CS 6360.002/003 – Assignment 3

Due Date: October 13, 2017, 11:59 PM.

Use COMPANY database schema and specify following queries in relational algebra.

1. Retrieve the names of all employees in department 5 who work more than 10 hours per week on the ProductX project.

2. List the names of all employees who have a dependent with the same first name as themselves.

3. Find the names of all employees who are directly supervised by 'Franklin Wong'.

4. For each project, list the project name and the total hours per week (by all employees) spent on that project.

5. Retrieve the names of all employees who work on every project. (hint: use division)

6. Retrieve the names of all employees who do not work on any project.

7. For each department, retrieve the department name and the average salary of all employees working in that department.

8. Retrieve the average salary of all female employees.

9. 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.

10. List the last names of all department managers who have no dependents.

Use LIBRARY database schema (in Assignment 2) and specify following queries in relational algebra.

11. Find all books (book titles) that are borrowed from 'Richardson' library branch.

12. Find all books (book titles) that are overdue. (Books become overdue if the Due_date is a date in the past and Return_date is null)

13. For each library branch (branch name), find total number of books that are overdue.

14. Retrieve the names of all borrowers who have overdue books.

15. Retrieve the names of all borrowers who do not have any books checked out.

16. For each book that is checked out from the "Richardson" library branch and whose Due_date is today, retrieve the book title, the borrower's name, and the borrower's address.

17. For each library branch, retrieve the branch name and the total number of books loaned out from that branch.

18. Retrieve the names, addresses, and number of books checked out for all borrowers who have more than five books checked out.

Questions 1-10 are 6 points, 11-18 are 5 points.