CECS 323 LAB RA INNER JOIN

OBJECTIVE:

Give you first-hand experience with using Relational Algebra (RA) in an interactive environment where you can see it work.

INTRODUCTION:

The RA tool that we will use for our exercises needs a little setup which you can find instructions for here.

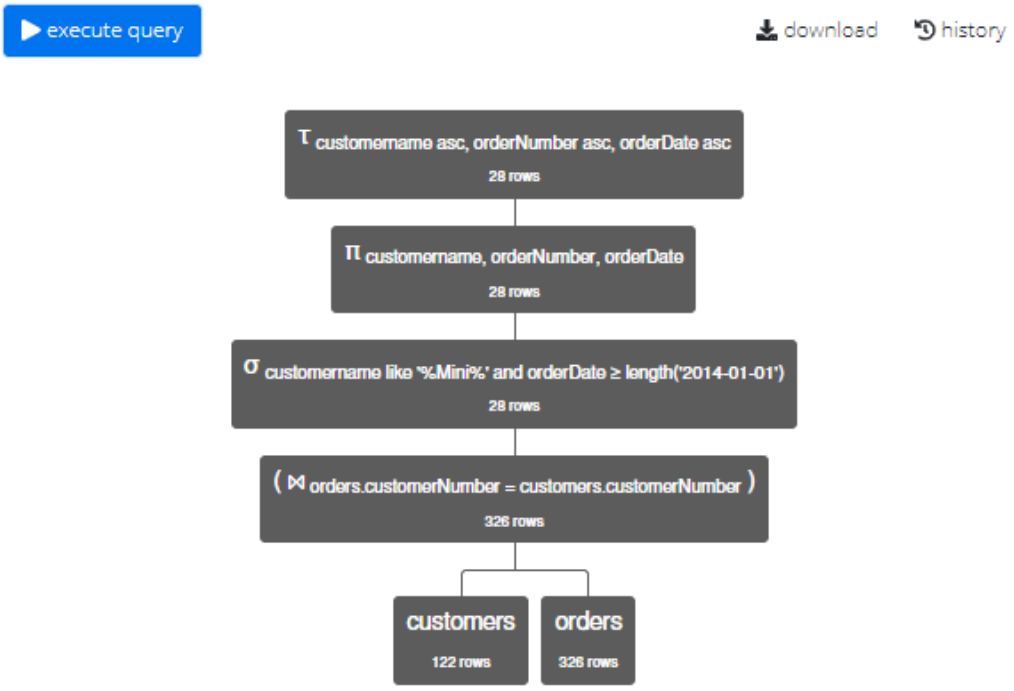
For each of the questions in the procedure section, please provide me with the original question, followed by your RA statement and a screen shot of the graphic that RelaX gives you that shows the steps that it goes through when it executes the statement. Do not worry about the output rows.

For example, the RA for "list the customer name, order number and order date for any order placed on or after January 1st, 2014 by a customer with the word 'Mini' in their name. Order by customer name, order Number, and order date. (28)" would look like:

τcustomername,orderNumber,orderDate (πcustomername,orderNumber,orderDate (σcustomername like '%Mini%' ∧ orderDate ≥date('2014-01-01') ((customers) ⋈ orders.customerNumber = customers.customerNumber (orders))))

Please take careful note of where there are blanks. It appears any whitespace will do in those cases. Also note that the comma-delimited list for the project and the tau do not need to have any whitespace in them.

The execution diagram for this looks like:



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PROCEDURE:

1. List the customer name of any customer located in a different state from the office where their sales representative works. This relational algebra tool does not support a coalesce function, but it also seems to be fine with comparing nulls to other values. List the customers in ascending order by customer name. (58)

2. List the customers who have ever purchased the 'Pont Yacht' product. Be sure to list each customer only once. List the customers in ascending order by customer name. (24)

3. List the office code, city, state, and country of every office that has an employee working there who is the sales representative for a customer who has ever bought '1928 Mercedes-Benz SSK'. Order by office code. (5)

4. Select customer name, order date, shipped date, quantity ordered, product line, product name for all orders made in May of 2013 and shipped in some **other** month. Order by customer name and order date (17)

5. Select customer name, order number, order date, and status on all orders in which at least one of the products ordered has a quantity ordered > the quantity in stock for that product. List each order no more than once. Order by the customer name and the order number. (28)

WHAT TO TURN IN:

- Your Word document with the prompts the relational algebra and the screen shots of the RelaX execution diagram.