

BANKING MANAGEMENT SYSTEM

Final Project For SQL Module by Shubham Korade

1. Description:

Following database schema is designed to function as a backend storage database for a web application built to manage a Bank.

By storing information in a relational database, all the tasks related to daily functioning of the Bank can be performed easily and much more efficiently. Some of the benefits of using this system to store data over traditional paper registers are as follows:

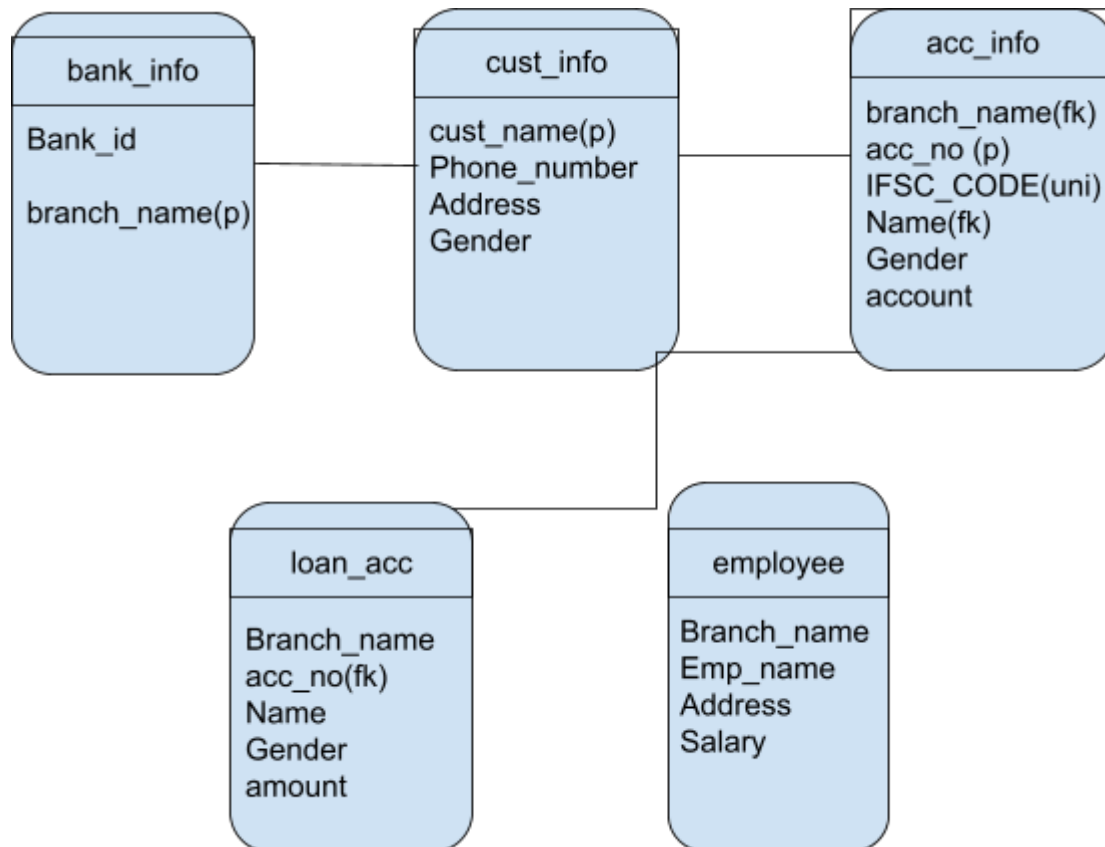
- Updating and modifying Customer Accounts in the Bank is much easier and efficient.
- Maintaining customer details and their account is easy and efficient.
- RDBMS provides many ways to analyse available data, thus helping in making more informed decisions about the Bank Management System.

This database contains 6 tables:

1. Bank_info
2. Cust_info
3. Acc_info
4. Loan_acc
5. employee

How these tables/entities are related to each other is shown pictorially on the next page through ER diagram, i.e., Entity Relationship Diagram.

