Account-schema = (account_no, branch_name, balance)

account_number	*branch_name*	*balance*
A-101	Downtown	500
A-215	Mianus	700
A-102	Perryridge	400
A-305	Round Hill	350
A-201	Brighton	900
A-222	Redwood	700
A-217	Brighton	750

2.2 The *account* relation with unordered tuples.

Branch-schema = (branch_name, branch_city, assests)

branch_name	*branch_city*	*assets*
Brighton	Brooklyn	7100000
Downtown	Brooklyn	9000000
Mianus	Horseneck	400000
North Town	Rye	3700000
Perryridge	Horseneck	1700000
Pownal	Bennington	300000
Redwood	Palo Alto	2100000
Round Hill	Horseneck	8000000

Figure 2.3 The *branch* relation.

Customer-schema = (customer_name, customer_street, customer_city)

customer_name	*customer_street*	*customer_city*
Adams	Spring	Pittsfield
Brooks	Senator	Brooklyn
Curry	North	Rye
Glenn	Sand Hill	Woodside
Green	Walnut	Stamford
Hayes	Main	Harrison
Johnson	Alma	Palo Alto
Jones	Main	Harrison
Lindsay	Park	Pittsfield
Smith	North	Rye
Turner	Putnam	Stamford
Williams	Nassau	Princeton

Figure 2.4 The *customer* relation.

Loan-schema = (loan_no, branch_name, amount)

loan_number	*branch_name*	*amount*
L-11	Round Hill	900
L-14	Downtown	1500
L-15	Perryridge	1500
L-16	Perryridge	1300
L-17	Downtown	1000
L-23	Redwood	2000
L-93	Mianus	500

Figure 2.6 The *loan* relation.

Depositor-schema = (customer_name, account_no)

customer_name	*account_number*
Hayes	A-102
Johnson	A-101
Johnson	A-201
Jones	A-217
Lindsay	A-222
Smith	A-215
Turner	A-305

Figure 2.5 The *depositor* relation.

Borrower-schema = (customer_name, loan_no)

customer_name	*loan_number*
Adams	L-16
Curry	L-93
Hayes	L-15
Jackson	L-14
Jones	L-17
Smith	L-11
Smith	L-23
Williams	L-17

Figure 2.7 The *borrower* relation.

