CompSci 316: Intro to Databases

Discussion-2 Quiz: Simple RA

**Description** Consider a database “beers” containing information about bars, beers, and drinkers.

- drinker(name, address)
- bar(name, address)
- beer(name, brewer)
- frequents(drinker, bar, times_a_week)
- likes(drinker, beer)
- serves(bar, beer, price)

Write RA queries to find out the answers to the questions (i.e., DO NOT use aggregates `aggr_`).

**Demo Questions**

1. Find names of all bars that Dan frequents more than once a week (sample questions)
   a. Down Under Pub
   b. The Edge
   c. James Joyce
   d. Satisfaction
   e. Talk of the Town

   Solution:
   `\project_{bar} \select_{drinker = 'Dan' and times_a_week > 1} frequents;`

**Quiz Questions**

1. Find names of all bars that serve Corona but not Dixie
   a. Down Under Pub
   b. The Edge
   c. James Joyce Pub
   d. Satisfaction
   e. Talk of the Town

   Solution:
   `\project_{bar} \select_{beer = 'Corona'} \diff`
\project_{\text{bar}} \{ \select_{\text{beer} = '\text{Dixie}' } \text{ serves} \};

2. Find all pairs of drinkers who visit the same bar exactly twice a week?
   a. Ben, Dan
   b. Amy, Eve
   c. Ben, Coy
   d. Ben, Richard
   e. Coy, Dan

Solution w/ renamed attributes:
\project_{\text{drinker1, drinker2}}
\select_{\text{times}_a_week1 = 2} (\rename_{\text{drinker1, bar1, times}_a_week1} \text{ frequents} \
\join_{\text{drinker1} < \text{drinker2} \text{ and bar1} = \text{bar2} \text{ and} \
\text{times}_a_week1 = \text{times}_a_week2} \
\rename_{\text{drinker2, bar2, times}_a_week2} \text{ frequents} \
);

Solution w/ renamed table:
\project_{F1.\text{drinker}, F2.\text{drinker}}
\select_{F1.\text{times}_a_week = 2} (\rename_{F1: *} \text{ frequents} \
\join_{F1.\text{drinker} < F2.\text{drinker} \text{ and F1.bar} = F2.\text{bar} \text{ and} \
F1.\text{times}_a_week = F2.\text{times}_a_week} \
\rename_{F2: *} \text{ frequents} 
);