PROGRAM 2: BANKING ENTERPRISE DATABASE

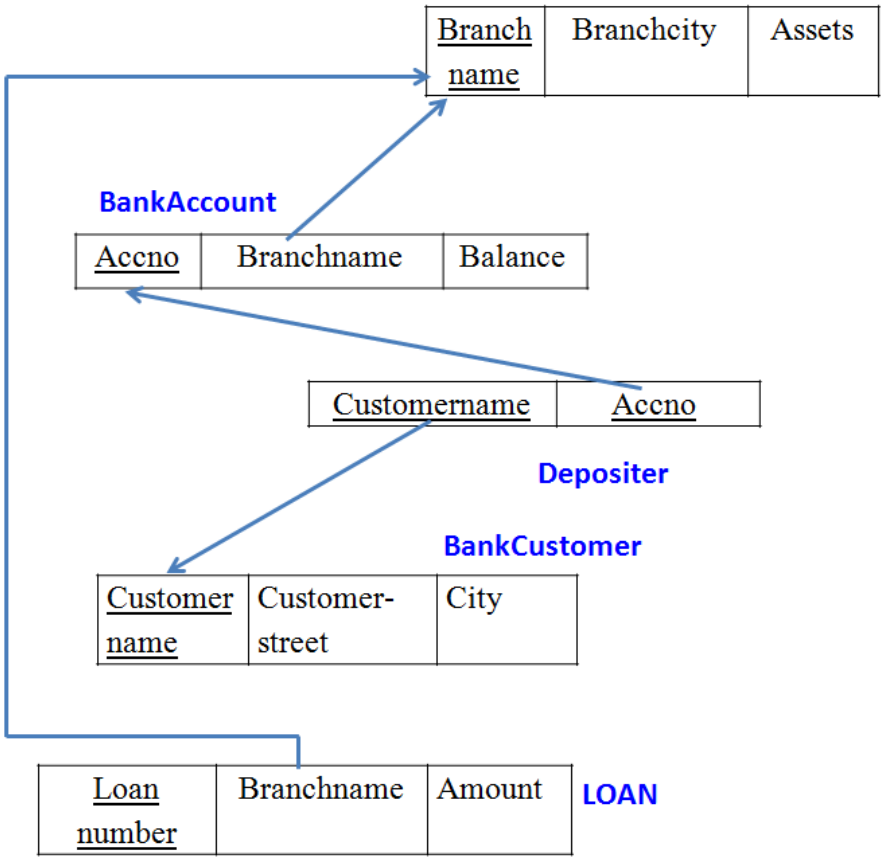
Consider the following database for a banking enterprise.

Branch (branch-name: String, branch-city: String, assets: real)
BankAccount(accno: int, branch-name: String, balance: real)
BankCustomer (customer-name: String, customer-street: String, customer-city: String)
Depositer(customer-name: String, accno: int)
Loan (loan-number: int, branch-name: String, amount: real)

i. Create the above tables by properly specifying the primary keys and the foreign keys.
ii. Enter at least five tuples for each relation.
iii. Find all the customers who have at least two accounts at the *Main* branch (ex. SBI_ResidencyRoad).
iv. Find all the customers who have an account at *all* the branches located in a specific city (Ex. Delhi).
v. Demonstrate how you delete all account tuples at every branch located in a specific city (Ex. Bombay).

INTRODUCTION: This database is developed for supporting banking facilities. Details of the branch along with the accounts and loans handled by them are recorded. Also details of the depositors of the corresponding branches are maintained.

Schema Diagram



i. Create the above tables by properly specifying the primary keys and the foreign keys.

create database Lab2;
use Lab2;

create table Branch(branch_name varchar(30),branch_city varchar(30),assests real, primary key(branch_name));
desc Branch;

	Field	Type	Null	Key	Default	Extra
▶	branch_name	varchar(30)	NO	PRI	NULL	
	branch_city	varchar(30)	YES		NULL	
	assests	double	YES		NULL	

create table BankCustomer(customer_name varchar(30),customer_street varchar(30),customer_city varchar(30), primary key(customer_name));
desc BankCustomer;

	Field	Type	Null	Key	Default	Extra
▶	customer_name	varchar(30)	NO	PRI	NULL	
	customer_street	varchar(30)	YES		NULL	
	customer_city	varchar(30)	YES		NULL	

```
create table BankAccount(
accno int,
branch_name varchar(20),
balance real,
primary key(accno),
foreign key(branch_name) references Branch(branch_name)
);
desc BankAccount;
```

	Field	Type	Null	Key	Default	Extra
▶	accno	int	NO	PRI	NULL	
	branch_name	varchar(20)	YES	MUL	NULL	
	balance	double	YES		NULL	

```
create table Depositer(
customer_name varchar(20),
accno int,
primary key(customer_name,accno),
foreign key(customer_name) references BankCustomer(customer_name),
foreign key(accno) references BankAccount(accno)
);
desc Depositer;
```

	Field	Type	Null	Key	Default	Extra
▶	customer_name	varchar(20)	NO	PRI	NULL	
	accno	int	NO	PRI	NULL	

```
create table Loan(
loan_number int,
branch_name varchar(20),
Amount real,
primary key(loan_number),
foreign key(branch_name) references Branch(branch_name)
);
desc Loan;
```

