

#### ASSIGNMENT - 4a

```
mysql> show databases;
```

```
+-----+
| Database          |
+-----+
| 3304DB             |
| prerfer            |
| AAA3304            |
| ass3               |
+-----+
```

4 rows in set (0.495 sec)

```
mysql> use 3304DB;
```

Database changed

```
mysql> show tables;
```

```
+-----+
| Tables_in_3304DB |
+-----+
| Borrower          |
| Fine              |
+-----+
```

2 rows in set (0.000 sec)

```
mysql> select *from Borrower;
```

```
+-----+-----+-----+-----+-----+
| Rollno | Name   | Dateifissue | Status | book_name |
+-----+-----+-----+-----+-----+
| 1      | AAA    | 2022-07-01  | R      | DBMS      |
| 2      | AB     | 2022-07-12  | R      | CN        |
| 3      | CB     | 2022-08-17  | R      | ASD       |
| 4      | MD     | 2022-08-20  | R      | ARFC      |
| 5      | ER     | 2022-09-05  | I      | DSA       |
| 6      | ET     | 2022-09-10  | I      | OOP       |
| 7      | NT     | 2022-08-30  | I      | CAT       |
| 8      | PT     | 2022-08-30  | R      | MEC       |
+-----+-----+-----+-----+-----+
```

8 rows in set (0.000 sec)

```
mysql> delimiter //
```

```
mysql> create procedure finecalc(in roll int)
```

```
-> begin
```

```
-> declare fine int;
```

```
-> declare days int;
```

```
-> declare idate date;
```

```
-> declare exit handler for SQLEXCEPTION select
```

```
-> ' create table definition';
```

```
-> select Dateifissue into idate from Borrower where Rollno=roll;
```

```
-> select datediff(curdate(), idate) into days;
```

```
-> if days>15 and days<=30 then
```

```
-> set fine=days*5;
```

```
-> insert into Fine values(roll, curdate(), fine);
```

```
-> elseif days>30 then
```

```
-> set fine=((days-30)*50) + 15*5;
```

```
-> insert into Fine values(roll, curdate(), fine);
```

```
-> else
```

```
-> insert into Fine values(roll, curdate(),0);
```

```
-> end if;
```

```
-> update Borrower set Status='R' where Rollno=roll;
```

```
-> end
```

```
-> //
```

Query OK, 0 rows affected (0.080 sec)

```
mysql> call finecalc(13);
```

Query OK, 3 rows affected (0.009 sec)

```
mysql> call finecalc(14);
```

Query OK, 3 rows affected (0.001 sec)

```
mysql> call finecalc(15);
```

Query OK, 3 rows affected (0.004 sec)

```
mysql> call finecalc(16);
Query OK, 4 rows affected (0.007 sec)
mysql> call finecalc(17);
Query OK, 2 rows affected (0.005 sec)
mysql> call finecalc(18);
Query OK, 2 rows affected (0.005 sec)
mysql> call finecalc(19);
Query OK, 2 rows affected (0.001 sec)
mysql> call finecalc(20);
Query OK, 2 rows affected (0.000 sec)
```

```
mysql> select *from Fine;
+-----+-----+-----+
| Roll_no | Date       | Amt  |
+-----+-----+-----+
| 1       | 2022-09-12 | 365  |
| 2       | 2022-09-12 | 275  |
| 3       | 2022-09-12 | 85   |
| 4       | 2022-09-12 | 50   |
| 5       | 2022-09-12 | 0    |
| 6       | 2022-09-12 | 0    |
| 7       | 2022-09-12 | 0    |
| 8       | 2022-09-12 | 0    |
+-----+-----+-----+
4 rows in set (0.000 sec)
```

#### ASSIGNMENT - 4b

```
mysql> use area3304;
Database changed
mysql> create table areas(radius int,area float(5, 2));
Query OK, 0 rows affected (0.24 sec)
mysql> delimiter //
mysql> create procedure areacal()
-> begin
-> declare r int;
-> declare a float(5,2);
-> set r = 5;
-> while r <= 9
-> do
-> set a = 3.14*power(r,2);
-> insert into areas values(r, a);
-> set r = r + 1;
-> end while;
-> end;//
Query OK, 0 rows affected (0.07 sec)

mysql> call areacal();
-> //
Query OK, 1 row affected (0.29 sec)
```

```
mysql> SELECT * FROM areas;//
+-----+-----+
| radius | area  |
+-----+-----+
| 5      | 78.50 |
| 6      | 113.04 |
| 7      | 153.86 |
| 8      | 200.96 |
| 9      | 254.34 |
+-----+-----+
5 rows in set (0.00 sec)
```

## ASSIGNMENT - 5

```
mysql> create database grade3304;
Query OK, 1 row affected (0.00 sec)

mysql> use grade3304;
Database changed
mysql> create table student_marks(roll int primary key,name varchar(50), total_marks
int);
Query OK, 0 rows affected (0.29 sec)

mysql> create table result(roll int primary key,clas varchar(20));
Query OK, 0 rows affected (0.23 sec)

mysql> delimiter ;;
mysql> create function process_grade(marks int)
  -> returns varchar(20) deterministic
  -> begin
  -> declare grade varchar(20) default 'Pass';
  -> if marks >= 1500 and marks <= 900 then
  -> set grade = 'Distinction';
  -> elseif marks >= 900 then
  -> set grade = 'First Class';
  -> elseif marks >= 825 then
  -> set grade = 'Higher Second class';
  -> end if;
  -> return grade;
  -> end;;
Query OK, 0 rows affected (0.03 sec)

mysql> create procedure submit_marks(in roll int,in name varchar(50), in marks int)
  -> begin
  -> declare grade varchar(20);
  -> select process_grade(marks) into grade;
  -> insert into student_marks values(roll, name, marks);
  -> insert into result values(roll, grade);
  -> end;;
Query OK, 0 rows affected (0.00 sec)

mysql> delimiter ;
mysql> call submit_marks(2,'AAA',1200);
Query OK, 1 row affected (0.07 sec)

mysql> call submit_marks(6,'BBBB',902);
Query OK, 1 row affected (0.14 sec)

mysql> call submit_marks(90,'CCC',820);
Query OK, 1 row affected (0.07 sec)

mysql> call submit_marks(76,'DDD',843);
Query OK, 1 row affected (0.12 sec)

mysql> select result.roll, name, total_marks,clas from student_marks, result where
result.roll = student_marks.roll;
+-----+-----+-----+-----+
| roll | name | total_marks | clas |
+-----+-----+-----+-----+
| 2 | AAA | 1200 | First Class |
| 6 | BBBB | 902 | First Class |
| 76 | DDD | 843 | Higher Second class |
| 90 | CCC | 820 | Pass |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>
```

