Entity Inheritance

Cătălin Tudose

PhD in Computer Science, Java and Web Technologies Expert

www.catalintudose.com | https://www.linkedin.com/in/catalin-tudose-847667a1

Overview

Inherit from entities and non-entities

Working with mapping strategies

Working with converters

Abstract Entity Classes

Annotated with the @Entity annotation

Mapped as an entity

Target of queries

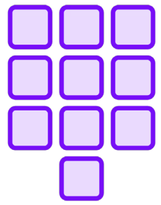
Entities Inheriting from Non-entities

Define state and mapping information common to multiple entities

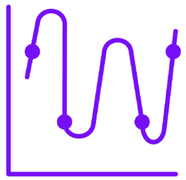
The mapped superclass cannot be queried

Only unidirectional relationships

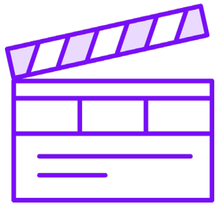
Annotations to Inherit from Non-entities



@MappedSuperclass

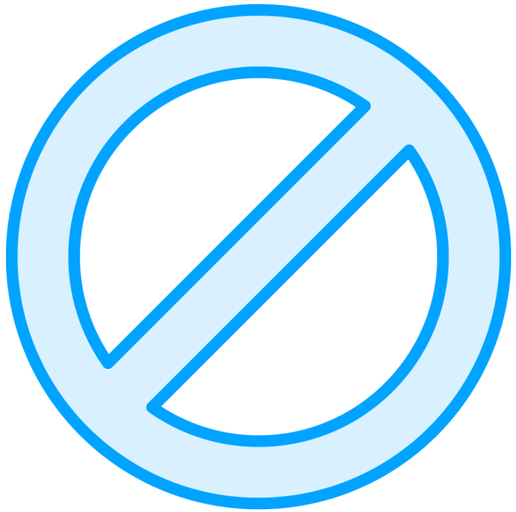


