**QUERIES**

**Query 0**. Retrieve the birth date and address of the employee(s) whose name is ‘John B. Smith’. **SELECT BDate, Address FROM EMPLOYEE WHERE FName = 'John' AND Minit = 'B' AND LName = 'Smith'; Query 1.** Retrieve the name and address of all employees who work for the ‘Research’ department. **SELECT Fname, Minit, Lname, Address FROM EMPLOYEE AS E, DEPARTMENT AS D WHERE E.Dno = D.Dnumber AND D.DName = 'Research'; 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. **SELECT P.Pnumber, P.Dnum, E.Lname, E.Address, E.Bdate FROM EMPLOYEE AS E, PROJECT AS P, DEPARTMENT AS D WHERE P.Plocation = 'Stafford' AND P.Dnum = D.Dnumber AND D.Mgr\_ssn = E.Ssn; 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. **SELECT E.Fname, E.Lname, S.Fname, S.Lname FROM EMPLOYEE AS E, EMPLOYEE AS S WHERE E.Super\_ssn = S.Ssn; Queries 9 and 10**. Select all EMPLOYEE Ssns (Q9) and all combinations of EMPLOYEE Ssn and DEPARTMENT Dname (Q10) in the database. **SELECT Ssn FROM EMPLOYEE; SELECT E.Ssn, D.Dname FROM EMPLOYEE AS E, DEPARTMENT AS D; Query 11**. Retrieve the salary of every employee (Q11) and all distinct salary values (Q11A). **SELECT E.Salary FROM EMPLOYEE AS E; SELECT DISTINCT E.Salary FROM EMPLOYEE AS E; 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. *Method 1*: **(SELECT DISTINCT P.Pnumber FROM PROJECT AS P, EMPLOYEE AS E, DEPARTMENT AS D WHERE E.Lname = 'Smith' AND P.Dnum = D.Dnumber AND D.Mgr\_ssn = E.Ssn) UNION (SELECT DISTINCT P.Pnumber FROM PROJECT AS P, EMPLOYEE AS E, WORKS\_ON AS W WHERE E.Lname = 'Smith' AND P.Pnumber = W.Pno AND W.Essn = E.Ssn);** *Method 2*: **SELECT DISTINCT Pnumber FROM PROJECT WHERE Pnumber IN (SELECT Pnumber FROM PROJECT AS P, DEPARTMENT AS D, EMPLOYEE AS E WHERE P.Dnum = D.Dnumber AND D.Mgr\_ssn = E.Ssn AND E.Lname = 'Smith') OR Pnumber IN (SELECT Pno FROM WORKS\_ON AS W, EMPLOYEE AS E WHERE W.Essn = E.Ssn AND E.Lname = 'Smith'); Query 12**. Retrieve all employees whose address is in Houston, Texas. **SELECT Fname,Lname FROM EMPLOYEE WHERE Adress LIKE ‘%Houston,TX%’; Query 12A**. Find all employees who were born during the 1950s. **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. **SELECT E.Fname, E.Lname,(E.Salary\*1.1) AS Increased\_Salary 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’; Query 14**. Retrieve all employees in department 5 whose salary is between $30,000 and $40,000. **SELECT \* FROM EMPLOYEE WHERE Dno = 5 AND (Salary BETWEEN 30000 AND 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. **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;**

**Chapter 7: Query 18**. Retrieve the names of all employees who do not have supervisors. **SELECT E.Fname,E.Lname FROM EMPLOYEE AS E WHERE E.Super\_Ssn IS NULL; Query**: Retrieve the names of employees whose salary is greater than the salary of all the employees in department 5: **SELECT Fname, Lname FROM EMPLOYEE WHERE Salary > ALL (SELECT Salary FROM EMPLOYEE WHERE Dno = 5); 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. *Method 1*: **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);** *Method 2*: **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;** *Method 3*: **SELECT E.Fname, E.Lname FROM EMPLOYEE AS E WHERE EXISTS (SELECT D.Essn FROM DEPENDENT AS D WHERE E.Fname = D.Dependent\_name AND E.Sex = D.Sex); Query 6**. Retrieve the names of employees who have no dependents. **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. **SELECT Fname, Lname FROM EMPLOYEE WHERE EXISTS ( SELECT \* FROM DEPENDENT WHERE Ssn = Essn ) AND EXISTS ( SELECT \* FROM DEPARTMENT WHERE Ssn = Mgr\_ssn ); Query 17**. Retrieve the Social Security numbers of all employees who work on project numbers 1, 2, or 3. **SELECT DISTINCT Essn FROM WORKS\_ON WHERE Pno IN (1, 2, 3); Query 19**. Find the sum of the salaries of all employees, the maximum salary, the minimum salary, and the average salary. **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. **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). **SELECT COUNT (\*) FROM EMPLOYEE; SELECT COUNT (\*) FROM EMPLOYEE, DEPARTMENT WHERE DNO = DNUMBER AND DNAME = ‘Research’; Query 23**. Count the number of distinct salary values in the database. **SELECT COUNT (DISTINCT Salary) FROM EMPLOYEE; Query 5**: retrieve the names of all employees who have two or more Dependents. **SELECT Lname, Fname FROM EMPLOYEE WHERE ( SELECT COUNT (\*) FROM DEPENDENT WHERE Ssn = Essn ) > = 2; Query 24**. For each department, retrieve the department number, the number of employees in the department, and their average salary. **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. **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. **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. **SELECT Pnumber, Pname, COUNT (\*) FROM PROJECT, WORKS\_ON, EMPLOYEE WHERE Pnumber = Pno AND Ssn = Essn AND Dno = 5 GROUP BY Pnumber, Pname; Query 28**. For each department that has more than five employees, retrieve the department number and the number of its employees who are making more than $40,000. *Method 1*: **SELECT Dno, COUNT (\*) FROM EMPLOYEE WHERE Salary>40000 AND Dno IN ( SELECT Dno FROM EMPLOYEE GROUP BY Dno HAVING COUNT (\*) > 5)GROUP BY Dno;** *Method 2:* **WITH BIGDEPTS (Dno) AS ( SELECT Dno FROM EMPLOYEE GROUP BY Dno HAVING COUNT (\*) > 5) SELECT Dno, COUNT (\*)FROM EMPLOYEE WHERE Salary>40000 AND Dno IN BIGDEPTS GROUP BY Dno;**