw a new DataAccessException.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=112.54) [And what this would simulate is that as we got partially through our code,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=119.51) [something happened and we would want to roll back those changes.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=128.07) [So we'll just put in here a string of Testing Exception Handling and save that.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=131.57) [And now when we go to execute that batch service,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=141.74) [it should go through and roll them back rather than update all of them.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=147.04) [So let's scroll down in our application and find that testBatchUpdate,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=152.12) [and there's mine.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=159.02) [I'm going to right‑click on it and say Run As, JUnit](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=161.74) [Test. Now if things were set up with transactions, it](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=165.73) [would roll back all those changes.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=170.35) [Let's execute that and see what happens to our](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=173.04) [database. It's successfully completed.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=175.35) [I'm going to switch over to our MySQL Workbench and run that select](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=179.01) [statement again, and you'll notice that all of my rides have now been](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=183.08) [updated even though that exception was thrown.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=188.21) [Let's go ahead and fix that so that it doesn't do that.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=192.74) [The first thing that we want to do is open up our src/main/resources](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=196.14) [jdbc‑config file, and we're going to do two things in here.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=202.41) [First, I'm going to go down to the Namespaces tab and check the tx](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=209.04) [namespace so that it adds that to the declaration in our XML file. Then](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=214.32) [I'm going to switch back to the Source tab, and now I can come in here](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=220.14) [and add two beans inside of here.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=225.12) [The first one we're going to use the tx prefix of](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=227.91) [annotation‑driven, and it has an attribute of transaction‑manager,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=231.56) [and we're just going to pass in transactionManager.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=240.04) [The second bean I'm going to add is using the bean prefix, and I'm going](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=243.54) [to say id=transactionManager. And I'm going to type this one out because](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=251.39) [there's a few things I want to show you in here. And there is a class](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=259.24) [associated with this that is](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=262.83) [org.springframework.jdbc.datasource.DataSourceTransactionManager.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=265.41) [And then inside of the bean tags, make sure you're in between the angle brackets,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=281.74) [there is a property that we're going to add to it, and the property](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=287.44) [name is dataSource, and we're going to do a reference to our data](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=292.44) [source, so that is dataSource as well.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=298.53) [Now, our tx annotation‑driven and our transactionManager are defined.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=307.94) [Yours should automatically try to deploy like mine has here.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=313.47) [Now everything is set up inside of our XML file to handle transactions.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=317.54) [The only thing we need to go back and add to our code is at the top of](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=324.22) [our batch we want to say that it is @Transactional.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=329.42) [Now you may be wondering why I didn't have to include another JAR or anything](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=337.34) [like that to get this functionality, and that is because this is automatically](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=342.84) [included as a transitive dependency in Spring JDBC.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=347.25) [So these classes were already available because we](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=352.27) [are using Maven. Now to test this,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=354.51) [I'm going to go through and do the exact same thing again. I'm going to](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=357.45) [go back in our RestControllerTest and I'm going to scroll up to our](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=360.54) [testCreateRide because, remember, we don't have a ride now that doesn't](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=363.38) [have a date associated with it.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=368) [So I'm going to right‑click on testCreateRide and say Run As, JUnit](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=370.37) [Test, switch over to my database, run that select statement again, and](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=375.56) [I should have one at the bottom of here that does not have a ride date,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=384.07) [and I do. Then I'm going to switch back and run my batch, but this time](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=387.56) [that transaction should be rolled back. So I'm going to right‑click on](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=395.07) [testBatchUpdate and say Run As, JUnit Test, it successfully completed.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=398.9) [That is because we have an exception handler in there that caught](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=407.09) [that exception instead of dumping out a stack trace.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=410.71) [But if I go check my database again, we will see that it did not save those](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=413.46) [changes. So our transaction did in fact roll back. If you question that, you](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=423) [can test that by going back into your RideServiceImpl,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=429.1) [going down to your batch, and either comment that transactional up above or](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=433.24) [comment out that throw new DataAccessException and save that.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=438.28) [It will redeploy, and we'll go back to our](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=444.04) [testBatchUpdate and run that JUnit test again.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=447.84) [Now it should have saved those to our database, our test was](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=455.24) [successful. Because we didn't throw that exception again, it should](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=458.92) [commit them, and it did. So quite simple.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=463.42) [All we had to do was inside of our application we added the name space](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=468.69) [for tx so that we could put our tx annotation‑driven transaction‑manager](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=476.19) [in there, and then we added a bean for the](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=481.47) [org.springframework.jdbc.datasource.DataSourceTransactionManager that we](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=484.47) [wrap our data source with, and then inside of our code all we had to do](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=490.48) [was throw a DataAccessException to test it,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=495.48) [but add that @Transactional annotation to our code to say anything](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=499.12) [that takes place in this unit of work, I want to be inside of a](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=504.92) [transaction. Very easy to do, and now you're starting to see the](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=508.92) [full power of why you have a service tier that calls multiple](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=513.03) [functions from inside of it.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=516.82) [Think of a more complex application. If I was updating](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=518.54) [three, four or five database tables,](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=521.31) [all I have to do is still put that one annotation at the top](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=523.29) [and it will roll back all of our changes if an exception is thrown somewhere along the way.](https://app.pluralsight.com/course-player?clipId=79b8517a-1eb0-4d32-aeff-b0da9726791b&startTime=526.71)

### [Summary](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb)

[In this module we learned exceptions and how to implement an](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb&startTime=1.664) [exception handler since Spring handles all of its exceptions](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb&startTime=6.193411764705884) [through unchecked runtime exceptions.](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb&startTime=10.164) [Then we added transactions to our application using a](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb&startTime=12.164) [transaction manager and annotations to mark which methods we](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb&startTime=16.552888888888887) [want to be part of that transaction.](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb&startTime=20.552888888888873) [And with exception handling and transactions,](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb&startTime=23.664) [that actually concludes our course on using Spring JDBC to develop applications.](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb&startTime=26.86400000000001) [Thank you for sticking with us this far and if you enjoy this course I recommend watching some of the other courses I have on Pluralsight.](https://app.pluralsight.com/course-player?clipId=b7fdf0e7-0fd3-4b9f-b73e-8327456360cb&startTime=32.61136842105263)