

คณะวิศวกรรมศาสตร์ มหาวิทยาลัยหอการค้าไทย  
ผศ.เฉลิมชันม์ ไวยศยดำรง

## Traceability and Logistics

- ออกแบบและสร้างฐานข้อมูล **(Database and SQL)**
- วิเคราะห์ข้อมูล **Visual Design tool (Less Code)**

ไฟล์เอกสารและไฟล์ที่ใช้ในการสอน

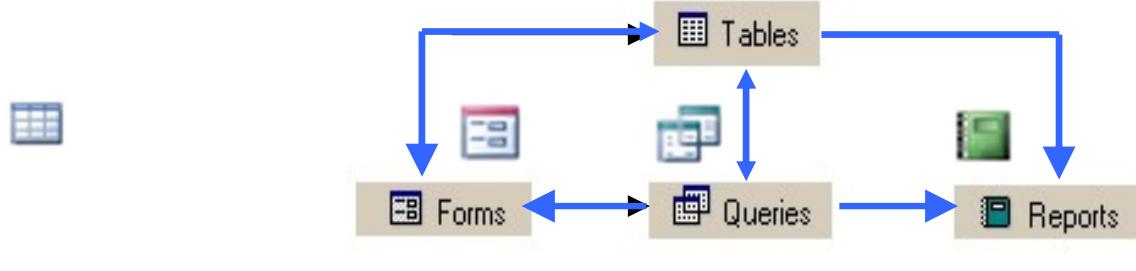
[Basic\\_Database\\_Warehouse\\_ABC\\_V03.Pdf](#)

[https://github.com/chalermchonv/UTCC\\_ENGINEERING](https://github.com/chalermchonv/UTCC_ENGINEERING)  
[Database And Sql/Warehouse\\_ABC](#)

[https://github.com/chalermchonv/UTCC\\_ENGINEERING/tree/main/Database%20And%20SQL/Warehouse\\_ABC](https://github.com/chalermchonv/UTCC_ENGINEERING/tree/main/Database%20And%20SQL/Warehouse_ABC)

## จุดประสงค์ในการออกแบบฐานข้อมูล

- ลดความซ้ำซ้อนของข้อมูล ลดความผิดพลาดในการกรอกข้อมูล
- เพื่อความรวดเร็วในการ เพิ่ม แก้ไข ลบ และ ค้นหาข้อมูล
- เพื่อความถูกต้องและน่าเชื่อถือของข้อมูล
- เพื่อสามารถกำหนดความปลอดภัยในการใช้งานร่วมกัน
- ข้อมูลที่จัดเก็บต้องเป็นอิสระต่อการใช้งานร่วมกัน



All Access O... ▾ «

Tables	×
Product	Selected
ProductType	
Supplier	
Unit	
Queries	×
Q_ProductDetail	
Forms	×
Product	
Reports	×
Product	



Table (ตาราง) : แหล่งเก็บข้อมูลข้อความ ภาพ เสียง ฯลฯ

Query (ตารางเสริมอิน) : การเข้ามาร่วมกับตาราง แสดงข้อมูลโดยกำหนดเงื่อนไข

Form (แบบฟอร์ม) : ส่วนติดต่อกับผู้ใช้ กรอก แสดง แก้ไขข้อมูลจากตารางหรือตารางเสริมอิน

Report (รายงาน) : แสดงข้อมูลจากตาราง ตารางเสริมอิน หรือแบบฟอร์มทางเครื่องพิมพ์

Macro (ชุดคำสั่ง) : สร้างคำสั่งการทำงานที่ใช้งานซ้ำๆ

Module (โปรแกรมย่ออย) : Visual Basic For Application (VBA)

# การสร้างตาราง (Table)

- ฟิลด์ Field

- เรコード Record



การทำงานกับตาราง

เพิ่มข้อมูล

แก้ไข

ลบ

ค้นหา

เรコード Record

บรรทัดข้อมูล

ฟิลด์ Field

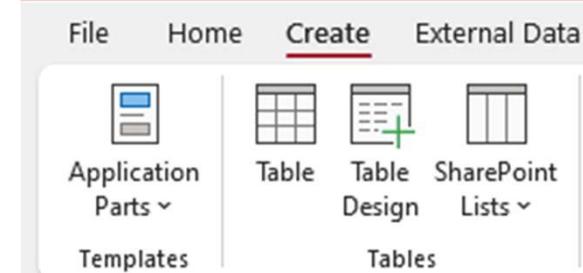
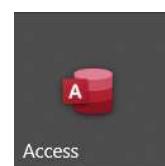
คอลัมน์ข้อมูล

Customers		
	Customer_Code	Customer_Name
	CS-01	name CS-01
	CS-02	name CS-02
	CS-03	name CS-03
	CS-04	name CS-04
	<b>Primary Key</b>	

Field Name	Data Type
ProductID	AutoNumber
ProductName	Short Text
ProductCode	Short Text
UnitPrice	Currency
ProductComm	Short Text
ProductTypeID	Number
UnitID	Number
IsCanceled	Yes/No

Short Text	กำหนดขนาดข้อความ
Long Text	กำหนดชนิดตัวเลข
Number	
Large Number	
Date/Time	วันที่ เวลา
Date/Time Extended	
Currency	เงิน ไม่บัด เศษ
AutoNumber	รหัสเลข อัตโนมัติ
Yes/No	

Byte
Integer
Long Integer
Single
Double
Replication ID
Decimal



# ชนิดคีย์ในฐานข้อมูล

- Primary Key
- Candidate Key
- Composite Key
- Foreign Key

Customers			
Customer_ID	Customer_Code	Customer_Name	SaleGroup_ID
1	CS-01	name CS-01	1
2	CS-02	name CS-02	1
3	CS-03	name CS-03	2
4	CS-04	name CS-04	9
5	CS-05	name CS-05	2
6	CS-06	name CS-06	3

Candidate  
Key

Primary Key

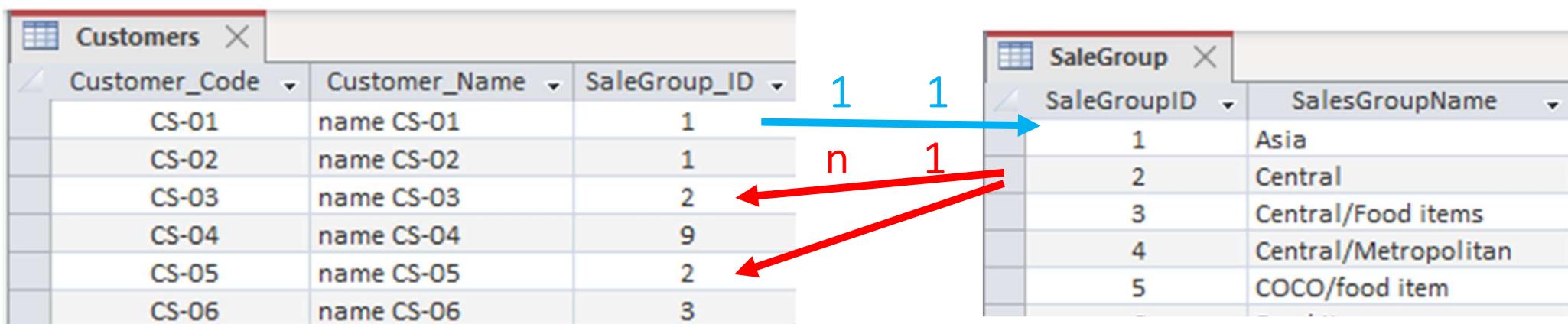
Foreign Key

SaleGroup	
SaleGroupID	SalesGroupName
1	Asia
2	Central
3	Central/Food items
4	Central/Metropolitan
5	COCO/food item

