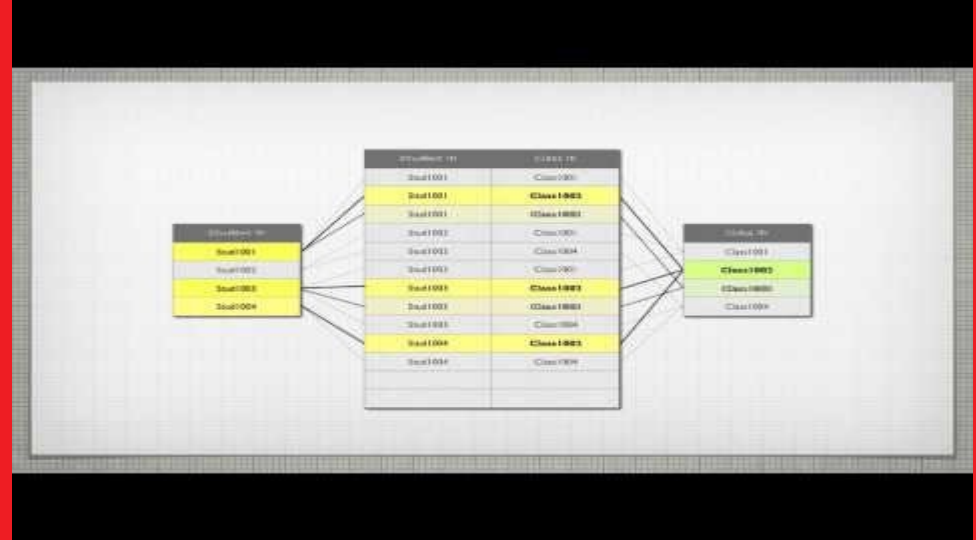


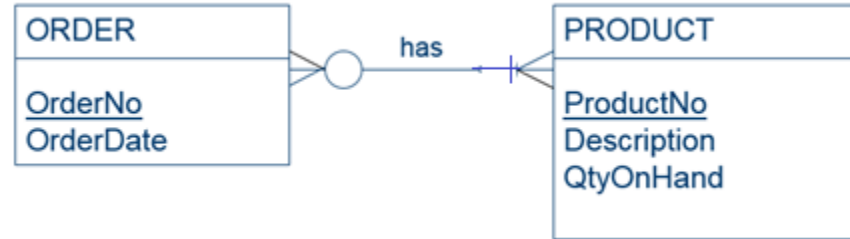
Solving M:N Relationships



- <https://www.youtube.com/watch?v=NvrpuBAMddw> [5:24 min]
- In this example, entity names are written as plural numbers, but in our course we put all entity names as singular numbers.

COMPOSITE or ASSOCIATIVE Entity

- When two entities have an M:N relationship, it cannot be properly implemented in a relational database as there are attributes associated to both entities but do not fit well to any one entity