## ASSIGNMENT - 6

```
mysql> show databases
```

```
-> ;
```

```
+-----+
| Database |
+-----+
| information_schema |
| LIBRARY3304 |
| area3304 |
| grade3304 |
| lib3304 |
| library_3352 |
| library_3353 |
| mysql |
| performance_schema |
| sys |
+-----+
10 rows in set (0.02 sec)
```

```
mysql> create database cursor3304
```

```
-> ;
```

```
Query OK, 1 row affected (0.00 sec)
```

```
mysql> use cursor3304;
```

```
Database changed
```

```
mysql> create table O_RollCall(roll_no int primary key, name varchar(50), branch  
varchar(10));
```

```
Query OK, 0 rows affected (0.27 sec)
```

```
mysql> insert into O_RollCall values
```

```
-> (3302,"aaa","class a"),  
-> (3306,"bbbB","class a"),  
-> (3334,"eee","class r"),  
-> (3340,"fff","class g");
```

```
Query OK, 4 rows affected (0.04 sec)
```

```
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> create table N_RollCall(roll_no int primary key, name varchar(50), branch  
varchar(10));
```

```
Query OK, 0 rows affected (0.27 sec)
```

```
mysql> insert into N_RollCall values
```

```
-> (3302,"aaa","class a"),  
-> (3306,"bbbB","class a"),  
-> (3345,"jjj","class t");
```

```
Query OK, 3 rows affected (0.06 sec)
```

```
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> select * from O_RollCall;
```

```
+-----+-----+-----+
| roll_no | name | branch |
+-----+-----+-----+
| 3302 | aaa | class a |
| 3306 | bbbB | class a |
| 3334 | eee | class r |
| 3340 | fff | class g |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> select * from N_RollCall;
```

```
+-----+-----+-----+
| roll_no | name | branch |
+-----+-----+-----+
| 3302 | aaa | class a |
| 3306 | bbbB | class a |
| 3345 | jjj | class t |
```

```
+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> delimiter //
\mysql> ;
-> //
```

ERROR 1065 (42000): Query was empty

```
mysql> delimiter //
```

```
mysql> create procedure old_to_new()
```

```
-> begin
```

```
-> declare finished int default 0;
```

```
-> declare current_roll int;
```

```
-> declare current_name varchar(50);
```

```
-> declare current_branch varchar(10);
```

```
-> declare current_cursor for select * from O_RollCall;
```

```
-> declare continue handler for not found set finished = 1;
```

```
-> open current;
```

```
-> ilabel: loop
```

```
-> fetch current into current_roll,current_name, current_branch;
```

```
-> if current_roll not in (select roll_no from N_RollCall) then
```

```
-> insert into N_RollCall
```

```
-> values (current_roll, current_name, current_branch);
```

```
-> end if;
```

```
-> if finished = 1 then
```

```
-> leave ilabel;
```

```
-> end if;
```

```
-> end loop ilabel;
```

```
-> close current;
```

```
-> end//
```

Query OK, 0 rows affected, 3 warnings (0.05 sec)

```
mysql> call old_to_new();
```

```
-> /
```

```
-> /
```

```
-> //
```

Query OK, 0 rows affected (0.06 sec)

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '/'/' at line 1

```
mysql> call old_to_new(); //
```

Query OK, 0 rows affected (0.00 sec)

```
mysql> Select * from O_RollCall; //
```

```
+-----+-----+-----+
```

```
| roll_no | name | branch |
```

```
+-----+-----+-----+
```

```
| 3302 | aaa | class a |
```

```
| 3306 | bbbB | class a |
```

```
| 3334 | eee | class r |
```

```
| 3340 | fff | class g |
```

```
+-----+-----+-----+
```

4 rows in set (0.00 sec)

```
mysql> Select * from N_RollCall; //
```

```
+-----+-----+-----+
```

```
| roll_no | name | branch |
```

```
+-----+-----+-----+
```

```
| 3302 | aaa | class a |
```

```
| 3306 | bbbB | class a |
```

```
| 3334 | eee | class r |
```

```
| 3340 | fff | class g |
```

```
| 3345 | jjj | class t |
```

```
+-----+-----+-----+
```

5 rows in set (0.00 sec)

```
mysql>
```

## ASSIGNMENT 7

```
mysql> system clear
mysql> create database 3304A7;
Query OK, 1 row affected (0.00 sec)

mysql> use 3304A7;
Database changed
mysql> create table library (bookid int, book_name varchar(20), publication
varchar(20));
Query OK, 0 rows affected (0.18 sec)

mysql> create table library_audit (sno int auto_increment primary key, old_book
varchar(20), new_book varchar(20), operation varchar(20), time datetime);
Query OK, 0 rows affected (0.22 sec)

mysql> insert into library values(1,"TOC","Pub1");
Query OK, 1 row affected (0.03 sec)

mysql> insert into library values(2,"SPM","Pub2");
Query OK, 1 row affected (0.03 sec)

mysql> insert into library values(3,"DBMS","Pub3");
Query OK, 1 row affected (0.03 sec)

mysql> insert into library values(4,"CNS","Pub4");
Query OK, 1 row affected (0.03 sec)

mysql> select *from library;
+-----+-----+-----+
| bookid | book_name | publication |
+-----+-----+-----+
|      1 | TOC      | Pub1       |
|      2 | SPM      | Pub2       |
|      3 | DBMS     | Pub3       |
|      4 | CNS      | Pub4       |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> select *from library_audit;
Empty set (0.01 sec)

mysql> delimiter //
mysql> create trigger T_update
-> after update on library
-> for each row begin
-> declare action varchar(20);
-> declare newbook varchar(20);
-> declare oldbook varchar(20);
-> set oldbook=old.book_name;
-> set newbook=new.book_name;
-> set action='update';
-> insert into library_audit(old_book,new_book,operation,time)
-> values(oldbook,newbook,action,now());
-> end; //
Query OK, 0 rows affected (0.08 sec)

mysql> update library set book_name='SPOS' where bookid=2;
-> //
Query OK, 1 row affected (0.09 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select *from library_audit;
-> //
+-----+-----+-----+-----+-----+
| sno | old_book | new_book | operation | time                |
+-----+-----+-----+-----+-----+
|  1  | SPM      | SPOS     | update    | 2022-09-21 12:10:44 |
```

```
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> update library set book_name='SPOS' where bookid=2;
-> //
```

```
Query OK, 0 rows affected (0.03 sec)
Rows matched: 1  Changed: 0  Warnings: 0
```

```
mysql> select *from library_audit;
-> //
```

```
+-----+-----+-----+-----+-----+
| sno | old_book | new_book | operation | time                |
+-----+-----+-----+-----+-----+
|  1  | SPM      | SPOS     | update    | 2022-09-21 12:10:44 |
|  2  | SPOS     | SPOS     | update    | 2022-09-21 12:11:50 |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> update library set book_name='HCI' where bookid=3;
-> //
```

```
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> select *from library_audit;
-> //
```

```
+-----+-----+-----+-----+-----+
| sno | old_book | new_book | operation | time                |
+-----+-----+-----+-----+-----+
|  1  | SPM      | SPOS     | update    | 2022-09-21 12:10:44 |
|  2  | SPOS     | SPOS     | update    | 2022-09-21 12:11:50 |
|  3  | DBMS     | HCI      | update    | 2022-09-21 12:12:09 |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> create trigger trigger_delete
```

```
-> after delete on library for each row begin
-> declare action varchar(20);
-> declare book varchar(20);
-> set book=old.book_name;
-> set action='delete';
-> insert into library_audit(old_book,operation,time) values(book,action,now());
-> end; //
```

```
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> delete from library where bookid=4;
-> //
```

```
Query OK, 1 row affected (0.05 sec)
```

```
mysql> select *from library_audit;
-> //
```

```
+-----+-----+-----+-----+-----+
| sno | old_book | new_book | operation | time                |
+-----+-----+-----+-----+-----+
|  1  | SPM      | SPOS     | update    | 2022-09-21 12:10:44 |
|  2  | SPOS     | SPOS     | update    | 2022-09-21 12:11:50 |
|  3  | DBMS     | HCI      | update    | 2022-09-21 12:12:09 |
|  4  | CNS      | NULL     | delete    | 2022-09-21 12:13:41 |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> notee
```

