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-- Microsoft SQL Server T-SQL Fundamentals

-- Chapter 06 - Set Operators

-- © Itzik Ben-Gan

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SET NOCOUNT ON

USE TSQLV4;

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-- The UNION Operator

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-- The UNION ALL Multiset Operator

SELECT country, region, city FROM HR.Employees

UNION ALL

SELECT country, region, city FROM Sales.Customers;

-- The UNION Distinct Set Operator

SELECT country, region, city FROM HR.Employees

UNION

SELECT country, region, city FROM Sales.Customers;

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-- The INTERSECT Operator

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-- The INTERSECT Distinct Set Operator

SELECT country, region, city FROM HR.Employees

INTERSECT

SELECT country, region, city FROM Sales.Customers;

-- The INTERSECT ALL Multiset Operator (Optional, Advanced)

SELECT

ROW\_NUMBER()

OVER(PARTITION BY country, region, city

ORDER BY (SELECT 0)) AS rownum,

country, region, city

FROM HR.Employees

INTERSECT

SELECT

ROW\_NUMBER()

OVER(PARTITION BY country, region, city

ORDER BY (SELECT 0)),

country, region, city

FROM Sales.Customers;

WITH INTERSECT\_ALL

AS

(

SELECT

ROW\_NUMBER()

OVER(PARTITION BY country, region, city

ORDER BY (SELECT 0)) AS rownum,

country, region, city

FROM HR.Employees

INTERSECT

SELECT

ROW\_NUMBER()

OVER(PARTITION BY country, region, city

ORDER BY (SELECT 0)),

country, region, city

FROM Sales.Customers

)

SELECT country, region, city

FROM INTERSECT\_ALL;

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-- The EXCEPT Operator

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-- The EXCEPT Distinct Set Operator

-- Employees EXCEPT Customers

SELECT country, region, city FROM HR.Employees

EXCEPT

SELECT country, region, city FROM Sales.Customers;

-- Customers EXCEPT Employees

SELECT country, region, city FROM Sales.Customers

EXCEPT

SELECT country, region, city FROM HR.Employees;

-- The EXCEPT ALL Multiset Operator (Optional, Advanced)

WITH EXCEPT\_ALL

AS

(

SELECT

ROW\_NUMBER()

OVER(PARTITION BY country, region, city

ORDER BY (SELECT 0)) AS rownum,

country, region, city

FROM HR.Employees

EXCEPT

SELECT

ROW\_NUMBER()

OVER(PARTITION BY country, region, city

ORDER BY (SELECT 0)),

country, region, city

FROM Sales.Customers

)

SELECT country, region, city

FROM EXCEPT\_ALL;

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-- Precedence

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-- INTERSECT Precedes EXCEPT

SELECT country, region, city FROM Production.Suppliers

EXCEPT

SELECT country, region, city FROM HR.Employees

INTERSECT

SELECT country, region, city FROM Sales.Customers;

-- Using Parenthesis

(SELECT country, region, city FROM Production.Suppliers

EXCEPT

SELECT country, region, city FROM HR.Employees)

INTERSECT

SELECT country, region, city FROM Sales.Customers;

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-- Circumventing Unsupported Logical Phases

-- (Optional, Advanced)

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-- Number of distinct locations

-- that are either employee or customer locations in each country

SELECT country, COUNT(\*) AS numlocations

FROM (SELECT country, region, city FROM HR.Employees

UNION

SELECT country, region, city FROM Sales.Customers) AS U

GROUP BY country;

-- Two most recent orders for employees 3 and 5

SELECT empid, orderid, orderdate

FROM (SELECT TOP (2) empid, orderid, orderdate

FROM Sales.Orders

WHERE empid = 3

ORDER BY orderdate DESC, orderid DESC) AS D1

UNION ALL

SELECT empid, orderid, orderdate

FROM (SELECT TOP (2) empid, orderid, orderdate

FROM Sales.Orders

WHERE empid = 5

ORDER BY orderdate DESC, orderid DESC) AS D2;