Lab 6. Write the following queries in SQL.

Q1. Print the number of credit cards that John Smith owns.

SELECT count(\*) from Ownership o, Customer c

WHERE o.cid = c.id AND

c.name = ‘John Smith’

Q2. For every customer, print their name and the total (in dollars) of all their purchases.

SELECT c.name, SUM(t.amount)

FROM CUSTOMER c, Transaction t

WHERE c.Id = t.cid

GROUP BY t.cid, c.name

Q3. Print the name of the vendor with the highest single transaction.

SELECT v.name

FROM Vender v, Transaction t

WHERE

v.id = t.vid AND

t.amount = (SELECT MAX(amount) FROM Transaction);

Q4. Print the name of vendor with the highest total proceeds from transactions.

**SELECT** v.name

**FROM** Vender v,

(SELECT vid as vid, SUM(amount) as sum FROM Transaction GROUP BY vid) as SumTab,

(SELECT MAX(sum) as sum FROM (SELECT vid as video, SUM(amount) as sum FROM Transaction GROUP BY vid) as SumTab2) as MaxTab

**Where** MaxTab.sum = SumTab.sum AND

v.id = SumTab.vid;

Q5. Create an additional table that stores the different credit card types (e.g., Visa, MC, Discovery, etc.). Then write a query that prints the names of all customers that own every single credit card type.

CREATE TABLE cc\_types AS (SELECT Distinct TYPE FROM CreditCard);

create view typeCount as

Select c.name as cname, Count(DISTINCT cc.type) as count

FROM Customer c, Ownership o, CreditCard cc

WHERE c.id = o.CustomerId and cc.number = o.CCNum

GROUP BY c.name

Select t.cname

FROM typeCount t

WHERE t.count = (SELECT COUNT(\*)

FROM cc\_types)

GROUP BY t.cname

Q6. What is the name of the customers that has the highest credit card balance (sum the credit card balances of all their cards)?]

SELECT c.name

FROM Customer c,

(SELECT o.CustomerId as cid, sum(cc.balance) AS balance

FROM CreditCard cc, Ownership o

WHERE o.CCNum = cc.number

GROUP BY o.CustomerId ) AS customerSums,

(SELECT max(temp.balance) AS balance

FROM (SELECT sum(cc.balance) AS balance FROM CreditCard cc, Ownership o

WHERE o.CCNum = cc.number

GROUP BY o.CustomerId) AS temp ) AS customerMax

WHERE c.id = customerSums.cid AND

customerSums.balance = customerMax.balance;

Q7. Print the transaction with the highest amount.

SELECT \*

FROM Transaction t

WHERE

t.amount = (SELECT MAX(amount) FROM Transaction)

Q8. For every customer, print the amount of their latest payment.

SELECT Distinct c2.id, t2.amount

FROM Customer c2, Payment t2, Ownership o2,

(SELECT custId, MAX(date) as date

FROM

(SELECT Distinct o.CustomerId as custId, MAX(t.date) as date

FROM Payment t, Ownership o

WHERE t.CCNum = o.CCNum

GROUP BY o.CustomerId, t.CCNum) as dates

GROUP BY custId) as dates2

WHERE

t2.date = dates2.date AND

c2.id = o2.CustomerId AND

t2.CCNum = o2.CCNum

ORDER BY c2.id

Q9. What are the total sales for each card type (i.e., total sales for visa, MC, etc.)

SELECT cc.type, SUM( t.amount) FROM Transaction t, CreditCard cc

WHERE cc.number = t.ccNum GROUP BY cc.type;

Q10. For 2014, print the total sales for each month. The function year(date) will give you the year of a date and the function month(date) will give you the month. You can use both functions inside SQL, e.g., you can group by month(date).

SELECT year(t.date), month(t.date), SUM( t.amount) FROM Transaction t

GROUP BY month(t.date), year(t.date)

ORDER BY year(t.date), month(t.date);

Show during lab time. As last resource, follow directions below.

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