SQL SERVER

Wildcard Characters

% (Percent): Represents zero or more characters.

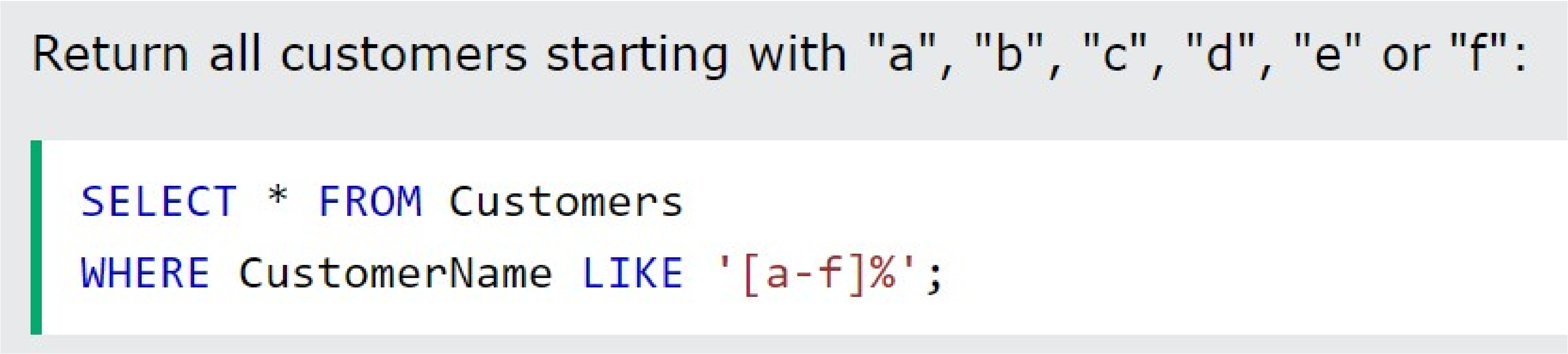
_ (Underscore): Represents a single character.

[] (Square Brackets): Represents any single character within the brackets (like a set of characters)

[^] (Caret inside square brackets): Represents any single character not within the brackets.

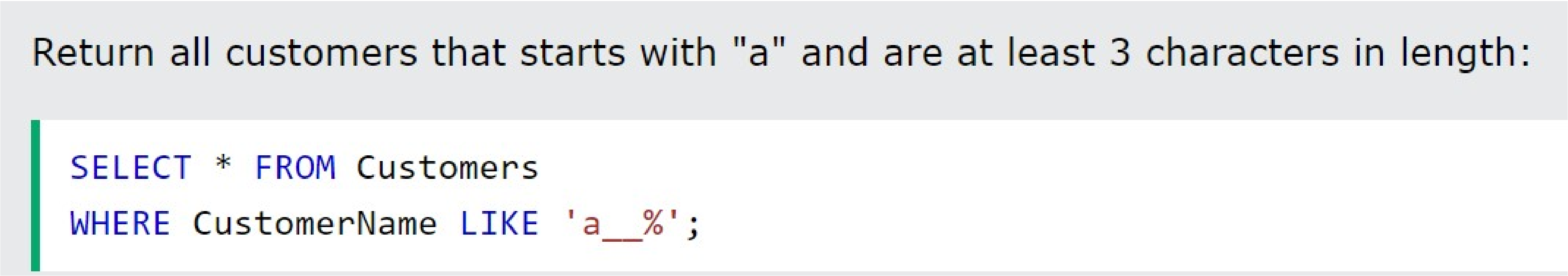
```
SELECT * FROM STUDENT WHERE Name LIKE 'A%';

-- Finds any name starting with 'A'

SELECT * FROM STUDENT WHERE Name LIKE '_an';

-- Finds names like 'Dan', 'Jan', etc.

SELECT * FROM STUDENT WHERE Name LIKE '[CD]an';

-- Finds names like 'Dan' or 'Can'

SELECT * FROM STUDENT WHERE Name LIKE '[^A]an';

-- Finds names that do not start with 'A', like 'Dan', 'Can', etc.
```

EX:



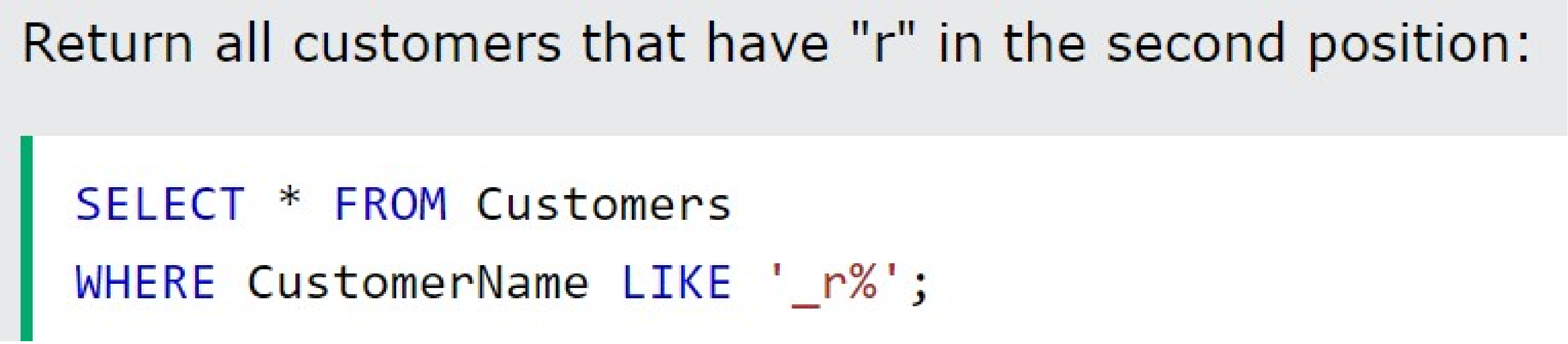
Return all customers starting with "a", "b", "c", "d", "e" or "f":

```
SELECT * FROM Customers
WHERE CustomerName LIKE '[a-f]%';
```



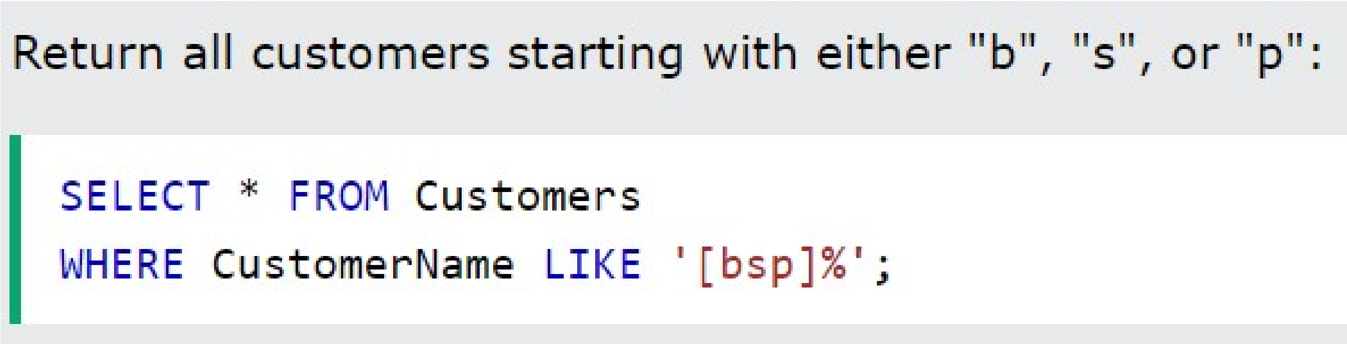
Return all customers that starts with "a" and are at least 3 characters in length:

```
SELECT * FROM Customers
WHERE CustomerName LIKE 'a__%';
```



