outsystems

Modeling Data Relationships

Reactive Developer Boot Camp

Helen Stafford closed a new $700,500.00 deal in the United Kingdom

$73.65
Due in 5 Days

Invoice	Status
INV-010-2019	Unpaid
From	To
05/10/2019	23/10/2019

Ammount
$73.65

Invoice	Status	Invoice	Status	Invoice	Status
INV-010-2019	Unpaid	INV-009-2019	Paid	INV-009-2019	Paid
From	To	From	To	From	To
05/10/2019	23/10/2019	05/09/2019	27/09/2019	02/08/2019	20/08/2019

Customer
Ace Systems Inc

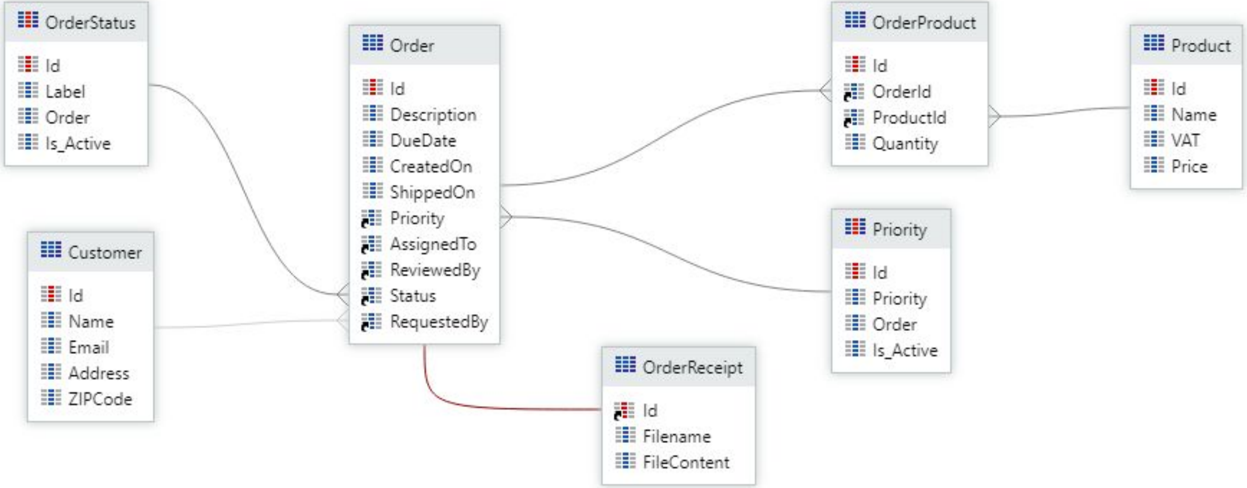
Address
