Defining the Domain Model

Antonio Goncalves
JAVA CHAMPION

@agoncal   www.antoniogoncalves.org

Previous Module

Development environment setup

Maven Archetype

Bootstrap a Java EE application

Directory structure

Configuration files

Overview

Understanding Domain Model

Map object

Relational database

Java Persistence API

Object Relational Mapping

What Is a Domain Model?

Describes the business

System of abstractions

Represented by an object

Nouns in our domain

Book Object

```
public class Book {

  private String   title;
  private String   description;
  private Float    unitCost;
  private String   isbn;
  private Date     publicationDate;
  private Integer  nbOfPages;
  private String   imagURL;
  private Language language;

  // constructors, assessors, behavior
}
```

What Is Object Relational Mapping?

Brings databases and objects together

Objects have transient state

Only available when the JVM is running

Some objects need to be persisted

Relational databases store state

Mapping between objects and tables

Java Persistence API

What Is Java Persistence API?

Maps objects to relational database

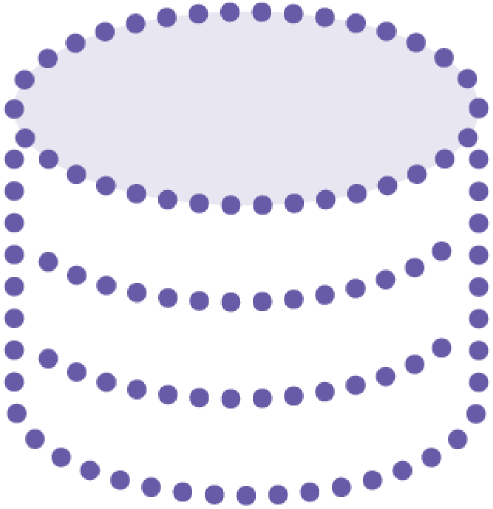
Entity manager

Entity

CRUD operations

Query language JPQL

What Is an Entity?



Entity rather than object

Live persistently in database

Mapped to a database

Persistent identity

Removes JDBC boilerplate code

Book Entity with JPA

```java
@Entity
public class Book {

  @Id @GeneratedValue(strategy = GenerationType.AUTO)
  private Long id;
  @Column(length = 200)
  private String title;
  @Column(length = 10000)
  private String description;
  @Column(name = "publication_date")
  @Temporal(TemporalType.DATE)
  private Date publicationDate;
  // ...
```

Deployment Descriptor

persistence.xml

```
<persistence xmlns:xsi="...">

  <persistence-unit name="bookStorePU">
    <properties>
      <property name="javax.persistence.schema-
generation.database.action" value="drop-and-create"/>
      <property name="javax.persistence.schema-
generation.scripts.action"  value="drop-and-create"/>
      <property name="javax.persistence.schema-
generation.scripts.create-target"
                                value="bookStoreCreate.ddl"/>
    </properties>
  </persistence-unit>
</persistence>
```

