INSTRUCTIONS:

- Write and execute all queries using the RA, DLOG, DRC, and OurSQL interpreters.
- All students will solve Problem 1. In addition, students whose last name begins with “A” through “K” will solve Problem 2 and the remaining students will solve Problem 3.

1. Specify and execute the following queries on the COMPANY database schema.
   
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 employees who are directly supervised by ‘Franklin Wong’.
   d. Retrieve the names of employees who work on every project.
   e. Retrieve the names of employees who do not work on any project.
   f. Retrieve 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.
   g. Retrieve the last names of all department managers who have no dependents.

2. Consider the following GRADEBOOK relational schema describing the data for a grade book of a particular instructor (Note: The attributes A, B, C, and D store grade cutoffs.)

```
catalog(cno,ctitle)
students(sid,fname,lname,minit)
courses(term,secno,cno,A,B,C,D)
enrolls(sid,term,secno)
```

Specify and execute the following queries on the GRADEBOOK database schema.

a. Retrieve the names of students enrolled in the ‘Automata’ class in the term of Fall 1996.
   b. Retrieve the SID values of students who have enrolled in CSc226 as well as CSc227.
   c. Retrieve the SID values of students who have enrolled in CSc226 or CSc227.
   d. Retrieve the names of students who have not enrolled in any class.
   e. Retrieve the names of students who have enrolled in all courses in the catalog table.
3. Consider the database consisting of the following relations:

    supplier(sno, sname)
    part(pno, pname)
    project(jno, jname)
    supply(sno, pno, jno)

The database records information about suppliers, parts, and projects and includes a ternary relationship between suppliers, parts, and projects. This relationship is a many-many-many relationship. Specify and execute the following queries.

a. Retrieve part numbers of parts that are supplied to exactly two projects.
b. Retrieve supplier names of suppliers who supply more than two parts to project ‘J1’.
c. Retrieve part numbers of parts that are supplied by every supplier.
d. Retrieve project names of projects that are supplied only by suppliers ‘S1’.
e. Retrieve supplier names of suppliers who supply at least two different parts each to at least two different projects.