Primary Key

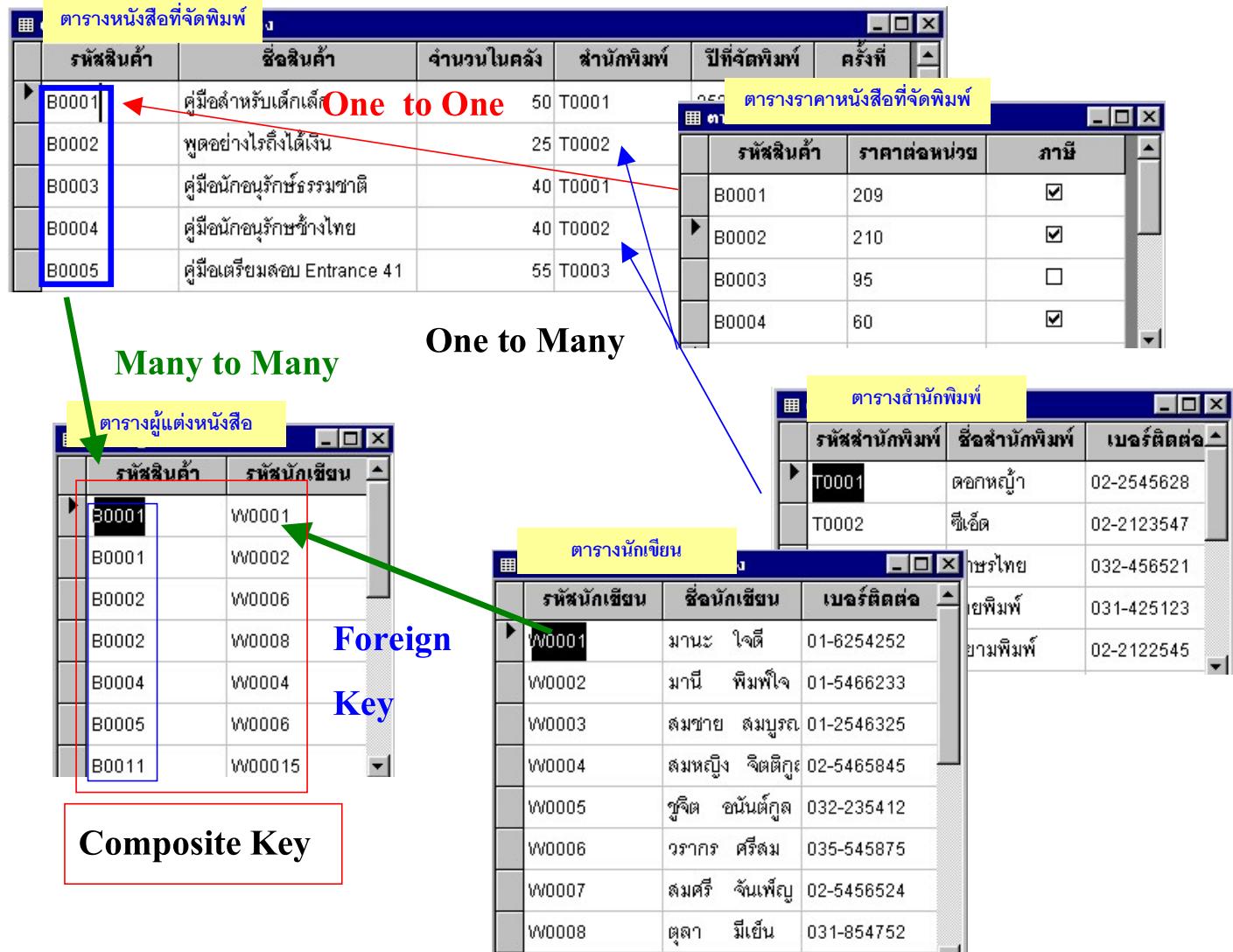
# Relationships

- One to One
- One to Many
- Many to Many

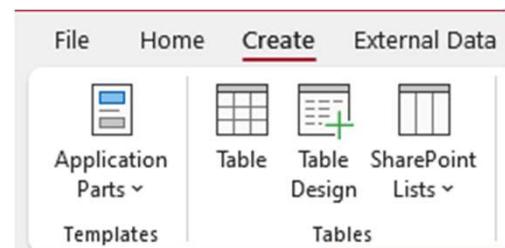


# ตัวอย่างฐานข้อมูลของร้านขายหนังสือ

Primary  
Key



## Create Tab : Table Design



1. Table : Customer Design View

Customers	
Field Name	Data Type
Customer_Code	Short Text
Customer_Name	Short Text
SaleGroup_ID	Number

2. Table : SaleGroup

SaleGroup	
Field Name	Data Type
SaleGroupID	AutoNumber
SalesGroupName	Short Text



Datasheet View		
Customers		
Customer_Code	Customer_Name	SaleGroup_ID
CS-01	name CS-01	1
CS-02	name CS-02	1
CS-03	name CS-03	2
CS-04	name CS-04	9
CS-05	name CS-05	2
CS-06	name CS-06	3

SaleGroup	
SaleGroupID	SalesGroupName
1	Asia
2	Central
3	Central/Food items
4	Central/Metropolitan
5	COCO/food item

## Create Tab : Query Design

Design View

Right Click

Right Click

Show Table

Customer  
Customer\_Code  
Customer\_Name  
SaleGroup\_ID

Customer\_Code Customer\_Name SaleGroup\_ID

Field: Customer\_Code Table: Customers Sort: Show: Criteria: or:

Add Tables

Tables Links Queries

Search

Customers Products SaleGroup SaleNote SaleNote\_Detail Total\_YM Units WH\_Locations

Add Selected Tables

## Right Click On Design

SQL SQL View

Datasheet View

Show Table...

## Right Click On Tab

Save

Close

Close All

Design View

SQL SQL View

Datasheet View

Create

Query Wizard Design Queries

Query Design

## Datasheet View

Customer_Code	Customer_Name	SaleGroup_ID
CS-01	name CS-01	1
CS-02	name CS-02	1
CS-03	name CS-03	2
CS-04	name CS-04	9
CS-05	name CS-05	2
CS-06	name CS-06	3

## Query : Sort

Customer\_Code  
Customer  
Customer\_Name  
SaleGroup\_ID

Customer\_Code Customer\_Name SaleGroup\_ID

Field: Customer\_Code Table: Customers Sort: Show: Criteria: or:

Descending

Ascending

Descending

(not sorted)

Customer_Code	Customer_Name	SaleGroup_ID
CS-06	name CS-06	3
CS-05	name CS-05	2
CS-04	name CS-04	9
CS-03	name CS-03	2
CS-02	name CS-02	1
CS-01	name CS-01	1

## Query : Criteria

Create



**Query1**

Customers

*	
Customer_Code	
Customer_Name	
SaleGroup_ID	

SaleGroup

*	
SaleGroupID	
SalesGroupName	

Field: Customer\_Code Customer\_Name SaleGroup\_ID SalesGroupName  
Table: Customers Customers Customers SaleGroup  
Sort:  
Show:      
Criteria:  
or:

Criteria : SaleGroup\_ID = 1

Field:	Customer_Code	Customer_Name	SaleGroup_ID
Table:	Customers	Customers	Customers
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			1

Criteria : Customer\_Code = "CS-02" AND SaleGroup\_ID = 1

Field:	Customer_Code	Customer_Name	SaleGroup_ID
Table:	Customers	Customers	Customers
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"CS-01"	AND	1

Criteria : SaleGroup\_ID = 1 OR SaleGroup\_ID = 1

Field:	Customer_Name	SaleGroup_ID	SalesGroupName
Table:	Customers	Customers	SaleGroup
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	1	OR	2
or:			

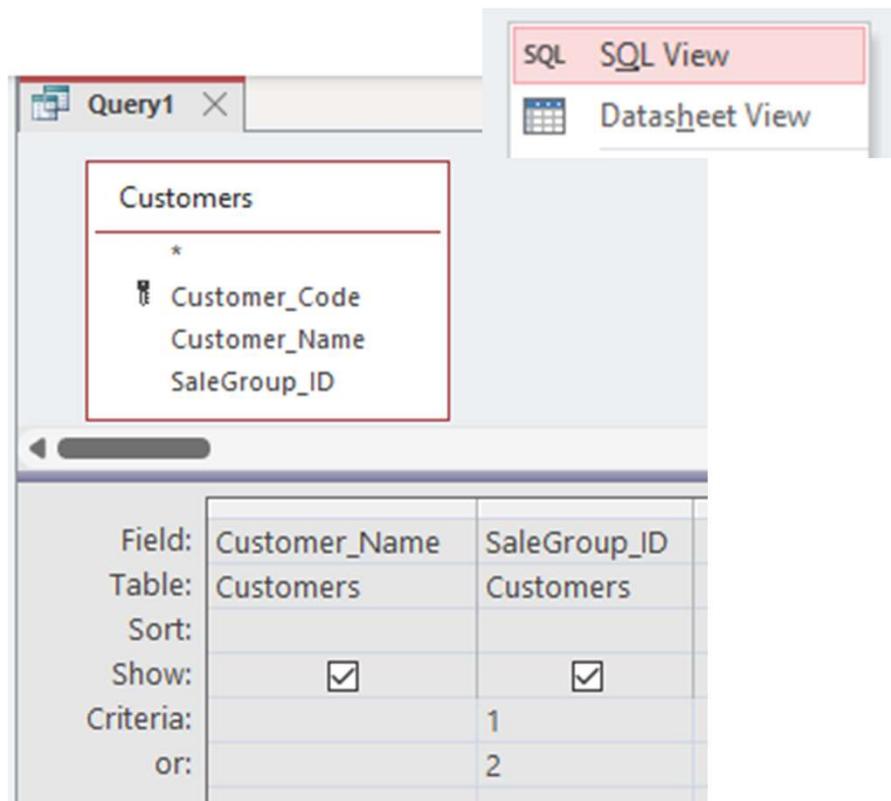
**Query1**

Customer_Code	Customer_Name	SaleGroup_ID	SalesGroupName
CS-01	name CS-01	1	Asia
CS-02	name CS-02	1	Asia
CS-03	name CS-03	2	Central
CS-05	name CS-05	2	Central

## รูปแบบคำสั่ง Select (SQL)

```
SELECT column1, column2, ...
FROM table_name;
```

```
SELECT * FROM table_name;
```

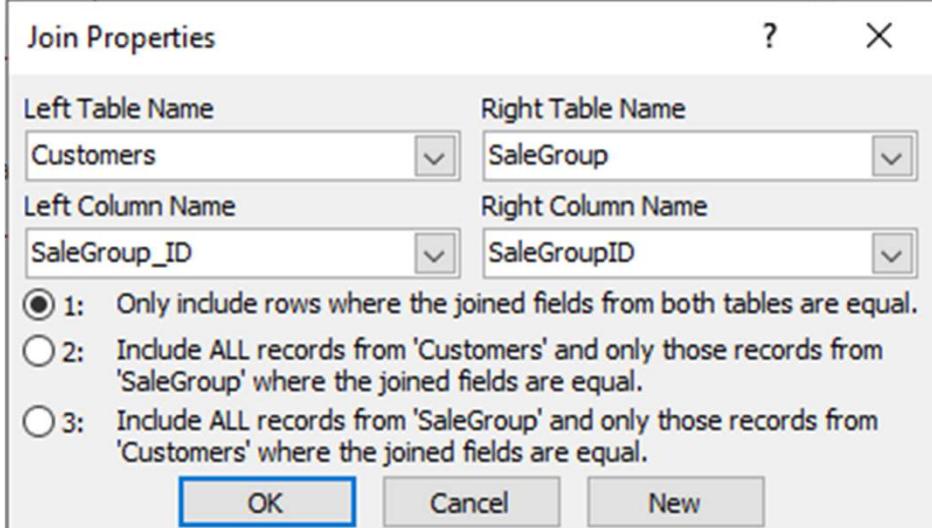
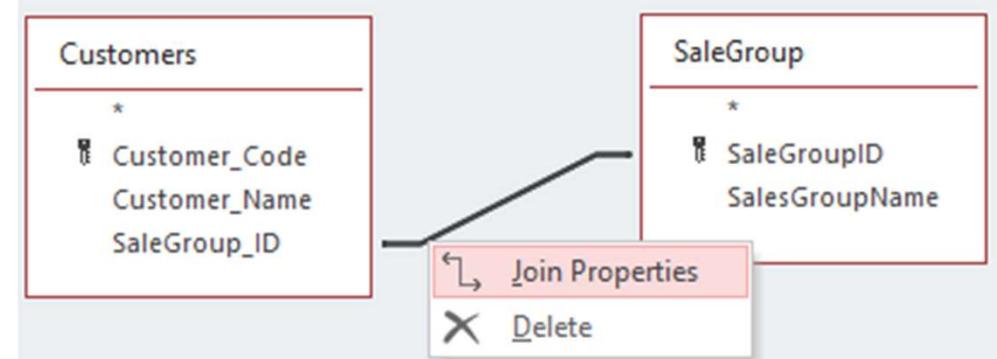


```
SELECT column1, column2, ...
FROM table_name
WHERE condition;
```

[https://www.w3schools.com/sql/sql\\_select.asp](https://www.w3schools.com/sql/sql_select.asp)

```
SELECT
    Customers.Customer_Code,
    Customers.Customer_Name,
    Customers.SaleGroup_ID
FROM
    Customers
WHERE
    Customers.SaleGroup_ID = 1
    OR
    ((Customers.SaleGroup_ID) = 2));
```

## Join Properties Between Tables



- 1: Only include rows where the joined fields from both tables are equal.
- 2: Include ALL records from 'Customers' and only those records from 'SaleGroup' where the joined fields are equal.
- 3: Include ALL records from 'SaleGroup' and only those records from 'Customers' where the joined fields are equal.

