




RELATIONAL DATABASES

BSc IoT

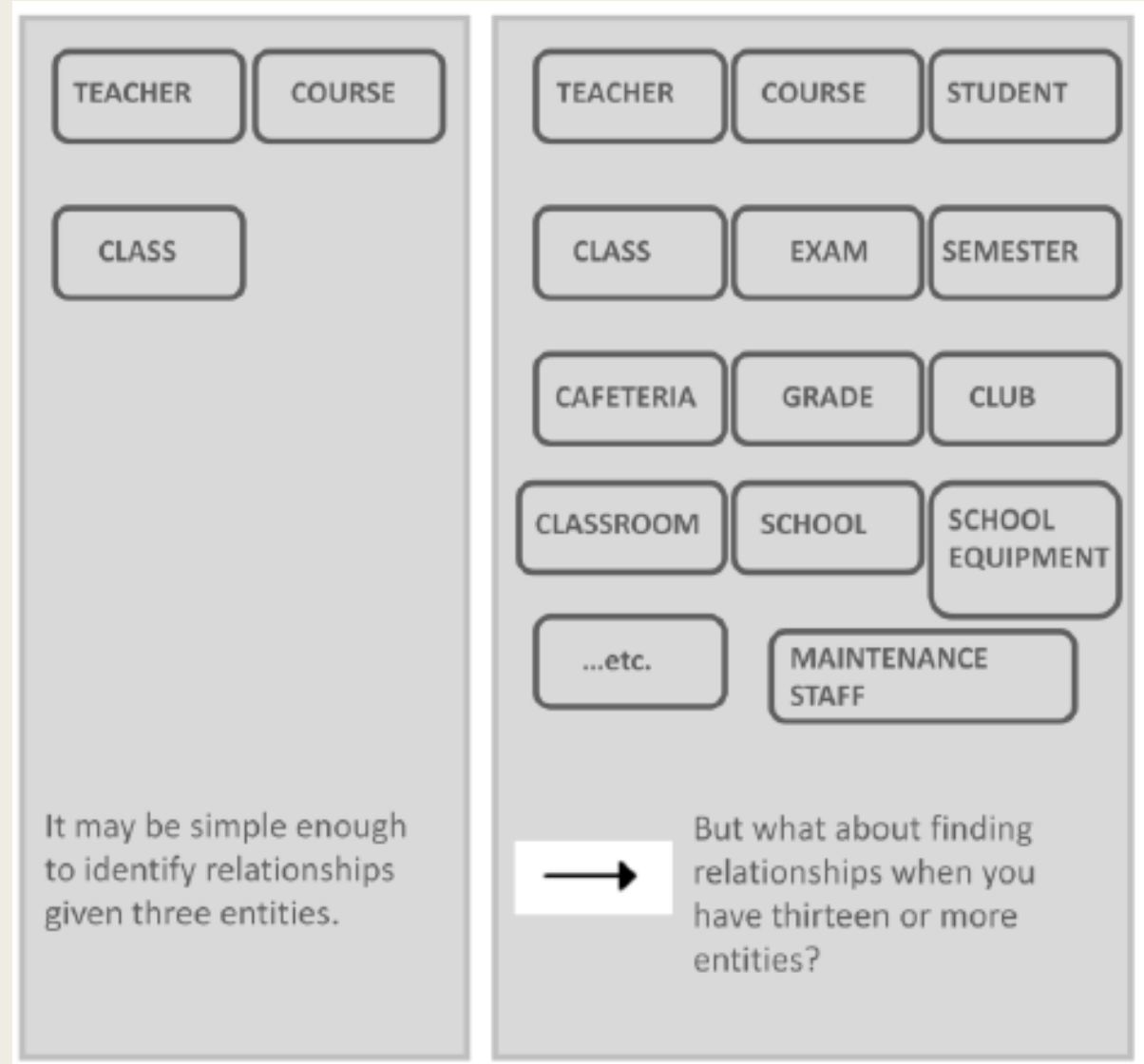


Objectives

- Identify relationships using a matrix diagram
- Draw an ERD from a matrix diagram

Purpose of Matrix Diagrams

- It is useful to know more than one way to discover relationships.
- Using a matrix diagram, especially when you are dealing with many entities, is a good way to make sure that you have not missed any.



