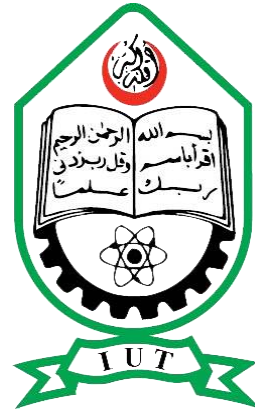


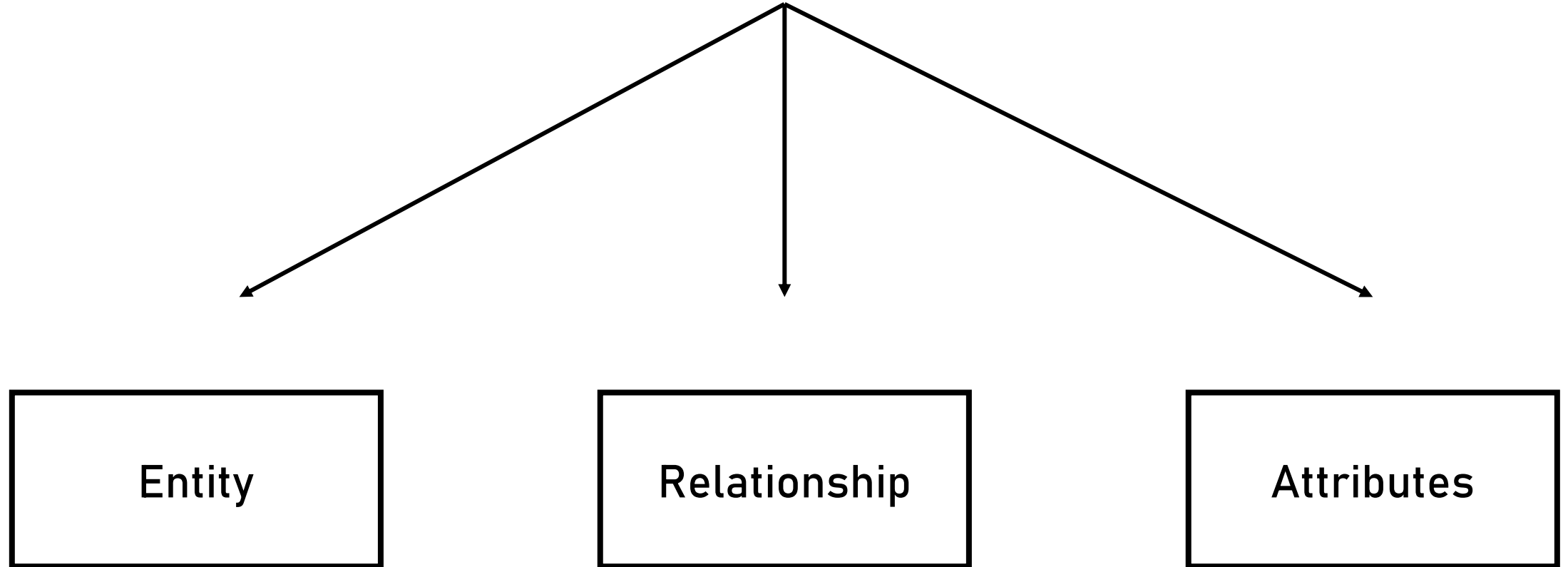
**CSE 4308**  
**Database Management Systems Lab**  
**Lab 07**  
**ER Models and Converting ER Models to Relational Models**