OK

Cancel

New

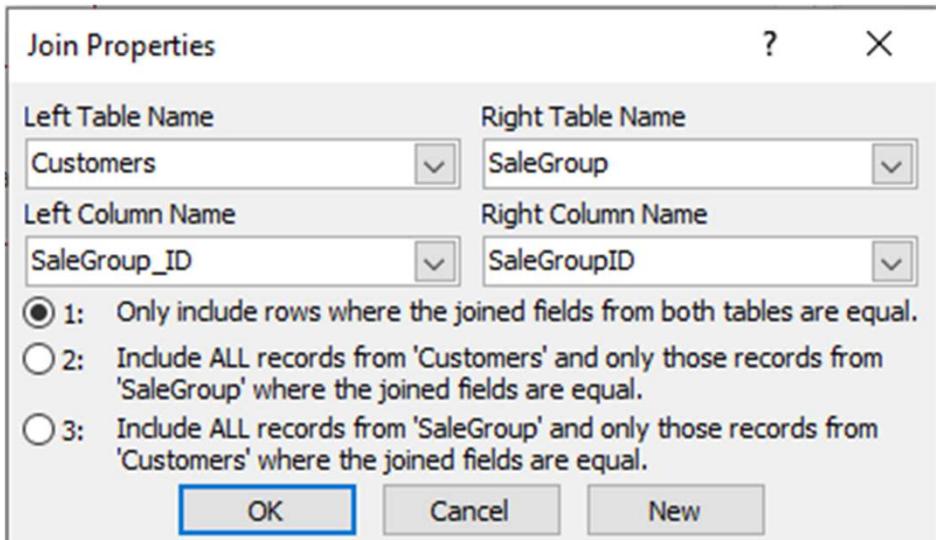
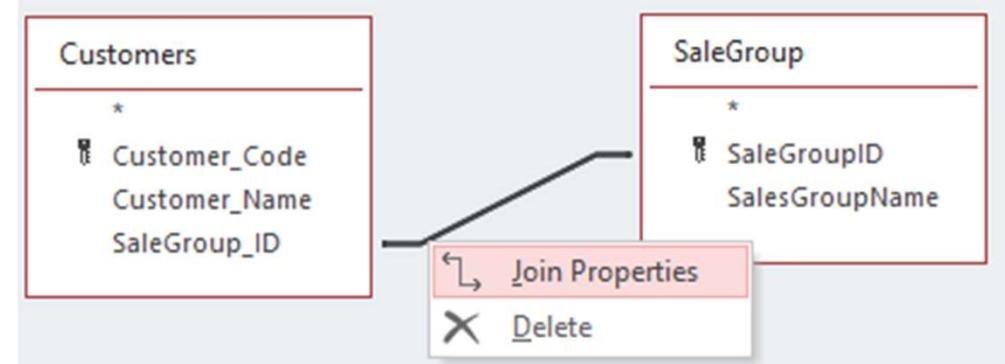
Customers		
Customer_Code	Customer_Name	SaleGroup_ID
CS-01	name CS-01	1
CS-02	name CS-02	1
CS-03	name CS-03	2
CS-04	name CS-04	9
CS-05	name CS-05	2
CS-06	name CS-06	3

SaleGroup	
SaleGroupID	SalesGroupName
1	Asia
2	Central
3	Central/Food items
4	Central/Metropolitan
5	COCO/food item

- 2: Include ALL records from 'Customers' and only those records from 'SaleGroup' where the joined fields are equal.

Customer_Code	Customer_Name	SaleGroup_ID	SalesGroupName
CS-01	name CS-01	1	Asia
CS-02	name CS-02	1	Asia
CS-03	name CS-03	2	Central
CS-05	name CS-05	2	Central
CS-06	name CS-06	3	Central/Food items
CS-04	name CS-04	9	

## Join Properties Between Tables

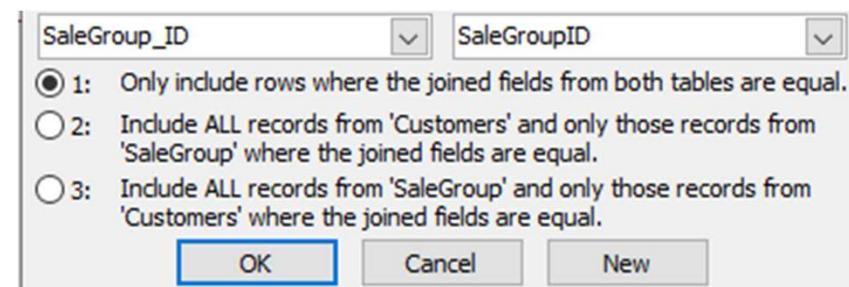
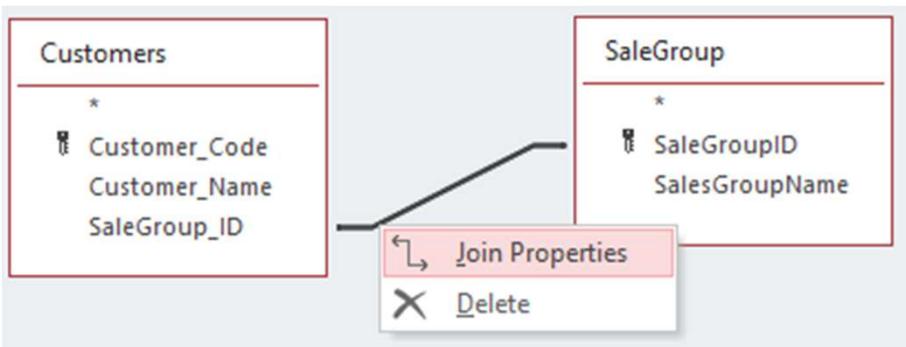


Customers		
Customer_Code	Customer_Name	SaleGroup_ID
CS-01	name CS-01	1
CS-02	name CS-02	1
CS-03	name CS-03	2
CS-04	name CS-04	9
CS-05	name CS-05	2
CS-06	name CS-06	3

SaleGroup	
SaleGroupID	SalesGroupName
1	Asia
2	Central
3	Central/Food items
4	Central/Metropolitan
5	COCO/food item

③: Include ALL records from 'SaleGroup' and only those records from 'Customers' where the joined fields are equal.

Customer_Code	Customer_Name	SaleGroupID	SalesGroupName
CS-01	name CS-01	1	Asia
CS-02	name CS-02	1	Asia
CS-03	name CS-03	2	Central
CS-05	name CS-05	2	Central
CS-06	name CS-06	3	Central/Food items
		4	Central/Metropolitan
		5	COCO/food item



### LEFT JOIN

FROM Customers LEFT JOIN SaleGroup ON Customers.SaleGroup\_ID = SaleGroup.SaleGroupID;

Customer_Code	Customer_Name	SaleGroup_ID	SalesGroupName
CS-01	name CS-01	1	Asia
CS-02	name CS-02	1	Asia
CS-03	name CS-03	2	Central
CS-05	name CS-05	2	Central
CS-06	name CS-06	3	Central/Food items
CS-04	name CS-04	9	

### RIGHT JOIN

FROM Customers RIGHT JOIN SaleGroup ON Customers.SaleGroup\_ID = SaleGroup.SaleGroupID;

Customer_Code	Customer_Name	SaleGroupID	SalesGroupName
CS-01	name CS-01	1	Asia
CS-02	name CS-02	1	Asia
CS-03	name CS-03	2	Central
CS-05	name CS-05	2	Central
CS-06	name CS-06	3	Central/Food items
		4	Central/Metropolitan
		5	COCO/food item

## Criteria : Is Null



Query1

Customer_Code	Customer_Name	SaleGroupID	SalesGroupName
CS-04	name CS-04		

Field:	Customer_Code	Customer_Name	SaleGroupID	SalesGroupName
Table:	Customers	Customers	SaleGroup	SaleGroup
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			Is Null	

- ② 2: Include ALL records from 'Customers' and only those records from 'SaleGroup' where the joined fields are equal.



Query1

Customer_Code	Customer_Name	SaleGroupID	SalesGroupName
		4	Central/Metropolitar
		5	COCO/food item

Field:	Customer_Code	Customer_Name	SaleGroupID	SalesGroupName
Table:	Customers	Customers	SaleGroup	SaleGroup
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		Is Null		

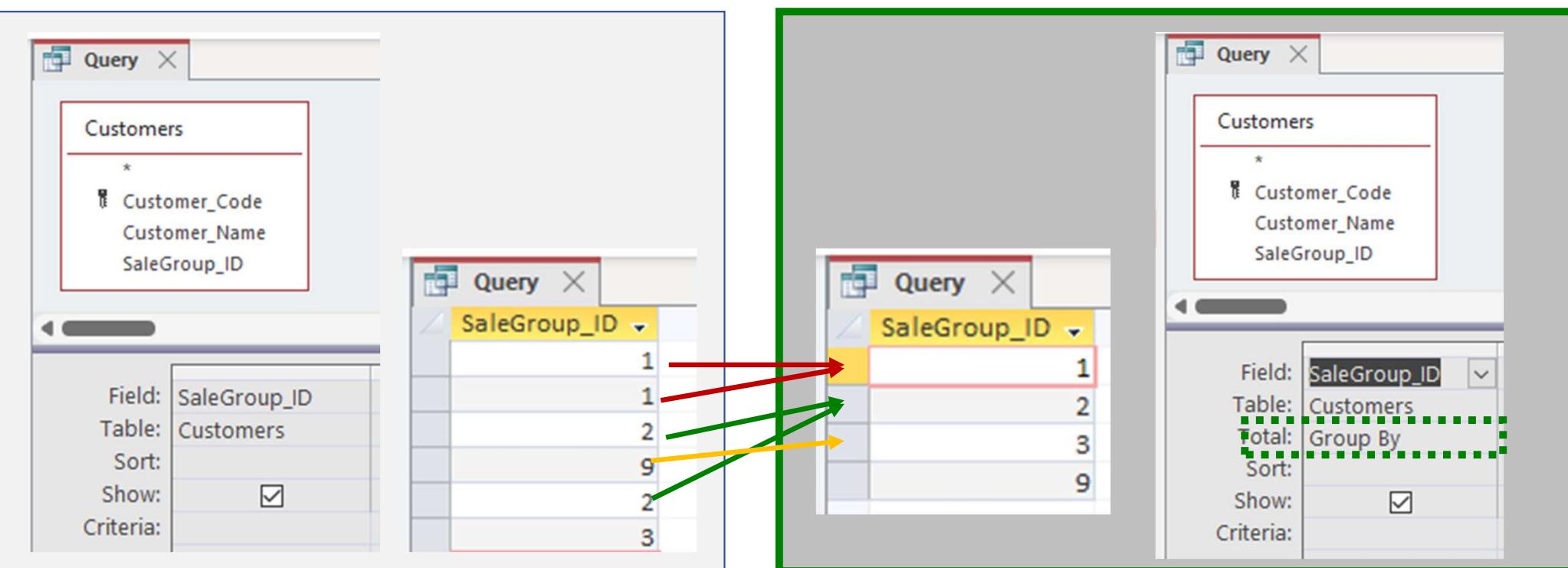
- ③ 3: Include ALL records from 'SaleGroup' and only those records from 'Customers' where the joined fields are equal.

