

## ER Notations

⇒The relationship set 'R', between the two entity sets  $E_1$  and  $E_2$  may be one-to-one, one-to-many, many-to-one or many-to-many.

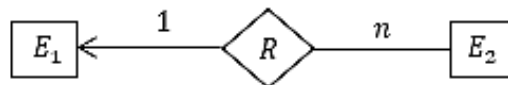
⇒To distinguish among these types, we draw either a directed line ( $\rightarrow$ ) or an undirected line ( $-$ ) between the relationship set and the entity set.

### One-to-One:



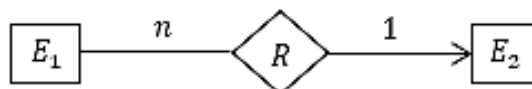
We say there is a one-to-one ( $1:1$ ) relationship, when there is a directed line from the relationship set 'R' to both the entity sets  $E_1$  and  $E_2$ .

### One-to-Many:



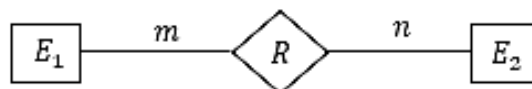
We say there is a one-to-many relationship ( $1:n$ ) between  $E_1$  and  $E_2$ , when there is a directed line from the relationship set  $R$  to the entity set  $E_1$  and an undirected line to the Entity set  $E_2$ .

### Many-to-One:



We say there is a many-to-one ( $n:1$ ) relationship between  $E_1$  and  $E_2$ , when there is an undirected line from the relationship set  $R$  to the entity set  $E_1$  and a directed line to the entity set  $E_2$ .

### Many-to-Many:



We say there is a many-to-many ( $m:n$ ) relationship between  $E_1$  and  $E_2$ , when there is an undirected line from the relationship set  $R$  to both the entity sets  $E_1$  and  $E_2$ .

