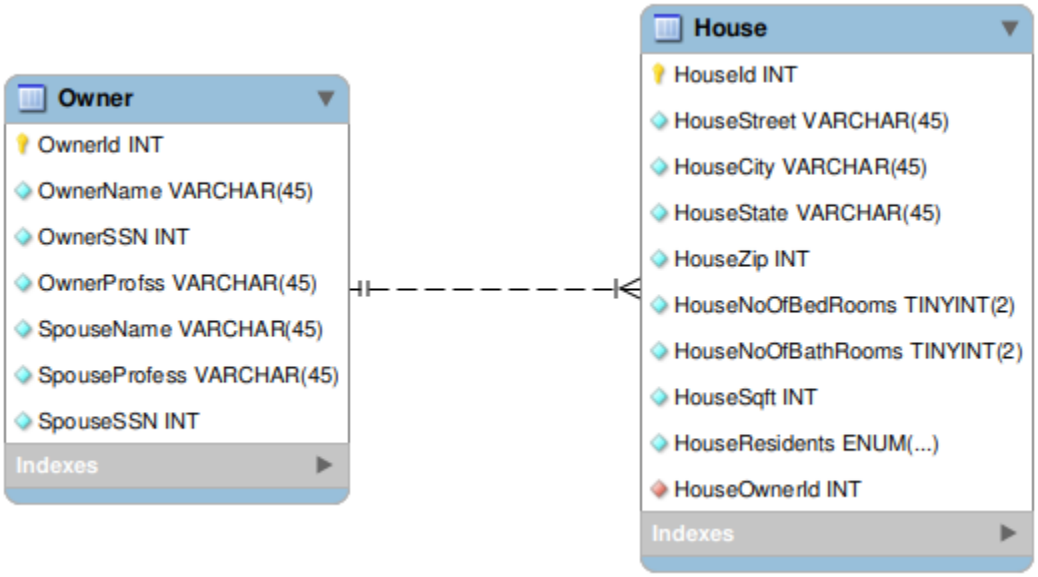
Data Modeling Assignment

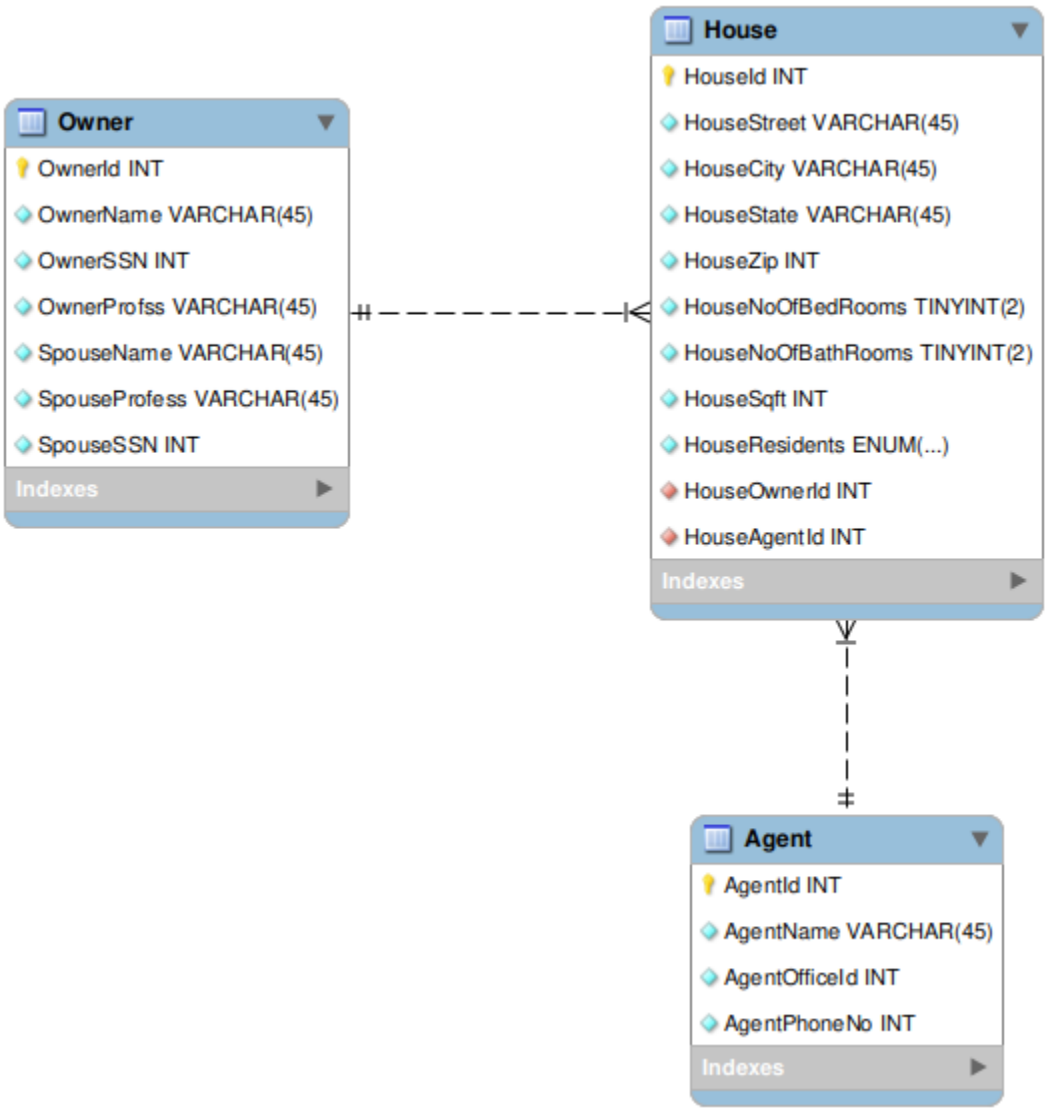
- Define an ERD for the following narrative. The database should track homes and owners. A home has a unique home identifier, a street address, a city, a state, a zip, a number of bedrooms, a number of bathrooms, and square feet. A home is either owner occupied or rented. An owner has a unique owner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

