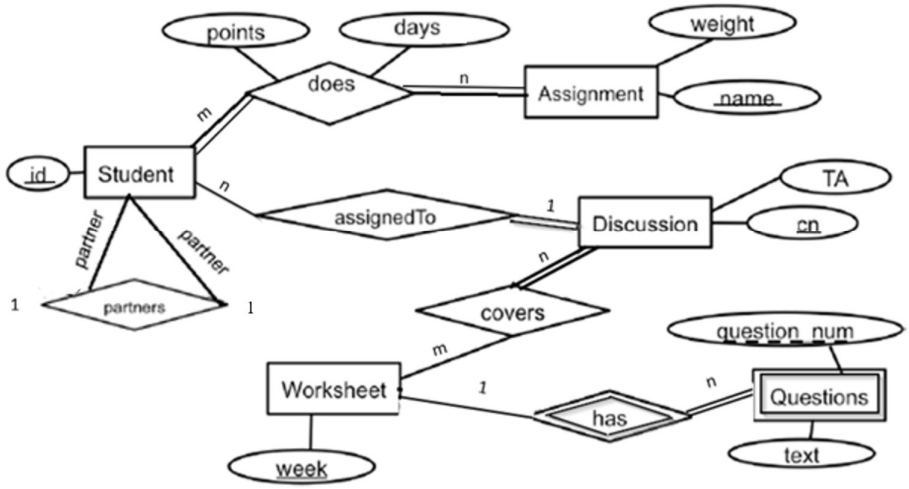
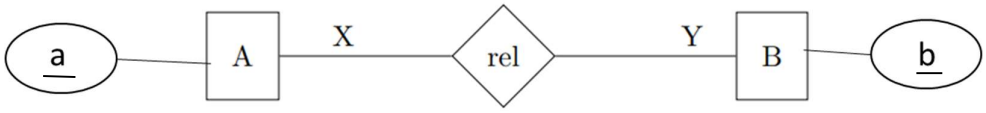
CS3402 Tutorial 2:

1. Translate the ER diagram below to relational tables in the following steps.
   (a) Map *strong entity* type into relation
   (b) Map *weak entity + identifying relationship* type into relation
   (c) Map binary *1:1 relationship* types into attributes
   (d) Map binary *1:N Relationship* types into attributes
   (e) Map binary *M:N relationship* type into relation
   (f) Map *N-ary* relationship type into relation
   (g) Map *multi-valued* attribute into relation



2 Consider the following ER model with entities A and B (with attributes a and b) connected through a relationship.



2.1 Complete the table below by converting the ER model to relational schema, for all cardinality options. Write down the relations and underline their primary keys.

Hint: Map 1:1 relationship types into attributes; Map 1:N Relationship types into attributes; Map M:N relationship type into relation.

ER Model (X:Y)	Relational Schema
M:N	
1:N	
N:1	
1:1	

2.2 Suppose we want to add elements to the relations. Mark which tuples from below can be inserted into the relational schemas you created for the M:N relationship:
(a1, b1)
(a1, b2)
(a2, b1)
(a2, b2)

2.3 How about the 1:N case?
(a1, b1)
(a1, b2)
(a2, b1)
(a2, b2)

2.4 How about the 1:1 case?
(a1, b1)
(a1, b2)
(a2, b1)
(a2, b2)