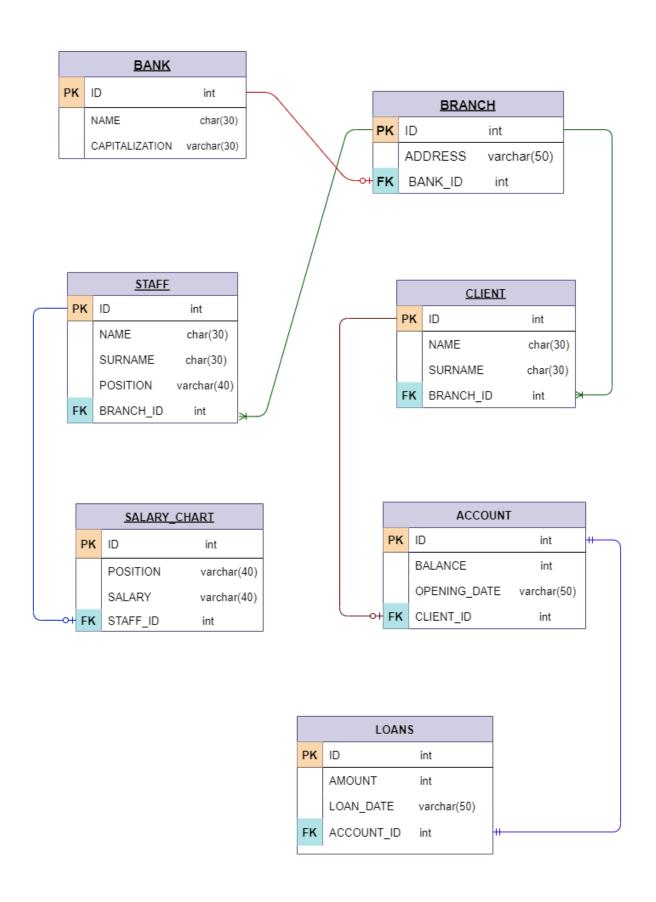
BANK MANAGEMENT SYSTEM DATABASE



SQL Project



Bank Management System

Create Database:-

```
MariaDB [(none)]> create database Bank;
Query OK, 1 row affected (0.003 sec)
```

Show Database :-

Use Database as Bank :-

```
MariaDB [(none)]> use bank;
Database changed
MariaDB [bank]>
```

Create Tables:-

- a) Bank
- b) Branch
- c) Staff
- d) Salary_Chart
- e) Client
- f) Account
- g) Loans

a) Bank:-

MariaDB [bank] > create table Bank(id int primary key, Name char(20), Capitalization varchar(30)); Query OK, 0 rows affected (0.013 sec)

MariaDB [bank]> de	esc bank;	·	·	.	
Field	Туре	Null	Key	Default	Extra
•	int(11) char(20) varchar(30)	YES	İ	NULL NULL NULL	
3 rows in set (0.0	930 sec)				·

b) Branch:-

MariaDB [bank] > create table Branch(ID int primary key, Address varchar(50), Bank_id int, foreign key(Bank_id) references Bank(ID)); Query OK, 0 rows affected (0.057 sec)

MariaDB [ba	ank]> desc bra				·
Field	Type				:
Address	 int(11) varchar(50) int(11)	YES YES	MUL	NULL NULL	
3 rows in s	set (0.032 sec				

c) Staff:-

MariaDB [bank		•			-
Field		 Null	Key	Default	Extra
ID Name Surname Position Branch_id	int(11) char(10) char(10) char(20) int(11)	NO YES YES YES YES	PRI MUL	NULL NULL NULL NULL NULL	
5 rows in set	(0.028 sec			,	

d) Salary_Chart:-

MariaDB [bar	nk]> desc sala:	ry_chart	:;		·
Field	Туре	Null	Key	Default	Extra
Position Salary	int(11) varchar(10) varchar(20) int(11)	YES YES YES	MUL	NULL NULL NULL NULL	
4 rows in se	et (0.026 sec)	-		 	

