

Building an Application Using Java SE

Setting up a Java Application



Sander Mak

Java Champion

@sander_mak

Who's This Course For?



**Java
Developer**



Java SE: The Big Picture



Java SE Fundamentals

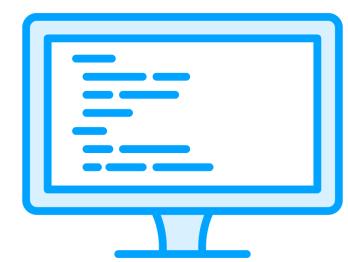


**Object-oriented Programming
in Java 17**

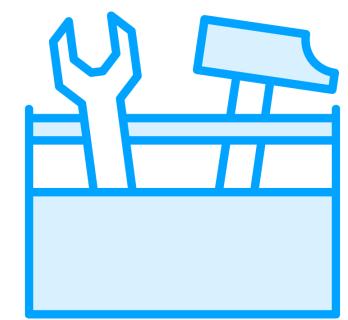
Who's This Course For?



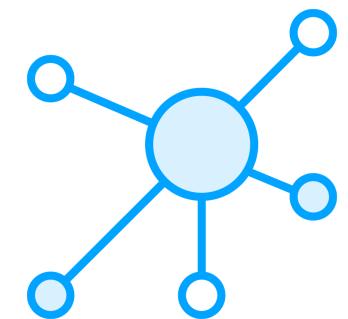
Java
Developer



Get comfortable with a non-trivial Java codebase



See standard Java tooling and libraries in action



Connect concepts in a real-world setting

We'll spend most of our time in the IDE!

Version Check



This course was created by using:

- Java SE 17

<https://www.oracle.com/java/technologies/downloads/#java21>

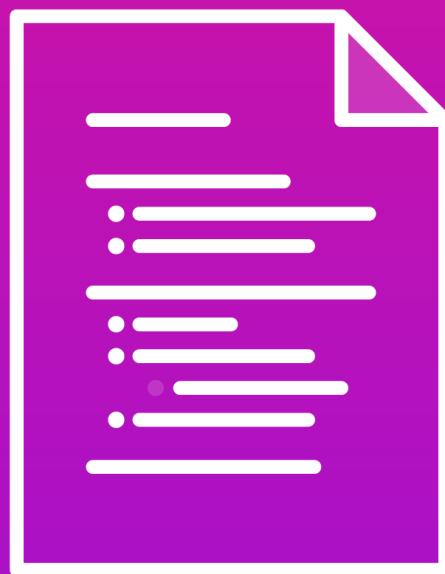
Version Check



This course is 100% applicable to:

- Java SE 17, 21
- Very likely to work on later versions as well

Relevant Notes



A note on frameworks and libraries:

- IntelliJ IDEA Community Edition 2022.1,
exact version match not necessary

<https://www.jetbrains.com/idea/download/>

- Maven 3.8.6, any 3.8.* version will suffice

<https://maven.apache.org/download.cgi>

SDKMAN! <https://sdkman.io>

What Are We Going to Build?

"How can we get others to learn new and cool tech in our company?"

"Let's build a course information API for other developers!"



What Are We Going to Build?

Requirements

Store interesting courses in a database

Expose courses over a REST API

Allow addition of notes through the API

Fill the database with Pluralsight course information



Project: Course Info

How Are We Going to Build It?

