CS 775/875 hw 1 2/8/2021 Due date: 2/15/2021

Instructions:

1. Electronic submission: You assignment is **due by 11:00 PM, 2/15**.

   Submit instructions: From your agate home directory:

   (a) create a directory called *hw1*. Write all your queries in *hw1*.

   (b) copy or create the *culinary.db* file to directory *hw1*.

   (c) Each query should be in a separate file named **q*i***, where $i = 1, 2, ..., 6$. You should have **q1, q2, ..., q6** corresponding to each query, by order.

   (d) From directory *hw1*, submit your queries using the command:
   $\sim cs775/submit\ 1\ q*$

   (e) 1 is the assignment number. Note that if you want to resubmit, then you need to use 1a, 1b, 1c,..... for assignment number (not 1).

   (f) We have had submission problems in the past. In order to ensure that you get credit for you work, make a tar file of your final submission using the command

   *tar -zcpvf hw1.tar q**

   Do not touch *hw1.tar* until you get back your graded assignment. The tar file keeps a dated copy of submitted files in your directory.

2. Your answers must be written in the format specified by **RA: A Relational Algebra Interpreter**, developed by Professor Yang of Duke University. Information about the RA tool is available on Prof. Yang's website: https://users.cs.duke.edu/∼junyang/radb/

3. The TA will be grading your assignment by using the following command:

   radb culinary.db -i q*i* -o outq*i*

   for each query.

   Please note that the TA may use a different instance of the database while grading.

4. Late policy: 1 day late: 2 points off, 2 days late: 4 points off; > 2 days late: will not be graded.

5. The relevant reading material is from Chapter 8: 8.1, 8.2.1 and class notes. You do NOT need to use cross product (or join) for any of these queries.

Queries:
To test some of the queries, you may have to add data to the database.

1. (5 points) **q1**: List the ssn of students who are not staff. (Rename ssn to SSN.)

   Result has schema: (SSN)

2. (5 points) **q2**: List the ssn of students who are also staff.

   Result has schema: (SSN)

3. (5 points) **q3**: List all the staff and students in a single table with attribute NAMES.

   Result has schema: (NAMES)

4. (5 points) **q4**: List the offerings that are being held in both Berlin and Dublin.

   Result has schema: (code)

5. (5 points) **q5**: List all the registrations that have a balance more than 200 and less that 2000.

   Result has schema: (ssn, code)

6. (5 points) **q6**: List all offerings that are not being held in Berlin or Dublin. (For example, if cs3 is held in Berlin, it should not appear in the list; if cs4 is held in Dublin it should not appear in the list; if cs5 is being held in both Berlin and Dublin, it should not apear.)

   Result has schema: (code)