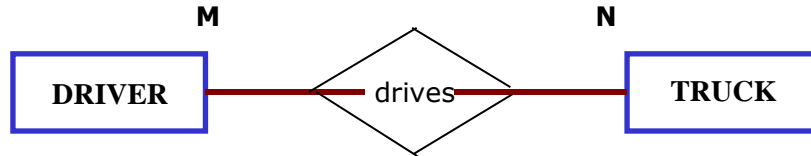


REVIEW QUESTIONS 4

- Suppose that you have the entity relationship model shown in figure below. How would you convert this model into an entity relationship model that displays only 1:M relationships? (Make sure that you draw the revised entity relationship model.)



During some time interval, a DRIVER can drive many different TRUCKs and any TRUCK can be driven by many DRIVERs

FIGURE Q3.3 The UML Class ERD for question 1



During some time interval, a DRIVER can drive many TRUCKS and any TRUCK can be driven by many DRIVERs.

- How would you implement a 1:M relationship in a database composed of two tables? Give an example. (Make sure that you draw the E-R model and relational schema)
- Identify and describe the components of the database table shown in figure below, using correct terminology such as entity set, attribute, entity, tuple, primary key and foreign key. Use your knowledge of the naming conventions to identify the table's probable foreign key(s).

Table name: EMPLOYEE

EMP_NUM	EMP_LNAME	EMP_INITIAL	EMP_FNAME	DEPT_CODE	JOB_CODE
11234	Friedman	K	Robert	MKTG	12
11238	Zulu	D	Cela	MKTG	12
11241	Fontein		Juliette	INFS	5
11242	Theron	J	Emma	ENG	9
11245	Smithson	B	Bernard	INFS	6
11248	Washington	G	Oleta	ENGR	8
11256	McBride		Randall	ENGR	8
11257	Mazibuko	D	Fikile	MKTG	14
11258	Smith	W	William	MKTG	14
11260	Ratula	A	Katrina	INFS	5

PROBLEMS 4

PART I. Use the database shown in figure in the next page to work problems 1 through 7. Note that the database is composed of four tables and reflects these relationships:

- An EMPLOYEE has only one JOB_CODE, but a JOB_CODE can be held by many EMPLOYEEs.
- An EMPLOYEE can have many PLANs, and any PLAN can be assigned to many EMPLOYEEs.

Note that the M:N relationship has been decomposed into two 1:M relationships for which the BENEFIT table serves as the composite or bridge entity.

Database name: Ch03_BeneCo		
Table name: EMPLOYEE		
EMP_CODE	EMP_LNAME	JOB_CODE
14	Rudell	2
15	Arendse	1
16	Ruellardo	1
17	Smith	3
20	Smith	2

Table name: JOB	
JOB_CODE	JOB_DESCRIPTION
1	Clerical
2	Technical
3	Managerial

Table name: BENEFIT	
EMP_CODE	PLAN_CODE
15	2
15	3
16	1
17	1
17	3
17	4
20	3

Table name: PLAN	
PLAN_CODE	PLAN_DESCRIPTION
1	Term life
2	Stock purchase
3	Long-term disability
4	Dental

1. For each table in the database, identify the primary key and the foreign key(s). If a table does not have a foreign key, write NONE in the assigned space.

Table	Primary key	Foreign Key(s)
EMPLOYEE		
BENEFIT		
JOB		
PLAN		

2. Draw the entity relationship diagram for the relationship between EMPLOYEE and JOB.
3. Draw the Relational Schema for the relationship between EMPLOYEE and JOB.

4. Do the tables exhibit entity integrity? Answer Yes or No, then explain your answer.

Table	Entity Integrity?	Explanation
EMPLOYEE		
BENEFIT		

JOB
PLAN

5. Do the tables exhibit referential integrity? Answer Yes or No, then explain your answer. Write NA (Not Applicable) if the table does not have a foreign key.

Table	Referential Integrity?	Explanation
EMPLOYEE		
BENEFIT		
JOB		
PLAN		

6. Draw the Entity Relationship diagram to show the relationships among EMPLOYEE, JOB, BENEFIT, and PLAN.
7. Draw the Relational Schema to show the relationships among EMPLOYEE, JOB, BENEFIT, and PLAN.