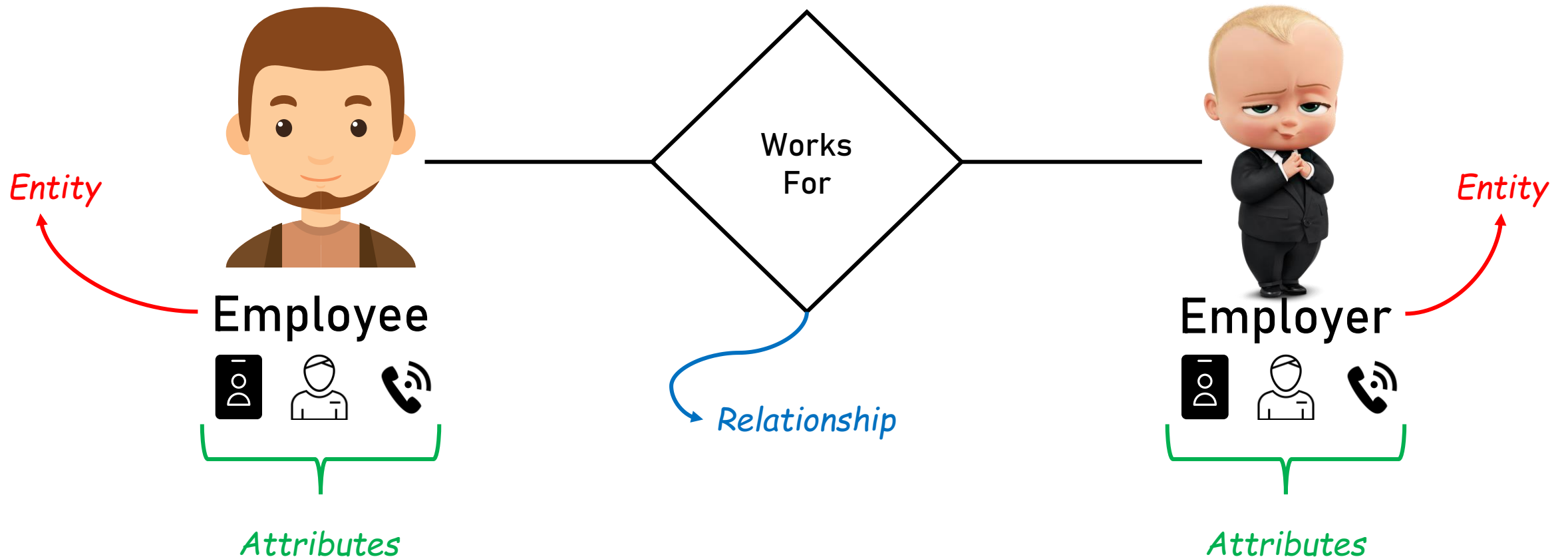
**Department of Computer Science and Engineering**  
**Islamic University of Technology, OIC**