55 Thomson Plac
Boston, MA 0221

Task description
Pick-up package
delivery instruct

What you will learn here

- Data Relationships
- Entity and Reference Identifiers
- Types of Relationships

Data Relationships

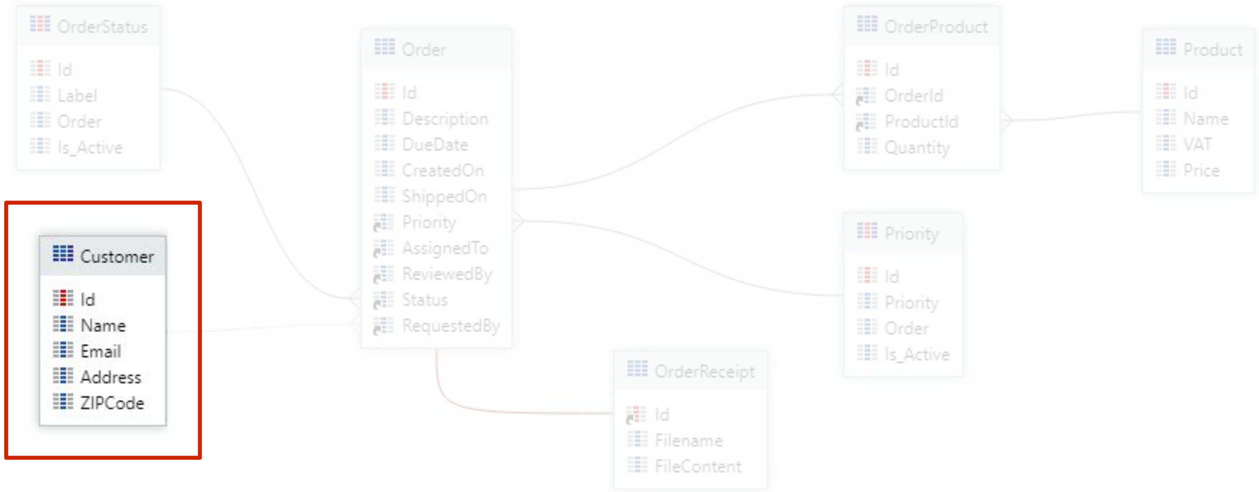


Data is rarely isolated

A rich data model establishes the relationships between data

The relationships can be as important as the data itself

Data Relationships



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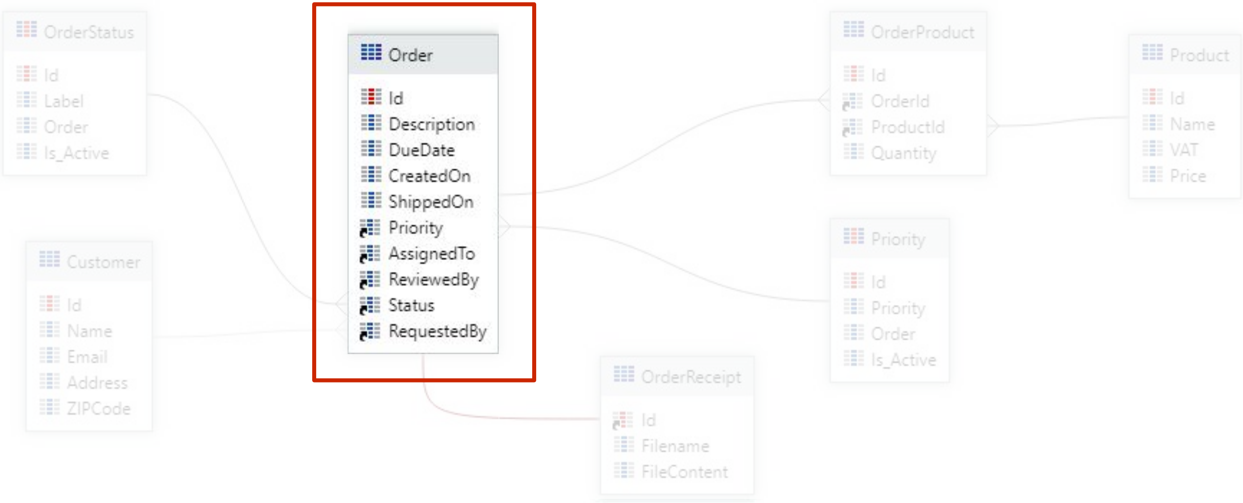