ASSIGNMENT - 8  
//MySQL

```
(base) admin1@admin1-HP-280-Pro-G6-Microtower-PC:~$ sudo mysql
[sudo] password for admin1:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 4
Server version: 5.7.42-0ubuntu0.18.04.1 (Ubuntu)
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> select user from mysql.user;
```

```
+-----+
| user          |
+-----+
| debian-sys-maint |
| mysql.session   |
| mysql.sys       |
| root            |
+-----+
4 rows in set (0.00 sec)
```

```
mysql> create user '3304'@'localhost' identified by '3304-Akashdeep';
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> grant all privileges on * . * to '3304'@'localhost' with grant option;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> create database 3304_Assignment8;
Query OK, 1 row affected (0.00 sec)
```

```
mysql> use 3304_Assignment8;
```

Database changed

```
mysql> select user from mysql.user;
```

```
+-----+
| user          |
+-----+
| 3304           |
| debian-sys-maint |
| mysql.session   |
| mysql.sys       |
| root            |
+-----+
5 rows in set (0.00 sec)
```

//Python Output

```
(base) admin1@admin1-HP-280-Pro-G6-Microtower-PC:~/3304$ python3 assignment8-code.py
Connected to MYSQL Server version 5.7.42-0ubuntu0.18.04.1
You are connected to the database: ('3304_Assignment8',)
creating table T1
Showing tables:
('T1',)
Inserting 2 values in T1
(101, 'abc')
(102, 'def')
Updating id 102 to 103
(101, 'abc')
(103, 'def')
Deleting entry with id = 103
(101, 'abc')
(base) admin1@admin1-HP-280-Pro-G6-Microtower-PC:~/3304$
```



```

//Python CODE
import mysql.connector

connection = mysql.connector.connect(
    host = "localhost",
    database="3304_Assignment8",
    user = "3304",
    password = "3304-Akashdeep"
)

if connection.is_connected():
    db_Info = connection.get_server_info()
    print("Connected to MYSQL Server version ",db_Info)
    cursor = connection.cursor()
    cursor.execute("select database();")
    record = cursor.fetchone()
    print("You are connected to the database: ",record)

def print_table():
    cursor.execute("select * from demo;")
    for i in cursor:
        print(i)

def create():
    print ("creating table demo")
    cursor.execute("create table if not exists demo(id int primary key, name varchar(24));")
    print("Showing tables: ")
    cursor.execute("show tables;")
    for i in cursor:
        print(i)

def insert():
    print("Inserting 4 values in demo")
    cursor.execute("insert into demo
values(101,'abc'), (102,'def'), (103,'ghi'), (104,'jkl');")
    cursor.execute("select * from demo;")
    for i in cursor:
        print(i)

def update():
    print("Updating id 104 to 105")
    cursor.execute("update demo set id = 105 where id = 104;")
    cursor.execute("select * from demo;")
    for i in cursor:
        print(i)

def delete():
    print("Deleting entry with id = 105")
    cursor.execute("delete from demo where id = 105;")
    cursor.execute("select * from demo;")
    for i in cursor:
        print(i)

def main():
    while(True):
        print("-----")
        print("1. Create")
        print("2. Insert")
        print("3. Update")
        print("4. Delete")
        print("5. Print Table")
        print("6. Exit")
        ch = int(input("Enter choice: "))
        if(ch == 1):
            create()
        if(ch == 2):
            insert()
        if(ch == 3):
            update()
        if(ch == 4):
            delete()
        if(ch == 5):
            print_table()
        if(ch == 6):
            break;
        print("-----")

main()

