

CS304 Tutorial 2 Questions — Relational Schema and SQL

Abstract

Now it is the time we map our design in the E-R diagram to relational schema, and executable SQL DDL statements. This tutorial contains 2 questions for you to get familiar with this process and a first glance to SQL.

Question 1

Following from Tutorial 1, Question 1. We have the E-R diagram as shown in figure 1. Now your task is to 1) generate from the E-R diagram the corresponding relational schema. 2) Write the corresponding CreateTable statements in SQL.

Comments:

1. first write schema using underline for keys.
2. Create SQL statement for all the attributes.
3. Add in constraints (Key, not_null, foreign key etc.)

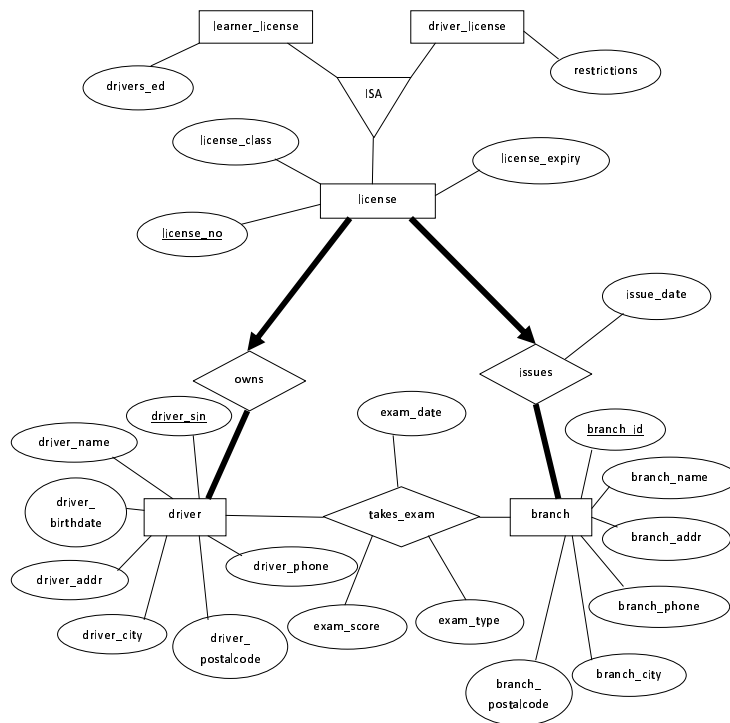


Figure 1: Motor-branch E-R diagram

Question 2

Suppose you execute the following SQL statements in sequence. What is the result at the end of each statement?

1) CREATE TABLE r1 (
 a1 INTEGER,
 a2 CHAR(20),
 PRIMARY KEY (a1))

2) CREATE TABLE r2(
 a3 INTEGER,
 a4 DATE,
 a5 INTEGER,

PRIMARY KEY (a3)
FOREIGN KEY (a5) REFERENCES r1(a1))

- 3) INSERT INTO r1 VALUES (111, '111')
- 4) INSERT INTO r1 VALUES (222, '222')
- 5) INSERT INTO r2 VALUES (1, '08-JUN-2003', 111)
- 6) INSERT INTO r2 VALUES (2, '08-JUN-2003', 333)
- 7) ALTER TABLE r2 ADD a6 CHAR(10)
- 8) INSERT INTO r2 VALUES (3, '08-JUN-2003', 111, 'a')
- 9) DELETE FROM r1 WHERE r1.a2 = '111'
- 10) DROP TABLE r2

Question 3

Consider the following ER diagram. Write an SQL specification with primary and foreign key constraints to create tables for relations: Student, Course, and Enrolled.

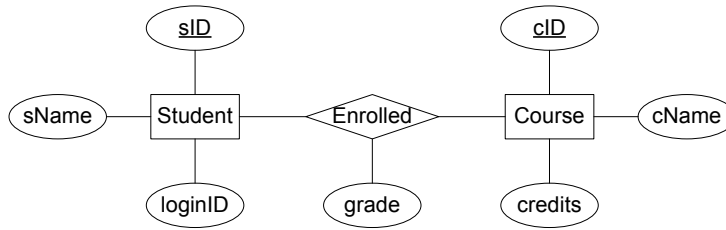


Figure 2: student-enrolment ER-diagram