

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
Database_Warehouse_ABC

https://github.com/chalermchonv/UTCC_ENGINEERING/tree/main/Database_Warehouse_ABC

← → C github.com/chalermchonv/UTCC_ENGINEERING

vb.net - Calculate the... SAP Business One: I... Understanding Engi... Access Connector f... Picasso Comfort หม... gs1th_guideline_me... Crea3D Ⓜ️ สุดค้ายอด杰ลอก! บุกสบฯ...

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 [chalermchonv / UTCC_ENGINEERING](https://github.com/chalermchonv/UTCC_ENGINEERING) Public  Pin  Unwatch 1

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https://github.com/chalermchonv/UTCC_ENGINEERING

chalermchonv Add files via upload ad9fc1c 1 minute ago 14 commits

Database And SQL Add files via upload 4 hours ago

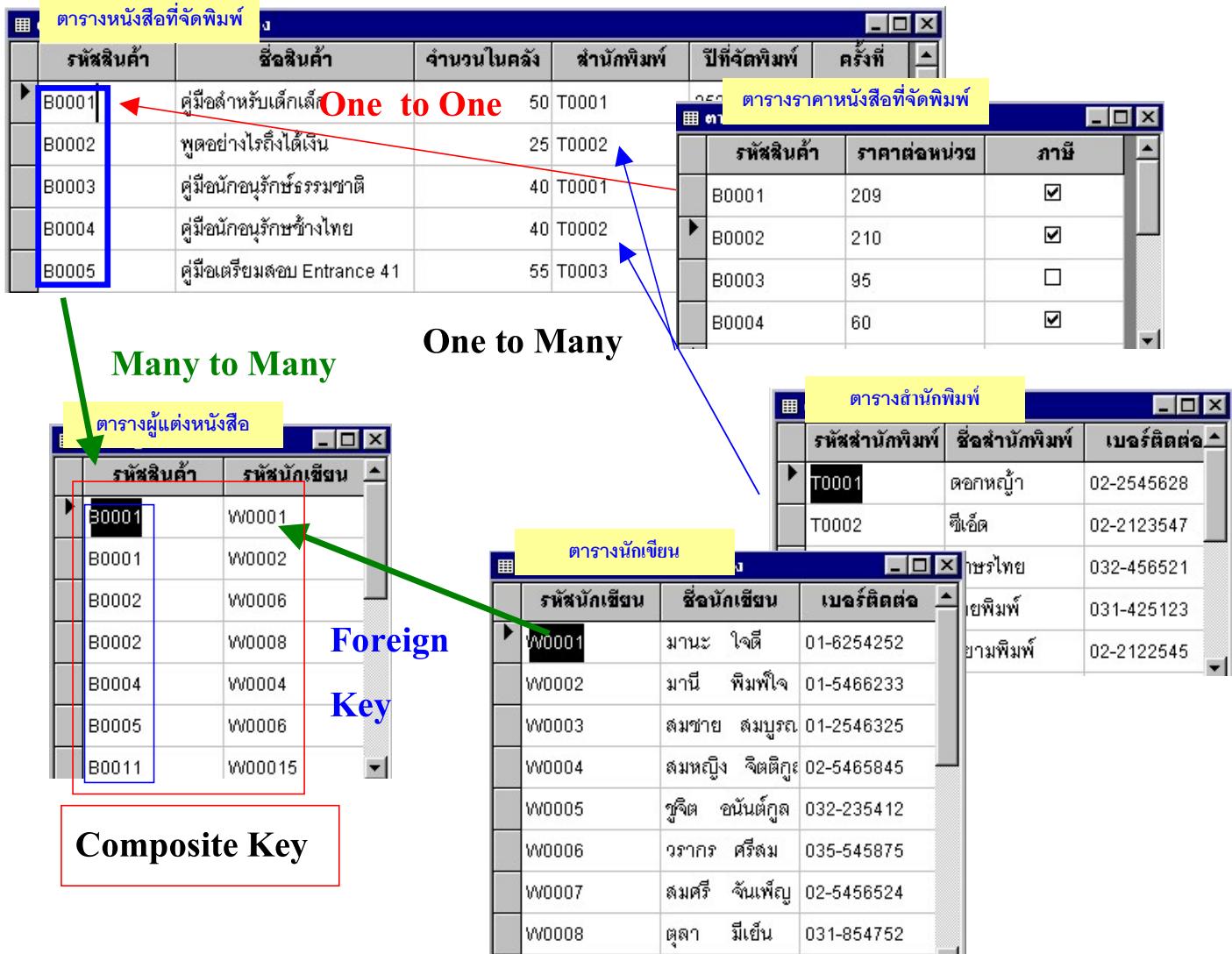
Database_Warehouse_ABC Add files via upload 1 minute ago

 Help people interested in this repository understand your project by adding a README. [Add a README](#)

https://github.com/chalermchonv/UTCC_ENGINEERING/tree/main/Database_Warehouse_ABC

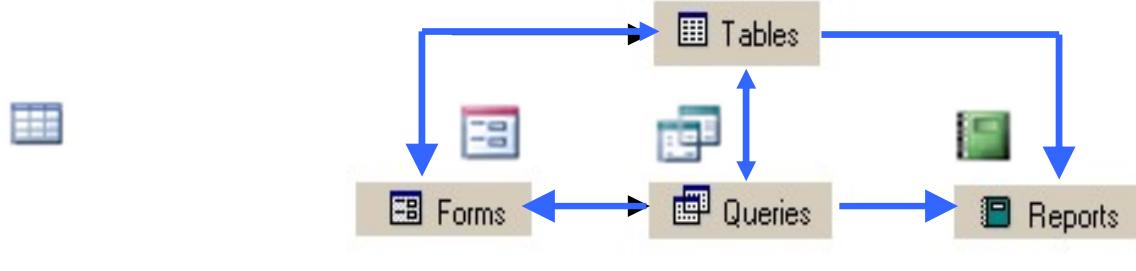
ตัวอย่างฐานข้อมูลของร้านขายหนังสือ

Primary
Key



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

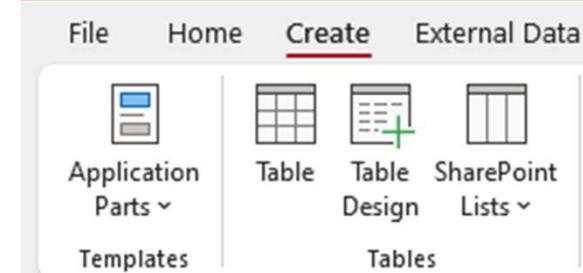
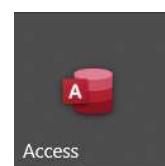
คอลัมน์ข้อมูล