```

## ASSIGNMENT – 2

```
mysql> create database bankingDB
-> ;
ERROR 1007 (HY000): Can't create database 'bankingdb'; database exists
mysql> use bakingDB
ERROR 1049 (42000): Unknown database 'bakingdb'
mysql> clear
mysql> use BankingDB
Database changed
mysql> create table branch(
-> branch_name varchar(255) primary key,
-> branch_city varchar(255),
-> assest int
-> );
Query OK, 0 rows affected (0.04 sec)
mysql> CREATE TABLE customer(
-> cid varchar(255) primary key,
-> cname varchar(255),
-> street varchar(255),
-> city varchar(255)
-> );
Query OK, 0 rows affected (0.01 sec)

mysql> create table loan(
-> loan_no int PRIMARY KEY,
-> branch_name varchar(255),
-> balance int
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> CREATE TABLE account(
-> account_no int PRIMARY KEY,
-> branch_name varchar(255),
-> balance int
-> );
Query OK, 0 rows affected (0.03 sec)
mysql> drop table customer
-> ;
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE TABLE customer(
-> cid int PRIMARY KEY,
-> cname varchar(255),
-> street varchar(255),
-> city varchar(255)
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> create Table borrower(
-> cid int,
-> loean_no int,
-> FOREIGN KEY (cid) REFERENCES customer(cid),
-> FOREIGN KEY (loan_no) REFERENCES loan(loan_no)
-> );
ERROR 1072 (42000): Key column 'loan_no' doesn't exist in table
mysql> create Table borrower(
-> cid int,
-> loan_no int,
-> FOREIGN KEY (cid) REFERENCES customer(cid),
-> FOREIGN KEY (loan_no) REFERENCES loan(loan_no)
-> );
Query OK, 0 rows affected (0.04 sec)
mysql> create table depositor(
-> cid int,
-> account_no int,
-> FOREIGN KEY (cid) REFERENCES customer(cid),
-> FOREIGN KEY (account_no) REFERENCES account(account_no)
```

```
-> );  
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> show tables  
-> ;
```

```
+-----+  
| Tables_in_bankingdb |  
+-----+  
| account              |  
| borrower             |  
| branch               |  
| customer             |  
| depositor            |  
| loan                 |  
+-----+  
6 rows in set (0.02 sec)
```

```
mysql> INSERT INTO account VALUES(1,"Pune",20000);  
Query OK, 1 row affected (0.05 sec)
```

```
mysql> INSERT INTO account VALUES(2,"Pune",40000);  
Query OK, 1 row affected (0.02 sec)
```

```
mysql> INSERT INTO account VALUES(3,"Pune",10000);  
Query OK, 1 row affected (0.05 sec)
```

```
mysql> INSERT INTO account VALUES(4,"Pune",50000);  
Query OK, 1 row affected (0.05 sec)
```

```
mysql> INSERT INTO account VALUES(5,"Pune",10000);  
Query OK, 1 row affected (0.02 sec)
```

```
mysql> SELECT * FROM account  
-> ;
```

```
+-----+-----+-----+  
| account_no | branch_name | balance |  
+-----+-----+-----+  
|          1 | Pune        | 20000  |  
|          2 | Pune        | 40000  |  
|          3 | Pune        | 10000  |  
|          4 | Pune        | 50000  |  
|          5 | Pune        | 10000  |  
+-----+-----+-----+  
5 rows in set (0.00 sec)
```

```
mysql> INSERT INTO branch VALUES("Pune","Pune",100000);  
Query OK, 1 row affected (0.02 sec)
```

```
mysql> INSERT INTO account VALUES(6,"Bti",1000);  
Query OK, 1 row affected (0.02 sec)
```

```
mysql> INSERT INTO branch VALUES("Bti","Bathinda",500000);  
Query OK, 1 row affected (0.05 sec)
```

```
mysql> SELECT * from account  
-> ;
```

```
+-----+-----+-----+  
| account_no | branch_name | balance |  
+-----+-----+-----+  
|          1 | Pune        | 20000  |  
|          2 | Pune        | 40000  |  
|          3 | Pune        | 10000  |  
|          4 | Pune        | 50000  |  
|          5 | Pune        | 10000  |  
|          6 | Bti         | 1000   |  
+-----+-----+-----+  
6 rows in set (0.00 sec)
```

```
mysql> Select * from branch;
+-----+-----+-----+
| branch_name | branch_city | assest |
+-----+-----+-----+
| Bti         | Bathinda   | 500000 |
| Pune       | Pune       | 100000 |
+-----+-----+-----+
2 rows in set (0.00 sec)
mysql> INSERT INTO customer VALUES(11,"Raman","Street-1","Pune");;
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO customer VALUES(22,"Aman","Street-2","Pune");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO customer VALUES(33,"Aman","Street-3","Pune");
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO customer VALUES(44,"Rawan","Street-5","Pune");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES(55,"Sam","Street-6","Pune");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO customer VALUES(66,"Kirti","Street-6","Delhi");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO loan VALUES(1,"Pune",1000);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO loan VALUES(2,"Delhi",8000);
Query OK, 1 row affected (0.02 sec)

mysql> Select * from customer
-> ;
+-----+-----+-----+-----+
| cid | cname | street | city |
+-----+-----+-----+-----+
| 11 | Raman | Street-1 | Pune |
| 22 | Aman  | Street-2 | Pune |
| 33 | Aman  | Street-3 | Pune |
| 44 | Rawan | Street-5 | Pune |
| 55 | Sam   | Street-6 | Pune |
| 66 | Kirti | Street-6 | Delhi |
+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> Select * from account
-> ;
+-----+-----+-----+
| account_no | branch_name | balance |
+-----+-----+-----+
| 1 | Pune | 20000 |
| 2 | Pune | 40000 |
| 3 | Pune | 10000 |
| 4 | Pune | 50000 |
| 5 | Pune | 10000 |
| 6 | Bti  | 1000  |
+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> INSERT INTO borrower VALUES(11, 1);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO borrower VALUES(22,2);
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * FROM borrower
```

```

-> ;
+-----+-----+
| cid | loan_no |
+-----+-----+
| 11 | 1 |
| 22 | 2 |
+-----+-----+
2 rows in set (0.00 sec)

```

```

mysql> INSERT INTO depositor VALUES(11,1);
Query OK, 1 row affected (0.05 sec)

```

```

mysql> INSERT INTO depositor VALUES(22,2);
Query OK, 1 row affected (0.02 sec)

```

```

mysql> SELECT * FROM customer;
+-----+-----+-----+-----+
| cid | cname | street | city |
+-----+-----+-----+-----+
| 11 | Raman | Street-1 | Pune |
| 22 | Aman | Street-2 | Pune |
| 33 | Aman | Street-3 | Pune |
| 44 | Rawan | Street-5 | Pune |
| 55 | Sam | Street-6 | Pune |
| 66 | Kirti | Street-6 | Delhi |
+-----+-----+-----+-----+
6 rows in set (0.00 sec)

```

```

mysql>

```

### ASSIGNMENT – 3

```
mysql> use bankingDB
Database changed
mysql> show tables
-> ;
```

```
+-----+
| Tables_in_bankingdb |
+-----+
| account              |
| borrower             |
| branch               |
| customer             |
| depositor            |
| loan                 |
+-----+
6 rows in set (0.06 sec)
```

```
mysql> CREATE TABLE dummy(
-> col1 int,
-> col2 int
-> );
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> INSERT INTO dummy VALUES(1, 2);
Query OK, 1 row affected (0.02 sec)
```

```
mysql> SELECT * from dummy
-> ;
```

```
+-----+-----+
| col1 | col2 |
+-----+-----+
| 1    | 2    |
+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> ALTER TABLE dummy
-> ADD col3 int;
Query OK, 0 rows affected (0.03 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * from dummy;
+-----+-----+-----+
| col1 | col2 | col3 |
+-----+-----+-----+
| 1    | 2    | NULL |
+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> UPDATE Dummy
-> SET col3 = 3
-> where col1 = 1;
Query OK, 1 row affected (0.05 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> SELECT * from dummy;
+-----+-----+-----+
| col1 | col2 | col3 |
+-----+-----+-----+
| 1    | 2    | 3    |
+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> DROP Table dummy;
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> show tables;
+-----+
| Tables_in_bankingdb |
```

```

+-----+
| account      |
| borrower     |
| branch       |
| customer     |
| depositor    |
| loan         |
+-----+
6 rows in set (0.00 sec)
mysql> CREATE INDEX col4
      -> On loan(loan_no, branch_name, balance);
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM loan;
+-----+-----+-----+
| loan_no | branch_name | balance |
+-----+-----+-----+
|      1 | Pune       |    1000 |
|      2 | Delhi      |    8000 |
+-----+-----+-----+
2 rows in set (0.00 sec)
mysql> ALTER Table loan
      -> DROP INDEX col4;
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> CREATE TABLE dummy(
      -> id into AUTO_INCREMENT PRIMARY KEY,
      -> name varchar(255)
      -> );
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
corresponds to your MySQL server version for the right syntax to use near 'into
AUTO_INCREMENT PRIMARY KEY,
name varchar(255)
)' at line 2
mysql> CREATE TABLE dummy(
      -> id int AUTO_INCREMENT PRIMARY KEY,
      -> name varchar(255)
      -> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO dummy(name) VALUES("z");
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO dummy(name) VALUES("ga");
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * from dummy;
+-----+-----+
| id | name |
+-----+-----+
|  1 | z    |
|  2 | ga   |
+-----+-----+
2 rows in set (0.00 sec)

mysql> ALTER TABLE dummy
      -> MODIFY name varchar(255) NOT NULL;
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SHOW TABLES
      -> ;
+-----+
| Tables_in_bankingdb |
+-----+

