CS544 EA

Hibernate

Association: Bi-Directional

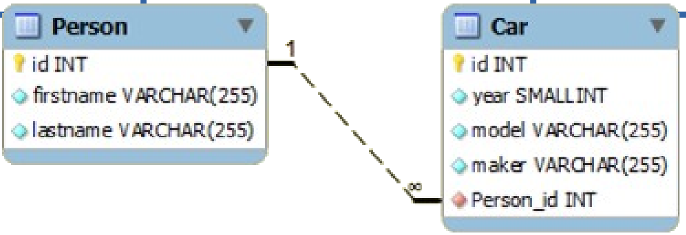
ManyToOne / OneToMany

- Bi-directional OneToMany == ManyToOne
  - Needs owning side → **mappedBy()**

```
@Entity
public class Person {
        @Id
        @GeneratedValue
        private Long id;
        private String firstname;
        private String lastname;
        @OneToMany(mappedBy="owner")
        private List<Car> cars =
                new ArrayList<>();

        ...
```

Name of property
on other side
that has the mapping

```
@Entity
public class Car {
        @Id
        @GeneratedValue
        private Long id;
        private short year;
        private String model;
        private String maker;
        @ManyToOne
        private Person owner;

        ...
```



Person
- id INT
- firstname VARCHAR(255)
- lastname VARCHAR(255)

Car
- id INT
- year SMALLINT
- model VARCHAR(255)
- maker VARCHAR(255)
- Person_id INT

Which Side?

- mappedBy() says other side mapped this association
  - Gives up control of the association
  - Says that the **other side is the owning side**

- For Bi-Directional OneToMany / ManyToOne:
  - Only @OneToMany has mappedBy() option

@ManyToOne
cannot say mappedBy()
Even if it wanted to!

Side with the FK,
Natural owner
of the association

Join Table

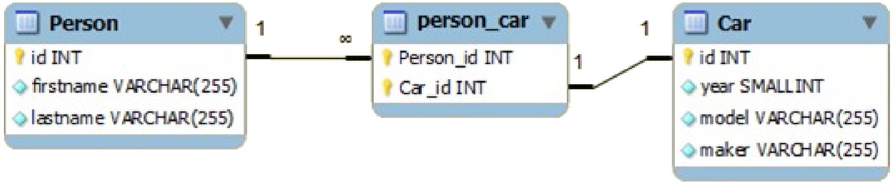
- You can use a Join Table
  - Annotation has to be on @ManyToOne

```
@Entity
public class Person {
        @Id
        @GeneratedValue
        private Long id;
        private String firstname;
        private String lastname;
        @OneToMany(mappedBy="owner")
        private List<Car> cars =
                new ArrayList<>();

        ...
```

Because of mappedBy() extra mapping annotations on this side are ignored

Only on this side do extra mapping annotations work

```
@Entity
public class Car {
        @Id
        @GeneratedValue
        private Long id;
        private short year;
        private String model;
        private String maker;
        @ManyToOne
        @JoinTable
        private Person owner;

        ...
```



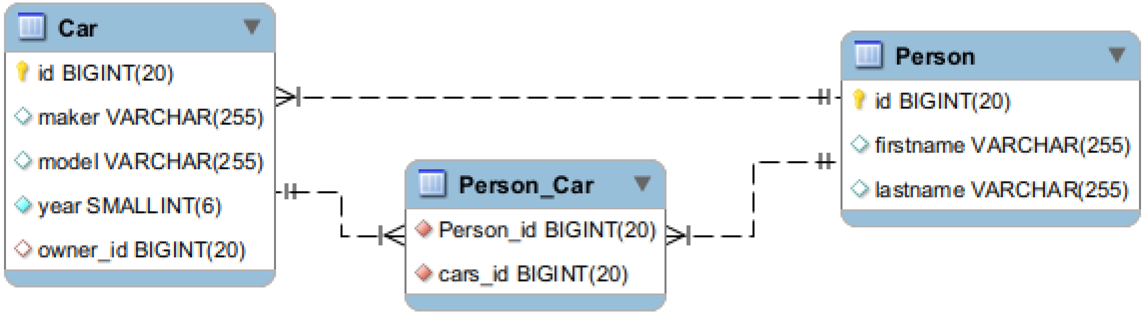
Person
id INT
firstname VARCHAR(255)
lastname VARCHAR(255)

person_car
Person_id INT
Car_id INT

Car
id INT
year SMALLINT
model VARCHAR(255)
maker VARCHAR(255)

No mappedBy()

- What happens if you forget mappedBy()?
  - 2 uni-directional associations
  - Uni-directional @ManyToOne uses FK
  - Uni-directional @OneToMany uses Join Table



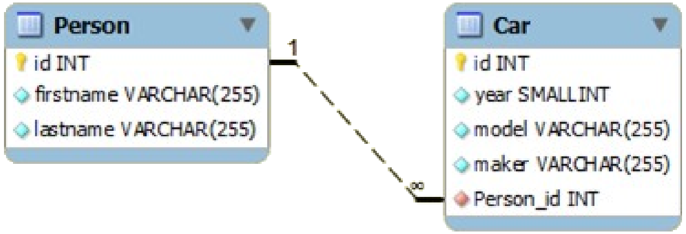
Car
id BIGINT(20)
maker VARCHAR(255)
model VARCHAR(255)
year SMALLINT(6)
owner_id BIGINT(20)

Person_Car
Person_id BIGINT(20)
cars_id BIGINT(20)

Person
id BIGINT(20)
firstname VARCHAR(255)
lastname VARCHAR(255)

JoinColumn

- What if you forget mappedBy()
  - But specify @JoinColumn on @OneToMany
  - No join table, schema looks okay



Person
id INT
firstname VARCHAR(255)
lastname VARCHAR(255)

Car
id INT
year SMALLINT
model VARCHAR(255)
maker VARCHAR(255)
Person_id INT

- Both sides will update the one FK
  - Creating a **race condition** (not sure which one wins)
  - Bad programming!