Module 9
Data Modeling Problems and Design Errors

Lesson 1: Data Modeling Problems I

Lesson Objectives

- Practice analyzing simple narrative problem statements and applying design transformations
- Focus on consistency with narrative problem statements
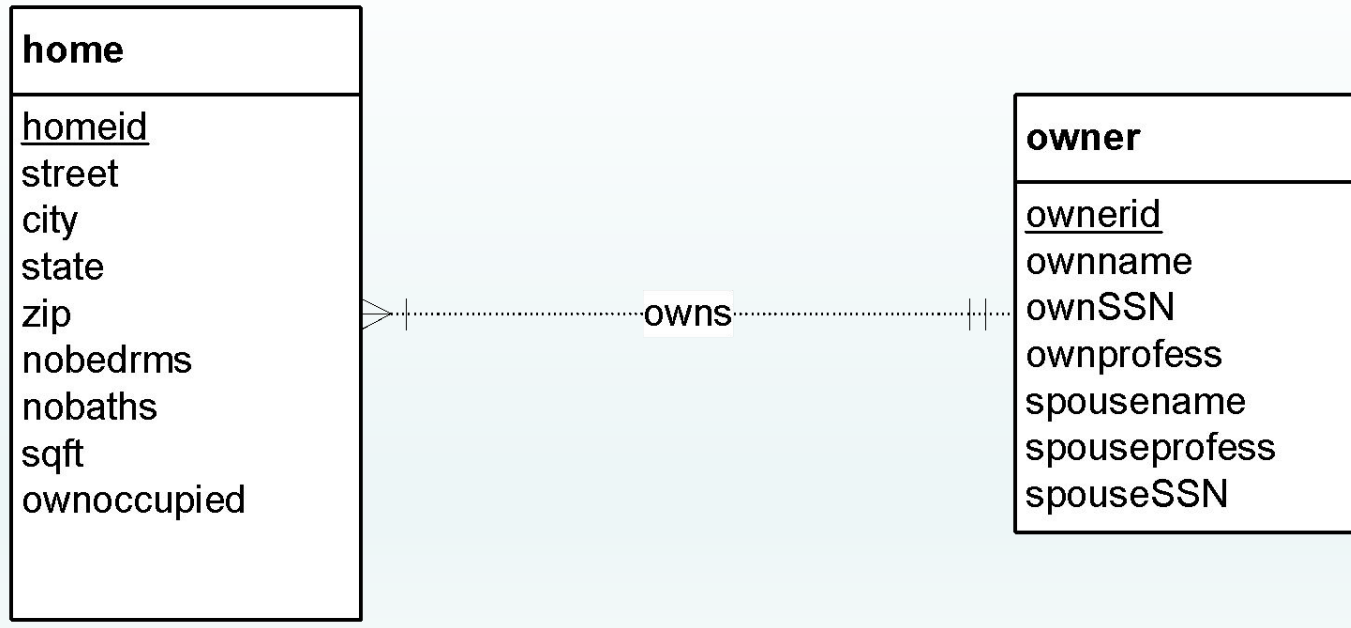- Learn from mistakes

Problem 1

- Track homes and owners
- Home has only 1 owner. Owner can possess 1 or more homes.
- Home has unique home identifier, address, characteristics (number of bedrooms, bathrooms, …), and occupied by owner, tenant, or vacant.
- Owner has unique owner number, government identifier, name, and spouse details.

Information Systems Program

Problem 1 Solution

home

homeid
street
city
state
zip
nobedrms
nobaths
sqft
ownoccupied

owner

ownerid
ownname
ownSSN
ownprofess
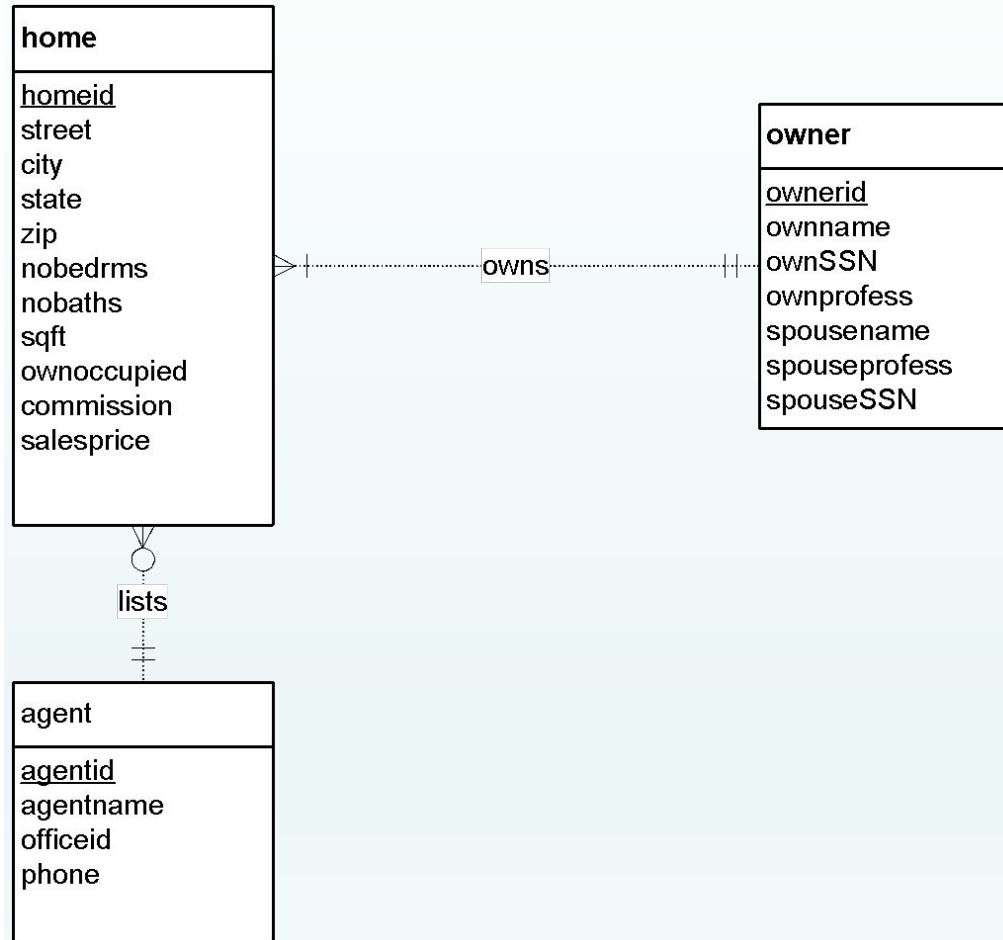spousename
spouseprofess
spouseSSN