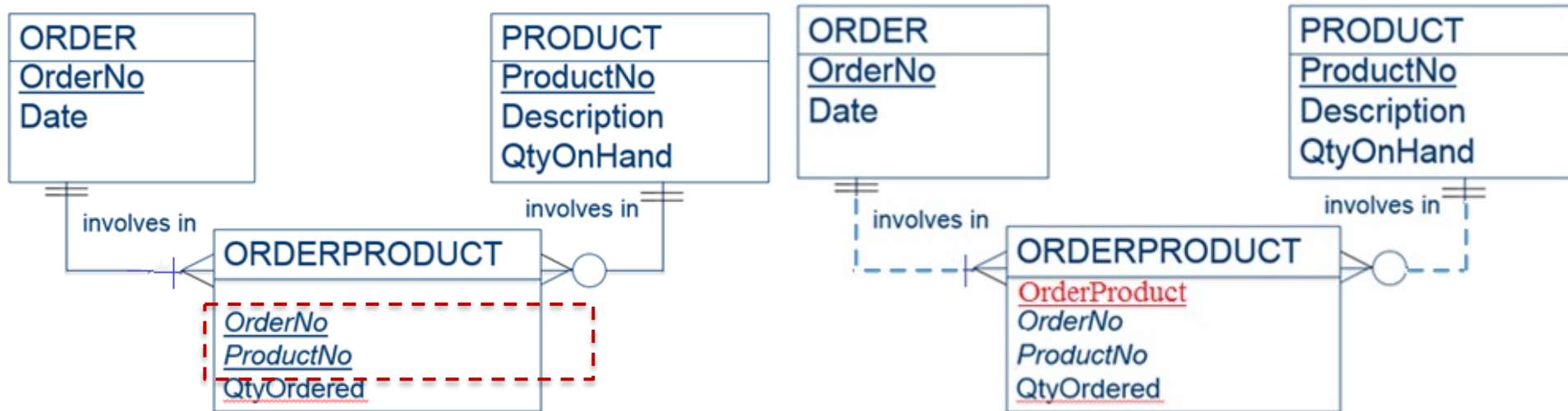


- where should *quantity ordered* be placed
ORDERS, PRODUCT or ?
- Introduce bridging entity composed of keys of the two related entities, known as a **COMPOSITE** or **ASSOCIATIVE** or **BRIDGING ENTITY**
 - This new entity is **existence-dependent**
- One M:N relationship is equivalent to two 1:M relationships
 - sometimes better to model in this manner, especially when composite is a 'real' thing or you wish to add relationships to composite

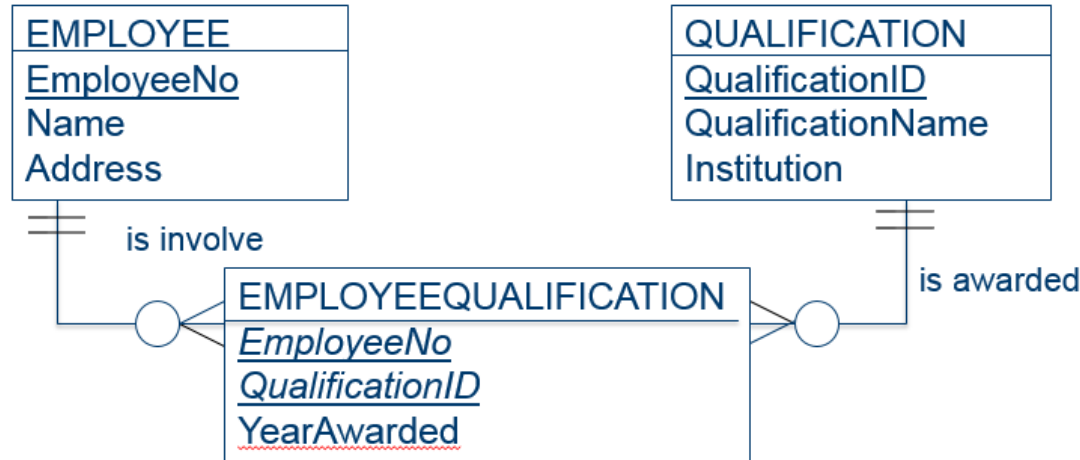
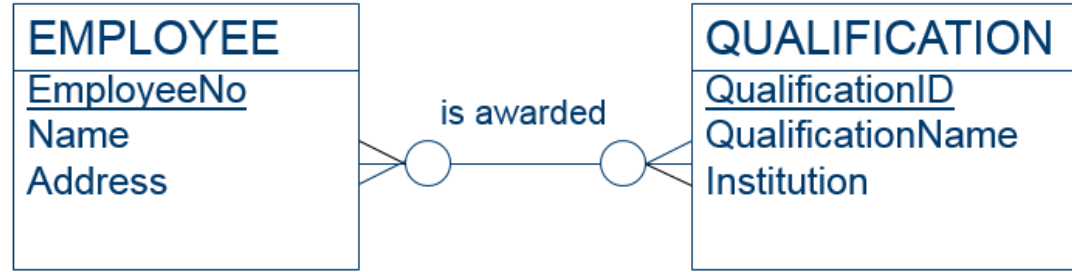
COMPOSITE or ASSOCIATIVE Entity