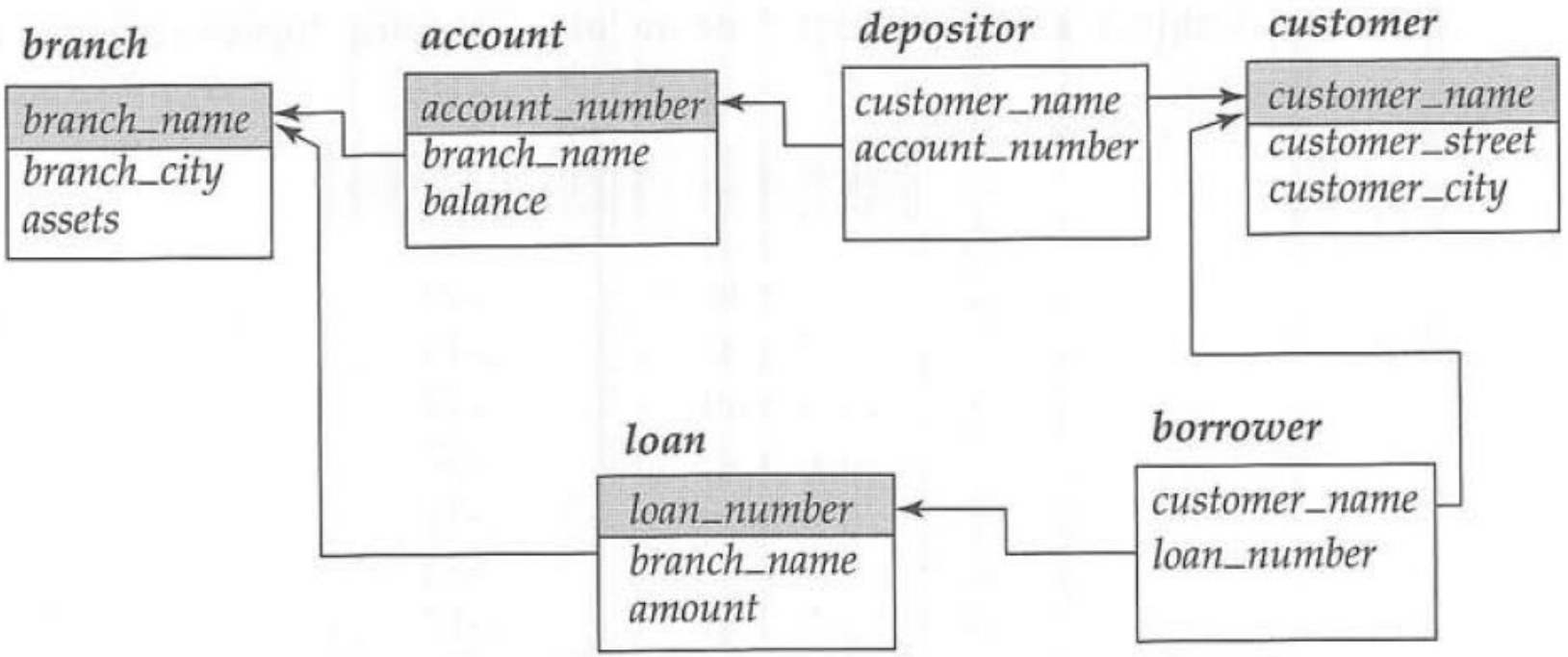

Figure 2.8 Schema diagram for the banking enterprise.

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

BRANCH_NAME

Round Hill

Downtown

Perryridge

Perryridge

Downtown

Redwood

Mianus

2. Find the names of all branches in the loan relation. The output relation does not have any duplicates.

BRANCH_NAME

Downtown

Mianus

Perryridge

Round Hill

Redwood

3. Find the names of all branches in the loan relation. The output relation does have duplicates explicitly.

LOAN_NUMBER	BRANCH_NAME	AMOUNT
L-11	Round Hill	900
L-14	Downtown	1500
L-15	Perryridge	1500
L-16	Perryridge	1300
L-17	Downtown	1000
L-23	Redwood	2000
L-93	Mianus	500

4. Find all loan numbers for loans made at the Perryridge branch with loan amounts greater than $1200.

```
LOAN_NUMBER
--------------------
L-15
L-16
```

5. Find all loan numbers of those loans with loan amounts between $500 and $1000.

```
LOAN_NUMBER
--------------------
L-11
L-17
L-93
```

6. For all customer who have a loan from the bank, find their names, loan numbers and loan amount.

```
CUSTOMER_NAME       LOAN_NUMBER          AMOUNT
-------------------- -------------------- ----------
Adams                L-16                 1300
Curry                L-93                 500
Hayes                L-15                 1500
Jackson              L-14                 1500
Jones                L-17                 1000
Smith                L-11                 900
Smith                L-23                 2000
Williams             L-17                 1000
```

7. For all customer who have a loan at Perryridge branch, find their names, loan numbers and loan amount.

CUSTOMER_NAME	LOAN_NUMBER	AMOUNT
Adams	L-16	1300
Hayes	L-15	1500

8. Attribute borrower.loan_no is renamed as loan_id.

CUSTOMER_NAME	LOAN_ID	AMOUNT
Adams	L-16	1300
Curry	L-93	500
Hayes	L-15	1500
Jackson	L-14	1500
Jones	L-17	1000
Smith	L-11	900
Smith	L-23	2000
Williams	L-17	1000

9. Relations and attribute are renamed.

CUSTOMER_NAME	LOAN_ID	AMOUNT
Adams	L-16	1300
Curry	L-93	500
Hayes	L-15	1500
Jackson	L-14	1500
Jones	L-17	1000
Smith	L-11	900
Smith	L-23	2000
Williams	L-17	1000