



20280083_LaiToanThang_DBM_Lab04

```
-- Lab 04: HQTCSĐ  
-- MSSV: 20280083  
-- TÊN: LẠI TOÀN THẮNG
```

```
USE Northwind;
```

```
--      1. Theo mỗi OrderID cho biết số lượng Quantity của  
--      mỗi ProductID chiếm tỷ lệ bao nhiêu phần trăm
```

```
SELECT OrderId, ProductId,  
       Quantity, SUM(Quantity) OVER (PARTITION BY OrderId) AS TotalQuantity,  
       STR(CAST(Quantity * 100.0 / SUM(Quantity) OVER (PARTITION BY OrderId) AS DECIMAL(5, 2))) + '%' AS PercentQuantityByOrderId  
FROM [OrderItem] AS OI
```

(2155 rows affected)

	OrderId	ProductId	Quantity	TotalQuantity	PercentQuantityByOrderId
1	1	11	12	27	44%
2	1	42	10	27	37%
3	1	72	5	27	19%
4	2	14	9	49	18%
5	2	51	40	49	82%
6	3	41	10	60	17%
7	3	51	35	60	58%
8	3	65	15	60	25%
9	4	22	6	41	15%
10	4	57	15	41	37%
11	4	65	20	41	49%
12	5	20	40	105	38%
13	5	33	25	105	24%
14	5	60	40	105	38%
15	6	31	20	102	20%
16	6	39	42	102	41%
17	6	49	40	102	39%
18	7	24	15	57	26%
19	7	55	21	57	37%
20	7	74	21	57	37%
21	8	2	20	110	18%
22	8	16	35	110	32%
23	8	36	25	110	23%

```
--      2. Xuất các hóa đơn kèm theo thông tin ngày trong
--      tuần của hóa đơn là : Thứ 2,3,4,5,6,7, Chủ Nhật
```

```
SELECT Id, OrderDate, OrderNumber, CustomerId, TotalAmount, DATENAME(WEEKDAY, OrderDate) AS DayOfWeek
FROM [Order]
```

(830 rows affected)

	Id	OrderDate	OrderNumber	CustomerId	TotalAmount	DayOfWeek
1	1	2012-07-04 00:00:00.000	542378	85	440.00	Wednesday
2	2	2012-07-05 00:00:00.000	542379	79	1863.40	Thursday
3	3	2012-07-08 00:00:00.000	542380	34	1813.00	Sunday
4	4	2012-07-08 00:00:00.000	542381	84	670.80	Sunday
5	5	2012-07-09 00:00:00.000	542382	76	3730.00	Monday
6	6	2012-07-10 00:00:00.000	542383	34	1444.80	Tuesday
7	7	2012-07-11 00:00:00.000	542384	14	625.20	Wednesday
8	8	2012-07-12 00:00:00.000	542385	68	2490.50	Thursday
9	9	2012-07-15 00:00:00.000	542386	88	517.80	Sunday
10	10	2012-07-16 00:00:00.000	542387	35	1119.90	Monday
11	11	2012-07-17 00:00:00.000	542388	20	2018.60	Tuesday
12	12	2012-07-18 00:00:00.000	542389	13	100.80	Wednesday
13	13	2012-07-19 00:00:00.000	542390	56	1746.20	Thursday
14	14	2012-07-19 00:00:00.000	542391	61	448.00	Thursday
15	15	2012-07-22 00:00:00.000	542392	65	624.80	Sunday
16	16	2012-07-23 00:00:00.000	542393	20	2464.80	Monday
17	17	2012-07-24 00:00:00.000	542394	24	724.50	Tuesday
18	18	2012-07-25 00:00:00.000	542395	7	1176.00	Wednesday
19	19	2012-07-26 00:00:00.000	542396	87	364.80	Thursday
20	20	2012-07-29 00:00:00.000	542397	25	4031.00	Sunday
21	21	2012-07-30 00:00:00.000	542398	33	1101.20	Monday
22	22	2012-07-31 00:00:00.000	542399	89	676.00	Tuesday
23	23	2012-08-01 00:00:00.000	542400	87	1376.00	Wednesday

```
--      3. Với mỗi ProductID trong OrderItem xuất các thông tin gồm OrderID, ProductID,
--      ProductName, UnitPrice, Quantity, ContactInfo, ContactType. Trong đó ContactInfo ưu tiên Fax,
--      nếu không thì dùng Phone của Supplier sản phẩm đó. Còn ContactType là ghi chú đó là loại ContactInfo nào
```

```
SELECT OrderID, ProductId, ProductName, P.UnitPrice, Quantity, COALESCE(Fax, Phone) as 'ContactInfo',
CASE COALESCE(Fax, Phone)
WHEN Fax THEN 'Fax'
ELSE COALESCE('Phone', 'N/A')
END AS 'ContactType'
FROM OrderItem as OI
JOIN Product as P
ON OI.ProductId = P.Id
JOIN Supplier as S
ON P.SupplierId = S.Id
```

```

SELECT OrderID, ProductId, ProductName, P.UnitPrice, Quantity, COALESCE(Fax, Phone) as 'ContactInfo',
CASE
    WHEN Fax IS NOT NULL THEN 'Fax'
    ELSE 'Phone'
END AS 'ContactInfo'
FROM OrderItem as OI
JOIN Product as P
ON OI.ProductId = P.Id
JOIN Supplier as S
ON P.SupplierId = S.Id