2. ER-Diagram for Banking Management System:



3. Table Descriptions:

1. bank_info:

Field	Type	Null	Key	Default	Extra
bank_id	varchar(20)	YES	UNI	NULL	
branch_name	varchar(20)	NO	PRI	NULL	

2. cust_info:

Field	Type	Null	Key	Default	Extra
cust_name	char(20)	YES	PRI	NULL	
phone_number	int(20)	YES		NULL	
address	varchar(20)	YES		NULL	
gender	char(1)	YES		NULL	

3. acc_info:

Field	Type	Null	Key	Default	Extra
branch_name	varchar(20)	YES	MUL	NULL	
acc_no	varchar(20)	NO	PRI	NULL	
IFSC_CODE	varchar(20)	YES	UNI	NULL	
name	char(20)	YES		NULL	
gender	char(1)	YES		NULL	
account	char(20)	YES		NULL	

4. loan_acc:

Field	Type	Null	Key	Default	Extra
branch_name	varchar(20)	YES		NULL	
acc_no	varchar(20)	YES	MUL	NULL	
name	char(20)	YES		NULL	
gender	char(1)	YES		NULL	
amount	int(30)	YES		NULL	

5.employee:

Field	Type	Null	Key	Default	Extra
branch_name	varchar(20)	YES		NULL	
emp_name	char(20)	YES		NULL	
address	varchar(20)	YES		NULL	
salary	int(20)	YES		NULL	

4.Commands:

- **Create Database:**
create database bms;
- **Select Database:**
use bms;
- **Create table name bank_info:**
create table bank_info(
bank_id varchar(20)unique key,
branch_name varchar(20)primary key);

- **Create table name cust_info:**

```
create table cust_info(  
  cust_name char(20)primary key,  
  phone_number int(20),  
  address varchar(20),  
  gender char(1));
```

- **Create table name acc_info:**

```
create table acc_info(  
  branch_name varchar(20),  
  acc_no varchar(20)primary key,  
  IFSC_CODE varchar(20)unique key,  
  name char(20),  
  gender char(1),  
  account char(20),  
  constraint acc_info_name_fk foreign key(branch_name)  
  references bank_info(branch_name),  
  constraint acc_cust_name_fk foreign key(name) references  
  cust_info(cust_name));
```

- **Create table name loan_acc:**

```
create table loan_acc(  
  branch_name varchar(20),  
  acc_no varchar(20),  
  name char(20),  
  gender char(1),  
  amount int(30),  
  constraint loan_acc_no_fk foreign key(acc_no) references  
  acc_info(acc_no));
```

- **Create table name employee:**

```
create table employee(  
  branch_name varchar(20),  
  emp_name char(20),  
  address varchar(20),  
  salary int(20));
```

- **Populate “bank_info” table:**

insert into bank_info values

(‘ AN3029’,’Andheri’),
(‘SA2234’,’Sanpada’),
(‘TH4831’,’Thane’),
(‘ va1234’,’Vashi’);

- **Populate “cust_info” table:**

insert into cust_info values

(‘Onkar Thorat’, 9004892091,’Andheri’,’m’),
(‘Kalyani Jadhav’,7021074863,’Sanpada’,’f’),
(‘Pooja Kadan’,9967574730,’Sanpada’,’f’),
(‘Mahesh Rane’,9869328469,’Nerul’,’m’),
(‘Pravin Kharje’,81045646607,’Vashi’,’m’),
(‘Priya Mane’,81088978872,’Thane’,’f’),
(‘Aryan Jadhv’,7208368188,’Vashi’,’m’),
(‘Vedant Barve’,9022711176,’Sanpada’,’m’);

- **Populate “Acc_info” table:**

Insert into acc_info values

(‘Andheri’,’AN9022111’,’DH7021’,’Onkar Thorat’,’m’,’Saving’),
(‘Sanpada’,’SA2375319’,’PA8351’,’Pooja Kadan’,’f’,’Saving’),
(‘Sanpada’,’SA7342722’,’PA5261’,’Kalyani Jadhav’,’f’,’Current’),
(‘Sanpada’,’SA7362476’,’ PA8532’,’Vedant Barve’,’m’,’Current’),
(‘Thane’,’TH9241831’,’NE3562’,’Priya Mane’,’f’,’Saving’),
(‘Vashi’,’VA9022111’,’SH8356’,’Pravin Kharje’,’Saving’),
(‘Vashi’,’VA7343824’,’SH2731’,’Aryan Jadhv’,’Saving’),
(‘Nerul’,’NE2837351’,’RU0263’,’Mahesh Rane’,’Current’);

