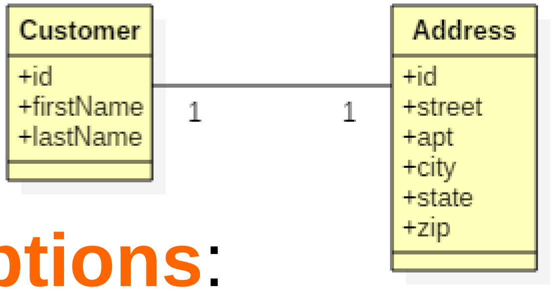
CS544 EA

Hibernate

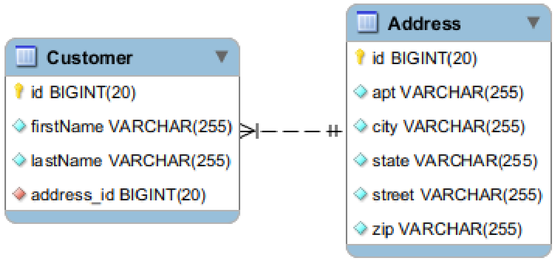
Association: OneToOne

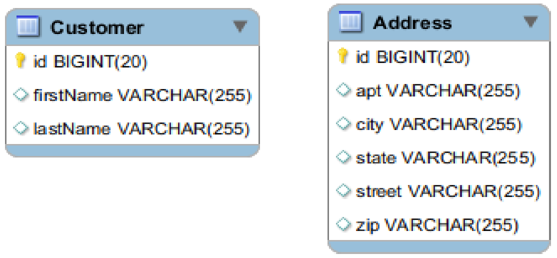
OneToOne

- OO: Customer and Address (if bi-directional) have a reference to each other



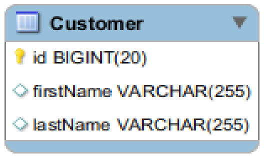
- Relational, **two options**:
  - FK (on one side) with unique constraint
  - Shared Primary Keys



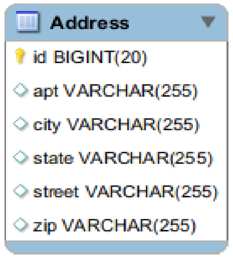


Shared Primary Key

- Shared Primary Key uses the Primary Key as Foreign Key
  - By having the **same value** rows connect

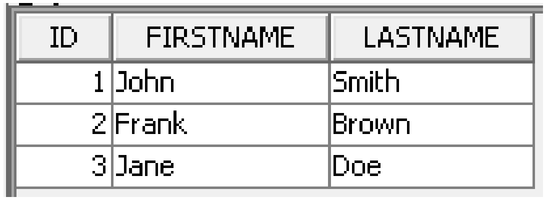


Customer
- id BIGINT(20)
- firstName VARCHAR(255)
- lastName VARCHAR(255)



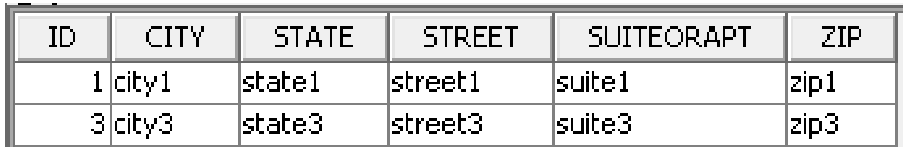
Address
- id BIGINT(20)
- apt VARCHAR(255)
- city VARCHAR(255)
- state VARCHAR(255)
- street VARCHAR(255)
- zip VARCHAR(255)

CUSTOMER table



ID	FIRSTNAME	LASTNAME
1	John	Smith
2	Frank	Brown
3	Jane	Doe

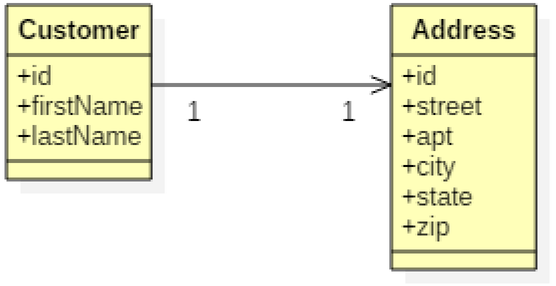
ADDRESS table



ID	CITY	STATE	STREET	SUITEORAPT	ZIP
1	city1	state1	street1	suite1	zip1
3	city3	state3	street3	suite3	zip3

