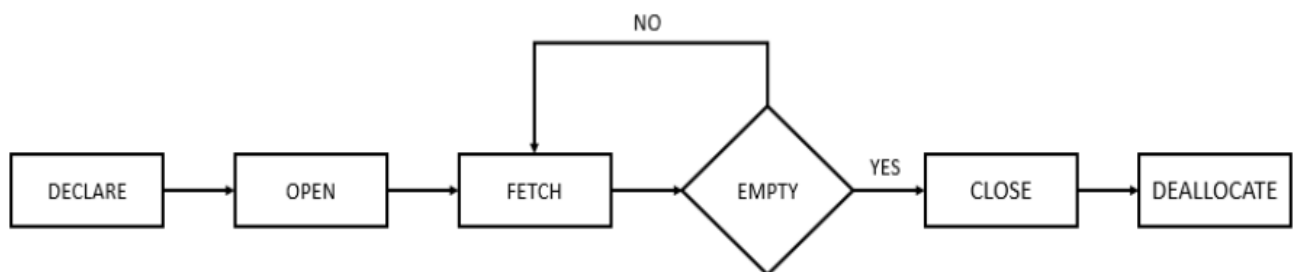# SQL CURSOR

What is a database cursor

A database cursor is an object that enables traversal over the rows of a result set. It allows you to process individual row returned by a query.

SQL Server cursor life cycle

These are steps for using a cursor:

First, declare a cursor.

```
DECLARE cursor_name CURSOR
    FOR select_statement;
```

To declare a cursor, you specify its name after the DECLARE keyword with the CURSOR data type and provide a SELECT statement that defines the result set for the cursor.

Next, open and populate the cursor by executing the `SELECT` statement:

```
OPEN cursor_name;
```

Then, fetch a row from the cursor into one or more variables:

```
FETCH NEXT FROM cursor INTO variable_list;
```

SQL Server provides the `@@FETCHSTATUS` function that returns the status of the last cursor `FETCH` statement executed against the cursor; If `@@FETCHSTATUS` returns 0, meaning the `FETCH` statement was successful. You can use the `WHILE` statement to fetch all rows from the cursor as shown in the following code:

```
WHILE @@FETCH_STATUS = 0
    BEGIN
        FETCH NEXT FROM cursor_name;
    END;
```

After that, close the cursor:
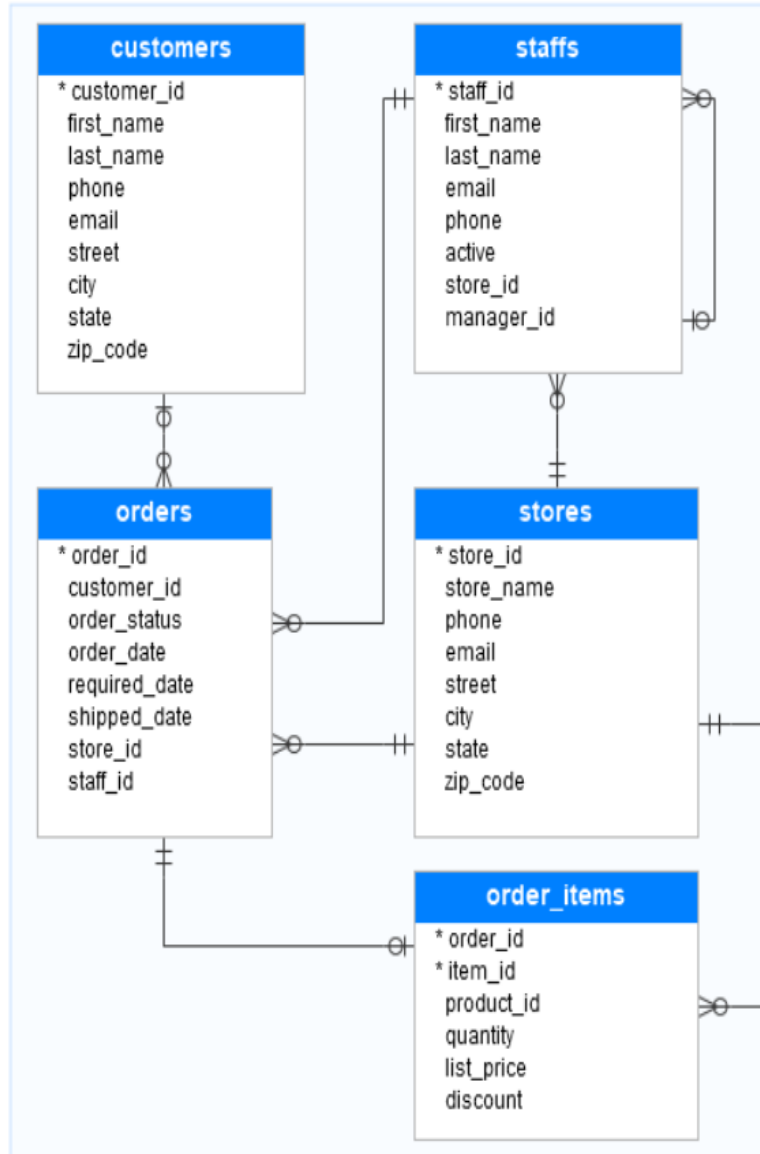
```
CLOSE cursor_name;
```