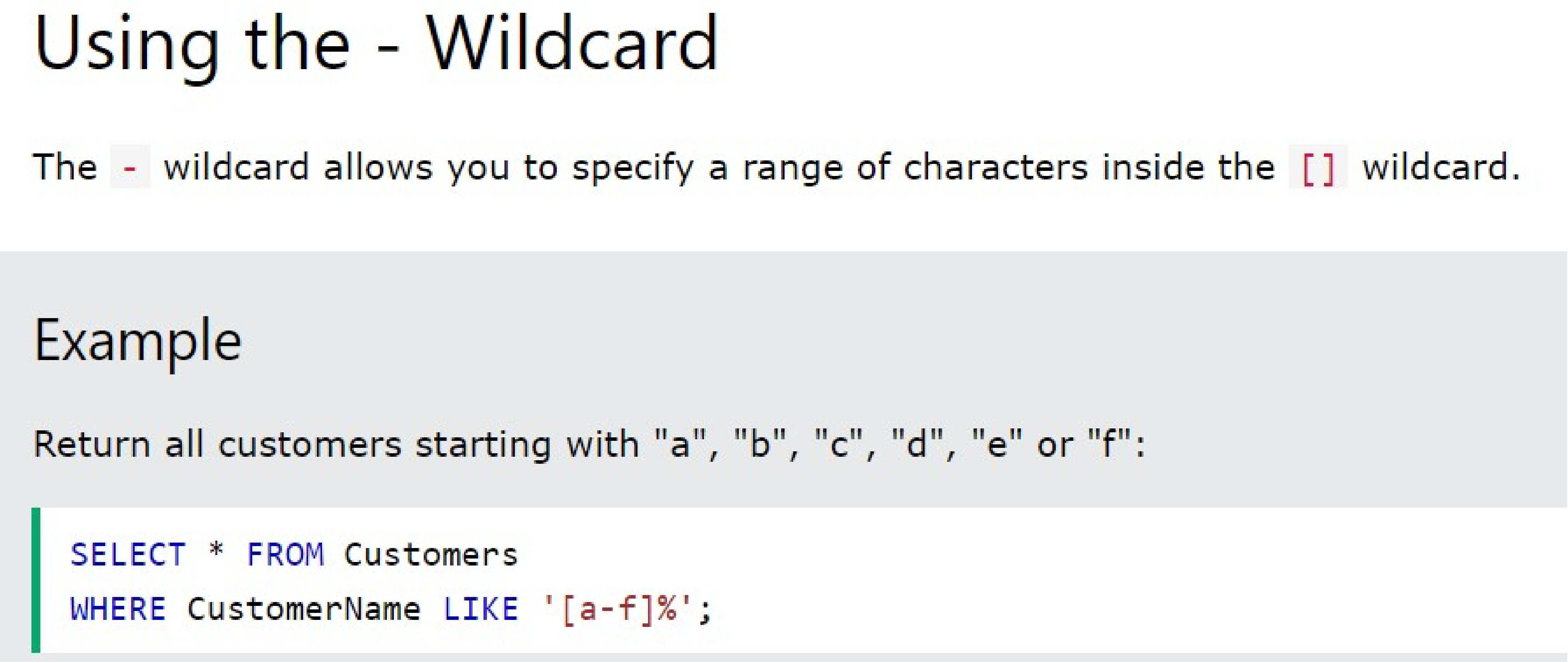
Return all customers that have "r" in the second position:

```
SELECT * FROM Customers
WHERE CustomerName LIKE '_r%';
```



Return all customers starting with either "b", "s", or "p":

```
SELECT * FROM Customers
WHERE CustomerName LIKE '[bsp]%';
```



Using the - Wildcard

The `-` wildcard allows you to specify a range of characters inside the `[]` wildcard.

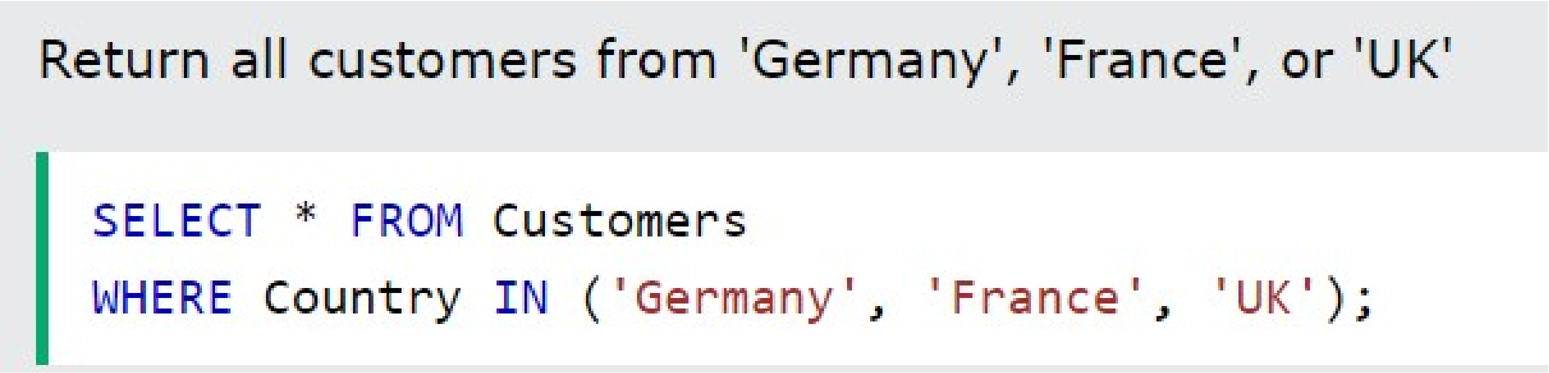
Example

Return all customers starting with "a", "b", "c", "d", "e" or "f":

```
SELECT * FROM Customers
WHERE CustomerName LIKE '[a-f]%';
```

