BAZY DANYCH

WYKŁAD VIII

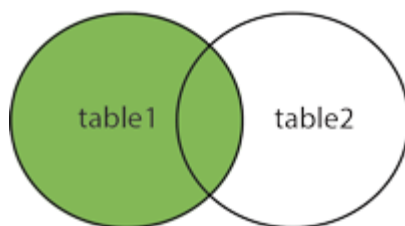JOIN

SQL

Łączenie tabel:
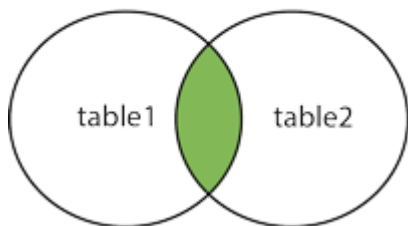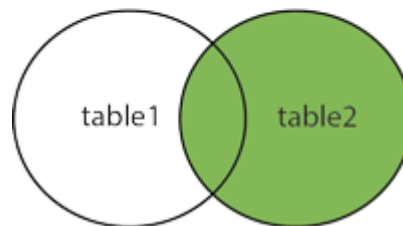
SQL
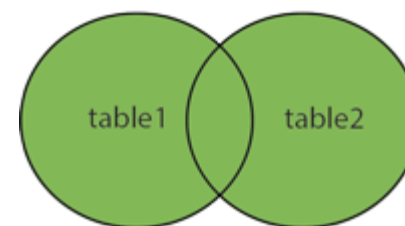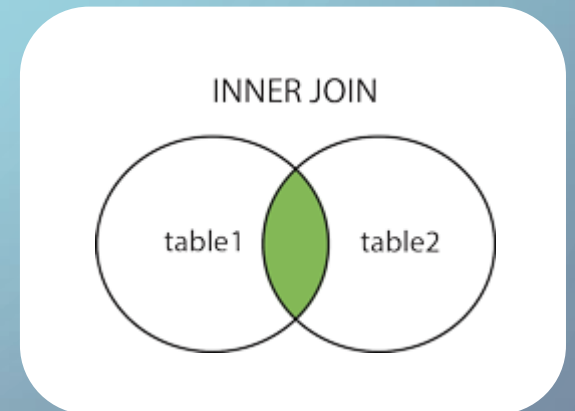
INNER JOIN wybiera rekordy, które mają pasujące wartości w obu tabelach.

Składnia INNER JOIN:

```sql
SELECT column_name(s)
FROM table1
INNER JOIN table2
ON table1.column_name = table2.column_name;
```

SQL

Przykład:

Tabela: ORDERS

	OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	ShippedDate	ShipVia	Freight	ShipName	ShipAddress
1	10248	VINET	5	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000	1996-07-16 00:00:00.000	3	32,38	Vins et alcools Chevalier	59 rue de l'Abbaye
2	10249	TOMSP	6	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000	1996-07-10 00:00:00.000	1	11,61	Toms Spezialitäten	Luisenstr. 48
3	10250	HANAR	4	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-12 00:00:00.000	2	65,83	Hanari Cames	Rua do Paço, 67
4	10251	VICTE	3	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-15 00:00:00.000	1	41,34	Victuailles en stock	2, rue du Commerce
5	10252	SUPRD	4	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000	1996-07-11 00:00:00.000	2	51,30	Suprêmes délices	Boulevard Tirou, 255
6	10253	HANAR	3	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000	1996-07-16 00:00:00.000	2	58,17	Hanari Cames	Rua do Paço, 67
7	10254	CHOPS	5	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000	1996-07-23 00:00:00.000	2	22,98	Chop-suey Chinese	Hauptstr. 31
8	10255	RICSU	9	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000	1996-07-15 00:00:00.000	3	148,33	Richter Supermarkt	Starenweg 5
9	10256	WELLI	3	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000	1996-07-17 00:00:00.000	2	13,97	Wellington Importadora	Rua do Mercado, 12
10	10257	HILAA	4	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000	1996-07-22 00:				
11	10258	ERNSH	1	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000	1996-07-23 00:				
12	10259	CENTC	4	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000	1996-07-25 00:				
13	10260	OTTIK	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-29 00:				
14	10261	QUEDE	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-30 00:				
15	10262	RATTC	8	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000	1996-07-25 00:				
16	10263	ERNSH	9	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000	1996-07-31 00:				
17	10264	FOLKO	6	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000	1996-08-23 00:				
18	10265	BLONP	2	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000	1996-08-12 00:				
19	10266	WARTH	3	1996-07-26 00:00:00.000	1996-09-06 00:00:00.000	1996-07-31 00:				

Tabela: CUSTOMERS

	CustomerID	CompanyName	ContactName	ContactTitle	Address
1	ALFKI	Alfreds Futterkiste	Maria Anders	Sales Representative	Obere Str. 57
2	ANATR	Ana Trujillo Emparedados y helados	Ana Trujillo	Owner	Avda. de la Constitución 2222
3	ANTON	Antonio Moreno Taquería	Antonio Moreno	Owner	Mataderos 2312
4	AROUT	Around the Horn	Thomas Hardy	Sales Representative	120 Hanover Sq.
5	BERGS	Berglunds snabbköp	Christina Berglund	Order Administrator	Berguvsvägen 8
6	BLAUS	Blauer See Delikatessen	Hanna Moos	Sales Representative	Forsterstr. 57
7	BLONP	Blondesddsl pere et fils	Frédérique Citeaux	Marketing Manager	24, place Kléber
8	BOLID	Bólido Comidas preparadas	Martín Sommer	Owner	C/ Araquil, 67
9	BONAP	Bon app'	Laurence Lebihan	Owner	12, rue des Bouchers
10	BOTTM	Bottom-Dollar Markets	Elizabeth Lincoln	Accounting Manager	23 Tsawassen Blvd.
11	BSBEV	B's Beverages	Victoria Ashworth	Sales Representative	Fauntleroy Circus
12	CACTU	Cactus Comidas para llevar	Patricio Simpson	Sales Agent	Cerito 333

SQL

SELECT Orders.OrderID, Customers.ContactName, Orders.OrderDate

FROM Orders

INNER JOIN Customers ON Orders.CustomerID=Customers.CustomerID

WHERE Orders.OrderDate BETWEEN '1996.08.01' AND '1996.08.30';

	OrderID	ContactName	OrderDate
1	10270	Pirkko Koskitalo	1996-08-01 00:00:00.000
2	10271	Art Braunschweiger	1996-08-01 00:00:00.000
3	10272	Paula Wilson	1996-08-02 00:00:00.000
4	10273	Horst Kloss	1996-08-05 00:00:00.000
5	10274	Paul Henriot	1996-08-06 00:00:00.000
6	10275	Giovanni Rovelli	1996-08-07 00:00:00.000
7	10276	Miguel Angel Paolino	1996-08-08 00:00:00.000
8	10277	Alexander Feuer	1996-08-09 00:00:00.000
9	10278	Christina Berglund	1996-08-12 00:00:00.000
10	10279	Renate Messner	1996-08-13 00:00:00.000
11	10280	Christina Berglund	1996-08-14 00:00:00.000
12	10281	Alejandra Camino	1996-08-14 00:00:00.000
13	10282	Alejandra Camino	1996-08-15 00:00:00.000
14	10283	Carlos González	1996-08-16 00:00:00.000
15	10284	Renate Messner	1996-08-19 00:00:00.000
16	10285	Horst Kloss	1996-08-20 00:00:00.000
17	10286	Horst Kloss	1996-08-21 00:00:00.000
18	10287	Janete Limeira	1996-08-22 00:00:00.000
19	10288	Maurizio Moroni	1996-08-23 00:00:00.000
20	10289	Victoria Ashworth	1996-08-26 00:00:00.000
21	10290	Pedro Afonso	1996-08-27 00:00:00.000
22	10291	Bernardo Batista	1996-08-27 00:00:00.000
23	10292	Anabela Domingues	1996-08-28 00:00:00.000
24	10293	Miguel Angel Paolino	1996-08-29 00:00:00.000
25	10294	Paula Wilson	1996-08-30 00:00:00.000