```

(2155 rows affected)

	OrderID	ProductId	ProductName	UnitPrice	Quantity	ContactInfo	ContactInfo
1	1	11	Queso Cabrales	21.00	12	(98) 598 76 54	Phone
2	1	42	Singaporean Hokkien Fried Mee	14.00	10	555-8787	Phone
3	1	72	Mozzarella di Giovanni	34.80	5	(0544) 60603	Fax
4	2	14	Tofu	23.25	9	(06) 431-7877	Phone
5	2	51	Manjimup Dried Apples	53.00	40	(02) 555-4873	Fax
6	3	41	Jack's New England Clam Chowder	9.65	10	(617) 555-3389	Fax
7	3	51	Manjimup Dried Apples	53.00	35	(02) 555-4873	Fax
8	3	65	Louisiana Fiery Hot Pepper Sauce	21.05	15	(100) 555-4822	Phone
9	4	22	Gustaf's Knäckebröd	21.00	6	031-987 65 91	Fax
10	4	57	Ravioli Angelo	19.50	15	(089) 6547667	Fax
11	4	65	Louisiana Fiery Hot Pepper Sauce	21.05	20	(100) 555-4822	Phone
12	5	20	Sir Rodney's Mamalade	81.00	40	(161) 555-4448	Phone
13	5	33	Geitost	2.50	25	(0)2-953010	Phone
14	5	60	Camembert Pierrot	34.00	40	38.76.98.58	Fax
15	6	31	Gorgonzola Telino	12.50	20	(0544) 60603	Fax
16	6	39	Chartreuse verte	18.00	42	(1) 03.83.00.62	Fax
17	6	49	Maxilaku	20.00	40	(953) 10956	Phone
18	7	24	Guaraná Fantástica	4.50	15	(11) 555 4640	Phone
19	7	55	Pâté chinois	24.00	21	(514) 555-9022	Phone
20	7	74	Longlife Tofu	10.00	21	(03) 3555-5011	Phone
21	8	2	Chang	19.00	20	(171) 555-2222	Phone
22	8	16	Pavlova	17.45	35	(03) 444-6588	Fax
23	8	36	Inlaqd Sill	19.00	25	08-123 45 67	Phone

```

-- 4. Cho biết Id của database Northwind, Id của bảng Supplier, Id của User
-- mà bạn đang đăng nhập là bao nhiêu. Cho biết luôn tên User mà đang đăng nhập