e) Client :-

MariaDB [bank	(]> desc cl:	ient;	·		.
Field	Туре	Null	Key	Default	Extra
ID Name Branch_id		YES	į i	NULL	
3 rows in set	(0.026 se	·)			

f) Account :-

MariaDB [bank]>	desc accou	ınt;		.	.
Field	Туре	Null	Key	Default	Extra
ID Balance Opening_Date Client_id	int(11) date	YES YES		NULL NULL	
4 rows in set (0.028 sec)				,

g) Loans :-

MariaDB [bank]> desc lo	ans;			·
Field	т Туре	Null	Key	Default	Extra
ID Amount Loan_Date Account_id	date	YES		NULL NULL NULL NULL	
+		•	·		++

Total Tables Created:-

Alter:-

1) Alter Column Name :-

```
MariaDB [bank]> alter table bank change id ID int;
Query OK, 0 rows affected (0.009 sec)
Records: 0 Duplicates: 0 Warnings: 0
MariaDB [bank] > desc bank;
 Field
                   Type
                                 Null
                                       | Key | Default
                                                         Extra
 ID
                   int(11)
                                  NO
                                         PRI
                                               NULL
                                               NULL
                   char(20)
                                  YES
 Name
                   varchar(30)
 Capitalization
                                 YES
                                               NULL
3 rows in set (0.012 sec)
```

2) Alter Add Column :-

```
MariaDB [bank] > alter table client add Mobile_No varchar(12) not null after Name;
Query OK, 0 rows affected (0.012 sec)
Records: 0 Duplicates: 0 Warnings: 0
MariaDB [bank] > desc client;
 Field
                           | Null | Key |
                                          Default | Extra
             Type
              int(11)
                                          NULL
  TD
                            NO
                                    PRT
  Name
              char(20)
                             YES
                                          NULL
              varchar(12)
  Mobile_No
                             NO
                                          NULL
                                          NULL
 Branch_id
              int(11)
                            YES
                                    MUL
 rows in set (0.012 sec)
```

3) Alter Changing Datatype :-

```
MariaDB [bank]> alter table client modify Mobile_No varchar(11);
Query OK, 0 rows affected (0.062 sec)
Records: 0 Duplicates: 0 Warnings: 0
MariaDB [bank] > desc client;
 Field
                           | Null | Key
            | Type
                                        | Default | Extra
 ID
              int(11)
                            NO
                                    PRI
                                          NULL
 Name
              char(20)
                            YES
                                          NULL
 Mobile_No
              varchar(11)
                            YES
                                          NULL
 Branch_id
             int(11)
                            YES
                                    MUL
                                          NULL
4 rows in set (0.013 sec)
```

4) Alter Table Name :-

MariaDB [bank] > alter table bank rename to banks; Query OK, 0 rows affected (0.032 sec)

5) Alter Delete Column :-

```
MariaDB [bank]> alter table staff drop surname;
Query OK, 0 rows affected (0.009 sec)
Records: 0 Duplicates: 0 Warnings: 0
MariaDB [bank]> desc staff;
| Field
                       | Null | Key | Default | Extra
             Type
 ID
             int(11)
                        NO
                                PRI
                                      NULL
             char(10)
                        YES
Name
                                      NULL
 Position
             char(20)
                        YES
                                      NULL
 Branch_id | int(11)
                       YES
                                    I NULL
                              MUL
4 rows in set (0.013 sec)
```

Inserting Values:-

1) Banks -

```
MariaDB [bank]> insert into banks values(01,'KOTAK MAHINDRA BANK','990 CR');
Query OK, 1 row affected (0.006 sec)

MariaDB [bank]> insert into banks values(02,'STATE BANK OF INDIA','892 CR');
Query OK, 1 row affected (0.004 sec)

MariaDB [bank]> insert into banks values(03,'BANK OF INDIA','4100 CR');
Query OK, 1 row affected (0.004 sec)
```

