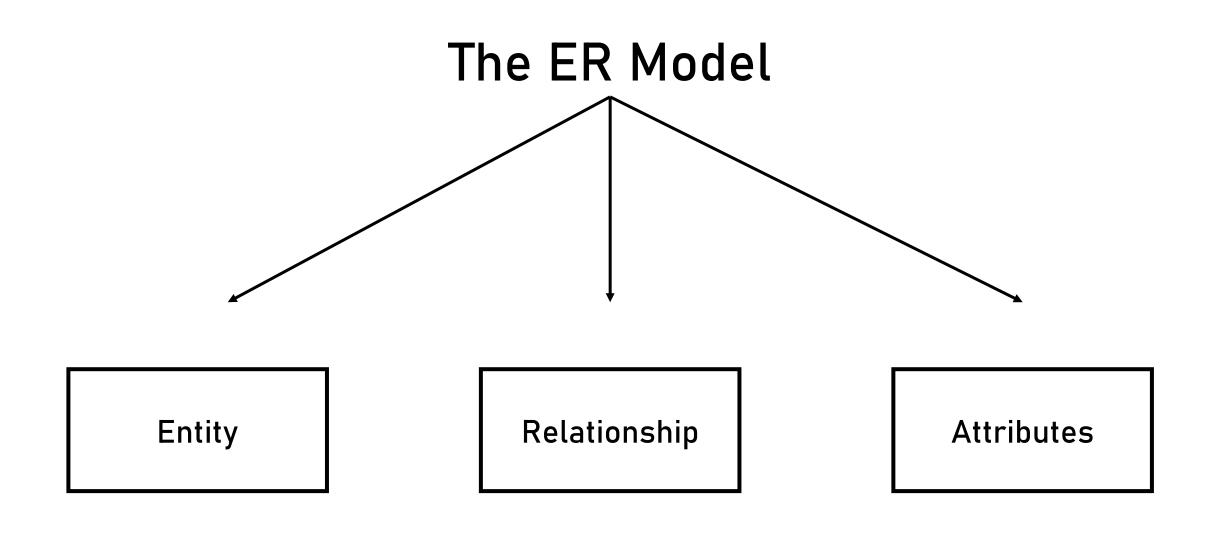
CSE 4308 Database Management Systems Lab Lab 07 ER Models and Converting ER Models to Relational Models

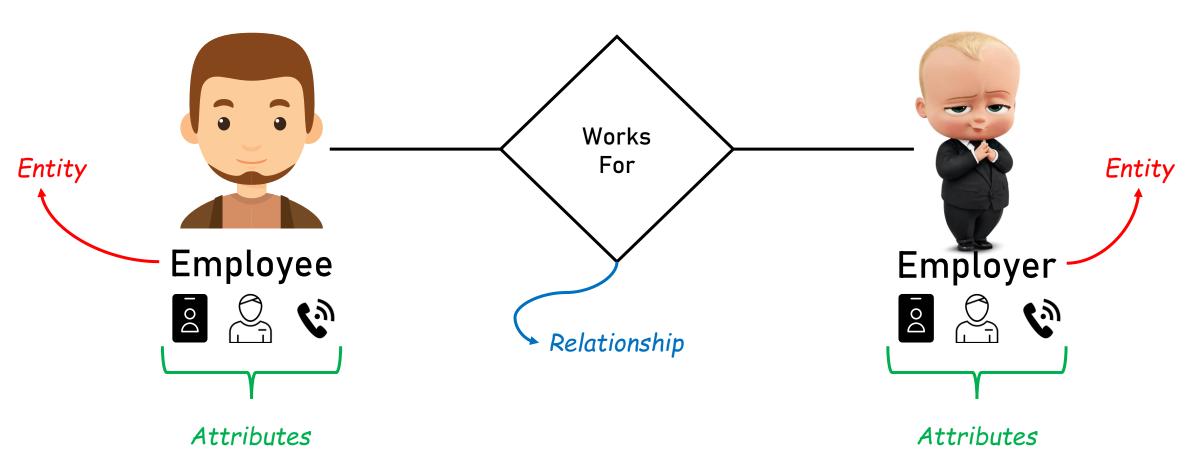


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Mohammad Anas Jawad Lecturer, IUT CSE