Demo

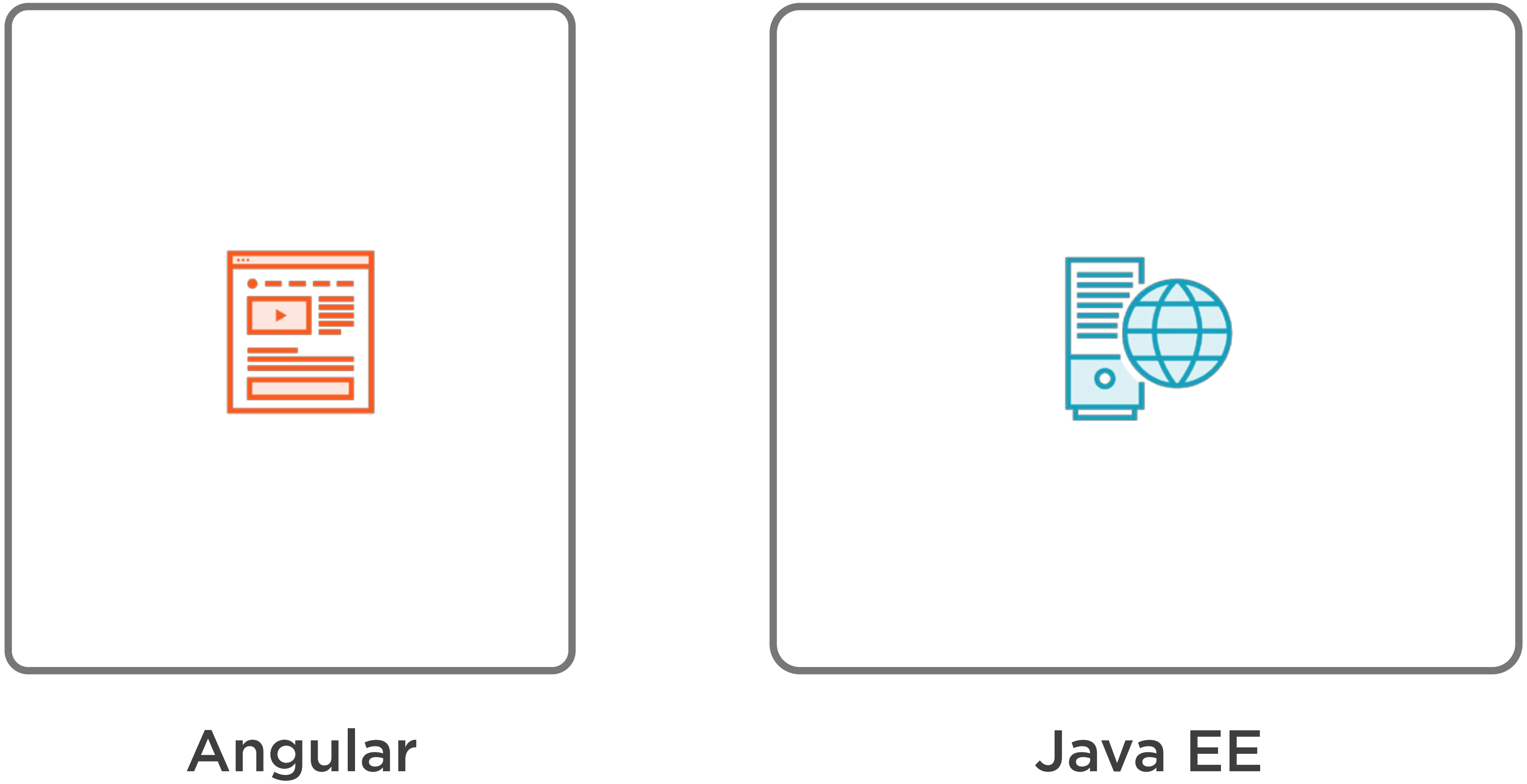
Implementing the Book object

Java Persistence API

Mapping the Book entity

Generating the DDL

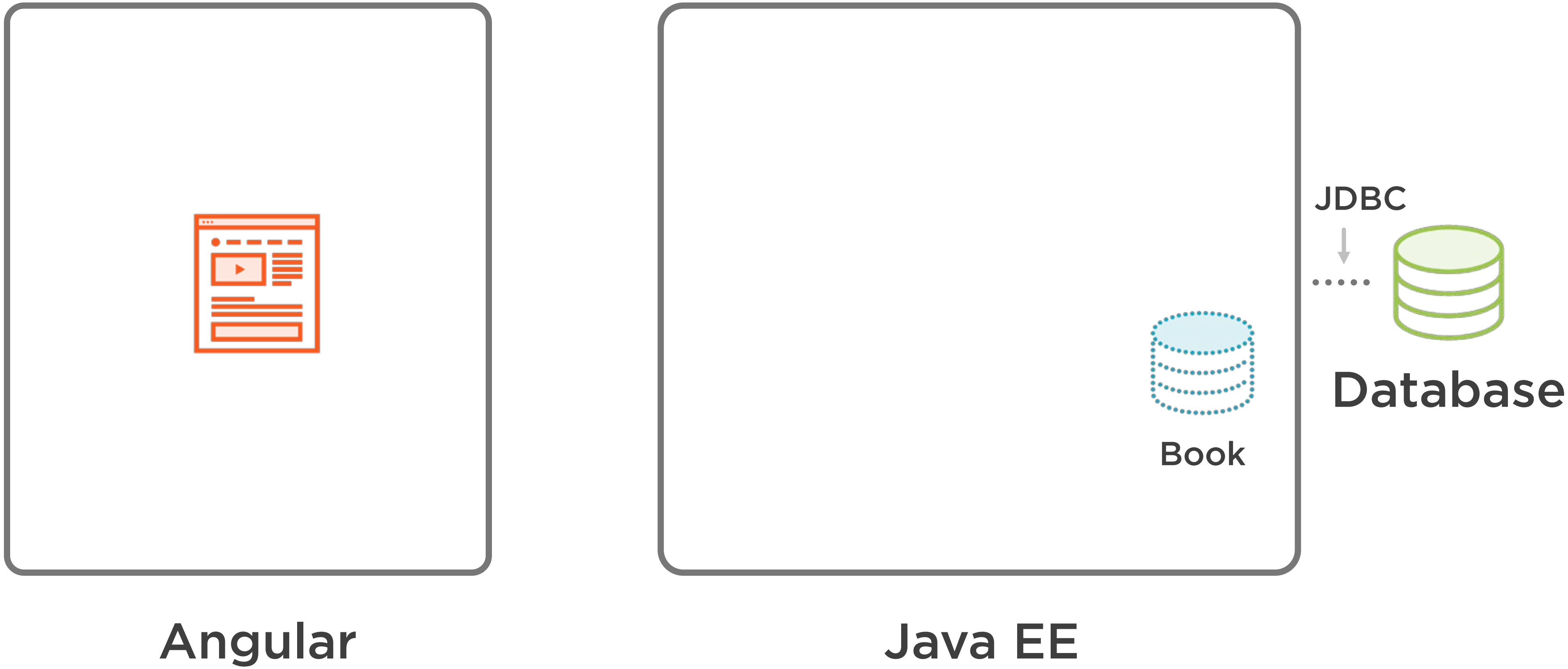
Anatomy of the BookStore Application



Angular

Java EE

Anatomy of the BookStore Application



Summary

Domain model

Book

Relational database

Java Persistence API

Map entity

Next Module

Manipulate the Book entity

Insert, select and delete

Querying books

Transactions