```

```
| account      |
| borrower     |
| branch       |
| customer     |
| depositor    |
| dummy        |
| loan         |
+-----+
```

7 rows in set (0.00 sec)

```
mysql> SELECT * FROM Account;
```

```
+-----+-----+-----+
| account_no | branch_name | balance |
+-----+-----+-----+
|          1 | Pune        | 20000   |
|          2 | Pune        | 40000   |
|          3 | Pune        | 10000   |
|          4 | Pune        | 50000   |
|          5 | Pune        | 10000   |
|          6 | Bti         | 1000    |
+-----+-----+-----+
```

6 rows in set (0.00 sec)

```
mysql> SELECT * from dummy;
```

```
+-----+-----+
| id | name |
+-----+-----+
|  1 | z     |
|  2 | ga    |
+-----+-----+
```

2 rows in set (0.00 sec)

```
mysql> INSERT INTO DUMMY(name) VALUES ("D");
```

Query OK, 1 row affected (0.02 sec)

```
mysql> SELECT * FROM dummy;
```

```
+-----+-----+
| id | name |
+-----+-----+
|  1 | z     |
|  2 | ga    |
|  3 | D     |
+-----+-----+
```

3 rows in set (0.00 sec)

```
mysql> SELECT * from Branch;
```

```
+-----+-----+-----+
| branch_name | branch_city | assest |
+-----+-----+-----+
| Bti         | Bathinda    | 500000 |
| Pune        | Pune        | 100000 |
+-----+-----+-----+
```

2 rows in set (0.00 sec)

```
mysql> SELECT * from account;
```

```
+-----+-----+-----+
| account_no | branch_name | balance |
+-----+-----+-----+
|          1 | Pune        | 20000   |
|          2 | Pune        | 40000   |
|          3 | Pune        | 10000   |
|          4 | Pune        | 50000   |
|          5 | Pune        | 10000   |
|          6 | Bti         | 1000    |
+-----+-----+-----+
```

6 rows in set (0.00 sec)



```
mysql> SELECT cid, cname FROM CUSTOMER;
```

```
+-----+-----+
| cid | cname |
+-----+-----+
| 11 | Raman |
| 22 | Aman  |
| 33 | Aman  |
| 44 | Rawan |
| 55 | Sam   |
| 66 | Kirti |
+-----+-----+
```

6 rows in set (0.00 sec)

```
mysql> SELECT * from loan;
```

```
+-----+-----+-----+
| loan_no | branch_name | balance |
+-----+-----+-----+
| 1 | Pune | 1000 |
| 2 | Delhi | 8000 |
+-----+-----+-----+
```

2 rows in set (0.00 sec)

```
mysql> select cname from CUSTOMER where cid in (select cid from BORROWER where loan_no
in (select loan_no from LOAN where branch_name ="Pune"));
```

```
+-----+
| cname |
+-----+
| Raman |
+-----+
```

1 row in set (0.02 sec)

```
mysql> SELECT DISTINCT account
-> ^C
```

```
mysql> SELECT DISTINCT account_no FROM depositor;
```

```
+-----+
| account_no |
+-----+
| 1 |
| 2 |
+-----+
```

2 rows in set (0.05 sec)

```
mysql> UPDATE branch SET branch_city = "Pune" where branch_name = "Pune";
```

Query OK, 0 rows affected (0.02 sec)

Rows matched: 1 Changed: 0 Warnings: 0

```
mysql> UPDATE branch SET branch_city = "dighi" where branch_name = "Pune";
```

Query OK, 1 row affected (0.02 sec)

Rows matched: 1 Changed: 1 Warnings: 0

```
mysql> SELECT * from loan;
```

```
+-----+-----+-----+
| loan_no | branch_name | balance |
+-----+-----+-----+
| 1 | Pune | 1000 |
| 2 | Delhi | 8000 |
+-----+-----+-----+
```

2 rows in set (0.00 sec)

```
mysql> SELECT * FROM borrower;
```

```
+-----+-----+
| cid | loan_no |
+-----+-----+
| 11 | 1 |
| 22 | 2 |
+-----+-----+
```

2 rows in set (0.00 sec)

```
mysql> UPDATE loan
-> SET amount = amount + 100000
-> ^C
mysql> UPDATE loan
-> SET Balance = balance + 100000
-> Where loan_no in(
-> SELECT loan_no
-> FROM borrower
-> WHERE cid = 11);
Query OK, 1 row affected (0.06 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> SELECT * from loan;
+-----+-----+-----+
| loan_no | branch_name | balance |
+-----+-----+-----+
|      1  | Pune        | 101000 |
|      2  | Delhi       |   8000 |
+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM customer where cname LIKE "%R";
Empty set (0.00 sec)
```

```
mysql> SELECT * FROM customer where cname LIKE "R%";
+-----+-----+-----+-----+
| cid | cname | street | city |
+-----+-----+-----+-----+
|  11 | Raman | Street-1 | Pune |
|  44 | Rawan | Street-5 | Pune |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
mysql> SELECT * from CUSTOMER where cid IN (SELECT cid FROM borrower WHERE loan_no IN
(SELECT loan_no FROM loan WHERE branch_name in("Pune","Bti")));
+-----+-----+-----+-----+
| cid | cname | street | city |
+-----+-----+-----+-----+
|  11 | Raman | Street-1 | Pune |
+-----+-----+-----+-----+
1 row in set (0.02 sec)
```

```
mysql> select avg
-> (balance) as "Average Balance" from Account where branch_name = "Pune";
+-----+
| Average Balance |
+-----+
|      26000.0000 |
+-----+
1 row in set (0.05 sec)
```

```
mysql> Select min(balance), max(balance) from LOAN where branch_name = "PUNE";
+-----+-----+
| min(balance) | max(balance) |
+-----+-----+
|      101000 |      101000 |
+-----+-----+
1 row in set (0.05 sec)
```

```
mysql> Select sum(balance) from ACCOUNT where branch_name = "Pune";
+-----+
| sum(balance) |
+-----+
|      130000 |
+-----+
1 row in set (0.00 sec)
```

```
mysql> SELECT * from customer order by cname, city desc;
```

```

+-----+-----+-----+-----+
| cid | cname | street | city |
+-----+-----+-----+-----+
| 22 | Aman | Street-2 | Pune |
| 33 | Aman | Street-3 | Pune |
| 66 | Kirti | Street-6 | Delhi |
| 11 | Raman | Street-1 | Pune |
| 44 | Rawan | Street-5 | Pune |
| 55 | Sam | Street-6 | Pune |
+-----+-----+-----+-----+
6 rows in set (0.00 sec)