IN

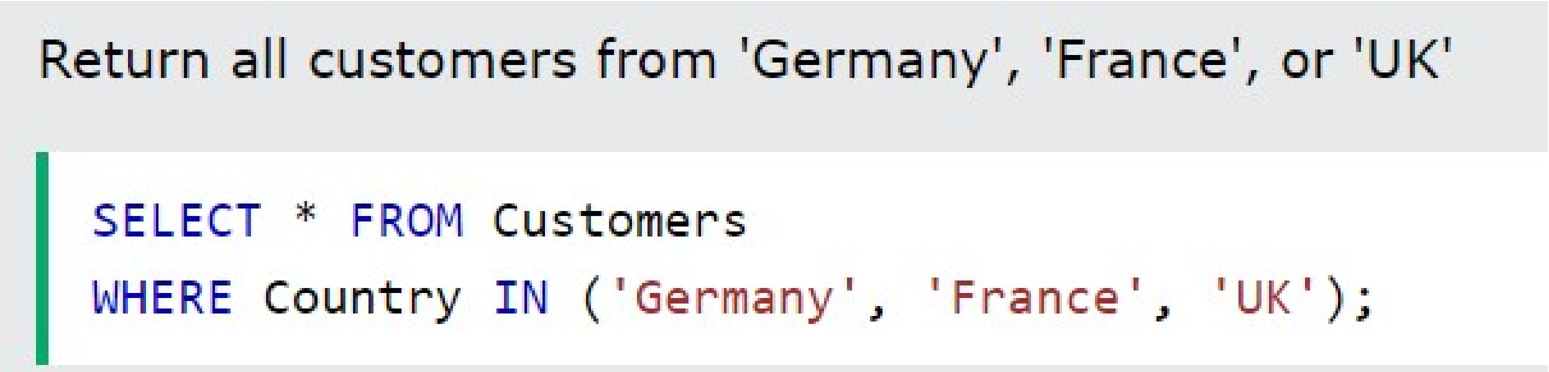
```
SELECT column_name(s)
FROM table_name
WHERE column_name IN (value1, value2, ...);
```



Return all customers from 'Germany', 'France', or 'UK'

```
SELECT * FROM Customers
WHERE Country IN ('Germany', 'France', 'UK');
```

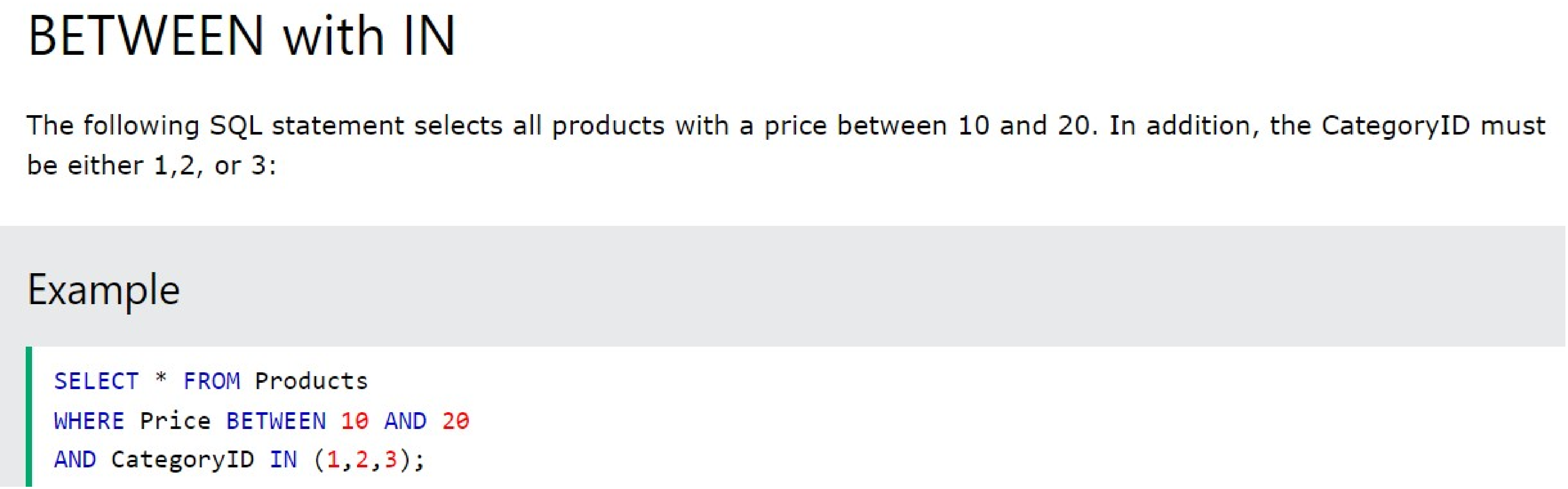
```
SELECT column_name(s)
FROM table_name
WHERE column_name IN (value1, value2, ...);
```



Return all customers from 'Germany', 'France', or 'UK'

```
SELECT * FROM Customers
WHERE Country IN ('Germany', 'France', 'UK');
```

BETWEEN ... AND

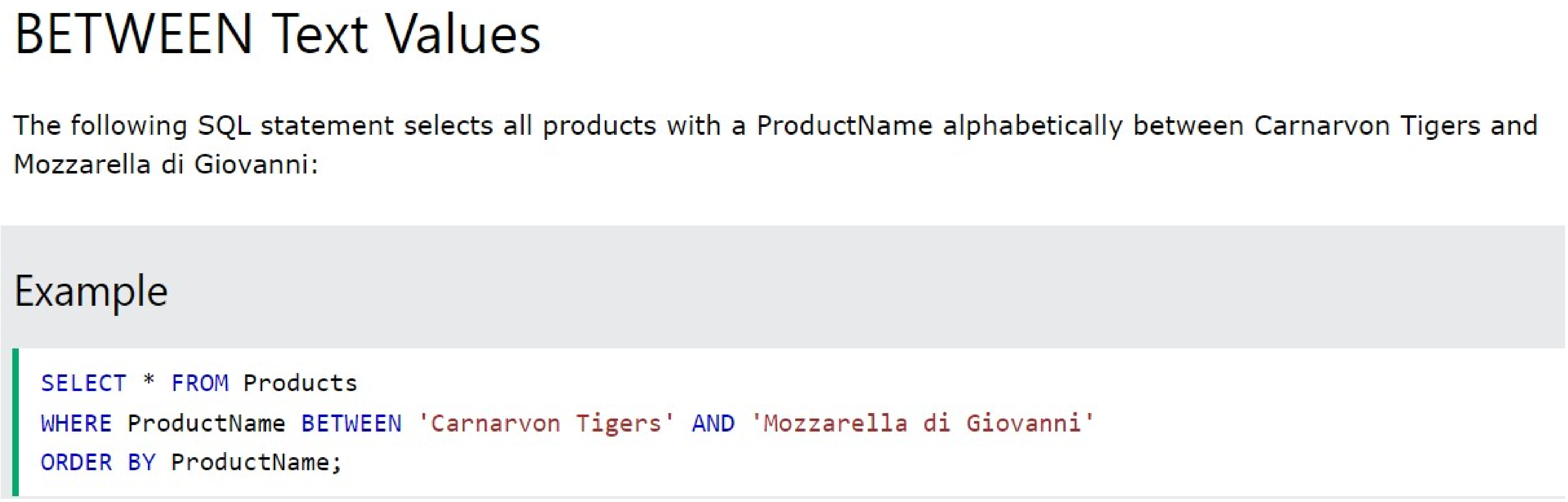


BETWEEN with IN

The following SQL statement selects all products with a price between 10 and 20. In addition, the CategoryID must be either 1,2, or 3:

Example

```
SELECT * FROM Products
WHERE Price BETWEEN 10 AND 20
AND CategoryID IN (1,2,3);
```

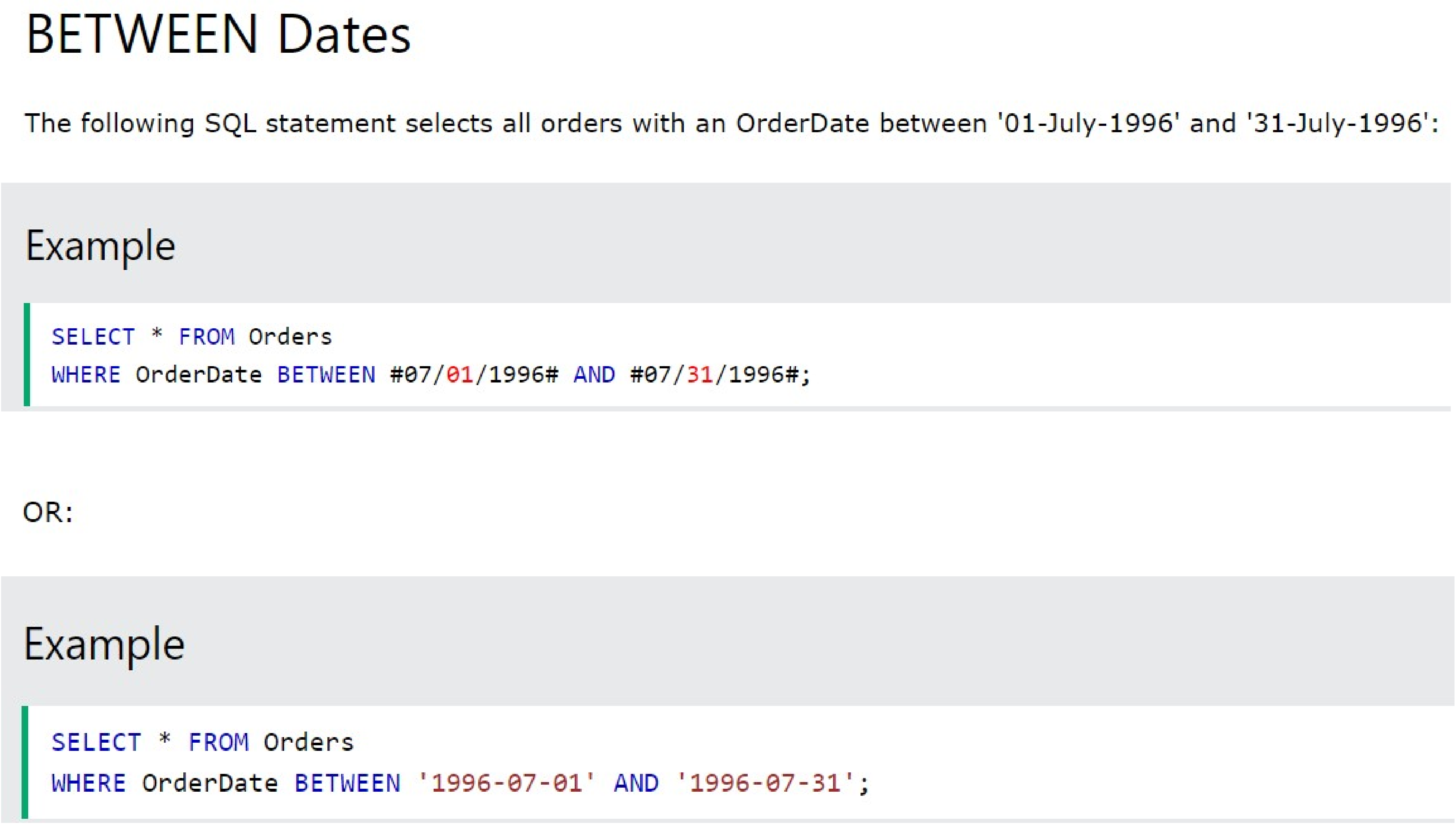


BETWEEN Text Values

The following SQL statement selects all products with a ProductName alphabetically between Carnarvon Tigers and Mozzarella di Giovanni:

Example

```
SELECT * FROM Products
WHERE ProductName BETWEEN 'Carnarvon Tigers' AND 'Mozzarella di Giovanni'
ORDER BY ProductName;
```



BETWEEN Dates

The following SQL statement selects all orders with an OrderDate between '01-July-1996' and '31-July-1996':

Example

```
SELECT * FROM Orders
WHERE OrderDate BETWEEN #07/01/1996# AND #07/31/1996#;
```

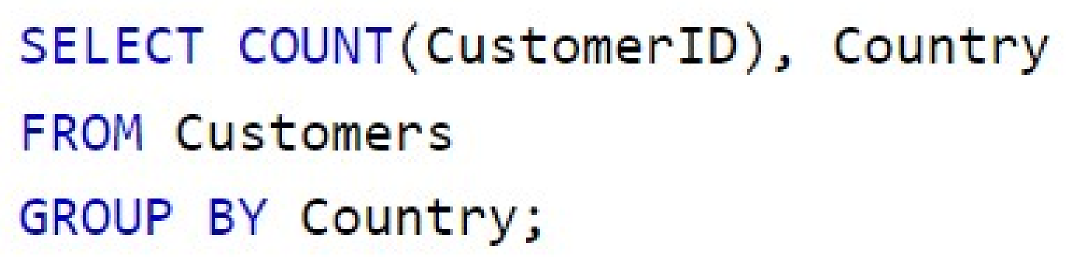
OR:

Example

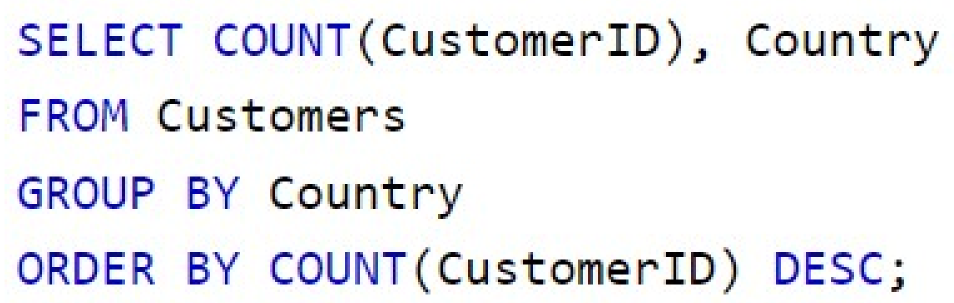
```
SELECT * FROM Orders
WHERE OrderDate BETWEEN '1996-07-01' AND '1996-07-31';
```