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
	Primary Key	

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

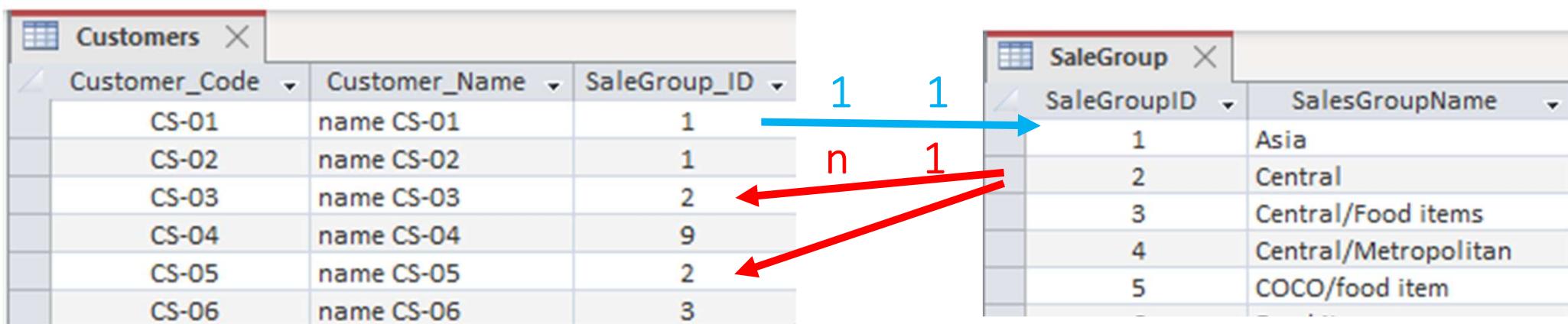
Foreign Key

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

Primary Key

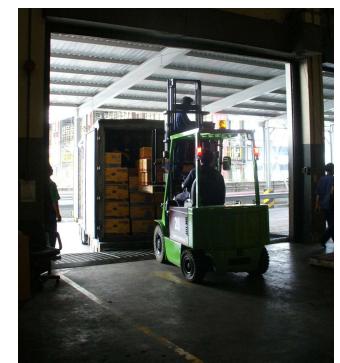
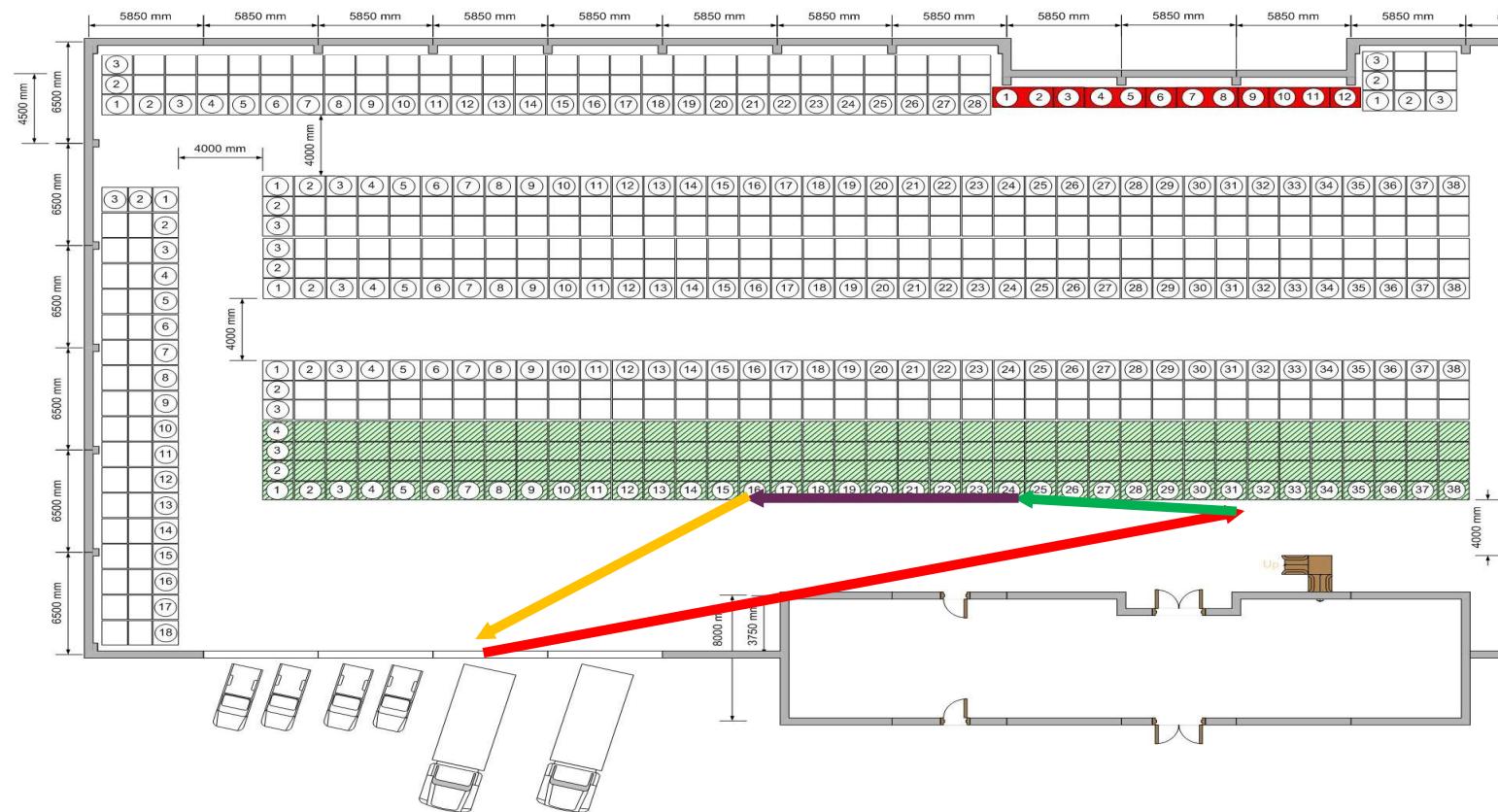
Relationships

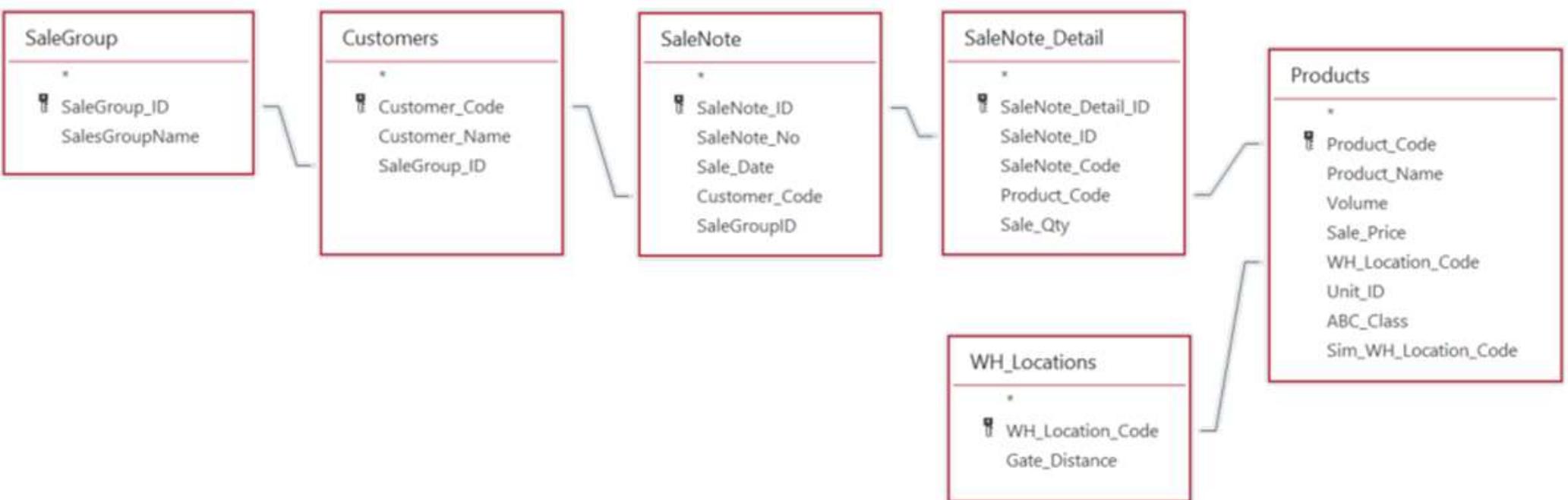
- One to One
- One to Many
- Many to Many