Finally, deallocate the cursor:
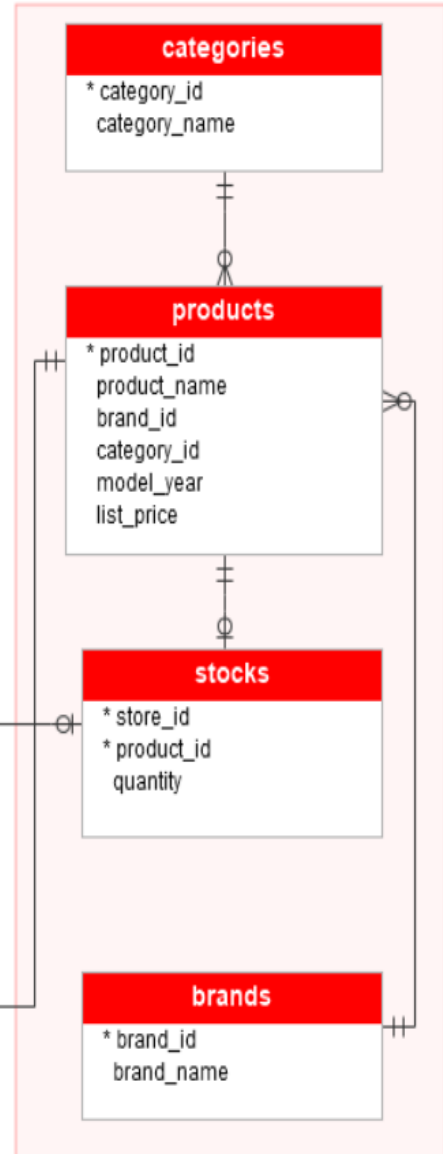
```
DEALLOCATE cursor_name;
```

The following illustrates the BikeStores database diagram:

Sales

Production

customers
* customer_id
first_name
last_name
phone
email
street
city
state
zip_code

staffs
* staff_id
first_name
last_name
email
phone
active
store_id
manager_id

categories
* category_id
category_name

products
* product_id
product_name
brand_id
category_id
model_year
list_price

orders
* order_id
customer_id
order_status
order_date
required_date
shipped_date
store_id
staff_id

stores
* store_id
store_name
phone
email
street
city
state
zip_code

stocks
* store_id
* product_id
quantity

order_items
* order_id
* item_id
product_id
quantity
list_price
discount

brands
* brand_id
brand_name

SQL Server cursor example

We'll use the `prodution.products` table from the sample database to show you how to use a cursor:

production.products

* product_id
  product_name
  brand_id
  category_id
  model_year
  list_price

```
DECLARE

    @product_name VARCHAR(MAX),

    @list_price   DECIMAL;


DECLARE cursor_product CURSOR
FOR SELECT

        product_name,

        list_price

    FROM

        production.products;
```

```sql
OPEN cursor_product;

FETCH NEXT FROM cursor_product INTO
    @product_name,
    @list_price;

WHILE @@FETCH_STATUS = 0
    BEGIN
        PRINT @product_name + CAST(@list_price AS
varchar);
        FETCH NEXT FROM cursor_product INTO
            @product_name,
            @list_price;
    END;

CLOSE cursor_product;

DEALLOCATE cursor_product;
```