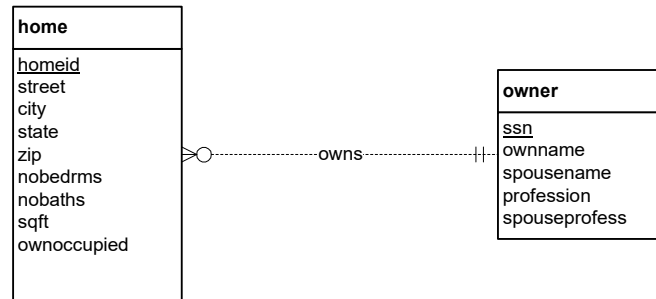


ER Tutorial (Sept 2023)

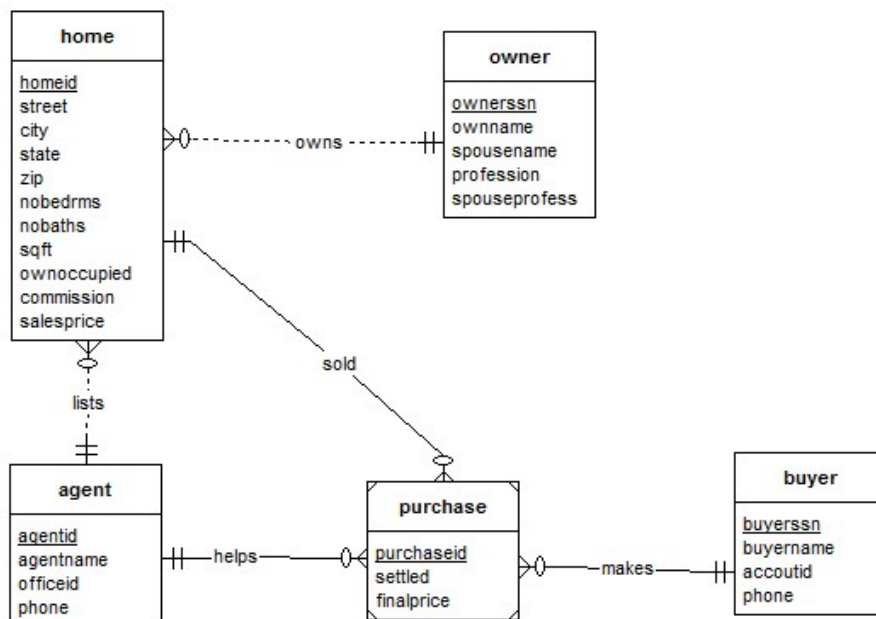
- (a) Define an ERD for the following narrative. The database should track homes and owners. A home has a unique home identifier, a street address, a city, a state, a zip, a number of bedrooms, a number of bathrooms, and a house area in square feet. A home is either owner occupied or rented. An owner has a social security number, a name, an optional spouse name, a profession, and an optional spouse profession. An owner can possess one or more homes. Each home can only have one owner.



- (b) Refine the ERD from (a) by considering the additional information below.

Agents represent owners in the sale of a home. An agent can list many homes but a home can be listed by an agent. An agent has a unique agent identifier, a name, an office identifier, and a phone number. When an owner agrees to list a home with an agent, a commission (percentage of the sales price) and a selling price are determined.

Every buyer has a unique name, a bank account number and a phone number. A buyer can make an offer to purchase a home through an agent. The agent would pass the offer to the house's owner to consider. The owner can propose a counter-offer to the buyer through the agent as well. After several rounds of negotiation, either a final purchase price is settled as a sales transaction or the deal is cancelled.



- (c) In the ERD from (b), transform it to a set of normalized tables. Indicate the primary keys and foreign keys clearly. State any assumptions if necessary.

owner(ownerssn, ownname, spousesname, profession, spouseprofess)

agent(agentid, agentname, officeid, phone)

buyer(buyerssn, buyername, accounted, phone)

home(homeid, ownerssn, agentid, street, city, state, zip, nobedrms, nobaths, sqft, ownoccupied, commission, slaesprice)

FOREIGN KEY(ownerssn) REFERENCES owner

FOREIGN KEY(agentid) REFERENCES agent

purchase(purchaseid, homeid, agented, buyerssn, settled, finalprice)

FOREIGN KEY(homeid) REFERENCES home

FOREIGN KEY(agentid) REFERENCES agent

FOREIGN KEY(buyerssn) REFERENCES buyer