Forklift Distance Simulation

วางแผนสำหรับจัดเก็บผลิตภัณฑ์หล่ออลูมิเนียม (Racking System)





SaleNote_No	SaleGroupID	SalesGroupName	Sale_Date	Customer_Code	Customer_Name	Product_Code	Product_Name	Sale_Qty	TotalLine	Unit
8003453205	11	Northeast	16/01/2022	CS-01	name CS-01	502021	DYNAMIC COMMONRAI	1	6817	PAC
8003453210	9	Metropolitan	16/01/2022	CS-02	name CS-02	502021	DYNAMIC COMMONRAI	3	20451	PAC
8003453218	8	Industrial	23/11/2022	CS-03	name CS-03	502257	HINO GEAR OIL 85W-140	10	37390	PAC
8003453230	9	Metropolitan	01/02/2022	CS-04	name CS-04	500749	หัวเข็มดีเซล (48/0.17)	1	5867	PAC
8003453230	9	Metropolitan	01/02/2022	CS-04	name CS-04	501595	V-120D # 40 NP (6/5)	1	6536	PAC
8003453230	9	Metropolitan	01/02/2022	CS-04	name CS-04	501597	V-120D # 40 NP (20/1)	1	2963	PAC
8003453230	9	Metropolitan	01/02/2022	CS-04	name CS-04	501631	HI-SPEED 2T NP (20/1)	1	6755	PAC



SaleGroup	Field Name	Data Type
	SaleGroup_ID	AutoNumber
	SalesGroupName	Short Text

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

SaleGroup	SaleGroup_ID	SalesGroupName	Click to Add
	1	Asia	
	2	Central	
	3	Central/Food items	
	4	Central/Metropolitan	
	5	COCO/food item	
	6	Food items	
	7	Government&State En	

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	5
	CS-05	name CS-05	2
	CS-06	name CS-06	3
	CS-07	name CS-07	9
	CS-08	name CS-08	2

Products	
*	
Product_Code	
Product_Name	
Volume	
Sale_Price	
WH_Location_Code	
Unit_ID	
ABC_Class	
Sim_WH_Location_Code	

WH_Locations	
*	
WH_Location_Code	
Gate_Distance	

Units	
*	
Unit_ID	
Unit	

WH_Locations X

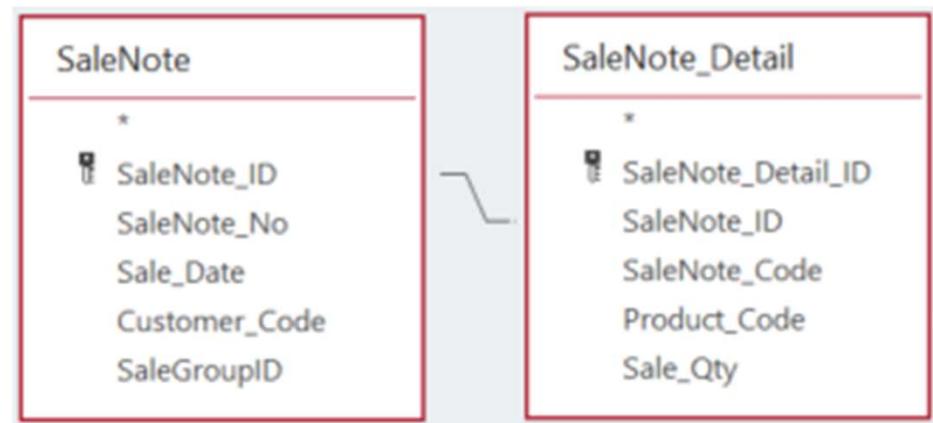
WH_Location_Code	Gate_Distance
A1-30	67
A1-31	66
A1-32	64
A1-33	63

Units X

Unit_ID	Unit	Unit2
1	Unit	หน่วย
2	PAC	กล่อง
3	Tank	ถัง

Products X

Product_Code	Product_Name	Volume	Sale_Price	WH_Location_Code	Unit_ID
500600	BRAKE (24/1)	24/1	฿4,524.00	AL4-1	2
500602	BRAKE (24/0.5)	24/0.5	฿1,769.00	AR5-20	2
500681	CUP GREASE # 3 (6/2 KG)	6/2	฿4,845.00	AL4-13	2
500683	CUP GREASE # 3 (24/0.5 KG)	24/0.5	฿1,769.00	AL4-12	2
500691	CHASSIS GREASE # 2 (6/2 KG)	6/2	฿4,158.00	AL4-10	2
500693	CHASSIS GREASE # 2 (24/0.5 KG)	24/0.5	฿5,569.00	AL4-9	2
500749	หัวเข็มดีเซล (48/0.17)	48/0.17	฿5,867.00	AR3-18	2



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

SaleNote_Detail

SaleNote_Detail_ID	SaleNote_ID	SaleNote_Code	Product_Code	Sale_Qty
3	3	8003453218	502257	10
10	4	8003453230	501645	2
8	4	8003453230	501633	2
11	4	8003453230	501732	1

Create Tab : Table Design

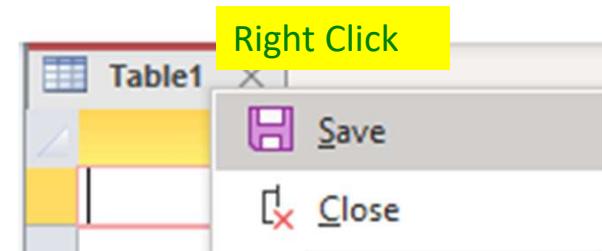


1. Table : Customer Design View

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

2. Table : SaleGroup

SaleGroup	
Field Name	Data Type
SaleGroup_ID	AutoNumber
SalesGroupName	Short Text



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

SaleGroup	
SaleGroup_ID	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

Query1

Field:	Customer_Code	Customer_Name	SaleGroup_ID	SalesGroupName
Table:	Customers	Customers	Customers	SaleGroup
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Create

Query Design

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
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
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	1	OR	2
or:			

គំណាបារម្មូលខ្លួនការណែនាំ : Like "*01*"