@AttributeOverride



@AssociationOverride

Extending Non-entities with Non-persistent State



Non-persistent state

Inherit behavior

Annotations are ignored

Demo

Extend one entity

Demo

Extend one non-entity

Mapping Strategies

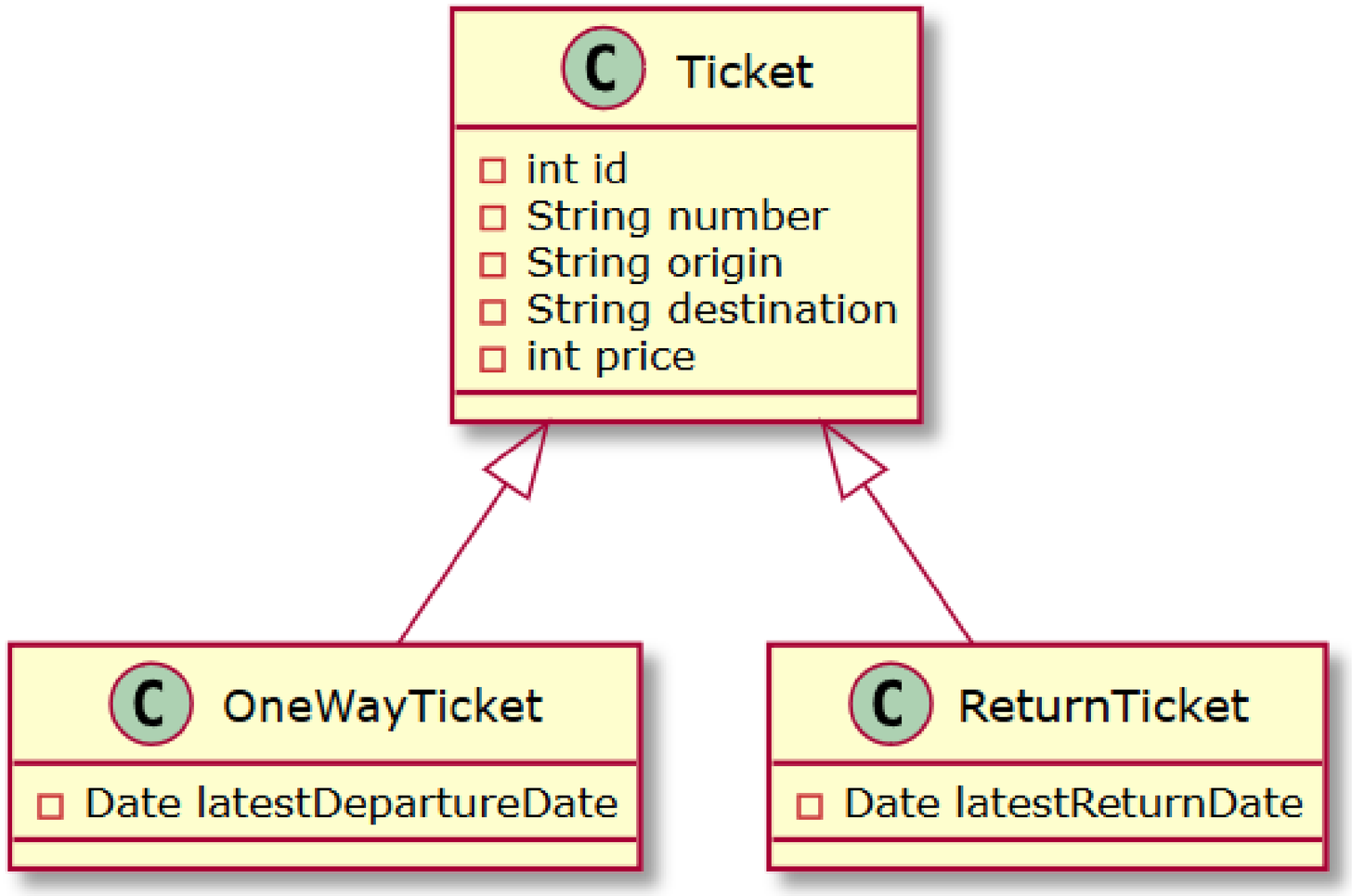
Mapping Strategies

Single table per class hierarchy

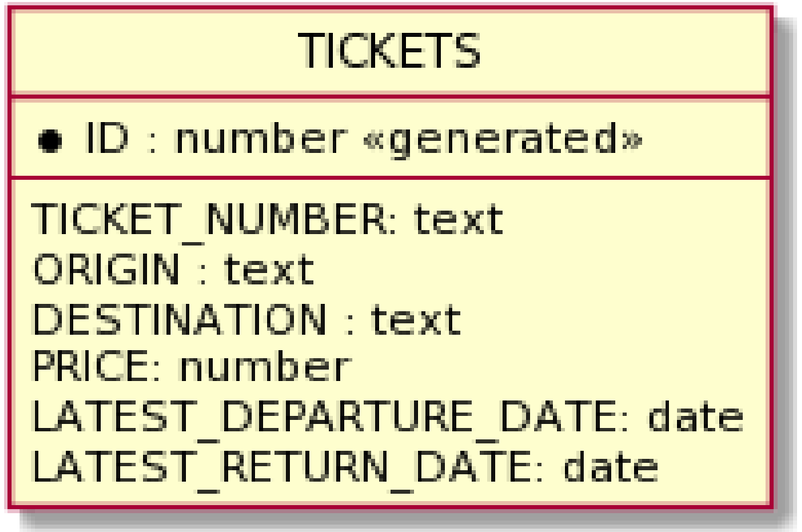
Joined subclass strategy

Table per concrete entity class

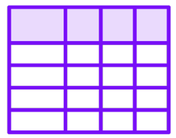
The Classes Hierarchy



Single Table per Class Hierarchy



Single Table per Class Hierarchy



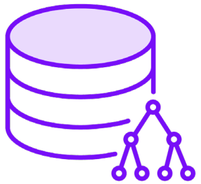
All classes in the hierarchy mapped to a single table

Discriminator column

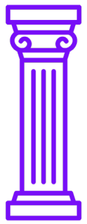
Good support for polymorphic relationships