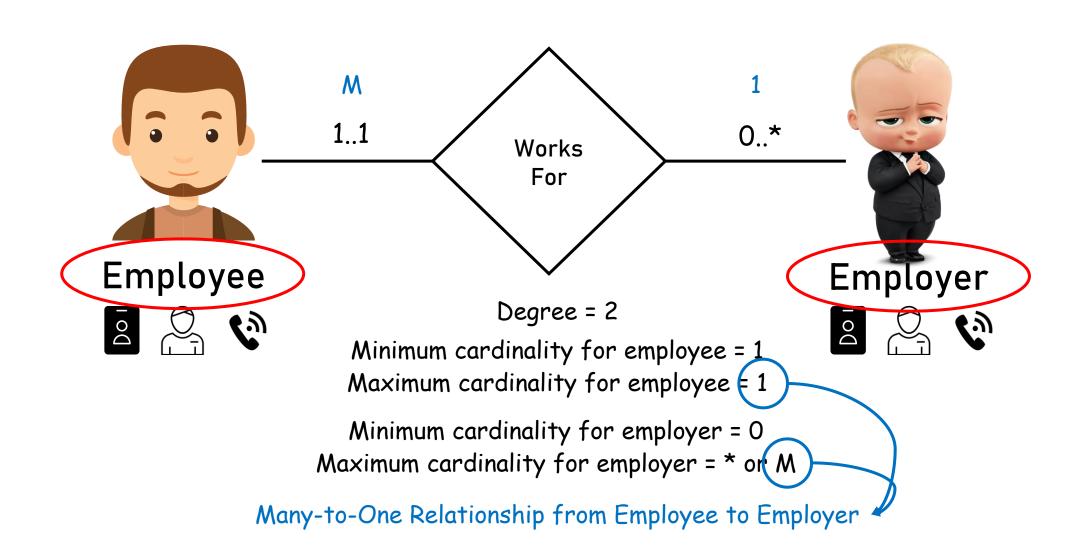


Entity, Relationship and Attributes

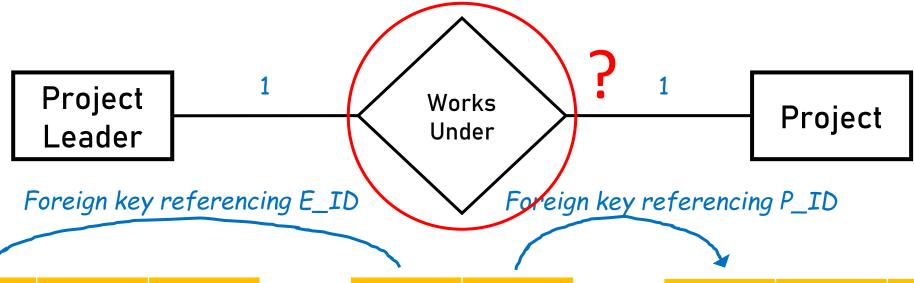


Fun fact: What we just designed is called an ER Model!