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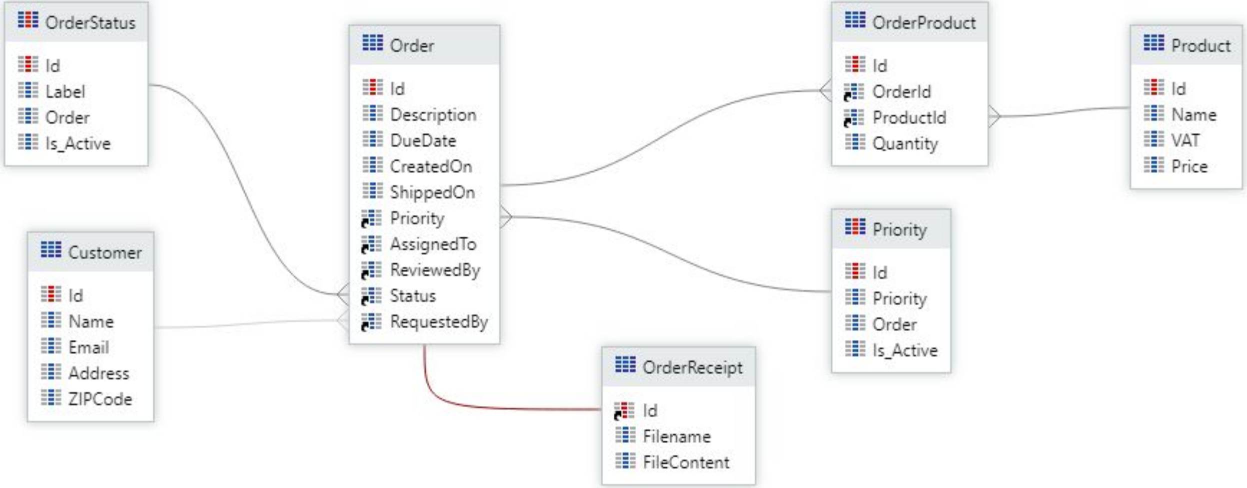

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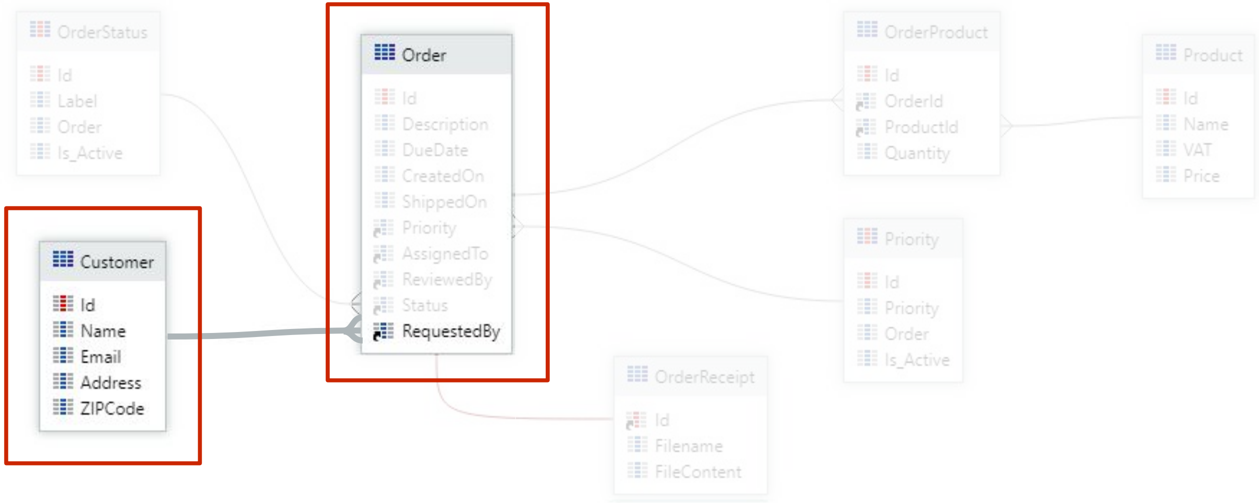
Data Relationships

