Database

Fundamentals & Design

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Union operator

- It's used to combine results from different queries.

- Display names for all employees who is or was working in the organization.

SELECT Name FROM Employees

UNION

SELECT Name FROM Employees_retired

One Result

Union operator (cont.)

- Number of columns and data types in the different queries must be the same.

- The UNION operator selects only distinct values by default.

- To allow duplicate values, use UNION ALL.

Sub-Queries

- Find the names of the employees working in "sales" department.

Select   name
from   Employee
Where   Dno in (select Dnumber
                        from Department
                        where dname = 'sales')

Sub-Queries (cont.)

- Display department name with the highest paid employee.

    1- Get the Highest Salary.
    2- Get Deptno for this Employee.
    3- Get Department name.

    SELECT dname FROM dept
    WHERE deptno = (SELECT deptno FROM emp
    WHERE sal = (SELECT MAX(sal) FROM EMP));

Sub-Queries (cont.)

- Find the names of employees whose salary is greater than the salary of the employees in department 5.

  Select   Lname , Fname
  From   Employee
  Where   salary > All (select   salary
                            from   Employee
                            where Dno=5)

  OR:
  Select   Lname , Fname
  From   Employee
  Where   salary > (select Max(salary) from Employee
                           where Dno=5)

Join Queries

- Define Cartesian Product ?

  Match rows in both tables

- Inner Join:
   Return rows when there is at least one match in both tables.

- Outer Join:
   Return rows when there is no match in one of the tables.

Inner Join

- Retrieve the name , address of all employees who work for Research Department.

Select   fname , Lname, address
From   Employee , Department
Where   Department.number = Employee.Dno and
             Dname='research'

Self Join

- Find the name of each employee and his supervisor name.

Select   e.name AS 'Employee_name' , s.name AS 'Supervisor'
From   Employees e , Employees s
Where   e.supervisorID = s.ID

Outer Join

- **LEFT JOIN**
  Return all rows from the left table, even if there are no matches in the right table.

- **RIGHT JOIN**
  Return all rows from the right table, even if there are no matches in the left table.

- **FULL JOIN**
  Return rows when there is a match in one of the tables.

Exists Condition

- Check if the result of correlated subquery is empty.

- The EXISTS condition is considered "to be met" if the subquery returns at least one row.

- Display suppliers information who have orders.

```
SELECT    *
FROM      suppliers
WHERE EXISTS
  (select    *
   from    orders
   where  suppliers.supplier_id = orders.supplier_id);
```

- Retrieve the name of employees who have no dependents.

```
Select      name
From        employee
Where Not Exists
            ( select *
              from dependent
              where ssn=Essn)
```

Thank You…