

Mappers

Resumo

Os mappers, ou mapeadores são responsáveis por mapear um tipo de dado para outro, realizando conversões.

Isso é necessário porque nem sempre o tipo de dado de origem em um conector é igual ao tipo de dado no conector de destino.

Embora o Mizura suporte nativamente 14 tipos de dados diferentes, você pode implementar um mapeador customizado se for preciso. Por exemplo, em um repositório o tipo de dado de um campo pode ser uma imagem do Google Maps, e no outro essa informação ser armazenada textualmente, na forma de seu endereço.

Para criar o seu mapeamento customizado, basta implementar a interface [IElementMapper](#):

```
public interface IElementMapper<S extends Object, D> {  
    public D convert(S source, Class<? extends D> destination);  
}
```

Mapeamentos Nativos

O Mizura vem com implementação de mapeamento padrão (vide classe [DefaultElementMapper](#)) para 14 tipos de dados mais comuns no Java (vide abaixo), originando 196 combinações. Dessas, geram 21 condições de erro (ex. Converter uma data para um tipo booleano) e 11 implicam em perda de precisão (ex.: Converter um double para um inteiro). Nas condições de erro, o valor no objeto de destino será null ou o valor padrão do tipo de dado Java quando usados primitivos.

Os seguintes mapeamentos são implementados pelo Mizura:

- java.lang.String
- java.lang.Boolean
- java.util.Date
- java.lang.Long
- java.lang.Integer
- java.lang.Double
- java.lang.Float
- java.lang.Byte
- java.lang.Short
- java.lang.Character
- java.math.BigInteger
- java.math.AtomiLong
- java.math.AtomicInteger

E aqui, o teste unitário (vide classe [DefaultElementMapperTest](#)) com as saídas dessas conversões:

```
CONVERT(Float,Float) = Float: 123456.79 -> Float: 123456.79  
CONVERT(Float,Double) = Float: 123456.79 -> Double: 123456.7890625  
CONVERT(Float,AtomicInteger) = Float: 123456.79 -> AtomicInteger: 123456  
CONVERT(Float,Byte) = Float: 123456.79 -> Byte: 64  
CONVERT(Float,Long) = Float: 123456.79 -> Long: 123456  
CONVERT(Float,Character) = Float: 123456.79 -> Character: 1  
CONVERT(Float,AtomicLong) = Float: 123456.79 -> AtomicLong: 123456  
CONVERT(Float,Date) = Float: 123456.79 -> Date: Wed Dec 31 21:02:03 BRT 1969  
CONVERT(Float,Boolean) = Float: 123456.79 -> Boolean: false  
CONVERT(Float,BigDecimal) = Float: 123456.79 -> BigDecimal: 123456.7890625  
CONVERT(Float,String) = Float: 123456.79 -> String: 123456.79  
CONVERT(Float,Integer) = Float: 123456.79 -> Integer: 123456  
CONVERT(Float,BigInteger) = Float: 123456.79 -> BigInteger: 123456  
CONVERT(Float,Short) = Float: 123456.79 -> Short: -7616  
CONVERT(Double,Float) = Double: 123456.789 -> Float: 123456.79  
CONVERT(Double,Double) = Double: 123456.789 -> Double: 123456.789  
CONVERT(Double,AtomicInteger) = Double: 123456.789 -> AtomicInteger: 123456  
CONVERT(Double,Byte) = Double: 123456.789 -> Byte: 64  
CONVERT(Double,Long) = Double: 123456.789 -> Long: 123456  
CONVERT(Double,Character) = Double: 123456.789 -> Character: 1  
CONVERT(Double,AtomicLong) = Double: 123456.789 -> AtomicLong: 123456  
CONVERT(Double,Date) = Double: 123456.789 -> Date: Wed Dec 31 21:02:03 BRT 1969  
CONVERT(Double,Boolean) = Double: 123456.789 -> Boolean: false  
CONVERT(Double,BigDecimal) = Double: 123456.789 -> BigDecimal: 123456.789000000004307366907596588134765625
```