Properties of Relationship Degree, Minimum Cardinality, Maximum Cardinality



Converting an ER Model to a Relational Model Case 1: One-to-One Relationship

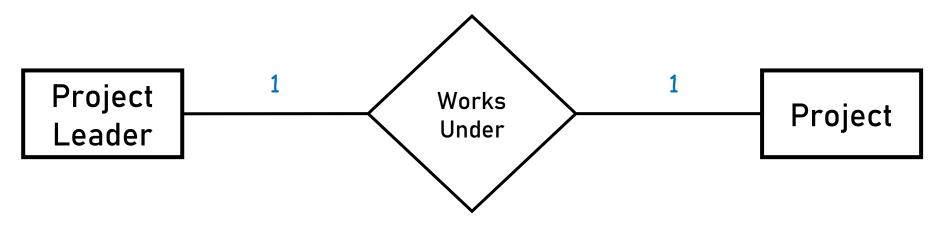


E_ID_	Name	Phone
E1	Α	123
E2	В	213
E3	С	321
E4	D	221

E_ID	P_ID
E1	P1
E2	P2
E3	Р3

P_ID_	Name	Budget
P1	Alpha	100\$
P2	Beta	200\$
Р3	Gamma	1000\$

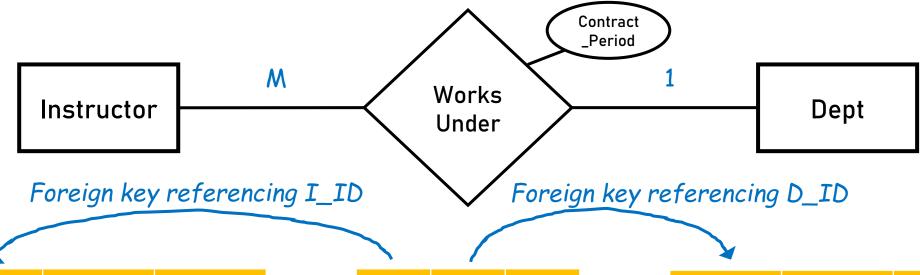
Converting an ER Model to a Relational Model Case 1: One-to-One Relationship



E_ID_	Name	Phone	P_ID
E1	Α	123	P1
E2	В	213	P2
E3	С	321	Р3
E4	D	221	

P_ID	Name	Budget
P1	Alpha	100\$
P2	Beta	200\$
Р3	Gamma	1000\$

Converting an ER Model to a Relational Model Case 2: Many-to-One Relationship

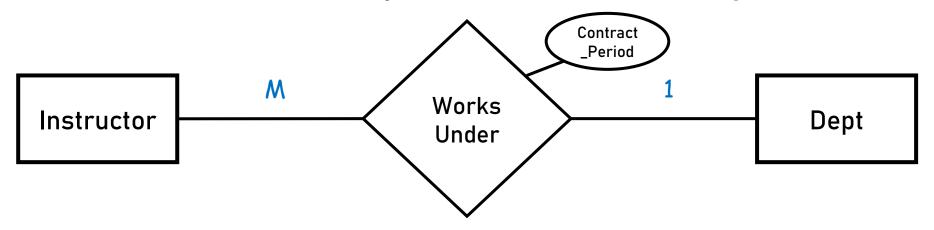


<u>I_ID</u>	Name	Phone
I1	Α	123
I2	В	213
I3	С	321
I 4	D	221

<u>I_ID</u>	D_ID	Con_ per
I1	D1	1 yr
I2	D1	1 yr
13	D3	3 yr
14	D2	2 yr

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

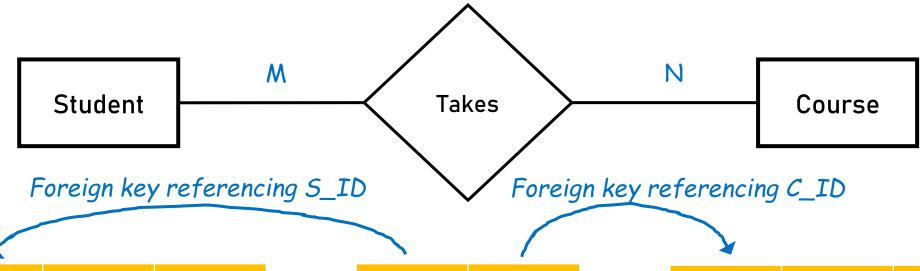
Converting an ER Model to a Relational Model Case 2: Many-to-One Relationship



<u>I_ID</u>	Name	Phone	D_ID	Con_per
I1	Α	123	D1	1 yr
I2	В	213	D1	1 yr
I3	С	321	D3	3 yr
14	D	221	D2	2 yr

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

Converting an ER Model to a Relational Model Case 3: Many-to-Many Relationship



S_ID_	Name	Phone
S 1	Α	123
52	В	213
53	С	321
54	D	221

S_ID	C_ID
51	<i>C</i> 1
52	<i>C</i> 2
51	C2
52	<i>C</i> 1
53	<i>C</i> 3

<u>C_ID</u>	Name	Credit
<i>C</i> 1	DBMS	3.0
<i>C</i> 2	C++	3.0
<i>C</i> 3	DS	2.0

Thank You!