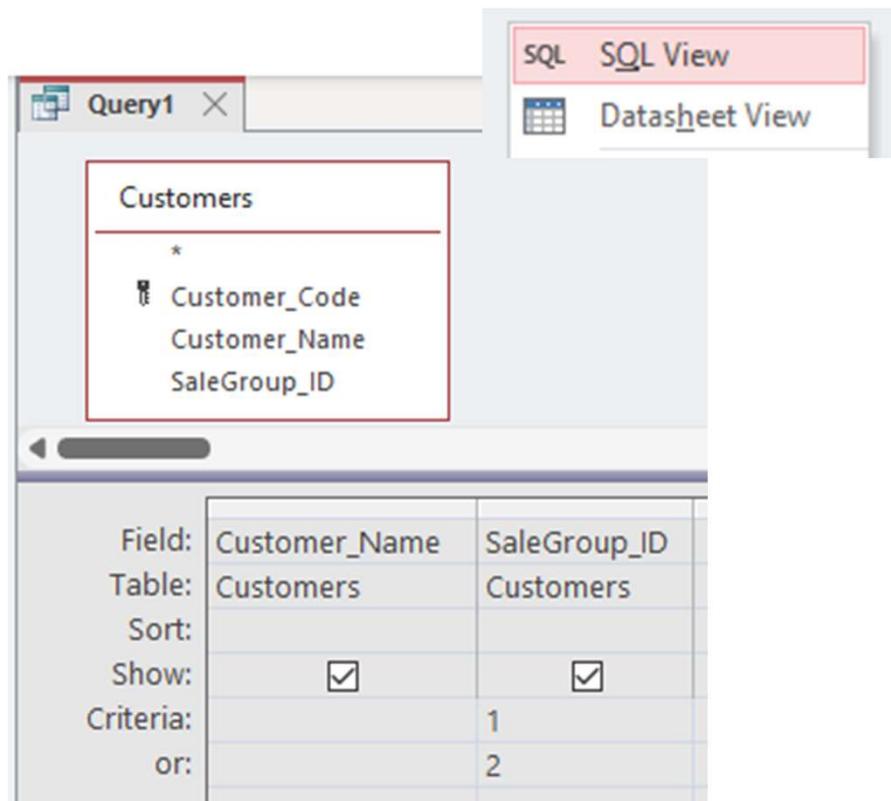
The screenshot shows the Microsoft Access Query Designer interface. On the left, the 'Customer' table is selected, displaying fields: *, Customer_Code, Customer_Name, and SaleGroup_ID. The main area shows a query results grid with one row: Customer_Code 'CS-01', Customer_Name 'name CS-01', and SaleGroup_ID '1'. Below the grid, the query definition is shown in a grid:

Field:	Customer_Code	Customer_Name	SaleGroup_ID
Table:	Customer	Customer	Customer
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		Like "*01*"	

รูปแบบคำสั่ง Select (SQL)

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

```
SELECT * FROM table_name;
```

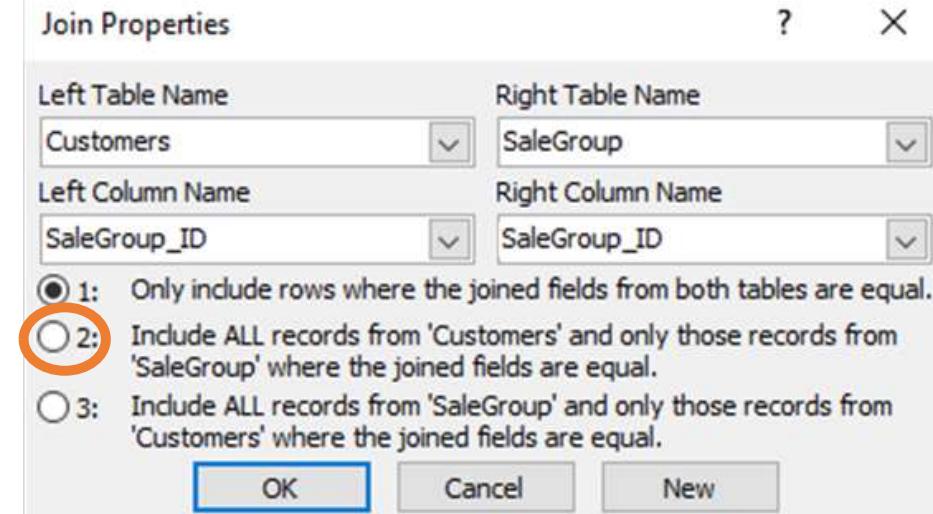
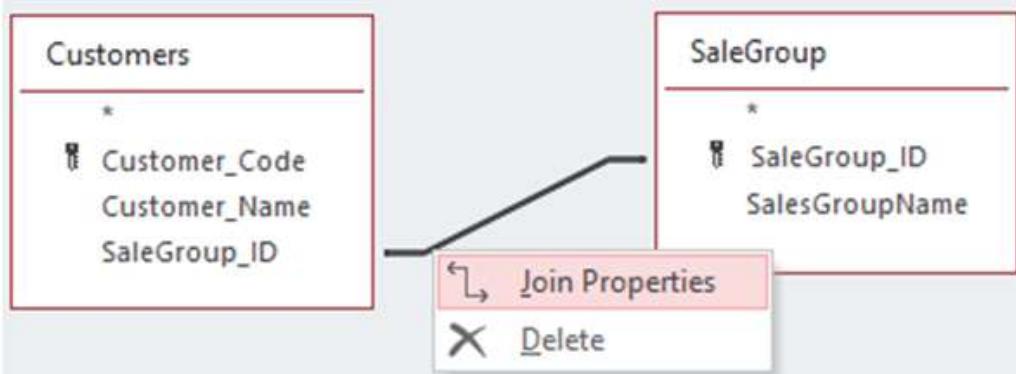


```
SELECT column1, column2, ...
FROM table_name
WHERE condition;
```