CONVERT(Double,String) = Double: 123456.789 -> String: 123456.789
CONVERT(Double,Integer) = Double: 123456.789 -> Integer: 123456
CONVERT(Double,BigInteger) = Double: 123456.789 -> BigInteger: 123456
CONVERT(Double,Short) = Double: 123456.789 -> Short: -7616
CONVERT(AtomicInteger,Float) = AtomicInteger: 123456 -> Float: 123456.0
CONVERT(AtomicInteger,Double) = AtomicInteger: 123456 -> Double: 123456.0
CONVERT(AtomicInteger,AtomicInteger) = AtomicInteger: 123456 -> AtomicInteger: 123456
CONVERT(AtomicInteger,Byte) = AtomicInteger: 123456 -> Byte: 64
CONVERT(AtomicInteger,Long) = AtomicInteger: 123456 -> Long: 123456
CONVERT(AtomicInteger,Character) = AtomicInteger: 123456 -> Character: 1
CONVERT(AtomicInteger,AtomicLong) = AtomicInteger: 123456 -> AtomicLong: 123456
CONVERT(AtomicInteger,Date) = AtomicInteger: 123456 -> Date: Wed Dec 31 21:02:03 BRT 1969
CONVERT(AtomicInteger,Boolean) = AtomicInteger: 123456 -> Boolean: false
CONVERT(AtomicInteger,BigDecimal) = AtomicInteger: 123456 -> BigDecimal: 123456
CONVERT(AtomicInteger,String) = AtomicInteger: 123456 -> String: 123456
CONVERT(AtomicInteger,Integer) = AtomicInteger: 123456 -> Integer: 123456
CONVERT(AtomicInteger,BigInteger) = AtomicInteger: 123456 -> BigInteger: 123456
CONVERT(AtomicInteger,Short) = AtomicInteger: 123456 -> Short: -7616
CONVERT(Integer,Float) = Integer: 123 -> Float: 123.0
CONVERT(Integer,Double) = Integer: 123 -> Double: 123.0
CONVERT(Integer,AtomicInteger) = Integer: 123 -> AtomicInteger: 123
CONVERT(Integer,Byte) = Integer: 123 -> Byte: 123
CONVERT(Integer,Long) = Integer: 123 -> Long: 123
CONVERT(Integer,Character) = Integer: 123 -> Character: 1
CONVERT(Integer,AtomicLong) = Integer: 123 -> AtomicLong: 123
CONVERT(Integer,Date) = Integer: 123 -> Date: Wed Dec 31 21:00:00 BRT 1969
CONVERT(Integer,Boolean) = Integer: 123 -> Boolean: false
CONVERT(Integer,BigDecimal) = Integer: 123 -> BigDecimal: 123
CONVERT(Integer,String) = Integer: 123 -> String: 123
CONVERT(Integer,Integer) = Integer: 123 -> Integer: 123
CONVERT(Integer,BigInteger) = Integer: 123 -> BigInteger: 123
CONVERT(Integer,Short) = Integer: 123 -> Short: 123
CONVERT(Long,Float) = Long: 123456 -> Float: 123456.0
CONVERT(Long,Double) = Long: 123456 -> Double: 123456.0
CONVERT(Long,AtomicInteger) = Long: 123456 -> AtomicInteger: 123456
CONVERT(Long,Byte) = Long: 123456 -> Byte: 64
CONVERT(Long,Long) = Long: 123456 -> Long: 123456
CONVERT(Long,Character) = Long: 123456 -> Character: 1
CONVERT(Long,AtomicLong) = Long: 123456 -> AtomicLong: 123456
CONVERT(Long,Date) = Long: 123456 -> Date: Wed Dec 31 21:02:03 BRT 1969
CONVERT(Long,Boolean) = Long: 123456 -> Boolean: false
CONVERT(Long,BigDecimal) = Long: 123456 -> BigDecimal: 123456
CONVERT(Long,String) = Long: 123456 -> String: 123456
CONVERT(Long,Integer) = Long: 123456 -> Integer: 123456
CONVERT(Long,BigInteger) = Long: 123456 -> BigInteger: 123456
CONVERT(Long,Short) = Long: 123456 -> Short: -7616
