Exercise 3 – INLS 623

Ramakrishnan Chapter 5, Exercises 5.7 [1] (Page 178)

Consider the following relational schema and briefly answer the question that follows:

Emp(*eid*: integer, *ename*: string, *age*: integer, *salary*: real)
Works(*eid*: integer, *did*: integer, *pct_time*: integer)
Dept(*did*: integer, *budget*: real, *managerid*: integer)

1. Define a table constraint on Emp that will ensure that every employee makes at least $10,000.
2. Salary of employee must not be greater than manager of the department an employee works for.

Ramakrishnan Chapter 5, Exercises 5.8.2 [a,b,c] (Page 179)

Consider the following relations:

Student(*snum*: integer, *sname*: string, *major*: string, *level*: string, *age*: integer)
Class(*name*: string, *meets_at*: time, *room*: string, *fid*: integer)
Enrolled(*snum*: integer, *cname*: string)
Faculty(*fid*: integer, *fname*: string, *deptid*: integer)

The meaning of these relations is straightforward; for example, Enrolled has one record per student-class pair such that the student is enrolled in the class.

Express each of the following integrity constraints in SQL unless it is implied by the primary and foreign key constraint; if so, explain how it is implied. If the constraint cannot be expressed in SQL, say so. For each constraint, state what operations (inserts, deletes and updates on specific relations) must be monitored to enforce the constraint.

a. Every class has a minimum enrollment of 5 students and a maximum enrollment of 30 students.
b. At least one class meets in each room.
c. Every faculty member must teach at least two courses.