Business Scenario

- “I work for a travel agency. I keep a record of the countries that our customers have visited and the landmarks they have seen in each country. It helps us to customise tours for them.”



	TRAVELER	COUNTRY	LANDMARK
TRAVELER			
COUNTRY			
LANDMARK			

MATRIX DIAGRAM

Matrix Diagram

- A grid like drawing that can be used to discover and record relationships between entities in an ER Model.
- Sometimes it is hard to know where to start defining relationships.
- To avoid confusion, be consistent in writing to and reading from the matrix only in one direction.
- Row by row is standard method.

Matrix Diagram

	TRAVELER	COUNTRY	LANDMARK
TRAVELER	_____	visit	have seen
COUNTRY	visited by	_____	the location of
LANDMARK	seen by	located in	_____

correct: COUNTRY visited by TRAVELER

correct: LANDMARK seen by TRAVELER

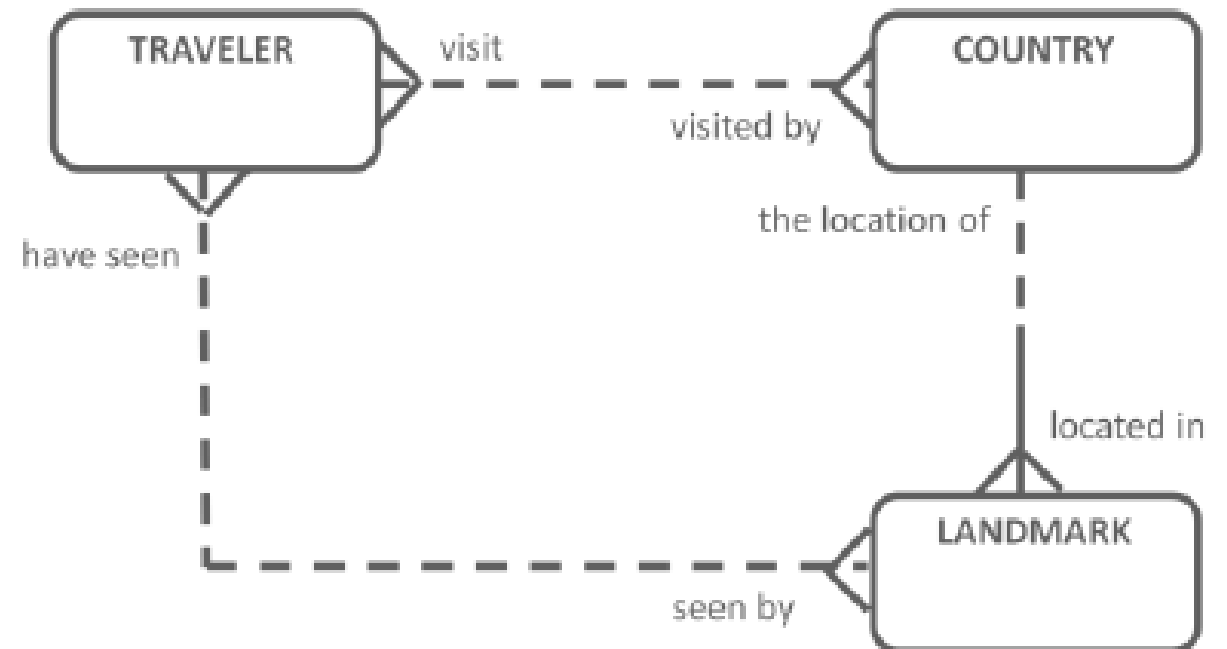
incorrect: TRAVELER visited by COUNTRY

incorrect: TRAVELER seen by LANDMARK

Matrix Diagram

- Relationships discovered via the matrix diagram are then drawn on the ERD.
- Matrix diagrams do not show optionality and cardinality.

	TRAVELER	COUNTRY	LANDMARK
TRAVELER	_____	visit	have seen
COUNTRY	visited by	_____	the location of
LANDMARK	seen by	located in	_____



Matrix Diagrams

- Each COUNTRY may be visited by one or more TRAVELERS.
- Each TRAVELER may visit one or more COUNTRY.
- What are the other relationships?

	TRAVELER	COUNTRY	LANDMARK
TRAVELER	_____	visit	have seen
COUNTRY	visited by	_____	the location of
LANDMARK	seen by	located in	_____

