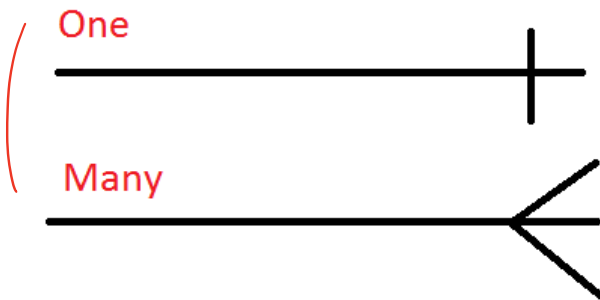


## Cardinality

*number of connection*

~~✱~~ **Cardinality** refers to the relationship between a row of one table and a row of another table.  
The only two options for cardinality are one or many.

We can illustrate that using crow's foot notation:

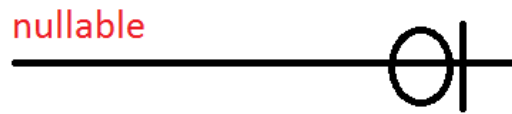


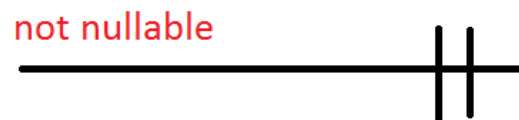
One is illustrated with a vertical line., Many is illustrated with 3 lines. Think of many as a crow's foot!

## Modality

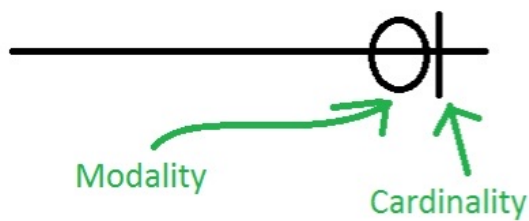
As **cardinality** is the maximum number of connections between table rows (either one or many), **modality** is the least number of row connections. ~~✱~~ Modality also only has two options, 0 being the least or 1 being the least.

We can also draw modality in our crow's foot notation. If the modality is zero or more, we put a little circle right beside the cardinality. If the modality is one or more, we put a vertical line next to the cardinality:

nullable 

not nullable 

Here is an illustration of modality. ~~Notice that we can put both cardinality and modality on the same line.~~ Modality goes on the inside and cardinality goes on the outside.



Modality

Cardinality

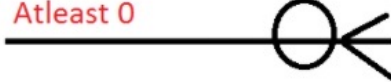
Modality goes on the inside, cardinality on the outside.

Cardinality and modality together gives us four possible combinations:

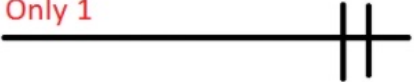
0 or 1



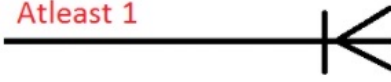
Atleast 0




Only 1




Atleast 1

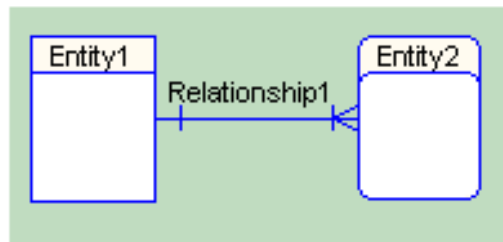


## Cardinality ← Oracle에서 표기하는 형태.

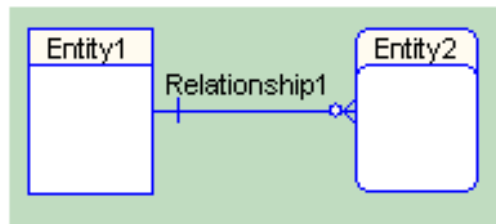
One-to-many relationship is represented by this symbol: 

One-to-one relationship is represented by this symbol: 

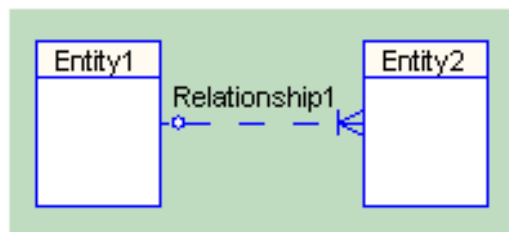
**Parent:** mandatory **Child:** mandatory



**Parent:** mandatory **Child:** optional



**Parent:** optional **Child:** mandatory



**Parent:** optional **Child:** optional