Mohammad Anas Jawad  
Lecturer, IUT CSE

# The ER Model



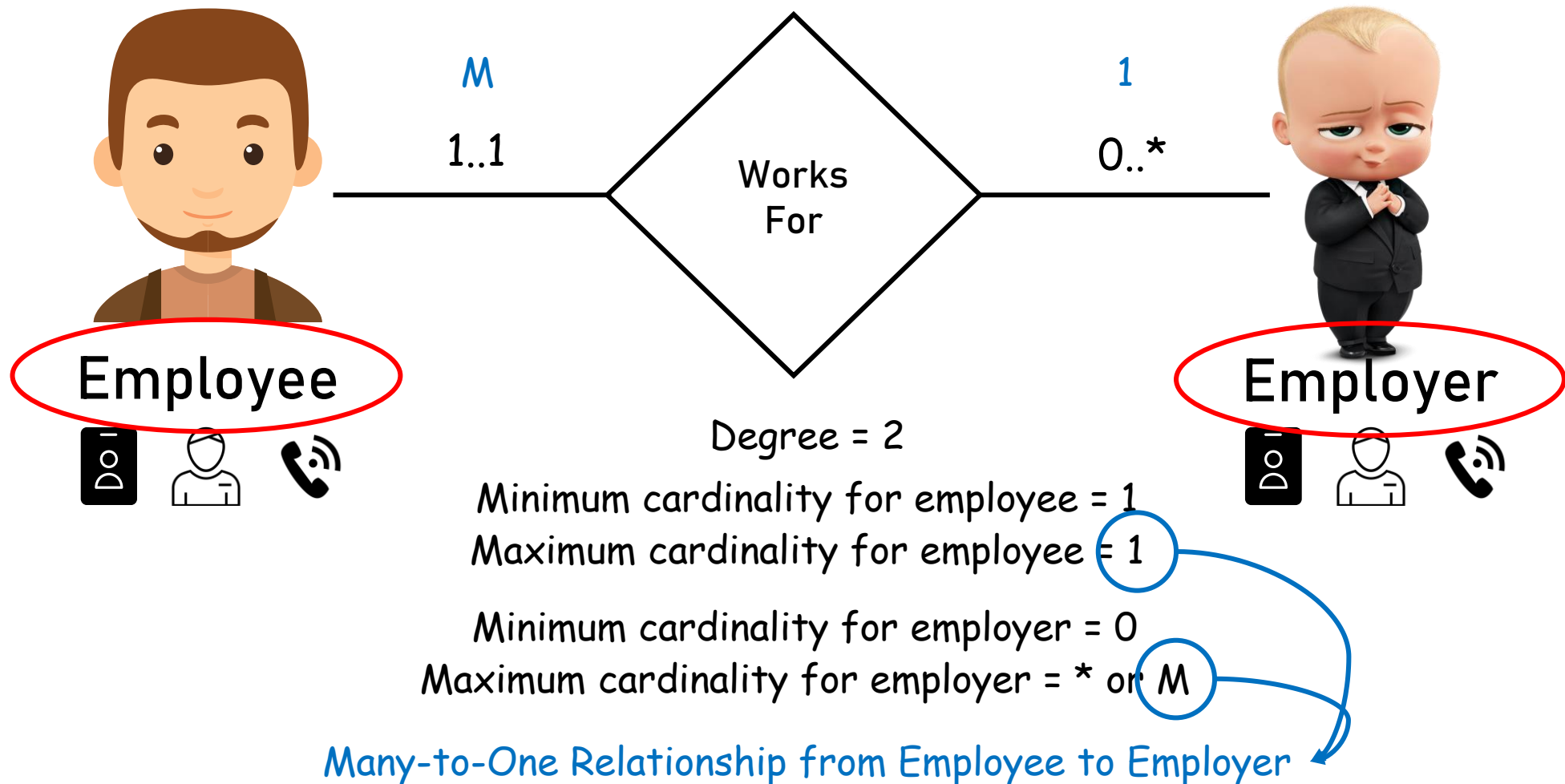
# Entity, Relationship and Attributes



Fun fact: What we just designed is called an ER Model!