https://www.w3schools.com/sql/sql_select.asp

```
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



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

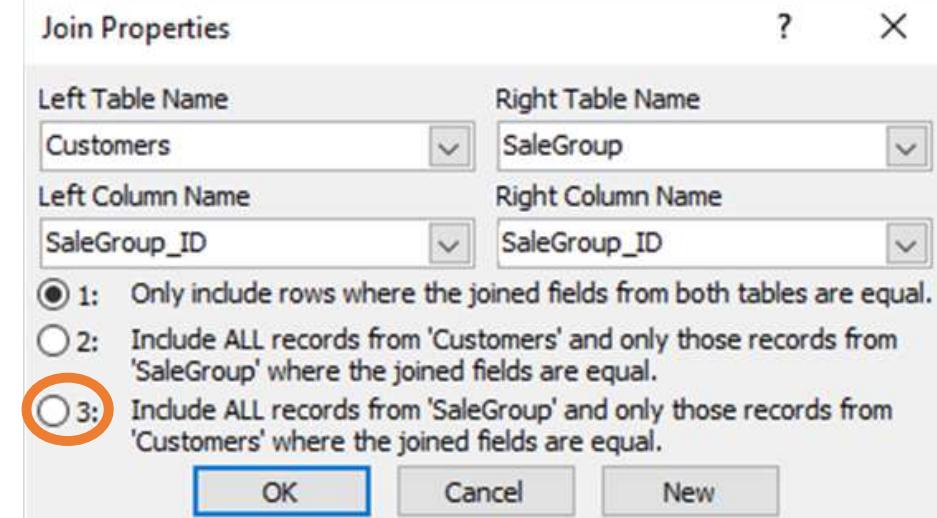
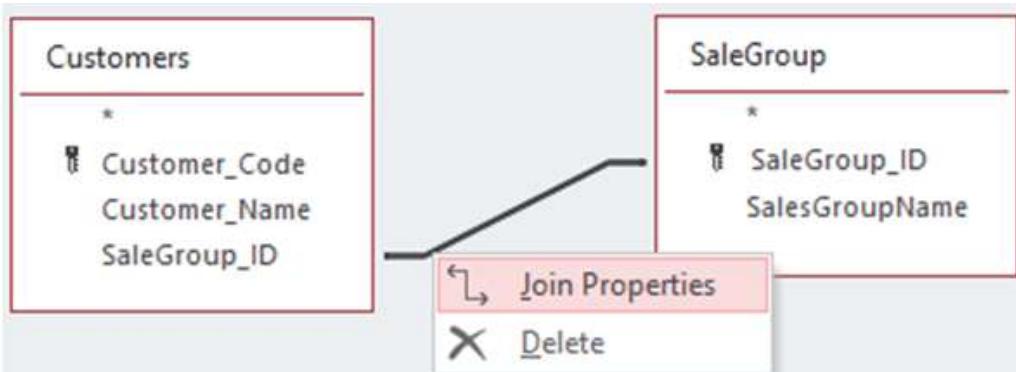
SaleGroup

SaleGroup_ID	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

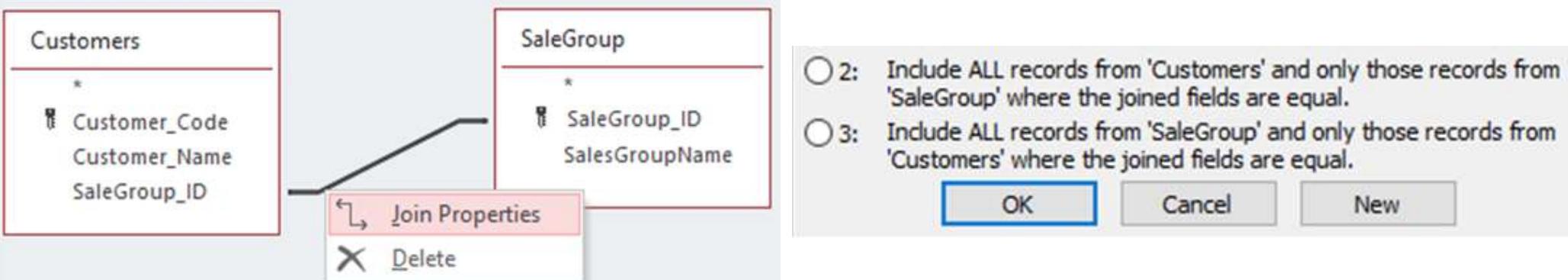
Customer_Code	Customer_Name	SaleGroup_ID
CS-01	name CS-01	1
CS-02	name CS-02	1
CS-03	name CS-03	2
CS-04	name CS-04	9
CS-05	name CS-05	2
CS-06	name CS-06	3

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

SaleGroup

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



LEFT JOIN

FROM Customers LEFT JOIN SaleGroup ON Customers.SaleGroup_ID = SaleGroup.SaleGroupID;

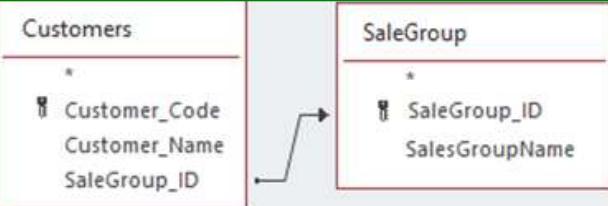
Customer_Code	Customer_Name	SaleGroup_ID	SalesGroupName
CS-01	name CS-01	1	Asia
CS-02	name CS-02	1	Asia
CS-03	name CS-03	2	Central
CS-05	name CS-05	2	Central
CS-06	name CS-06	3	Central/Food items
CS-04	name CS-04	9	

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 X

Customer_Code	Customer_Name	SaleGroupID	SalesGroupName
CS-04	name CS-04		

Field:	Customer_Code	Customer_Name	SaleGroup_ID	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 X