```

```

mysql> SELECT * from customer;
+-----+-----+-----+-----+
| cid | cname | street | city |
+-----+-----+-----+-----+
| 11 | Raman | Street-1 | Pune |
| 22 | Aman | Street-2 | Pune |
| 33 | Aman | Street-3 | Pune |
| 44 | Rawan | Street-5 | Pune |
| 55 | Sam | Street-6 | Pune |
| 66 | Kirti | Street-6 | Delhi |
+-----+-----+-----+-----+
6 rows in set (0.00 sec)

```

```

mysql> SELECT cname FROM Customer
-> where city = "Pune"
-> UNION
-> SELECT cname FROM customer
-> where city = "Bti";

```

```

+-----+
| cname |
+-----+
| Raman |
| Aman |
| Rawan |
| Sam |
+-----+
4 rows in set (0.00 sec)

```

```

mysql>

```

## ASSIGNMENT - 2

```
mysql> CREATE DATABASE Banking;
Query OK, 1 row affected (0.00 sec)

mysql> USE Banking;
Database changed

mysql> CREATE TABLE Branch(branch_name VARCHAR(20) PRIMARY KEY, branch_city
VARCHAR(20), assets VARCHAR(20));
Query OK, 0 rows affected (0.03 sec)

mysql> CREATE TABLE Customer(c_id INT AUTO_INCREMENT PRIMARY KEY, street
VARCHAR(20), city VARCHAR(20));
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE TABLE Loan(loan_no INT AUTO_INCREMENT PRIMARY KEY, branch_name
VARCHAR(20), amount INT, FOREIGN KEY (branch_name) REFERENCES Branch(branch_name));
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE TABLE Account (account_no INT AUTO_INCREMENT PRIMARY KEY, branch_name
VARCHAR(20), balance INT);
Query OK, 0 rows affected (0.01 sec)

mysql> ALTER TABLE Account ADD FOREIGN KEY(branch_name) REFERENCES
Branch(branch_name);
Query OK, 0 rows affected (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> CREATE TABLE Borrower( c_id INT, loan_no INT, FOREIGN KEY(c_id) REFERENCES
Customer(c_id) , FOREIGN KEY(loan_no) REFERENCES Loan(loan_no));
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE TABLE Depositor( c_id INT, account_no INT, FOREIGN KEY(c_id)
REFERENCES Customer(c_id) , FOREIGN KEY(account_no) REFERENCES
Account(account_no));
Query OK, 0 rows affected (0.02 sec)

mysql> ALTER TABLE Customer ADD c_name VARCHAR(20);
Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> DESC Customer;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| c_id  | int           | NO   | PRI | NULL    | auto_increment |
| street | varchar(20)   | YES  |     | NULL    |                |
| city  | varchar(20)   | YES  |     | NULL    |                |
| c_name | varchar(20)   | YES  |     | NULL    |                |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_banking |
+-----+
| account            |
| borrower           |
| branch             |
| customer           |
| depositor          |
| loan               |
+-----+
6 rows in set (0.01 sec)
```

```
mysql> INSERT INTO Branch VALUES
-> ("Dighi","Pune","Gold"),
-> ("Pimpri","Pune","Gold"),
-> ("Thana","Mumbai","Property");
Query OK, 3 rows affected (0.00 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM Branch;
+-----+-----+-----+
| branch_name | branch_city | assets |
+-----+-----+-----+
| Dighi       | Pune       | Gold   |
| Pimpri      | Pune       | Gold   |
| Thana       | Mumbai     | Property |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Customer VALUES
-> (100,"Abhishek","MG Road","Pune");
-> (101,"Aryan","GB Road","Pune"),
-> (102,"Rana","Kacha Road","Mumbai"),
-> (103,"Thakur","Bahubali Road","Mandi");
Query OK, 3 rows affected (0.00 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM Customer;
+-----+-----+-----+-----+
| c_id | c_name   | street          | city |
+-----+-----+-----+-----+
| 100  | Abhishek | MG Road        | Pune |
| 101  | Aryan    | GB Road        | Pune |
| 102  | Rana     | Kacha Road     | Mumbai |
| 103  | Thakur   | Bahubali Road  | Mandi |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Loan VALUES
-> (100,"Dighi",100000),
-> (101,"Pimpri",80000),
-> (102,"Pimpri",10000),
-> (103,"Thana",69000);
Query OK, 4 rows affected (0.00 sec)
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM Loan;
+-----+-----+-----+
| loan_no | branch_name | amount |
+-----+-----+-----+
| 100     | Dighi       | 100000 |
| 101     | Pimpri      | 80000  |
| 102     | Pimpri      | 10000  |
| 103     | Thana       | 69000  |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Account VALUES
-> (10,"Dighi",100000),
-> (11,"Dighi",110000),
-> (12,"Thana",1000000),
-> (13,"Pimpri",6900000);
Query OK, 4 rows affected (0.00 sec)
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM Account;
```

```

+-----+-----+-----+
| account_no | branch_name | balance |
+-----+-----+-----+
|          10 | Dighi       | 100000  |
|          11 | Dighi       | 110000  |
|          12 | Thana       | 1000000  |
|          13 | Pimpri      | 6900000  |
+-----+-----+-----+
4 rows in set (0.00 sec)

```

```

mysql> INSERT INTO Borrower VALUES
-> (100,101),
-> (101,102),
-> (101,103),
-> (103,100);
Query OK, 4 rows affected (0.00 sec)
Records: 4 Duplicates: 0 Warnings: 0

```

```

mysql> SELECT * FROM Borrower;
+-----+-----+
| c_id | loan_no |
+-----+-----+
| 100 | 101 |
| 101 | 102 |
| 101 | 103 |
| 103 | 100 |
+-----+-----+
4 rows in set (0.00 sec)

```

```

mysql> INSERT INTO Depositor VALUES
-> (100, 10),
-> (101, 11),
-> (101, 12),
-> (102, 13);
Query OK, 4 rows affected (0.00 sec)
Records: 4 Duplicates: 0 Warnings: 0

```

```

mysql> SELECT * FROM Depositor;
+-----+-----+
| c_id | account_no |
+-----+-----+
| 100 | 10 |
| 101 | 11 |
| 101 | 12 |
| 102 | 13 |
+-----+-----+
4 rows in set (0.00 sec)

```

```

mysql> SELECT * FROM Branch,Account;
+-----+-----+-----+-----+-----+-----+
| branch_name | branch_city | assets | account_no | branch_name | balance |
+-----+-----+-----+-----+-----+-----+
| Thana       | Mumbai     | Property | 10 | Dighi       | 100000 |
| Pimpri      | Pune       | Gold    | 10 | Dighi       | 100000 |
| Dighi       | Pune       | Gold    | 10 | Dighi       | 100000 |
| Thana       | Mumbai     | Property | 11 | Dighi       | 110000 |
| Pimpri      | Pune       | Gold    | 11 | Dighi       | 110000 |
| Dighi       | Pune       | Gold    | 11 | Dighi       | 110000 |
| Thana       | Mumbai     | Property | 12 | Thana       | 1000000 |
| Pimpri      | Pune       | Gold    | 12 | Thana       | 1000000 |
| Dighi       | Pune       | Gold    | 12 | Thana       | 1000000 |
| Thana       | Mumbai     | Property | 13 | Pimpri      | 6900000 |
| Pimpri      | Pune       | Gold    | 13 | Pimpri      | 6900000 |
| Dighi       | Pune       | Gold    | 13 | Pimpri      | 6900000 |

