LAB - Insert Into Select

In this lab, you will learn how to use the SQL Server `INSERT INTO SELECT` statement to add data from other tables to a table.

To insert data from other tables into a table, you use the following SQL Server `INSERT INTO SELECT` statement:

```
INSERT  [ TOP ( expression ) [ PERCENT ] ]
INTO target_table (column_list)
query
```

In this syntax, the statement inserts rows returned by the `query` into the `target_table`.

The `query` is any valid `SELECT` statement that retrieves data from other tables. It must return the values that are corresponding to the columns specified in the `column_list`.

The `TOP` clause part is optional. It allows you to specify the number of rows returned by the query to be inserted into the target table. If you use the `PERCENT` option, the statement will insert the percent of rows instead. Note that it is a best practice to always use the `TOP` clause with the `ORDER BY` clause.

Examples

Let's create a table named `addresses` for the demonstration:

```
CREATE TABLE sales.addresses (
    address_id INT IDENTITY PRIMARY KEY,
    street VARCHAR (255) NOT NULL,
    city VARCHAR (50),
    state VARCHAR (25),
    zip_code VARCHAR (5)
);
```

1) Insert all rows from another table example

The following statement inserts all addresses from the `customers` table into the `addresses` table:

```
INSERT INTO sales.addresses (street, city, state, zip_code)
SELECT
    street,
    city,
    state,
    zip_code
FROM
    sales.customers
ORDER BY
    first_name,
    last_name;
```

To verify the insert, you use the following query:

```
SELECT
    *
FROM
    sales.addresses;
```

Here is the result:

address_id	street	city	state	zip_code
1	807 Grandrose Ave.	Yonkers	NY	10701
2	26 Market Drive	Forest Hills	NY	11375
3	60 Myers Dr.	Amityville	NY	11701
4	9782 Indian Spring Lane	Harlingen	TX	78552
5	167 James St.	Los Banos	CA	93635
6	755 East Henry Lane	Central Islip	NY	11722
7	8165 Baker Ave.	Franklin Square	NY	11010
8	669 S. Gartner Street	San Pablo	CA	94806
9	683 West Kirkland Dr.	East Northport	NY	11731
10	684 Westport Drive	Ballston Spa	NY	12020
11	720 Thompson Lane	Rego Park	NY	11374
12	973 Yukon Avenue	Encino	CA	91316
13	55 Cambridge Street	Plainview	NY	11803

2) Insert some rows from another table example

Sometimes, you just need to insert some rows from another table into a table. In this case, you limit the number of rows returned from the query by using conditions in the `WHERE` clause.

The following statement adds the addresses of the stores located in `Santa Cruz` and `Baldwin` to the `addresses` table:

```sql
INSERT INTO
    sales.addresses (street, city, state, zip_code)
SELECT
    street,
    city,
    state,
    zip_code
FROM
    sales.stores
WHERE
    city IN ('Santa Cruz', 'Baldwin');
```

SQL Server returned the following message indicating that two rows have been inserted successfully.

```
(2 rows affected)
```

3) Insert the top N of rows

First, you use the following statement to delete all rows from the `addresses` table:

```sql
TRUNCATE TABLE sales.addresses;
```

Second, to insert the top 10 customers sorted by their first names and last names, you use the `INSERT TOP INTO SELECT` statement as follows:

```sql
INSERT TOP (10)
INTO sales.addresses (street, city, state, zip_code)
SELECT
    street,
    city,
    state,
    zip_code
FROM
    sales.customers
ORDER BY
    first_name,
    last_name;
```

SQL Server returned the following message showing that ten rows have been inserted successfully.

```
(10 rows affected)
```

4) Insert the top percent of rows

Instead of using an absolute number of rows, you can insert a percent number of rows into a table.

First, truncate all rows from the `addresses` table:

```
TRUNCATE TABLE sales.addresses;
```

Second, insert top two percent of rows from the `customers` table sorted by first names and last names into the `addresses` table:

```
INSERT TOP (10) PERCENT
INTO sales.addresses (street, city, state, zip_code)
SELECT
    street,
    city,
    state,
    zip_code
FROM
    sales.customers
ORDER BY
    first_name,
    last_name;
```

SQL Server issued the following message indicating that 145 rows have been inserted successfully.

```
(145 rows affected)
```

In this lab, you have learned how to use the SQL Server `INSERT INTO SELECT` statement to insert rows from other tables into a table.