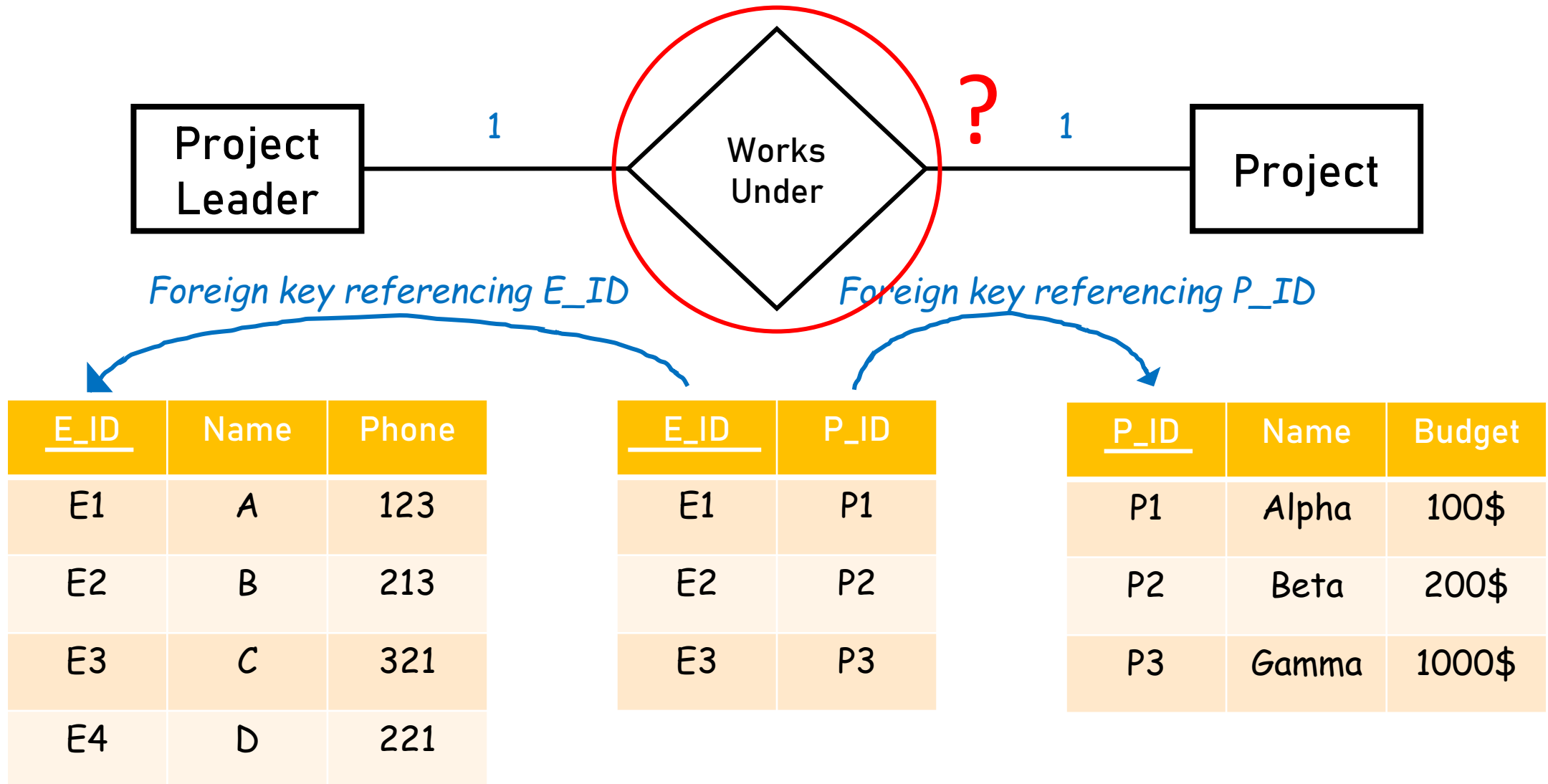
# Properties of Relationship

## Degree, Minimum Cardinality, Maximum Cardinality



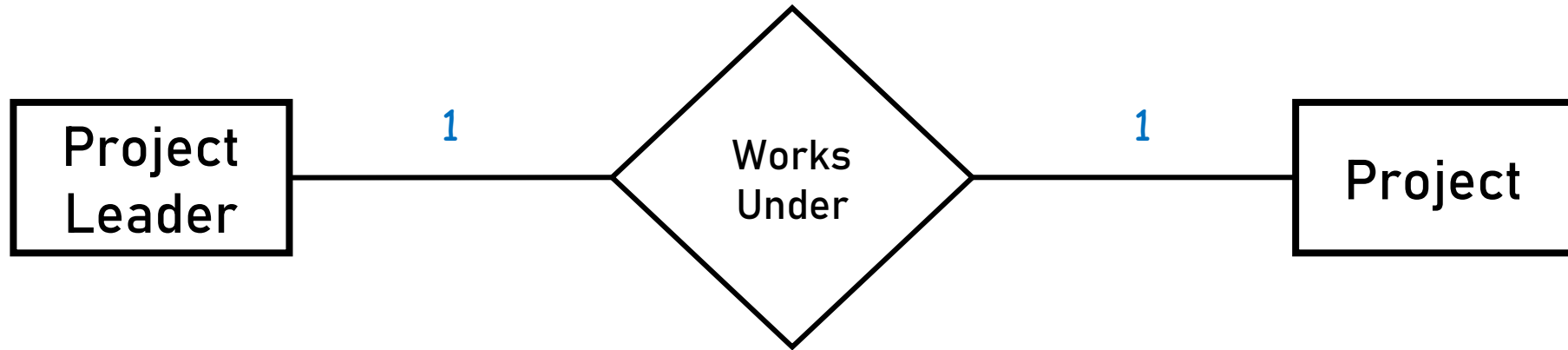
# Converting an ER Model to a Relational Model