Solution:



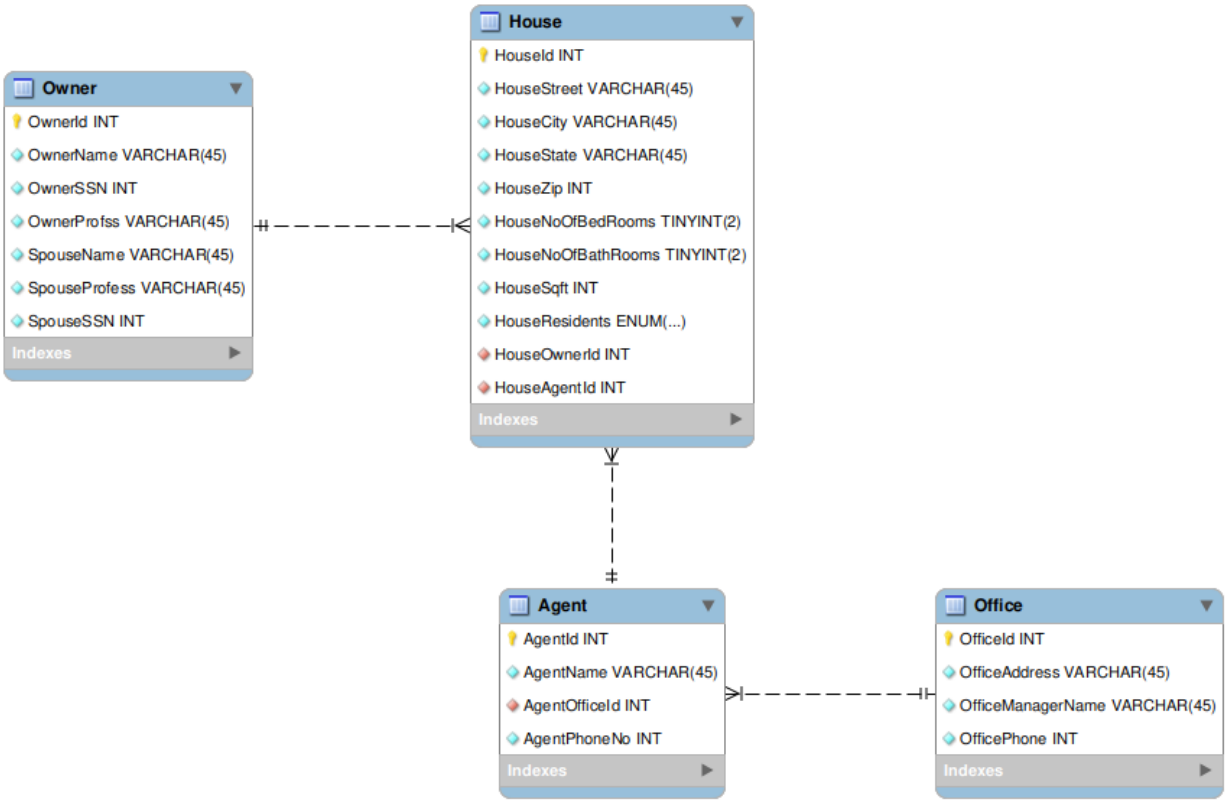
- Refine the ERD from problem 1 by adding an agent entity type. Agents represent owners in the sale of a home. An agent can list many homes, but only one agent can list a home. An agent has a unique agent identifier, a name, an office identifier, and a phone number. When an owner agrees to list a home with an agent, a commission (percentage of the sales price) and a selling price are determined.