CONVERT(Character,Float) = Character: t -> Float: UNSUPPORTED
CONVERT(Character,Double) = Character: t -> Double: UNSUPPORTED
CONVERT(Character,AtomicInteger) = Character: t -> AtomicInteger: UNSUPPORTED
CONVERT(Character,Byte) = Character: t -> Byte: UNSUPPORTED
CONVERT(Character,Long) = Character: t -> Long: UNSUPPORTED
CONVERT(Character,Character) = Character: t -> Character: t
CONVERT(Character,AtomicLong) = Character: t -> AtomicLong: UNSUPPORTED
CONVERT(Character,Date) = Character: t -> Date: UNSUPPORTED
CONVERT(Character,Boolean) = Character: t -> Boolean: true
CONVERT(Character,BigDecimal) = Character: t -> BigDecimal: UNSUPPORTED
CONVERT(Character,String) = Character: t -> String: t
CONVERT(Character,Integer) = Character: t -> Integer: UNSUPPORTED
CONVERT(Character,BigInteger) = Character: t -> BigInteger: UNSUPPORTED
CONVERT(Character,Short) = Character: t -> Short: UNSUPPORTED
CONVERT(AtomicLong,Float) = AtomicLong: 123456 -> Float: 123456.0
CONVERT(AtomicLong,Double) = AtomicLong: 123456 -> Double: 123456.0
CONVERT(AtomicLong,AtomicInteger) = AtomicLong: 123456 -> AtomicInteger: 123456
CONVERT(AtomicLong,Byte) = AtomicLong: 123456 -> Byte: 64
CONVERT(AtomicLong,Long) = AtomicLong: 123456 -> Long: 123456
CONVERT(AtomicLong,Character) = AtomicLong: 123456 -> Character: 1
CONVERT(AtomicLong,AtomicLong) = AtomicLong: 123456 -> AtomicLong: 123456
CONVERT(AtomicLong,Date) = AtomicLong: 123456 -> Date: Wed Dec 31 21:02:03 BRT 1969
CONVERT(AtomicLong,Boolean) = AtomicLong: 123456 -> Boolean: false
CONVERT(AtomicLong,BigDecimal) = AtomicLong: 123456 -> BigDecimal: 123456
CONVERT(AtomicLong,String) = AtomicLong: 123456 -> String: 123456

```
CONVERT(AtomicLong,Integer) = AtomicLong: 123456 -> Integer: 123456
CONVERT(AtomicLong,BigInteger) = AtomicLong: 123456 -> BigInteger: 123456
CONVERT(AtomicLong,Short) = AtomicLong: 123456 -> Short: -7616
CONVERT(Date,Float) = Date: Mon Aug 15 15:23:12 BRT 2011 -> Float: 1.31343254E12
CONVERT(Date,Double) = Date: Mon Aug 15 15:23:12 BRT 2011 -> Double: 1.313432592767E12
CONVERT(Date,AtomicInteger) = Date: Mon Aug 15 15:23:12 BRT 2011 -> AtomicInteger: -827399809
CONVERT(Date,Byte) = Date: Mon Aug 15 15:23:12 BRT 2011 -> Byte: 127
CONVERT(Date,Long) = Date: Mon Aug 15 15:23:12 BRT 2011 -> Long: 1313432592767
CONVERT(Date,Character) = Date: Mon Aug 15 15:23:12 BRT 2011 -> Character: UNSUPPORTED
CONVERT(Date,AtomicLong) = Date: Mon Aug 15 15:23:12 BRT 2011 -> AtomicLong: 1313432592767
CONVERT(Date,Date) = Date: Mon Aug 15 15:23:12 BRT 2011 -> Date: Mon Aug 15 15:23:12 BRT 2011
CONVERT(Date,Boolean) = Date: Mon Aug 15 15:23:12 BRT 2011 -> Boolean: UNSUPPORTED
CONVERT(Date,BigDecimal) = Date: Mon Aug 15 15:23:12 BRT 2011 -> BigDecimal: 1313432592767
CONVERT(Date,String) = Date: Mon Aug 15 15:23:12 BRT 2011 -> String: 2011-08-15 15:23:12,767
CONVERT(Date,Integer) = Date: Mon Aug 15 15:23:12 BRT 2011 -> Integer: -827399809
