Database Management System (DBMS)

Lecture-29

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Exercise

Consider the employee database of the previous questions. Give an expression in SQL for each of the following queries.

1. Modify the database so that Jones now lives in Newtown.
2. Give all employees of First Bank Corporation a 10 percent raise.
3. Give all managers of First Bank Corporation a 10 percent raise.
4. Give all managers of First Bank Corporation a 10 percent raise unless the salary becomes greater than $100,000; in such cases, give only a 3 percent raise.
5. Delete all tuples in the works relation for employees of Small Bank Corporation.

Solution

1. update employee
set city = 'Newton'
where person-name = 'Jones'

2. update works
set salary = salary * 1.1
where company-name = 'First Bank Corporation'

3. update works
set salary = salary * 1.1
where employee-name in (select manager-name from manages)
and company-name = 'First Bank Corporation'

SQL

4. update works

set salary = salary * 1.03

where employee-name in (select manager-name from manages)

and salary * 1.1 > 100000

and company-name = 'First Bank Corporation'

update works

set salary = salary * 1.1

where employee-name in (select manager-name from manages)

and salary * 1.1 <= 100000

and company-name = 'First Bank Corporation'

5. delete works

where company-name = 'Small Bank Corporation'

Exercise

Consider the following employee database:-

person (driver-id, name, address)
car (license, model, year)
accident (report-number, date, location)
owns (driver-id, license)
participated (driver-id, license, report-number, damage-amount)

Where the primary keys are underlined. Construct the following SQL queries for this relational database.

SQL

1. Find the total number of people who owned cars that were involved in accidents in 1989.
2. Find the number of accidents in which the cars belonging to "John Smith" were involved.
3. Add a new accident to the database; assume any values for required attributes.
4. Delete the Mazda belonging to "John Smith".
5. Update the damage amount for the car with license number "AABB2000" in the accident with report number "AR2197" to $3000.

Solution

1. select count (distinct name)
from accident, participated, person
where accident.report-number = participated.report-number
and participated.driver-id = person.driver-id
and date between date '1989-00-00' and date '1989-12-31'

2. select count (distinct *)
from accident
where exists (select *
from participated, person
where participated.driver-id = person.driver-id
and person.name = 'John Smith'
and accident.report-number = participated.report-number)

SQL

3. We assume the driver was "Jones," although it could be someone else. Also, we assume "Jones" owns one Toyota. First we must find the license of the given car. Then the participated and accident relations must be updated in order to both record the accident and tie it to the given car. We assume values "Berkeley" for location, '2001-09-01' for date and date, 4007 for reportnumber and 3000 for damage amount.

insert into accident
values (4007, '2001-09-01', 'Berkeley')
insert into participated
select o.driver-id, c.license, 4007, 3000
from person p, owns o, car c
where p.name = 'Jones' and p.driver-id = o.driver-id and
o.license = c.license and c.model = 'Toyota'

SQL

4. delete car
where model = 'Mazda' and license in
(select license
from person p, owns o
where p.name = 'John Smith'
and p.driver-id = o.driver-id)

5. update participated
set damage-amount = 3000
where report-number = "AR2197" and driver-id in
(select driver-id
from owns
where license = "AABB2000")