Requires nullable columns

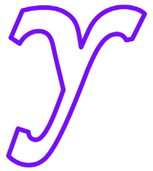
Annotations for Mapping Strategies



@Inheritance

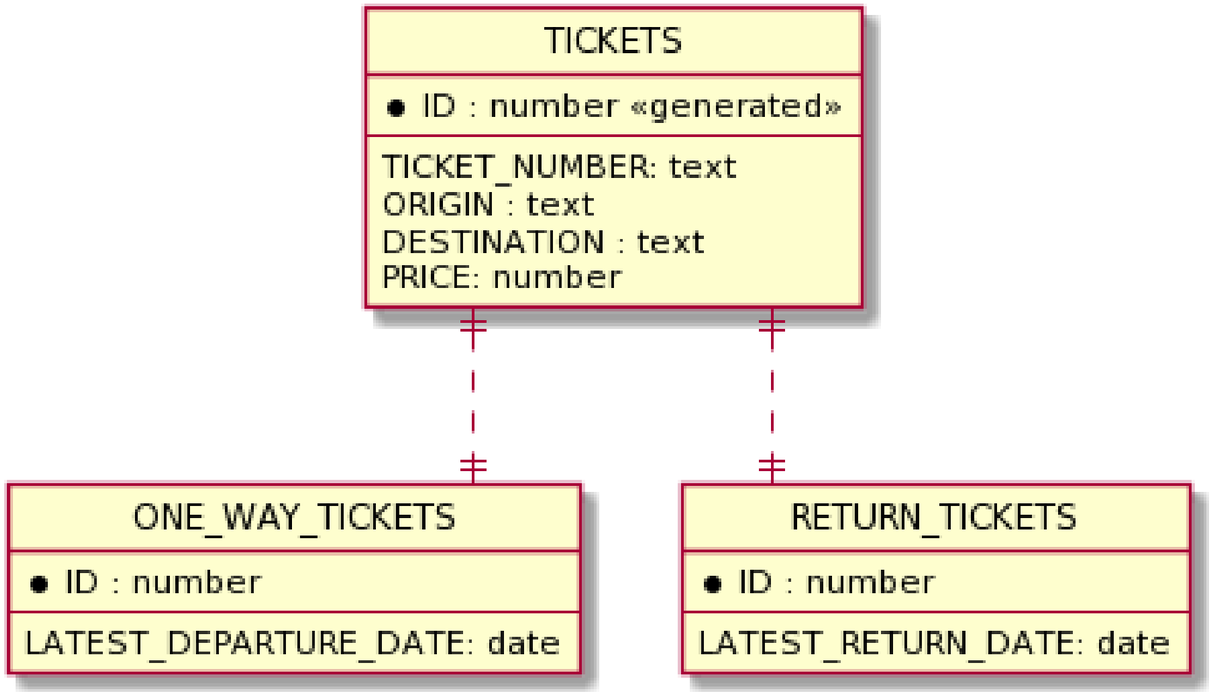


@DiscriminatorColumn

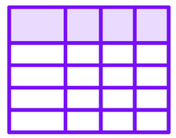


@DiscriminatorValue

Joined Subclass Strategy



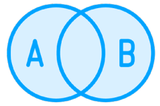
Joined Subclass Strategy



Classes as separate tables

Join through the primary key column

Good support for polymorphic relationships



More join operations between entities

Table per Concrete Class Strategy

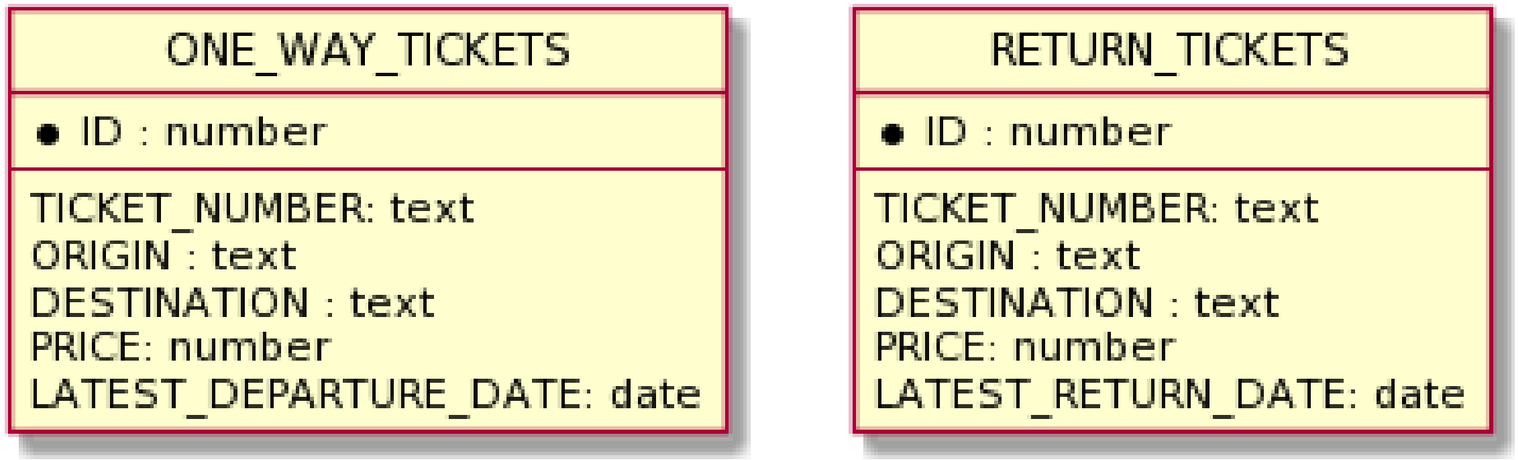
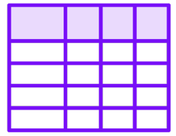


Table per Concrete Class Strategy



Each subclass is mapped to a separate table

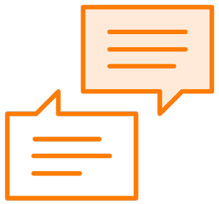
All properties mapped to columns of the table for the class

Poor support for polymorphic relationships

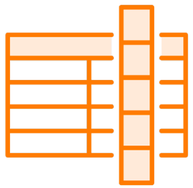
May duplicate the IDs between tables

Storing Values Represented Differently

Java boolean ⇔ 0/1, True/False, Yes/No



jakarta.persistence.AttributeConverter



Convert entity attribute state to database column and vice-versa

Demo

Single table per class hierarchy

Demo

Joined subclass strategy

Demo

Table per concrete class strategy

Demo

Conversion

Summary

Build class hierarchies

- Inherited from entities
- Inherited from non-entities

Applied the mapping strategies

- Single table per class hierarchy
- Joined subclass strategy
- Table per concrete class strategy
- Particularities, pluses, minuses

Worked with converters

Course Summary

ORM and JPA

Working with entities

Entity relationships

Entity inheritance