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

* 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 , e.fname || ' ' || e.lname as "Name"
from departments d , employee e
where d.mgrssn = e.ssn;
```

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

```
select d.dname , p.pname
from departments d , project p
where d.dnum = p.dnum
```

3. Display the full data about all the dependence associated with the name of the employee they depend on him/her.

```
select d.* , e.fname || ' ' || e.lname as "Name"
from dependent d , employee e
where d.essn = e.ssn
```

4. Display (Using Union Function)
   a. The name and the gender of the dependence that's gender is Female and depending on Female Employee.
   b. And the male dependence that depends on Male Employee.

```
select d.dependent_name , d.sex
from dependent d , employee e
where d.essn = e.ssn and d.sex ='F' and e.sex = 'F'
union
select d.dependent_name , d.sex
from dependent d , employee e
where d.essn = e.ssn and d.sex ='M' and e.sex = 'M'
```

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

```
select pnumber , pname , city
from project
where city in ('Cairo' , 'Alex')
```

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

```
select *
from project
where upper (pname) like upper ('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 between 1000 and 2000
```

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

```
select *, e.fname || ' ' || e.lname as "Employee Name"
from employee e , project p , works_for w
where e.ssn = w.essn and w.pno = p.pnumber
and  p.dnum = 10
and w.hours >= 10 and p.pname = 'Al Rabwah'
```

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

```
select e.fname || ' ' || e.lname as "Employee Name"
from employee e , employee s
where e.superssn = s.ssn and s.fname = 'Hussien' and s.lname = 'Nabil'
```

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

```
select p.pname , sum(w.hours) as "Total Hours"
from project p , works_for w
where p.pnumber = w.pno
group by p.pname , p.pnumber
```

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

```
select e.fname || ' ' || e.lname as "Employee Name" , p.pname
from employee e , project p , works_for w
where e.ssn = w.essn and p.pnumber = w.pno
order by p.pname
```

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

```
select d.*
from departments d , employee e
where e.dno = d.dnum and e.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 d.dname , max(salary) "Maximum Salary" , min(salary) "Minimum Salary"
, avg(salary) "Average Salary"
from departments d , employee e
where e.dno = d.dnum
group by d.dnum , d.dname
```

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

```
select e.lname
from employee e , departments dep
where e.ssn = dep.mgrssn and e.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 d.dnum , d.dname , count (e.ssn)
from departments d , employee e
where e.dno = d.dnum
group by d.dnum , d.dname
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 as "Employee Name" , p.pname
from employee e , project p , works_for w , departments d
where e.ssn = w.essn and w.pno = p.pnumber and e.dno = d.dnum
order by e.dno , 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 p , departments d , employee e
where p.dnum = d.dnum and d.mgrssn = e.ssn and p.city = 'Cairo'
```

or

```
select p.pnumber , d.dname , e.lname , e.address , e.bdate
from project p , departments d , employee e
where p.dnum = d.dnum and d.mgrssn = e.ssn
group by p.pnumber, d.dname , e.lname , e.address , e.bdate
having p.city = 'Cairo'
```