Solution:



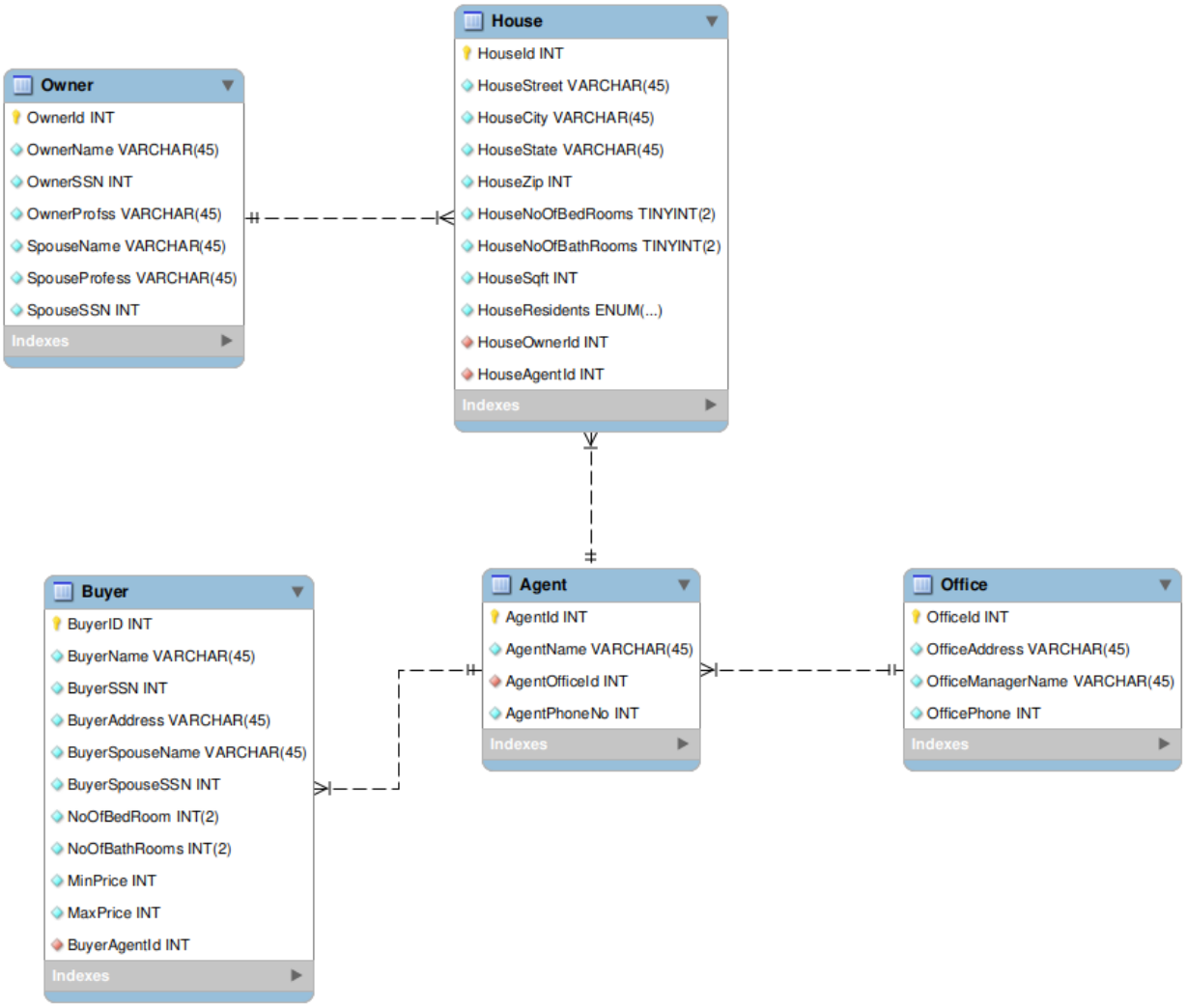
- In the ERD from problem 2, transform the attribute, office identifier, into an entity type. Data about an office include the phone number, the manager name, and the address.

Solution:



- In the ERD from problem 3, add a buyer entity type. A buyer entity type has a Social Security number, a name, a phone, preferences for the number of bedrooms and bathrooms, and a price range. An agent can work with many buyers, but a buyer works with only one agent.

Solution:


Owner
OwnerId INT
OwnerName VARCHAR(45)
OwnerSSN INT
OwnerProfss VARCHAR(45)
SpouseName VARCHAR(45)
SpouseProfess VARCHAR(45)
SpouseSSN INT
Indexes
House
HouseId INT
HouseStreet VARCHAR(45)
HouseCity VARCHAR(45)
HouseState VARCHAR(45)
HouseZip INT
HouseNoOfBedRooms TINYINT(2)
HouseNoOfBathRooms TINYINT(2)
HouseSqft INT
HouseResidents ENUM(...)
HouseOwnerId INT
HouseAgentId INT
Indexes
Buyer
BuyerID INT
BuyerName VARCHAR(45)
BuyerSSN INT
BuyerAddress VARCHAR(45)
BuyerSpouseName VARCHAR(45)
BuyerSpouseSSN INT
NoOfBedRoom INT(2)
NoOfBathRooms INT(2)
MinPrice INT
MaxPrice INT
BuyerAgentId INT
Indexes
Agent
AgentId INT
AgentName VARCHAR(45)
AgentOfficeId INT
AgentPhoneNo INT
Indexes
Office
OfficeId INT
OfficeAddress VARCHAR(45)
OfficeManagerName VARCHAR(45)
OfficePhone INT
Indexes