SQL

Przykład:

Tabela: ORDERS

Tabela: SHIPPERS

	ShipperID	CompanyName	Phone
1	1	Speedy Express	(503) 555-9831
2	2	United Package	(503) 555-3199
3	3	Federal Shipping	(503) 555-9931

	OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	ShippedDate	ShipVia	Freight	ShipName	ShipAddress
1	10248	VINET	5	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000	1996-07-16 00:00:00.000	3	32,38	Vins et alcools Chevalier	59 rue de l'Abbaye
2	10249	TOMSP	6	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000	1996-07-10 00:00:00.000	1	11,61	Toms Spezialitäten	Luisenstr. 48
3	10250	HANAR	4	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-12 00:00:00.000	2	65,83	Hanari Carnes	Rua do Paço, 67
4	10251	VICTE	3	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-15 00:00:00.000	1	41,34	Victuailles en stock	2, rue du Commerce
5	10252	SUPRD	4	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000	1996-07-11 00:00:00.000	2	51,30	Suprêmes délices	Boulevard Tirou, 255
6	10253	HANAR	3	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000	1996-07-16 00:00:00.000	2	58,17	Hanari Carnes	Rua do Paço, 67
7	10254	CHOPS	5	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000	1996-07-23 00:00:00.000	2	22,98	Chop-suey Chinese	Hauptstr. 31
8	10255	RICSU	9	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000	1996-07-15 00:00:00.000	3	148,33	Richter Supermarkt	Starenweg 5
9	10256	WELLI	3	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000	1996-07-17 00:00:00.000	2	13,97	Wellington Importadora	Rua do Mercado, 12
10	10257	HILAA	4	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000	1996-07-22 00:00:00.000	3	81,91	HILARION-Abastos	Carrera 22 con Ave. Carlos Soublette #8-35
11	10258	ERNSH	1	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000	1996-07-23 00:00:00.000	1	140,51	Ernst Handel	Kirchgasse 6
12	10259	CENTC	4	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000	1996-07-25 00:				
13	10260	OTTIK	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-29 00:				
14	10261	QUEDE	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-30 00:				
15	10262	RATTC	8	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000	1996-07-25 00:				
16	10263	ERNSH	9	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000	1996-07-31 00:				
17	10264	FOLKO	6	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000	1996-08-23 00:				
18	10265	BLONP	2	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000	1996-08-12 00:				
19	10266	WARTH	3	1996-07-26 00:00:00.000	1996-09-06 00:00:00.000	1996-07-31 00:				

Tabela: CUSTOMERS

	CustomerID	CompanyName	ContactName	ContactTitle	Address
1	ALFKI	Alfreds Futterkiste	Maria Anders	Sales Representative	Obere Str. 57
2	ANATR	Ana Trujillo Emparedados y helados	Ana Trujillo	Owner	Avda. de la Constitución 2222
3	ANTON	Antonio Moreno Taquería	Antonio Moreno	Owner	Mataderos 2312
4	AROUT	Around the Horn	Thomas Hardy	Sales Representative	120 Hanover Sq.
5	BERGS	Berglunds snabbköp	Christina Berglund	Order Administrator	Berguvsvägen 8
6	BLAUS	Blauer See Delikatessen	Hanna Moos	Sales Representative	Forsterstr. 57
7	BLONP	Blondesddsl pere et fils	Frédérique Citeaux	Marketing Manager	24, place Kléber
8	BOLID	Bólido Comidas preparadas	Martín Sommer	Owner	C/ Araquil, 67
9	BONAP	Bon app'	Laurence Lebihan	Owner	12, rue des Bouchers
10	BOTTM	Bottom-Dollar Markets	Elizabeth Lincoln	Accounting Manager	23 Tsawassen Blvd.
11	BSBEV	B's Beverages	Victoria Ashworth	Sales Representative	Fauntleroy Circus
12	CACTU	Cactus Comidas para llevar	Patricio Simpson	Sales Agent	Cerito 333

SQL

SELECT Orders.OrderID, Customers.ContactName, Shippers.Phone

FROM ((Orders

INNER JOIN Customers ON Orders.CustomerID = Customers.CustomerID)

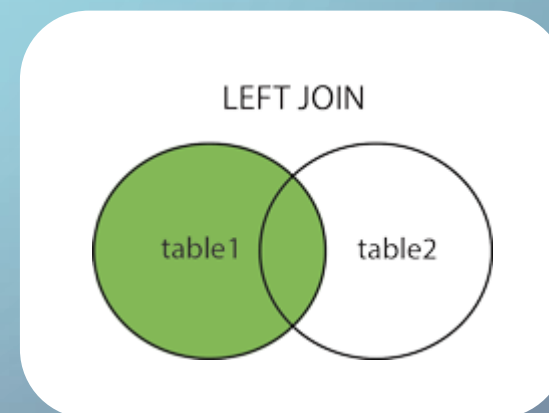INNER JOIN Shippers ON Orders.ShipVia= Shippers.ShipperID);

	OrderID	ContactName	Phone
1	10248	Paul Henriot	(503) 555-9931
2	10249	Karin Josephs	(503) 555-9831
3	10250	Mario Pontes	(503) 555-3199
4	10251	Mary Saveley	(503) 555-9831
5	10252	Pascale Cartrain	(503) 555-3199
6	10253	Mario Pontes	(503) 555-3199
7	10254	Yang Wang	(503) 555-3199
8	10255	Michael Holz	(503) 555-9931
9	10256	Paula Parente	(503) 555-3199
10	10257	Carlos Hernández	(503) 555-9931
11	10258	Roland Mendel	(503) 555-9831
12	10259	Francisco Chang	(503) 555-9931
13	10260	Henriette Pfalzheim	(503) 555-9831
14	10261	Bernardo Batista	(503) 555-3199
15	10262	Paula Wilson	(503) 555-9931
16	10263	Roland Mendel	(503) 555-9931
17	10264	Maria Larsson	(503) 555-9931
18	10265	Frédérique Citeaux	(503) 555-9831
19	10266	Pirkko Koskitalo	(503) 555-9931
20	10267	Peter Franken	(503) 555-9831
21	10268	Manuel Pereira	(503) 555-9931
22	10269	Karl Jablonski	(503) 555-9831

SQL

LEFT JOIN zwraca wszystkie rekordy z lewej tabeli (tabela 1) oraz pasujące rekordy z prawej tabeli (tabela 2). Wynik to 0 rekordów z prawej strony, jeśli nie ma dopasowania.

