

CSCI-321: Database Systems
Homework #5 – Answer Key

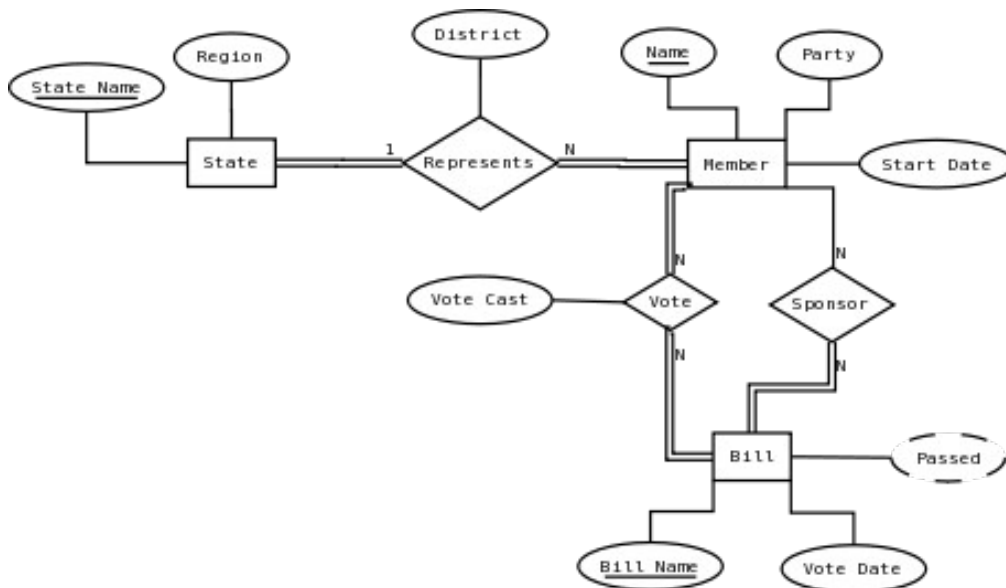
7.7. Describes the role played by each participant in a relationship. When a relationship is formed from the same entity, we must specify the different roles played by each.

7.21. There can be variations from that shown below.

Assumptions:

- A vote is recorded for each member of congress on every bill (yes, no, present, absent).
- A member can only vote once on a given bill.
- Each member of congress can sponsor multiple bills and each bill can be sponsored by multiple members of congress.
- The district a member of congress represents is identified by number.

ER-Model:

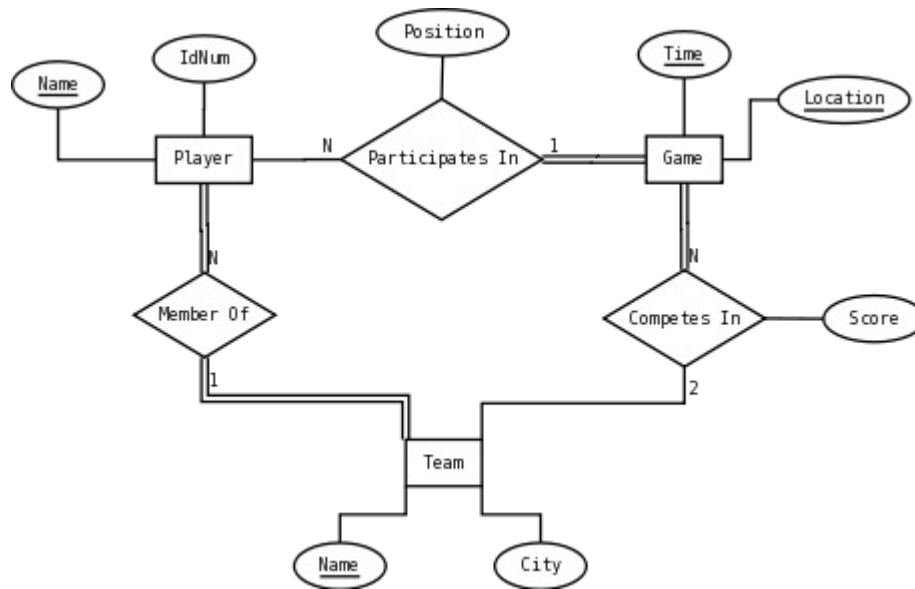


7.22. There can be variations from that shown below.

Assumptions:

- The ER-model is for soccer.
- Each player will have a unique id # and belong to a single team.
- Each team name is unique.
- Each game is identified by its time and location.

ER-Model:



7.23

- The strong entities are: Bank, Account, Loan, and Customer.
- There is a weak entity: Bank Branch
 - partial key: branch_no
 - identifying relationship: branches.
- Constraints on the partial key and identifying relationship are:
 - Each bank can have multiple branches but each branch belongs to a single bank.
 - Each bank must have branch and each branch must belong to a bank.
- The relationships include:
Branches: 1:N, Accts: 1:N, Loans: 1:N, A_C: N:N, L_C: N:N

7.28

- True – total participation of “Performs In” indicates every actor must have performed in at least one movie.
- Maybe – actors can perform in multiple movies, but we have no way of knowing the max number each actor has performed in.
- Maybe – actors can have a leading role in multiple movies (no way knowing actual number).
- True – as indicated by the mapping constraint of 2:N on “Lead Role”.
- Maybe – is possible but no way of knowing for sure.
- Maybe – a producer can be an actor but no way of knowing for sure.
- False – a produce can be an actor in some other movie.
- Maybe – each can contain many actors.
- Maybe – a producer can be a director on the same movie.
- Maybe – each movie is directed by a single person but produced by multiple people. No way of knowing actual numbers from the diagram.
- Maybe – see (j)
- Maybe – it's possible, but no way of knowing from the diagram.
- Maybe – it's possible, but no way of knowing from the diagram.