## Group By (Total)



**Customers**

Customer_Code	Customer_Name	SaleGroup_ID
CS-01	name CS-01	1
CS-02	name CS-02	1
CS-03	name CS-03	2
CS-04	name CS-04	9
CS-05	name CS-05	2
CS-06	name CS-06	3



## Group By (Express)

Query X

Customers

\* Customer\_Code  
Customer\_Name  
SaleGroup\_ID

Field: SaleGroup\_ID  
Table: Customers  
Total: Group By  
Sort:  
Show:   
Criteria:  
or:

Customer\_Code  
Count  
Group by  
Sum  
Avg  
Min  
Max  
Count  
StDev  
Var  
First  
Last  
Expression  
Where

Customer_Code	Customer_Name	SaleGroup_ID
CS-01	name CS-01	1
CS-02	name CS-02	1
CS-03	name CS-03	2
CS-04	name CS-04	9
CS-05	name CS-05	2
CS-06	name CS-06	3

SaleGroup_ID	CountOfCusto
1	2
2	2
3	1
9	1

Sum  
Avg  
Min  
Max  
Count  
StDev  
Var  
First  
Last  
Expression  
Where

## Make Table

Run 2  
คลิกเพื่อเปลี่ยนแปลง

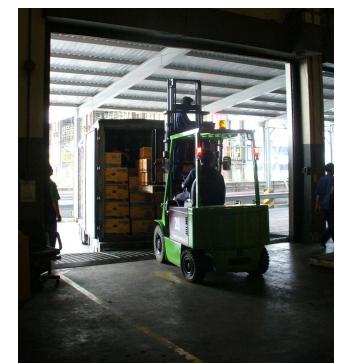
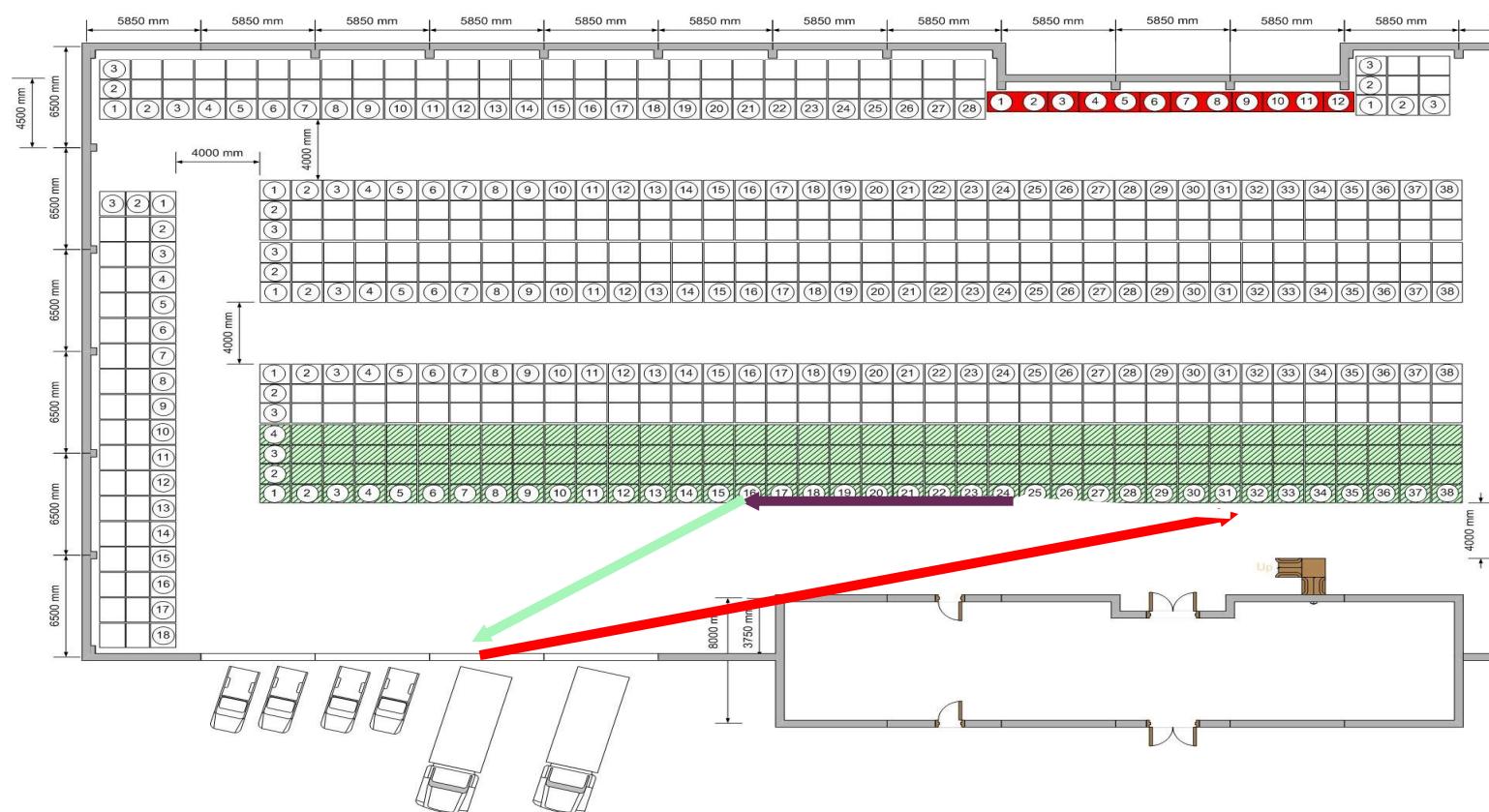
ข้อมูล

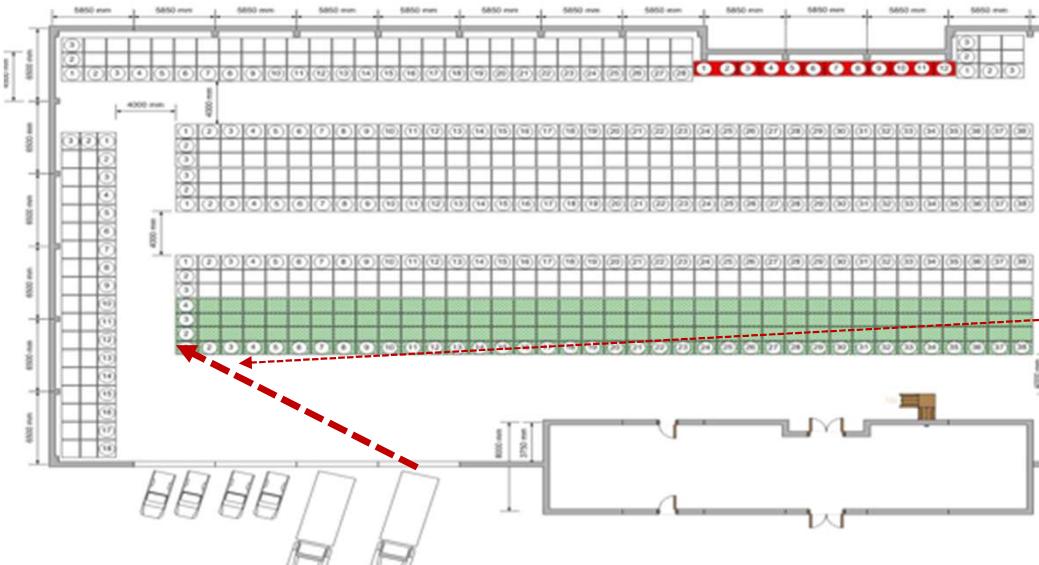
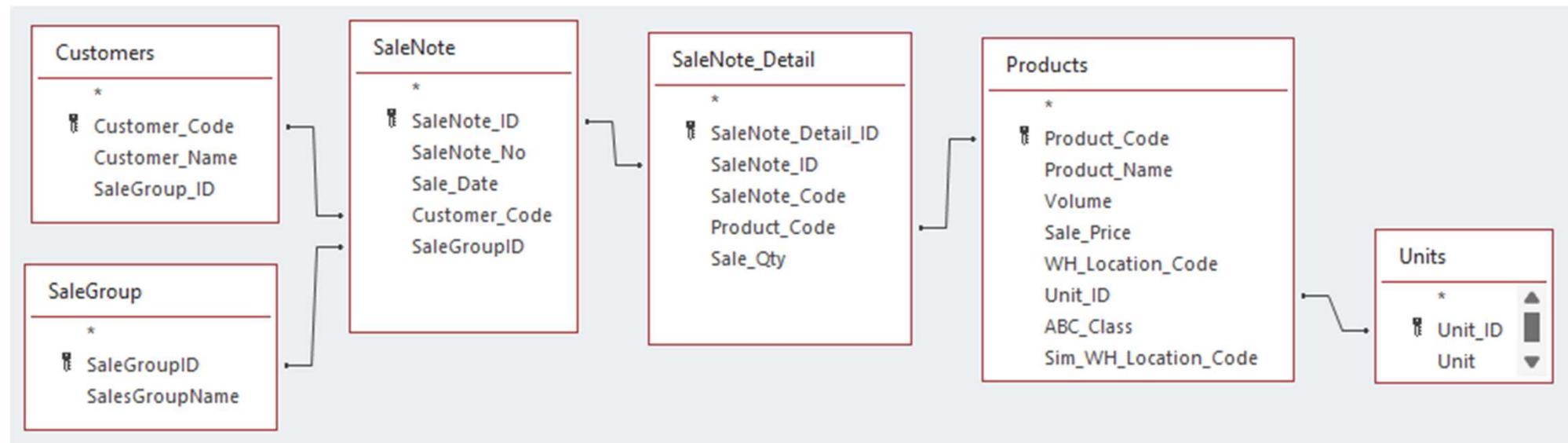
- Make Table
- Append
- Update
- Delete

