DBMS – LAB -06

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ROLL NO: S20200010212

SECTION: C

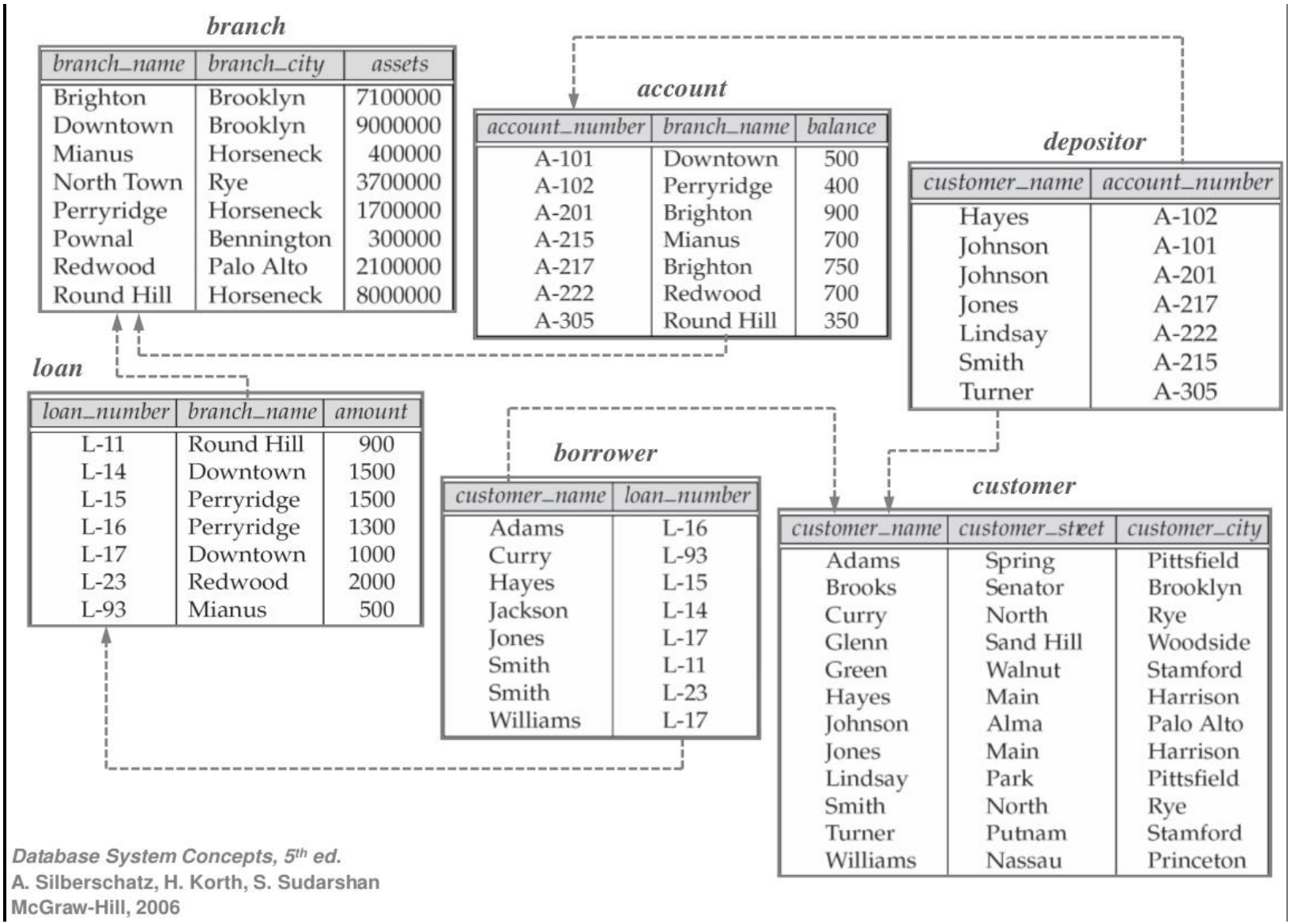
TASK: (LAB EXERCISES)

