



Get smart with MapStruct

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- **Project lead** of MapStruct
- Platform architect at Flowable
 - Open source engines (BPMN, CMMN, DMN)
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The Problem

- Need to map between different models
 - View Model vs DB Model
 - 3rd party REST API vs DB Model
- Types are similar, but **not quite the same**

Car
- make: String - model: Model - numberOfSeats: int - manufacturingDate: LocalDate - price: BigDecimal - category: Category

CarDto
- make: String - model: String - seatCount: int - manufacturingDate: String - price: double - category: String

Problem Solutions

- **Manually**
 - Boring code
 - Error prone (might miss a mapping for a new property)
- **Reflection-based libraries**
 - Lack of type safety
 - Performance penalty
 - Difficult debugging

Introducing MapStruct

- Mappings defined as **interfaces**
- Mapping **java code generated** at compile time using annotation processor
- **No reflection**
- **No runtime dependencies**

@Mapper

```
public interface CarMapper {
```

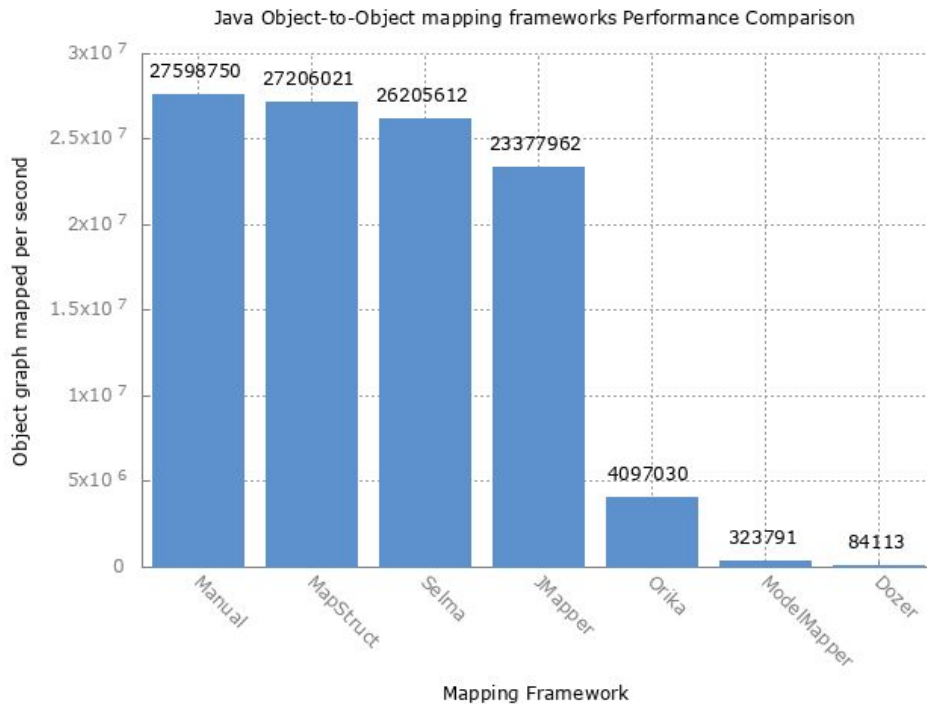
```
    @Mapping(target = "seatCount", source = "numberOfSeats")
```

```
    @Mapping(target = "manufacturingDate", dateFormat = "yyyy-MM-dd")
```

```
    CarDto map(Car car);
```

```
}
```

Performance



<https://github.com/arey/java-object-mapper-benchmark>

Installation

- Installation instructions - <http://mapstruct.org/documentation/installation/>
- Maven example - <https://github.com/mapstruct/mapstruct-examples/blob/master/mapstruct-file-mapping>
- Gradle example - <https://github.com/mapstruct/mapstruct-examples/tree/master/mapstruct-on-gradle>
- IDE Support - <http://mapstruct.org/documentation/ide-support>
 - Eclipse Plugin
 - IntelliJ Plugin

Demo

Advantages of code generation

- **Type-safe**
- **Quick feedback** loop
- Easy to debug
- Plain method calls -> **very fast**
- No runtime dependencies
- Works on CLI or in your IDE

What else is there

- Collection mappings
- Update methods
- Custom naming strategies
- Configuration inheritance
 - Inverse methods
 - @MapperConfig

Future work

- Make use of constructor arguments when instantiating mapping targets
- Annotation composition (meta annotations)
- Mapping from Object into Map

Get smart with MapStruct

- Reference guide, API docs etc. - mapstruct.org/
- Source code, IDE plugins, examples - <https://github.com/mapstruct/>
- Demo from this presentation - https://github.com/filiphr/jug_switzerland_2019
- Gitter channel - <https://gitter.im/mapstruct/mapstruct-users>
- Discussion group - <https://groups.google.com/forum/#!forum/mapstruct-users>
- Latest news
 @GetMapStruct or #MapStruct