## Case 1: One-to-One Relationship



# Converting an ER Model to a Relational Model

## Case 1: One-to-One Relationship

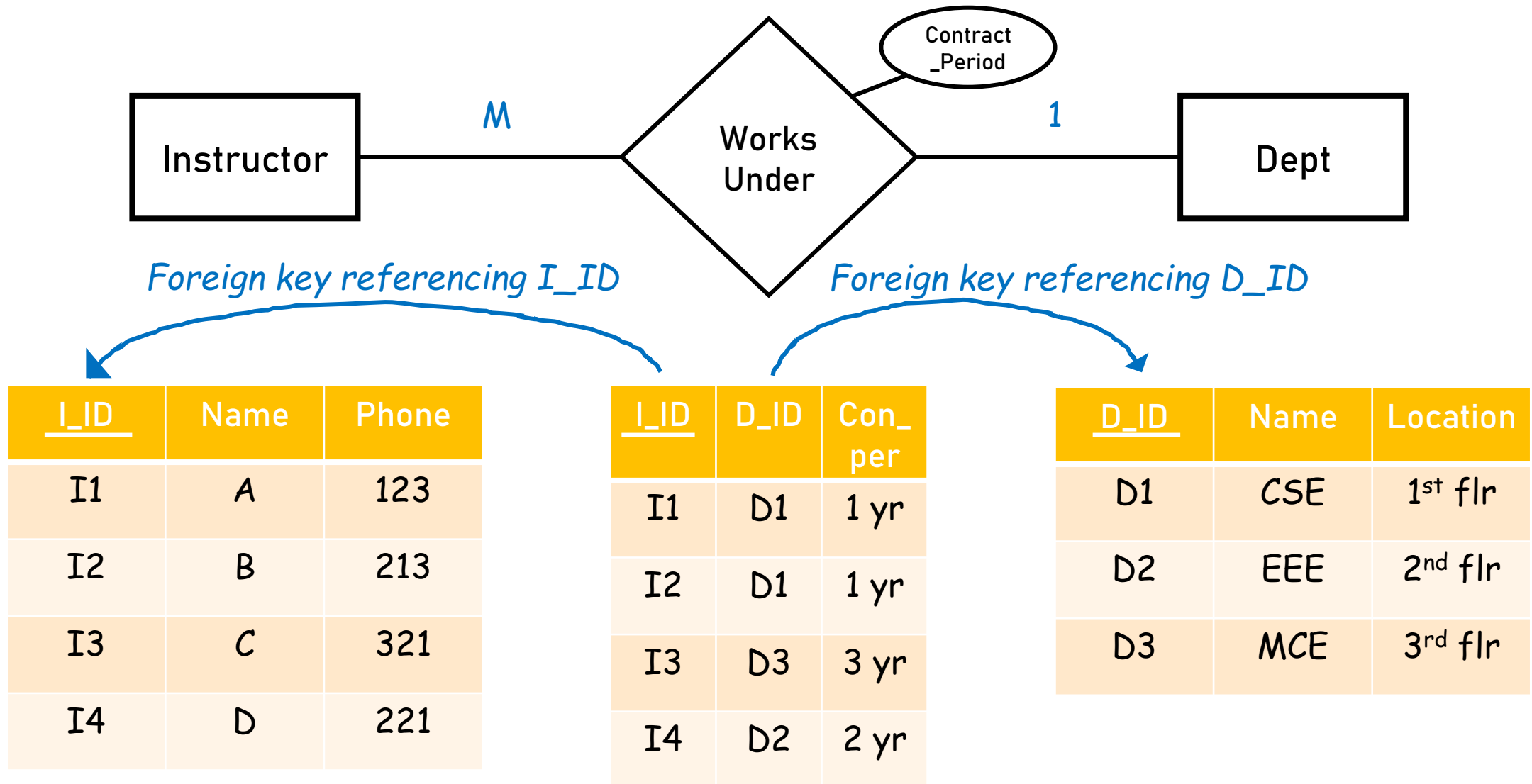


<u>E_ID</u>	Name	Phone	P_ID
E1	A	123	P1