SQL COMMANDS

1. Derived Tables

2. views and joins

ALL TABLES:



branch

branch_name	branch_city	assets
Brighton	Brooklyn	7100000
Downtown	Brooklyn	9000000
Mianus	Horseneck	400000
North Town	Rye	3700000
Perryridge	Horseneck	1700000
Pownal	Bennington	300000
Redwood	Palo Alto	2100000
Round Hill	Horseneck	8000000

account

account_number	branch_name	balance
A-101	Downtown	500
A-102	Perryridge	400
A-201	Brighton	900
A-215	Mianus	700
A-217	Brighton	750
A-222	Redwood	700
A-305	Round Hill	350

depositor

customer_name	account_number
Hayes	A-102
Johnson	A-101
Johnson	A-201
Jones	A-217
Lindsay	A-222
Smith	A-215
Turner	A-305

loan

loan_number	branch_name	amount
L-11	Round Hill	900
L-14	Downtown	1500
L-15	Perryridge	1500
L-16	Perryridge	1300
L-17	Downtown	1000
L-23	Redwood	2000
L-93	Mianus	500

borrower

customer_name	loan_number
Adams	L-16
Curry	L-93
Hayes	L-15
Jackson	L-14
Jones	L-17
Smith	L-11
Smith	L-23
Williams	L-17

customer

customer_name	customer_street	customer_city
Adams	Spring	Pittsfield
Brooks	Senator	Brooklyn
Curry	North	Rye
Glenn	Sand Hill	Woodside
Green	Walnut	Stamford
Hayes	Main	Harrison
Johnson	Alma	Palo Alto
Jones	Main	Harrison
Lindsay	Park	Pittsfield
Smith	North	Rye
Turner	Putnam	Stamford
Williams	Nassau	Princeton

Database System Concepts, 5th ed.
A. Silberschatz, H. Korth, S. Sudarshan
McGraw-Hill, 2006

Question 1:

Find the names of all branches with customers who have an account in the and who live in “Pittsfield”, using exactly one join

```
mysql> use lab5;
Database changed
mysql> show tables;
+----------------+
| Tables_in_lab5 |
+----------------+
| account        |
| borrower       |
| branch         |
| customer       |
| depositor      |
| loan           |
+----------------+
6 rows in set (0.02 sec)

mysql> select branch_name from account where account_number in (select account_number from depositor natural join customer where customer_city = "pittsfield");
+-------------+
| branch_name |
+-------------+
| Redwood     |
+-------------+
1 row in set (0.07 sec)

mysql>
```

Question 2:

Display name and balance of the customers whose balance is 700 and above.

```
mysql> select customer_name,balance from depositor natural join account where depositor.account_number = account.account_number and balance >= 700;
+---------------+---------+
| customer_name | balance |
+---------------+---------+
| Johnson       |  900.00 |
| Smith         |  700.00 |
| Jones         |  750.00 |
| Lindsay       |  700.00 |
+---------------+---------+
4 rows in set (0.01 sec)
```

Question 3:

Find the total loan amount taken by ‘Smith’

```
mysql> select sum(amount) as Total_loan from loan join borrower where borrower.loan_number = loan.loan_number and customer_name = "smith";
+------------+
| Total_loan |
+------------+
|       2900 |
+------------+
1 row in set (0.04 sec)
```

Question 4:

Find the branch cities that occurred more than once in the branch table

```
mysql> select branch_city , count(branch_city) from branch group by branch_city having count(branch_city)>1;
+-------------+--------------------+
| branch_city | count(branch_city) |
+-------------+--------------------+
| Brooklyn    |                  2 |
| Horseneck   |                  3 |
+-------------+--------------------+
2 rows in set (0.03 sec)
```

Question 5:

Find the names of customers (along with branch name and city) who have account at banks, present in the same (branch city)

```
mysql>  select customer_name , branch_name ,branch_city from depositor
    -> natural join account natural join branch
    ->  where branch_city in (select branch_city from branch group by branch_city having count(branch_city)>1);
+---------------+-------------+-------------+
| customer_name | branch_name | branch_city |
+---------------+-------------+-------------+
| Johnson       | Downtown    | Brooklyn    |
| Hayes         | Perryridge  | Horseneck   |
| Johnson       | Brighton    | Brooklyn    |
| Smith         | Mianus      | Horseneck   |
| Jones         | Brighton    | Brooklyn    |
| Turner        | Round Hill  | Horseneck   |
+---------------+-------------+-------------+
6 rows in set (0.00 sec)
```

