NIBM WORLD WIDE

SOFTWARE ENGINEERING

DATABASE MANAGEMENT SYSTEMS

JOINING TABLES USING DATA MANIPULATION LANGUAGE

National Institute of Business Management

Lesson 09 – Joining Tables using Data Manipulation Language (DML)

Joining Tables

- A JOIN clause is used to combine rows from two or more tables, based on a related column between them.

Here are the different types of the JOINs in SQL:

- (INNER) JOIN: Returns records that have matching values in both tables
- LEFT (OUTER) JOIN: Return all records from the left table, and the matched records from the right table
- RIGHT (OUTER) JOIN: Return all records from the right table, and the matched records from the left table
- FULL (OUTER) JOIN: Return all records when there is a match in either left or right table

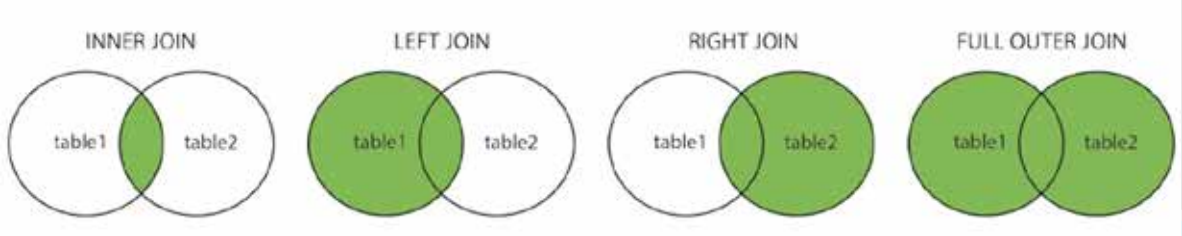

Figure 9.0.1 Different Joining Types

Inner Join

The INNER JOIN keyword selects records that have matching values in both tables.

Note: The INNER JOIN keyword selects all rows from both tables as long as there is a match between the columns. If there are records in the “Employee" table that do not have matches in “Department", these records will not be shown!

Syntax:

```
Select column_name(s)
from table1
INNER JOIN table2
ON table1.column_name = table2.column_name;
```

Examples:

Display Eno, Ename, DeptNo and DeptName of all the employees

```
Select Employee.Eno, Employee.Ename, Department.DeptNo, Department.Dname
from Employee INNER JOIN Department
ON Employee.Dno=Department.DeptNo;
```

Another way

```
Select Eno, Ename, DeptNo, Dname
from Employee, Department
where Employee.Dno=Department.DeptNo;
```

Another way with using Alias

```
Select E.Eno, E.Ename, D.DeptNo, D.Dname
from Employee E, Department D
where E.Dno = D.DeptNo;
```

Display Eno, Ename, Salary and DeptName of all the employees who is getting paid more than 25000.

```
Select Eno, Ename, Salary, Dname
from Employee, Department
where Employee.Dno=Department.DeptNo AND Salary > 25000;
```

Display Eno, Ename, Salary, Address and DeptName of all the employees who lives in Colombo

```
Select Eno, Ename, Salary, EAddress, Dname
from Employee, Department
where Employee.Dno=Department.DeptNo AND Address='Colombo';
```

Display Eno, Ename, Salary, Address and DeptName of all the employees who lives in Colombo and who get paid between 15000 and 65000.

```
Select Eno, Ename, Salary, EAddress, Dname
```

```
from Employee, Department
where Employee.Dno=Department.DeptNo AND Address='Colombo' AND Salary Between
15000 AND 65000;
```

Display the department number along with the department name which have Total salary exceeding 75000?

```
Select DeptNo, Dname, Sum(Salary)
from Department, Employee
where Department.DeptNo=Employee.Dno
group by DeptNo, Dname
having Sum(Salary) > 75000;
```

Display the department number along with the department name which have Total salary exceeding 75000 without the Manager position?

```
Select Dno, Dname, Sum(Salary)
from Employee, Department
where Employee.Dno=Department.DeptNo AND Position != 'Manager'
group by Dno, Dname
having Sum(Salary) > 75000;
```

Join 3 Tables

Suppose you have another table called Project which connects with Employee table with the foreign key of Pno.

```
SELECT Employee.Eno, Employee.Ename, Department.Dname, Project.Pname
FROM ((Employee INNER JOIN Department
ON Employee.Dno = Department.DeptNo)
INNER JOIN Project ON Employee.Pno = Project.Pno);
```

Left Join

The LEFT JOIN keyword returns all records from the left table (table1), and the matched records from the right table (table2). The result is NULL from the right side, if there is no match.

Note: The LEFT JOIN keyword returns all records from the left table (Employee), even if there are no matches in the right table (Department).

```
Select DeptNo, Dname, Eno, Ename
from Employee left join Department
ON Employee.Dno=Department.DeptNo;
```

Right Join

The RIGHT JOIN keyword returns all records from the right table (table2), and the matched records from the left table (table1). The result is NULL from the left side, when there is no match.

Note: The RIGHT JOIN keyword returns all records from the right table (Department), even if there are no matches in the left table (Employee).

```
Select DeptNo, Dname, Eno, Ename
from Employee right join Department
ON Employee.Dno=Department.DeptNo;
```

Full Outer Join

The FULL OUTER JOIN keyword return all records when there is a match in either left (table1) or right (table2) table records.

Note: FULL OUTER JOIN can potentially return very large result-sets!

Note: The FULL OUTER JOIN keyword returns all the rows from the left table (Employee), and all the rows from the right table (Department). If there are rows in "Employee" that do not have matches in "Department", or if there are rows in " Department" that do not have matches in "Employee", those rows will be listed as well.

```
Select DeptNo, Dname, Eno, Ename
from Employee full outer join Department
ON Employee.Dno=Department.DeptNo;
```