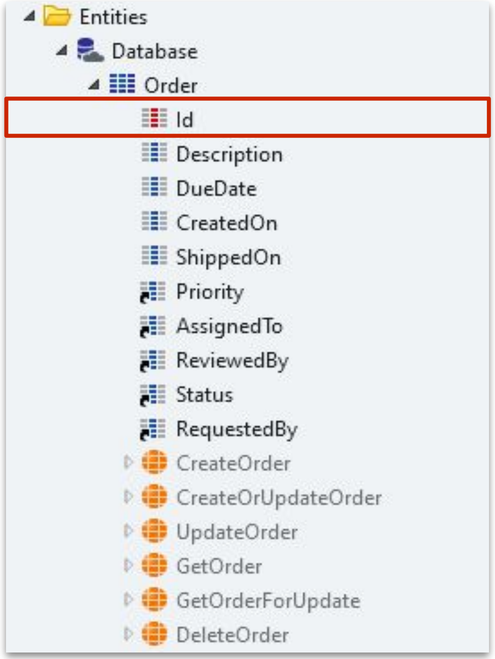


Data is rarely isolated

A rich data model establishes the relationships between data

The relationships can be as important as the data itself

Entity Identifier

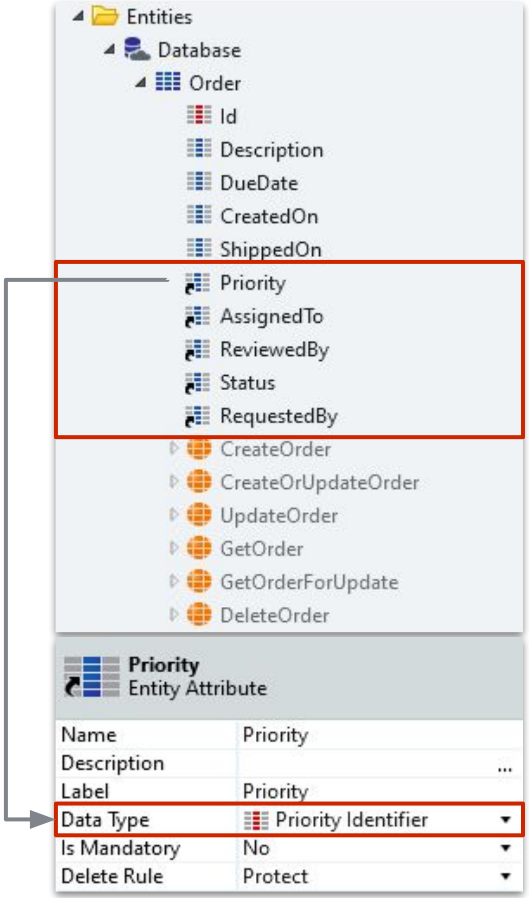


- Entities
  - Database
    - Order
      - Id
      - Description
      - DueDate
      - CreatedOn
      - ShippedOn
      - Priority
      - AssignedTo
      - ReviewedBy
      - Status
      - RequestedBy
      - CreateOrder
      - CreateOrUpdateOrder
      - UpdateOrder
      - GetOrder
      - GetOrderForUpdate
      - DeleteOrder

- An Entity **must** have an **Identifier** to allow relationships
  - **Id** attribute is a long integer and automatically numbered by default
  - Mandatory
  - Possible types
    - Text
    - Integer / Long Integer
    - (Another) Entity Identifier
- Represents the DB table’s Primary Key
  - Support **simple primary keys**
  - **NO** composite keys!

Referencing an Entity

- Entities can be referenced by their identifier
  - Create an attribute of type *Entity* Identifier
  - Can be mandatory or not
  - Static Entities can only reference other Static Entities
- Represents the database table’s Foreign Key
- *NullIdentifier()* is the default value for reference attributes