CONVERT(Date,BigInteger) = Date: Mon Aug 15 15:23:12 BRT 2011 -> BigInteger: 1313432592767
CONVERT(Date,Short) = Date: Mon Aug 15 15:23:12 BRT 2011 -> Short: -7809
CONVERT(Boolean,Float) = Boolean: true -> Float: UNSUPPORTED
CONVERT(Boolean,Double) = Boolean: true -> Double: UNSUPPORTED
CONVERT(Boolean,AtomicInteger) = Boolean: true -> AtomicInteger: UNSUPPORTED
CONVERT(Boolean,Byte) = Boolean: true -> Byte: UNSUPPORTED
CONVERT(Boolean,Long) = Boolean: true -> Long: UNSUPPORTED
CONVERT(Boolean,Character) = Boolean: true -> Character: T
CONVERT(Boolean,AtomicLong) = Boolean: true -> AtomicLong: UNSUPPORTED
CONVERT(Boolean,Date) = Boolean: true -> Date: UNSUPPORTED
CONVERT(Boolean,Boolean) = Boolean: true -> Boolean: true
CONVERT(Boolean,BigDecimal) = Boolean: true -> BigDecimal: UNSUPPORTED
CONVERT(Boolean,String) = Boolean: true -> String: true
CONVERT(Boolean,Integer) = Boolean: true -> Integer: UNSUPPORTED
CONVERT(Boolean,BigInteger) = Boolean: true -> BigInteger: UNSUPPORTED
CONVERT(Boolean,Short) = Boolean: true -> Short: UNSUPPORTED
CONVERT(BigDecimal,Float) = BigDecimal: 123456.7890625 -> Float: 123456.79
CONVERT(BigDecimal,Double) = BigDecimal: 123456.7890625 -> Double: 123456.7890625
CONVERT(BigDecimal,AtomicInteger) = BigDecimal: 123456.7890625 -> AtomicInteger: 123456
CONVERT(BigDecimal,Byte) = BigDecimal: 123456.7890625 -> Byte: 64
CONVERT(BigDecimal,Long) = BigDecimal: 123456.7890625 -> Long: 123456
CONVERT(BigDecimal,Character) = BigDecimal: 123456.7890625 -> Character: 1
CONVERT(BigDecimal,AtomicLong) = BigDecimal: 123456.7890625 -> AtomicLong: 123456
CONVERT(BigDecimal,Date) = BigDecimal: 123456.7890625 -> Date: Wed Dec 31 21:02:03 BRT 1969
CONVERT(BigDecimal,Boolean) = BigDecimal: 123456.7890625 -> Boolean: false
CONVERT(BigDecimal,BigDecimal) = BigDecimal: 123456.7890625 -> BigDecimal: 123456.7890625
CONVERT(BigDecimal,String) = BigDecimal: 123456.7890625 -> String: 123456.7890625
CONVERT(BigDecimal,Integer) = BigDecimal: 123456.7890625 -> Integer: 123456
CONVERT(BigDecimal,BigInteger) = BigDecimal: 123456.7890625 -> BigInteger: 123456
CONVERT(BigDecimal,Short) = BigDecimal: 123456.7890625 -> Short: -7616
CONVERT(String,Float) = String: Acentuação -> Float: UNSUPPORTED
CONVERT(String,Double) = String: Acentuação -> Double: UNSUPPORTED
CONVERT(String,AtomicInteger) = String: Acentuação -> AtomicInteger: UNSUPPORTED
CONVERT(String,Byte) = String: Acentuação -> Byte: UNSUPPORTED
CONVERT(String,Long) = String: Acentuação -> Long: UNSUPPORTED
CONVERT(String,Character) = String: Acentuação -> Character: A
CONVERT(String,AtomicLong) = String: Acentuação -> AtomicLong: UNSUPPORTED
CONVERT(String,Date) = String: Acentuação -> Date: UNSUPPORTED
CONVERT(String,Boolean) = String: Acentuação -> Boolean: false
CONVERT(String,BigDecimal) = String: Acentuação -> BigDecimal: UNSUPPORTED
CONVERT(String,String) = String: Acentuação -> String: Acentuação
CONVERT(String,Integer) = String: Acentuação -> Integer: UNSUPPORTED
