**Company Database Schema**

Here is the schema of a company database, please implement it on any RDBMS you like and then try to create the following requests (queries): "create only the dependent table with all data and relations"

**Employee**:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Fname** | **Lname** | **SSN** | **BDATE** | **Addresss** | **Sex** | **Salary** | **Superssn** | **Dno** |
| Ahmed | Ali | 112233 | 1/1/1965 | 15 Ali fahmy St.Giza | M | 1300 | 223344 | 10 |
| Kamel | Mohamed | 223344 | 15/10/1970 | 38 Mohy el dien abo el Ezz St.Cairo | M | 1800 | 321654 | 10 |
| Hanaa | Sobhy | 123456 | 18/3/1973 | 38 Abdel Khalik Tharwat St. Downtown.Cairo | F | 800 | 223344 | 10 |
| Amr | Omran | 321654 | 14/9/1963 | 44 Hilopolis.Cairo | M | 2500 | Null | null |
| Noha | Mohamed | 968574 | 1/2/1975 | 55 Orabi St. El Mohandiseen .Cairo | F | 1600 | 321654 | 20 |
| Edward | Hanna | 512463 | 19/8/1972 | 18 Abaas El 3akaad St. Nasr City.Cairo | M | 1500 | 321654 | 30 |
| Mariam | Adel | 669955 | 12/6/1982 | 269 El-Haram st. Giza | F | 750 | 512463 | 20 |
| Maged | Raoof | 521634 | 6/4/1980 | 18 Kholosi st.Shobra.Cairo | M | 1000 | 968574 | 30 |

**Department**

|  |  |  |  |
| --- | --- | --- | --- |
| **Dname** | **DNum** | **MGRSSN** | **MGRStart Date** |
| DP1 | 10 | 223344 | 1/1/2005 |
| DP2 | 20 | 968574 | 1/3/2006 |
| DP3 | 30 | 512463 | 1/6/2006 |

**Works\_for**

|  |  |  |
| --- | --- | --- |
| **ESSN** | **Pno** | **Hours** |
| 223344 | 100 | 10 |
| 223344 | 200 | 10 |
| 223344 | 300 | 10 |
| 112233 | 100 | 40 |
| 968574 | 400 | 15 |
| 968574 | 700 | 15 |
| 968574 | 300 | 10 |
| 669955 | 400 | 20 |
| 223344 | 500 | 10 |
| 669955 | 700 | 7 |
| 669955 | 300 | 10 |
| 512463 | 500 | 10 |
| 512463 | 600 | 25 |
| 521634 | 500 | 10 |
| 521634 | 600 | 20 |
| 521634 | 300 | 6 |
| 521634 | 400 | 4 |

**Project**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pname** | **Pnumber** | **Plocation** | **City** | **Dnum** |
| AL Solimaniah | 100 | Cairo\_Alex Road | Alex | 10 |
| Al Rabwah | 200 | 6th of October City | Giza | 10 |
| Al Rawdah | 300 | Zaied City | Giza | 10 |
| Al Rowad | 400 | Cairo\_Faiyom Road | Giza | 20 |
| Al Rehab | 500 | Nasr City | Cairo | 30 |
| Pitcho American | 600 | Maady | Cairo | 30 |
| Ebad El Rahman | 700 | Ring Road | Cairo | 20 |

**Dependent**

|  |  |  |  |
| --- | --- | --- | --- |
| **ESSN** | **Dependent\_name** | **Sex** | **Bdate** |
| 112233 | Hala Saied Ali | F | 18/10/1970 |
| 223344 | Ahmed Kamel Shawki | M | 27/3/1998 |
| 223344 | Mona Adel Mohamed | F | 25/4/1975 |
| 321654 | Ramy Amr Omran | M | 26/1/1990 |
| 321654 | Omar Amr Omran | M | 30/3/1993 |
| 321654 | Sanaa Gawish | F | 16/5/1973 |
| 512463 | Sara Edward | F | 15/9/2001 |
| 512463 | Nora Ghaly | F | 22/6/1976 |

Name: Bainh alaaelden abdelfattah aboraya

**\* Try to create the following Queries:**

1. Display the Department id, name and id and the name of its manager.

SELECT d.dnum, d.dname, e.ssn, CONCAT(e.fname, ' ', e.lname) AS managerName

FROM departments d, employee e

WHERE e.ssn = d.mgrssn;

1. Display the name of the departments and the name of the projects under its control

SELECT d.dname AS d, p.pname AS n

FROM departments d

INNER JOIN project p ON d.dnum = p.dnum;

1. Display the full data about all the dependence associated with the name of the

employee they depend on him/her.