Field	Type	Null	Key	Default	Extra
loan_number	int	NO	PRI	NULL	
branch_name	varchar(20)	YES	MUL	NULL	
Amount	double	YES		NULL	

ii. Enter at least five tuples for each relation.

```
insert into Branch values('SBI_Chamrajpet','Bangalore',50000);
insert into Branch values('SBI_ResidencyRoad','Bangalore',10000);
insert into Branch values('SBI_ShivajiRoad','Bombay',20000);
insert into Branch values('SBI_ParlimentRoad','Delhi',10000);
insert into Branch values('SBI_Jantarmantar','Delhi',20000);
select *from Branch;
```

branch_name	branch_city	assests
SBI_Chamrajpet	Bangalore	50000
SBI_Jantarmantar	Delhi	20000
SBI_ParlimentRoad	Delhi	10000
SBI_ResidencyRoad	Bangalore	10000
SBI_ShivajiRoad	Bombay	20000
NULL	NULL	NULL

```
insert into Loan values(2,'SBI_ResidencyRoad',2000);
insert into Loan values(1,'SBI_Chamrajpet',1000);
insert into Loan values(3,'SBI_ShivajiRoad',3000);
insert into Loan values(4,'SBI_ParlimentRoad',4000);
insert into Loan values(5,'SBI_Jantarmantar',3000);
select *from Loan;
```

loan_number	branch_name	Amount
1	SBI_Chamrajpet	10000
2	SBI_ResidencyRoad	20000
3	SBI_ShivajiRoad	30000
4	SBI_ParlimentRoad	40000
5	SBI_Jantarmantar	30000
NULL	NULL	NULL

```
insert into BankAccount values(1,'SBI_Chamrajpet',2000);
insert into BankAccount values(2,'SBI_ResidencyRoad',5000);
insert into BankAccount values(3,'SBI_ShivajiRoad',6000);
insert into BankAccount values(4,'SBI_ParlimentRoad',9000);
insert into BankAccount values(5,'SBI_Jantarmantar',8000);
insert into BankAccount values(6, 'SBI_ShivajiRoad', 4000);
```

```
insert into BankAccount values(8, 'SBI_ResidencyRoad', 4000);
insert into BankAccount values(9, 'SBI_ParlimentRoad', 3000);
insert into BankAccount values(10, 'SBI_ResidencyRoad', 5000);
insert into BankAccount values(11, 'SBI_Jantarmantar', 2000);
select *from BankAccount;
```

accno	branch_name	balance
1	SBI_Chamrajpet	2000
2	SBI_ResidencyRoad	5000
3	SBI_ShivajiRoad	6000
4	SBI_ParlimentRoad	9000
5	SBI_Jantarmantar	8000
6	SBI_ShivajiRoad	4000
8	SBI_ResidencyRoad	4000
9	SBI_ParlimentRoad	3000
10	SBI_ResidencyRoad	5000
11	SBI_Jantarmantar	2000
NULL	NULL	NULL

```
insert into BankCustomer values ('Avinash', 'Bull_Temple_Road', 'Bangalore');
insert into BankCustomer values ('Dinesh', 'Bannergatta_Road', 'Bangalore');
insert into BankCustomer values ('Mohan', 'National_College_Road', 'Bangalore');
insert into BankCustomer values ('Nikhil', 'Akbar_Road', 'Delhi');
insert into BankCustomer values ('Ravi', 'Prithviraj_Road', 'Delhi');
select *from BankCustomer;
```

customer_name	customer_street	customer_city
Avinash	Bull_Temple_Road	Bangalore
Dinesh	Bannergatta_Road	Bangalore
Mohan	National_College_Road	Bangalore
Nikhil	Akbar_Road	Delhi
Ravi	Prithviraj_Road	Delhi
NULL	NULL	NULL

```
insert into Depositer values('Avinash', 1);
insert into Depositer values('Dinesh', 2);
insert into Depositer values('Nikhil', 4);
insert into Depositer values('Ravi', 5);
insert into Depositer values('Avinash', 8);
insert into Depositer values('Nikhil', 9);
insert into Depositer values('Dinesh', 10);
insert into Depositer values('Nikhil', 11);
select *from Depositer;
```

	customer_name	accno
▶	Avinash	1
	Dinesh	2
	Nikhil	4
	Ravi	5
	Avinash	8
	Nikhil	9
	Dinesh	10
	Nikhil	11
*	NULL	NULL

iii. Find all the customers who have at least two accounts at the *Main* branch (ex. SBI_ResidencyRoad).

```
select c.customer_name
from BankCustomer c
where exists(
select d.customer_name
from Depositer d, BankAccount ba
where
d.accno=ba.accno and
c.customer_name=d.customer_name and
ba.branch_name='SBI_ResidencyRoad'
group by d.customer_name
having count(d.customer_name)>=2
);
```

	customer_name
▶	Dinesh
*	NULL

iv. Find all the customers who have an account at *all* the branches located in a specific city (Ex. Delhi).

```
select distinct d.customer_name from Depositer d where exists( select * from BankAccount ba
where ba.accno=d.accno and exists (select * from Branch b where b.branch_name =
ba.branch_name and b.branch_city='Delhi'));
```

	customer_name
▶	Ravi
	Nikhil

v. Demonstrate how you delete all account tuples at every branch located in a specific city (Ex. Bombay).

delete from BankAccount where branch_name in (select branch_name from branch where branch_city = 'Bombay');
select *from BankAccount;

accno	branch_name	balance
1	SBI_Chamrajpet	2000
2	SBI_ResidencyRoad	5000
4	SBI_ParlimentRoad	9000
5	SBI_Jantarmantar	8000
8	SBI_ResidencyRoad	4000
9	SBI_ParlimentRoad	3000
10	SBI_ResidencyRoad	5000
11	SBI_Jantarmantar	2000
NULL	NULL	NULL