COMP 3380 – Databases: Concepts and Usage

Department of Computer Science
The University of Manitoba
Fall 2006

Assignment 3 (Part A)

Course Number: COMP 338 (Section A01)
Instructor: Dr. Carson K. Leung **Due Date: Tue, Nov 28, 2006**
Hand-in: In class (at 11:30 in EITC E2-105)

Instructions:
- Submit all answers on 8.5" x 11" paper in a letter-size folder.
- Clearly indicate your name, student number, and section on the outside of the folder.
- Include a *signed* Honesty Declaration as the *first page* of your assignment.

Questions:
1. Write each of the following queries in ***relational algebra*** for the Students-Courses-Professors database created for Assignment 2:
   - Students (<u>studentID</u>, studentName)
   - Courses (<u>courseID</u>, courseName)
   - Profs (<u>profID</u>, profName, profOffice)
   - Section (<u>courseID, sectNum</u>, profID)
     where foreign key (courseID) references Courses on delete cascade,
     foreign key (profID) references Profs
   - Enrolled (<u>studentID, courseID, sectNum</u>, grade)
     where foreign key (studentID) references Students,
     foreign key (courseID, sectNum) references Section

   a) Display the student ID of each student enrolled in 'COMP 3380'.

   b) Display the result of performing a Cartesian-product of Students and Enrolled.

   c) Display the student name, course name, and grade for each student who received an 'A+' in the corresponding course (i.e., display all courses in which a specific student received an 'A+').

   d) Display the name of each professor who teaches a course.

   e) Display the names of all professors who do not teach any courses.

   f) Display the names of all professors who teach *all* the courses.

   g) Display the student IDs of all students who are not enrolled in 'COMP 4380'.

   h) Display the student IDs of all students who are enrolled in 'COMP 3380' but not in 'COMP 4380'.

--- End of Assignment 3 (Part A) ---