GROUP BY

```
SELECT column_name(s)
FROM table_name
WHERE condition
GROUP BY column_name(s)
ORDER BY column_name(s);
```



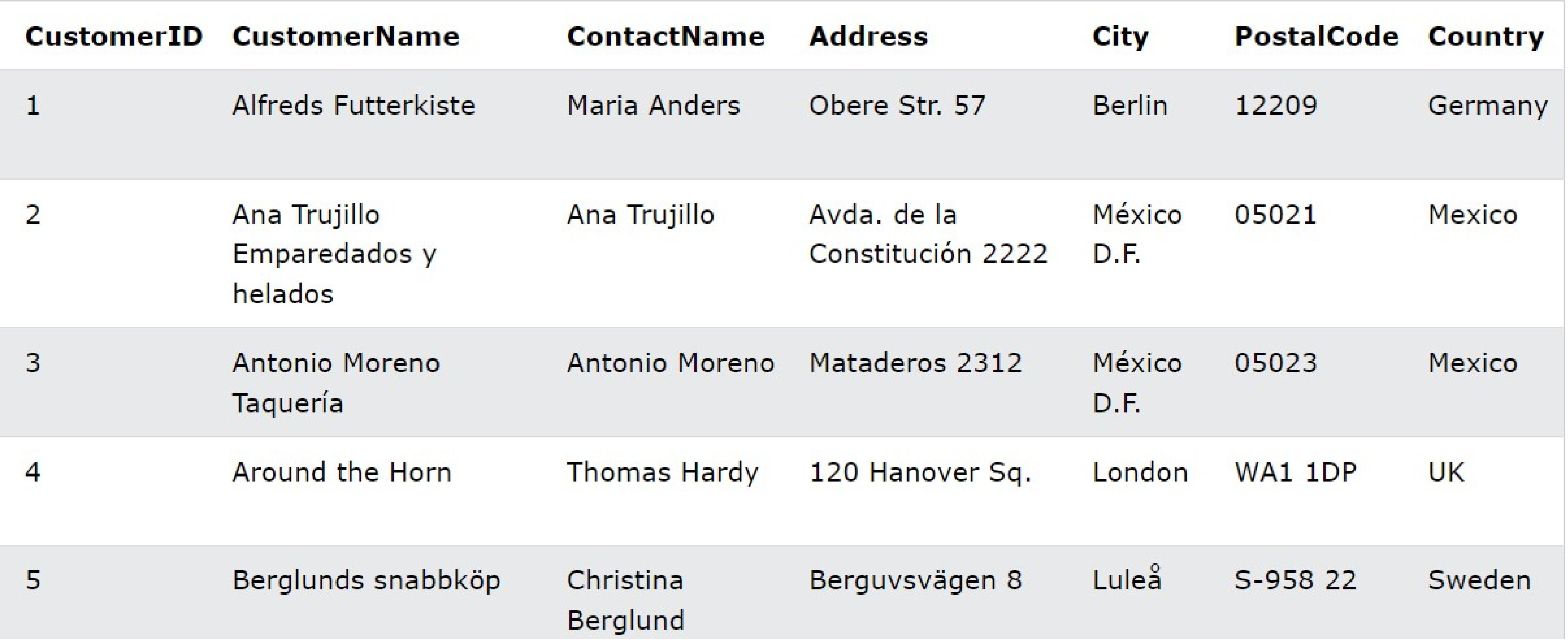
```
SELECT COUNT(CustomerID), Country
FROM Customers
GROUP BY Country;
```



```
SELECT COUNT(CustomerID), Country
FROM Customers
GROUP BY Country
ORDER BY COUNT(CustomerID) DESC;
```

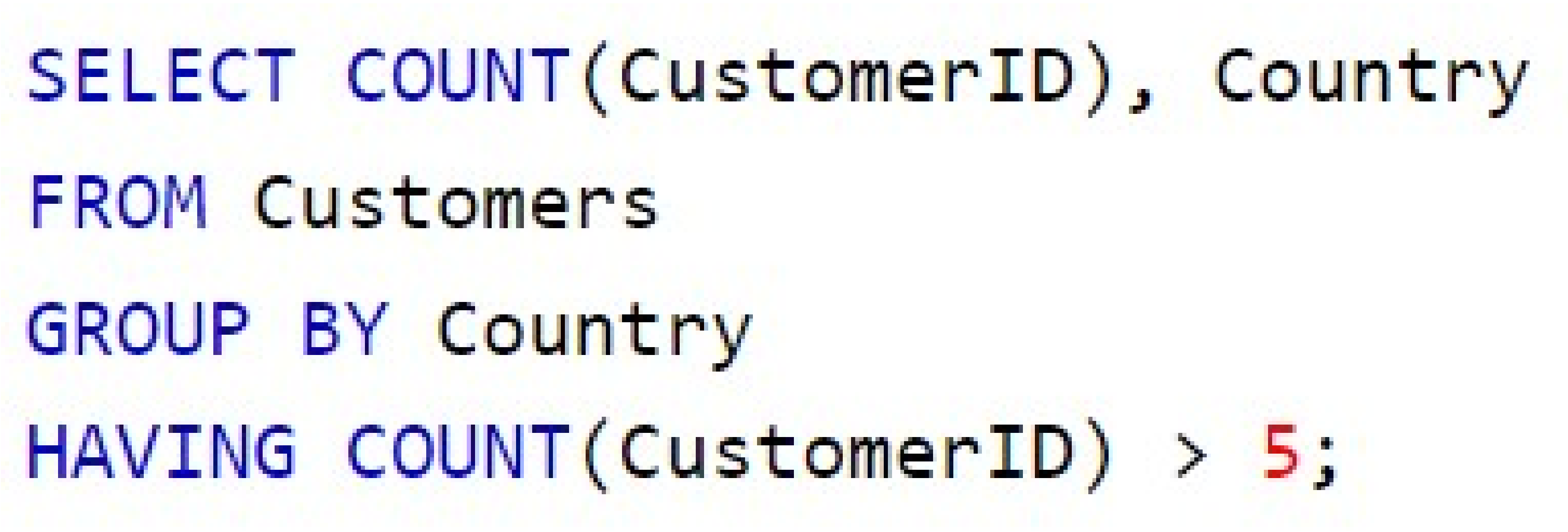
HAVING

```sql
SELECT column_name(s)
FROM table_name
WHERE condition
GROUP BY column_name(s)
HAVING condition
ORDER BY column_name(s);
```