LEFT JOIN Składnia:

```
SELECT column_name(s)
FROM table1
LEFT JOIN table2
ON table1.column_name = table2.column_name;
```

SQL

Przykład:

Tabela: ORDERS

	OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	ShippedDate	ShipVia	Freight	ShipName	ShipAddress
1	10248	VINET	5	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000	1996-07-16 00:00:00.000	3	32,38	Vins et alcools Chevalier	59 rue de l'Abbaye
2	10249	TOMSP	6	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000	1996-07-10 00:00:00.000	1	11,61	Toms Spezialitäten	Luisenstr. 48
3	10250	HANAR	4	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-12 00:00:00.000	2	65,83	Hanari Cames	Rua do Paço, 67
4	10251	VICTE	3	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-15 00:00:00.000	1	41,34	Victuailles en stock	2, rue du Commerce
5	10252	SUPRD	4	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000	1996-07-11 00:00:00.000	2	51,30	Suprêmes délices	Boulevard Tirou, 255
6	10253	HANAR	3	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000	1996-07-16 00:00:00.000	2	58,17	Hanari Cames	Rua do Paço, 67
7	10254	CHOPS	5	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000	1996-07-23 00:00:00.000	2	22,98	Chop-suey Chinese	Hauptstr. 31
8	10255	RICSU	9	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000	1996-07-15 00:00:00.000	3	148,33	Richter Supermarkt	Starenweg 5
9	10256	WELLI	3	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000	1996-07-17 00:00:00.000	2	13,97	Wellington Importadora	Rua do Mercado, 12
10	10257	HILAA	4	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000	1996-07-22 00:00:00.000	3	81,91	HILARION-Abastos	Carrera 22 con Ave. Carlos Soublette #8-35
11	10258	ERNSH	1	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000	1996-07-23 00:00:00.000	1	140.51	Ernst Handel	Kirchgasse 6
12	10259	CENTC	4	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000	1996-07-25 00:				
13	10260	OTTIK	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-29 00:				
14	10261	QUEDE	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-30 00:				
15	10262	RATTC	8	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000	1996-07-25 00:				
16	10263	ERNSH	9	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000	1996-07-31 00:				
17	10264	FOLKO	6	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000	1996-08-23 00:				
18	10265	BLONP	2	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000	1996-08-12 00:				
19	10266	WARTH	3	1996-07-26 00:00:00.000	1996-09-06 00:00:00.000	1996-07-31 00:				

Tabela: CUSTOMERS

	CustomerID	CompanyName	ContactName	ContactTitle	Address
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4	AROUT	Around the Horn	Thomas Hardy	Sales Representative	120 Hanover Sq.
5	BERGS	Berglunds snabbköp	Christina Berglund	Order Administrator	Berguvsvägen 8
6	BLAUS	Blauer See Delikatessen	Hanna Moos	Sales Representative	Forsterstr. 57
7	BLONP	Blondesddsl pere et fils	Frédérique Citeaux	Marketing Manager	24, place Kléber
8	BOLID	Bólido Comidas preparadas	Martín Sommer	Owner	C/ Araquil, 67
9	BONAP	Bon app'	Laurence Lebihan	Owner	12, rue des Bouchers
10	BOTTM	Bottom-Dollar Markets	Elizabeth Lincoln	Accounting Manager	23 Tsawassen Blvd.
11	BSBEV	B's Beverages	Victoria Ashworth	Sales Representative	Fauntleroy Circus
12	CACTU	Cactus Comidas para llevar	Patricio Simpson	Sales Agent	Cerito 333

SQL

SELECT Customers.CompanyName, Orders.OrderID

FROM Customers

LEFT JOIN Orders ON Customers.CustomerID = Orders.CustomerID

	CompanyName	OrderID
1	Alfreds Futterkiste	10643
2	Alfreds Futterkiste	10692
3	Alfreds Futterkiste	10702
4	Alfreds Futterkiste	10835
5	Alfreds Futterkiste	10952
6	Alfreds Futterkiste	11011
7	Ana Trujillo Emparedados y helados	10308
8	Ana Trujillo Emparedados y helados	10625
9	Ana Trujillo Emparedados y helados	10759
10	Ana Trujillo Emparedados y helados	10926
11	Antonio Moreno Taquería	10365
12	Antonio Moreno Taquería	10507
13	Antonio Moreno Taquería	10535
14	Antonio Moreno Taquería	10573
15	Antonio Moreno Taquería	10
16	Antonio Moreno Taquería	10
17	Antonio Moreno Taquería	10
18	Around the Horn	10
19	Around the Horn	10
20	Around the Horn	10
21	Around the Horn	10
22	Around the Horn	10

824	Wilman Kala	10910
825	Wilman Kala	11005
826	Wolski Zajazd	10374
827	Wolski Zajazd	10611
828	Wolski Zajazd	10792
829	Wolski Zajazd	10870
830	Wolski Zajazd	10906
831	Wolski Zajazd	10998
832	Wolski Zajazd	11044

✅ Query executed successfully.

	CompanyName	OrderID
1	FISSA Fabrica Inter. Salchichas S.A.	NULL
2	Paris spécialités	NULL
3	Vins et alcools Chevalier	10248
4	Toms Spezialitäten	10249
5	Hanari Carnes	10250
6	Victuailles en stock	10251
7	Suprêmes délices	10252
8	Hanari Carnes	10253
9	Chop-suey Chinese	10254
10	Richter Supermarkt	10255
11	Wellington Importadora	10256
12	HILARION-Abastos	10257
13	Ernst Handel	10258
14	Centro comercial Moctezuma	10259
15	Ottilies Käseladen	
16	Que Delícia	
17	Rattlesnake Canyon Grocery	
18	Ernst Handel	
19	Folk och fä HB	
20	Blondesddsl père et fils	
21	Wartian Herkku	

826	LILA-Supermercado	11071
827	Ernst Handel	11072
828	Pericles Comidas clásicas	11073
829	Simons bistro	11074
830	Richter Supermarkt	11075
831	Bon app'	11076
832	Rattlesnake Canyon Grocery	11077

✅ Query executed successfully.

SELECT Customers.CompanyName, Orders.OrderID

FROM Customers

LEFT JOIN Orders ON Customers.CustomerID = Orders.CustomerID

ORDER BY Orders.OrderID;

SQL

RIGHT JOIN zwraca wszystkie rekordy z prawej tabeli (tabela 2) oraz pasujące rekordy z lewej tabeli (tabela 1). Wynik to 0 rekordów od lewej strony, jeśli nie ma dopasowania.

RIGHT JOIN Składnia:


```
SELECT column_name(s)
FROM table1
RIGHT JOIN table2
ON table1.column_name = table2.column_name;
```

SQL

Przykład:

Tabela: ORDERS

	OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	ShippedDate	ShipVia	Freight	ShipName	ShipAddress
1	10248	VINET	5	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000	1996-07-16 00:00:00.000	3	32,38	Vins et alcools Chevalier	59 rue de l'Abbaye
2	10249	TOMSP	6	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000	1996-07-10 00:00:00.000	1	11,61	Toms Spezialitäten	Luisenstr. 48
3	10250	HANAR	4	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-12 00:00:00.000	2	65,83	Hanari Carnes	Rua do Paço, 67
4	10251	VICTE	3	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-15 00:00:00.000	1	41,34	Victuailles en stock	2, rue du Commerce
5	10252	SUPRD	4	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000	1996-07-11 00:00:00.000	2	51,30	Suprêmes délices	Boulevard Tirou, 255
6	10253	HANAR	3	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000	1996-07-16 00:00:00.000	2	58,17	Hanari Carnes	Rua do Paço, 67
7	10254	CHOPS	5	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000	1996-07-23 00:00:00.000	2	22,98	Chop-suey Chinese	Hauptstr. 31
8	10255	RICSU	9	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000	1996-07-15 00:00:00.000	3	148,33	Richter Supermarkt	Starenweg 5
9	10256	WELLI	3	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000	1996-07-17 00:00:00.000	2	13,97	Wellington Importadora	Rua do Mercado, 12
10	10257	HILAA	4	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000	1996-07-22 00:00:00.000	3	81,91	HILARION-Abastos	Carrera 22 con Ave. Carlos Soublette #8-35
11	10258	ERNSH	1	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000	1996-07-23 00:00:00.000	1	140,51	Ernst Handel	Kirchgasse 6
12	10259	CENTC	4	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000	1996-07-25 00:				
13	10260	OTTIK	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-29 00:				
14	10261	QUEDE	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-30 00:				
15	10262	RATTC	8	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000	1996-07-25 00:				
16	10263	ERNSH	9	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000	1996-07-31 00:				
17	10264	FOLKO	6	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000	1996-08-23 00:				
18	10265	BLONP	2	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000	1996-08-12 00:				
19	10266	WARTH	3	1996-07-26 00:00:00.000	1996-09-06 00:00:00.000	1996-07-31 00:				