Build tool

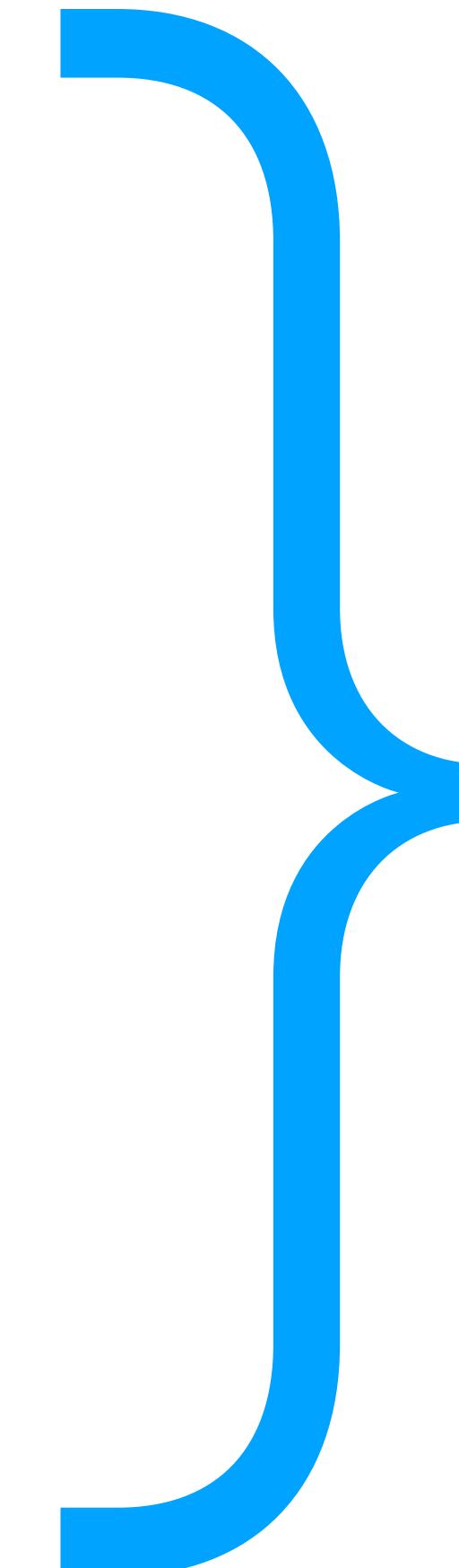
Web API call

JSON handling

REST API + server

Database interaction

Testing



Java framework?

Spring (Boot)

Jakarta EE

Quarkus

Micronaut

...

How Are We Going to Build It?