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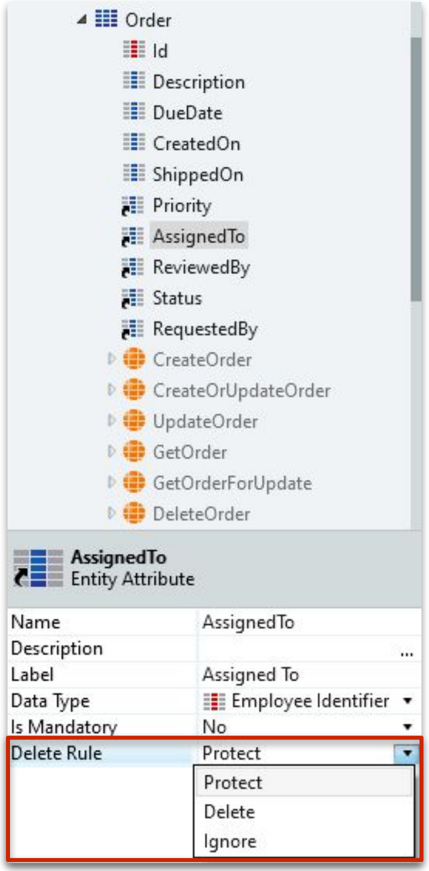
Priority
Entity Attribute

Name	Priority
Description	...
Label	Priority
Data Type	Priority Identifier ▾
Is Mandatory	No ▾
Delete Rule	Protect ▾

Delete Rule

- Property of the reference attribute
  - Specifies the referential integrity
- Applied when deleting a record from the referenced Entity
  - Protect - does not allow deleting the record
    - Employee with Orders assigned to it is not deleted
  - Delete - deletes the record and cascades delete all the records that reference it
    - Employee is deleted as well as all the Orders assigned to it
  - Ignore - does not guarantee referential integrity
    - Employee is deleted. Orders are kept

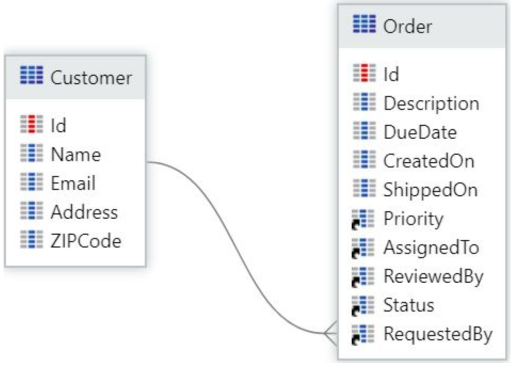


AssignedTo
Entity Attribute

Name	AssignedTo
Description	...
Label	Assigned To
Data Type	Employee Identifier
Is Mandatory	No
Delete Rule	Protect

Types of Relationships

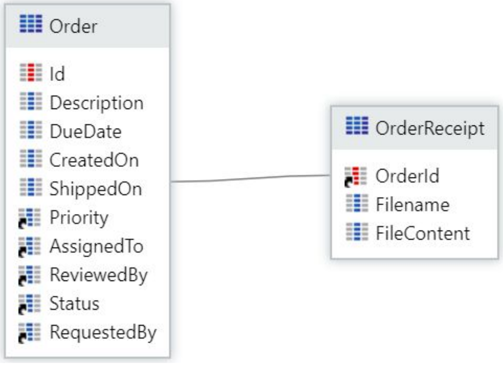
1-to-Many



Customer
- Id
- Name
- Email
- Address
- ZIPCode

Order
- Id
- Description
- DueDate
- CreatedOn
- ShippedOn
- Priority
- AssignedTo
- ReviewedBy
- Status
- RequestedBy

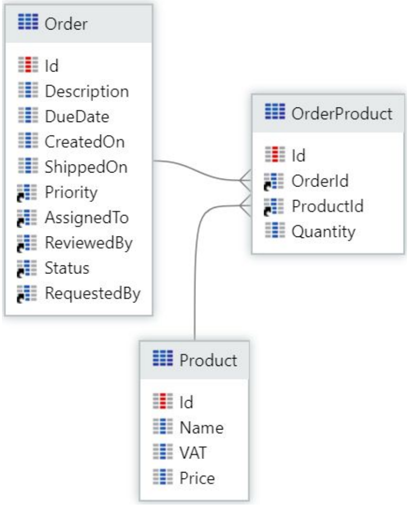
1-to-1



Order
- Id
- Description
- DueDate
- CreatedOn
- ShippedOn
- Priority
- AssignedTo
- ReviewedBy
- Status
- RequestedBy