Question 6:

Display all customer cities and total loan amount taken by all customers from each of those cities

```
mysql> select customer_city,sum(amount) as total_loan from(customer natural left outer join borrower)natural left join loan group by customer_city order by amount desc;
+---------------+------------+
| customer_city | total_loan |
+---------------+------------+
| Harrison      |       2500 |
| Pittsfield    |       1300 |
| Princeton     |       1000 |
| Rye           |       3400 |
| Brooklyn      |       NULL |
| Woodside      |       NULL |
| Stamford      |       NULL |
| Palo Alto     |       NULL |
+---------------+------------+
8 rows in set (0.00 sec)
```

Question 7:

Display total balance amount of each customer in customer table(display null for those who do not have account)

```
mysql> select customer_name , sum(balance) as Total_balance from (customer natural left outer join depositor ) natural left outer join account group by customer_name;
+---------------+---------------+
| customer_name | Total_balance |
+---------------+---------------+
| Adams         |          NULL |
| Brooks        |          NULL |
| Curry         |          NULL |
| Glenn         |          NULL |
| Green         |          NULL |
| Hayes         |        400.00 |
| Johnson       |       1400.00 |
| Jones         |        750.00 |
| Lindsay       |        700.00 |
| Smith         |        700.00 |
| Turner        |        350.00 |
| Williams      |          NULL |
+---------------+---------------+
12 rows in set (0.00 sec)
```

Question 8:

Display total loan amount of each customer in customer table(display null for those who did not take loan)

```
mysql> select customer_name , sum(amount) as Total_loan from (customer natural left outer join borrower) natural left outer join loan group by customer_name;
+---------------+------------+
| customer_name | Total_loan |
+---------------+------------+
| Adams         |       1300 |
| Brooks        |       NULL |
| Curry         |        500 |
| Glenn         |       NULL |
| Green         |       NULL |
| Hayes         |       1500 |
| Johnson       |       NULL |
| Jones         |       1000 |
| Lindsay       |       NULL |
| Smith         |       2900 |
| Turner        |       NULL |
| Williams      |       1000 |
+---------------+------------+
12 rows in set (0.00 sec)
```

Question 9:

Create a view that displays customer_name, account_number and loannumber(null if there is no data for any of the column)

```
mysql> create view view as select customer_name, account_number, loan_number from ((customer natural left outer join borrower ) natural left outer join depositor) natural left outer join account;
Query OK, 0 rows affected (0.03 sec)

mysql> select * from view;
+---------------+----------------+-------------+
| customer_name | account_number | loan_number |
+---------------+----------------+-------------+
| Adams         | NULL           | L-16        |
| Brooks        | NULL           | NULL        |
| Curry         | NULL           | L-93        |
| Glenn         | NULL           | NULL        |
| Green         | NULL           | NULL        |
| Hayes         | A-102          | L-15        |
| Johnson       | A-101          | NULL        |
| Johnson       | A-201          | NULL        |
| Jones         | A-217          | L-17        |
| Lindsay       | A-222          | NULL        |
| Smith         | A-215          | L-11        |
| Smith         | A-215          | L-23        |
| Turner        | A-305          | NULL        |
| Williams      | NULL           | L-17        |
+---------------+----------------+-------------+
14 rows in set (0.00 sec)
```

Question 10:

Try creating and inserting into view for each of the conditions mentioned above for views, under which you can’t insert data into views.

```
mysql> create view v1 as select customer_name from customer;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from v1;
+---------------+
| customer_name |
+---------------+
| Adams         |
| Brooks        |
| Curry         |
| Glenn         |
| Green         |
| Hayes         |
| Johnson       |
| Jones         |
| Lindsay       |
| Smith         |
| Turner        |
| Williams      |
+---------------+
12 rows in set (0.00 sec)
```

THANK YOU