

CSc 4710/6710

Spring 2003

Homework 3: Due: 6 February, 2003 (Thursday)

1. **(9.11 EN text).** Try to map the relational schema of Figure 7.20 into an ER schema. This is part of a process known as reverse engineering, where a conceptual schema is created for an existing implemented database. State any assumptions you make.
2. **(9.13 EN Text).** Map the BANK ER schema of Exercise 3.23 (shown in Figure 3.17) into a relational schema. Specify all primary keys and foreign keys.
3. **(7.18 EN Text).** Specify the following queries on the database schema shown in Figure 7.5, using the relational operators discussed in this chapter. Also, show the result of each query as it would apply to the database of Figure 7.6.
 - a. Retrieve the names of all employees in department 5 who work more than 10 hours per week on the 'ProductX' project.
 - b. List the names of all employees who have a dependent with the same first name as themselves.
 - c. Find the names of all employees who are directly supervised by 'Franklin Wong'.
 - e. Retrieve the names of all employees who work on every project.
 - f. Retrieve the names of all employees who do not work on any project.
 - i. Find the names and addresses of all employees who work on at least one project located in Houston but whose department has no location in Houston.
 - j. List the last names of all department managers who have no dependents.