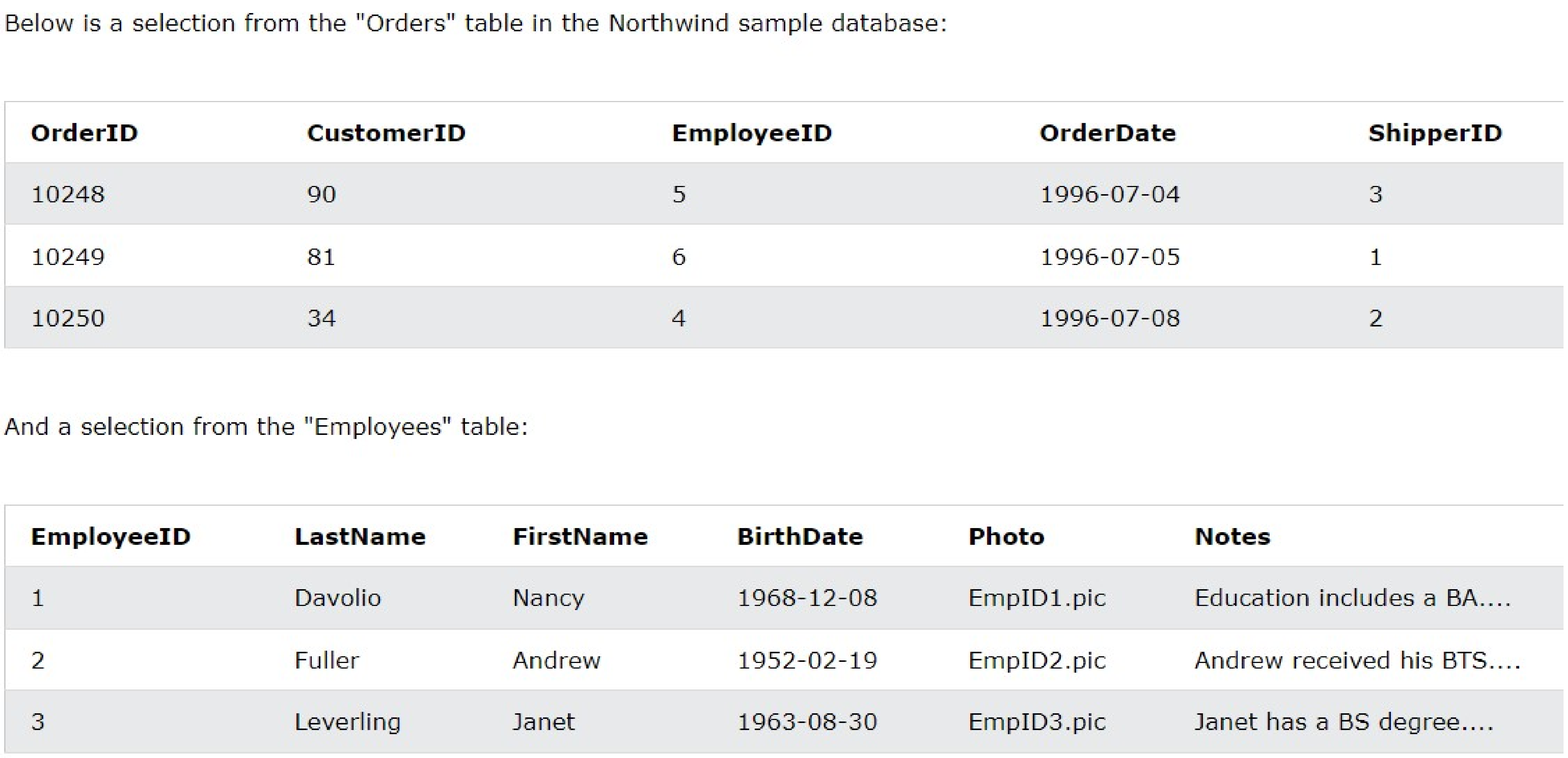


CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	Sweden

The following SQL statement lists the number of customers in each country. Only include countries with more than 5 customers:



```
SELECT COUNT(CustomerID), Country
FROM Customers
GROUP BY Country
HAVING COUNT(CustomerID) > 5;
```



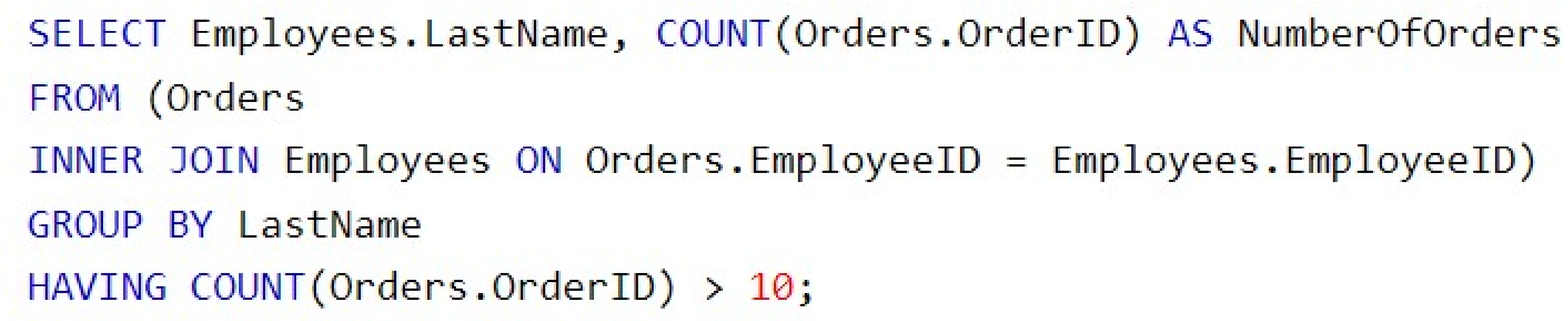
Below is a selection from the "Orders" table in the Northwind sample database:

OrderID	CustomerID	EmployeeID	OrderDate	ShipperID
10248	90	5	1996-07-04	3
10249	81	6	1996-07-05	1
10250	34	4	1996-07-08	2

And a selection from the "Employees" table:

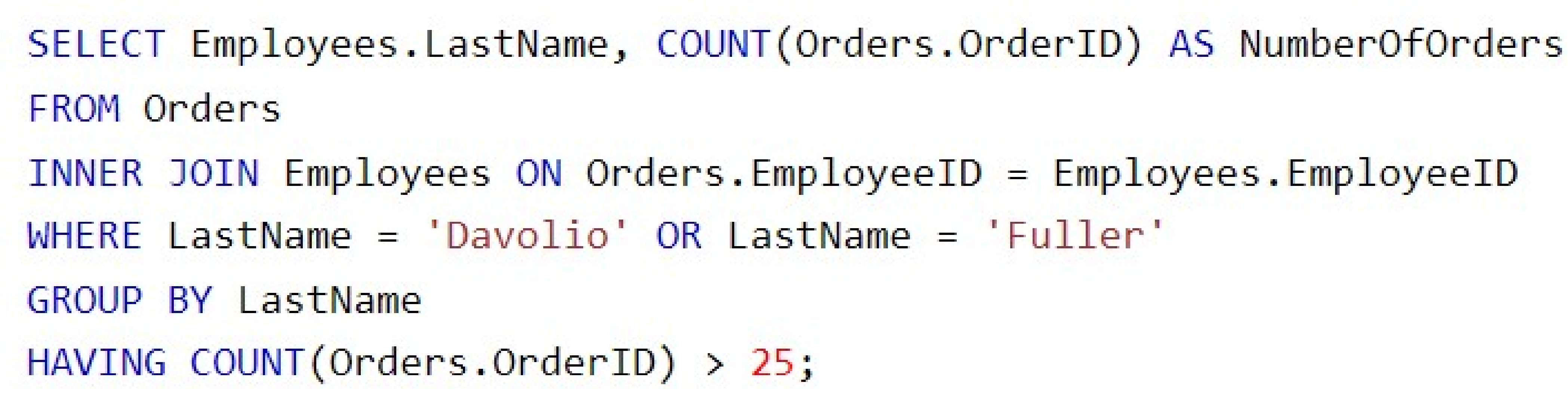
EmployeeID	LastName	FirstName	BirthDate	Photo	Notes
1	Davolio	Nancy	1968-12-08	EmpID1.pic	Education includes a BA....
2	Fuller	Andrew	1952-02-19	EmpID2.pic	Andrew received his BTS....
3	Leverling	Janet	1963-08-30	EmpID3.pic	Janet has a BS degree....

The following SQL statement lists the employees that have registered more than 10 orders:



```
SELECT Employees.LastName, COUNT(Orders.OrderID) AS NumberOfOrders
FROM (Orders
INNER JOIN Employees ON Orders.EmployeeID = Employees.EmployeeID)
GROUP BY LastName
HAVING COUNT(Orders.OrderID) > 10;
```

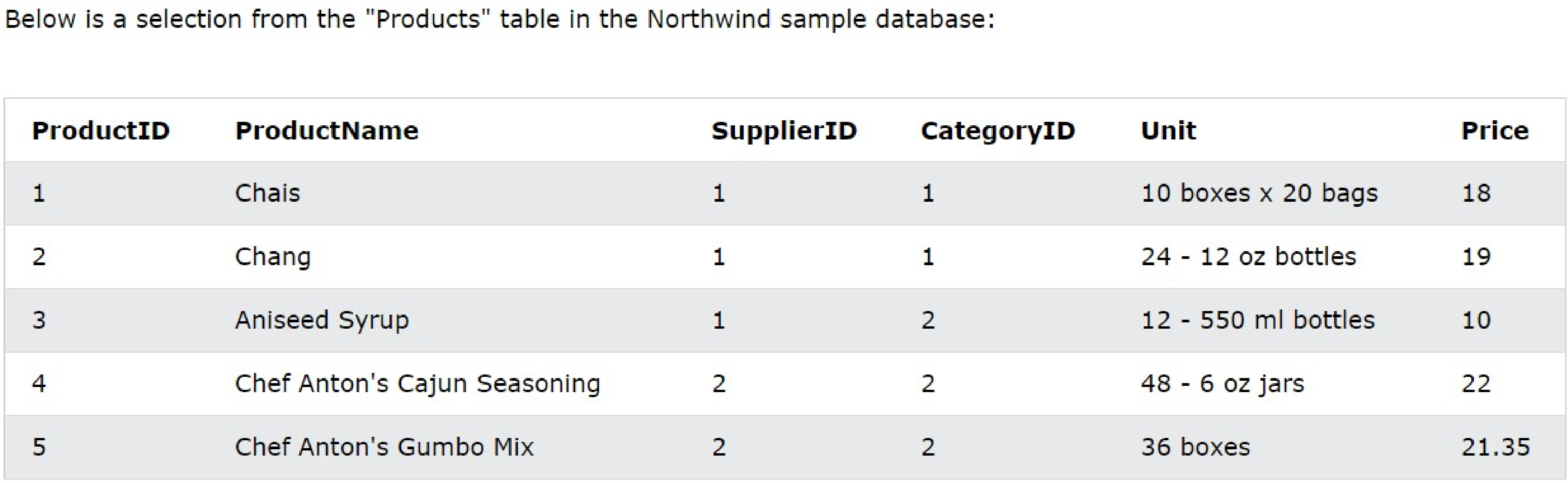
Lists if the employees "Davolio" or "Fuller" have registered more than 25 orders:



```sql
SELECT Employees.LastName, COUNT(Orders.OrderID) AS NumberOfOrders
FROM Orders
INNER JOIN Employees ON Orders.EmployeeID = Employees.EmployeeID
WHERE LastName = 'Davolio' OR LastName = 'Fuller'
GROUP BY LastName
HAVING COUNT(Orders.OrderID) > 25;
```

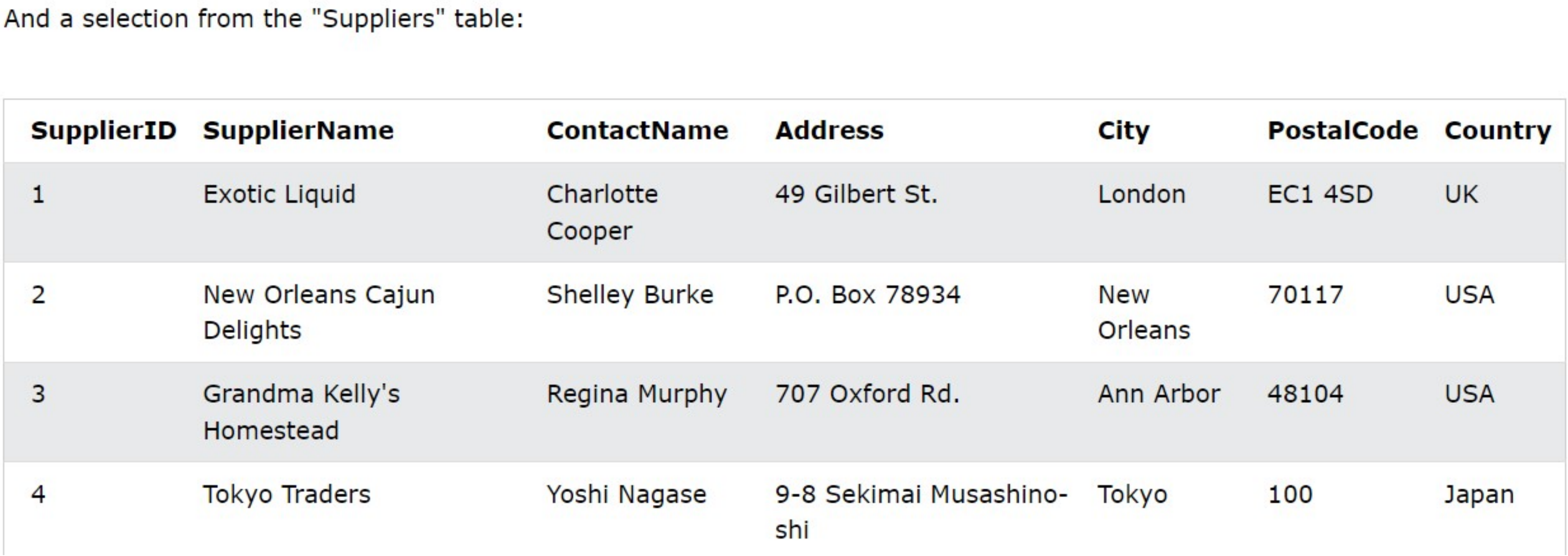
EXISTS

```
SELECT column_name(s)
FROM table_name
WHERE EXISTS
        (
          SELECT column_name
          FROM table_name
          WHERE condition
        );
```