Build tool

Web API call

JSON handling

REST API + server

Database interaction

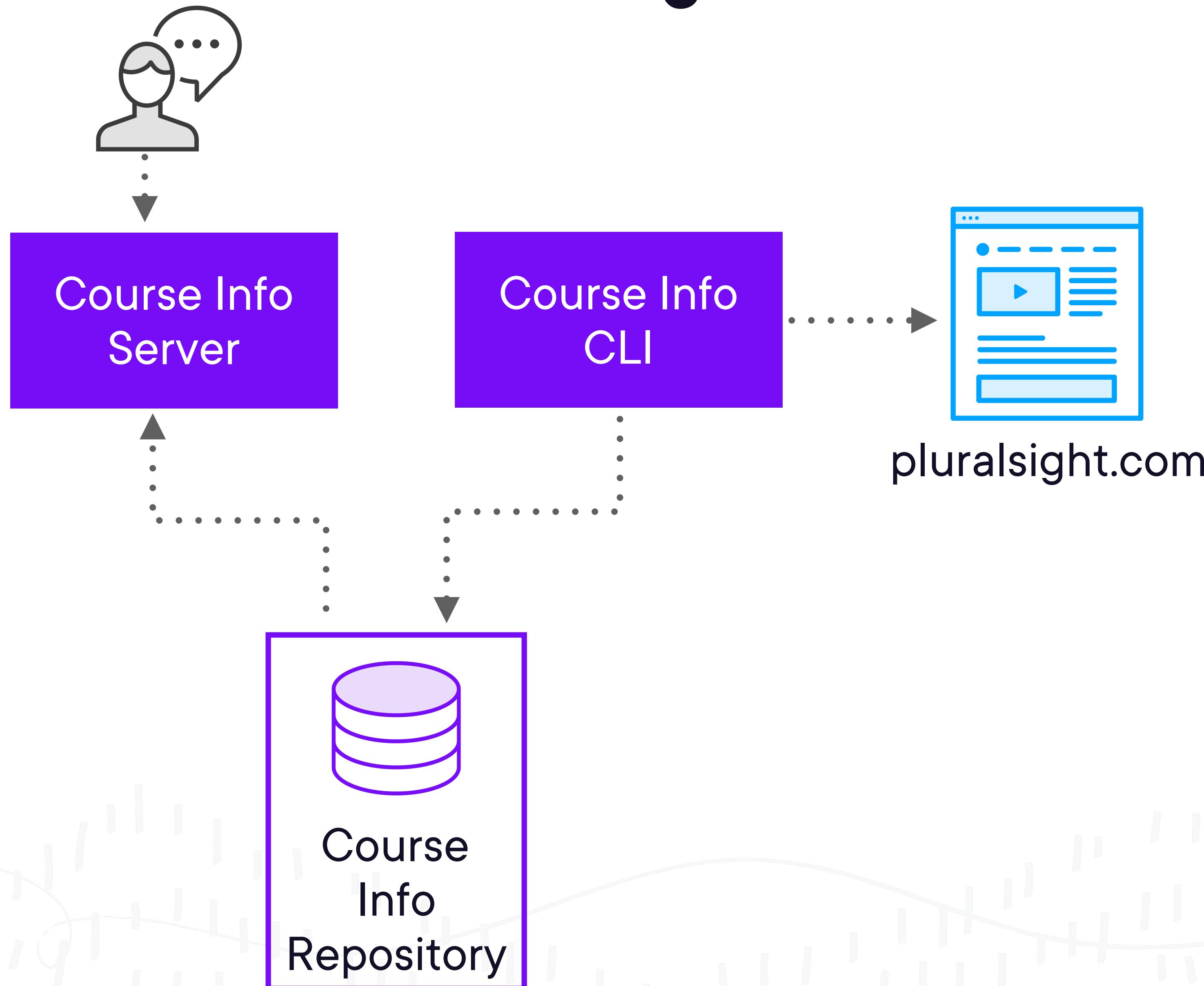
Testing

