mysql> CREATE DATABASE IF NOT EXISTS bank;

mysql> USE bank;

mysql> CREATE TABLE branch (

-> branch\_name VARCHAR(20) PRIMARY KEY,

-> branch\_city VARCHAR(20),

-> assets INT

-> );

mysql> CREATE TABLE account(

-> account\_number INT PRIMARY KEY,

-> branch\_name VARCHAR(20),

-> balance INT,

-> FOREIGN KEY(branch\_name) REFERENCES branch(branch\_name)

-> );

mysql> CREATE TABLE customer(

-> customer\_name VARCHAR(30) PRIMARY KEY,

-> customer\_street VARCHAR(50),

-> customer\_city VARCHAR(20)

-> );

mysql> CREATE TABLE depositor(

-> customer\_name VARCHAR(30),

-> account\_number INT,

-> FOREIGN KEY(account\_number) REFERENCES account(account\_number),

-> FOREIGN KEY(customer\_name) REFERENCES customer(customer\_name)

-> );

mysql> CREATE TABLE loan(

-> loan\_number INT PRIMARY KEY,

-> branch\_name VARCHAR(20),

-> amount INT,

-> FOREIGN KEY(branch\_name) REFERENCES branch(branch\_name)

-> );

mysql> CREATE TABLE borrower(

-> customer\_name VARCHAR(30),

-> loan\_number INT,

-> FOREIGN KEY(loan\_number) REFERENCES loan(loan\_number),

-> FOREIGN KEY(customer\_name) REFERENCES customer(customer\_name)

-> );

mysql> INSERT INTO branch values

-> ('AKURDI' ,'NIGDI', 150000),

-> ('CAMP', 'PUNE', 100000),

-> ('KHADKI', 'PUNE', 155000),

-> ('NAVI MUMBAI', 'MUMBAI', 105000),

-> ('SANTA CRUZ', 'MUMBAI', 105000),

-> ('STATION', 'PUNE', 155000);

mysql> INSERT INTO account values (1001, 'CAMP' ,60000),

-> (1002, 'STATION' ,100000),

-> (1003, 'STATION' ,130000),

-> (1004, 'KHADKI' ,10000),

-> (2001, 'AKURDI' ,50000),

-> (2002, 'AKURDI' ,150000),

-> (2003, 'AKURDI' ,12000),

-> (2004, 'AKURDI' ,50000),

-> (3001, 'NAVI MUMBAI' ,60000),

-> (3002, 'SANTA CRUZ' ,16000),

-> (3003, 'NAVI MUMBAI' ,10000),

-> (3004, 'NAVI MUMBAI' ,12000);

mysql> INSERT INTO customer values ('ADESH PARDESHI', 'CAMP' ,'PUNE'),

-> ('ANKITA KAMBLI', 'PIMPRI' ,'PIMPRI'),

-> ('APOORV SHAH', 'VASAI ROAD' ,'MUMBAI'),

-> ('DHIREN JAIN', 'AKURDI' ,'NIGDI'),

-> ('NIDA SHAIKH', 'SANTA CRUZ' ,'MUMBAI'),

-> ('PRIYANKA LOKHANDE', 'BORIWALI(E)' ,'MUMBAI'),

-> ('RIDDHI RUNWAL', 'AKURDI' ,'NIGDI'),

-> ('RIDDHI SANGHVI', 'WAKDEWADI' ,'PUNE'),

-> ('SHARVARI KULKARNI', 'VIMAN-NAGAR' ,'PUNE'),

-> ('SHIKHA JAISWAL', 'ABC CHOWK' ,'PUNE'),

-> ('SOHAM BHOJ', 'AKURDI' ,'NIGDI'),

-> ('YOJNA GADIYA', 'BORIWALI(W)' ,'MUMBAI');