2) Branch -

```
MariaDB [bank]> insert into branch(id,address,bank_id)
    -> values (1,'Domvivli East, Maharashtra, India',1),
    -> (2, 'Thane East, Maharashtra, India',1),
-> (3, 'Kalyan West, Maharashtra, India',2),
-> (4, 'Badlapur, Maharashtra, India',2),
    -> (5, 'Ratnagiri, Maharashtra, India', 3),
    -> (6, 'Karol Bagh, Delhi, India', 3);
Query OK, 6 rows affected (0.002 sec)
Records: 6 Duplicates: 0 Warnings: 0
MariaDB [bank]> select * from branch;
| ID | Address
                                                  Bank_id |
        Domvivli East, Maharashtra, India
                                                          1
        Thane East, Maharashtra, India
                                                          1
        Kalyan West, Maharashtra, India
   3
                                                          2
        Badlapur, Maharashtra, India
                                                          2
   4
        Ratnagiri, Maharashtra, India
   5
                                                          3
        Karol Bagh, Delhi, India
                                                          3
6 rows in set (0.001 sec)
```

3) Staff :-

```
MariaDB [bank]> insert into staff(id,name,position,branch_id)
    -> values (101,'Akash Kharade','Manager',1),
    -> (102,'Raj Bamble','Manager',3),
    -> (103,'Yash Patil','Cashier',4),
    -> (104,'Kushagra Chopra','Clerk',5),
    -> (105,'Jayesh Tank','Loan Officer',6),
    -> (106,'Pratham Patil','Cashier',2),
    -> (107,'Sahil Kumar','Clerk',1),
    -> (108,'Omkar Shetty','Manager',6);
Query OK, 8 rows affected, 6 warnings (0.075 sec)
Records: 8 Duplicates: 0 Warnings: 6
```

```
MariaDB [bank]> select * from Staff;
 ID
        Name
                           Position
                                           Branch_id
  101
        Akash Kharade
                           Manager
                                                    1
 102
                                                    3
        Raj Bamble
                           Manager
 103
        Yash Patil
                           Cashier
                                                    4
 104
        Kushagra Chopra
                           Clerk
                                                    5
  105
        Jayesh Tank
                           Loan Officer
                                                    6
        Pratham Patil
  106
                                                    2
                           Cashier
 107
                                                    1
        Sahil Kumar
                           Clerk
                                                    6
  108
        Omkar Shetty
                           Manager
8 rows in set (0.000 sec)
```

4) Salary_Chart:-

```
MariaDB [bank]> insert into salary_chart(id,position,salary,staff_id)
    -> values(1001, 'MANAGER', '15,00,000/pa',101),
    -> (1002, 'MANAGER', '15,00,000/pa',102),
-> (1003, 'CASHIER', '6,00,000/pa',103),
    -> (1004, 'CLERK', '3,00,000/pa',104),
    -> (1005, 'LOAN OFFICER', '12,00,000/pa',105),
    -> (1006, 'CASHIER', '6,00,000/pa',106),

-> (1007, 'CLERK', '3,00,000/pa',107),

-> (1008, 'MANAGER', '15,00,000/pa',108);
Query OK, 8 rows affected, 1 warning (0.009 sec)
Records: 8 Duplicates: 0 Warnings: 1
MariaDB [bank]> select * from salary_chart;
                                             Staff_id
  ID
          Position
                          Salary
  1001
          MANAGER
                          15,00,000/pa
                                                   101
  1002
          MANAGER
                          15,00,000/pa
                                                   102
  1003
          CASHIER
                          6,00,000/pa
                                                   103
  1004
          CLERK
                          3,00,000/pa
                                                   104
  1005
          LOAN OFFIC
                          12,00,000/pa
                                                   105
  1006
          CASHIER
                          6,00,000/pa
                                                   106
                          3,00,000/pa
  1007
          CLERK
                                                   107
  1008
          MANAGER
                          15,00,000/pa
                                                   108
8 rows in set (0.000 sec)
```

