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Chapter 6 & 7 Review

1.

1. For each department whose average employee salary is more than $30,000, retrieve the department name and the number of employees working for that department.

SELECT D.Dname, COUNT(E.Salary)

FROM DEPARMENT AS D, EMPLOYEE AS E

WHERE E.Dno = D.Dnumber AND E.Salary > 30000

GROUP BY D.Dname, E.Salary;

1. We can specify this query in SQL to count the number of male employees in each department making more than $30,000, because the EMPLOYEE table contains an attribute named ‘Sex’, therefore, we can specify it in the WHERE clause as a condition to retrieve the data.

2.

Retrieve the names of all employees who work in the department that has the employee with the highest salary among all employees

SELECT Fname, Lname

FROM EMPLOYEE

WHERE Dno = ( SELECT Dno

FROM EMPLOYEE

WHERE Salary = (SELECT MAX(Salary) FROM EMPLOYEE) );

Retrieve the names of employees who make at least $10,000 more than the employee who is paid the least in the company

SELECT Fname, Lname

FROM EMPLOYEE

WHERE Salary >= 10000 + (SELECT MIN(Salary) FROM EMPLOYEE);

Retrieve the names of all employees whose supervisor’s supervisor has ‘888665555’ for Ssn.

SELECT Fname, Lname

FROM EMPLOYEE

WHERE Super\_ssn IN (SELECT Ssn

FROM EMPLOYEE

WHERE Super\_ssn = ‘888665555’);

3

1. Retrieve the names and major departments of all straight-A students (students who have a grade of A in all their courses)

SELECT S.Name, S.Major

FROM STUDENT AS S, GRADE\_REPORT AS G

WHERE S.Student\_number = G.Student\_number and ALL G.Grade = ‘A’;

1. Retrieve the names and major departments of all students who do not have a grade of A in any of their courses

SELECT Name, Major

FROM STUDENT AS S

WHERE NOT EXISTS (SELECT \*

FROM GRADE\_REPORT AS G

WHERE S.Student\_number = G.Student\_number and G.Grade = ‘A’);

6

1. This query is allowed and could rewrite as

SELECT Dno, COUNT(\*), SUM(Salary), AVG(Salary)

FROM EMPLOYEE

GROUP BY Dno;

1. This query is allowed and could rewrite as

SELECT Dno, COUNT(\*)

FROM EMPLOYEE

WHERE SUM(Salary) > 10000;

1. This query is allowed and could rewrite as

SELECT Dno, AVG(Salary)

FROM EMPLOYEE

WHERE COUNT(\*) (SELECT COUNT(\*) FROM EMPLOYEE WHERE Dno = 4)

1. This query is ambiguous, since it could be either change all the employees who are in department number 3 to number 4, or the department is being changed from 3 to 4.
2. This query is ambiguous, since it could be either delete all department that has more than employees or delete all employee that works for more than 4 deparments