```

```
+-----+-----+-----+-----+-----+
12 rows in set (0.00 sec)
```

```
mysql> SELECT c_id, c_name FROM Customer;
```

```
+-----+-----+
| c_id | c_name |
+-----+-----+
| 100 | Pune   |
| 101 | Pune   |
| 102 | Mumbai |
| 103 | Mandi  |
+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> SELECT c_name FROM Customer WHERE Customer.c_id = (SELECT c_id FROM Borrower
WHERE Borrower.loan_no = (SELECT loan_no FROM Loan WHERE Loan.branch_name =
"Dighi"));
```

```
+-----+
| c_name |
+-----+
| Thakur |
+-----+
1 row in set (0.00 sec)
```

```
mysql> UPDATE Branch SET branch_city = "Delhi" WHERE branch_name = "Pimpri";
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> SELECT * FROM Branch;
```

```
+-----+-----+-----+
| branch_name | branch_city | assets |
+-----+-----+-----+
| Dighi       | Pune       | Gold   |
| Pimpri      | Delhi      | Gold   |
| Thana       | Mumbai     | Property |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> UPDATE Loan SET amount = amount + 100000 WHERE loan_no = (SELECT loan_no
FROM BORROWER WHERE c_id = 100);
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> SELECT * FROM Loan;
```

```
+-----+-----+-----+
| loan_no | branch_name | amount |
+-----+-----+-----+
| 100     | Dighi       | 100000 |
| 101     | Pimpri      | 180000 |
| 102     | Pimpri      | 10000  |
| 103     | Thana       | 69000  |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> DELETE FROM Customer WHERE Customer.c_id = (Select c_id FROM Depositor WHERE
Depositor.account_no = ( SELECT account_no FROM Account WHERE Account.balance
BETWEEN 30000 AND 80000));
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> SELECT c_name FROM Customer WHERE c_name LIKE "T%";
```

```
+-----+
| c_name |
+-----+
| Thakur |
+-----+
```

```
+-----+
1 row in set (0.00 sec)
```

```
mysql> SELECT * FROM CUSTOMER WHERE Customer.c_id IN (SELECT c_id FROM Borrower
WHERE loan_no IN (SELECT loan_no FROM Loan WHERE branch_name IN("Dighi", "Pimri",
"Thana")));
```

```
+-----+-----+-----+-----+
| c_id | c_name | street      | city  |
+-----+-----+-----+-----+
| 101  | Aryan  | GB Road     | Pune  |
| 103  | Thakur | Bahubali Road | Mandi  |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> SELECT AVG(balance) FROM Account WHERE branch_name = "Dighi";
```

```
+-----+
| AVG(balance) |
+-----+
| 105000.0000 |
+-----+
1 row in set (0.00 sec)
```

```
mysql> SELECT COUNT(c_id) FROM Customer WHERE c_id IN(SELECT c_id FROM Depositor
WHERE account_no IN(SELECT account_no FROM Account where branch_name IN("Dighi")));
```

```
+-----+
| COUNT(c_id) |
+-----+
| 2 |
+-----+
1 row in set (0.00 sec)
```

```
mysql> SELECT MAX(amount), MIN(amount) FROM Loan WHERE branch_name = "Pimpri";
```

```
+-----+-----+
| MAX(amount) | MIN(amount) |
+-----+-----+
| 180000 | 10000 |
+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> SELECT SUM(balance) FROM Account WHERE branch_name = "Dighi";
```

```
+-----+
| SUM(balance) |
+-----+
| 210000 |
+-----+
1 row in set (0.00 sec)
```

```
mysql> SELECT * FROM Customer ORDER BY c_name, city DESC;
```

```
+-----+-----+-----+-----+
| c_id | c_name  | street      | city  |
+-----+-----+-----+-----+
| 100  | Abhishek | MG Road     | Pune  |
| 101  | Aryan   | GB Road     | Pune  |
| 102  | Rana    | Kacha Road  | Mumbai |
| 103  | Thakur  | Bahubali Road | Mandi  |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> SELECT c_name FROM Customer WHERE c_id IN(SELECT c_id FROM Depositor WHERE
account_no IN(SELECT account_no FROM Account WHERE branch_name ="Dighi")) UNION
SELECT c_name FROM Customer WHERE c_id IN(SELECT c_id FROM Depositor WHERE
account_no IN(SELECT account_no FROM Account WHERE branch_name ="Pimpri"));
```

```
+-----+
| c_name |
+-----+
```



```

+-----+
| Abhishek |
| Aryan    |
| Rana      |
+-----+
3 rows in set (0.00 sec)

```

```

mysql> SELECT c_name FROM Customer WHERE c_id IN(SELECT c_id FROM Depositor WHERE
account_no IN(SELECT account_no FROM Account WHERE branch_name ="Dighi")) UNION ALL
SELECT c_name FROM Customer WHERE c_id IN(SELECT c_id FROM Depositor WHERE
account_no IN(SELECT account_no FROM Account WHERE branch_name ="Pimpri"));
+-----+
| c_name |
+-----+
| Abhishek |
| Aryan    |
| Rana      |
+-----+
3 rows in set (0.00 sec)

```

### ASSIGNMENT - 3

mysql> use bankingDB

Database changed

mysql> show tables

-> ;

```
+-----+
| Tables_in_bankingdb |
+-----+
| account              |
| borrower              |
| branch               |
| customer              |
| depositor             |
| loan                  |
+-----+
6 rows in set (0.06 sec)
```

mysql> CREATE TABLE dummy(

-> col1 int,

-> col2 int

-> );

Query OK, 0 rows affected (0.04 sec)

mysql> INSERT INTO dummy VALUES(1, 2);

Query OK, 1 row affected (0.02 sec)

mysql> SELECT \* from dummy

-> ;

```
+-----+-----+
| col1 | col2 |
+-----+-----+
| 1    | 2    |
+-----+-----+
1 row in set (0.00 sec)
```

mysql> ALTER TABLE dummy

-> ADD col3 int;

Query OK, 0 rows affected (0.03 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> SELECT \* from dummy;

```
+-----+-----+-----+
| col1 | col2 | col3 |
+-----+-----+-----+
| 1    | 2    | NULL |
+-----+-----+-----+
1 row in set (0.00 sec)
```

mysql> UPDATE Dummy

-> SET col3 = 3

-> where col1 = 1;

Query OK, 1 row affected (0.05 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT \* from dummy;

```
+-----+-----+-----+
| col1 | col2 | col3 |
+-----+-----+-----+
| 1    | 2    | 3    |
+-----+-----+-----+
1 row in set (0.00 sec)
```

mysql> DROP Table dummy;