OrderReceipt
- OrderId
- Filename
- FileContent

Many-to-Many



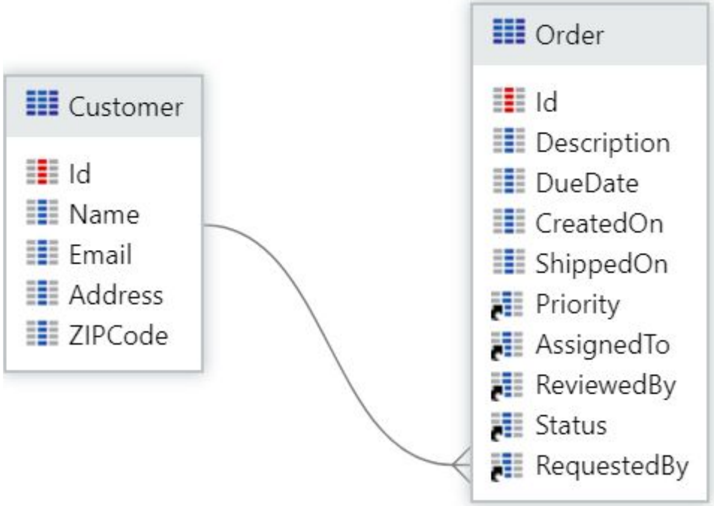
Order
- Id
- Description
- DueDate
- CreatedOn
- ShippedOn
- Priority
- AssignedTo
- ReviewedBy
- Status
- RequestedBy

OrderProduct
- Id
- OrderId
- ProductId
- Quantity

Product
- Id
- Name
- VAT
- Price

Types of Relationships

1-to-Many



Customer

- Id
- Name
- Email
- Address
- ZIPCode

Order

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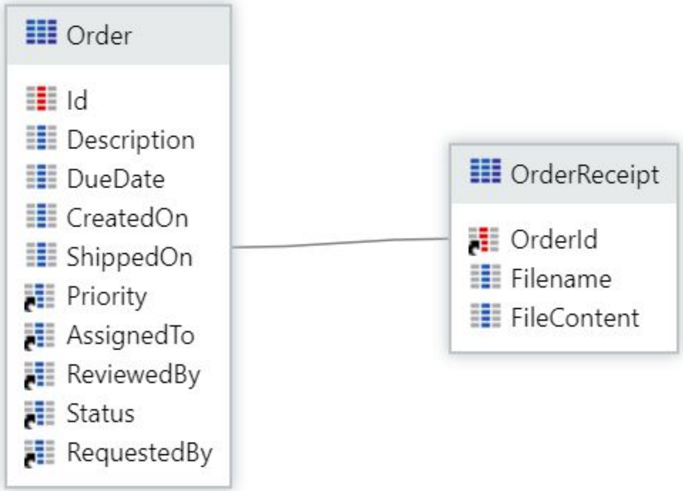
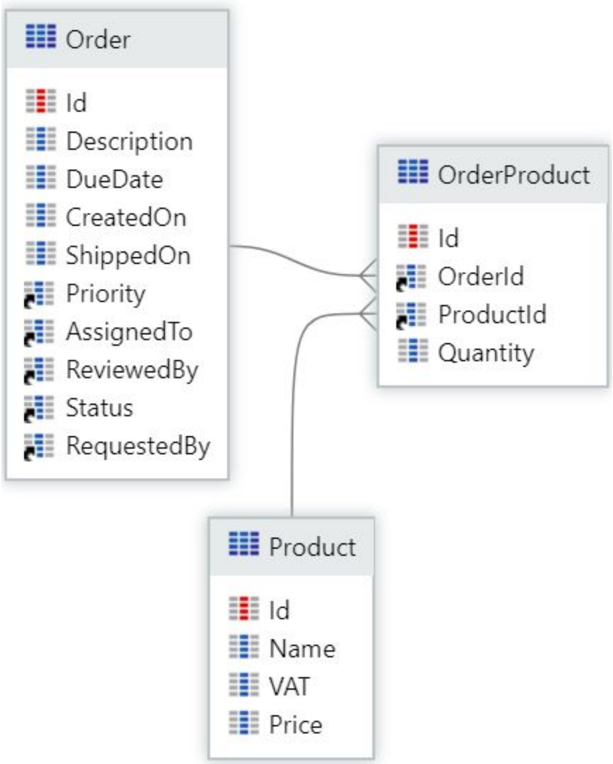
Types of Relationships