Java 17 + libraries

Maven
Jackson

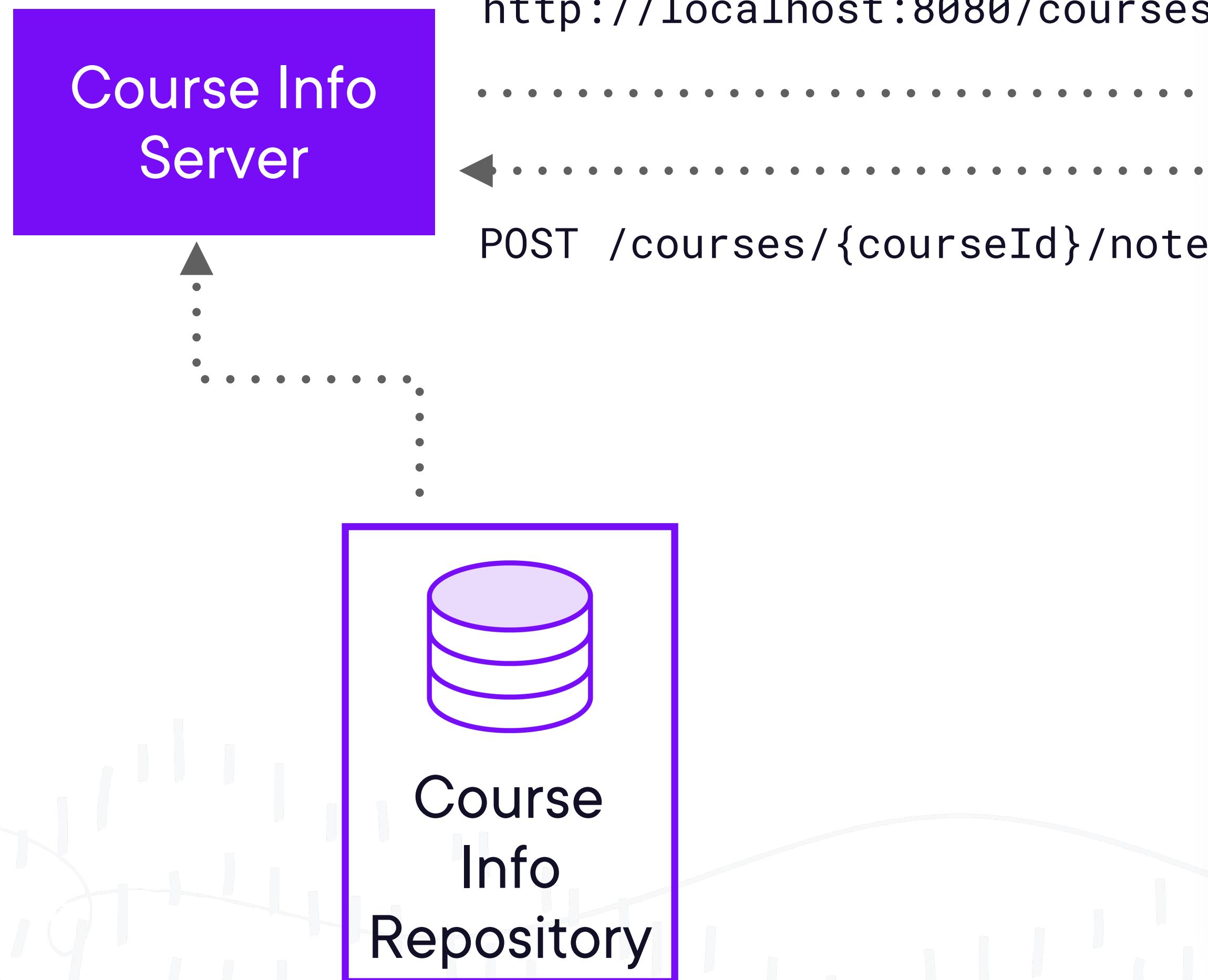
JAX-RS / Jersey
H2 database
JUnit

How Are We Going to Build It?



