



## Attributes:

- > employee(employee\_id, first\_name, last\_name, hired\_date, street, city, state, zip\_code, unit\_number, telephone\_type, telephone\_number, emails<sup>3</sup>)
- > rental\_property(rental\_id, street, city, state, zip\_code, unit\_number, property\_type, number\_bedrooms, number\_bathrooms, area\_square\_footage, monthly\_rent, monthly\_management\_fee, qdvs)
- > partner(employee\_id, first\_name, last\_name, hired\_date, street, city, state, zip\_code, unit\_number, telephone\_type, telephone\_number, emails<sup>3</sup>, num\_Contracts)
- > associate(employee\_id, first\_name, last\_name, hired\_date, street, city, state, zip\_code, unit\_number, telephone\_type, telephone\_number, emails, num\_properties)
- > property\_viewing(viewing\_id, date, time)
- > property\_owner(owner\_id, first\_name, last\_name, street, city, zip\_code, unit\_number, telephone\_type, telephone\_number, emails<sup>3</sup>)
- > client(client\_id, first\_name, last\_name, street, city, zip\_code, unit\_number, telephone\_type, telephone\_number, property\_references, max\_rent, emails<sup>3</sup>)
- > lease(lease\_id, date, monthly\_rent, deposit, lease\_duration, start\_date, end\_date)

## Relations:

- > AssociateManagesProperty(associate\_id, rental\_id)
- > OwnerOwnsProperty(owner\_id, rental\_id)
- > ViewingForProperty(viewing\_id, rental\_id, associate\_id, {client\_id<sup>3</sup>})
- > LeaseForProperty(lease\_id, partner\_id, client\_id, rental\_id, owner\_id)
- > EmployeeIsPartner(employee\_id, num\_Contracts)
- > EmployeeIsAssociate(employee\_id, num\_properties)

## Primary keys

Employee: employee\_id

Partner: employee\_id

Associate: employee\_id

Rental\_Property: rental\_id

Property\_Viewing: viewing\_id

Property\_Owner: owner\_id

Client: client\_id

Lease: lease\_id

## Foreign Keys

Rental\_Property: employee\_id, owner\_id

Property\_Viewing: rental\_id, employee\_id {client\_ids}

Property\_Owner: {Rental\_Properties}

Lease: employee\_id, client\_id, rental\_id, owner\_id

## Cardinality Constraints

Employee → Partner / Associate: Employee must be either a partner or associate, but not both

Partner → Employee: There can be 1 to many partners

Associate → Employee: There can be 1 to many associates

Rental\_Property → Associate: A rental property has exactly 1 associate

Associate → Rental\_Property: An associate can have 0 to many rental properties

Rental\_Property → Property\_Owner: Rental property has exactly 1 owner

Property\_Owner → Rental\_Property: Property owner has 1 to many rental properties

Property\_Viewing → Rental\_Property: Property viewing has exactly 1 rental property

Rental\_Property → Property\_Viewing: Rental property can have 0 to many viewings

Property\_Viewing → Associate: Property viewing has exactly 1 associate

Associate → Property\_Viewing: Associate can have 0 to many viewing

Property Viewing → Client: Property viewing has 1 to many clients

Client → Property Viewing: Client has 0 to many property viewings

Lease → Partner: Lease has exactly 1 partner

Partner → Lease: Partner has 0 to many leases

Lease → Rental Property: Lease has exactly 1 rental property

Rental Property → Lease: Rental property has 0 to many leases

Lease → Client: Lease has exactly 1 client

Client → Lease: Client has 0 to many leases

Lease → Property Owner: Lease has exactly 1 property owner

Property Owner → Lease: Property owner has 0 to many leases

### Entity Constraints

- Every attribute for each entity is required
- Associate may have max 12 properties
- Lease a minimum duration of 3 months and maximum duration of 36 months