- **Populate “loan_acc” table:**

insert into loan_acc values

(‘Sanpada’,’SA7342722’,’Kalyani Jadhav’,’f’,500000),
(‘Vashi’,’VA9022111’,’Pravin Kharje’,’m’,40000),
(‘Andheri’,’AN9022111’,’Onkar Thorat’,’m’,250000’)
(‘Sanpada’,’SA7362476’,’Vedant Barve’,’800000’)

- **Populate “employee” table:**

insert into employee values

```
('Vashi','Sagar Pol','Turbhe','40000'),  
( 'Vashi','Nivedita More','Vashi','450000'),  
( 'Vashi','Jayant Mahadik','Juinagar','40000'),  
( 'Vashi','Adarsh Korade','Sanpada','50000'),  
( 'Sanpada','Aditya Solunke','Sanpada','40000'),  
( 'Sanpada','Vaibhav Vaghmare','Vashi','30000'),  
( 'Sanpada','Vikas Kamble','Nerul','40000'),  
( 'Sanpada','Vicky Jain','Turbhe','45000'),  
( 'Thane','Prathmesh Pawar','Koper','45000'),  
( 'Thane','Pratik Chavan','Airoli','50000'),  
( 'Nerul','Komal Mane','Ghansoli','50000'),  
( 'Andheri','Ankur Thorat','Vadala','50000');
```

5. SUB-QUERIES:

display the information above 40000 salary employee:

```
select * from employee where emp_name in (select salary from
employee where salary > 40000);
```

branch_name	emp_name	address	salary
Vashi	Adarsh Korade	Sanpada	50000
Sanpada	Vaibhav Vaghmare	Vashi	30000
Sanpada	Vicky Jain	Turbhe	45000
Thane	Prathmesh Pawar	Koper	45000
Thane	Pratik Chavan	Airoli	50000
Nerul	Komal Mane	Ghansoli	50000
Andheri	Ankur Thorat	Vadala	50000

display the employees whose salary is more than the average salary earned by all employees:

```
select * from employee where salary > (select avg(salary) from
employee);
```

branch_name	emp_name	address	salary
Vashi	Adarsh Korade	Sanpada	50000
Thane	Pratik Chavan	Airoli	50000
Nerul	Komal Mane	Ghansoli	50000
Andheri	Ankur Thorat	Vadala	50000
Vashi	Pratik Patil	Vashi	60000
Thane	Pooja Rajpure	Sanpada	68000

Display the employees who earn the highest salary in each branch_name:

```
select * from employee where (branch_name,salary) in (select
branch_name,max(salary) from employee group by branch_name);
```

```
+-----+-----+-----+-----+
| branch_name | emp_name    | address | salary |
+-----+-----+-----+-----+
| Sanpada    | Vicky Jain  | Turbhe  | 45000 |
| Nerul      | Komal Mane  | Ghansoli | 50000 |
| Andheri    | Ankur Thorat | Vadala  | 50000 |
| Vashi      | Pratik Patil | Vashi   | 60000 |
| Thane      | Pooja Rajpure | Sanpada | 68000 |
+-----+-----+-----+-----+
```

Display the employees in each branch who earn more than the average salary in that branch:

```
select * from employee e1 where salary > (select avg(salary) from
employee e2 where e2.branch_name = e1.branch_name);
```

```
+-----+-----+-----+-----+
| branch_name | emp_name    | address | salary |
+-----+-----+-----+-----+
| Vashi      | Adarsh Korade | Sanpada | 50000 |
| Sanpada    | Aditya Solunke | Sanpada | 40000 |
| Sanpada    | Vikas Kamble  | Nerul   | 40000 |
| Sanpada    | Vicky Jain    | Turbhe  | 45000 |
| Vashi      | Pratik Patil  | Vashi   | 60000 |
| Thane      | Pooja Rajpure | Sanpada | 68000 |
+-----+-----+-----+-----+
```

Display customers who do not have any loan:

```
select * from acc_info where name not in (select emp_name from employee);
```

branch_name	acc_no	IFSC_CODE	name	gender	account
Andheri	AN9022111	DH7021	Onkar Thorat	m	Saving
Sanpada	SA2375319	PA8351	Pooja Kadan	f	Saving
Sanpada	SA7342722	PA5261	Kalyani Jadhav	f	Current
Sanpada	SA7362476	PA8532	Vedant Barve	m	Current
Thane	TH9241831	NE3562	Priya Mane	f	Saving
Vashi	VA9022111	SH8356	Pravin Kharje	m	Saving

