**Quiz 1 (30 minutes) [Busch]**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RUID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

QUERIES – write SQL (ask first, is this monotonic query?)

1. Find all beers which are sold by bars which Joe frequent

SELECT sells.beer

FROM sells, frequents

WHERE frequents.drinker = 'Joe' AND sells.bar = frequents.bar;

1. Find all bars which are not frequented by any drinker who frequents Cabana

SELECT b.name

FROM bars b

WHERE NOT EXISTS

(SELECT f.drinker FROM frequents f

WHERE f.bar = b.name

AND f.drinker IN (SELECT f2.drinker FROM frequents f2 WHERE f2.bar = 'Cabana'));

1. Find beers which are liked by every drinker who frequents Old Tavern

SELECT b.name

FROM beers b

WHERE NOT EXISTS

(SELECT f.drinker

FROM frequents f

WHERE f.bar = 'Old Tavern'

AND NOT EXISTS (

SELECT \*

FROM likes l

WHERE l.beer = b.name AND l.drinker = f.drinker));

Or

SELECT l.beer

FROM likes l, frequents f

WHERE l.drinker = f.drinker and f.bar = 'Old Tavern'

GROUP BY l.beer

HAVING COUNT(\*) = (SELECT COUNT(f2.drinker)

FROM frequents f2 WHERE f2.bar = 'Old Tavern');

4. Assume database scheme R[Bar, Beer, Price, Day\_of\_the\_Week, Sold], where Sold is number of bottles of beer sold on a given day by a given bar.

Find the bar(s) which sells the most beers (comparing to other bars) on Saturdays. (There may be several bars tied for first place)

ANSWER:

Select A.b, A.su

from (Select s.bar as b, sum(s.Sold) as su

from R s

where s.day='Saturday' group by s.bar)A

where A.su = ( Select Max(B.suma)

from

(Select s1.bar, Sum(s1.Sold) as suma

from R s1

where s1.day='Saturday' group by s1.bar)B )

5. What does this SQL query return (write it in English)?

Select distinct f.drinker

From frequents f

Where f.drinker IN (

Select f2.drinker

From frequents f2

Where f2.bar IN

(Select bar

From sells, likes

Where sells.beer = likes.beer AND likes.drinker = f.drinker));

Drinkers who frequent some bars which serve some beers they like.

6\*. What does this SQL query return (write it in English)?

\*[[This will not count but some extra credit will be given since I have missed one join condition here]]

SELECT d.name

FROM drinkers d

WHERE NOT EXISTS

(Select s.bar

From likes l, sells s, frequents f

Where (l.beer = s.beer) and (l.drinker=d.name) and (f.drinker=l.drinker))

**ANSWER**: It would be “Drinkers who do not frequent any bar which serve a beer they like” if there was condition on bar (f.bar=s.bar).

7. What does this query return for the database instance R of db scheme

B = [Beer, Manufacturer, Price, Alcohol]

R = {<Bud, Anheuser-Busch, NULL, 4.5>}

SELECT R.Beer

FROM R

WHERE (Alcohol < 6 AND Price > 5)

OR (Manufacturer = 'Anheuser-Busch' AND Price <= 5)

**ANSWER**: The result will be empty since due to the Price being NULL, mysql will evaluate both disjoints to MAYBE, consequently WHERE clause is not going to be true.

But this is incorrect since no matter what NULL is the WHERE condition will always be TRUE.