mysql> INSERT INTO depositor values ('ADESH PARDESHI', 1001),

-> ('RIDDHI SANGHVI', 1002),

-> ('SHARVARI KULKARNI', 1003),

-> ('SHIKHA JAISWAL', 1004),

-> ('ANKITA KAMBLI', 2001),

-> ('DHIREN JAIN', 2002),

-> ('RIDDHI RUNWAL', 2003),

-> ('SOHAM BHOJ', 2004),

-> ('APOORV SHAH', 3001),

-> ('NIDA SHAIKH', 3002),

-> ('PRIYANKA LOKHANDE', 3003),

-> ('YOJNA GADIYA', 3004);

mysql> INSERT INTO loan values(101, 'CAMP' ,15000),

-> (102, 'STATION' ,100000),

-> (103, 'KHADKI' ,10000),

-> (201, 'AKURDI' ,12000),

-> (202, 'AKURDI' ,50000),

-> (301, 'NAVI MUMBAI' ,20000),

-> (302, 'SANTA CRUZ' ,20000),

-> (303, 'SANTA CRUZ' ,60000),

-> (304, 'NAVI MUMBAI' ,60000);

mysql> INSERT INTO borrower values ('ADESH PARDESHI', 101),

-> ('RIDDHI SANGHVI', 102),

-> ('SHARVARI KULKARNI', 103),

-> ('ANKITA KAMBLI', 201),

-> ('RIDDHI RUNWAL', 202),

-> ('APOORV SHAH', 301),

-> ('APOORV SHAH', 301),

-> ('NIDA SHAIKH', 302),

-> ('PRIYANKA LOKHANDE', 303),

-> ('YOJNA GADIYA', 304);

mysql> SELECT \* FROM branch;

+-------------+-------------+--------+

| branch\_name | branch\_city | assets |

+-------------+-------------+--------+

| AKURDI | NIGDI | 150000 |

| CAMP | PUNE | 100000 |

| KHADKI | PUNE | 155000 |

| NAVI MUMBAI | MUMBAI | 105000 |

| SANTA CRUZ | MUMBAI | 105000 |

| STATION | PUNE | 155000 |

+-------------+-------------+--------+

6 rows in set (0.00 sec)

mysql> SELECT \* FROM account;

+----------------+-------------+---------+

| account\_number | branch\_name | balance |

+----------------+-------------+---------+

| 1001 | CAMP | 60000 |

| 1002 | STATION | 100000 |

| 1003 | STATION | 130000 |

| 1004 | KHADKI | 10000 |

| 2001 | AKURDI | 50000 |

| 2002 | AKURDI | 150000 |

| 2003 | AKURDI | 12000 |

| 2004 | AKURDI | 50000 |

| 3001 | NAVI MUMBAI | 60000 |

| 3002 | SANTA CRUZ | 16000 |

| 3003 | NAVI MUMBAI | 10000 |

| 3004 | NAVI MUMBAI | 12000 |

+----------------+-------------+---------+

12 rows in set (0.00 sec)

mysql> SELECT \* FROM customer;

+-------------------+-----------------+---------------+

| customer\_name | customer\_street | customer\_city |

+-------------------+-----------------+---------------+

| ADESH PARDESHI | CAMP | PUNE |

| ANKITA KAMBLI | PIMPRI | PIMPRI |

| APOORV SHAH | VASAI ROAD | MUMBAI |

| DHIREN JAIN | AKURDI | NIGDI |

| NIDA SHAIKH | SANTA CRUZ | MUMBAI |

| PRIYANKA LOKHANDE | BORIWALI(E) | MUMBAI |

| RIDDHI RUNWAL | AKURDI | NIGDI |

| RIDDHI SANGHVI | WAKDEWADI | PUNE |

| SHARVARI KULKARNI | VIMAN-NAGAR | PUNE |

| SHIKHA JAISWAL | ABC CHOWK | PUNE |

| SOHAM BHOJ | AKURDI | NIGDI |

| YOJNA GADIYA | BORIWALI(W) | MUMBAI |

+-------------------+-----------------+---------------+

12 rows in set (0.00 sec)

mysql> SELECT \* FROM depositor;