5) Client:-

```
MariaDB [bank] insert into client(id,name,surname,mobile_no,branch_id)
     -> values(111,'Rohit','Sharma',4545454545,1),
-> (112,'Ravi','Varma',1414141414,1),
-> (113,'Virat','Kohli',1818181818,2),
-> (114,'Vinod','Gupta',2121212121,3),
-> (115,'Mahi','Dhoni',7777777777,2),
-> (116,'Yuvi','Singh',1717171717,3);
Query OK, 6 rows affected, 2 warnings (0.003 sec)
Records: 6 Duplicates: 0 Warnings: 2
MariaDB [bank] > select * from client;
  ID
          Name
                                     Mobile_no
                       Surname
                                                        Branch_id
                                                                    1
                                     2147483647
  111
           Rohit
                       Sharma
                                                                    1
  112
           Ravi
                       Varma
                                     1414141414
                                                                    2
  113
           Virat
                       Kohli
                                     1818181818
  114
           Vinod
                       Gupta
                                     2121212121
                                                                    3
  115
           Mahi
                       Dhoni
                                     2147483647
                                                                    2
  116
          Yuvi
                       Singh
                                     1717171717
                                                                    3
6 rows in set (0.001 sec)
```

6) Account :-

```
MariaDB [bank]> insert into account(id,balance,opening_date,client_id)
    -> values(200012083,234511,'2019-09-23',112),
    -> (200012223,444511,'2012-04-13',113),
-> (400021223,1200511,'2012-08-02',114),
-> (400035600,350078,'2010-04-07',115),
-> (500078600,790034,'2022-01-04',116),
    -> (800090067,980034,'2016-09-01',115),
    -> (600030022,256000,'2018-12-30',116);
Query OK, 7 rows affected (0.004 sec)
Records: 7 Duplicates: 0 Warnings: 0
MariaDB [bank] > select * from account;
| ID
                            Opening_Date |
                                               Client_id
                Balance
                  234511
                             2019-09-23
  200012083
                                                       112
                  444511
                             2012-04-13
                                                       113
  200012223
  300030033
                  120000
                             2001-01-01
                                                       111
  300040033
                  340440
                             2011-11-21
                                                       111
                 1200511
                                                       114
  400021223
                             2012-08-02
  400035600
                  350078
                             2010-04-07
                                                      115
  500078600
                  790034
                             2022-01-04
                                                      116
  600030022
                  256000
                             2018-12-30
                                                      116
  800090067
                  980034
                             2016-09-01
                                                      115
9 rows in set (0.000 sec)
```

7) Loans :-

```
MariaDB [bank]> insert into loans(id,amount,loan_date,Account_id)
   -> values(10010,100000,'2019-09-12',600030022),
   -> (10020,450000,'2013-02-21',400035600),
   -> (20040,325000,'2018-03-24',200012223),
   -> (20070,985000,'2021-01-01',400021223),
   -> (40030,682000,'2017-05-11',800090067);
Query OK, 5 rows affected (0.004 sec)
Records: 5 Duplicates: 0 Warnings: 0
MariaDB [bank]> select * from loans;
ID
         Amount | Loan_Date
                               Account_id
          100000
                   2019-09-12
 10010
                                 600030022
 10020
          450000
                   2013-02-21
                                 400035600
 20040
          325000
                   2018-03-24
                                 200012223
 20070
          985000
                   2021-01-01
                                 400021223
 40030
          682000
                   2017-05-11
                                 800090067
5 rows in set (0.000 sec)
```

Queries

1) Select:-

```
MariaDB [bank]> select name, surname, mobile_no from client;
                    mobile_no
  name
          surname
  Rohit
          Sharma
                     2147483647
  Ravi
                     1414141414
          Varma
          Kohli
  Virat
                     1818181818
  Vinod
          Gupta
                     2121212121
                     2147483647
  Mahi
          Dhoni
  Yuvi
                     1717171717
          Singh
  rows in set (0.000 sec)
```

