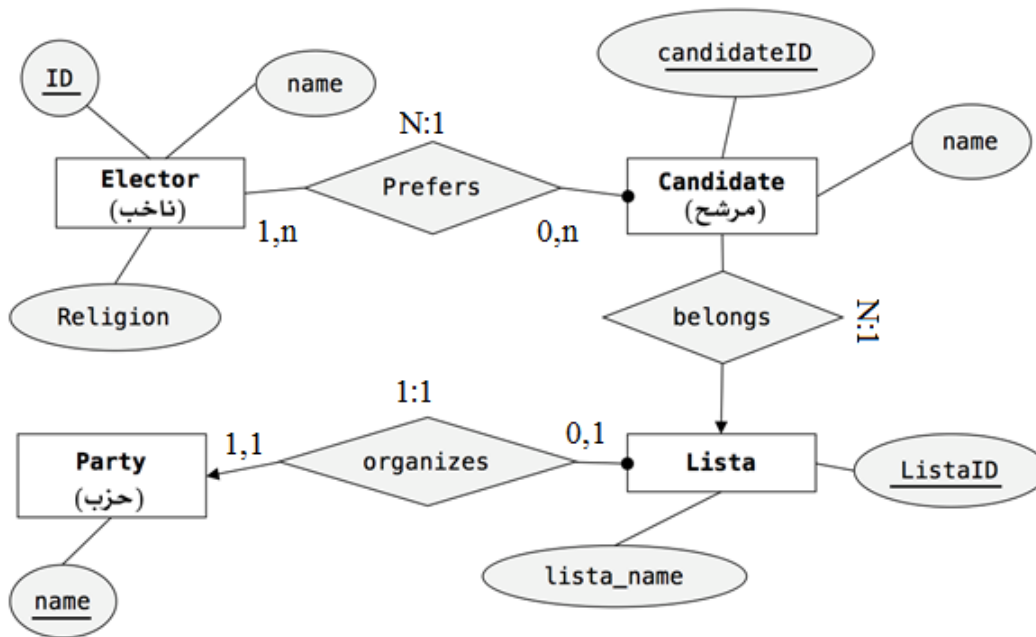


ER diagram – Relational Model

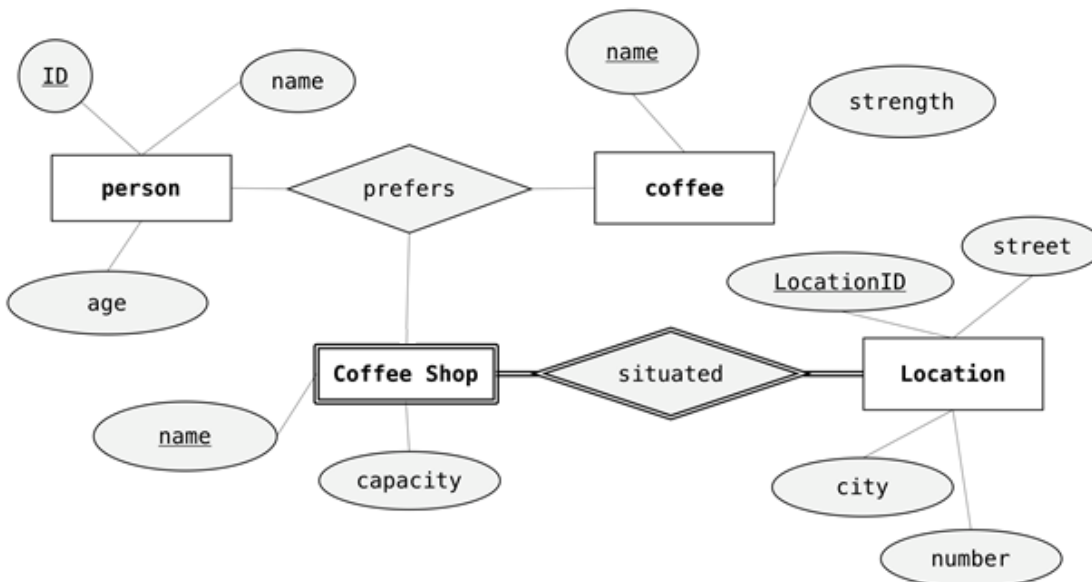
Question1:

Consider the following E/R diagram. We wish to convert it to its relational model.



Question2:

Consider the following E/R, in which a person prefers a certain coffee at a specific coffee shop. For example, Sara prefers the Latté at Starbucks and the Cappuccino at Caribou's.



We wish to convert it to its relational form.

- 1) Complete the missing attributes in each relation below
- 2) Indicate the primary keys (by underlying)
- 3) Indicate the foreign keys (using arrows).

Question3:

A library service (consisting of **many libraries**) wants to create a database to store details of its libraries, books and borrowers. Details include the following:

- A book has a unique ISBN number, a title and an author.
- The library service may own several copies of a given book, each of which is located in one of the service's libraries.
- In order to distinguish different copies of the same book a library assigns a different copy-number to each of its copies of a given book; the price that was paid for each copy is also recorded.
- Every library has a unique name and type. It is either a main library or a branch library.
- A main library may have zero or more branch libraries and every branch library is a branch of exactly one main library.
- A borrower has a name and a unique ID code. A borrower can have many books on loan (date must be recorded).

- a) Design and draw an ER diagram that captures the requirements above. Be sure to indicate all key and cardinality constraints.
- b) Create the schema corresponding to this ER (ER to Relational Mapping)