+-------------------+----------------+

| customer\_name | account\_number |

+-------------------+----------------+

| ADESH PARDESHI | 1001 |

| RIDDHI SANGHVI | 1002 |

| SHARVARI KULKARNI | 1003 |

| SHIKHA JAISWAL | 1004 |

| ANKITA KAMBLI | 2001 |

| DHIREN JAIN | 2002 |

| RIDDHI RUNWAL | 2003 |

| SOHAM BHOJ | 2004 |

| APOORV SHAH | 3001 |

| NIDA SHAIKH | 3002 |

| PRIYANKA LOKHANDE | 3003 |

| YOJNA GADIYA | 3004 |

+-------------------+----------------+

12 rows in set (0.00 sec)

mysql> SELECT \* FROM loan;

+-------------+-------------+--------+

| loan\_number | branch\_name | amount |

+-------------+-------------+--------+

| 101 | CAMP | 15000 |

| 102 | STATION | 100000 |

| 103 | KHADKI | 10000 |

| 201 | AKURDI | 12000 |

| 202 | AKURDI | 50000 |

| 301 | NAVI MUMBAI | 20000 |

| 302 | SANTA CRUZ | 20000 |

| 303 | SANTA CRUZ | 60000 |

| 304 | NAVI MUMBAI | 60000 |

+-------------+-------------+--------+

9 rows in set (0.00 sec)

mysql> SELECT \* FROM borrower;

+-------------------+-------------+

| customer\_name | loan\_number |

+-------------------+-------------+

| ADESH PARDESHI | 101 |

| RIDDHI SANGHVI | 102 |

| SHARVARI KULKARNI | 103 |

| ANKITA KAMBLI | 201 |

| RIDDHI RUNWAL | 202 |

| APOORV SHAH | 301 |

| APOORV SHAH | 301 |

| NIDA SHAIKH | 302 |

| PRIYANKA LOKHANDE | 303 |

| YOJNA GADIYA | 304 |

+-------------------+-------------+

10 rows in set (0.00 sec)

**1. Find the names of all branches in loan relation.**

mysql> SELECT DISTINCT(branch\_name) FROM loan;

+-------------+

| branch\_name |

+-------------+

| AKURDI |

| CAMP |

| KHADKI |

| NAVI MUMBAI |

| SANTA CRUZ |

| STATION |

+-------------+

6 rows in set (0.00 sec)

**2. Find all loan numbers for loans made at Akurdi Branch with loan amount > 12000.**

mysql> SELECT loan\_number FROM loan WHERE branch\_name = "AKURDI" AND amount > 12000;

+-------------+

| loan\_number |

+-------------+

| 202 |

+-------------+

1 row in set (0.00 sec)

**3. Find all customers who have a loan from bank. Find their names,loan\_no and loan amount.**

mysql> SELECT customer\_name,borrower.loan\_number,amount FROM borrower,loan WHERE borrower.loan\_number = loan.loan\_number;

+-------------------+-------------+--------+

| customer\_name | loan\_number | amount |

+-------------------+-------------+--------+

| ADESH PARDESHI | 101 | 15000 |

| RIDDHI SANGHVI | 102 | 100000 |

| SHARVARI KULKARNI | 103 | 10000 |

| ANKITA KAMBLI | 201 | 12000 |

| RIDDHI RUNWAL | 202 | 50000 |

| APOORV SHAH | 301 | 20000 |

| APOORV SHAH | 301 | 20000 |

| NIDA SHAIKH | 302 | 20000 |

| PRIYANKA LOKHANDE | 303 | 60000 |

| YOJNA GADIYA | 304 | 60000 |

+-------------------+-------------+--------+

10 rows in set (0.00 sec)

**4. List all customers in alphabetical order who have loan from Akurdi branch.**

mysql> SELECT customer\_name FROM borrower,loan WHERE loan.branch\_name = 'AKURDI' AND borrower.loan\_number = loan.loan\_number ORDER BY customer\_name;

+---------------+

| customer\_name |

+---------------+

| ANKITA KAMBLI |

| RIDDHI RUNWAL |

+---------------+

2 rows in set (0.00 sec)