1-to-1

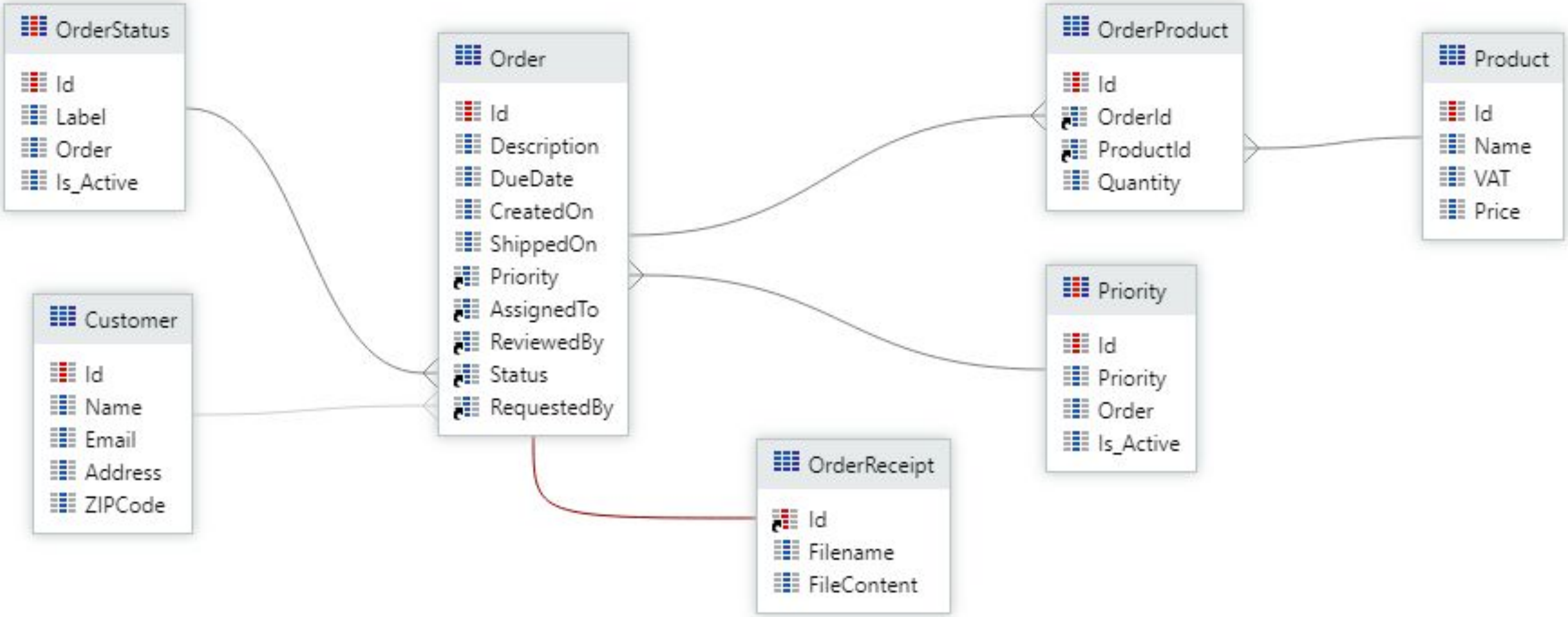


Types of Relationships

Many-to-Many



Modeling Data Relationships



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Questions?

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Thank You!