Query 0. Retrieve the birth date and address of the employee(s) whose name is

‘John B. Smith’.

Q0: SELECT Bdate, Address

FROM EMPLOYEE

WHERE Fname = ‘John’ AND Minit = ‘B’ AND Lname = ‘Smith’；

**Retrieve birthdate and PhoneNo of the employees whose name is …**

Query 1. Retrieve the name and address of all employees who work for the

‘Research’ department.

Q1: SELECT Fname, Lname, Address

FROM EMPLOYEE, DEPARTMENT

WHERE Dname = ‘Research’ AND Dnumber = Dno;

**Retrieve PhoneNo of all farmers who work on land …**

Query 2. For every project located in ‘Stafford’, list the project number, the

controlling department number, and the department manager’s last name,

address, and birth date.

Q2: SELECT Pnumber, Dnum, Lname, Address, Bdate

FROM PROJECT, DEPARTMENT, EMPLOYEE

WHERE Dnum = Dnumber AND Mgr\_ssn = Ssn AND

Plocation = ‘Stafford’

**For every plan in farmland …, list the fertilizer, the last name, birthdate, and phone number of the farmer that takes charge of the land. (the purchaser who by the product?)**

Query 8. For each employee, retrieve the employee’s first and last name and the

first and last name of his or her immediate supervisor.

Q8: SELECT E.Fname, E.Lname, S.Fname, S.Lname

FROM EMPLOYEE AS E, EMPLOYEE AS S

WHERE E.Super\_ssn = S.Ssn;

**Every farmer’s name and … name of immediate leader**

Queries 9 and 10. Select all EMPLOYEE Ssns (Q9) and all combinations of

EMPLOYEE Ssn and DEPARTMENT Dname (Q10) in the database.

Q9: SELECT Ssn

FROM EMPLOYEE;

**All farmer id**

Q10: SELECT Ssn, Dname

FROM EMPLOYEE, DEPARTMENT;

**All farmer id and the id of the farm that he or she takes charge of**

Query 11. Retrieve the salary of every employee (Q11) and all distinct salary

values (Q11A).

Q11: SELECT ALL Salary

FROM EMPLOYEE;

Q11A: SELECT DISTINCT Salary

FROM EMPLOYEE;

Query 4. Make a list of all project numbers for projects that involve an employee

whose last name is ‘Smith’, either as a worker or as a manager of the department

that controls the project.

Q4A: ( SELECT DISTINCT Pnumber

FROM PROJECT, DEPARTMENT, EMPLOYEE

WHERE Dnum = Dnumber AND Mgr\_ssn = Ssn

AND Lname = ‘Smith’ )

UNION

( SELECT DISTINCT Pnumber

FROM PROJECT, WORKS\_ON, EMPLOYEE

WHERE Pnumber = Pno AND Essn = Ssn

AND Lname = ‘Smith’ );

Query 12. Retrieve all employees whose address is in Houston, Texas.

Q12: SELECT Fname, Lname

FROM EMPLOYEE

WHERE Address LIKE ‘%Houston,TX%’;

Query 12A. Find all employees who were born during the 1950s.

Q12: SELECT Fname, Lname

FROM EMPLOYEE

WHERE Bdate LIKE ‘\_ \_ 7 \_ \_ \_ \_ \_ \_ \_’;

Query 13. Show the resulting salaries if every employee working on the

‘ProductX’ project is given a 10% raise.

Q13: SELECT E.Fname, E.Lname, 1.1 \* E.Salary AS Increased\_sal

FROM EMPLOYEE AS E, WORKS\_ON AS W, PROJECT AS P

WHERE E.Ssn = W.Essn AND W.Pno = P.Pnumber AND

P.Pname = ‘ProductX’;

14. Retrieve all employees in department 5 whose salary is between

$30,000 and $40,000.

Q14: SELECT \*

FROM EMPLOYEE

WHERE (Salary BETWEEN 30000 AND 40000) AND Dno = 5;

The condition (Salary BETWEEN 30000 AND 40000) in Q14 is equivalent to the condition

((Salary >= 30000) AND (Salary <= 40000)).

Query 15. Retrieve a list of employees and the projects they are working on,

ordered by department and, within each department, ordered alphabetically by

last name, then first name.

Q15: SELECT D.Dname, E.Lname, E.Fname, P.Pname

FROM DEPARTMENT AS D, EMPLOYEE AS E, WORKS\_ON AS W,

PROJECT AS P

WHERE D.Dnumber = E.Dno AND E.Ssn = W.Essn AND W.Pno =

P.Pnumber

ORDER BY D.Dname, E.Lname, E.Fname;

Query 18. Retrieve the names of all employees who do not have supervisors.

Q18: SELECT Fname, Lname

FROM EMPLOYEE

WHERE Super\_ssn IS NULL;

Q4A: SELECT DISTINCT Pnumber

FROM PROJECT

WHERE Pnumber IN

( SELECT Pnumber

FROM PROJECT, DEPARTMENT, EMPLOYEE

WHERE Dnum = Dnumber AND

Mgr\_ssn = Ssn AND Lname = ‘Smith’ )

OR

Pnumber IN

( SELECT Pno

FROM WORKS\_ON, EMPLOYEE

WHERE Essn = Ssn AND Lname = ‘Smith’ );

Query 16. Retrieve the name of each employee who has a dependent with the

same first name and is the same sex as the employee.

