```sql
CREATE VIEW uvw_DetailProductInOrder
AS
    SELECT I.OrderId, O.OrderNumber, O.OrderDate, I.ProductId,
            ProductInfo = P.ProductName + ' ' + P.Package,
            I.UnitPrice, I.Quantity
    FROM [Order] O join OrderItem I ON O.Id = I.OrderId join Product P ON I.ProductId = P.Id
GO

SELECT *
FROM uvw_DetailProductInOrder
```

	OrderId	OrderNumber	OrderDate	ProductId	ProductInfo	UnitPrice	Quantity
1	1	542378	2012-07-04 00:00:00.000	11	Queso Cabrales 1 kg pkg.	14.00	12
2	1	542378	2012-07-04 00:00:00.000	42	Singaporean Hokkien Fried Mee 32 - 1 kg pkgs.	9.80	10
3	1	542378	2012-07-04 00:00:00.000	72	Mozzarella di Giovanni 24 - 200 g pkgs.	34.80	5
4	2	542379	2012-07-05 00:00:00.000	14	Tofu 40 - 100 g pkgs.	18.60	9
5	2	542379	2012-07-05 00:00:00.000	51	Manjimup Dried Apples 50 - 300 g pkgs.	42.40	40
6	3	542380	2012-07-08 00:00:00.000	41	Jack's New England Clam Chowder 12 - 12 oz cans	7.70	10
7	3	542380	2012-07-08 00:00:00.000	51	Manjimup Dried Apples 50 - 300 g pkgs.	42.40	35
8	3	542380	2012-07-08 00:00:00.000	65	Louisiana Fiery Hot Pepper Sauce 32 - 8 oz bottles	16.80	15
9	4	542381	2012-07-08 00:00:00.000	22	Gustaf's Knäckebröd 24 - 500 g pkgs.	16.80	6
10	4	542381	2012-07-08 00:00:00.000	57	Ravioli Angelo 24 - 250 g pkgs.	15.60	15
11	4	542381	2012-07-08 00:00:00.000	65	Louisiana Fiery Hot Pepper Sauce 32 - 8 oz bottles	16.80	20

```sql
CREATE VIEW uvw_AllProductInOrder
AS
    SELECT OrderId, OrderNumber, OrderDate,
            ProductList = STUFF((
                                SELECT ',' + CAST(I.ProductId AS NVARCHAR(25))
                                FROM [Order] O join OrderItem I ON O.Id = I.OrderId
                                WHERE I.OrderId = uvw_DetailProductInOrder.OrderId
                                FOR XML PATH ('')
                                ), 1, 1, ''),
            TotalAmount = SUM(UnitPrice * Quantity)
    FROM uvw_DetailProductInOrder
    GROUP BY OrderId, OrderNumber, OrderDate
GO

SELECT *
FROM uvw_AllProductInOrder
```
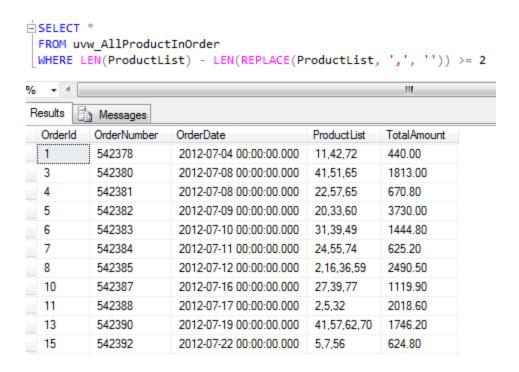
Results | Messages

OrderId	OrderNumber	OrderDate	ProductList	TotalAmount
1	542378	2012-07-04 00:00:00.000	11,42,72	440.00
2	542379	2012-07-05 00:00:00.000	14,51	1863.40
3	542380	2012-07-08 00:00:00.000	41,51,65	1813.00
4	542381	2012-07-08 00:00:00.000	22,57,65	670.80
5	542382	2012-07-09 00:00:00.000	20,33,60	3730.00
6	542383	2012-07-10 00:00:00.000	31,39,49	1444.80
7	542384	2012-07-11 00:00:00.000	24,55,74	625.20
8	542385	2012-07-12 00:00:00.000	2,16,36,59	2490.50
9	542386	2012-07-15 00:00:00.000	53,77	517.80
10	542387	2012-07-16 00:00:00.000	27,39,77	1119.90
11	542388	2012-07-17 00:00:00.000	2,5,32	2018.60

```sql
SELECT *
FROM uvw_DetailProductInOrder
WHERE MONTH(OrderDate) = 7
```

