

Hi.  
  
In this video we are going to discuss another important property of relationships that is used when we move from the relationships to the tables, when we want to represent relationships within the tables of our database.  
  
This property is called the optionality.  
  
It's fairly simple, but we have to be clear about what it means.  
  
So basically, if we have a relationship between two entities, what we are checking on both sides of this relationship is whether every instance of the entity type is in fact participates in the relationship or not.  
  
If every instance participates in the relationship, then it's called an obligatory relationship.  
  
If this is not the case, we call the relationship non obligatory.  
  
So that is when each instance may exist independently of the relationship.  
  
So, for example, we have a relationship between vehicles and employees.  
  
Then I would say that each vehicle in the company must have assigned an employee, but not every employee must have a vehicle.  
  
So.  
  
So it will be obligatory on vehicle and non obligatory on employee, because there are many employees which do not have a vehicle assigned.  
  
But in the company every vehicle should be assigned to at least one employee.  
  
You see here, the optionality is obligatory on vehicle and non obligatory on employee.  
  
On the other hand, we might have students in classes that we see.  
  
But then, so what is the relationship?  
  
So there's a bit of a grey area here, but I would think that students exist even if they're not enrolled in any class.  
  
So it might always happen that there's a student in the system which currently isn't enrolled in any class.  
  
So I think that this relationship between students and classes is at least non obligatory on students and probably also non obligatory on classes.  
  
Clearly a class is nothing if there are no students enrolled.  
  
But if you create the class, you store it into the database for a while at least, it will exist there without anybody enrolled.  
  
So I would think it's non obligatory on students and non obligatory on classes.  
  
In general, the optionality of a relationship is important, as you will see, but it's always a matter of debate, so to speak.  
  
So whenever in an exercise or a homework, you are asked to exactly identify the optionality.  
  
And if you are unsure, you just should not only write down this is the optionality, but then also explain why you think this is this optionality and that is that optionality, because if you give the right argument, you might have a point.  
  
So it's not always clear cut the answer to this question, but clearly there are some cases where it's clear cut.  
  
So if you're unsure, just give your arguments for this.  
  
So if you look back at the example between buses and stages, we had a relationship called allocated to routes and buses and here would say that each route has to have one or many buses so I think a route doesn't exist without bus and vice versa a bus is allocated to exactly one route so this should be obligatory on both sides and you can go through it.  
  
I mean we have towns.  
  
The only exception of the obligatoryness of the relationship in the bus example is probably the town entity because I think it's fair that we might have in the database information about towns to which there is no routes connected for example so the relationship between passes through between routes and towns should be obligatory on routes but it's non obligatory on towns because the towns might be just in the database without actually having the bus route connected to them.  
  
So we will see more examples in the exercises for optionality and especially then also when we discuss the diagrams we will see many more examples.  
  
Thanks for listening to this video.  
  
See you next time.