```

```

-- Id của database Northwind
SELECT DB_ID('Northwind') as 'Database ID'
-- Id của bảng Supplier
SELECT OBJECT_ID('Supplier') as 'Supplier ID'
-- Id của User
SELECT SUSER_ID() as 'User ID'
-- tên User mà đang đăng nhập
SELECT SUSER_SNAME() AS 'User Name'

```

Results		Messages	
Database ID			
1	5		
Supplier ID			
1	1125579048		
User ID			
1	259		
User Name			
1	TOANTHANG\Thang Lai		

```
-- 5. Cho biết các thông tin user_update, user_seek, user_scan
-- và user_lookup trên bảng Order trong database Northwind
```

```
SELECT
    [TableName] = OBJECT_NAME(object_id),
    user_updates, user_seeks, user_scans, user_lookups
FROM
    sys.dm_db_index_usage_stats
WHERE
    database_id = DB_ID('Northwind')
AND
    OBJECT_NAME(object_id) = 'Order'
-----
SELECT
    OBJECT_NAME(object_id) AS TableName,
    user_updates,
    user_seeks,
    user_scans,
    user_lookups
FROM
    sys.dm_db_index_usage_stats
WHERE
    OBJECT_ID = OBJECT_ID('Order')
```

	TableName	user_updates	user_seeks	user_scans	user_lookups
1	Order	0	28	0	0
2	Order	0	0	28	18
3	Order	0	0	1	0

```
-- 6. Dùng WITH phân chia cây như sau : Mức 0 là các Quốc Gia(Country), mức 1 là các Thành Phố (City)
-- thuộc Country đó, và mức 2 là các Hóa Đơn (Order) thuộc khách hàng từ Country-City đó
-- DÙNG WITH VỚI ĐỂ QUY ĐỊNH XÂY DỰNG CÂY
```

```

WITH OrderCategory (Country, City, OrderId, Level)
AS (
    -- Level 0: Countries
    SELECT DISTINCT Country,
        City = CAST('' AS NVARCHAR(255)),
        OrderId = -1,
        Level = 0
    FROM Customer

    UNION ALL

    -- Level 1: Cities within each Country
    SELECT C.Country,
        City = CAST(C.City AS NVARCHAR(255)),
        OrderId = -1,
        Level = OC.Level + 1
    FROM OrderCategory OC
    INNER JOIN Customer C ON OC.Country = C.Country
    WHERE OC.Level = 0

    UNION ALL

    -- Level 2: Orders within each City
    SELECT C.Country,
        City = CAST(C.City AS NVARCHAR(255)),
        O.Id AS OrderId,
        Level = OC.Level + 1
    FROM OrderCategory OC
    INNER JOIN Customer C ON OC.Country = C.Country AND OC.City = C.City
    INNER JOIN [Order] O ON C.Id = O.CustomerId
    WHERE OC.Level = 1
)
SELECT [Quoc Gia] = CASE WHEN Level = 0 THEN Country ELSE '-' END,
    [Thanh Pho] = CASE WHEN Level = 1 THEN City ELSE '----' END,
    [Order Id] = CASE WHEN Level = 2 THEN CAST(OrderId AS NVARCHAR) ELSE '-----' END,
    Cap = Level
FROM OrderCategory
GROUP BY Country, City, OrderId, Level
ORDER BY Country, City, OrderId, Level;

```

(920 rows affected)

