SQL Examples and Exercises

Delete project 7 from the works\_on table.

List each project name and the number of employees who work on it as well as the number of hours total spent on it.

select p.pname, count(w.essn), sum(w.hours)

from (PROJECT p left outer join WORKS\_ON w on p.PNumber = w.PNumber)

group by p.Pnumber;

List the total number of employees.

select count(\*) from EMPLOYEE;

Find the employees who have no dependents.

select ssn from EMPLOYEE

where ssn not in (select essn from DEPENDENT);

Find the employees who have no supervisors.

select ssn from EMPLOYEE where SupervisorSSN is null;

List each department name and the amount of money it spends on salaries.

select d.DName, sum(e.salary)

from DEPARTMENT d, EMPLOYEE e

where d.DNumber = e.DNumber

group by d.DNumber;

Find the total number of supervisors (employees who supervise someone).

select count(\*) from EMPLOYEE

where ssn in (select distinct SupervisorSSN from EMPLOYEE);

List each employee and the total number of hours each employee spends working on projects.

select e.ssn, sum(w.hours)

from (EMPLOYEE e left outer join WORKS\_ON w on e.ssn = w.essn)

group by e.ssn;

What is the maximum total number of hours spent working on projects by any employee?

select max(b.t\_hours) from

(select e.ssn, sum(w.hours) as t\_hours

from (EMPLOYEE e left outer join WORKS\_ON w on e.ssn = w.essn)

group by e.ssn) as b;

List each department number, name, manager's last name and the amount spent on salaries, sorted with the department that spends the least at the top.

select d.DNumber, d.dname, e1.lname, sum(e2.salary) as budget

from (DEPARTMENT d left outer join EMPLOYEE e2 on d.DNumber = e2.DNumber)

join EMPLOYEE e1 on d.MgrSSN = e1.SSN

group by d.DNumber

order by budget asc;

Produce a list of all employee's last names and the count of their dependents, sorted by the number of dependents, from most to least.

select e1.lname, count(d.essn) as kids

from (DEPENDENT d right outer join EMPLOYEE e1 on d.essn = e1.ssn)

group by e1.ssn

order by kids desc;

For all employees who have a dependent whose name begins with 'M', list the employee last name, dependent name, and the age difference between them in years. (consult W3 schools for SQL date functions in mySQL)

select e.lname, d.name as field2, datediff(d.bdate, e.bdate)/365

from EMPLOYEE e join DEPENDENT d on e.ssn = d.essn

where d.name like 'M%';

List the department name, department manager's name, and number of locations, for departments who have more than 2 locations.

select d.DNumber, d.dname, e1.lname, count(dl.dnumber) as locs

from (DEPARTMENT d left outer join DEPT\_LOCATION dl on d.DNumber = dl.DNumber)

join EMPLOYEE e1 on d.MgrSSN = e1.SSN

group by d.DNumber

having locs > 2;

For supervisors who have no male employees working for them, find the SSN and the total number of employees working for them.

select e.ssn, count(e2.ssn)

from EMPLOYEE e join EMPLOYEE e2 on e.ssn = e2.SupervisorSSN

where not exists (select e3.ssn from EMPLOYEE e3 where e3.SupervisorSSN = e.ssn and e3.gender = 'M')

group by e.ssn;

Find the last name and salary of the employee(s) who earn the maximum salary.

select e.lname, salary from EMPLOYEE e

where e.salary =

(select max(salary) from EMPLOYEE);

Challenge:

Find the last name of the employee(s) who work the maximum total number of hours spent working on projects by any employee?

select b.t\_name, b.t\_ssn, t\_hours

from

(select e.lname as t\_name, e.ssn as t\_ssn, sum(w.hours) as t\_hours

from (EMPLOYEE e left outer join WORKS\_ON w on e.ssn = w.essn)

group by e.ssn) as b

where t\_hours in (select max(t\_hours)

from (select e.ssn, sum(w.hours) as t\_hours

from EMPLOYEE e, WORKS\_ON w where e.ssn = w.essn

group by e.ssn) as c);