Java 17 + libraries
Maven
Jackson
JAX-RS / Jersey
H2 database
JUnit

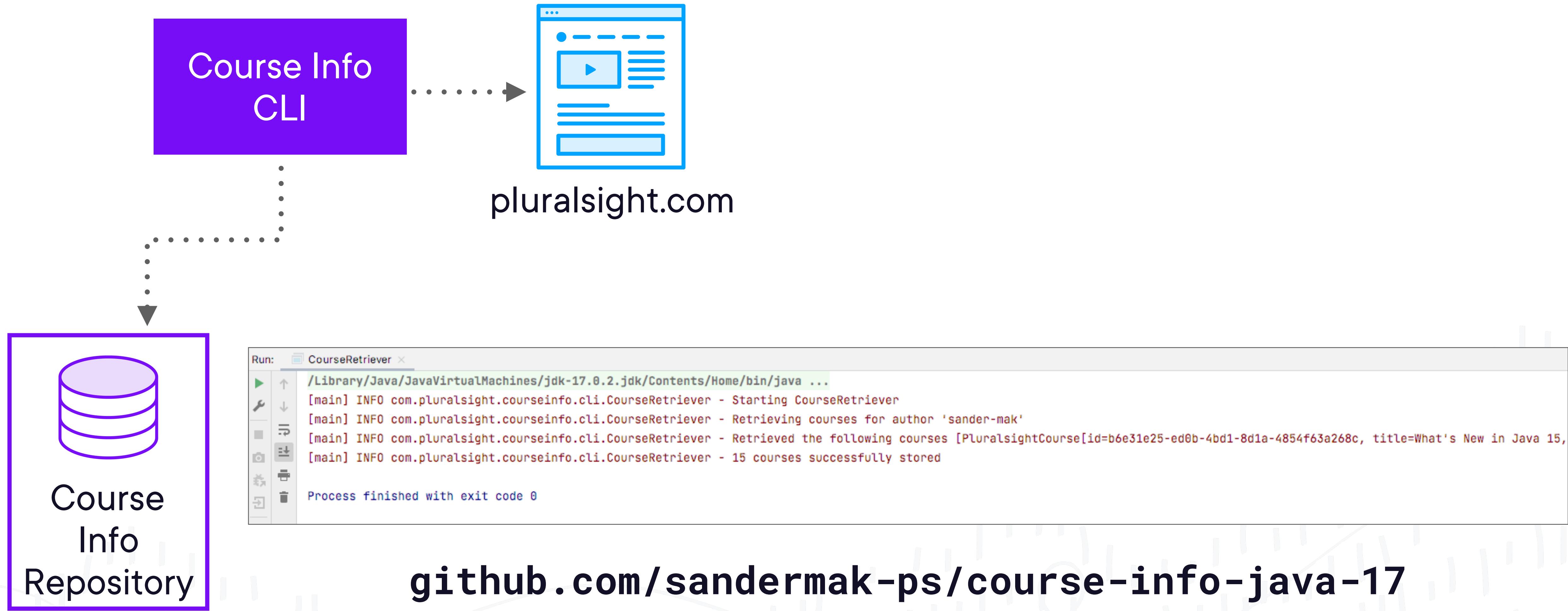
How Are We Going to Build It?



