CASE 2 STUDY

Use the contents of Figure 2.1 to work Problems 1–3.

1. Write the business rule(s) that govern the relationship between AGENT and CUSTOMER.

2. Given the business rule(s) you wrote in Problem 1, create the basic Crow's Foot ERD.

3. Using the ERD you drew in Problem 2, create the equivalent object representation and UML class diagram. (Use Figure 2.4 as your guide.)

FIGURE 2.1 LINKING RELATIONAL TABLES

Table name: AGENT (first six attributes)

Database name: Ch02_InsureCo

AGENT_CODE	AGENT_LNAME	AGENT_FNAME	AGENT_INITIAL	AGENT_AREACODE	AGENT_PHONE
501	Alby	Alex	B	713	228-1249
502	Hahn	Leah	F	615	882-1244
503	Okon	John	T	615	123-5589

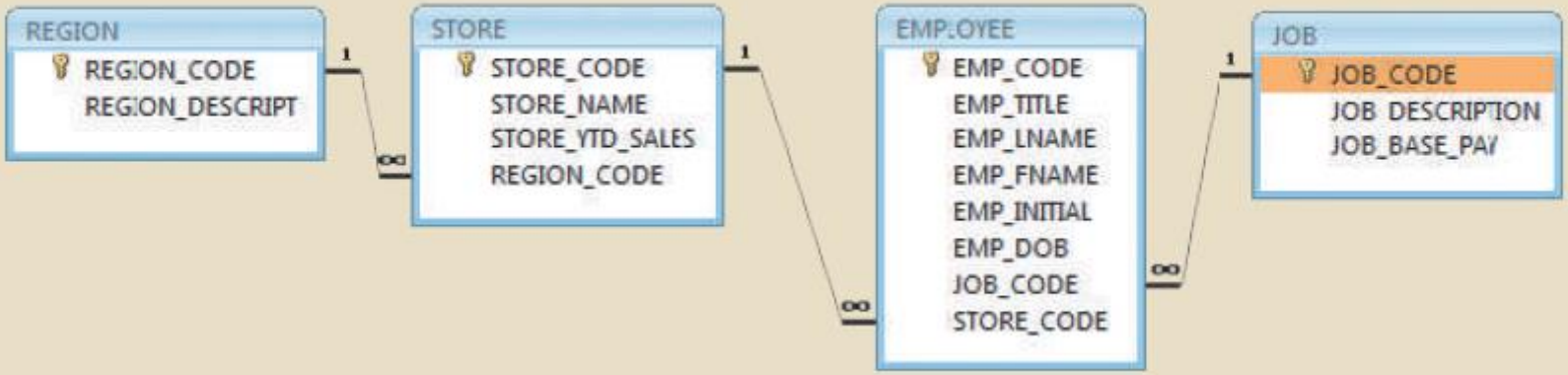
Link through AGENT_CODE

Table name: CUSTOMER

CUS_CODE	CUS_LNAME	CUS_FNAME	CUS_INTIAL	CUS_AREACODE	CUS_PHONE	CUS_INSURE_TYPE	CUS_INSURE_AMT	CUS_RENEW_DATE	AGENT_CODE
10010	Ramas	Alfred	A	615	844-2573	T1	100.00	05-Apr-2018	502
10011	Dunne	Leona	K	713	894-1238	T1	250.00	16-Jun-2018	501
10012	Smith	Kathy	W	615	894-2285	S2	150.00	29-Jan-2019	502
10013	Olowski	Paul	F	615	894-2180	S1	300.00	14-Oct-2018	502
10014	Orlando	Myron		615	222-1672	T1	100.00	28-Dec-2019	501
10015	O'Brian	Amy	B	713	442-3381	T2	850.00	22-Sep-2018	503
10016	Brown	James	G	615	297-1228	S1	120.00	25-Mar-2019	502
10017	Williams	George		615	290-2556	S1	250.00	17-Jul-2018	503
10018	Farriss	Anne	G	713	382-7185	T2	100.00	03-Dec-2018	501
10019	Smith	Olette	K	615	297-3809	S2	500.00	14-Mar-2019	503

Using Figure P2.4 as your guide, work Problems 4–5. The DealCo relational diagram shows the initial entities and attributes for the DealCo stores, which are located in two regions of the country.