Steps:

1. Insert a new Entity between the two entities involved in the many-to-many
2. Take the PK's from each of the entities and place it in the new
3. Add in any attributes required
4. Connectivity – Crow's foot points to the new entity
5. Two FKs in new entity can be a composite primary key, or enter a new attribute to the primary key

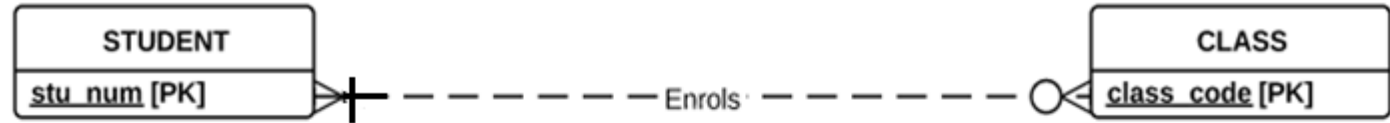


Example 2:

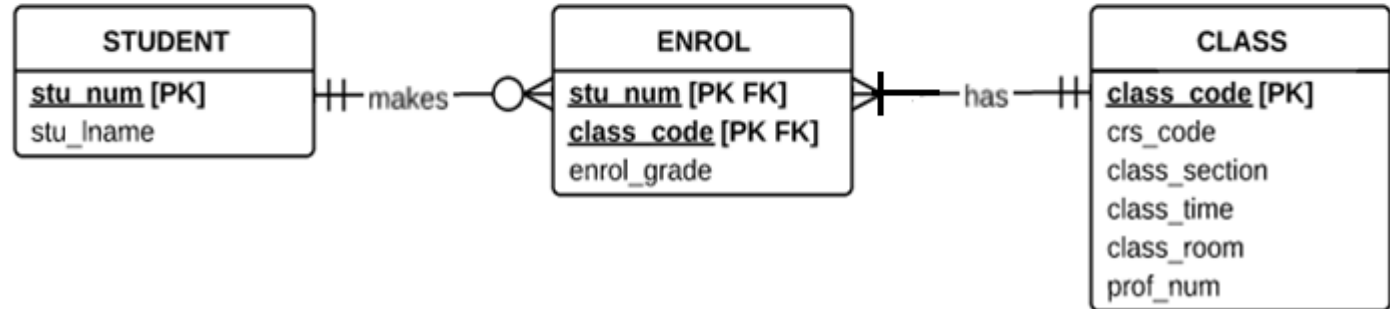


Example 3:

Conceptual Model
(ERD)



Logical
Relational Model



- Software tools modelling at the Logical level do not allow the designer to draw M:N relations (two 1:M relationships must be used)

Converting the M:N relationship into two 1:M relationships

Table name: STUDENT

Database name: Ch04_CollegeTry

	STU_NUM	STU_LNAME
▶ +	321452	Bowser
+	324257	Smithson

Table name: ENROLL

	CLASS_CODE	STU_NUM	ENROLL_GRADE
▶	10014	321452	C
	10014	324257	B
	10018	321452	A
	10018	324257	B
	10021	321452	C
	10021	324257	C

Table name: CLASS

	CLASS_CODE	CRS_CODE	CLASS_SECTION	CLASS_TIME	CLASS_ROOM	PROF_NUM
▶ +	10014	ACCT-211	3	TTh 2:30-3:45 p.m.	BUS252	342
+	10018	CIS-220	2	MWTF 9:00-9:50 a.m.	KLR211	114
+	10021	QM-261	1	MWTF 8:00-8:50 a.m.	KLR200	114

Thank you