

CSE370 : Database Systems | Summer 2024
Lab Assignment : 03 | Lab Section : 08
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No 1	Find the name and loan number of all customers having a loan at the Downtown branch.
	<pre>SELECT c.customer_name, l.loan_number from customer c, borrower b, loan l WHERE c.customer_id = b.customer_id and b.loan_number = l.loan_number and l.branch_name = 'Downtown';</pre>
	<pre>MariaDB [Bank_22101698]> SELECT c.customer_name, l.loan_number from customer c, borrower b, loan l -> WHERE c.customer_id = b.customer_id and b.loan_number = l.loan_number and l.branch_name = 'Downtown' +-----+-----+ customer_name loan_number +-----+-----+ Johnson L-14 Jones L-17 Williams L-17 +-----+-----+ 3 rows in set (0.002 sec)</pre>

No 2	Find all the possible pairs of customers who are from the same city. show in the format Customer1, Customer2, City.
	<pre>SELECT C1.customer_name as Customer1, C2.customer_name as Customer2, c1.customer_city as City FROM customer C1, customer C2 WHERE C1.customer_city = C2.customer_city AND C1.customer_id != C2.customer_id;</pre>
	<pre>MariaDB [Bank_22101698]> SELECT C1.customer_name as Customer1, C2.customer_name as Customer2, c1.customer_city as City -> FROM customer C1, customer C2 WHERE C1.customer_city = C2.customer_city AND C1.customer_id != C2.customer_id; +-----+-----+-----+ Customer1 Customer2 City +-----+-----+-----+ Hayes Jones Harrison Curry Smith Rye Jones Hayes Harrison Smith Curry Rye Adams Lindsay Pittsfield Green Turner Stamford Lindsay Adams Pittsfield Turner Green Stamford +-----+-----+-----+</pre>

No 3	If the bank gives out 4% interest to all accounts, show the total interest across each branch. Print Branch_name, Total_Interest														
	<pre>SELECT branch_name as Branch_name, SUM(balance*(4/100)) as Total_Interest FROM account group by branch_name;</pre>														
	<pre>MariaDB [Bank_22101698]> SELECT branch_name as Branch_name, SUM(balance*(4/100)) as Total_Interest -> FROM account group by branch_name;</pre> <table border="1"> <thead> <tr> <th>Branch_name</th><th>Total_Interest</th></tr> </thead> <tbody> <tr><td>Brighton</td><td>66.0000</td></tr> <tr><td>Downtown</td><td>20.0000</td></tr> <tr><td>Mianus</td><td>28.0000</td></tr> <tr><td>Perryridge</td><td>16.0000</td></tr> <tr><td>Redwood</td><td>28.0000</td></tr> <tr><td>Round Hill</td><td>14.0000</td></tr> </tbody> </table> <pre>6 rows in set (0.001 sec)</pre>	Branch_name	Total_Interest	Brighton	66.0000	Downtown	20.0000	Mianus	28.0000	Perryridge	16.0000	Redwood	28.0000	Round Hill	14.0000
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No 4	Find account numbers with the highest balances for each city in the database						
	<pre>SELECT a.account_number FROM account a, customer c, depositor d WHERE a.account_number = d.account_number AND c.customer_id = d.customer_id AND (a.balance, c.customer_city) IN (SELECT MAX(a.balance), c.customer_city FROM account a, depositor d, customer c WHERE a.account_number = d.account_number AND c.customer_id = d.customer_id GROUP BY c.customer_city);</pre>						
	<pre>MariaDB [Bank_22101698]> SELECT a.account_number FROM account a, customer c, depositor d -> WHERE a.account_number = d.account_number AND c.customer_id = d.customer_id -> AND (a.balance, c.customer_city) IN (SELECT MAX(a.balance), c.customer_city -> FROM account a, depositor d, customer c -> WHERE a.account_number = d.account_number AND c.customer_id = d.customer_id -> GROUP BY c.customer_city);</pre> <table><tr><th>account_number</th></tr><tr><td>A-217</td></tr><tr><td>A-215</td></tr><tr><td>A-222</td></tr><tr><td>A-305</td></tr><tr><td>A-201</td></tr></table> <pre>5 rows in set (0.001 sec)</pre>	account_number	A-217	A-215	A-222	A-305	A-201
account_number							
A-217							
A-215							
A-222							
A-305							
A-201							

No 5	Show the loan number, loan amount, and name of customers with the top 5 highest loan amounts. The data should be sorted by increasing amounts, then decreasing loan numbers in case of the same loan amount. [Hint for top 5: Check the "limit" keyword in mysql]																		
	<pre>SELECT l.loan_number, l.amount, c.customer_name FROM customer c, loan l, borrower b WHERE l.loan_number=b.loan_number and b.customer_id = c.customer_id ORDER BY l.amount DESC, l.loan_number DESC limit 5;</pre>																		
	<pre>MariaDB [Bank_22101698]> SELECT l.loan_number, l.amount, c.customer_name FROM -> customer c, loan l, borrower b WHERE l.loan_number = b.loan_number and -> b.customer_id = c.customer_id ORDER BY l.amount DESC, l.loan_number DESC limit 5;</pre> <table><thead><tr><th>loan_number</th><th>amount</th><th>customer_name</th></tr></thead><tbody><tr><td>L-23</td><td>2000</td><td>Smith</td></tr><tr><td>L-15</td><td>1500</td><td>Hayes</td></tr><tr><td>L-14</td><td>1500</td><td>Johnson</td></tr><tr><td>L-16</td><td>1300</td><td>Adams</td></tr><tr><td>L-17</td><td>1000</td><td>Jones</td></tr></tbody></table> <pre>5 rows in set (0.001 sec)</pre>	loan_number	amount	customer_name	L-23	2000	Smith	L-15	1500	Hayes	L-14	1500	Johnson	L-16	1300	Adams	L-17	1000	Jones
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No 6	Find the names of customers with an account and also a loan at the Perryridge branch.
	<pre>SELECT c.customer_name FROM customer c, account a, depositor d, loan l, borrower b WHERE c.customer_id = d.customer_id AND d.customer_id = b.customer_id AND d.account_number = a.account_number AND l.loan_number = b.loan_number AND a.branch_name = 'Perryridge' AND l.branch_name = 'Perryridge';</pre>
	<pre>MariaDB [Bank_22101698]> SELECT c.customer_name -> FROM customer c, account a, depositor d, loan l, borrower b -> WHERE c.customer_id = d.customer_id -> AND d.customer_id = b.customer_id -> AND d.account_number = a.account_number -> AND l.loan_number = b.loan_number -> AND a.branch_name = 'Perryridge' -> AND l.branch_name = 'Perryridge'; +-----+ customer_name +-----+ Hayes +-----+ 1 row in set (0.018 sec)</pre>

No 7	Find the total loan amount of all customers having at least 2 loans from the bank. Show in format customer name, total_loan.
	<pre>SELECT c.customer_name as customer_name, SUM(l.amount) as total_loan FROM customer c, loan l, borrower b WHERE c.customer_id = b.customer_id and b.loan_number = l.loan_number GROUP BY b.customer_id HAVING COUNT(*)>=2;</pre>
	<pre>MariaDB [Bank_22101698]> SELECT c.customer_name as customer_name, SUM(l.amount) as total_loan -> FROM customer c, loan l, borrower b WHERE c.customer_id = b.customer_id -> and b.loan_number = l.loan_number GROUP BY b.customer_id HAVING COUNT(*)>=2; +-----+-----+ customer_name total_loan +-----+-----+ Smith 2900 +-----+-----+ 1 row in set (0.001 sec)</pre>