Tabela: CUSTOMERS

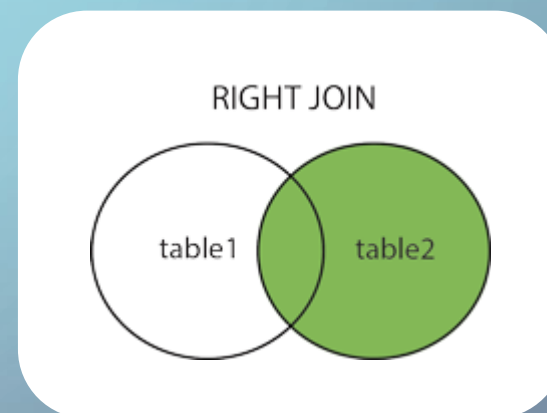|	CustomerID	CompanyName	ContactName	ContactTitle	Address
1	ALFKI	Alfreds Futterkiste	Maria Anders	Sales Representative	Obere Str. 57
2	ANATR	Ana Trujillo Emparedados y helados	Ana Trujillo	Owner	Avda. de la Constitución 2222
3	ANTON	Antonio Moreno Taquería	Antonio Moreno	Owner	Mataderos 2312
4	AROUT	Around the Horn	Thomas Hardy	Sales Representative	120 Hanover Sq.
5	BERGS	Berglunds snabbköp	Christina Berglund	Order Administrator	Berguvsvägen 8
6	BLAUS	Blauer See Delikatessen	Hanna Moos	Sales Representative	Forsterstr. 57
7	BLONP	Blondesddsl pere et fils	Frédérique Citeaux	Marketing Manager	24, place Kléber
8	BOLID	Bólido Comidas preparadas	Martín Sommer	Owner	C/ Araquil, 67
9	BONAP	Bon app'	Laurence Lebihan	Owner	12, rue des Bouchers
10	BOTTM	Bottom-Dollar Markets	Elizabeth Lincoln	Accounting Manager	23 Tsawassen Blvd.
11	BSBEV	B's Beverages	Victoria Ashworth	Sales Representative	Fauntleroy Circus
12	CACTU	Cactus Comidas para llevar	Patricio Simpson	Sales Agent	Cerrito 333

SQL

SELECT Customers.CompanyName, Orders.OrderID

FROM Customers

RIGHT JOIN Orders ON Customers.CustomerID = Orders.CustomerID

	CompanyName	OrderID
1	Alfreds Futterkiste	10643
2	Alfreds Futterkiste	10692
3	Alfreds Futterkiste	10702
4	Alfreds Futterkiste	10835
5	Alfreds Futterkiste	10952
6	Alfreds Futterkiste	11011
7	Ana Trujillo Emparedados y helados	10308
8	Ana Trujillo Emparedados y helados	10625
9	Ana Trujillo Emparedados y helados	10759
10	Ana Trujillo Emparedados y helados	10926
11	Antonio Moreno Taquería	10365
12	Antonio Moreno Taquería	10507
13	Antonio Moreno Taquería	10535
14	Antonio Moreno Taquería	
15	Antonio Moreno Taquería	
16	Antonio Moreno Taquería	
17	Antonio Moreno Taquería	
18	Around the Horn	
19	Around the Horn	
20	Around the Horn	
21	Around the Horn	
22	Around the Horn	10707
23	Around the Horn	10741

826	Wolski Zajazd	10792
827	Wolski Zajazd	10870
828	Wolski Zajazd	10906
829	Wolski Zajazd	10998
830	Wolski Zajazd	11044

✅ Query executed successfully.

	CompanyName	OrderID
1	Vins et alcools Chevalier	10248
2	Toms Spezialitäten	10249
3	Hanari Carnes	10250
4	Victuailles en stock	10251
5	Suprêmes délices	10252
6	Hanari Carnes	10253
7	Chop-suey Chinese	10254
8	Richter Supermarkt	10255
9	Wellington Importadora	10256
10	HILARION-Abastos	10257
11	Ernst Handel	10258
12	Centro comercial Moctezuma	10259
13	Ottilies Käseladen	10260
14	Que Delícia	
15	Rattlesnake Canyon Grocery	
16	Ernst Handel	
17	Folk och fä HB	
18	Blondesddsl père et fils	
19	Wartian Herkku	
20	Frankenversand	
21	GROSELLA-Restaurante	

825	Ernst Handel	11072
826	Pericles Comidas clásicas	11073
827	Simons bistro	11074
828	Richter Supermarkt	11075
829	Bon app'	11076
830	Rattlesnake Canyon Grocery	11077

✅ Query executed successfully.

SELECT Customers.CompanyName, Orders.OrderID

FROM Customers

RIGHT JOIN Orders ON Customers.CustomerID = Orders.CustomerID
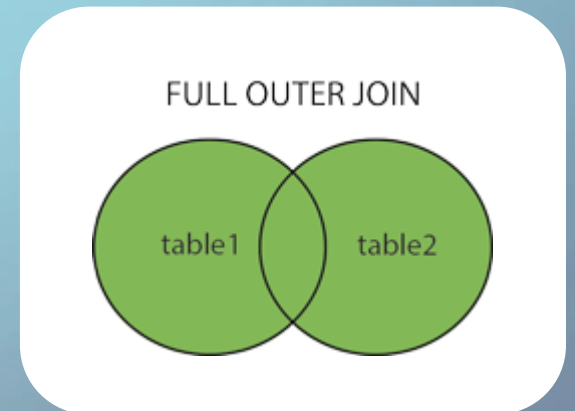
ORDER BY Orders.OrderID;

SQL

FULL OUTER JOIN zwraca wszystkie rekordy w przypadku dopasowania lewych (tabela1) lub prawych (tabela2) rekordów tabeli.

Wskazówka: FULL OUTER JOIN i FULL JOIN są tym samym.

Składnia FULL OUTER JOIN:


```
SELECT column_name(s)
FROM table1
FULL OUTER JOIN table2
ON table1.column_name = table2.column_name
WHERE condition;
```

SQL

Przykład:

Tabela: ORDERS

	OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	ShippedDate	ShipVia	Freight	ShipName	ShipAddress
1	10248	VINET	5	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000	1996-07-16 00:00:00.000	3	32,38	Vins et alcools Chevalier	59 rue de l'Abbaye
2	10249	TOMSP	6	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000	1996-07-10 00:00:00.000	1	11,61	Toms Spezialitäten	Luisenstr. 48
3	10250	HANAR	4	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-12 00:00:00.000	2	65,83	Hanari Carnes	Rua do Paço, 67
4	10251	VICTE	3	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	1996-07-15 00:00:00.000	1	41,34	Victuailles en stock	2, rue du Commerce
5	10252	SUPRD	4	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000	1996-07-11 00:00:00.000	2	51,30	Suprêmes délices	Boulevard Tirou, 255
6	10253	HANAR	3	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000	1996-07-16 00:00:00.000	2	58,17	Hanari Carnes	Rua do Paço, 67
7	10254	CHOPS	5	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000	1996-07-23 00:00:00.000	2	22,98	Chop-suey Chinese	Hauptstr. 31
8	10255	RICSU	9	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000	1996-07-15 00:00:00.000	3	148,33	Richter Supermarkt	Starenweg 5
9	10256	WELLI	3	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000	1996-07-17 00:00:00.000	2	13,97	Wellington Importadora	Rua do Mercado, 12
10	10257	HILAA	4	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000	1996-07-22 00:00:00.000	3	81,91	HILARION-Abastos	Carrera 22 con Ave. Carlos Soublette #8-35
11	10258	ERNSH	1	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000	1996-07-23 00:00:00.000	1	140,51	Ernst Handel	Kirchgasse 6
12	10259	CENTC	4	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000	1996-07-25 00:				
13	10260	OTTIK	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-29 00:				
14	10261	QUEDE	4	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000	1996-07-30 00:				
15	10262	RATTC	8	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000	1996-07-25 00:				
16	10263	ERNSH	9	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000	1996-07-31 00:				
17	10264	FOLKO	6	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000	1996-08-23 00:				
18	10265	BLONP	2	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000	1996-08-12 00:				
19	10266	WARTH	3	1996-07-26 00:00:00.000	1996-09-06 00:00:00.000	1996-07-31 00:				