Q16: SELECT E.Fname, E.Lname

FROM EMPLOYEE AS E

WHERE E.Ssn IN ( SELECT D.Essn

FROM DEPENDENT AS D

WHERE E.Fname = D.Dependent\_name

AND E.Sex = D.Sex );

Q16A: SELECT E.Fname, E.Lname

FROM EMPLOYEE AS E, DEPENDENT AS D

WHERE E.Ssn = D.Essn AND E.Sex = D.Sex

AND E.Fname = D.Dependent\_name;

Q16B: SELECT E.Fname, E.Lname

FROM EMPLOYEE AS E

WHERE EXISTS ( SELECT \*

FROM DEPENDENT AS D

WHERE E.Ssn = D.Essn AND E.Sex = D.Sex

AND E.Fname = D.Dependent\_name);

Query 6. Retrieve the names of employees who have no dependents.

Q6: SELECT Fname, Lname

FROM EMPLOYEE

WHERE NOT EXISTS ( SELECT \*

FROM DEPENDENT

WHERE Ssn = Essn );

Query 7. List the names of managers who have at least one dependent.

Q7: SELECT Fname, Lname

FROM EMPLOYEE

WHERE EXISTS ( SELECT \*

FROM DEPENDENT

WHERE Ssn = Essn )

AND

EXISTS ( SELECT \*

FROM DEPARTMENT

WHERE Ssn = Mgr\_ssn );

Q3A: SELECT Fname, Lname

FROM EMPLOYEE

WHERE NOT EXISTS ( ( SELECT Pnumber

FROM PROJECT

WHERE Dnum = 5)

EXCEPT ( SELECT Pno

FROM WORKS\_ON

WHERE Ssn = Essn) );

Q3B: SELECT Lname, Fname

FROM EMPLOYEE

WHERE NOT EXISTS ( SELECT \*

FROM WORKS\_ON B

WHERE ( B.Pno IN ( SELECT Pnumber

FROM PROJECT

WHERE Dnum = 5 )

AND

NOT EXISTS ( SELECT \*

FROM WORKS\_ON C

WHERE C.Essn = Ssn

AND C.Pno = B.Pno )));

Query 17. Retrieve the Social Security numbers of all employees who work on

project numbers 1, 2, or 3.

Q17: SELECT DISTINCT Essn

FROM WORKS\_ON

WHERE Pno IN (1, 2, 3);

Q8A: SELECT E.Lname AS Employee\_name, S.Lname AS Supervisor\_name

FROM EMPLOYEE AS E, EMPLOYEE AS S

WHERE E.Super\_ssn = S.Ssn;

Query 19. Find the sum of the salaries of all employees, the maximum salary,

the minimum salary, and the average salary.

Q19: SELECT SUM (Salary), MAX (Salary), MIN (Salary), AVG (Salary)

FROM EMPLOYEE;

Query 20. Find the sum of the salaries of all employees of the ‘Research’ department,

as well as the maximum salary, the minimum salary, and the average

salary in this department.

Q20: SELECT SUM (Salary), MAX (Salary), MIN (Salary), AVG (Salary)

FROM (EMPLOYEE JOIN DEPARTMENT ON Dno = Dnumber)

WHERE Dname = ‘Research’;

Queries 21 and 22. Retrieve the total number of employees in the company

(Q21) and the number of employees in the ‘Research’ department (Q22).

Q21: SELECT COUNT (\*)

FROM EMPLOYEE;

Q22: SELECT COUNT (\*)

FROM EMPLOYEE, DEPARTMENT

WHERE DNO = DNUMBER AND DNAME = ‘Research’;

Query 23. Count the number of distinct salary values in the database.

Q23: SELECT COUNT (DISTINCT Salary)

FROM EMPLOYEE;

Query 24. For each department, retrieve the department number, the number

of employees in the department, and their average salary.

Q24: SELECT Dno, COUNT (\*), AVG (Salary)

FROM EMPLOYEE

GROUP BY Dno;

Query 25. For each project, retrieve the project number, the project name, and

the number of employees who work on that project.

Q25: SELECT Pnumber, Pname, COUNT (\*)

FROM PROJECT, WORKS\_ON

WHERE Pnumber = Pno

GROUP BY Pnumber, Pname;

Query 26. For each project on which more than two employees work, retrieve the

project number, the project name, and the number of employees who work on

the project.

Q26: SELECT Pnumber, Pname, COUNT (\*)

FROM PROJECT, WORKS\_ON

WHERE Pnumber = Pno

GROUP BY Pnumber, Pname

HAVING COUNT (\*) > 2;

Query 27. For each project, retrieve the project number, the project name, and

the number of employees from department 5 who work on the project.

Q27: SELECT Pnumber, Pname, COUNT (\*)

FROM PROJECT, WORKS\_ON, EMPLOYEE

WHERE Pnumber = Pno AND Ssn = Essn AND Dno = 5

GROUP BY Pnumber, Pname;

Q28: SELECT Dno, COUNT (\*)

FROM EMPLOYEE

WHERE Salary>40000 AND Dno IN

( SELECT Dno

FROM EMPLOYEE

GROUP BY Dno

HAVING COUNT (\*) > 5)

GROUP BY Dno;