Display customers who do not have any account:

```
select * from cust_info where cust_name not in (select distinct name from acc_info);
```

cust_name	phone_number	address	gender
Aryan Jadhv	2147483647	Vashi	m
Mahesh Rane	2147483647	Nerul	m

Display Only above 30000 and less 50000 salary employee

```
select * from employee where salary>30000 and salary<50000;
```

branch_name	emp_name	address	salary
Vashi	Sagar Pol	Turbhe	40000
Vashi	Jayant Mahadik	Juinagar	40000
Sanpada	Aditya Solunke	Sanpada	40000
Sanpada	Vikas Kamble	Nerul	40000
Sanpada	Vicky Jain	Turbhe	45000
Thane	Prathmesh Pawar	Koper	45000

Display the employees who earn the highest salary in each branch_name:

```
select * from employee where (branch_name, salary) in (select  
branch_name, max(salary) from employee group by branch_name);
```

branch_name	emp_name	address	salary
Vashi	Adarsh Korade	Sanpada	50000
Sanpada	Vicky Jain	Turbhe	45000
Thane	Pratik Chavan	Airoli	50000
Nerul	Komal Mane	Ghansoli	50000
Andheri	Ankur Thorat	Vadala	50000

Display the customers count current account and saving accounts :

```
select account, count(account) from acc_info group by account having count(account)>1;
```

account	count(account)
Current	2
Saving	4

Display the customers count male and female accounts :

```
select gender, count(gender) from cust_info group by gender having count(gender)>1;
```

gender	count(gender)
f	3
m	5

Display the salary average:

```
select * from employee e join (select avg(salary) sal from employee) avg_sal on e.salary > avg_sal.sal;
```

branch_name	emp_name	address	salary	sal
Vashi	Adarsh Korade	Sanpada	50000	46769.2308
Thane	Pratik Chavan	Airoli	50000	46769.2308
Nerul	Komal Mane	Ghansoli	50000	46769.2308

Andheri	Ankur Thorat	Vadala	50000	46769.2308	
Vashi	Pratik Patil	Vashi	60000	46769.2308	
Thane	Pooja Rajpure	Sanpada	68000	46769.2308	
+-----+	+-----+	+-----+	+-----+	+-----+	+-----+

Display the employee salary > min salary :

select * from employee where salary > (select min(salary) from employee);

+-----+	+-----+	+-----+	+-----+	+-----+
branch_name	emp_name	address	salary	
+-----+	+-----+	+-----+	+-----+	+-----+
Vashi	Sagar Pol	Turbhe	40000	
Vashi	Jayant Mahadik	Juinagar	40000	
Vashi	Adarsh Korade	Sanpada	50000	
Sanpada	Aditya Solunke	Sanpada	40000	
Sanpada	Vikas Kamble	Nerul	40000	
Sanpada	Vicky Jain	Turbhe	45000	
Thane	Prathmesh Pawar	Koper	45000	
Thane	Pratik Chavan	Airoli	50000	
Nerul	Komal Mane	Ghansoli	50000	
Andheri	Ankur Thorat	Vadala	50000	
Vashi	Pratik Patil	Vashi	60000	
Thane	Pooja Rajpure	Sanpada	68000	
+-----+	+-----+	+-----+	+-----+	+-----+

Display the acc_info table each branch name accounts:

select * from acc_info where (branch_name, acc_no, name, account) in (select branch_name, acc_no, name, account from acc_info group by branch_name);

+-----+	+-----+	+-----+	+-----+	+-----+	+-----+
branch_name	acc_no	IFSC_CODE	name	gender	
account					

Andheri	AN9022111	DH7021	Onkar Thorat	m	Saving
Sanpada	SA2375319	PA8351	Pooja Kadan	f	Saving
Sanpada	SA7342722	PA5261	Kalyani Jadhav	f	Current
Sanpada	SA7362476	PA8532	Vedant Barve	m	Current
Thane	TH9241831	NE3562	Priya Mane	f	Saving
Vashi	VA9022111	SH8356	Pravin Kharje	m	Saving

