

# Translating Business Rules

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## WHAT'S COVERED

This tutorial explores the steps to translate business rules into databases in two parts:

1. Bidirectional Relationships
2. Identifying Constraints

## 1. Bidirectional Relationships

Some relationships between entities are bidirectional, or go both ways. Let's take a look at some business rules that help to define relationships.

Possible Business Relationships	
A customer has a single support rep, and an employee can support many customers.	The business defines a <b>one-to-many relationship</b> between the employee and customer table.
A customer has a single support rep, and an employee can only support one customer.	This would now make the relationship a <b>one-to-one relationship</b> .
A customer can have many support reps, and an employee can support many customers.	This business rule would generate a <b>many-to-many relationship</b> .

To properly identify the relationship type between two entities, we have to ask how many instances of the second entity are related to the first, and how many instances of the first entity are related to the second. Those questions help us to answer and define those relationship rules.

## 2. Identifying Constraints

➞ EXAMPLE Another example could be a business constraint where we may define that the quantity in the invoice must be greater than 0 but we would only allow the maximum number of tracks per invoice to be set to 100. With this business rule in force, we would set a CHECK constraint on the quantity of tracks column to verify that it is between 1 and 100.

➞ EXAMPLE Perhaps there may be an order system that required the shipping of a product. We may define that the order date must be the current date while the shipping date could be empty. However, if a value is set, it must be equal to or after the order date because it wouldn't make sense to have a shipping date set prior to the order date.

➞ **EXAMPLE** Perhaps the customer's email is meant to be used to set up customer accounts. As such, it may not be useful as the primary key, because we may separately create the primary key. However, because it has to be set up for the customer and it has to be different for each customer, it could be set up as NOT NULL and UNIQUE value, very similar to a candidate key.

Identifying and translating these business rules are key to ensuring that we are designing the database to meet the needs of the underlying database system. Remember, though, that not all business rules directly apply to the database, as they may apply to the application system where data is input or modified.



## SUMMARY

Translating business rules will help us define the entities, attributes, relationships, and constraints of a database. The **bidirectional relationships** present within the entities of the database determine how the database should be designed to support those business rules and processes. Once we have **identified constraints** in our business processes, that also helps us place supporting limits on the data that can be accepted into the database, either by the database management system or the application used to enter data, further improving the performance of the database.

Source: Authored by Vincent Tran