#1 .Transactions/bills cannot be issued at times when the given bar is closed

select distinct 'True' as 'output' from bills where NOT EXISTS(SELECT bills.bill_id FROM

bills LEFT JOIN operates ON operates.bar = bills.bar WHERE bills.bar = operates.bar AND

bills.day = operates.day AND (bills.time < operates.start OR bills.time > operates.end))

UNION

select distinct 'False' as 'output' from bills where EXISTS(SELECT bills.bill_id FROM bills

LEFT JOIN operates ON operates.bar = bills.bar WHERE bills.bar = operates.bar AND

bills.day = operates.day AND (bills.time < operates.start OR bills.time > operates.end));

#2. Drinkers cannot frequent bars in different state

select distinct 'True' as 'output' from drinker where EXISTS

(SELECT drinker.name FROM drinker LEFT JOIN frequents ON drinker.name = frequents.drinker

LEFT JOIN bar ON bar.state = drinker.state WHERE bar.state = drinker.state AND drinker.name

= frequents.drinker)

UNION

SELECT distinct 'False' as 'output' from drinker where EXISTS

(SELECT drinker.name FROM drinker LEFT JOIN frequents ON drinker.name = frequents.drinker

LEFT JOIN bar ON bar.state = drinker.state WHERE bar.state != drinker.state AND

drinker.name = frequents.drinker);

#3. For every two beers, b1 and b2, different bars may charge differently for b1

#and b2 but b1 should either be less expensive than b2 in ALL bars or more

#expensive than b2 in ALL bars. For example, it cannot be the case that in one

#bar Corona is more expensive than Bud, and in another bar, Bud is more

#expensive than Corona. However, Corona may be more expensive than Bud

#in one bar, and have the same price as Bud in another.

SELECT distinct 'true' AS 'output' FROM sellsbeer

WHERE EXISTS(SELECT * FROM sellsbeer B1, sellsbeer B2

WHERE b1.beername = b2.beername AND b1.barname <> b2.barname

AND b1.price = b2.price)

UNION

SELECT distinct 'false' AS 'output' FROM sellsbeer

WHERE EXISTS(SELECT * FROM sellsbeer B1, sellsbeer B2

WHERE b1.beername = b2.beername AND b1.barname <> b2.barname

AND b1.price <> b2.price);