Display the highest loan_acc in each branch name:

select * from loan_acc where (branch_name, acc_no, name, amount) in
(select branch_name, acc_no, name, amount from loan_acc group by
branch_name);

branch_name	acc_no	name	gender	amount
Sanpada	SA7342722	Kalyani Jadhav	f	500000
Vashi	VA9022111	Pravin Kharje	m	40000
Nerul	AN9022111	Onkar Thorat	m	2500000
Sanpada	SA7362476	Vedant Barve	m	800000

6. JOINS:

Display cust_info.cust_name inner join acc_info.name

```
select * from cust_info inner join acc_info on cust_info.cust_name =  
acc_info.name;
```

cust_name	phone_number	address	gender	branch_name	acc_no	IFSC_CODE	name	gender	account
Onkar Thorat	2147483647	Andheri	m	Andheri	AN9022111	DH7021	Onkar Thorat	m	Saving
Pooja Kadan	2147483647	Sanpada	f	Sanpada	SA2375319	PA8351	Pooja Kadan	f	Saving
Kalyani Jadhav	2147483647	Sanpada	f	Sanpada	SA7342722	PA5261	Kalyani Jadhav	f	Current
Vedant Barve	2147483647	Sanpada	m	Sanpada	SA7362476	PA8532	Vedant Barve	m	Current
Priya Mane	2147483647	Thane	f	Thane	TH9241831	NE3562	Priya Mane	f	Saving
Pravin Kharje	2147483647	Vashi	m	Vashi	VA9022111	SH8356	Pravin Kharje	m	Saving

Display acc_info Left Join loan_acc

```
select * from acc_info left join loan_acc on
acc_info.acc_no=loan_acc.acc_no;
```

```
+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+
| branch_name| acc_no| IFSC_CODE | name | gender | account |
branch_name | acc_no| name| gender|amount|
+-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+
| Sanpada    | SA7342722 | PA5261    | Kalyani Jadhav | f    | Current |
Sanpada     | SA7342722 | Kalyani Jadhav | f    | 500000 |
| Vashi      | VA9022111 | SH8356    | Pravin Kharje  | m    | Saving  |
Vashi       | VA9022111 | Pravin Kharje  | m    | 40000  |
| Andheri    | AN9022111 | DH7021    | Onkar Thorat   | m    | Saving  |
Nerul       | AN9022111 | Onkar Thorat   | m    | 2500000 |
| Sanpada    | SA7362476 | PA8532    | Vedant Barve   | m    | Current |
Sanpada     | SA7362476 | Vedant Barve   | m    | 800000 |
| Sanpada    | SA2375319 | PA8351    | Pooja Kadan    | f    | Saving  |
NULL        | NULL      | NULL        | NULL           | NULL |
| Thane      | TH9241831 | NE3562    | Priya Mane     | f    | Saving  |
NULL        | NULL      | NULL        | NULL           | NULL |
+-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+

```

Display acc_info right join loan_acc

```
select * from acc_info right join loan_acc on
acc_info.acc_no=loan_acc.acc_no;
```

```
+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+
| branch_name | acc_no  | IFSC_CODE | name          | gender |
account | branch_name | acc_no  | name          | gender | amount |
|
+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+

```


Sanpada	SA7342722	PA5261	Kalyani Jadhav	f	
Current	Sanpada	SA7342722	Kalyani Jadhav	f	500000
Vashi	VA9022111	SH8356	Pravin Kharje	m	
Saving	Vashi	VA9022111	Pravin Kharje	m	40000
Andheri	AN9022111	DH7021	Onkar Thorat	m	
Saving	Nerul	AN9022111	Onkar Thorat	m	2500000
Sanpada	SA7362476	PA8532	Vedant Barve	m	
Current	Sanpada	SA7362476	Vedant Barve	m	800000

Display the branch name and employee name they belong to:

branch_name	emp_name
Vashi	Sagar Pol
Vashi	Jayant Mahadik
Vashi	Adarsh Korade
Sanpada	Aditya Solunke
Sanpada	Vaibhav Vaghmare
Sanpada	Vikas Kamble
Sanpada	Vicky Jain
Thane	Prathmesh Pawar
Thane	Pratik Chavan
Nerul	Komal Mane
Andheri	Ankur Thorat
Vashi	Pratik Patil
Thane	Pooja Rajpure