Results | Messages

OrderId	OrderNumber	OrderDate	ProductId	ProductInfo	UnitPrice	Quantity
1	542378	2012-07-04 00:00:00.000	11	Queso Cabrales 1 kg pkg.	14.00	12
1	542378	2012-07-04 00:00:00.000	42	Singaporean Hokkien Fried Mee 32 - 1 kg pkgs.	9.80	10
1	542378	2012-07-04 00:00:00.000	72	Mozzarella di Giovanni 24 - 200 g pkgs.	34.80	5
2	542379	2012-07-05 00:00:00.000	14	Tofu 40 - 100 g pkgs.	18.60	9
2	542379	2012-07-05 00:00:00.000	51	Manjimup Dried Apples 50 - 300 g pkgs.	42.40	40
3	542380	2012-07-08 00:00:00.000	41	Jack's New England Clam Chowder 12 - 12 oz cans	7.70	10
3	542380	2012-07-08 00:00:00.000	51	Manjimup Dried Apples 50 - 300 g pkgs.	42.40	35
3	542380	2012-07-08 00:00:00.000	65	Louisiana Fiery Hot Pepper Sauce 32 - 8 oz bottles	16.80	15
4	542381	2012-07-08 00:00:00.000	22	Gustaf's Knäckebröd 24 - 500 g pkgs.	16.80	6
4	542381	2012-07-08 00:00:00.000	57	Ravioli Angelo 24 - 250 g pkgs.	15.60	15
4	542381	2012-07-08 00:00:00.000	65	Louisiana Fiery Hot Pepper Sauce 32 - 8 oz bottles	16.80	20

```
□SELECT *
 FROM uvw_AllProductInOrder
 WHERE LEN(ProductList) - LEN(REPLACE(ProductList, ',', '')) >= 2
```

Results | Messages

OrderId	OrderNumber	OrderDate	ProductList	TotalAmount
1	542378	2012-07-04 00:00:00.000	11,42,72	440.00
3	542380	2012-07-08 00:00:00.000	41,51,65	1813.00
4	542381	2012-07-08 00:00:00.000	22,57,65	670.80
5	542382	2012-07-09 00:00:00.000	20,33,60	3730.00
6	542383	2012-07-10 00:00:00.000	31,39,49	1444.80
7	542384	2012-07-11 00:00:00.000	24,55,74	625.20
8	542385	2012-07-12 00:00:00.000	2,16,36,59	2490.50
10	542387	2012-07-16 00:00:00.000	27,39,77	1119.90
11	542388	2012-07-17 00:00:00.000	2,5,32	2018.60
13	542390	2012-07-19 00:00:00.000	41,57,62,70	1746.20
15	542392	2012-07-22 00:00:00.000	5,7,56	624.80

4. Hai view trên đã readonly chưa ? Có những cách nào làm hai view trên thành readonly ?

Hai view trên chưa read-only. Những cách để làm cho hai trên thành read-only:

- Tạo trigger trên view.
- Thêm từ khóa UNION khi tạo view. Cụ thể, "UNION SELECT NULL WHERE 1 = 0"
- Thêm từ khóa WITH CHECK OPTION khi tạo view.

```
SET STATISTICS IO, TIME ON
GO

SELECT * FROM uvw_DetailProductInOrder
GO
SELECT * FROM uvw_AllProductInOrder
GO

SET STATISTICS IO, TIME OFF
GO
  SQL Server parse and compile time:
     CPU time = 0 ms, elapsed time = 0 ms.

  (2155 row(s) affected)
  Table 'Workfile'. Scan count 0, logical reads 0, physical reads 0,
  Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0
  Table 'OrderItem'. Scan count 1, logical reads 12, physical reads (
  Table 'Order'. Scan count 1, logical reads 8, physical reads 0, re;
  Table 'Product'. Scan count 1, logical reads 3, physical reads 0, ।

   SQL Server Execution Times:
     CPU time = 15 ms,  elapsed time = 247 ms.
  SQL Server parse and compile time:
     CPU time = 0 ms, elapsed time = 0 ms.

  (830 row(s) affected)
  Table 'Worktable'. Scan count 830, logical reads 6015, physical re;
  Table 'OrderItem'. Scan count 2, logical reads 24, physical reads (
  Table 'Order'. Scan count 1, logical reads 1668, physical reads 0,

   SQL Server Execution Times:
     CPU time = 16 ms,  elapsed time = 164 ms.
  SQL Server parse and compile time:
     CPU time = 0 ms, elapsed time = 0 ms.
```

View uvw_AllProductInOrder (164ms) sẽ chạy nhanh hơn view uvw_DetailProductInOrder
(247ms)