The screenshot shows the Microsoft Access ribbon with the 'Query Design' tab selected. In the 'Create' tab, the 'Make Table' icon is highlighted with a green dashed box. A red dashed box highlights the 'Run' icon in the 'Results' group. The 'Query' pane displays a table named 'Customers' with fields: Customer\_ID, Customer\_Code, and Customer\_Name. The 'Make Table' dialog box is open, labeled with a green box containing '1'. It shows the 'Table Name' field set to 'SaleGroup\_Summary' and the 'Current Database' radio button selected. The 'OK' button is highlighted with a blue box. The 'Field' section of the 'Query' pane shows the following settings:

Field:	SaleGroup_ID	Customer_Code
Table:	Customers	Customers
Total:	Group By	Count
Sort:		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		

ชุดแบบการจัดวางชั้นวางสำหรับจัดเก็บผลิตภัณฑ์หล่อลื่น (Racking System)





WH\_Locations

WH_Location_Code	Gate_Distance
A1-30	67
A1-31	66
A1-32	64
A1-33	63
A1-34	61
A1-35	62
A1-36	64
A1-37	65
A1-38	67
A1-39	68

**Customers**

Customer_ID	Customer_Code	Customer_Name	SaleGroup_ID
1	CS-01	name CS-01	1
2	CS-02	name CS-02	1
3	CS-03	name CS-03	2
4	CS-04	name CS-04	9
5	CS-05	name CS-05	2
6	CS-06	name CS-06	3

**SaleGroup**

SaleGroupID	SalesGroupName
1	Asia
2	Central
3	Central/Food items
4	Central/Metropolitan
5	COCO/food item

**Products**

Product_Code	Product_Name	Volume	Sale_Price	WH_Location_Code	Unit_ID	Sim_WH_Loca	ABC_Class
500600	BRAKE (24/1)	24/1	\$4,524.00	AL4-1	2	AL4-1	
500602	BRAKE (24/0.5)	24/0.5	\$1,769.00	AR5-20	2	AR5-20	
500681	CUP GREASE # 3 (6/2 KG)	6/2	\$4,845.00	AL4-13	2	AL4-13	
500683	CUP GREASE # 3 (24/0.5 KG)	24/0.5	\$1,769.00	AL4-12	2	AL4-12	

**Units**

Unit_ID	Unit	Unit2
1	Sales unit	Unit_Detail
2	PAC	กล่อง
3	Tank	ถัง

SaleNote

SaleNote_ID	SaleNote_No	Sale_Date	Customer_Code	SaleGroupID
1	8003453205	16/01/2022	CS-01	11
2	8003453210	16/01/2022	CS-02	9
3	8003453218	23/11/2022	CS-03	8
4	8003453230	01/02/2022	CS-04	9
5	8003453237	25/03/2022	CS-05	8
6	8003453311	21/09/2022	CS-06	9
7	8003453313	19/03/2022	CS-07	9
8	8003453323	03/12/2022	CS-08	8
9	8003453437	21/07/2022	CS-09	6
10	8003453555	04/01/2022	CS-10	8
11	8003453581	01/10/2022	CS-11	8

SaleNote\_Detail

SaleNote_Detail_ID	SaleNote_ID	SaleNote_Code	Product_Code	Sale_Qty
1	1	8003453205	502021	1
2	2	8003453210	502021	3
3	3	8003453218	502257	10
10	4	8003453230	501645	2
8	4	8003453230	501633	2
11	4	8003453230	501732	1
9	4	8003453230	501643	1
7	4	8003453230	501631	1
6	4	8003453230	501597	1
5	4	8003453230	501595	1

# Expression Builder

Expression Builder

Enter an Expression to define the [calculated query field](#):  
(Examples of expressions include [field1] + [field2] and [field1] < 5)

Format(«expression», «format», «firstdayofweek», «firstweekofyear»)

OK Cancel Help << Less

Expression Elements

- Q\_SaleNoteFullDetail
- Functions
  - Built-In Functions
  - Warehouse\_ABC\_L...
- Warehouse\_ABC\_Lab...
- Constants
- Operators

Expression Categories

- <All>
- Arrays
- Conversion
- Database
- Date/Time
- Domain Aggregate
- Error Handling
- Financial
- General
- Inspection
- Math

Expression Values

- Fix
- Format
- Format\$
- FormatCurrency
- FormatDateTime
- FormatNumber
- FormatPercent
- FV
- GUIDFromString
- Hex
- Hex\$

Format(expression, [format], [firstdayofweek], [firstweekofyear])

Returns a Variant of type String containing an expression formatted according to instructions contained in a format expression.

Expression Builder

Enter an Expression to define the [calculated query field](#):  
(Examples of expressions include [field1] + [field2] and [field1] < 5)

Format( [SaleNote]![Sale\_Date] , "q")

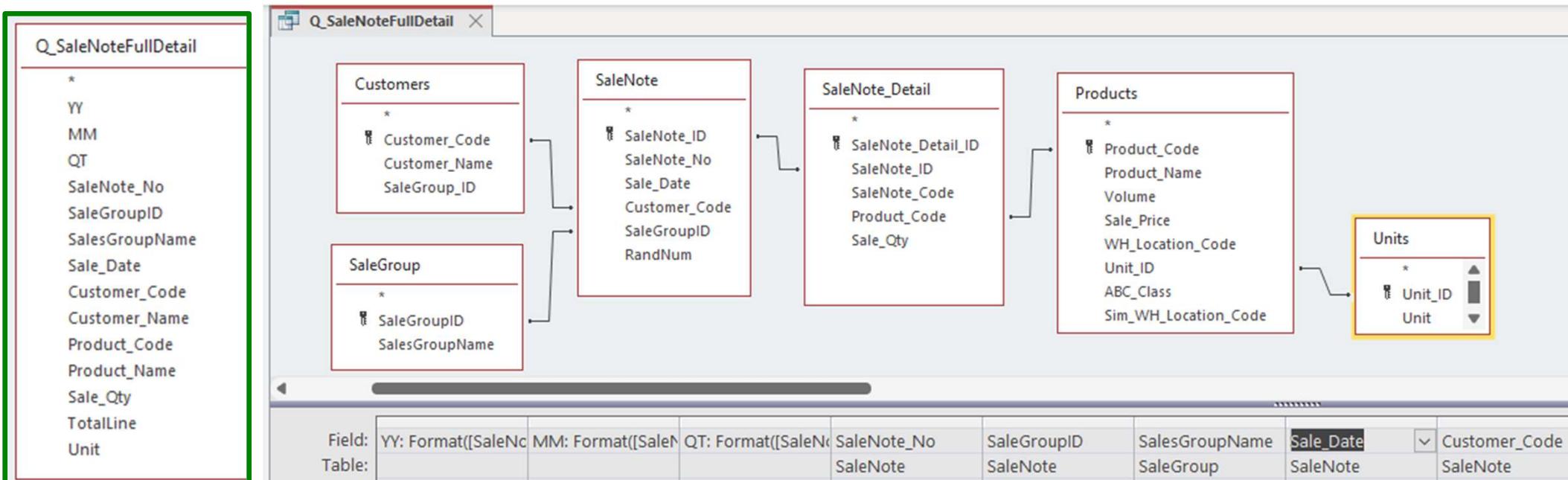
OK Cancel Help << Less

Expression Elements

- Warehouse\_ABC\_Lab...
- Tables
  - Customers
  - Products
  - SaleGroup
  - SaleNote
  - SaleNote\_bk
  - SaleNote\_Deta

Expression Categories

- Customer\_Code
- RandNum
- Sale Date
- SaleGroupID
- SaleNote\_ID
- SaleNote\_No



YY : Format( [SaleNote]![Sale\_Date] , "yyyy" )

MM : Format( [SaleNote]![Sale\_Date] , "mm" )

QT : Format( [SaleNote]![Sale\_Date] , "q" )

TotalLine : [SaleNote\_Detail]![Sale\_Qty] \* [Products]![Sale\_Price]

Sale_Qty	TotalLine	Unit
1	6817	PAC
3	20451	PAC
10	37390	PAC

Q\_SaleNoteFullDetail

YY	MM	QT	SaleNote_No	SaleGroupID	SalesGroupName	Sale_Date	Customer_Code	Customer_Name	Product_Code	Product_Name
2022	01	1	8003453205	11	Northeast	16/01/2022	CS-01	name CS-01	502021	DYNAMIC COMMONRA
2022	01	1	8003453210	9	Metropolitan	16/01/2022	CS-02	name CS-02	502021	DYNAMIC COMMONRA
2022	11	4	8003453218	8	Industrial	23/11/2022	CS-03	name CS-03	502257	HINO GEAR OIL 85W-1

# สรุปยอดขายสินค้า ปี 2022

Q\_Total\_Product\_Year X

Q_SaleNoteFullDetail						
*	YY	Product_Code	Product_Name	SumOfSale_Qt	SumOfTotalLir	CountOfSaleN
	YY	502073	DYNAMIC PREM NP(4/6+	2745	18,712,665.00	186
	MM	502021	DYNAMIC COMMONRAIL	774	5,276,358.00	101
	QT	502294	น้ำกันลิ้น (BATTERY FLUID)	756	4,828,572.00	161
	SaleNote_No	501631	HI-SPEED 2T NP (20/1)	709	4,789,295.00	84
	SaleGroupID	501524	DYNAMIC TURBO NP (4/6	965	4,300,040.00	94
	SalesGroupName	502150	PERFORMA SUPERSYN NI	476	3,102,568.00	14
	Sale_Date	501515	DYNAMIC PLUS 20W-50	777	3,062,934.00	58
	Customer_Code	501633	HI-SPEED 2T NP (20/0.5)	638	2,996,048.00	80
	Customer_Name	501595	V-120D # 40 NP (6/5)	350	2,287,600.00	70
	Product_Code	501597	V-120D # 40 NP (20/1)	759	2,248,917.00	107
	Product_Name	501493	PERFORMA SEMI SYN NP	890	2,238,350.00	103
	Sale_Qty	501637	MAX SPEED 2T NP (20/0.	292	2,008,084.00	11
	TotalLine					
	Unit					

