**Lab 3**

**Daniel Gisolfi & Brooke Higgins**

**21. Name the restaurants that have orders of at least one dish ordered by customer C100.**

SELECT R.RestaurantName

FROM Restaurants AS R, Orders AS O

WHERE O.CNum = 'C100'

AND O.RNum = R.RNum

**RestaurantName**

CheesecakeFactory

SiamPalace

**Cardinality = 2**

**22. Get customer numbers for customers that ordered at least one dish ordered by at least one customer who ordered at least one dish whose ListPrice is $9.99.**

SELECT DISTINCT O.CNum

FROM Orders AS O

WHERE EXISTS

(SELECT C.CNum

FROM Customers AS C

WHERE EXISTS

  (SELECT \*

        FROM Dishes AS D

        WHERE D.ListPrice = 9.99

        AND O.CNum = C.CNum

        AND O.DNum = D.DNum));

**CNum**

C100

C300

C400

C500

**Cardinality = 4**

**23. Get customer numbers for customers who have a Priority lower than that of customer C100.**

SELECT C.CNum

FROM Customers AS C

WHERE C.Priority < 20;

**CNum**

C200

**Cardinality = 1**

**24. Get restaurant numbers for restaurants whose HQLocation is first in the alphabetic list of such cities.**

SELECT TOP 1 R.RNum

FROM Restaurants AS R

ORDER BY R.HQLocation;

**RNum**

R10

**Cardinality = 1**

**25. Get restaurant numbers for restaurants that have orders of dish D1 in an average quantity less than the greatest quantity for any dish ordered from restaurant R10.**

SELECT DISTINCT O.RNum

FROM Orders AS O

WHERE O.DNum = 'D1'

AND EXISTS

(SELECT AVG(O.Quant) AS QUANTAVG

FROM Orders AS O

HAVING AVG(O.Quant) < (SELECT MAX(O.Quant) AS MaximumQuant

FROM Orders AS O

WHERE O.RNum = 'R10'));

**RNum**

R10

R40

**Cardinality =** 2

**26. Get customer numbers for customers that ordered dish D1 from some restaurant in a quantity greater than the average quantity of dish D1 for that restaurant.**

SELECT O.Cnum

FROM Orders AS O

WHERE O.DNum = 'D1'

AND   O.Quant > (SELECT   AVG(O.Quant) AS AVGQuant                                        FROM   Orders   AS   O                                                  WHERE O.DNum =  ‘D1')

**CNum**

C100

**Cardinality = 1**

**27. Name the restaurants that have no $9.99 (ListPrice) dishes that were ordered by any customer from Houston.**

SELECT R.RestaurantName

FROM Orders AS O, Restaurants AS R, Dishes AS D, Customers AS C

WHERE D.ListPrice <> 9.99

AND C.Hometown <> 'Houston'

AND R.RNum = O.RNum

AND C.Cnum = O.CNum

AND D.DNum = O.DNum;

**RestaurantName**

BombayPalace

CheesecakeFactory

Giacomos

GoldenDragon

SiamPalace

SoupPlantation

SzechuanPalace

**Cardinality = 7**

**28. Name the restaurants whose only order(s) came from customer C200.**

SELECT DISTINCT R.RestaurantName

FROM Restaurants AS R

WHERE R.RNum IN

(SELECT O.RNum

    FROM   Orders   AS   O

    GROUP   BY   O.RNum

    HAVING   SUM( If (O.CNum <>   ‘C200'));

**RestaurantName**

SiamPalace

SzechuanPalace

GoldenDragon

CheesecakeFactory

BombayPalace

Giacomos

**Cardinality = 6**

**29. Get dish numbers for dishes that have been ordered from all restaurants whose headquarters are in Houston.**

SELECT DISTINCT O.DNum

FROM Orders AS O

WHERE O.RNum = R.RNum

AND R.HQLocation = 'Houston';

**DNum**

D3

D5

D6

**Cardinality = 3**

**30. Get customer numbers for customers who ordered the same dish from all restaurants.**

SELECT   DISTINCT   Ord1.CNum

FROM   Orders AS Order1, Orders AS Order2

WHERE Order1.CNum = Order2.CNum

AND Order1.DNum = Order2.DNum

AND Order1.RNum = Order2.RNum;

**CNum**

C100 C200 C300

C400

C500

**Cardinality = 5**

**31. Get restaurant numbers for restaurants that have at least all of the dishes ordered by customer C100.**

SELECT DISTINCT R.RNum

FROM Restaurants AS R

WHERE NOT EXISTS

        (SELECT   \*

         FROM   Customers   AS   C

         WHERE   C.CNum   =   'C100'

         AND   NOT   EXISTS

        (SELECT   \*                                               FROM Orders  AS O

        WHERE   O.CNum   =   C.CNum                                             AND   O.RNum   =   R.RNum));

**RNum**

R10

R40

**Cardinality = 2**

**32. Get all cities with which at least one customer, dish, or restaurant is associated.**

SELECT C.Hometown

FROM Orders AS O, Customers as C, Restaurants AS R, Dishes AS D

WHERE C.Hometown = R.HQLocation

AND R.HQLocation = D.CityOfOrigin

AND C.Hometown = D.CityOfOrigin

AND O.CNum = C.CNum

AND R.RNum = O.RNum

AND D.DNum = O.DNum

**Hometown Boston Houston**

**Cardinality = 2**

**33. Get dish numbers for dishes that were ordered either by a customer from Houston or from a restaurant whose headquarters is in Houston.**

SELECT O.DNum

FROM Orders AS O, Customers as C, Restaurants AS R

WHERE C.Hometown = 'Houston'

OR R.HQLocation = 'Houston'

AND O.CNum = C.CNum

AND R.RNum = O.RNum;

**DNum**

D1

D2

D3

D4

D5

D6

**Cardinality = 6**