CS579
Homework Assignment 3

Due: 10/3

Problem 1 (10 points). Describe, in your own word, the difference between a key, a superkey, a candidate key, and a primary key in the relational data model that we discussed in the class.

Problem 2 (10 points). When a *delete* operation violates a referential integrity constraint, there are following four options the system can take. Describe each option using an example:

(1). *restrict*
(2). *cascade*
(3). *set null*
(4). *set default*

Problem 3 (10 points). Suppose each of the following operations is applied directly to the database of Figure 5.6. Indicate **all** integrity constraints violated by each operation, if any:

(a) Insert < 'John', 'B', 'Smith', '111223333', '1982-01-01', '2365 Newcastle Rd, Bellaire, TX', M, 58000, '888665555', 1 > into EMPLOYEE.

(b) Insert < 'Research', 10, '666778888', '2016-01-01' > into DEPARTMENT.

(c) Insert < 'Medical Billing', null, 'Worcester', 3 > into PROJECT

(e) Delete from the WORKS_ON table all tuples with Pno = 1.

(f) Change the Dnum attribute of the PROJECT tuple with Pnumber = 1 to 4.

(g) Change the Mgr_ssn attribute of the DEPARTMENT tuple with SSN= '987654321' to '555667777'.

(h) Delete from the DEPEMDENT table all tuples with Dependent_name = 'Alice'.

For Problem 4 – Problem 6, solve exercise problems in the textbook.

Problem 4 (10 points). Exercise 5.14

Problem 5 (10 points). Exercise 5.15

Problem 6 (10 points). Exercise 5.16

Include all your answers in a single file and name it *LastName_FirstName_Hw3.doc* or *LastName_FirstName_Hw3.pdf*, and submit it on Blackboard.