2) Select Order by :-

```
MariaDB [bank]> select name, surname, mobile_no from client order by name;
        | surname | mobile_no
  name
  Mahi
          Dhoni
                    2147483647
                    1414141414
  Ravi
          Varma
  Rohit
          Sharma
                     2147483647
  Vinod
          Gupta
                    2121212121
          Kohli
  Virat
                     1818181818
  Yuvi
          Singh
                    1717171717
6 rows in set (0.012 sec)
```

3) Order by Asc:-

```
MariaDB [bank]> select balance from account order by balance;
+-----+
| balance |
+-----+
| 120000 |
| 234511 |
| 256000 |
| 340440 |
| 350078 |
| 4444511 |
| 790034 |
| 980034 |
| 1200511 |
+-----+
9 rows in set (0.000 sec)
```

4) Order by Desc:-

```
MariaDB [bank] > select balance, opening_date from account order by Opening_date desc;
| balance | opening_date |
            2022-01-04
   790034
   234511
            2019-09-23
   256000
            2018-12-30
            2016-09-01
   980034
  1200511
            2012-08-02
   444511
            2012-04-13
            2011-11-21
   340440
   350078
            2010-04-07
            2001-01-01
   120000
9 rows in set (0.000 sec)
```

5) Limit:-

```
MariaDB [bank]> select surname, name, mobile_no from client order by surname limit 3,2;
+------+
| surname | name | mobile_no |
+------+
| Sharma | Rohit | 2147483647 |
| Singh | Yuvi | 1717171717 |
+------+
2 rows in set (0.000 sec)
```

6) Distinct:-

7) Where :-

```
MariaDB [bank]> select name, surname from client where name like 'v%';
+-----+
| name | surname |
+----+
| Virat | Kohli |
| Vinod | Gupta |
+-----+
```

8) Comparison:-

```
MariaDB [bank]> select Balance from account where balance>600000;
+-----+
| Balance |
+-----+
| 1200511 |
| 790034 |
| 980034 |
+-----+
```

9) Or:-

10) Where Not:-

```
MariaDB [bank] > select * from staff where not position='Clerk';
 ID
                        Position
                                        Branch_id |
  101
        Akash Kharade
                         Manager
  102
        Raj Bamble
                         Manager
        Yash Patil
  103
                         Cashier
  105
        Jayesh Tank
                         Loan Officer
        Pratham Patil
                         Cashier
  106
                                                2
                                                6
  108 |
        Omkar Shetty
                        Manager
```

11) Count :-

12) Average:-

```
MariaDB [bank]> select avg(balance) 'Average Account Balance' from Account;
+-----+
| Average Account Balance |
+-----+
| 524013.2222 |
+-----+
1 row in set (0.003 sec)
```

13) Sum :-

```
MariaDB [bank]> select Sum(balance) 'Total Amount in Banks' from account;
+------+
| Total Amount in Banks |
+-----+
| 4716119 |
+------+
1 row in set (0.000 sec)
```

14) Min Max:-

15) Group by Count :-

16) Union :-

```
MariaDB [bank] > select name from Staff
    -> union select name from client;
 name
  Akash Kharade
  Raj Bamble
  Yash Patil
  Kushagra Chopra
  Jayesh Tank
  Pratham Patil
  Sahil Kumar
  Omkar Shetty
  Rohit
  Ravi
  Virat
  Vinod
  Mahi
  Yuvi
```

