3.8

branch(branch_name, branch_city, assets)
customer (customer_name, customer_street, customer_city)
loan (loan_number, branch_name, amount)
borrower (customer_name, loan_number)
account (account_number, branch_name, balance )
depositor (customer_name, account_number)

Figure 3.1  Banking database for Exercises 3.8 and 3.15.

Consider the bank database of Figure 3.19, where the primary keys are underlined. Construct the following SQL queries for this relational database.

   a. Find all customers of the bank who have an account but not a loan.
   b. Find the names of all customers who live on the same street and in the same city as “Smith”.
   c. Find the names of all branches with customers who have an account in the bank and who live in “Harrison”.

3.9

employee (employee_name, street, city)
works (employee_name, company_name, salary)
company (company_name, city)
manages (employee_name, manager_name)

Figure 3.20. Employee database.

(Please note that: the above figure is for problem 3.9 and 3.16)
Consider the employee database of Figure ??, where the primary keys are underlined. Give an expression in SQL for each of the following queries.

a. Find the names and cities of residence of all employees who work for First Bank Corporation.

b. Find the names, street addresses, and cities of residence of all employees who work for First Bank Corporation and earn more than $10,000.

c. Find all employees in the database who do not work for First Bank Corporation.

d. Find all employees in the database who earn more than each employee of Small Bank Corporation.

e. Assume that the companies may be located in several cities. Find all companies located in every city in which Small Bank Corporation is located.

f. Find the company that has the most employees.

g. Find those companies whose employees earn a higher salary, on average, than the average salary at First Bank Corporation.
3.15 Consider the bank database of Figure 3.19, where the primary keys are underlined. Construct the following SQL queries for this relational database.

a. Find all customers who have an account at all the branches located in “Brooklyn”.

b. Find out the total sum of all loan amounts in the bank.

c. Find the names of all branches that have assets greater than those of at least one branch located in “Brooklyn”.

3.16 Consider the employee database of Figure 3.20, where the primary keys are underlined. Give an expression in SQL for each of the following queries.

a. Find the names of all employees who work for First Bank Corporation.

b. Find all employees in the database who live in the same cities as the companies for which they work.

c. Find all employees in the database who live in the same cities and on the same streets as do their managers.

d. Find all employees who earn more than the average salary of all employees of their company.

e. Find the company that has the smallest payroll.