CONVERT(String,BigInteger) = String: Acentuação -> BigInteger: UNSUPPORTED
CONVERT(String,Short) = String: Acentuação -> Short: UNSUPPORTED
CONVERT(Integer,Float) = Integer: 1233456 -> Float: 1233456.0
CONVERT(Integer,Double) = Integer: 1233456 -> Double: 1233456.0
CONVERT(Integer,AtomicInteger) = Integer: 1233456 -> AtomicInteger: 1233456
CONVERT(Integer,Byte) = Integer: 1233456 -> Byte: 48
CONVERT(Integer,Long) = Integer: 1233456 -> Long: 1233456
CONVERT(Integer,Character) = Integer: 1233456 -> Character: 1
CONVERT(Integer,AtomicLong) = Integer: 1233456 -> AtomicLong: 1233456
CONVERT(Integer,Date) = Integer: 1233456 -> Date: Wed Dec 31 21:20:33 BRT 1969
CONVERT(Integer,Boolean) = Integer: 1233456 -> Boolean: false
CONVERT(Integer,BigDecimal) = Integer: 1233456 -> BigDecimal: 1233456
CONVERT(Integer,String) = Integer: 1233456 -> String: 1233456
CONVERT(Integer,Integer) = Integer: 1233456 -> Integer: 1233456
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```
CONVERT(Integer,BigInteger) = Integer: 1233456 -> BigInteger: 1233456
CONVERT(Integer,Short) = Integer: 1233456 -> Short: -11728
CONVERT(BigInteger,Float) = BigInteger: 123456 -> Float: 123456.0
CONVERT(BigInteger,Double) = BigInteger: 123456 -> Double: 123456.0
CONVERT(BigInteger,AtomicInteger) = BigInteger: 123456 -> AtomicInteger: 123456
CONVERT(BigInteger,Byte) = BigInteger: 123456 -> Byte: 64
CONVERT(BigInteger,Long) = BigInteger: 123456 -> Long: 123456
CONVERT(BigInteger,Character) = BigInteger: 123456 -> Character: 1
CONVERT(BigInteger,AtomicLong) = BigInteger: 123456 -> AtomicLong: 123456
CONVERT(BigInteger,Date) = BigInteger: 123456 -> Date: Wed Dec 31 21:02:03 BRT 1969
CONVERT(BigInteger,Boolean) = BigInteger: 123456 -> Boolean: false
CONVERT(BigInteger,BigDecimal) = BigInteger: 123456 -> BigDecimal: 123456
CONVERT(BigInteger,String) = BigInteger: 123456 -> String: 123456
CONVERT(BigInteger,Integer) = BigInteger: 123456 -> Integer: 123456
CONVERT(BigInteger,BigInteger) = BigInteger: 123456 -> BigInteger: 123456
CONVERT(BigInteger,Short) = BigInteger: 123456 -> Short: -7616
CONVERT(Integer,Float) = Integer: 123 -> Float: 123.0
CONVERT(Integer,Double) = Integer: 123 -> Double: 123.0
CONVERT(Integer,AtomicInteger) = Integer: 123 -> AtomicInteger: 123
CONVERT(Integer,Byte) = Integer: 123 -> Byte: 123
CONVERT(Integer,Long) = Integer: 123 -> Long: 123
CONVERT(Integer,Character) = Integer: 123 -> Character: 1
CONVERT(Integer,AtomicLong) = Integer: 123 -> AtomicLong: 123
CONVERT(Integer,Date) = Integer: 123 -> Date: Wed Dec 31 21:00:00 BRT 1969
CONVERT(Integer,Boolean) = Integer: 123 -> Boolean: false
CONVERT(Integer,BigDecimal) = Integer: 123 -> BigDecimal: 123
CONVERT(Integer,String) = Integer: 123 -> String: 123
CONVERT(Integer,Integer) = Integer: 123 -> Integer: 123
CONVERT(Integer,BigInteger) = Integer: 123 -> BigInteger: 123
CONVERT(Integer,Short) = Integer: 123 -> Short: 123
```