A screenshot of a web browser window titled "localhost:8080/courses". The address bar also shows "localhost:8080/courses". The content area displays a JSON array of course objects. Each object has the following structure:

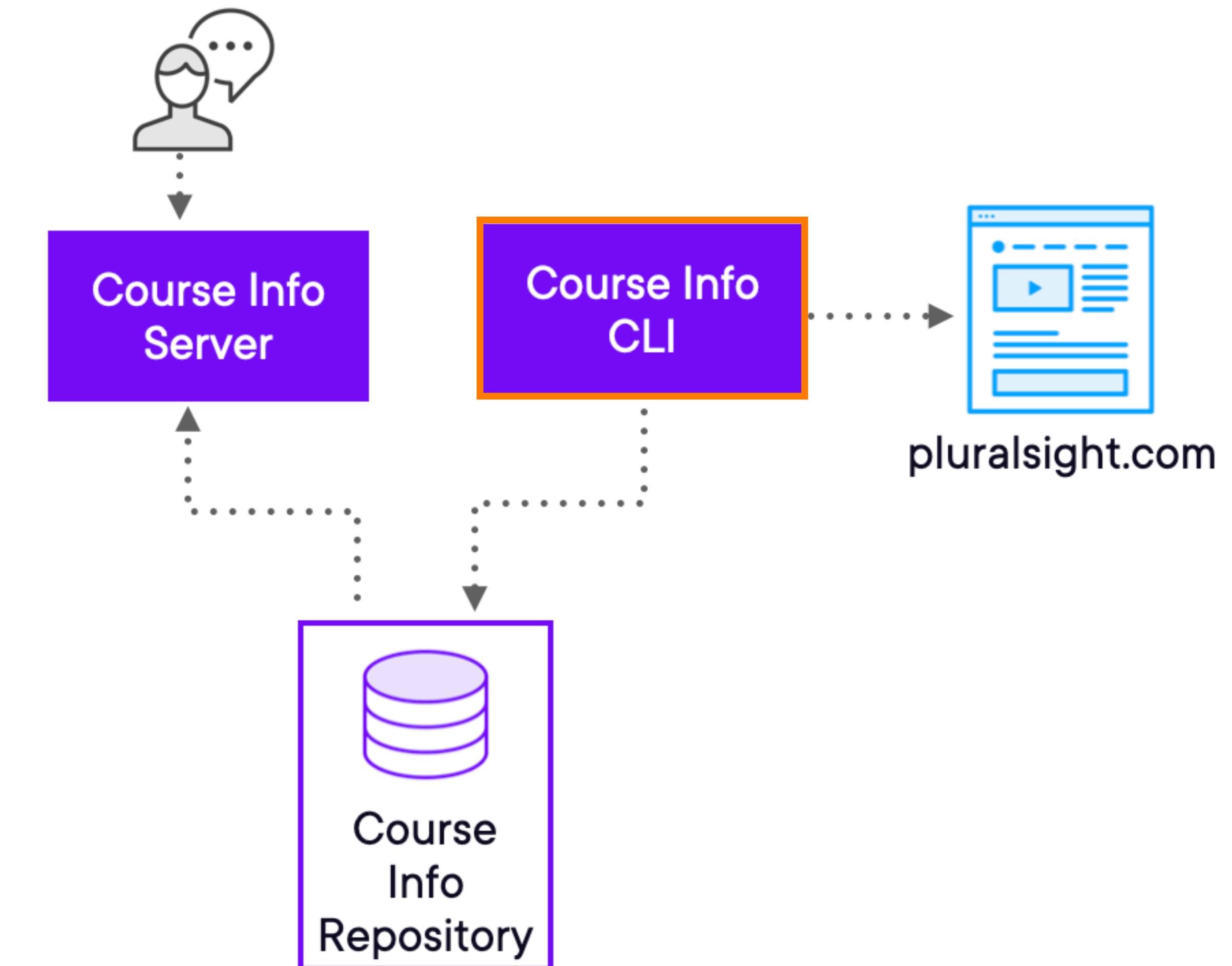
```
[{"id": "061f4437-be83-44c9-812f-82453fa3fb0b", "name": "Java 9 Modularity: First Look", "length": 124, "url": "https://app.pluralsight.com/library/courses/java-9-modularity-first-look", "notes": null}, {"id": "1717b720-e621-44f8-9991-0b21049eff3a", "name": "What's New in Java EE 8", "length": 119, "url": "https://app.pluralsight.com/library/courses/java-ee-8-whats-new", "notes": "Some course notes..."}, {"id": "3514597d-487c-41ec-9a30-d55ba28e3089", "name": "Java SE 17: The Big Picture", "length": 91, "url": "https://app.pluralsight.com/library/courses/java-se-17-big-picture", "notes": null}, {"id": "3529b7e5-a68e-450a-826b-ff0abf52304a", "name": "What's New in Java 12", "length": 67, "url": "https://app.pluralsight.com/library/courses/java-12-whats-new", "notes": null}, {"id": "38a35ba5-9b29-4406-b828-b04dce822900", "name": "What's New in Java 16", "length": 66, "url": "https://app.pluralsight.com/library/courses/java-16-whats-new", "notes": null}]
```

How Are We Going to Build It?