Field: YY Product\_Code Product\_Name Sale\_Qty TotalLine SaleNote\_No YY  
Table: Q\_SaleN Q\_SaleNoteFull Q\_SaleNoteFull  
Total: Group By Group By Group By Sum Sum Count Where  
Sort:  
Show:     
Criteria: "2022"

## Query Design



Totals



Parameters



Property Sheet



Insert Columns

Delete Columns

Return: 25

25  
5  
25  
100  
5%  
25%  
All

Q\_Total\_Product\_Year X

YY	Product_Code	Product_Name	SumOfSale_Qt	SumOfTotalLir	CountOfSaleN
2022	502073	DYNAMIC PREM NP(4/6+	2745	18,712,665.00	186
2022	502021	DYNAMIC COMMONRAIL	774	5,276,358.00	101
2022	502294	น้ำกันลิ้น (BATTERY FLUID)	756	4,828,572.00	161
2022	501631	HI-SPEED 2T NP (20/1)	709	4,789,295.00	84
2022	501524	DYNAMIC TURBO NP (4/6	965	4,300,040.00	94
2022	502150	PERFORMA SUPERSYN NI	476	3,102,568.00	14
2022	501515	DYNAMIC PLUS 20W-50	777	3,062,934.00	58
2022	501633	HI-SPEED 2T NP (20/0.5)	638	2,996,048.00	80
2022	501595	V-120D # 40 NP (6/5)	350	2,287,600.00	70
2022	501597	V-120D # 40 NP (20/1)	759	2,248,917.00	107
2022	501493	PERFORMA SEMI SYN NP	890	2,238,350.00	103
2022	501637	MAX SPEED 2T NP (20/0.	292	2,008,084.00	11

## สรุปยอดขายสินค้า ปี 2022

- 25 อันดับแรก
- ที่มีค่ามากกว่า 1 ล้านบาท
- สรุปยอดขายสินค้า รายเดือน

# สรุปยอดขายรายลูกค้า ปี 2022

Query Design

Insert Columns  
Delete Columns  
Return: 25

YY  
MM  
QT  
SaleNote\_No  
SaleGroupID  
SalesGroupName  
Sale\_Date  
Customer\_Code  
Customer\_Name  
Product\_Code  
Product\_Name  
Sale\_Qty  
TotalLine  
Unit

YY	Customer_Code	Customer_Name	SumOfSale_Qt	SumOfTotalLit	CountOfSaleN
2022	CS-266	name CS-266	456	2,639,352.00	5
2022	CS-177	name CS-177	453	2,550,345.00	11
2022	CS-233	name CS-233	275	1,857,475.00	4
2022	CS-201	name CS-201	253	1,713,236.00	3
2022	CS-146	name CS-146	260	1,694,680.00	1
2022	CS-322	name CS-322	285	1,418,710.00	17
2022	CS-107	name CS-107	195	988,826.00	15
2022	CS-198	name CS-198	150	977,700.00	1
2022	CS-210	name CS-210	145	789,119.00	7
2022	CS-179	name CS-179	134	749,587.00	10
2022	CS-318	name CS-318	134	719,195.00	16
2022	CS-191	name CS-191	110	690,500.00	2
2022	CS-12	name CS-12	115	664,666.00	11

Field:	YY	Customer_Code	Customer_Name	Sale_Qty	TotalLine	SaleNote_No	YY
Table:	Q_SaleN	Q_SaleNoteFullData	Q_SaleNoteFullData	Q_SaleNot	Q_SaleNote	Q_SaleNoteFullD	Q_SaleNote
Total:	Group By	Group By	Group By	Sum	Sum	Count	Where
Sort:					Descending		
Show:	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
Criteria:							"2022"

## สรุปยอดขายลูกค้า ปี 2022

- 25 อันดับแรก
- ที่มีค่ามากกว่า 1 ล้านบาท
- สรุปยอดขายลูกค้า รายเดือน ปี 2022

# สรุปยอดขาย SaleGroup ปี 2022

**Query Design**

The screenshot shows the Microsoft Access Query Design interface. On the left, the query definition pane shows fields grouped by YY, SaleGroupID, SalesGroupName, Sale\_Qty, TotalLine, SaleNote\_No, and YY. The 'Total' row indicates Sum for Sale\_Qty and TotalLine, Count for SaleNote\_No, and Where for YY. The 'Criteria' row specifies '2022' for YY. The 'Show' row has checkboxes for all fields except YY, which is checked. The 'Criteria' row also has a checkbox for YY, which is checked.

The main pane displays the results of the query in a table titled 'Q\_Total\_SaleGroup\_Year'. The table includes columns: YY, SaleGroupID, SalesGroupName, SumOfSale\_Qt, SumOfTotalLir, and CountOfSaleN. The data shows various sales groups and their totals for the year 2022.

**Query Buttons:**

- Totals**: Summarizes the data.
- Parameters**: Allows users to input parameters for the query.
- Property Sheet**: Shows properties for selected objects.
- Table Names**: Shows the names of the tables used in the query.

**Return:** 25

**Filter:** 25, 25%, 100%, 5%, 25%

YY	SaleGroupID	SalesGroupName	SumOfSale_Qt	SumOfTotalLir	CountOfSaleN
2022	2	Central	7846	38,559,526.00	1194
2022	9	Metropolitan	5276	26,806,784.00	919
2022	11	Northeast	1541	7,850,661.00	70
2022	8	Industrial	819	2,309,352.00	35
2022	1	Asia	285	1,418,710.00	17
2022	6	Food items	175	836,763.00	98
2022	7	Government&State E	60	201,122.00	13
2022	12	South	34	147,658.00	4

## สรุปยอดขาย SaleGroup ปี 2022

- 25 อันดับแรก
- ที่มีค่ามากกว่า 1 ล้านบาท
- สรุปยอดขายลูกค้ารายเดือน ปี 2022

YY	Product_Code	Product_Name	SumOfSale_Qt	SumOfTotalLir	CountOfSaleN
2022	502073	DYNAMIC PREM NP(4/6+	2745	18,712,665.00	186
2022	502021	DYNAMIC COMMONRAIL	774	5,276,358.00	101
2022	502294	น้ำกันลื่น (BATTERY FLUID)	756	4,828,572.00	161
2022	501631	HI-SPEED 2T NP (20/1)	709	4,789,295.00	84
2022	501524	DYNAMIC TURBO NP (4/6)	965	4,300,040.00	94
2022	502150	PERFORMA SUPERSYN NP	476	3,102,568.00	14
2022	501515	DYNAMIC PLUS 20W-50	777	3,062,934.00	58
2022	501633	HI-SPEED 2T NP (20/0.5)	638	2,996,048.00	80
2022	501595	V-120D # 40 NP (6/5)	350	2,287,600.00	70
2022	501597	V-120D # 40 NP (20/1)	759	2,248,917.00	107
2022	501493	PERFORMA SEMI SYN NP	890	2,238,350.00	103
2022	501637	MAX SPEED 2T NP (20/0.	292	2,000,004.00	11

```
Function UDF_ABC(Data As Variant, MaxValue As Variant)
Dim Step, ABC
Step = MaxValue / 3
If Data < Step Then ABC = "C"
If Data >= Step And Data < (Step * 2) Then ABC = "B"
If Data >= (Step * 2) Then ABC = "A"
UDF_ABC = ABC
End Function
```

ยอดขายสูงสุด 18.7 ล้าน

A < 12.4  
B >= 6.2 AND <= 12.4  
C > 6.2

คำสั่งซื้อสูงสุด 168 ครั้ง

A < 112  
B >= 56 AND <= 112  
C > 56

AutoSave Off UDF\_ABC.xlsm Search (Alt+Q)

File Home Insert Draw Page Layout Formulas Data Review View Developer Help

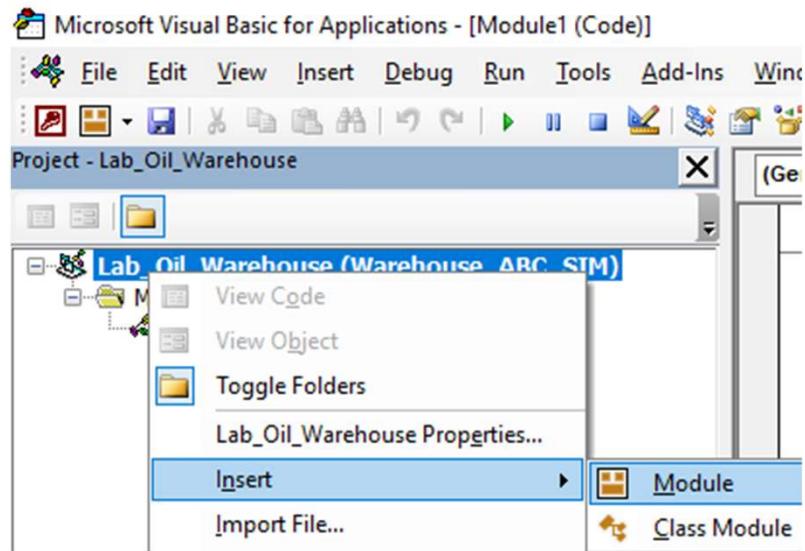
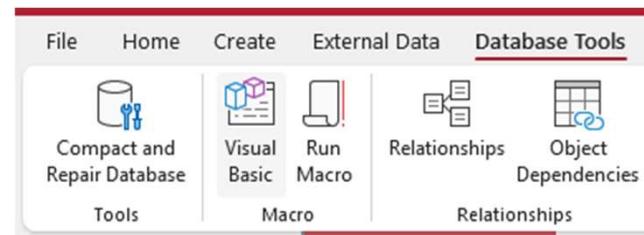
Record Macro Use Relative References Properties

Visual Basic Macros Add-ins Excel COM Insert Design Mode Run Dialog

Macro Security Code Source

E3 =UDF\_ABC(D3,\$D\$3)

	A	B	C	D	E
1					
2	Product_Code	Product_Name	CountOfSaleN	TotalLine	ABC
3	502252	YANMAR ENGINE OIL (6/3 L)	2	1896320	A
4	502150	PERFORMA SUPERSYN NP(4/4+ໂໂຣສັພທໍໄຮສ່າຍ)	1	1694680	A
5	502073	DYNAMIC PREM NP(4/6+1+LS GEAR OIL1L/PAC)	1	1636080	A



Microsoft Visual Basic for Applications - [Module1 (Code)]

File Edit View Insert Debug Run Tools Add-Ins Window Help

Project - Lab\_Oil\_Warehouse

(General)