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		

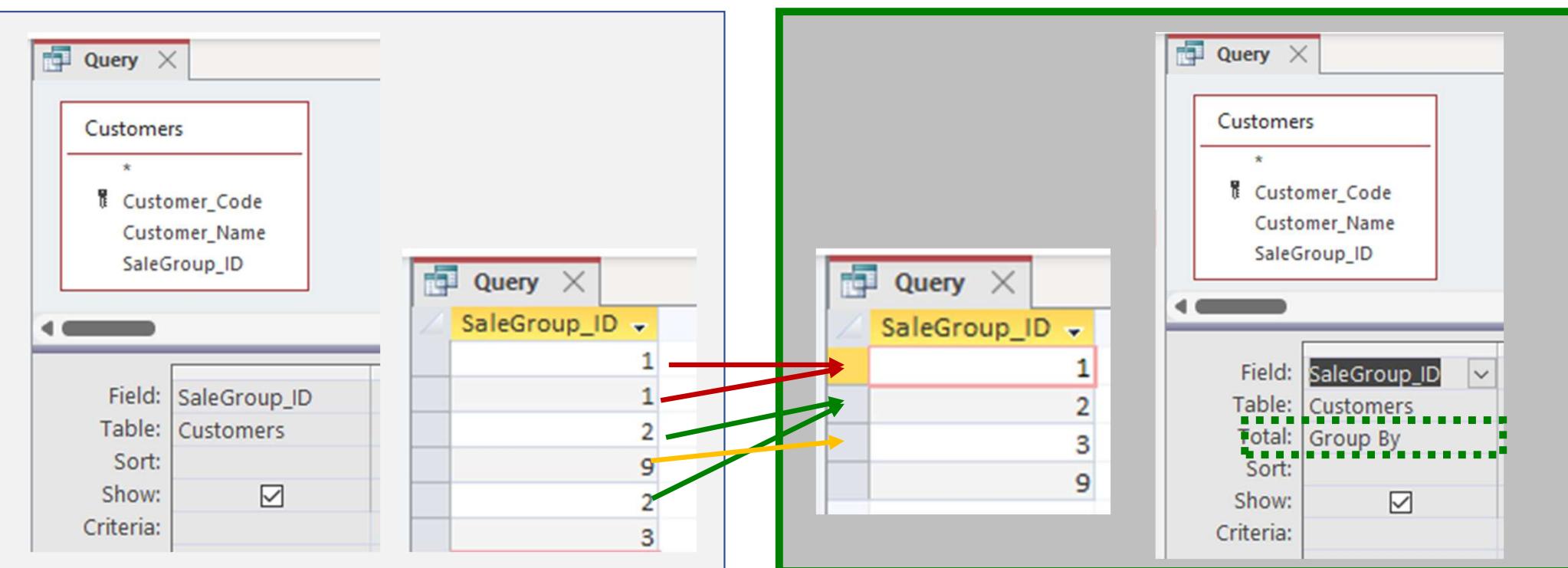
- ③ 3: Include ALL records from 'SaleGroup' and only those records from 'Customers' where the joined fields are equal.

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

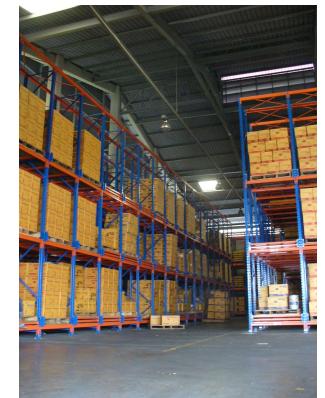
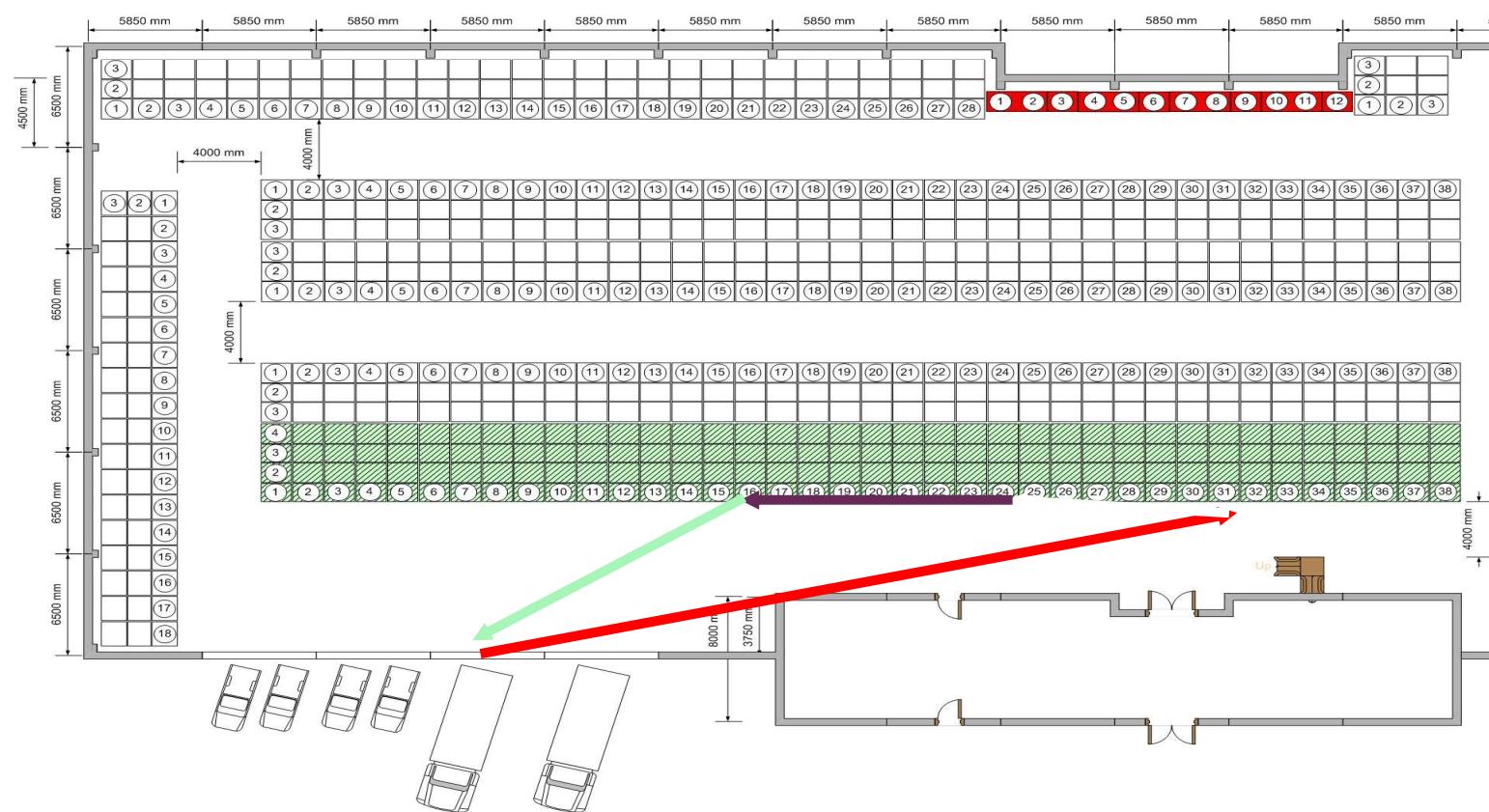
ข้อมูล

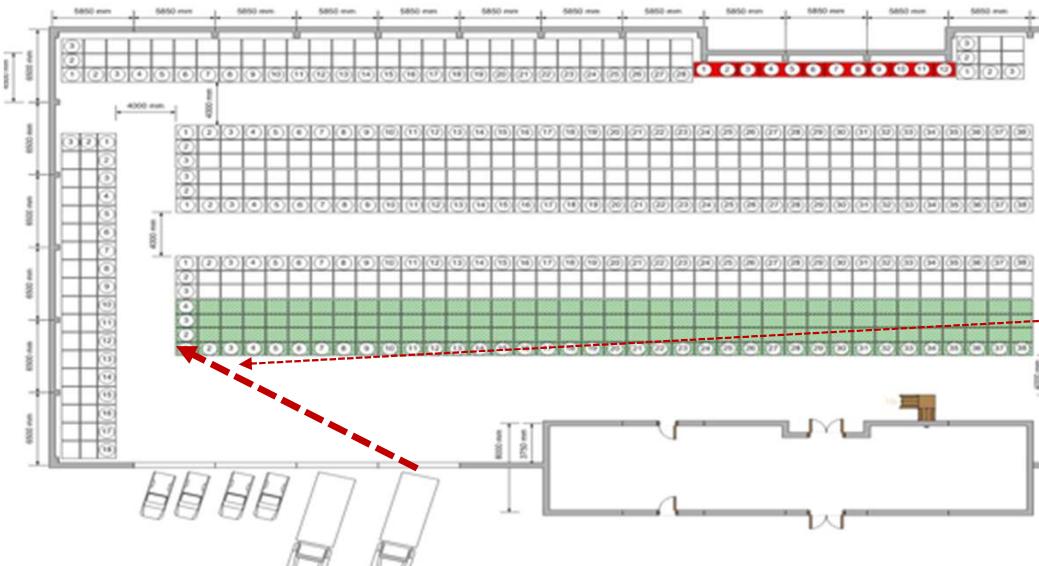
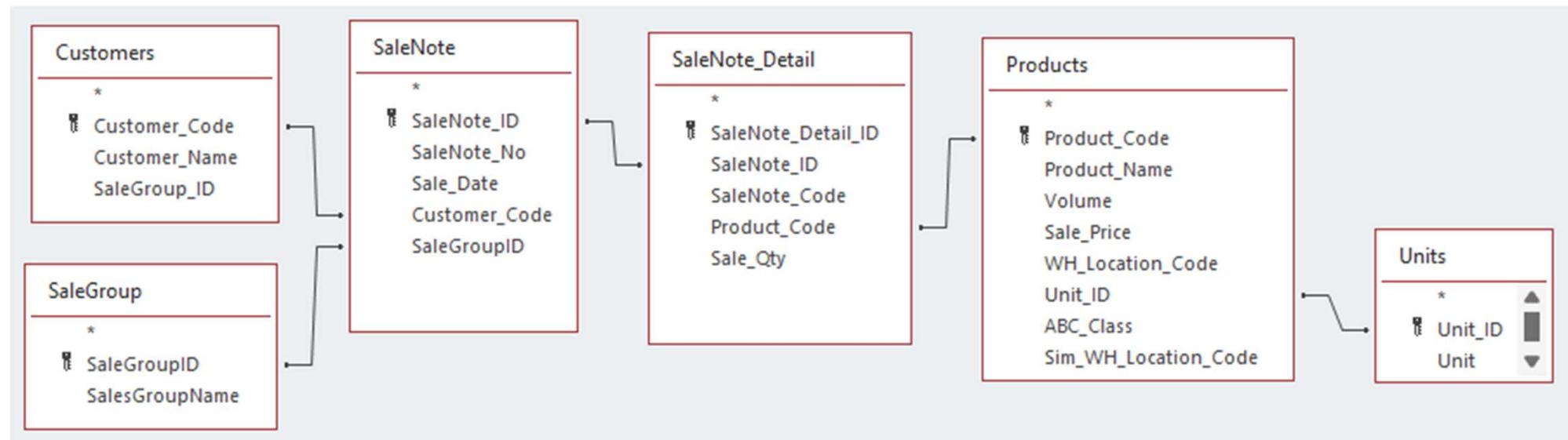
- Make Table
- Append
- Update
- Delete

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:		

รูปแบบการจัดวางชั้นวางสำหรับจัดเก็บผลิตภัณฑ์หล่อลีน (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

SaleGroup_ID	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")

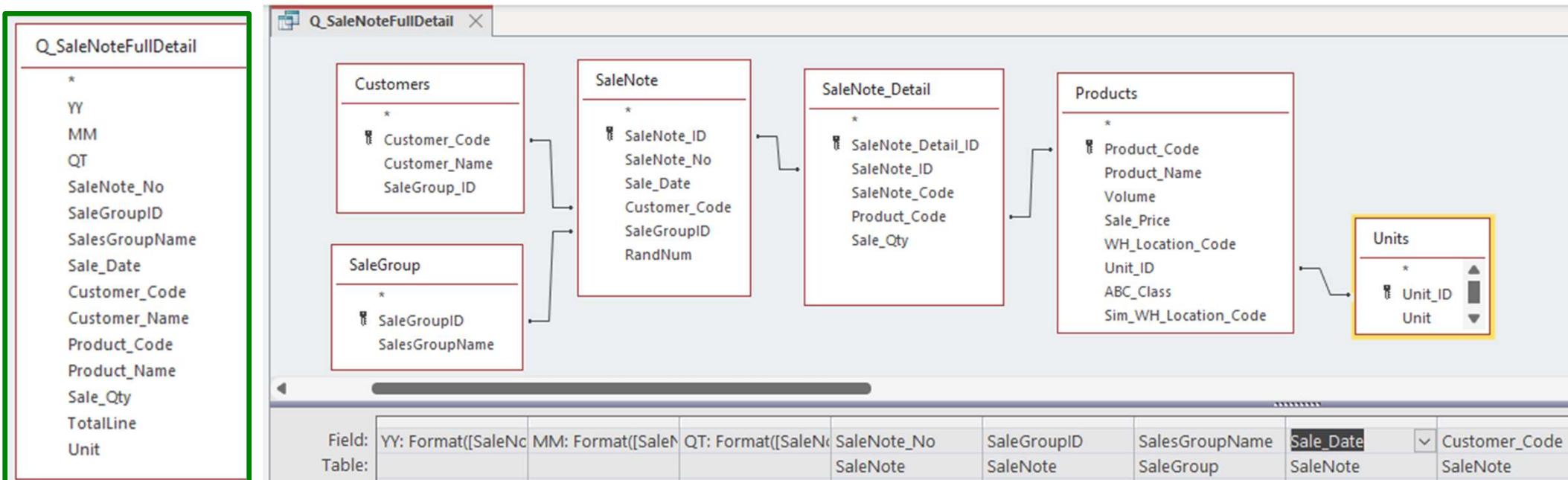
OK Cancel Help << Less

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
Customer_Code
Customer_Name
SumOfSale_Qt
SumOfTotalLit
CountOfSaleN

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
Table: Q_SaleN Q_SaleNoteFullData Q_SaleNoteFullData
Total: Group By Group By Group By
Sort:
Show:
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 window. On the left, there's a list of fields from the table 'Q_SaleNoteFullDetail'. In the center, the query results are displayed in a grid. On the right, there are various buttons and a dropdown menu.