E2	B	213	P2
E3	C	321	P3
E4	D	221	-----

<u>P_ID</u>	Name	Budget
P1	Alpha	100\$
P2	Beta	200\$
P3	Gamma	1000\$

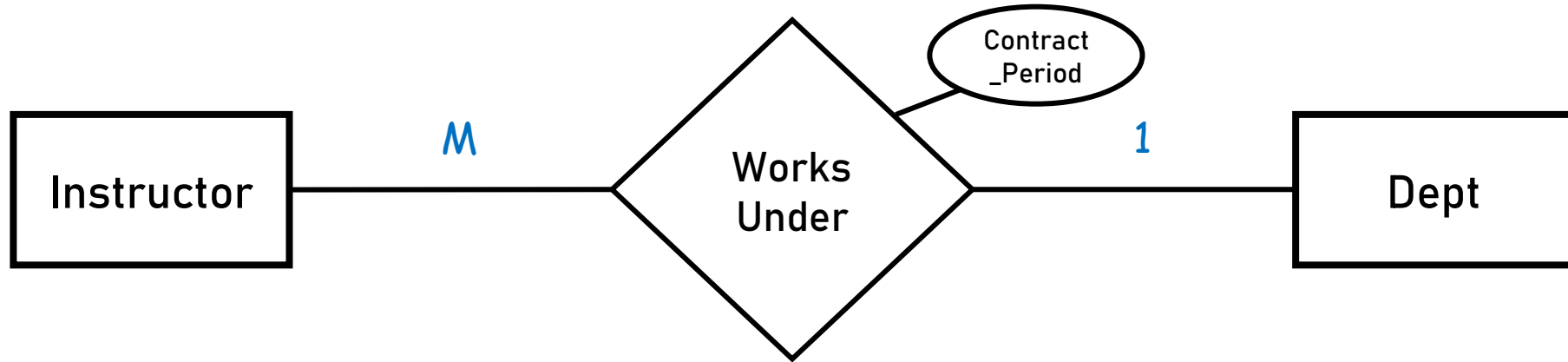
# Converting an ER Model to a Relational Model

