**Implementing COMPANY database schema and executing queries**

Database:-

mysql> show tables; 
Tables_in_company1Ø1 1 
department 
dependent 
dept _ locations 
6 
employee 
project 
works on 
rows in set 
(0 
sec) 

1. Query 1

Query:

2. Query 18. Retrieve the names of all employees who do not have supervisors. 
   018: 
   SELECT 
   FROM 
   WHERE 
   Fname, Lname 
   EMPLOYEE 
   Super_ssn IS NULL; 

Output:

1. mysql> SELECT Fname, Lname 
   FROM EMPLOYEE 
   WHERE Super_ssn IS NULL; 
   1 
   I Lname 
   Fname 
   James 
   Borg 
   row in set (Ø.ØØ sec) 
2. Query 2

Query:

2. Q4A: 
   SELECT 
   FROM 
   WHERE 
   DISTINCT Pnumber 
   PROJECT 
   Pnumber IN 
   ( SELECT 
   FROM 
   WHERE 
   OR 
   Pnumber IN 
   ( SELECT 
   FROM 
   WHERE 
   Pnumber 
   PROJECT, DEPARTMENT, EMPLOYEE 
   Dnum = Dnumber AND 
   Mgr_ssn = Ssn AND Lname = 'Smith' ) 
   pno 
   WORKS_ON, EMPLOYEE 
   Essn = Ssn AND Lname = 'Smith' ); 

Output:

1. mysql> 
   SELECT DISTINCT Pnumber 
   FROM PROJECT 
   WHERE Pnumber IN 
   ( SELECT Pnumber 
   FROM PROJECT, DEPARTMENT, 
   WHERE Dnum = Dnumber AND 
   Mgr_ssn = Ssn AND Lname 
   OR Pnumber IN 
   ( SELECT Pno 
   FROM WORKS ON, EMPLOYEE 
   EMPLOYEE 
   ' Smith' ) 
   ' Smith ' 
   WHERE 
   Pnumber 
   1 
   2 
   2 
   rows 
   set 
   Essn = Ssn AND Lname 
   (Ø.ØØ sec) 
2. Query 3

Query:

2. SELECT 
   FROM 
   WHERE 
   DISTINCT Essn 
   WORKS_ON 
   (Pno, Hours) IN 
   ( SELECT 
   FROM 
   WHERE 
   Pno, Hours 
   WORKS_ON 
   Essn = '123456789' 

Output:

1. mysql> 
   Essn 
   SELECT DISTINCT Essn 
   FROM WORKS ON 
   WHERE (Pno, Hours) IN ( SELECT Pno, Hours 
   FROM WORKS ON 
   ' 123456789 ' 
   WHERE Essn 
   1 
   123456789 | 
   row in set (0.01 sec) 
2. Query 4

Query:

2. SELECT 
   FROM 
   WHERE 
   Lname, Fname 
   EMPLOYEE 
   Salary > ALL 
   ( SELECT 
   FROM 
   WHERE 
   Salary 
   EMPLOYEE 
   Dno= 5 

Output:

1. mysql> 
   SELECT Lname, Fname 
   FROM EMPLOYEE 
   WHERE Salary > ALL ( SELECT Salary 
   FROM EMPLOYEE 
   WHERE Dno = 5 
   2 
   Lname 
   Borg 
   Wallace 
   rows In 
   I Fname 
   James 
   Jennifer 
   set (0.01 sec) 
2. Query 5

Query:

1. 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. 
   016: 
   SELECT 
   FROM 
   WHERE 
   E.Fname, E.Lname 
   EMPLOYEE AS E 
   ( SELECT 
   E.Ssn IN 
   FROM 
   WHERE 
   D. Essn 
   DEPENDENT AS D 
   E.Fname = D.Dependent_name 
   AND E.Sex= D.Sex); 

Output:

1. mysql> 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 
   Empty set (Ø.ØØ sec) 
2. Query 6

Query:

1. Q16A: 
   SELECT 
   FROM 
   WHERE 
   E.Fname, E.Lname 
   EMPLOYEE AS E, DEPENDENT AS D 
   E.Ssn = D.Essn AND E.Sex D.Sex 
   AND E.Fname = D.Dependent_name; 

Output:

1. mysql> 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; 
   Empty set (Ø.ØØ sec) 
2. Query 7

Query:

1. QI 6B: 
   SELECT 
   FROM 
   WHERE 
   E.Fname, ELname 
   EMPLOYEE AS E 
   EXISTS ( SELECT 
   FROM 
   WHERE 
   DEPENDENT AS D 
   E.Ssn = D.Essn AND E.Sex D.Sex 
   AND E.Fname = D.Dependent_name); 

Output:

1. mysql> 
   SELECT E.Fname, E. Lname 
   FROM EMPLOYEE AS E 
   WHERE EXISTS ( SELECT * 
   FROM DEPENDENT AS D 
   WHERE E.Ssn = D.Essn AND E.Sex 
   ANDIE . Fname = D.Dependent_name); 
   D. Sex 
   Empty set (Ø.ØØ sec) 
2. Query 8

Query:

1. SELECT 
   FROM 
   WHERE 
   Fname, Lname 
   EMPLOYEE 
   NOT EXISTS ( ( SELECT 
   FROM 
   WHERE 
   EXCEPT 
   Pnumber 
   PROJECT 
   Dnum = 5) 
   ( SELECT 
   FROM 
   WHERE 
   pno 
   WORKS_ON 
   Ssn = Essn) ); 

Output:

1. mysql> 
   SELECT Fname, Lname 
   FROM EMPLOYEE 
   WHERE NOT EXISTS ( ( SELECT Pnumber 
   FROM PROJECT 
   WHERE Dnum = 5) 
   EXCEPT ( SELECT Pno 
   FROM WORKS ON 
   — Essn) 
   WHERE Ssn 
   Empty set (0.01 sec) 
2. Query 9

Query:

1. Query 6. Retrieve the names of employees who have no dependents. 
   SELECT 
   FROM 
   WHERE 
   Fname, Lname 
   EMPLOYEE 
   NOT EXISTS ( SELECT 
   FROM 
   WHERE 
   DEPENDENT 
   Ssn = Essn ); 

Output:

1. mysql> 
   SELECT Fname, Lname 
   FROM EMPLOYEE 
   WHERE NOT EXISTS ( SELECT * 
   FROM DEPENDENT 
   WHERE Ssn 
   Lname 
   English 
   Narayan 
   Borg 
   Jabbar 
   Zelaya 
   Essn 
   Fname 
   Joyce 
   Ramesh 
   James 
   Ahmad 
   Alicia 
   5 rows in set (Ø.ØØ sec) 
2. Query 10

Query:

Query 7. List the names of managers who have at least one dependent. 
SELECT 
FROM 
WHERE 
Fname, Lname 
EMPLOYEE 
EXISTS ( SELECT 
FROM 
WHERE 
AND 
EXISTS ( SELECT 
FROM 
WHERE 
DEPENDENT 
Ssn = Essn ) 
DEPARTMENT 
Ssn = Mgr_ssn ); 

Output:

nysql> 
Fname 
SELECT Fname, Lname 
FROM EMPLOYEE 
WHERE EXISTS ( SELECT * 
FROM DEPENDENT 
Essn ) 
WHERE Ssn 
AND 
EXISTS ( SELECT * 
FROM DEPARTMENT 
WHERE Ssn = Mgr_ssn ); 
I Lname 
Franklin I Wong I 
Jennifer I Wallace 
rows in set (Ø.ØØ sec) 