SQL UNION

In previous article we have learned about **SQL JOINS**. In this section of Software Testing Class we are concentrating on "**SQL UNION**". In this post we are covering what is SQL UNION, examples of UNION, why use SQL UNION & difference between SQL JOIN and UNION.

What is a SQL UNION?

The **SQL UNION** operator allows you to combine the result of two or more **SQL SELECT queries**.

The only requirement to work SQL UNION query is both the SQL SELECT queries must having the same number of columns in the result set & with same data type.

SQL UNION Syntax:

```
1  SELECT column_name(s) FROM table1

2

3  UNION

4

5  SELECT column_name(s) FROM table2;
```

If we use UNION operator in the query then all unique records are returned in the result set. The duplicate records from the result set are displayed once.

SQL UNION example:

Let take example, we have following two tables called Table1 and Table2:

Table 1			Table 2	
Column 1	Column 2		Column 1	Column 2
a	a		b	a
a	b		a	b
a	c		b	c

First we will see how *SQL UNION operator* is combining the results of the two select statements:

```
1  SELECT Column1, Column2 FROM Table1
```

```
2
```

```
3  UNION
```

```
4
```

```
5  SELECT Column1, Column2 FROM Table2;
```

Following is the result upon executing the above*SQL UNION query*, the only unique records are returned from both tables.

Table 1			UNION		Table 2	
Column 1	Column 2				Column 1	Column 2
a	a				b	a
a	b				a	b
a	c				b	c

The UNION operator selects only distinct values by default.

Result	
Column 1	Column 2
a	a
a	b
a	c
b	a
b	c

Duplicate rows are displayed only once.

Note: *If we not specify any keyword with UNION operator then by default it take DISTINCT keyword i.e. "**UNION DISTINCT**"*

Now we will see how **SQL UNION ALL operator** is combining the results of the two select statements:
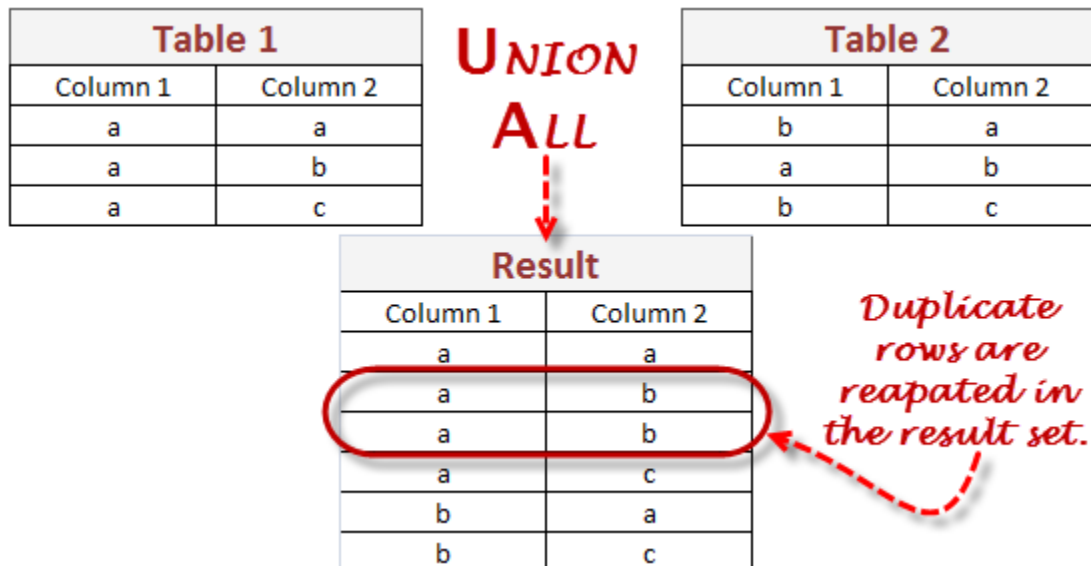
```
1  SELECT Column1, Column2 FROM Table1

2

3  UNION ALL

4

5  SELECT Column1, Column2 FROM Table2;
```

Following is the result set upon executing the above**SQL UNION ALL query**, the result set includes all records including duplicate records from both tables, so the duplicate rows are repeated in the result set.

UNION operator is by default returns the unique records. If you want to get the all rows including duplicate records then you can use "ALL" keyword with UNION.

Difference between SQL JOIN and UNION:

1. In the JOINS, the columns may be different in the tables but in the UNION the number of column must be same.
2. In case of UNION result set put rows one after each other i.e. result set puts vertically. But in case of JOIN result set put column one after each other i.e. result set puts horizontally. UNION makes a Cartesian product.
3. UNION is used for joining 2 result sets and JOIN is used for joining two or more tables, views, table-valued functions.

Conclusion on SQL UNION Queries:

- UNION operator is used to combine the result sets of two SELECT statements & combined result set includes all records from both tables.
- The number of columns & column data types must be same for using the UNION operator.
- The UNION DISTINCT keyword is returns the duplicate records from the result set. In the UNION operator if no any keyword is specified then it acts as DISTINCT keyword.
- UNION ALL simply joins 2 result sets including all the rows,does not remove the duplicate records from the result set.

Source:

http://www.softwaretestingclass.com/sql-union/