**5. Find all customers who have an account or loan or both at bank.**

mysql> SELECT customer\_name FROM customer

-> WHERE customer\_name IN (SELECT customer\_name FROM borrower UNION SELECT customer\_name FROM depositor);

+-------------------+

| customer\_name |

+-------------------+

| ADESH PARDESHI |

| ANKITA KAMBLI |

| APOORV SHAH |

| DHIREN JAIN |

| NIDA SHAIKH |

| PRIYANKA LOKHANDE |

| RIDDHI RUNWAL |

| RIDDHI SANGHVI |

| SHARVARI KULKARNI |

| SHIKHA JAISWAL |

| SOHAM BHOJ |

| YOJNA GADIYA |

+-------------------+

12 rows in set (0.01 sec)

mysql> SELECT customer.customer\_name FROM customer,borrower

-> WHERE customer.customer\_name = borrower.customer\_name

-> UNION SELECT customer.customer\_name FROM customer,depositor

-> WHERE customer.customer\_name = depositor.customer\_name;

+-------------------+

| customer\_name |

+-------------------+

| ADESH PARDESHI |

| ANKITA KAMBLI |

| APOORV SHAH |

| NIDA SHAIKH |

| PRIYANKA LOKHANDE |

| RIDDHI RUNWAL |

| RIDDHI SANGHVI |

| SHARVARI KULKARNI |

| YOJNA GADIYA |

| DHIREN JAIN |

| SHIKHA JAISWAL |

| SOHAM BHOJ |

+-------------------+

12 rows in set (0.00 sec)

**6. Find all customers who have both account and loan at bank.**

mysql> SELECT customer.customer\_name FROM customer,borrower,depositor

-> WHERE customer.customer\_name = borrower.customer\_name and customer.customer\_name = depositor.customer\_name;

+-------------------+

| customer\_name |

+-------------------+

| ADESH PARDESHI |

| ANKITA KAMBLI |

| APOORV SHAH |

| APOORV SHAH |

| NIDA SHAIKH |

| PRIYANKA LOKHANDE |

| RIDDHI RUNWAL |

| RIDDHI SANGHVI |

| SHARVARI KULKARNI |

| YOJNA GADIYA |

+-------------------+

10 rows in set (0.00 sec)

mysql> SELECT customer.customer\_name FROM customer

-> JOIN borrower ON customer.customer\_name = borrower.customer\_name

-> JOIN depositor ON customer.customer\_name = depositor.customer\_name;

+-------------------+

| customer\_name |

+-------------------+

| ADESH PARDESHI |

| ANKITA KAMBLI |

| APOORV SHAH |

| APOORV SHAH |

| NIDA SHAIKH |

| PRIYANKA LOKHANDE |

| RIDDHI RUNWAL |

| RIDDHI SANGHVI |

| SHARVARI KULKARNI |

| YOJNA GADIYA |

+-------------------+

10 rows in set (0.00 sec)

**7. Find all customers who have account but no loan at the bank.**

mysql> SELECT customer\_name FROM customer WHERE customer\_name IN (SELECT customer\_name FROM depositor) AND customer\_name NOT IN (SELECT customer\_name FROM borrower);

+----------------+

| customer\_name |

+----------------+

| DHIREN JAIN |

| SHIKHA JAISWAL |

| SOHAM BHOJ |

+----------------+

3 rows in set (0.01 sec)

mysql> SELECT customer.customer\_name FROM customer

-> JOIN depositor ON customer.customer\_name = depositor.customer\_name

-> LEFT JOIN borrower ON customer.customer\_name = borrower.customer\_name

-> WHERE borrower.customer\_name IS NULL;

+----------------+

| customer\_name |

+----------------+

| DHIREN JAIN |

| SHIKHA JAISWAL |

| SOHAM BHOJ |

+----------------+

3 rows in set (0.00 sec)

**8. Find the average account balance at each branch**

mysql> SELECT branch\_name,AVG(balance) FROM account GROUP BY branch\_name;