17) Inner Join:-

```
MariaDB [bank]> select name, surname, mobile_no, Balance, Opening_date from client inner join account on CID=client_id;
               surname | mobile_no | Balance | Opening_date |
                                                                   2019-09-23
2012-04-13
2001-01-01
2011-11-21
2012-08-02
2010-04-07
2022-01-04
2018-12-30
               Varma
Kohli
Sharma
Sharma
                                1414141414
   Virat
Rohit
Rohit
                                1818181818
                                                      444511
                               2147483647
2147483647
                                                      120000
340440
               Gupta
Dhoni
                               2121212121
2147483647
                                                     1200511
350078
   Mahi
                Singh
Singh
Dhoni
                                1717171717
1717171717
                                                      790034
256000
   Yuvi
   Yuvi
Mahi
                                2147483647
                                                      980034
                                                                    2016-09-01
```

18) Double Inner Joins:-

```
MariaDB [bank]> select name, surname, mobile_no, Balance, Opening_date, Amount, Loan_Date
    -> from client inner join account on cid=client_id inner join loans on aid=account_id;
                                | Balance | Opening_date | Amount | Loan_Date
        | surname | mobile_no
 name
  Yuvi
          Singh
                    1717171717
                                   256000
                                            2018-12-30
                                                            100000
                                                                     2019-09-12
  Mahi
          Dhoni
                    2147483647
                                   350078
                                             2010-04-07
                                                            450000
                                                                     2013-02-21
  Virat
          Kohli
                    1818181818
                                   444511
                                            2012-04-13
                                                            325000
                                                                     2018-03-24
                    2121212121
                                  1200511
                                            2012-08-02
                                                            985000
                                                                     2021-01-01
  Vinod
          Gupta
          Dhoni
                    2147483647
                                   980034
                                            2016-09-01
                                                            682000
                                                                     2017-05-11
  Mahi
 rows in set (0.001 sec)
```

19) Creating View:-

MariaDB [bank]> create view Account_Summary as select name,surname,mobile_no,Balance,Opening_date,Amount,Loan_Date -> from client inner join account on cid=client_id inner join loans on aid=account_id;
Query OK, 0 rows affected (0.009 sec)

MariaDB [bank]> select * from account_summary;

+				·	.	L
name	surname	mobile_no	Balance	Opening_date	Amount	Loan_Date
Yuvi Mahi Virat Vinod Mahi	Singh Dhoni Kohli Gupta Dhoni	17171717 2147483647 1818181818 2121212121 2147483647	256000 350078 444511 1200511 980034	2018-12-30 2010-04-07 2012-04-13 2012-08-02 2016-09-01	450000 325000 985000	2019-09-12 2013-02-21 2018-03-24 2021-01-01 2017-05-11
++				+	+	+

5 rows in set (0.006 sec)

20) Full Join:-

MariaDB [bank]> select	Name,address,Capitalization from bar	ks full join branch	on bkid=bank_id;
Name	address	Capitalization	
KOTAK MAHINDRA BANK STATE BANK OF INDIA	Domvivli East, Maharashtra, India Thane East,Maharashtra, India Kalyan West,Maharashtra, India Badlapur, Maharashtra, India Ratnagiri, Maharashtra, India Karol Bagh,Delhi, India	990 CR 990 CR 892 CR 892 CR 4100 CR	
6 rows in set (0.005 s	+ec)	+	

21) Droping View:-

```
MariaDB [bank] > drop view bb;
Query OK, 0 rows affected (0.001 sec)
```

Loan Account Detailed Result

name	surname	mobile_no	opening_date	balance	loan_date	amount	bname	address
 Mahi	Dhoni	2147483647	 2010-04-07	350078	2013-02-21	450000	KOTAK MAHINDRA BANK	Thane East,Maharashtra, India
Virat	Kohli	1818181818	2012-04-13					Thane East, Maharashtra, India
Mahi	Dhoni	2147483647	2016-09-01	980034	2017-05-11	682000	KOTAK MAHINDRA BANK	Thane East Maharashtra, India
Yuvi	Singh	1717171717	2018-12-30	256000	2019-09-12	100000	STATE BANK OF INDIA	Kalyan West,Maharashtra, India
Vinod	Gupta	2121212121	2012-08-02					Kalyan West Maharashtra, India