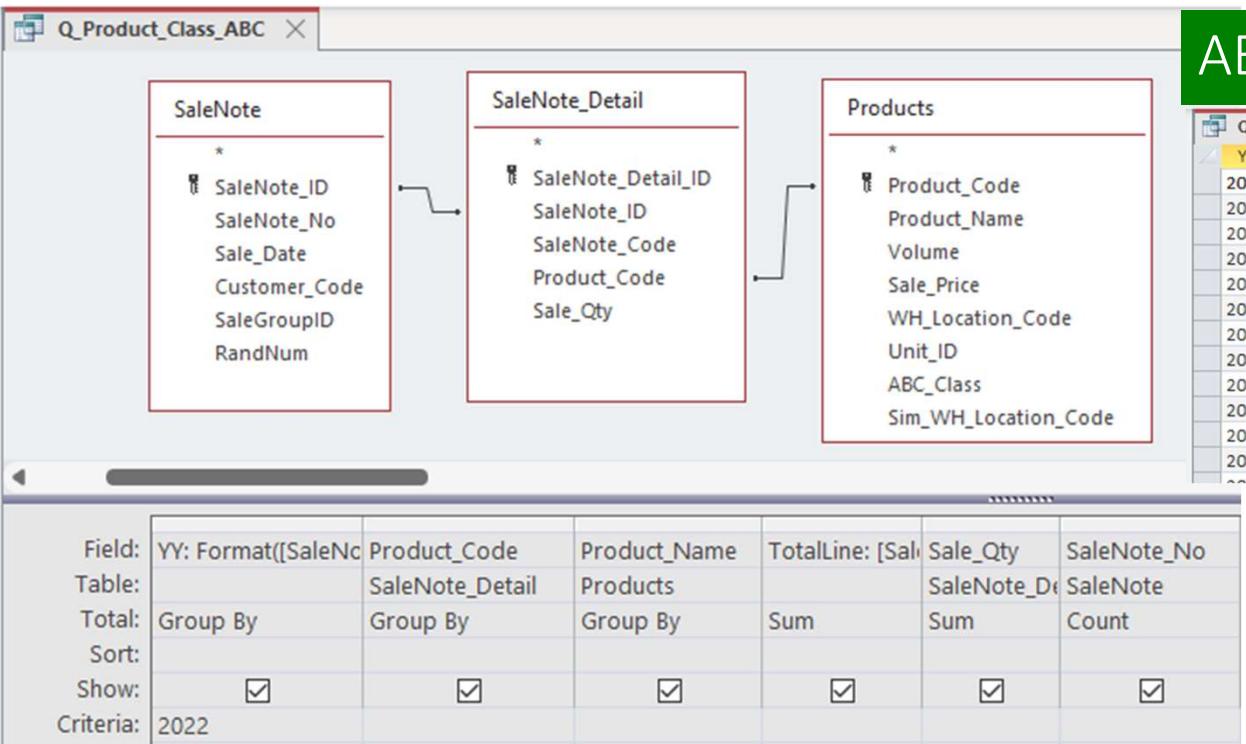
Option Compare Database

```
Function UDF_ABC(Data As Variant, MaxValue As Variant)
    Dim Step, ABC
    Step = MaxValue / 3
    If Data < Step Then ABC = "C"
    If Data >= Step And Data < (Step * 2) Then ABC = "B"
    If Data >= (Step * 2) Then ABC = "A"

    UDF_ABC = ABC

End Function
```

```
Function UDF_ABC(Data As Variant, MaxValue As Variant)
    Dim Step, ABC
    Step = MaxValue / 3
    If Data < Step Then ABC = "C"
    If Data >= Step And Data < (Step * 2) Then ABC = "B"
    If Data >= (Step * 2) Then ABC = "A"
    UDF_ABC = ABC
End Function
```



## ABC Class

**Q\_Total\_Product\_Year**

YY	Product_Code	Product_Name	SumOfSale_Qt	SumOfTotalLir	CountOfSaleN
2022	502073	DYNAMIC PREM NP(4/6+	2745	18,712,665.00	186
2022	502021	DYNAMIC COMMONRAIL	774	5,276,358.00	101
2022	502294	นำ้มัน (BATTERY FLUID)	756	4,828,572.00	161
2022	501631	HI-SPEED 2T NP (20/1)	709	4,789,295.00	84
2022	501524	DYNAMIC TURBO NP (4/6)	965	4,300,040.00	94
2022	502150	PERFORMA SUPERSYN NI	476	3,102,568.00	14
2022	501515	DYNAMIC PLUS 20W-50	777	3,062,934.00	58
2022	501633	HI-SPEED 2T NP (20/0.5)	638	2,996,048.00	80
2022	501595	V-120D # 40 NP (6/5)	350	2,287,600.00	70
2022	501597	V-120D # 40 NP (20/1)	759	2,248,917.00	107
2022	501493	PERFORMA SEMI SYN NP	890	2,238,350.00	103
2022	501637	MAX SPEED 2T NP (20/0)	292	2,008,084.00	11

ยอดขายสูงสุด 18.7 ล้าน

A < 12.4

B >= 6.2 AND <= 12.4

C > 6.2

คำสั่งซื้อสูงสุด 168 ครั้ง

A < 112

B >= 56 AND <= 112

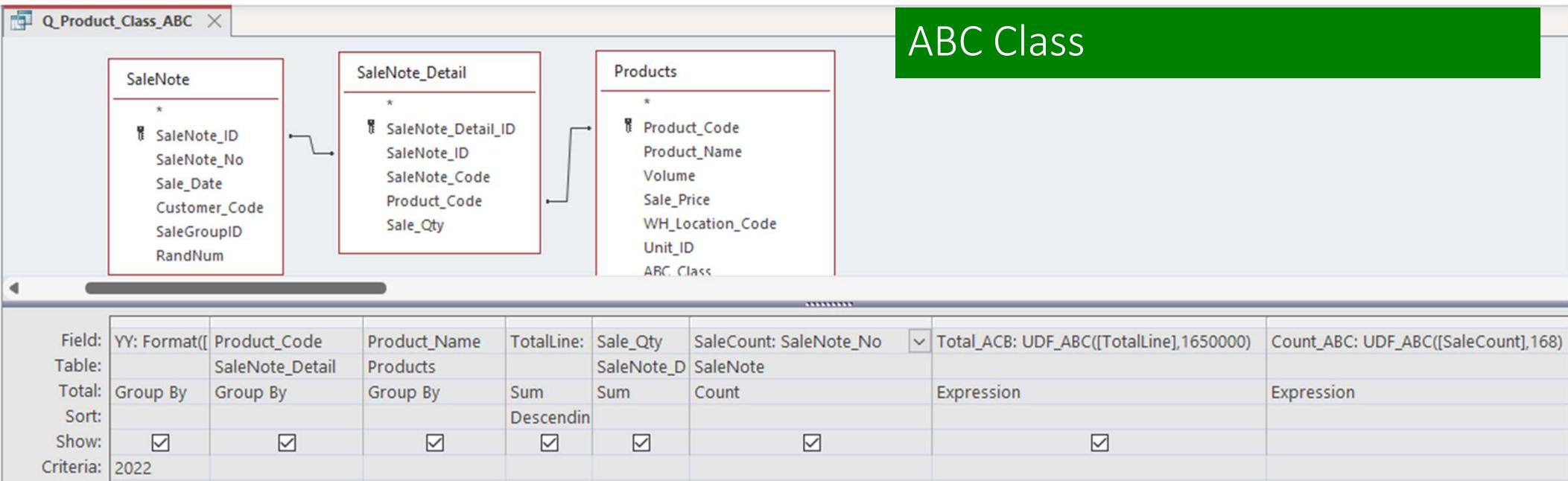
C > 56

YY:

**Format([SaleNote]![Sale\_Date], "yyyy")**

TotalSale:

**[SaleNote\_Detail]![Sale\_Qty]\*[Products]![Sale\_Price]**

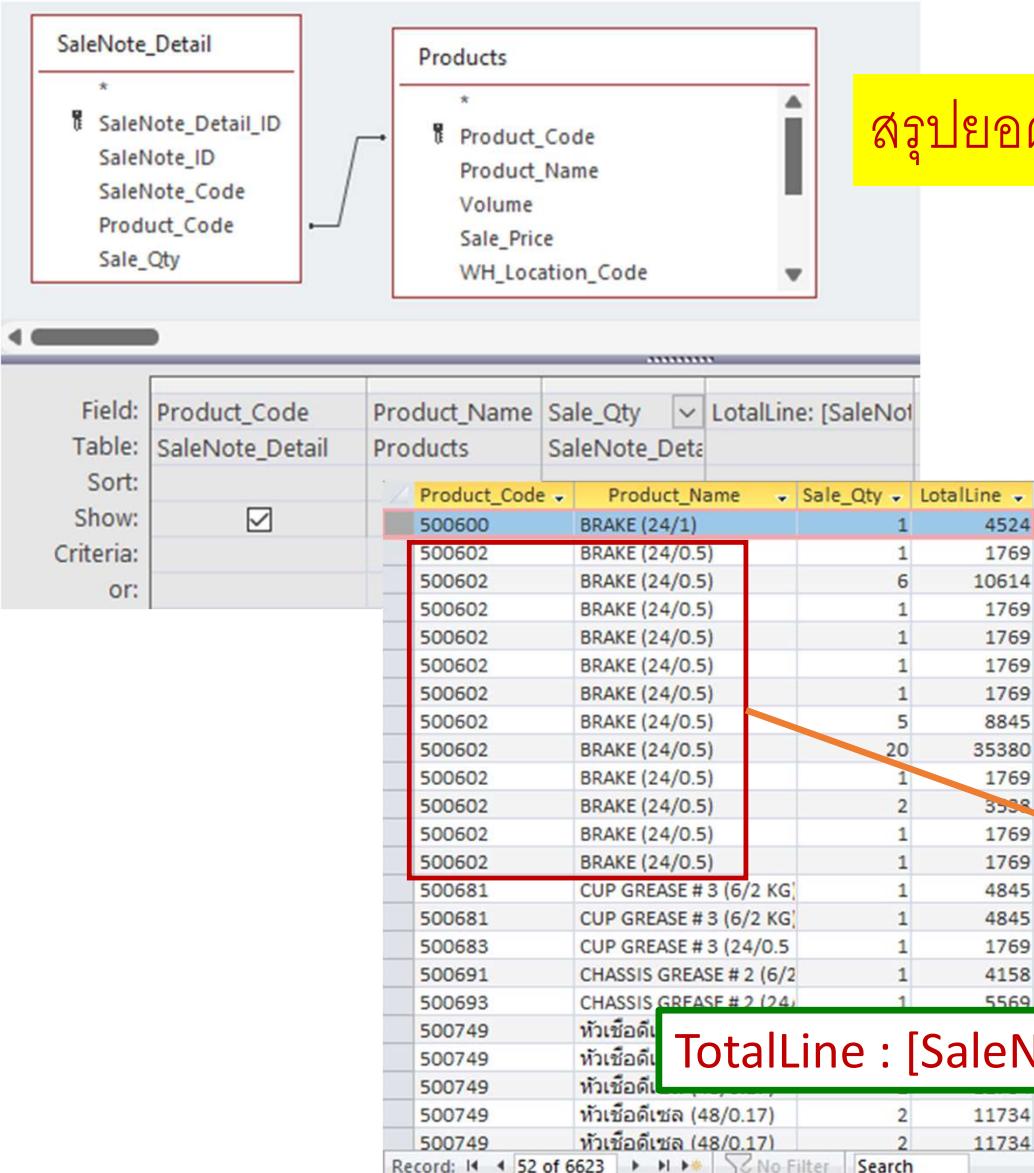


SaleCount: SaleNote\_No

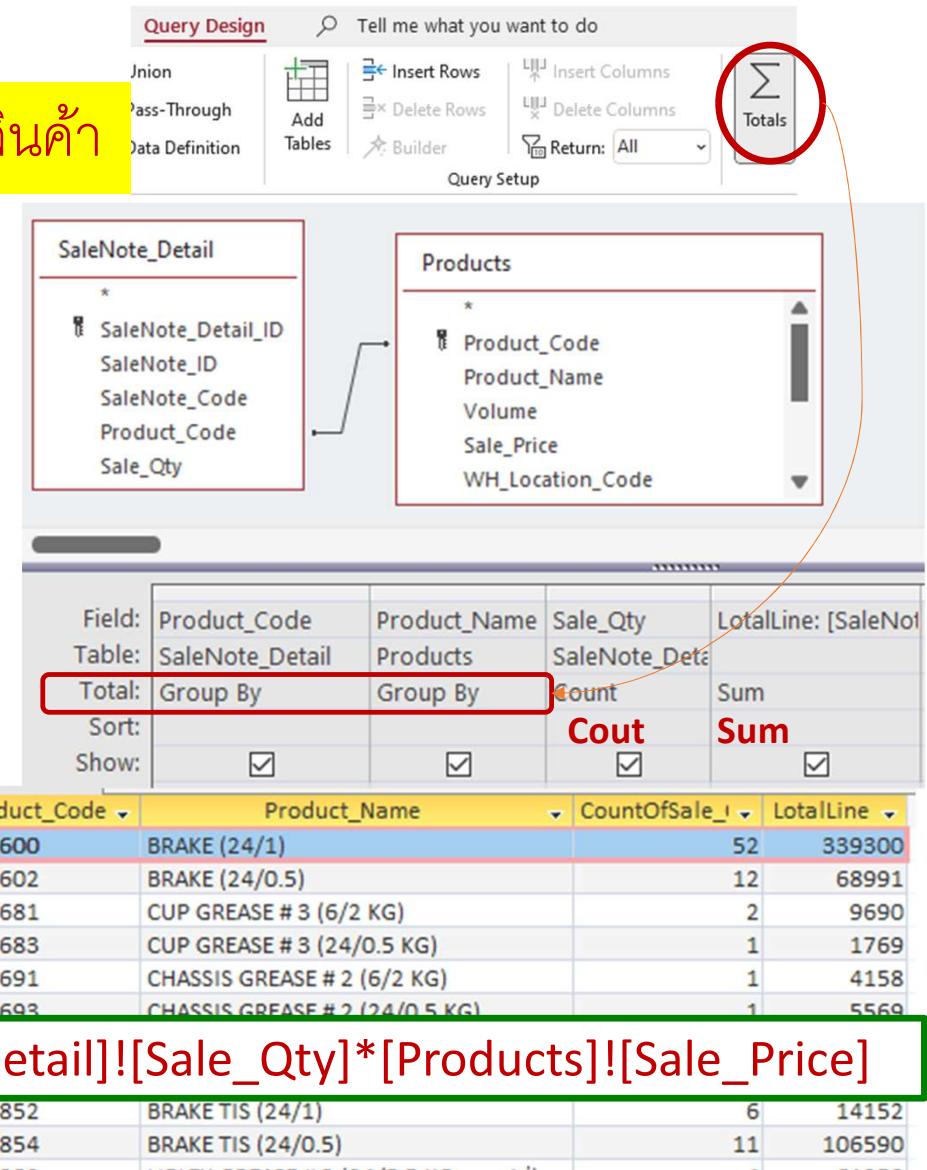
**Total\_ACB:**  
**UDF\_ABC([TotalLine],1650000)**

**Count\_ABC:**  
**UDF\_ABC( [SaleCount],168)**

YY	Product_C	Product_Name	TotalLine	SumOfSale_Qty	SaleCount	Total_ACB	Count_ABC
2022	502073	DYNAMIC PREM NP(4/6+	18,712,665.00	2745	186	A	A
2022	502021	DYNAMIC COMMONRAIL	5,276,358.00	774	101	A	B
2022	502294	น้ำกันลิ๊น (BATTERY FLUID)	4,828,572.00	756	161	A	A
2022	501631	HI-SPEED 2T NP (20/1)	4,789,295.00	709	84	A	B
2022	501524	DYNAMIC TURBO NP (4/t)	4,300,040.00	965	94	A	B



สรุปยอดขายสินค้า



Field:	Product_Code	Product_Name	Sale_Qty	TotalLine: [SaleNote_Detail]![Sale_Qty]*[Products]![Sale_Price]
Table:	SaleNote_Detail	Products	SaleNote_Detail	
Total:	Group By	Group By	Count	Sum
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Product_Code	Product_Name	Sale_Qty	TotalLine
500600	BRAKE (24/1)	1	4524
500602	BRAKE (24/0.5)	1	1769
500602	BRAKE (24/0.5)	6	10614
500602	BRAKE (24/0.5)	1	1769
500602	BRAKE (24/0.5)	1	1769
500602	BRAKE (24/0.5)	1	1769
500602	BRAKE (24/0.5)	1	1769
500602	BRAKE (24/0.5)	5	8845
500602	BRAKE (24/0.5)	20	35380
500602	BRAKE (24/0.5)	1	1769
500602	BRAKE (24/0.5)	2	3538
500602	BRAKE (24/0.5)	1	1769
500602	BRAKE (24/0.5)	1	1769
500681	CUP GREASE # 3 (6/2 KG)	1	4845
500681	CUP GREASE # 3 (6/2 KG)	1	4845
500683	CUP GREASE # 3 (24/0.5)	1	1769
500691	CHASSIS GREASE # 2 (6/2	1	4158
500693	CHASSIS GREASE # 2 (24/	1	5569
500749	ทัวเชือดีเซล (48/0.17)	1	5867
500749	ทัวเชือดีเซล (48/0.17)	1	5867
500749	ทัวเชือดีเซล (48/0.17)	2	11734
500749	ทัวเชือดีเซล (48/0.17)	2	11734
500749	ทัวเชือดีเซล (48/0.17)	2	11734

SaleNote_Detail
*
SaleNote_Detail_ID
SaleNote_ID
SaleNote_Code
Product_Code
Sale_Qty

Products
*
Product_Code
Product_Name
Volume
Sale_Price
WH_Location_Code

Total => Group By

Product_Code	Product_Name	CountOfSale_I	TotalLine
500600	BRAKE (24/1)	52	339300
500602	BRAKE (24/0.5)	12	68991
500681	CUP GREASE # 3 (6/2 KG)	2	9690
500683	CUP GREASE # 3 (24/0.5 KG)	1	1769
500691	CHASSIS GREASE # 2 (6/2 KG)	1	4158
500693	CHASSIS GREASE # 2 (24/0.5 KG)	1	5569
500749	ทัวเชือดีเซล (48/0.17)	87	1237937
500759	น้ำยาล้างหม้อน้ำ (24/0.5)	3	17601
500852	BRAKE TIS (24/1)	6	14152
500854	BRAKE TIS (24/0.5)	11	106590

TotalLine : [SaleNote\_Detail]![Sale\_Qty]\*[Products]![Sale\_Price]

SAP BusinessObjects Web Intelligence

**Totol\_Year**

YY	SumOfTotalLine
2022	78,130,576.00

**Query1**

Q_SaleNoteFullDetail	
*	
YY	
MM	
QT	
SaleNote_No	
SaleGroupID	
SalesGroupName	
Sale_Date	
Customer_Code	
Customer Name	

Property Sheet  
Selection type: Field Properties

Description	Format
Format	Standard
Decimal Places	
Input Mask	
Caption	

Field: YY  
Table: Q\_SaleNoteFull  
Total: Group By  
Sort:  
Show:     
Criteria: or: "2022"

ยอดรวมทั้งปี 2022

ยอดรวมทั้งปี 2022

= 78,130,576.00 (78.13 ล้าน)

# Forklift Distance Simulation

วางแผนสำหรับจัดเก็บผลิตภัณฑ์หล่ออลูมิเนียม (Racking System)



## SaleNote Forklift Distance

Q\_Total\_Forklift

```
graph LR; SN[SaleNote] --> SD[SaleNote_Detail]; SD --> P[Products]; P --> WL[WH_Locations]
```

Field:	Table:	Total:	Sort:	Show:	Criteria:
YY: Format([SaleNote].[SaleNote_Code])	SaleNote	Group By		<input checked="" type="checkbox"/>	2022
	SaleNote_Detail	Group By		<input checked="" type="checkbox"/>	
		Max		<input checked="" type="checkbox"/>	
				<input checked="" type="checkbox"/>	
				<input checked="" type="checkbox"/>	

Q\_Total\_Forklift

YY	SaleNote_Code	MaxGate	MinGate	AvgOfGate_Distance
2022	8003453205	50	50	50
2022	8003453210	50	50	50
2022	8003453218	45	45	45

## Total Forklift Distance

Query1

YY	ToTalMaxMin	Total2Avg
2022	44670	44076.2963832274

Field: YY  
Table: Q\_Total\_Forklift  
Total: Group By  
Sort:  
Show:     
Criteria:

ToTalMaxMin:  
Sum([MaxGate]+[MinGate])

Total2Avg:  
Sum([AvgOfGate\_Distance]\*2)