SELECT \*, CONCAT(e.fname, e.lname) AS employeeName

FROM dependent

INNER JOIN employee e ON dependent.essn = e.ssn;

1. Display (Using Union Function)
   1. The name and the gender of the dependence that's gender is Female and depending

on Female Employee.

* 1. And the male dependence that depends on Male Employee.

SELECT Dependent\_name, sex

FROM dependent

WHERE sex = 'F' AND ESSN IN (SELECT ESSN FROM employee WHERE sex = 'F')

UNION

SELECT Dependent\_name, sex

FROM dependent

WHERE sex = 'M' AND ESSN IN (SELECT ESSN FROM employee WHERE sex = 'M');

1. Display the Id, name and location of the projects in Cairo or Alex city.

SELECT pnumber, pname ,plocation

FROM project

WHERE plocation IN ('Cairo', 'Alex');

1. Display the Projects full data of the projects with a name starts with **"a"** letter.

SELECT \*

FROM project

WHERE pname LIKE 'a%';

7- display all the employees in department 30 whose salary from 1000 to 2000 LE monthly

SELECT \*

FROM employee

WHERE dno = 30 and salary between1000 and2000;

8-Retrieve the names of all employees in department 10 who works more than or equal10 hours per week on "AL Rabwah" project.

select concat(fname,' ',lname) as "Full Name"

from employee,project,works\_for

where ssn=essn and pnumber=pno and dno=10

and hours>=10

and pname='Al Rabwah';

9-Find the names of the employees who directly supervised with Kamel Mohamed.

select e.fname from employee e,employee em

where e.superssn=em.ssn and em.fname='Kamel';

10. For each project, list the project name and the total hours per week (for all employees) spent on that project.

select pname,sum(hours) as "hours per week" from project,works\_for

where pnumber=pno

group by pname;

11. Retrieve the names of all employees and the names of the projects they are working on, sorted by the project name.

select fname,pname from employee,project,works\_for

where ssn=essn and pnumber=pno

order by pname;

12. Display the data of the department which has the smallest employee ID over all employees' ID.

select departments.\* from employee ,departments

where dno=dnum and ssn=(select min(ssn) from employee);

13-For each department, retrieve the department name and the maximum, minimum and average salary of its employees.

select dname,max(salary) as"Max Salary",min(salary) as"Min Salary",avg(salary) as "Average Salary"

from departments,employee

where dnum=dno

group by dname;

14-List the last name of all managers who have no dependents.

select lname

from employee

where ssn in (select mgrssn from departments where mgrssn is not null)

and ssn not in (select essn from dependent);

15-For each department-- if its average salary is less than the average salary of all employees-- display its number, name and number of its employees.

select dnum,dname,count(ssn) as "Number Of Employees"

from departments,employee

where dnum=dno

group by dnum

having avg(salary)<(select avg(salary)from employee);

16-Retrieve a list of employees and the projects they are working on ordered by department and within each department, ordered alphabetically by last name, first name.

select e.fname,e.lname,d.dname,p.pname

from employee as e,departments as d,project as p,works\_for w

where e.dno=d.dnum and e.ssn=w.essn and w.pno=p.pnumber

order by d.dname,e.lname,e.fname;

17-For each project located in Cairo City , find the project number, the controlling department name ,the department manager last name ,address and birthdate.

select p.pnumber,d.dname,e.lname,e.address,e.bdate

from project as p,departments as d,employee as e

where p.dnum=d.dnum and d.mgrssn=e.ssn

and city='cairo';