Uni-Directional FK

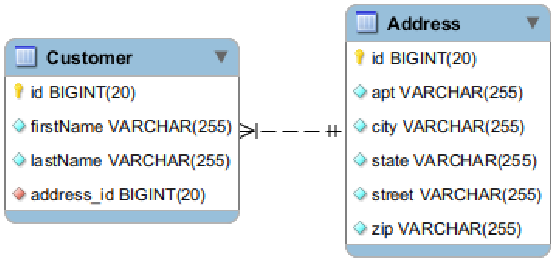
- Uni-directional use a FK
  - On the side that has the reference
  - Best match for spirit of uni-direct



```
@Entity
public class Customer {
      @Id
      @GeneratedValue
      private Long id;
      private String firstName;
      private String lastName;
      @OneToOne
      private Address address;

      ...
```

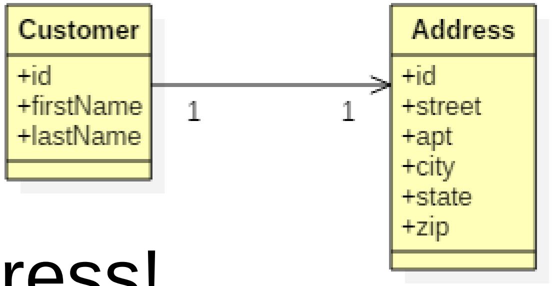
Simply place **@OneToOne** on the association

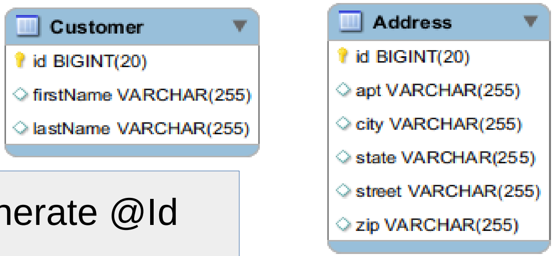
```
@Entity
public class Address {
      @Id
      @GeneratedValue
      private Long id;
      private String street;
      private String apt;
      private String city;
      private String state;
      private String zip;

      ...
```



Uni-Directional Shared PK

- Not as 'in the spirit'
  - Works properly if you specify it
  - Remember to **assign the ID** for address!





```
@Entity
public class Customer {
      @Id
      @GeneratedValue
      private Long id;
      private String firstName;
      private String lastName;
      @OneToOne
      @PrimaryKeyJoinColumn
      private Address address;

      ...
```

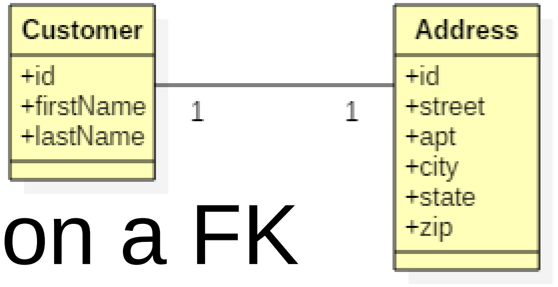
Add **@PrimaryKeyJoinColumn** to the association

```
@Entity
public class Address {
      @Id
      private Long id;
      private String street;
      private String apt;
      private String city;
      private String state;
      private String zip;

      ...
```

Cannot generate @Id

The value has to be same as ID value of Customer Programmer has to set it!

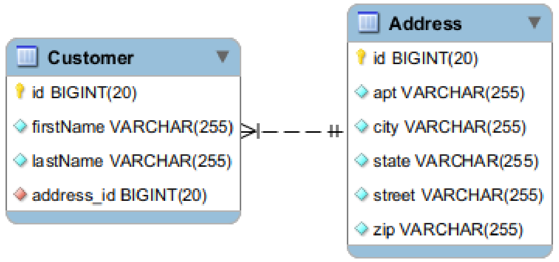
Bi-Directional FK



- A bi-directional associations based on a FK
  - Uses **@OneToOne** on both sides
  - One side has to give up control with **mappedBy()**

```
@Entity
public class Customer {
      @Id
      @GeneratedValue
      private Long id;
      private String firstName;
      private String lastName;
      @OneToOne
      private Address address;

      ...
```

```
@Entity
public class Address {
      @Id
      @GeneratedValue
      private Long id;
      private String street;
      private String apt;
      private String city;
      private String state;
      private String zip;
      @OneToOne(mappedBy="address")
      private Customer customer;

      ...
```