FIGURE P2.4 THE DEALCO RELATIONAL DIAGRAM

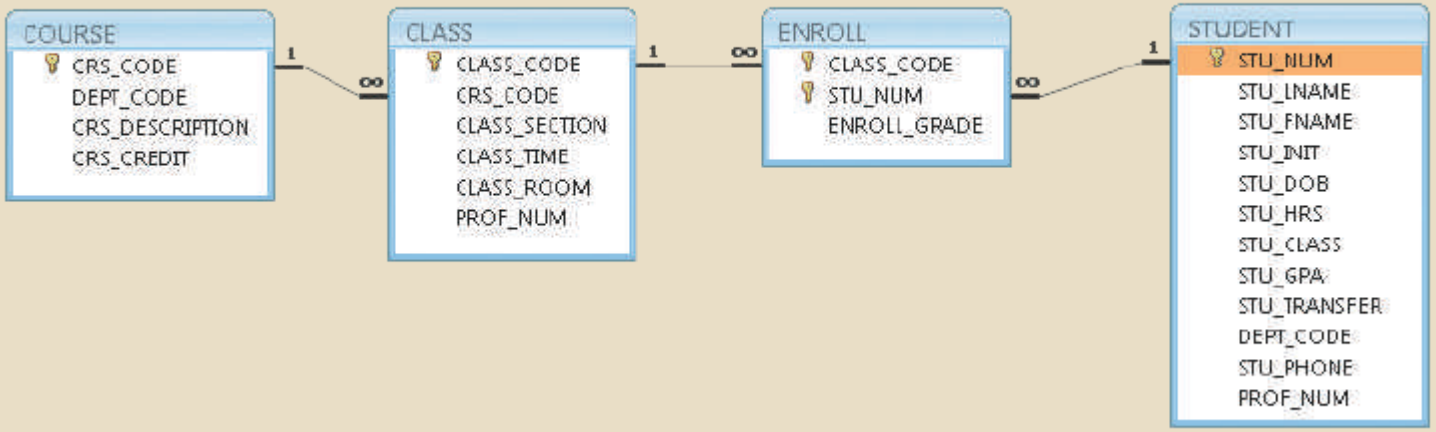


4. Identify each relationship type and write all of the business rules.

5. Create the basic Crow's Foot ERD for DealCo.

Using Figure P2.6 as your guide, work Problems 6–8. The Tiny College relational diagram shows the initial entities and attributes for the college.

FIGURE P2.6 THE TINY COLLEGE RELATIONAL DIAGRAM



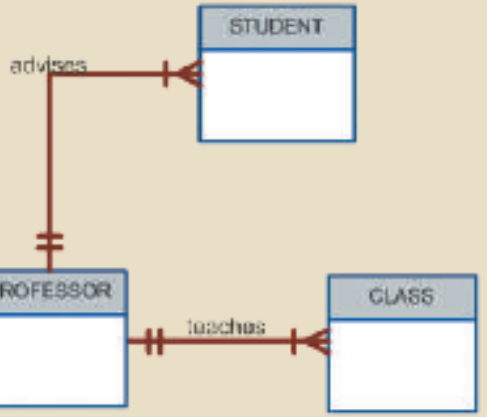
6. Identify each relationship type and write all of the business rules.

7. Create the basic Crow's Foot ERD for Tiny College.

8. Create the UML class diagram that reflects the entities and relationships you identified in the relational diagram.

Describe the relationships (identify the business rules) depicted in the Crow's Foot ERD shown in Figure P2.13.

FIGURE P2.13 THE CROW'S FOOT ERD FOR PROBLEM 13



Create a Crow's Foot ERD to include the following business rules for the ProdCo company:

a. Each sales representative writes many invoices.

b. Each invoice is written by one sales representative.

c. Each sales representative is assigned to one department.

d. Each department has many sales representatives.

e. Each customer can generate many invoices.

f. Each invoice is generated by one customer.

Create a Crow's Foot ERD for each of the following descriptions. (Note that the word *many* merely means *more than one* in the database modeling environment.)

a. Each of the MegaCo Corporation's divisions is composed of many departments. Each department has many employees assigned to it, but each employee works for only one department. Each department is managed by one employee, and each of those managers can manage only one department at a time.

b. During some period of time, a customer can download many ebooks from BooksOnline. Each of the ebooks can be downloaded by many customers during that period of time.

c. An airliner can be assigned to fly many flights, but each flight is flown by only one airliner.

d. The KwikTite Corporation operates many factories. Each factory is located in a region, and each region can be "home" to many of KwikTite's factories. Each factory has many employees, but each employee is employed by only one factory.

e. An employee may have earned many degrees, and each degree may have been earned by many employees.