## Case 2: Many-to-One Relationship



# Converting an ER Model to a Relational Model

## Case 2: Many-to-One Relationship



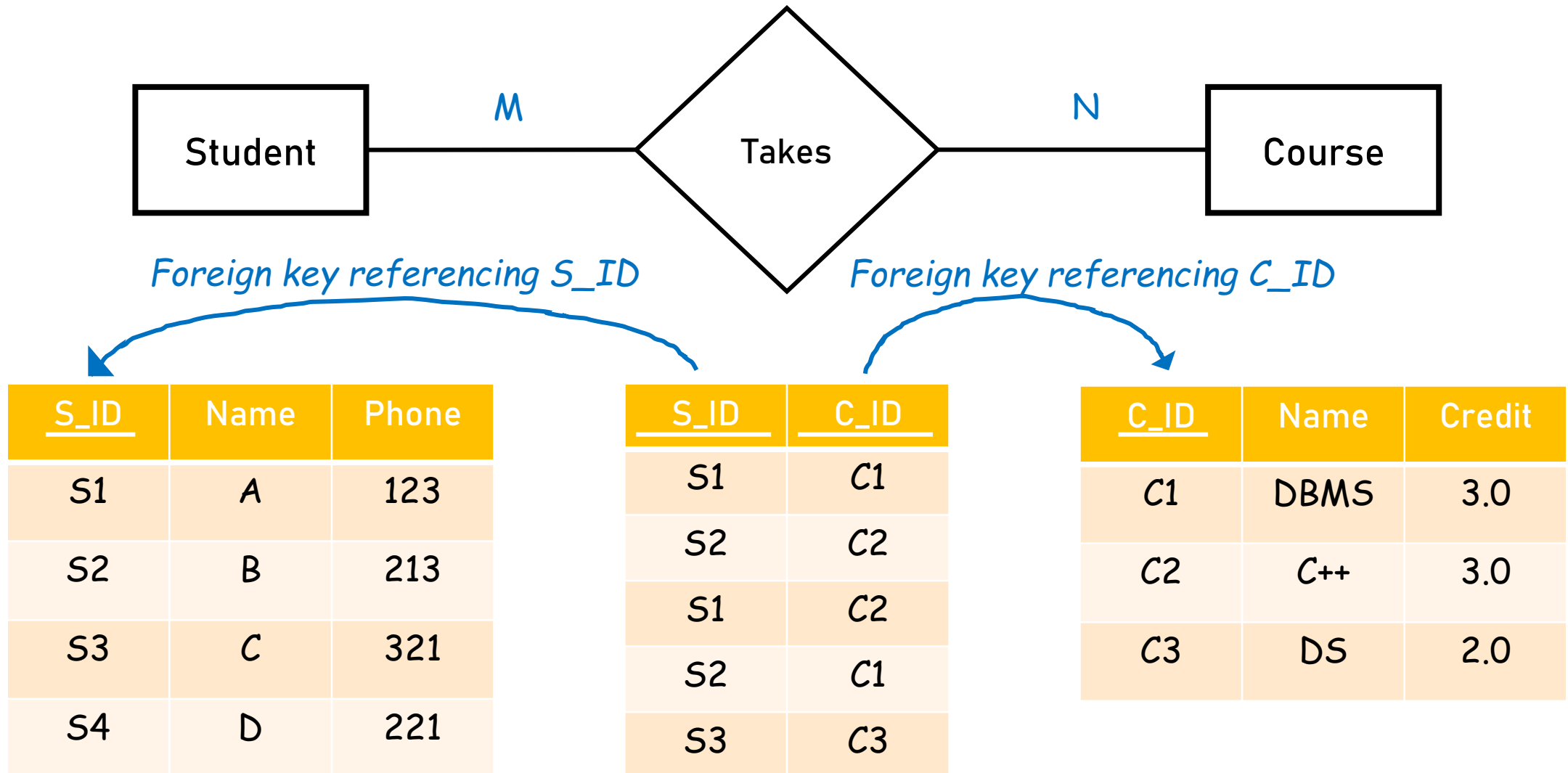
<u>I_ID</u>	Name	Phone	D_ID	Con_per
I1	A	123	D1	1 yr
I2	B	213	D1	1 yr
I3	C	321	D3	3 yr
I4	D	221	D2	2 yr

<u>D_ID</u>	Name	Location
D1	CSE	1 <sup>st</sup> flr
D2	EEE	2 <sup>nd</sup> flr
D3	MCE	3 <sup>rd</sup> flr



# Converting an ER Model to a Relational Model

## Case 3: Many-to-Many Relationship



*Thank You!*