REM Tara Walton - tara1984 - Assn 3, q1

REM Give an SQL schema definition for the employee database of Figure 3.20.

REM Choose an appropriate domain for each attribute and an appropriate primary key for each relation schema.

REM [30 points] Exercise 3.20 page 110. Include foreign key constraints where needed. Notice that the relation manages is recursive between employee and employee (similar to the relations prereq and course in the university database.) Also notice that both employee\_name and manager\_name are foreign keys in the relation manages referencing the relation employee. Be careful about the order you create the tables.

create table employee (

employee\_name varchar(20) primary key,

street varchar(20),

city varchar(15));

create table company (

company\_name varchar(30) primary key,

city varchar(15));

create table works (

employee\_name varchar(20) primary key,

company\_name varchar(30),

salary numeric(8, 2),

foreign key (employee\_name) references employee,

foreign key (company\_name) references company);

create table manages (

employee\_name varchar(20) primary key,

manager\_name varchar(20),

foreign key (employee\_name) references works,

foreign key (employee\_name) references employee,

foreign key (manager\_name) references employee);

REM Tara Walton - tara1984 - Assn 3, q2

REM [20 points] Populate the tables you created for the previous question with data.

REM Be careful about the order you populate the tables with data.

REM INSERT INTO (table) (att1, att2, att3)

REM VALUES('att1', 'att2', 'att3');

REM EMPLOYEE TABLE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

insert into employee (employee\_name, street, city)

values ('Tara Walton', '803 National Ave', 'Springfield');

insert into employee (employee\_name, street, city)

values ('Matthew Addler', '14436 National Ave', 'Springfield');

insert into employee (employee\_name, street, city)

values ('Brent Eaves', '123 Republic Rd', 'Nixa');

insert into employee (employee\_name, street, city)

values ('Brad Light', '4567 North St', 'Springfield');

insert into employee (employee\_name, street, city)

values ('Jordan Hadden', '1000 Main St', 'Ozark');

insert into employee (employee\_name, street, city)

values ('Keith Cissell', '9876 Main St', 'Ozark');

insert into employee (employee\_name, street, city)

values ('Lauren Hoehne', '123 Ballet Rd', 'Springfield');

insert into employee (employee\_name, street, city)

values ('Steven Senger', '1010 National Ave', 'Springfield');

REM COMPANY TABLE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

insert into company (company\_name, city)

values ('MSU CSC', 'Springfield');

insert into company (company\_name, city)

values ('Walmart', 'Nixa');

insert into company (company\_name, city)

values ('First Bank Corporation', 'Springfield');

REM WORKS TABLE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

insert into works (employee\_name, company\_name, salary)

values ('Tara Walton', 'MSU CSC', 28000.00);

insert into works (employee\_name, company\_name, salary)

values ('Matthew Addler', 'Walmart', 30000.00);

insert into works (employee\_name, company\_name, salary)

values('Brent Eaves', 'First Bank Corporation', 52000.00);

insert into works (employee\_name, company\_name, salary)

values ('Brad Light', 'Walmart', 20500.50);

insert into works (employee\_name, company\_name, salary)

values ('Jordan Hadden', 'MSU CSC', 18500.00);

insert into works (employee\_name, company\_name, salary)

values ('Keith Cissell', 'First Bank Corporation', 40500.00);

insert into works (employee\_name, company\_name, salary)

values ('Lauren Hoehne', 'Walmart', 25250.00);

insert into works (employee\_name, company\_name, salary)

values ('Steven Senger', 'MSU CSC', 30000.00);

REM MANAGES TABLE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

insert into manages (employee\_name, manager\_name)

values ('Tara Walton', 'Steven Senger');

insert into manages (employee\_name, manager\_name)

values ('Jordan Hadden', 'Steven Senger');

insert into manages (employee\_name, manager\_name)

values ('Keith Cissell', 'Brent Eaves');

insert into manages (employee\_name, manager\_name)

values ('Lauren Hoehne', 'Matthew Addler');

insert into manages (employee\_name, manager\_name)

values ('Brad Light', 'Matthew Addler');

REM Tara Walton - tara1984 - Assn 3, q3

REM [50 points] Exercise 3.16 page 109.

REM 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.

REM \*\*\*\* a. Find the names of all employees who work for “First Bank Corporation”.

select employee\_name

from works

where company\_name = 'First Bank Corporation';

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

select employee.employee\_name

from employee, works, company

where company.city = employee.city

and employee.employee\_name = works.employee\_name

and company.company\_name = works.company\_name;

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

create table temp (

name varchar(20),

street varchar(20),

city varchar (15));

insert into temp

select distinct manager\_name, street, city

from manages, employee E

where E.employee\_name = manager\_name;

select employee\_name

from employee, temp

where employee.street like '%temp.street%'

and employee.city = temp.city;

drop table temp;

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

select employee\_name, salary

from works W

group by company\_name

having salary > (select avg(salary)

from works S);

REM \*\*\*\* e. Find the company that has the smallest payroll.

select company\_name

from works

group by company\_name

having sum(salary) <= all(select sum(salary)

from works

group by company\_name);