**Usage of @JoinColumn and mappedBy in Spring JPA - 2024**

OneToOne

**UseCase-1**: **No usage of @JoinColumn**

**public** **class** Item {

}

**public** **class** ShoppingCart {

@OneToOne(cascade = CascadeType.***ALL***)

**private** Item item;

}

Tables created

**ShoppingCart** Table **Item Table**

|  |  |  |
| --- | --- | --- |
| Id | Name | Item\_id |
| 1 | Amazon | 1 |

|  |  |
| --- | --- |
| Id | Name |
| 1 | Samsung Mobile |

**UseCase-2**: **With usage of @JoinColumn**

**public** **class** ShoppingCart {

@OneToOne(cascade = CascadeType.***ALL***)

@JoinColumn(name="item\_id")

**private** Item item;

}

**public** **class** Item {

}

Tables created

**ShoppingCart Table** **Item Table**

|  |  |  |
| --- | --- | --- |
| Id | Name | Item\_id |
| 1 | Amazon | 1 |

|  |  |
| --- | --- |
| Id | Name |
| 1 | Samsung Mobile |

Note: In case of unidirectional OneToOne, it does not matter whether you use @JoinColumn or not.

**OneToOne – Bidirectional**

UseCase-1: No @JoinColumn and no mappedBy

**public** **class** Item {

@OneToOne

**private** ShoppingCart shoppingCart;

}

**public** **class** ShoppingCart {

@OneToOne(cascade = CascadeType.***ALL***)

**private** Item item;

}

**Database Tables**

ShoppingCart table Item Table

|  |  |  |
| --- | --- | --- |
| Id | Name | Item\_id |
| 1 | Amazon | 1 |

|  |  |  |
| --- | --- | --- |
| Id | Name | Shopping\_cart\_id |
| 1 | Samsung Mobile |  |

**private** **void** saveOne2OneUnidirectional() {

Item item = **new** Item("Samsung Mobile");

ShoppingCart cart = **new** ShoppingCart("Amazon");

cart.setItem(item);

shoppingCartRepo.save(cart);

}

**Use Case-2**: **To fix shopping\_cart\_id is null**

To fix the code is given below.

**private** **void** saveOne2OneUnidirectional() {

Item item = **new** Item("Samsung Mobile");

ShoppingCart cart = **new** ShoppingCart("Amazon");

cart.setItem(item);

item.setShoppingCart(cart); 🡸 This is important (both side we need to set the object)

shoppingCartRepo.save(cart);

}

Tables created

Item Table Shopping Cart Table

|  |  |  |
| --- | --- | --- |
| ID | Name | Shopping\_cart\_id |
| 1 | Samsung Mobile | 1 |

|  |  |  |
| --- | --- | --- |
| ID | Name | Item\_id |
| 1 | Amazon | 1 |

**Use Case-3**: **Use of @JoinColumn**

No impact, the above tables will be created.

**Use Case-4**: **Use of mappedBy in ShoppingCart class**

**public** **class** ShoppingCart {

@OneToOne(cascade = CascadeType.***ALL***, mappedBy = "shoppingCart")

**private** Item item;

}

**public** **class** Item {

@OneToOne

**private** ShoppingCart shoppingCart;

}

Shopping Cart Table Item Table

|  |  |
| --- | --- |
| Id | Name |
| 1 | Amazon |

|  |  |  |
| --- | --- | --- |
| Id | Name | Shopping\_cart\_id |
| 1 | Samsung Mobile | 1 |

**Use Case-5**: **Use of mappedBy in Item class**

**public** **class** ShoppingCart {

@OneToOne(cascade = CascadeType.***ALL***)

**private** Item item;

}

**public** **class** Item {

@OneToOne(mappedBy = "item")

**private** ShoppingCart shoppingCart;

}

Shopping Cart Table Item Table

|  |  |  |
| --- | --- | --- |
| Id | name | Item\_id |
| 1 | Amazon | 1 |

|  |  |
| --- | --- |
| Id | Name |
| 1 | Samsung Mobile |