ST. XAVIER’S COLLEGE

**Maitighar,Kathmandu**

**(Affiliated to Tribhuvan University)**



**Database Management System**

**Lab Assignment #6**

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1. **Join**

An SQL JOIN clause is used to combine rows from two or more tables, based on a common field between them. The most common type of join is: **SQL INNER JOIN (simple join)**. An SQL INNER JOIN return all rows from multiple tables where the join condition is met.

* 1. **Theta Join**

In theta join we apply the condition on input relation(s) and then only those selected

rows are used in the cross product to be merged and included in the output. It means

that in normal cross product all the rows of one relation are mapped/merged with all

the rows of second relation, but here only selected rows of a relation are made cross

product with second relation. It is denoted as under: -

RX S

1. **Natural Join**
   1. **Right Join**

The RIGHT JOIN keyword returns all rows from the right table (table2), with the matching rows in the left table (table1). The result is NULL in the left side when there is no match.

### SQL RIGHT JOIN Syntax

SELECT *column\_name(s)*  
FROM *table1*  
Right JOIN *table2*  
ON *table1.column\_name*=*table2.column\_name*;

* 1. **Left Join**

The LEFT JOIN keyword returns all rows from the left table (table1), with the matching rows in the right table (table2). The result is NULL in the right side when there is no match.

**SQL LEFT JOIN Syntax**

SELECT *column\_name(s)*  
FROM *table1*  
LEFT JOIN *table2*  
ON *table1.column\_name*=*table2.column\_name*;

* 1. **Inner Join**

The INNER JOIN keyword selects all rows from both tables as long as there is a match between the columns in both tables.

**SQL INNER JOIN Syntax**

SELECT *column\_name(s)*  
FROM *table1*  
INNER JOIN *table2*  
ON *table1.column\_name*=*table2.column\_name*;

1. **Rename Operator**

In relational algebra, a rename is a unary operation written as \rho_{a/b}(R) where:

* R is a relation
* a and b are attribute names
* b is an attribute of R

1. **Assignment Operator**

The equal sign (=) is the only Transact-SQL assignment operator. In the following example, the @MyCounter variable is created, and then the assignment operator sets @MyCounter to a value returned by an expression.

DECLARE @MyCounter INT;

SET @MyCounter = 1;

The assignment operator can also be used to establish the relationship between a column heading and the expression that defines the values for the column. The following example displays the column headings First Column Heading and Second Column Heading. The string xyz is displayed in the First Column Heading column heading for all rows. Then, each product ID from the Product table is listed in the Second Column Heading column heading.

1. **Division Operator**
2. **Additional Operations**
   1. **Set-intersection Operation**
   2. **Natural Join Operation**

A NATURAL JOIN is a JOIN operation that creates an implicit join clause for you based on the common columns in the two tables being joined. Common columns are columns that have the same name in both tables.

A NATURAL JOIN can be an INNER join, a LEFT OUTER join, or a RIGHT OUTER join. The default is INNER join.

If the SELECT statement in which the NATURAL JOIN operation appears has an asterisk (\*) in the select list, the asterisk will be expanded to the following list of columns (in this order):

* All the common columns
* Every column in the first (left) table that is not a common column
* Every column in the second (right) table that is not a common column

An asterisk qualified by a table name (for example, COUNTRIES.\*) will be expanded to every column of that table that is not a common column.

If a common column is referenced without being qualified by a table name, the column reference points to the column in the first (left) table if the join is an INNER JOIN or a LEFT OUTER JOIN. If it is a RIGHT OUTER JOIN, unqualified references to a common column point to the column in the second (right) table.

Syntax

*TableExpression* NATURAL [ { LEFT | RIGHT } [ OUTER ] | INNER ] JOIN { TableViewOrFunctionExpression | ( *TableExpression* ) }

**Reference:**

[**http://www.w3schools.com/sql/sql\_join\_right.asp**](http://www.w3schools.com/sql/sql_join_right.asp)

[**http://www.tutorialspoint.com/sql/sql-using-joins.htm**](http://www.tutorialspoint.com/sql/sql-using-joins.htm)

**https://msdn.microsoft.com/en-us/library/ms188343.aspx**