	Quoc Gia	Thanh Pho	Order Id	Cap
1	Argentina	---	----	0
2	--	Buenos Aires	-----	1
3	--	---	162	2
4	--	---	201	2
5	--	---	274	2
6	--	---	284	2
7	--	---	469	2
8	--	---	535	2
9	--	---	572	2
10	--	---	581	2
11	--	---	634	2
12	--	---	651	2
13	--	---	669	2
14	--	---	690	2
15	--	---	711	2
16	--	---	739	2
17	--	---	772	2
18	--	---	807	2
19	Austria	---	-----	0
20	--	Graz	-----	1
21	--	---	11	2
22	--	---	16	2
23	--	---	104	2
24	--	---	121	2
25	--	---	135	2
26	--	---	143	2
27	--	---	155	2
28	--	---	156	2
29	--	---	183	2
30	--	---	195	2

```
-- 7. Xuất những hóa đơn từ khách hàng France mà có tổng số lượng Quantity
-- lớn hơn 50 của các sản phẩm thuộc hóa đơn ấy

-- Xuất những hóa đơn từ khách hàng France mà có tổng số lượng Quantity lớn hơn 50
-- DÙNG CTE
WITH OrderSummary AS (
    SELECT OrderId, SUM(Quantity) AS 'TotalQuantity'
    FROM [OrderItem]
    GROUP BY OrderId
    HAVING SUM(Quantity) > 50
),
CustomerCountry AS (
    SELECT O.Id, O.OrderDate, OrderNumber, TotalAmount, CustomerId, Country, [Name] = CONCAT(FirstName, ' ', LastName)
    FROM Customer AS C
    JOIN [Order] AS O
    ON C.Id = O.CustomerId
    WHERE Country LIKE '%France%'
)
SELECT *
FROM OrderSummary AS OS
JOIN CustomerCountry AS CC
ON OS.OrderId = CC.Id;
```

	OrderId	TotalQuantity	Id	OrderDate	OrderNumber	TotalAmount	CustomerId	Country	Name
1	50	80	50	2012-09-04 00:00:00.000	542427	1420.00	7	France	Frédérique Citeaux
2	93	72	93	2012-10-29 00:00:00.000	542470	2564.40	9	France	Laurence Lebihan
3	113	138	113	2012-11-22 00:00:00.000	542490	7390.20	7	France	Frédérique Citeaux
4	115	94	115	2012-11-25 00:00:00.000	542492	1549.60	9	France	Laurence Lebihan
5	161	51	161	2013-01-08 00:00:00.000	542538	1622.40	23	France	Martine Rancé
6	166	78	166	2013-01-14 00:00:00.000	542543	2123.20	41	France	Annette Roulet
7	189	99	189	2013-02-05 00:00:00.000	542566	2210.80	7	France	Frédérique Citeaux
8	202	69	202	2013-02-18 00:00:00.000	542579	1838.20	7	France	Frédérique Citeaux
9	212	76	212	2013-02-27 00:00:00.000	542589	1688.00	84	France	Mary Saveley
10	223	53	223	2013-03-11 00:00:00.000	542600	1820.80	9	France	Laurence Lebihan
11	264	110	264	2013-04-18 00:00:00.000	542641	3000.00	9	France	Laurence Lebihan
12	299	80	299	2013-05-23 00:00:00.000	542676	2812.00	84	France	Mary Saveley
13	319	63	319	2013-06-12 00:00:00.000	542696	2040.00	7	France	Frédérique Citeaux
14	387	102	387	2013-08-15 00:00:00.000	542764	4985.50	23	France	Martine Rancé
15	416	80	416	2013-09-10 00:00:00.000	542793	2032.00	9	France	Laurence Lebihan
16	468	51	468	2013-10-23 00:00:00.000	542845	1296.00	9	France	Laurence Lebihan
17	508	99	508	2013-11-26 00:00:00.000	542885	2598.00	9	France	Laurence Lebihan
18	516	66	516	2013-12-03 00:00:00.000	542893	616.00	23	France	Martine Rancé
19	542	93	542	2013-12-22 00:00:00.000	542919	3687.00	23	France	Martine Rancé
20	567	78	567	2014-01-05 00:00:00.000	542944	2070.00	84	France	Mary Saveley
21	603	54	603	2014-01-23 00:00:00.000	542980	740.00	84	France	Mary Saveley
22	624	78	624	2014-02-05 00:00:00.000	543001	2083.40	9	France	Laurence Lebihan
23	685	80	685	2014-03-06 00:00:00.000	543062	1925.50	9	France	Laurence Lebihan