Query OK, 0 rows affected (0.02 sec)

mysql> show tables;

```
+-----+
| Tables_in_bankingdb |
+-----+
```

```

+-----+
| account      |
| borrower     |
| branch       |
| customer     |
| depositor    |
| loan         |
+-----+
6 rows in set (0.00 sec)
mysql> CREATE INDEX col4
      -> On loan(loan_no, branch_name, balance);
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0

```

```

mysql> SELECT * FROM loan;
+-----+-----+-----+
| loan_no | branch_name | balance |
+-----+-----+-----+
|      1 | Pune        |    1000 |
|      2 | Delhi       |    8000 |
+-----+-----+-----+

```

```

2 rows in set (0.00 sec)
mysql> ALTER Table loan
      -> DROP INDEX col4;
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0
mysql> CREATE TABLE dummy(
      -> id int AUTO_INCREMENT PRIMARY KEY,
      -> name varchar(255)
      -> );
Query OK, 0 rows affected (0.03 sec)

```

```

mysql> INSERT INTO dummy(name) VALUES("z");
Query OK, 1 row affected (0.02 sec)

```

```

mysql> INSERT INTO dummy(name) VALUES("ga");
Query OK, 1 row affected (0.02 sec)

```

```

mysql> SELECT * from dummy;
+----+-----+
| id | name |
+----+-----+
|  1 | z    |
|  2 | ga   |
+----+-----+
2 rows in set (0.00 sec)

```

```

mysql> ALTER TABLE dummy
      -> MODIFY name varchar(255) NOT NULL;
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0

```

```

mysql> SHOW TABLES
      -> ;

```

```

+-----+
| Tables_in_bankingdb |
+-----+
| account              |
| borrower             |
| branch               |
| customer             |
| depositor            |
| dummy                |
| loan                 |
+-----+
7 rows in set (0.00 sec)

```

```
mysql> SELECT * FROM Account;
```

account_no	branch_name	balance
1	Pune	20000
2	Pune	40000
3	Pune	10000
4	Pune	50000
5	Pune	10000
6	Bti	1000

6 rows in set (0.00 sec)

```
mysql> SELECT * from dummy;
```

id	name
1	z
2	ga

2 rows in set (0.00 sec)

```
mysql> INSERT INTO DUMMY(name) VALUES ("D");
Query OK, 1 row affected (0.02 sec)
```

```
mysql> SELECT * FROM dummy;
```

id	name
1	z
2	ga
3	D

3 rows in set (0.00 sec)

```
mysql> SELECT * from Branch;
```

branch_name	branch_city	asest
Bti	Bathinda	500000
Pune	Pune	100000

2 rows in set (0.00 sec)

```
mysql> SELECT * from account;
```

account_no	branch_name	balance
1	Pune	20000
2	Pune	40000
3	Pune	10000
4	Pune	50000
5	Pune	10000
6	Bti	1000

6 rows in set (0.00 sec)

```
mysql> SELECT cid, cname FROM CUSTOMER;
```

cid	cname
11	Raman
22	Aman
33	Aman
44	Rawan
55	Sam
66	Kirti

```
+-----+-----+
6 rows in set (0.00 sec)
```

```
mysql> SELECT * from loan;
+-----+-----+-----+
| loan_no | branch_name | balance |
+-----+-----+-----+
|        1 | Pune        |    1000 |
|        2 | Delhi       |    8000 |
+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> select cname from CUSTOMER where cid in (select cid from BORROWER where loan_no
in (select loan_no from LOAN where branch_name ="Pune"));
+-----+
| cname |
+-----+
| Raman |
+-----+
1 row in set (0.02 sec)
```

```
mysql> SELECT DISTINCT account
-> ^C
mysql> SELECT DISTINCT account_no FROM depositor;
+-----+
| account_no |
+-----+
|          1 |
|          2 |
+-----+
2 rows in set (0.05 sec)
```

```
mysql> UPDATE branch SET branch_city = "Pune" where branch_name = "Pune";
Query OK, 0 rows affected (0.02 sec)
Rows matched: 1  Changed: 0  Warnings: 0
```

```
mysql> UPDATE branch SET branch_city = "dighi" where branch_name = "Pune";
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> SELECT * from loan;
+-----+-----+-----+
| loan_no | branch_name | balance |
+-----+-----+-----+
|        1 | Pune        |    1000 |
|        2 | Delhi       |    8000 |
+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM borrower;
+-----+-----+
| cid | loan_no |
+-----+-----+
|   11 |        1 |
|   22 |        2 |
+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> UPDATE loan
-> SET amount = amount + 100000
-> ^C
mysql> UPDATE loan
-> SET Balance = balance + 100000
-> Where loan_no in(
-> SELECT loan_no
-> FROM borrower
-> WHERE cid = 11);
Query OK, 1 row affected (0.06 sec)
```

Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT \* from loan;

loan_no	branch_name	balance
1	Pune	101000
2	Delhi	8000

2 rows in set (0.00 sec)

mysql> SELECT \* FROM customer where cname LIKE "%R";  
Empty set (0.00 sec)

mysql> SELECT \* FROM customer where cname LIKE "R%";

cid	cname	street	city
11	Raman	Street-1	Pune
44	Rawan	Street-5	Pune

2 rows in set (0.00 sec)

mysql> SELECT \* from CUSTOMER where cid IN (SELECT cid FROM borrower WHERE loan\_no IN (SELECT loan\_no FROM loan WHERE branch\_name in("Pune","Bti")));

cid	cname	street	city
11	Raman	Street-1	Pune

1 row in set (0.02 sec)

mysql> select avg  
-> (balance) as "Average Balance" from Account where branch\_name = "Pune";

Average Balance
26000.0000

1 row in set (0.05 sec)

mysql> Select min(balance), max(balance) from LOAN where branch\_name = "PUNE";

min(balance)	max(balance)
101000	101000

1 row in set (0.05 sec)

mysql> Select sum(balance) from ACCOUNT where branch\_name = "Pune";

sum(balance)
130000

1 row in set (0.00 sec)

mysql> SELECT \* from customer order by cname, city desc;

cid	cname	street	city
22	Aman	Street-2	Pune
33	Aman	Street-3	Pune
66	Kirti	Street-6	Delhi
11	Raman	Street-1	Pune
44	Rawan	Street-5	Pune
55	Sam	Street-6	Pune

6 rows in set (0.00 sec)

```
mysql> SELECT * from customer;
```

cid	cname	street	city
11	Raman	Street-1	Pune
22	Aman	Street-2	Pune
33	Aman	Street-3	Pune
44	Rawan	Street-5	Pune
55	Sam	Street-6	Pune
66	Kirti	Street-6	Delhi

6 rows in set (0.00 sec)

```
mysql> SELECT cname FROM Customer
```

```
-> where city = "Pune"
```

```
-> UNION
```

```
-> SELECT cname FROM customer
```

```
-> where city = "Bti";
```

cname
Raman
Aman
Rawan
Sam

4 rows in set (0.00 sec)

```
mysql>
```