Buttons on the right:

- Insert Columns (blue icon)
- Delete Columns (red icon)
- Totals (highlighted with a red box)
- Parameters
- Property Sheet
- Table Names
- Return: 25 (highlighted with a red box)

Dropdown menu on the far right:

- 25
- 5
- 25
- 100
- 5%
- 25%
- All

Query Results Grid:

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	

Query Filter and Sort Options:

Field: YY	SaleGroupID	SalesGroupName	Sale_Qty	TotalLine	SaleNote_No	YY
Table: Q_SaleNote	Q_SaleNoteF	Q_SaleNoteFullDet	Q_SaleNote	Q_SaleNote	Q_SaleNoteFu	Q_SaleNo
Total: Group By	Group By	Group By	Sum	Sum	Count	Where
Sort: Descending						
Show: <input checked="" type="checkbox"/>	<input type="checkbox"/>					
Criteria: "2022"						

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

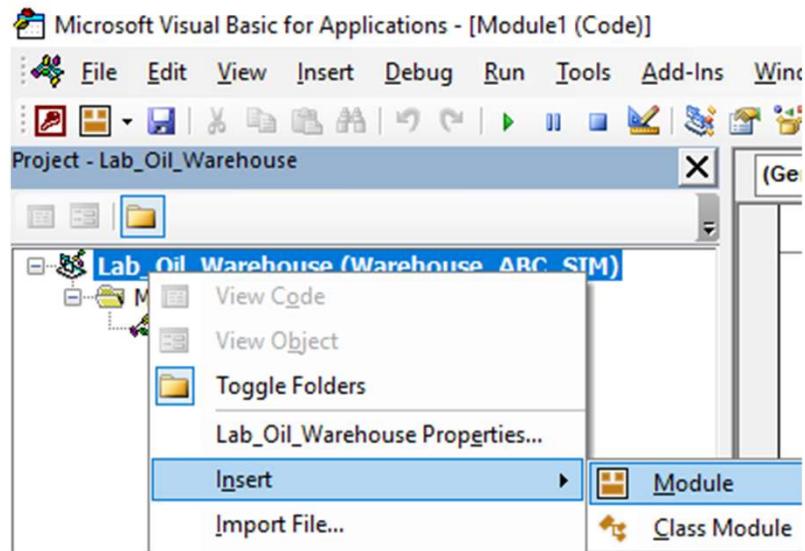
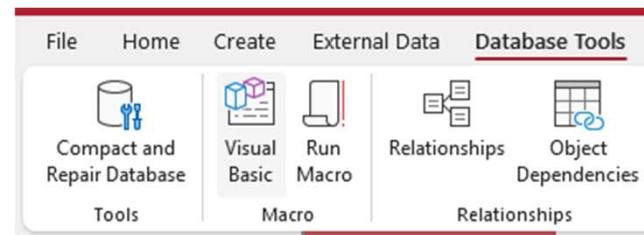
Record Macro Use Relative References Properties

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



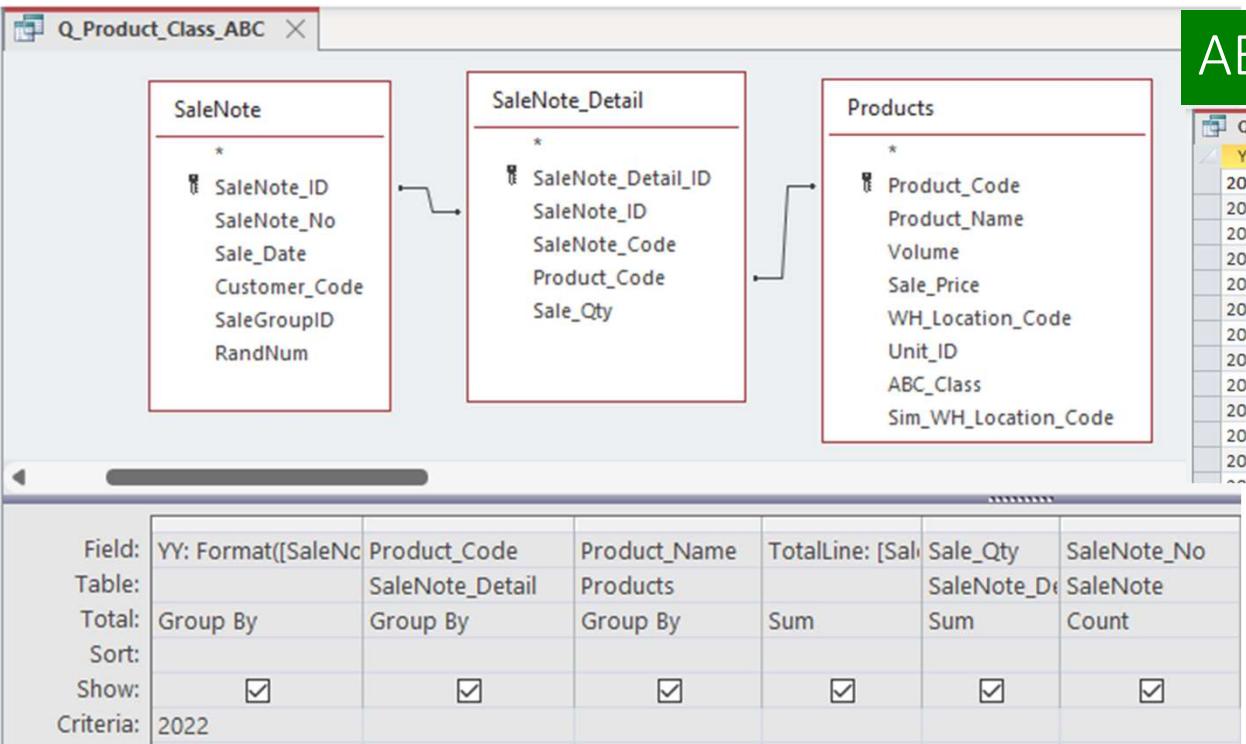
The screenshot shows the Microsoft VBA editor with the title 'Microsoft Visual Basic for Applications - [Module1 (Code)]'. The code editor displays the following VBA function:

```
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
```

```
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	นำ้ยาลัน (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

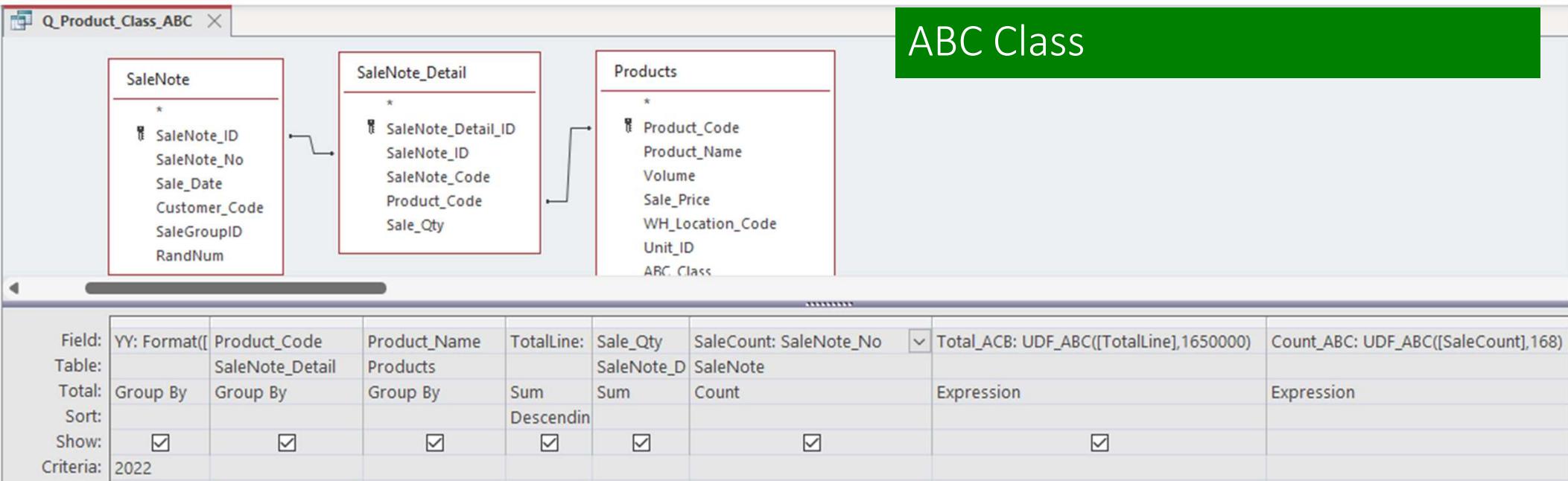
C > 56

YY:

Format([SaleNote]![Sale_Date], "yyyy")

TotalLine:

[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

```

    graph LR
      A["SaleNote_Detail  
*  
SaleNote_Detail_ID  
SaleNote_ID  
SaleNote_Code  
Product_Code  
Sale_Qty"] --> B["Products  
*  
Product_Code  
Product_Name  
Volume  
Sale_Price  
WH_Location_Code"]
  
```

Field: Product_Code Product_Name Sale_Qty TotalLine: [SaleNote_Detail]![Sale_Qty]*[Products]![Sale_Price]

Table: SaleNote_Detail Products SaleNote_Detail

Sort:

Show:

Criteria: or:

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 (24/0.5)	1	5569
500749	ทัวเรซอเดน		
500749	ทัวเรซอเดน		
500749	ทัวเรซอเดน		
500749	ทัวเรซอเดน เชล (48/0.17)	2	11734
500749	ทัวเรซอเดน เชล (48/0.17)	2	11734

Record: 14 52 of 6623 No Filter Search

Query Design Tell me what you want to do

Union Pass-Through Data Definition Add Tables Insert Rows Insert Columns Delete Rows Delete Columns Builder Return: All Totals

SaleNote_Detail

Field: Product_Code Product_Name Sale_Qty TotalLine: [SaleNote_Detail]![Sale_Qty]*[Products]![Sale_Price]

Table: SaleNote_Detail Products

Total: Group By Group By Count Sum

Sort:

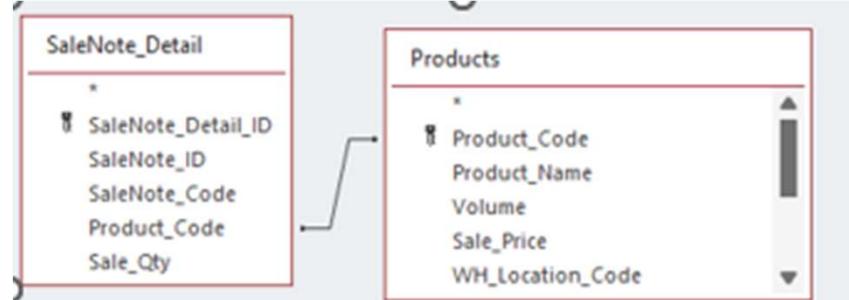
Show:

Product_Code	Product_Name	Sale_Qty	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
500852	BRAKE TIS (24/1)	6	14152
500854	BRAKE TIS (24/0.5)	11	106590

TotalLine : [SaleNote_Detail]![Sale_Qty]*[Products]![Sale_Price]

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



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"

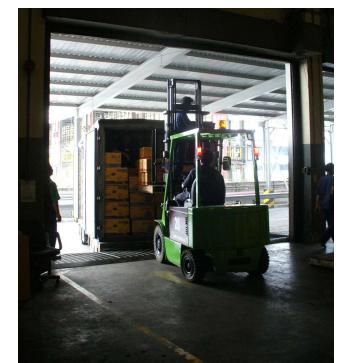
ยอดรวมทั้งปี 2022

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)