Demo

Setting up a Java project with Maven



DATA SCIENCE

Demo

Adding a dependency through Maven

API for parameterized log messages

Logging levels

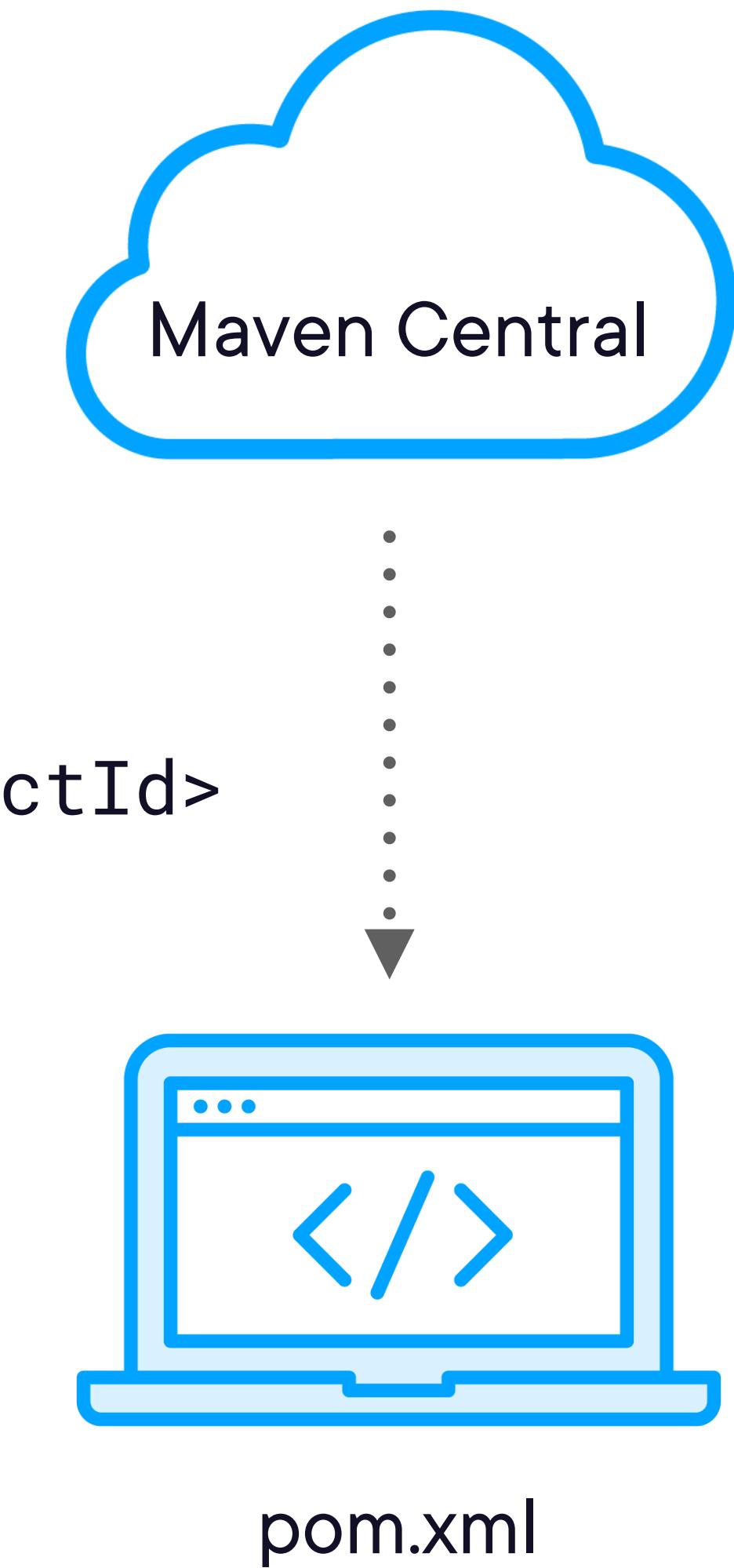
Configuration outside code

Support for different logging backends

Demo

Adding a dependency through Maven

```
<dependency>
    <groupId>org.slf4j</groupId>
    <artifactId>slf4j-api</artifactId>
    <version>1.7.36</version>
</dependency>
```



SLF4J Logging API

Your
application

SLF4J

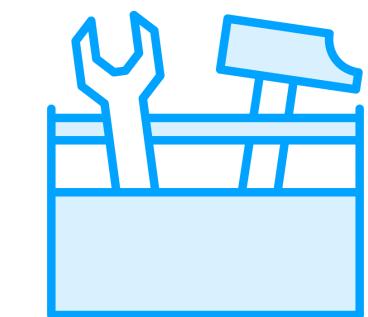
Log4j

Logback

JDK Logging

Simple Logging Facade for Java

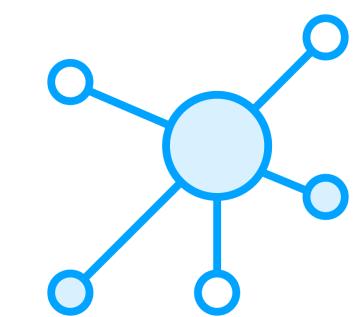
Summary



Set up a new project with Maven



Use IntelliJ to code and run the application



Manage dependencies