Below is a selection from the "Products" table in the Northwind sample database:

ProductID	ProductName	SupplierID	CategoryID	Unit	Price
1	Chais	1	1	10 boxes x 20 bags	18
2	Chang	1	1	24 - 12 oz bottles	19
3	Aniseed Syrup	1	2	12 - 550 ml bottles	10
4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22
5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35



And a selection from the "Suppliers" table:

SupplierID	SupplierName	ContactName	Address	City	PostalCode	Country
1	Exotic Liquid	Charlotte Cooper	49 Gilbert St.	London	EC1 4SD	UK
2	New Orleans Cajun Delights	Shelley Burke	P.O. Box 78934	New Orleans	70117	USA
3	Grandma Kelly's Homestead	Regina Murphy	707 Oxford Rd.	Ann Arbor	48104	USA
4	Tokyo Traders	Yoshi Nagase	9-8 Sekimai Musashino-shi	Tokyo	100	Japan

The following SQL statement returns TRUE and lists the suppliers with a product price less than 20:

```
SELECT SupplierName
FROM Suppliers a
WHERE EXISTS
    (    SELECT ProductName
         FROM Products b
         WHERE b.SupplierID = A.supplierID AND Price < 20
         );
```

ANY/ ALL

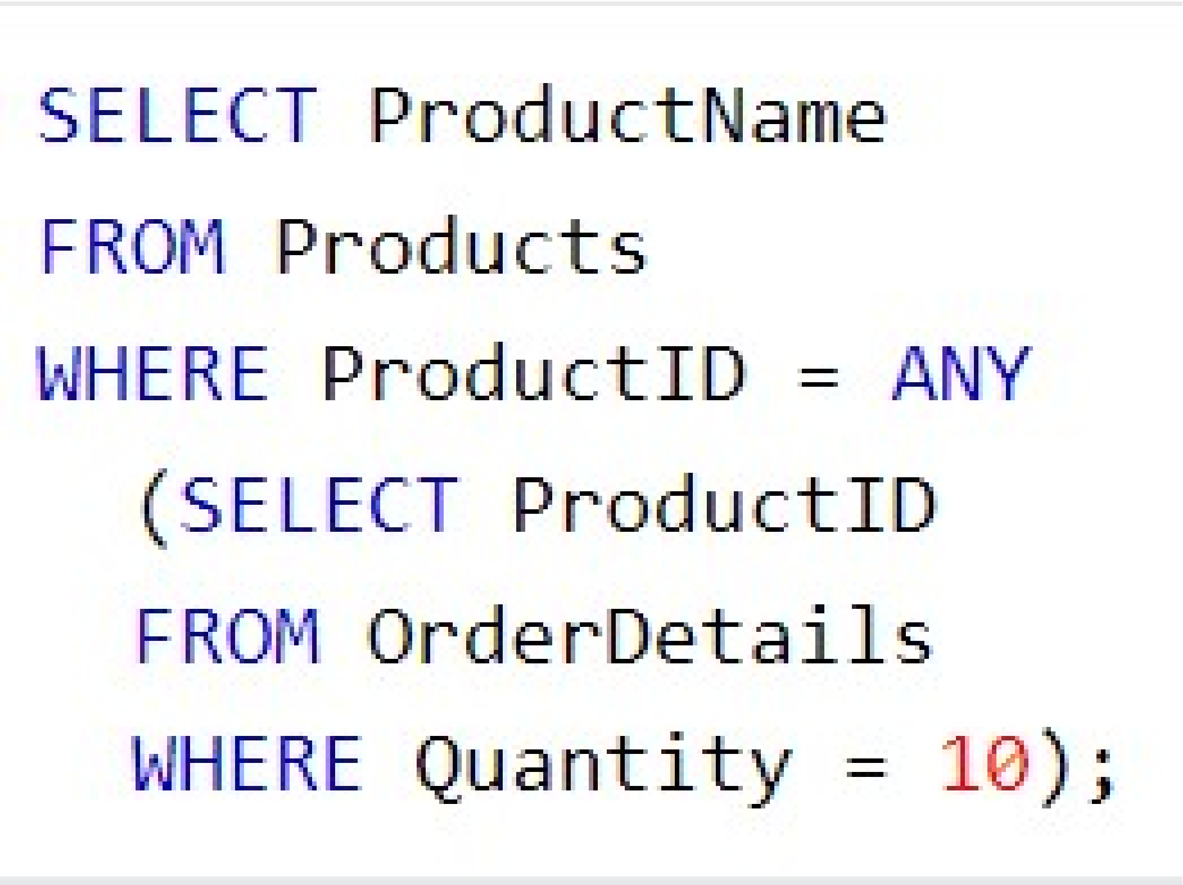
```
SELECT column_name(s)
FROM table_name
WHERE column_name operator ANY
  (SELECT column_name
  FROM table_name
  WHERE condition);
```

Note:

The **operator** must be (=, <>, !=, >, >=, <, or <=).

ALL Syntax With WHERE or HAVING

```
SELECT column_name(s)
FROM table_name
WHERE column_name operator ALL
  (SELECT column_name
  FROM table_name
  WHERE condition);
```



```sql
SELECT ProductName
FROM Products
WHERE ProductID = ANY
  (SELECT ProductID
  FROM OrderDetails
  WHERE Quantity = 10);
```

CASE

```
CASE
    WHEN condition1 THEN result1
    WHEN condition2 THEN result2
    WHEN conditionN THEN resultN
    ELSE result
END;
```

```
SELECT OrderID, Quantity,
CASE
    WHEN Quantity > 30 THEN 'The quantity is greater
than 30'
    WHEN Quantity = 30 THEN 'The quantity is 30'
    ELSE 'The quantity is under 30'
END AS QuantityText
FROM OrderDetails;
```

```
SELECT CustomerName, City, Country
FROM Customers
ORDER BY
(CASE
    WHEN City IS NULL THEN Country
    ELSE City
END);
```