From a business perspective Address is less important therefore it gives up ownership (says mappedBy)

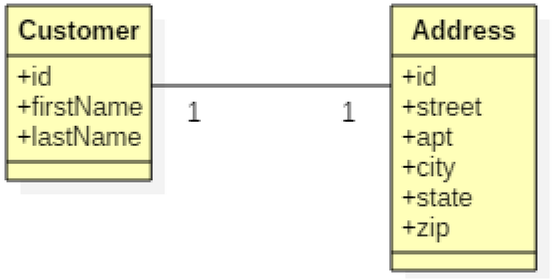
Bi-Directional Shared PK

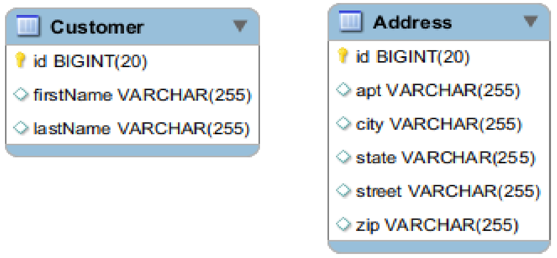
- The ‘owning side’ generates the ID
  - Programmer **manually sets value** on the other side

```java
@Entity
public class Customer {
	@Id
	@GeneratedValue
	private Long id;
	private String firstName;
	private String lastName;
	@OneToOne
	@PrimaryKeyJoinColumn
	private Address address;
```

```java
@Entity
public class Address {
	@Id
	private Long id;
	private String street;
	private String apt;
	private String city;
	private String state;
	private String zip;
	@OneToOne
	@PrimaryKeyJoinColumn
	private Customer customer;

	...
```

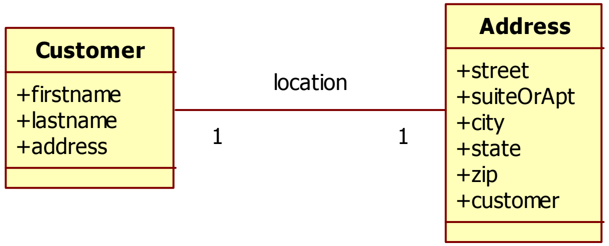
Both sides specify
@PrimaryKeyJoinColumn
No need for mappedBy

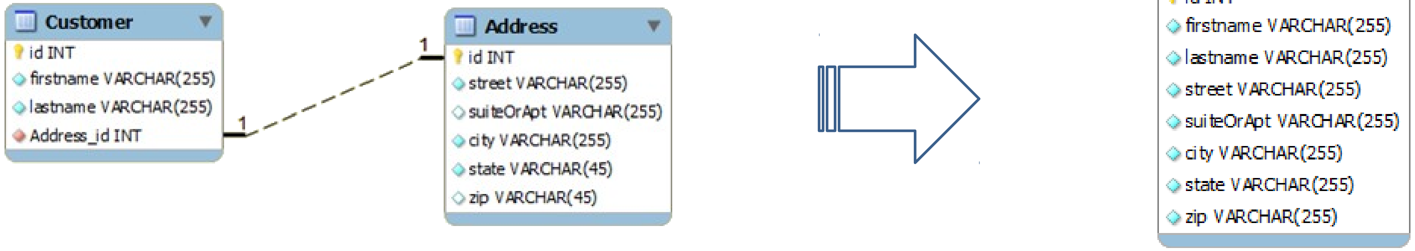




Embedded Classes

- During analysis Consider changing a **@OneToOne to** be an **embedded class**
  - We will discuss embedded in an upcoming lecture


Customer
+firstname
+lastname
+address
location
1
1
Address
+street
+suiteOrApt
+city
+state
+zip
+customer


Customer
id INT
firstname VARCHAR(255)
lastname VARCHAR(255)
Address_id INT
1
1
Address
id INT
street VARCHAR(255)
suiteOrApt VARCHAR(255)
city VARCHAR(255)
state VARCHAR(45)
zip VARCHAR(45)
Customer
id INT
firstname VARCHAR(255)
lastname VARCHAR(255)
street VARCHAR(255)
suiteOrApt VARCHAR(255)
city VARCHAR(255)
state VARCHAR(255)
zip VARCHAR(255)