Tabela: CUSTOMERS

	CustomerID	CompanyName	ContactName	ContactTitle	Address
1	ALFKI	Alfreds Futterkiste	Maria Anders	Sales Representative	Obere Str. 57
2	ANATR	Ana Trujillo Emparedados y helados	Ana Trujillo	Owner	Avda. de la Constitución 2222
3	ANTON	Antonio Moreno Taquería	Antonio Moreno	Owner	Mataderos 2312
4	AROUT	Around the Horn	Thomas Hardy	Sales Representative	120 Hanover Sq.
5	BERGS	Berglunds snabbköp	Christina Berglund	Order Administrator	Berguvsvägen 8
6	BLAUS	Blauer See Delikatessen	Hanna Moos	Sales Representative	Forsterstr. 57
7	BLONP	Blondesddsl pere et fils	Frédérique Citeaux	Marketing Manager	24, place Kléber
8	BOLID	Bólido Comidas preparadas	Martín Sommer	Owner	C/ Araquil, 67
9	BONAP	Bon app'	Laurence Lebihan	Owner	12, rue des Bouchers
10	BOTTM	Bottom-Dollar Markets	Elizabeth Lincoln	Accounting Manager	23 Tsawassen Blvd.
11	BSBEV	B's Beverages	Victoria Ashworth	Sales Representative	Fauntleroy Circus
12	CACTU	Cactus Comidas para llevar	Patricio Simpson	Sales Agent	Cerrito 333

SQL

SELECT Customers.CompanyName, Orders.OrderID

FROM Customers

FULL OUTER JOIN Orders ON Customers.CustomerID=Orders.CustomerID

	CompanyName	OrderID
1	Alfreds Futterkiste	10643
2	Alfreds Futterkiste	10692
3	Alfreds Futterkiste	10702
4	Alfreds Futterkiste	10835
5	Alfreds Futterkiste	10952
6	Alfreds Futterkiste	11011
7	Ana Trujillo Emparedados y helados	10308
8	Ana Trujillo Emparedados y helados	10625
9	Ana Trujillo Emparedados y helados	10759
10	Ana Trujillo Emparedados y helados	10926
11	Antonio Moreno Taquería	10365
12	Antonio Moreno Taquería	10507
13	Antonio Moreno Taquería	10535
14	Antonio Moreno Taquería	10573
15	Antonio Moreno Taquería	10
16	Antonio Moreno Taquería	10
17	Antonio Moreno Taquería	10
18	Around the Horn	10
19	Around the Horn	10
20	Around the Horn	10
21	Around the Horn	10
22	Around the Horn	10

824	Wilman Kala	10910
825	Wilman Kala	11005
826	Wolski Zajazd	10374
827	Wolski Zajazd	10611
828	Wolski Zajazd	10792
829	Wolski Zajazd	10870
830	Wolski Zajazd	10906
831	Wolski Zajazd	10998
832	Wolski Zajazd	11044

✅ Query executed successfully.

	CompanyName	OrderID
1	FISSA Fabrica Inter. Salchichas S.A.	NULL
2	Paris spécialités	NULL
3	Vins et alcools Chevalier	10248
4	Toms Spezialitäten	10249
5	Hanari Carnes	10250
6	Victuailles en stock	10251
7	Suprêmes délices	10252
8	Hanari Carnes	10253
9	Chop-suey Chinese	10254
10	Richter Supermarkt	10255
11	Wellington Importadora	10256
12	HILARION-Abastos	10257
13	Ernst Handel	10258
14	Centro comercial Moctezuma	10259
15	Ottilies Käseladen	
16	Que Delícia	
17	Rattlesnake Canyon Grocery	
18	Ernst Handel	
19	Folk och fä HB	
20	Blondesddsl père et fils	
21	Wartian Herkku	

826	LILA-Supermercado	11071
827	Ernst Handel	11072
828	Pericles Comidas clásicas	11073
829	Simons bistro	11074
830	Richter Supermarkt	11075
831	Bon app'	11076
832	Rattlesnake Canyon Grocery	11077

✅ Query executed successfully.

SELECT Customers.CompanyName, Orders.OrderID

FROM Customers

FULL OUTER JOIN Orders ON Customers.CustomerID=Orders.CustomerID

ORDER BY Orders.OrderID

SQL

Wynik:

CustomerName	OrderID
Null	10309
Null	10310
Alfreds	*Null*
Ana	10308
Antonio	*Null*

SQL

Przykład:

SELECT

    C.ContactName,

    C.CompanyName,

    C.City,

    O.OrderID,

    O.OrderDate,

    O.RequiredDate

FROM Customers C INNER JOIN Orders O

ON C.CustomerID=O.CustomerID

	ContactName	CompanyName	City	OrderID	OrderDate	RequiredDate
1	Paul Henriot	Vins et alcools Chevalier	Reims	10248	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000
2	Karin Josephs	Toms Spezialitäten	Münster	10249	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000
3	Mario Pontes	Hanari Carnes	Rio de Janeiro	10250	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
4	Mary Saveley	Victuailles en stock	Lyon	10251	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
5	Pascale Cartrain	Suprêmes délices	Charleroi	10252	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000
6	Mario Pontes	Hanari Carnes	Rio de Janeiro	10253	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000
7	Yang Wang	Chop-suey Chinese	Bern	10254	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000
8	Michael Holz	Richter Supermarkt	Genève	10255	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000
9	Paula Parente	Wellington Importadora	Resende	10256	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000
10	Carlos Hernández	HILARION-Abastos	San Cristóbal	10257	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000
11	Roland Mendel	Ernst Handel	Graz	10258	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000
12	Francisco Chang	Centro comercial Moctezuma	México D.F.	10259	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000
13	Henriette Pfalzheim	Ottilies Käseladen	Köln	10260	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
14	Bernardo Batista	Que Delícia	Rio de Janeiro	10261	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
15	Paula Wilson	Rattlesnake Canyon Grocery	Albuquerque	10262	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000
16	Roland Mendel	Ernst Handel	Graz	10263	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000
17	Maria Larsson	Folk och fä HB	Bräcke	10264	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000
18	Frédérique Citeaux	Blondesddsl père et fils	Strasbourg	10265	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000
19	Pirkko Koskitalo	Wartian Herkku	Oulu	10266	1996-07-26 00:00:00.000	1996-09-06 00:00:00.000
20	Peter Franken	Frankenversand	München	10267	1996-07-29 00:00:00.000	1996-08-26 00:00:00.000
21	Manuel Pereira	GROSELLA-Restaurante	Caracas	10268	1996-07-30 00:00:00.000	1996-08-27 00:00:00.000
22	Karl Jablonski	White Clover Markets	Seattle	10269	1996-07-31 00:00:00.000	1996-08-14 00:00:00.000