+-------------+--------------+

| branch\_name | AVG(balance) |

+-------------+--------------+

| AKURDI | 65500.0000 |

| CAMP | 60000.0000 |

| KHADKI | 10000.0000 |

| NAVI MUMBAI | 27333.3333 |

| SANTA CRUZ | 16000.0000 |

| STATION | 115000.0000 |

+-------------+--------------+

6 rows in set (0.00 sec)

**9. Find no. of depositors at each branch.**

mysql> SELECT branch\_name,count(branch\_name) FROM account

-> INNER JOIN depositor ON account.account\_number = depositor.account\_number

-> GROUP BY branch\_name;

+-------------+--------------------+

| branch\_name | count(branch\_name) |

+-------------+--------------------+

| AKURDI | 4 |

| CAMP | 1 |

| KHADKI | 1 |

| NAVI MUMBAI | 3 |

| SANTA CRUZ | 1 |

| STATION | 2 |

+-------------+--------------------+

6 rows in set (0.00 sec)

**10. Find name of Customer and city where customer name starts with Letter P.**

mysql> SELECT customer\_name,customer\_city FROM customer WHERE customer\_name LIKE "P%" or "p%";

+-------------------+---------------+

| customer\_name | customer\_city |

+-------------------+---------------+

| PRIYANKA LOKHANDE | MUMBAI |

+-------------------+---------------+

1 row in set, 1 warning (0.00 sec)

**11. Display distinct cities of branch.**

mysql> SELECT DISTINCT branch\_city from branch;

+-------------+

| branch\_city |

+-------------+

| NIGDI |

| PUNE |

| MUMBAI |

+-------------+

3 rows in set (0.00 sec)

**12. Find the branches where average account balance > 12000**

mysql> SELECT branch\_name,AVG(balance) FROM account GROUP BY branch\_name having AVG(balance)>12000;

+-------------+--------------+

| branch\_name | AVG(balance) |

+-------------+--------------+

| AKURDI | 65500.0000 |

| CAMP | 60000.0000 |

| NAVI MUMBAI | 27333.3333 |

| SANTA CRUZ | 16000.0000 |

| STATION | 115000.0000 |

+-------------+--------------+

5 rows in set (0.00 sec)

**13. Find number of tuples in customer relation.**

mysql> SELECT COUNT(\*) AS "NUM OF TUPLES" from customer;

+---------------+

| NUM OF TUPLES |

+---------------+

| 12 |

+---------------+

1 row in set (0.00 sec)

**14. Calculate total loan amount given by bank.**

mysql> SELECT SUM(amount) from loan;

+-------------+

| SUM(amount) |

+-------------+

| 347000 |

+-------------+

1 row in set (0.00 sec)

**15. Delete all loans with loan amount between 1300 and 1500.**

mysql> DELETE FROM loan WHERE amount BETWEEN 1300 AND 1500;

Query OK, 0 rows affected (0.05 sec)

**16. Delete all tuples at every branch located in Nigdi.**

mysql> DELETE FROM depositor WHERE account\_number IN

-> (SELECT account\_number FROM account JOIN branch ON account.branch\_name = branch.branch\_name WHERE branch.branch\_city = 'NIGDI');

Query OK, 4 rows affected (0.05 sec)

mysql> DELETE FROM borrower WHERE loan\_number IN

-> (SELECT loan\_number FROM loan JOIN branch ON loan.branch\_name = branch.branch\_name WHERE branch.branch\_city = 'NIGDI');

Query OK, 2 rows affected (0.01 sec)

mysql> DELETE FROM account WHERE branch\_name IN

-> (SELECT branch\_name FROM branch WHERE branch\_city = 'NIGDI');

Query OK, 4 rows affected (0.01 sec)

mysql> DELETE FROM loan WHERE branch\_name IN

-> (SELECT branch\_name FROM branch WHERE branch\_city = 'NIGDI');

Query OK, 2 rows affected (0.01 sec)

mysql> DELETE FROM branch WHERE branch\_city = 'NIGDI';

Query OK, 1 row affected (0.01 sec)