owns

Problem 2

- Track agents

- Agents represent owners in home sales. An agent can list many homes, but a home is listed by a maximum of one agent.

- Agent has a unique agent identifier, name, office identifier, and phone number.

- Commission and listing price are determined when a home is listed.

Information Systems Program

Problem 2 Solution

home

homeid
street
city
state
zip
nobedrms
nobaths
sqft
ownoccupied
commission
salesprice

owner

ownerid
ownname
ownSSN
ownprofess
spousename
spouseprofess
spouseSSN

owns

lists

agent

agentid
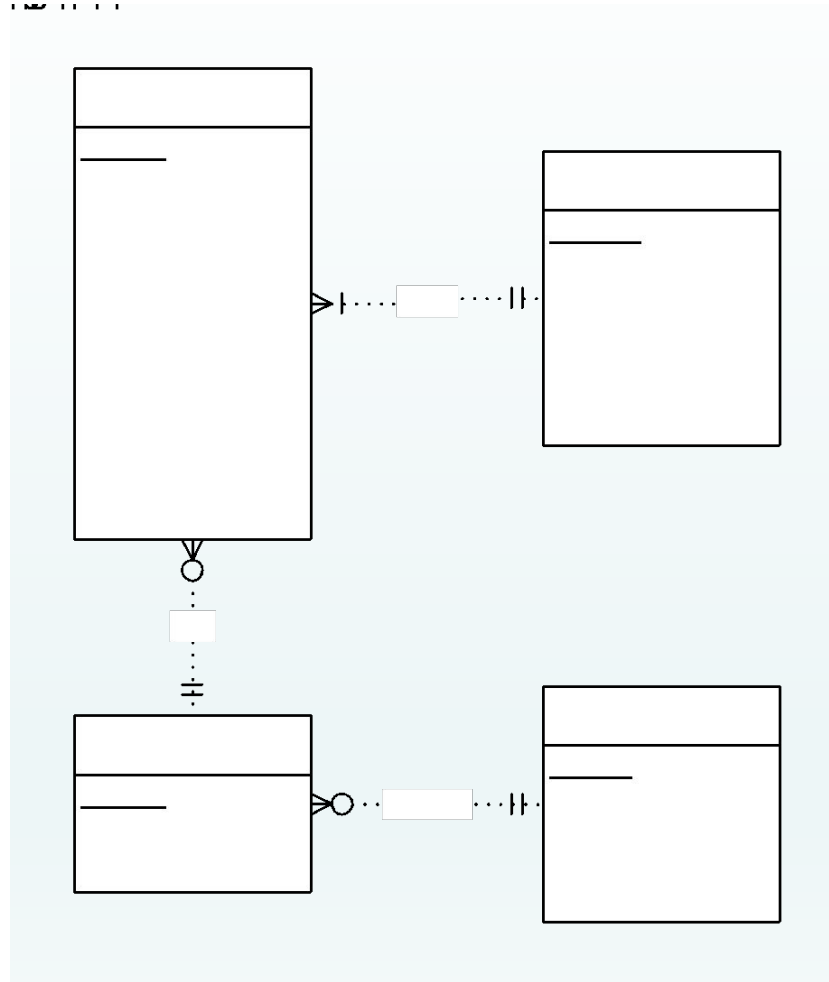agentname
officeid
phone

Problem 3

- Transform office identifier into an entity type
- Office has a phone number, manager name, and address.

Problem 3 Solution

Summary

- Work problems to gain confidence analyzing requirements

- Focus on goals of narrative problem analysis

- Use the ER Assistant or another tool for drawing ERDs

- Use notation precisely in business data modeling problems