SQL

Przykład:

SELECT

    C.ContactName,

    C.CompanyName,

    C.City,

    O.OrderID,

    O.OrderDate,

    O.RequiredDate

FROM Customers C INNER JOIN Orders O

ON C.CustomerID=O.CustomerID

WHERE C.City='London'

	ContactName	CompanyName	City	OrderID	OrderDate	RequiredDate
1	Victoria Ashworth	B's Beverages	London	10289	1996-08-26 00:00:00.000	1996-09-23 00:00:00.000
2	Thomas Hardy	Around the Horn	London	10355	1996-11-15 00:00:00.000	1996-12-13 00:00:00.000
3	Hari Kumar	Seven Seas Imports	London	10359	1996-11-21 00:00:00.000	1996-12-19 00:00:00.000
4	Ann Devon	Eastern Connection	London	10364	1996-11-26 00:00:00.000	1997-01-07 00:00:00.000
5	Hari Kumar	Seven Seas Imports	London	10377	1996-12-09 00:00:00.000	1997-01-06 00:00:00.000
6	Thomas Hardy	Around the Horn	London	10383	1996-12-16 00:00:00.000	1997-01-13 00:00:00.000
7	Hari Kumar	Seven Seas Imports	London	10388	1996-12-19 00:00:00.000	1997-01-16 00:00:00.000
8	Ann Devon	Eastern Connection	London	10400	1997-01-01 00:00:00.000	1997-01-29 00:00:00.000
9	Elizabeth Brown	Consolidated Holdings	London	10435	1997-02-04 00:00:00.000	1997-03-18 00:00:00.000
10	Thomas Hardy	Around the Horn	London	10453	1997-02-21 00:00:00.000	1997-03-21 00:00:00.000
11	Elizabeth Brown	Consolidated Holdings	London	10462	1997-03-03 00:00:00.000	1997-03-31 00:00:00.000
12	Victoria Ashworth	B's Beverages	London	10471	1997-03-11 00:00:00.000	1997-04-08 00:00:00.000
13	Hari Kumar	Seven Seas Imports	London	10472	1997-03-12 00:00:00.000	1997-04-09 00:00:00.000
14	Victoria Ashworth	B's Beverages	London	10484	1997-03-24 00:00:00.000	1997-04-21 00:00:00.000
15	Simon Crowther	North/South	London	10517	1997-04-24 00:00:00.000	1997-05-22 00:00:00.000
16	Hari Kumar	Seven Seas Imports	London	10523	1997-05-01 00:00:00.000	1997-05-29 00:00:00.000
17	Ann Devon	Eastern Connection	London	10532	1997-05-09 00:00:00.000	1997-06-06 00:00:00.000
18	Victoria Ashworth	B's Beverages	London	10538	1997-05-15 00:00:00.000	1997-06-12 00:00:00.000
19	Victoria Ashworth	B's Beverages	London	10539	1997-05-16 00:00:00.000	1997-06-13 00:00:00.000
20	Hari Kumar	Seven Seas Imports	London	10547	1997-05-23 00:00:00.000	1997-06-20 00:00:00.000

SQL

Przykład:

SELECT

    Mgr.FirstName + ' ' + Mgr.LastName AS 'Manager',

    Emp.FirstName + ' ' + Emp.LastName

    as 'Employee Name'

    FROM Employees AS Emp INNER JOIN Employees AS Mgr

    ON Mgr.EmployeeID=Emp.ReportsTo

	Manager	Employee Name
1	Andrew Fuller	Nancy Davolio
2	Andrew Fuller	Janet Leverling
3	Andrew Fuller	Margaret Peacock
4	Andrew Fuller	Steven Buchanan
5	Steven Buchanan	Michael Suyama
6	Steven Buchanan	Robert King
7	Andrew Fuller	Laura Callahan
8	Steven Buchanan	Anne Dodsworth

SQL

Przykład:

SELECT

    C.ContactName,

    C.CompanyName,

    C.City,

    O.OrderID,

    O.OrderDate,

    O.RequiredDate

FROM Customers C LEFT OUTER JOIN Orders O

ON C.CustomerID=O.CustomerID

	ContactName	CompanyName	City	OrderID	OrderDate	RequiredDate
1	Paul Henriot	Vins et alcools Chevalier	Reims	10248	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000
2	Karin Josephs	Toms Spezialitäten	Münster	10249	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000
3	Mario Pontes	Hanari Carnes	Rio de Janeiro	10250	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
4	Mary Saveley	Victuailles en stock	Lyon	10251	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
5	Pascale Cartrain	Suprêmes délices	Charleroi	10252	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000
6	Mario Pontes	Hanari Carnes	Rio de Janeiro	10253	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000
7	Yang Wang	Chop-suey Chinese	Bern	10254	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000
8	Michael Holz	Richter Supermarkt	Genève	10255	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000
9	Paula Parente	Wellington Importadora	Resende	10256	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000
10	Carlos Hernández	HILARION-Abastos	San Cristóbal	10257	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000
11	Roland Mendel	Ernst Handel	Graz	10258	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000
12	Francisco Chang	Centro comercial Moctezuma	México D.F.	10259	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000
13	Henriette Pfalzheim	Ottilies Käseladen	Köln	10260	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
14	Bernardo Batista	Que Delícia	Rio de Janeiro	10261	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
15	Paula Wilson	Rattlesnake Canyon Grocery	Albuquerque	10262	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000
16	Roland Mendel	Ernst Handel	Graz	10263	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000
17	Maria Larsson	Folk och fä HB	Bräcke	10264	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000
18	Frédérique Citeaux	Blondesddsl père et fils	Strasbourg	10265	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000

SQL

Przykład:

SELECT

    C.ContactName,

    C.CompanyName,

    C.City,

    O.OrderID,

    O.OrderDate,

    O.RequiredDate

FROM Customers C RIGHT OUTER JOIN Orders O

ON C.CustomerID=O.CustomerID

	ContactName	CompanyName	City	OrderID	OrderDate	RequiredDate
1	Paul Henriot	Vins et alcools Chevalier	Reims	10248	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000
2	Karin Josephs	Toms Spezialitäten	Münster	10249	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000
3	Mario Pontes	Hanari Carnes	Rio de Janeiro	10250	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
4	Mary Saveley	Victuailles en stock	Lyon	10251	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
5	Pascale Cartrain	Suprêmes délices	Charleroi	10252	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000
6	Mario Pontes	Hanari Carnes	Rio de Janeiro	10253	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000
7	Yang Wang	Chop-suey Chinese	Bern	10254	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000
8	Michael Holz	Richter Supermarkt	Genève	10255	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000
9	Paula Parente	Wellington Importadora	Resende	10256	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000
10	Carlos Hernández	HILARION-Abastos	San Cristóbal	10257	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000
11	Roland Mendel	Ernst Handel	Graz	10258	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000
12	Francisco Chang	Centro comercial Moctezuma	México D.F.	10259	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000
13	Henriette Pfalzheim	Ottilies Käseladen	Köln	10260	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
14	Bernardo Batista	Que Delícia	Rio de Janeiro	10261	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
15	Paula Wilson	Rattlesnake Canyon Grocery	Albuquerque	10262	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000
16	Roland Mendel	Ernst Handel	Graz	10263	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000
17	Maria Larsson	Folk och fä HB	Bräcke	10264	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000
18	Frédérique Citeaux	Blondesddsl père et fils	Strasbourg	10265	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000

SQL

Przykład:

SELECT

    C.ContactName,

    C.CompanyName,

    C.City,

    O.OrderID,

    O.OrderDate,

    O.RequiredDate

FROM Customers C FULL OUTER JOIN Orders O

ON C.CustomerID=O.CustomerID

	ContactName	CompanyName	City	OrderID	OrderDate	RequiredDate
1	Paul Henriot	Vins et alcools Chevalier	Reims	10248	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000
2	Karin Josephs	Toms Spezialitäten	Münster	10249	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000
3	Mario Pontes	Hanari Carnes	Rio de Janeiro	10250	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
4	Mary Saveley	Victuailles en stock	Lyon	10251	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
5	Pascale Cartrain	Suprêmes délices	Charleroi	10252	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000
6	Mario Pontes	Hanari Carnes	Rio de Janeiro	10253	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000
7	Yang Wang	Chop-suey Chinese	Bern	10254	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000
8	Michael Holz	Richter Supermarkt	Genève	10255	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000
9	Paula Parente	Wellington Importadora	Resende	10256	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000
10	Carlos Hernández	HILARION-Abastos	San Cristóbal	10257	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000
11	Roland Mendel	Ernst Handel	Graz	10258	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000
12	Francisco Chang	Centro comercial Moctezuma	México D.F.	10259	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000
13	Henriette Pfalzheim	Ottilies Käseladen	Köln	10260	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
14	Bernardo Batista	Que Delícia	Rio de Janeiro	10261	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
15	Paula Wilson	Rattlesnake Canyon Grocery	Albuquerque	10262	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000
16	Roland Mendel	Ernst Handel	Graz	10263	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000
17	Maria Larsson	Folk och fä HB	Bräcke	10264	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000
18	Frédérique Citeaux	Blondesddsl père et fils	Strasbourg	10265	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000

SQL

Przykład:

SELECT

   C.ContactName,

   C.CompanyName,

   C.City,

   O.OrderID,

   O.OrderDate,

   O.RequiredDate,

   OD.Quantity,

   OD.UnitPrice,P.ProductName

FROM Customers C INNER JOIN Orders O

ON C.CustomerID=O.CustomerID

INNER JOIN [Order Details] OD

ON O.OrderID=OD.OrderID INNER JOIN Products P

ON OD.ProductID=P.ProductID

	ContactName	CompanyName	City	OrderID	OrderDate	RequiredDate	Quantity	UnitPrice	ProductName
1	Paul Henriot	Vins et alcools Chevalier	Reims	10248	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000	12	14,00	Queso Cabrales
2	Paul Henriot	Vins et alcools Chevalier	Reims	10248	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000	10	9,80	Singaporean Hokkien Fried Mee
3	Paul Henriot	Vins et alcools Chevalier	Reims	10248	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000	5	34,80	Mozzarella di Giovanni
4	Karin Josephs	Toms Spezialitäten	Münster	10249	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000	9	18,60	
5	Karin Josephs	Toms Spezialitäten	Münster	10249	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000	40	42,40	Manjimup Dried Apples
6	Mario Pontes	Hanari Carnes	Rio de Janeiro	10250	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	10	7,70	Jack's New England Clam Chowder
7	Mario Pontes	Hanari Carnes	Rio de Janeiro	10250	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	35	42,40	Manjimup Dried Apples
8	Mario Pontes	Hanari Carnes	Rio de Janeiro	10250	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	15	16,80	Louisiana Fiery Hot Pepper Sauce
9	Mary Saveley	Victuailles en stock	Lyon	10251	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	6	16,80	Gustaf's Knäckebröd
10	Mary Saveley	Victuailles en stock	Lyon	10251	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	15	15,60	Ravioli Angelo
11	Mary Saveley	Victuailles en stock	Lyon	10251	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000	20	16,80	Louisiana Fiery Hot Pepper Sauce
12	Pascale Cartrain	Suprêmes délices	Charleroi	10252	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000	40	64,80	Sir Rodney's Marmalade
13	Pascale Cartrain	Suprêmes délices	Charleroi	10252	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000	25	2,00	Geitost
14	Pascale Cartrain	Suprêmes délices	Charleroi	10252	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000	40	27,20	Camembert Pierrot
15	Mario Pontes	Hanari Carnes	Rio de Janeiro	10253	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000	20	10,00	Gorgonzola Telino

SQL

Przykład:

CREATE VIEW LondonCustomers

AS SELECT * FROM Customers WHERE City='London'

GO

SELECT

    CV.ContactName,

    CV.CompanyName,

    CV.City,

    O.OrderID,

    O.OrderDate,

    O.RequiredDate

FROM LondonCustomers CV INNER JOIN Orders O

ON CV.CustomerID=O.CustomerID

	ContactName	CompanyName	City	OrderID	OrderDate	RequiredDate
1	Victoria Ashworth	B's Beverages	London	10289	1996-08-26 00:00:00.000	1996-09-23 00:00:00.000
2	Thomas Hardy	Around the Horn	London	10355	1996-11-15 00:00:00.000	1996-12-13 00:00:00.000
3	Hari Kumar	Seven Seas Imports	London	10359	1996-11-21 00:00:00.000	1996-12-19 00:00:00.000
4	Ann Devon	Eastern Connection	London	10364	1996-11-26 00:00:00.000	1997-01-07 00:00:00.000
5	Hari Kumar	Seven Seas Imports	London	10377	1996-12-09 00:00:00.000	1997-01-06 00:00:00.000
6	Thomas Hardy	Around the Horn	London	10383	1996-12-16 00:00:00.000	1997-01-13 00:00:00.000
7	Hari Kumar	Seven Seas Imports	London	10388	1996-12-19 00:00:00.000	1997-01-16 00:00:00.000
8	Ann Devon	Eastern Connection	London	10400	1997-01-01 00:00:00.000	1997-01-29 00:00:00.000
9	Elizabeth Brown	Consolidated Holdings	London	10435	1997-02-04 00:00:00.000	1997-03-18 00:00:00.000
10	Thomas Hardy	Around the Horn	London	10453	1997-02-21 00:00:00.000	1997-03-21 00:00:00.000
11	Elizabeth Brown	Consolidated Holdings	London	10462	1997-03-03 00:00:00.000	1997-03-31 00:00:00.000
12	Victoria Ashworth	B's Beverages	London	10471	1997-03-11 00:00:00.000	1997-04-08 00:00:00.000
13	Hari Kumar	Seven Seas Imports	London	10472	1997-03-12 00:00:00.000	1997-04-09 00:00:00.000
14	Victoria Ashworth	B's Beverages	London	10484	1997-03-24 00:00:00.000	1997-04-21 00:00:00.000
15	Simon Crowther	North/South	London	10517	1997-04-24 00:00:00.000	1997-05-22 00:00:00.000

SQL

Przykład:

CREATE FUNCTION BerlinCFunction() RETURNS TABLE

AS

    RETURN (SELECT * FROM Customers WHERE City='Berlin')

GO

SELECT

    TVF.ContactName,

    TVF.CompanyName,

    TVF.City,

    O.OrderID,

    O.OrderDate,

    O.RequiredDate

FROM dbo.BerlinCFunction() TVF INNER JOIN Orders O

ON TVF.CustomerID=O.CustomerID

	ContactName	CompanyName	City	OrderID	OrderDate	RequiredDate
1	Maria Anders	Alfreds Futterkiste	Berlin	10643	1997-08-25 00:00:00.000	1997-09-22 00:00:00.000
2	Maria Anders	Alfreds Futterkiste	Berlin	10692	1997-10-03 00:00:00.000	1997-10-31 00:00:00.000
3	Maria Anders	Alfreds Futterkiste	Berlin	10702	1997-10-13 00:00:00.000	1997-11-24 00:00:00.000
4	Maria Anders	Alfreds Futterkiste	Berlin	10835	1998-01-15 00:00:00.000	1998-02-12 00:00:00.000
5	Maria Anders	Alfreds Futterkiste	Berlin	10952	1998-03-16 00:00:00.000	1998-04-27 00:00:00.000
6	Maria Anders	Alfreds Futterkiste	Berlin	11011	1998-04-09 00:00:00.000	1998-05-07 00:00:00.000

SQL

Przykład:

SELECT

    ContactName,

    CompanyName,

    City,

    OrderID,

    OrderDate,

    RequiredDate

FROM Customers CROSS JOIN Orders

	ContactName	CompanyName	City	OrderID	OrderDate	RequiredDate
1	Maria Anders	Alfreds Futterkiste	Berlin	10248	1996-07-04 00:00:00.000	1996-08-01 00:00:00.000
2	Maria Anders	Alfreds Futterkiste	Berlin	10249	1996-07-05 00:00:00.000	1996-08-16 00:00:00.000
3	Maria Anders	Alfreds Futterkiste	Berlin	10250	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
4	Maria Anders	Alfreds Futterkiste	Berlin	10251	1996-07-08 00:00:00.000	1996-08-05 00:00:00.000
5	Maria Anders	Alfreds Futterkiste	Berlin	10252	1996-07-09 00:00:00.000	1996-08-06 00:00:00.000
6	Maria Anders	Alfreds Futterkiste	Berlin	10253	1996-07-10 00:00:00.000	1996-07-24 00:00:00.000
7	Maria Anders	Alfreds Futterkiste	Berlin	10254	1996-07-11 00:00:00.000	1996-08-08 00:00:00.000
8	Maria Anders	Alfreds Futterkiste	Berlin	10255	1996-07-12 00:00:00.000	1996-08-09 00:00:00.000
9	Maria Anders	Alfreds Futterkiste	Berlin	10256	1996-07-15 00:00:00.000	1996-08-12 00:00:00.000
10	Maria Anders	Alfreds Futterkiste	Berlin	10257	1996-07-16 00:00:00.000	1996-08-13 00:00:00.000
11	Maria Anders	Alfreds Futterkiste	Berlin	10258	1996-07-17 00:00:00.000	1996-08-14 00:00:00.000
12	Maria Anders	Alfreds Futterkiste	Berlin	10259	1996-07-18 00:00:00.000	1996-08-15 00:00:00.000
13	Maria Anders	Alfreds Futterkiste	Berlin	10260	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
14	Maria Anders	Alfreds Futterkiste	Berlin	10261	1996-07-19 00:00:00.000	1996-08-16 00:00:00.000
15	Maria Anders	Alfreds Futterkiste	Berlin	10262	1996-07-22 00:00:00.000	1996-08-19 00:00:00.000
16	Maria Anders	Alfreds Futterkiste	Berlin	10263	1996-07-23 00:00:00.000	1996-08-20 00:00:00.000
17	Maria Anders	Alfreds Futterkiste	Berlin	10264	1996-07-24 00:00:00.000	1996-08-21 00:00:00.000
18	Maria Anders	Alfreds Futterkiste	Berlin	10265	1996-07-25 00:00:00.000	1996-08-22 00:00:00.000

SQL

Przykład:

SELECT EMPLOYEES.EMPLOYEEID, EMPLOYEES.FIRSTNAME, EMPLOYEES.LASTNAME, SUM([ORDER DETAILS].UNITPRICE * QUANTITY * (1 - DISCOUNT)) AS EXTENDEDPRICE

FROM ORDERS

INNER JOIN [ORDER DETAILS] ON ORDERS.ORDERID = [ORDER DETAILS].ORDERID

INNER JOIN EMPLOYEES ON ORDERS.EMPLOYEEID = EMPLOYEES.EMPLOYEEID

GROUP BY EMPLOYEES.EMPLOYEEID, EMPLOYEES.FIRSTNAME, EMPLOYEES.LASTNAME

ORDER BY EMPLOYEES.FIRSTNAME, EMPLOYEES.LASTNAME;

	EMPLOYEEID	FIRSTNAME	LASTNAME	EXTENDEDPRICE
1	2	Andrew	Fuller	166537,75497818
2	9	Anne	Dodsworth	77308,0667095184
3	3	Janet	Leverling	202812,842793465
4	8	Laura	Callahan	126862,277704239
5	4	Margaret	Peacock	232890,845947266
6	6	Michael	Suyama	73913,1292438507
7	1	Nancy	Davolio	192107,604320526
8	7	Robert	King	124568,23538208
9	5	Steven	Buchanan	68792,2825393677

SQL

Przykład:

SELECT C.COMPANYNAME, COUNT(OD.ORDERID) AS 'NUMBER OF ORDERS'

FROM "ORDER DETAILS" OD

INNER JOIN ORDERS O ON O.ORDERID = OD.ORDERID

INNER JOIN CUSTOMERS C ON O.CUSTOMERID = C.CUSTOMERID

WHERE O.ORDERDATE > '19961231'

GROUP BY C.COMPANYNAME, OD.ORDERID ORDER BY COUNT(OD.ORDERID) DESC

	COMPANYNAME	NUMBER OF ORDERS
1	Rattlesnake Canyon Grocery	25
2	Save-a-lot Markets	6
3	Save-a-lot Markets	6
4	Ernst Handel	6
5	QUICK-Stop	5
6	White Clover Markets	5
7	Königlich Essen	5
8	QUICK-Stop	5
9	Ernst Handel	5
10	Save-a-lot Markets	5
11	Frankenversand	5
12	QUICK-Stop	5
13	Ernst Handel	5
14	Wartian Herkku	5
15	Save-a-lot Markets	5
16	Around the Horn	5
17	Save-a-lot Markets	5

SQL

Przykład:

WITH CTECust AS

(SELECT O.CustomerID, C.CompanyName, COUNT(*) AS OrderCount

FROM Orders O

INNER JOIN Customers C ON

O.CustomerID = C.CustomerID

WHERE OrderDAte > '19961231'

GROUP BY O.CustomerID, C.CompanyName

HAVING COUNT(*) >= 15

)

SELECT CTE.CustomerID, CTE.CompanyName, O.OrderID, O.OrderDate

FROM CTECust CTE

INNER JOIN Orders O ON

CTE.CustomerID = O.CustomerID

WHERE

O.OrderDate > '19961231'

	CustomerID	CompanyName	OrderID	OrderDate
1	BERGS	Berglunds snabbköp	10444	1997-02-12 00:00:00.000
2	BERGS	Berglunds snabbköp	10445	1997-02-13 00:00:00.000
3	BERGS	Berglunds snabbköp	10524	1997-05-01 00:00:00.000
4	BERGS	Berglunds snabbköp	10572	1997-06-18 00:00:00.000
5	BERGS	Berglunds snabbköp	10626	1997-08-11 00:00:00.000
6	BERGS	Berglunds snabbköp	10654	1997-09-02 00:00:00.000
7	BERGS	Berglunds snabbköp	10672	1997-09-17 00:00:00.000
8	BERGS	Berglunds snabbköp	10689	1997-10-01 00:00:00.000
9	BERGS	Berglunds snabbköp	10733	1997-11-07 00:00:00.000
10	BERGS	Berglunds snabbköp	10778	1997-12-16 00:00:00.000
11	BERGS	Berglunds snabbköp	10837	1998-01-16 00:00:00.000
12	BERGS	Berglunds snabbköp	10857	1998-01-28 00:00:00.000
13	BERGS	Berglunds snabbköp	10866	1998-02-03 00:00:00.000
14	BERGS	Berglunds snabbköp	10875	1998-02-06 00:00:00.000
15	BERGS	Berglunds snabbköp	10924	1998-03-04 00:00:00.000

DZIĘKUJĘ ZA UWAGĘ