Lesson: Queries in Access

— Explanation and Purpose

◆ 1. What is a Query?

A query is a tool in Access used to search, filter, analyze, and extract specific information from one or multiple tables.

It allows you to ask questions such as:

 "Which clients have unpaid invoices?"

"What are the orders made in March?"

"What is the total sales by city?"

So a query is like asking the database a question — and the query gives you the answer.

◆ 2. Why Are Queries Important? (Purpose)

Queries are essential because they help you:

✔️Filter data

 Example: show only clients from "Algiers".

✔️ Sort data

Example: sort invoices from highest to lowest amount.

✔️ Calculate values

Example: calculate total sales per client.

✔️ Combine information from different tables

 Example: show Client Name from Client table + Total Amount from Invoice table.

✔️ Create reports based on the filtered results

 Reports always depend on queries.

◆3. Types of Queries

1. Select Query

 Retrieves and displays data. → Most common type.

2. Parameter Query

Asks the user to enter a value.

 Example: "Enter Client Name".

3. Calculated Field Query

Performs math calculations.

 Example: Total = Quantity × UnitPrice.

4. Action Queries Modify data automatically (advanced):

- Update Query
- Delete Query
- Append Query
- Make-Table Query

◆4. How to Create a Simple Query

Go to Create → Query Design.

 Add the tables you need.

 Select the fields you want to display.

Add conditions (criteria) if needed.

Click Run (red exclamation mark).

Save the query.

◆5. Example

Goal: Display all orders for each client. Fields used:

- ClientName
- OrderDate
- TotalAmount

This shows how queries combine data from multiple tables

☑ Comprehensive Practical Exercise: Customer – Order – Invoice

PART 1 — Creating the Database

Database Name:

👉Sales_Management.accdb

PART 2 — Create the Tables

1 Customer Table (Client)

Field Name
CustomerID
CustomerName
City
Phone
Email

1 Sample Data

CustomerID	CustomerName	City	Phone	Email
C01	Adam morsli	Algiers	0550 22 33 44	adam@gmail.com
C02	Leila Ben	Oran	0661 55 22 99	leila@gmail.com
C03	Data Karim Ali	Constantine	0770 88 44 55	karim@gmail.com

2 Order Table (Commande)

Field Name
OrderID
OrderDate
TotalAmount

OrderDate	OrderDate	Total Amount	CustomerID
O100	01/03/2025	3500	C01
O101	05/03/2025	2200	C02
O102	10/03/2025	1800	C01

③ **Invoice Table (Facture)** TypeDescriptionShort Text (PK)Unique invoice numberShort TextLinked to OrderDate/TimeDate of invoiceNumberAmount to payStatusShort TextPaid / Unpaid

Field Name
InvoiceID
InvoiceDate
AmountDue
Status
OrderID

③ **Sample Data**

InvoiceID	InvoiceDate	AmountDue	Status	OrderID
F200	02/03/2025	3500	Paid	O100
F201	06/03/2025	22000	Unpaid	O101
F202	11/03/2025	1800	Unpaid	O102

PART 3 — Relationships

Create the following links:

① Customer.CustomerID → Order.CustomerID = One customer can have many orders.

② Order.OrderID → Invoice.OrderID = One order can have one invoice.

Check Enforce Referential Integrity.

PART 5 — Essential Queries

QUERY 1 — ORDERS BY CUSTOMER

Shows all orders made by each customer.

QUERY 2 — UNPAID INVOICES

Criteria on field Status: "Unpaid"

### QUERY 3 — ORDERS ABOVE 2000 DA

Criteria on TotalAmount: >2000

QUERY 4 — JOIN ALL TABLES

Customer + Order + Invoice Shows full details.

⭐ **How to Create "Orders by Customer" Query in Microsoft Access**

This query shows each customer and the orders they made, including order date and total amount.

✅STEP 1 — Open Query Design Open your Access database. Click the Create tab at the top. Click Query Design.
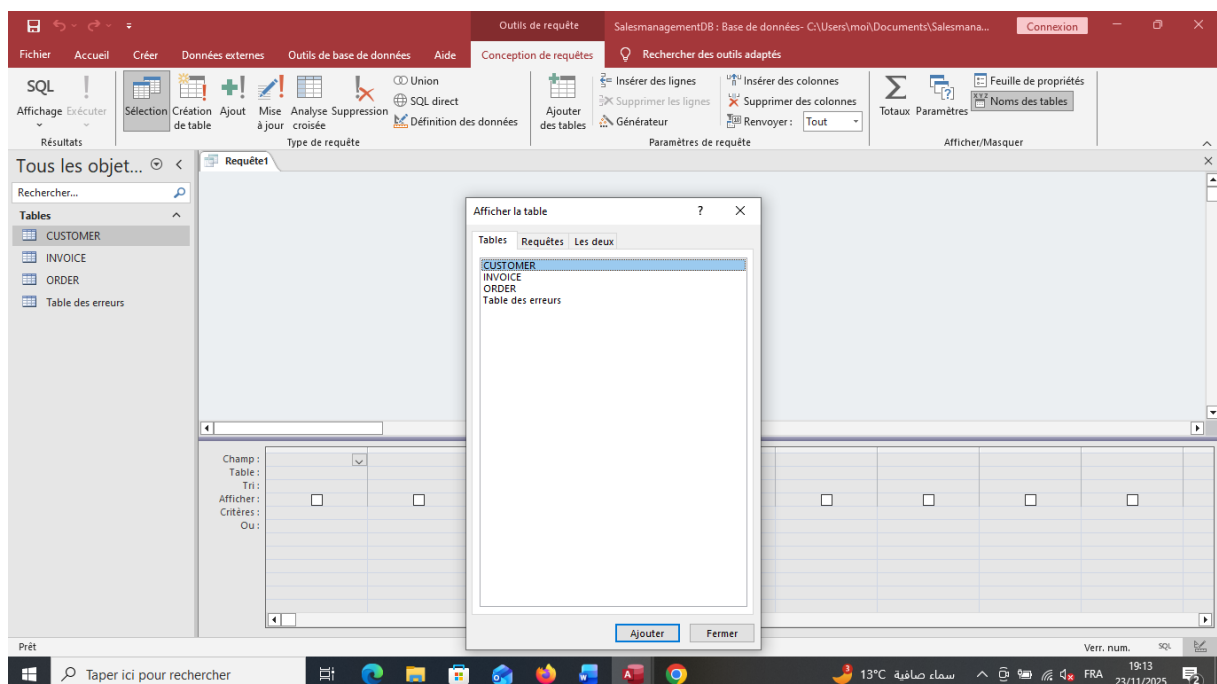
✅STEP 2 — Add Tables In the window that appears: Select Customers → click

Add Select Orders → click Add Close the window You will now see both tables

in the query designer.
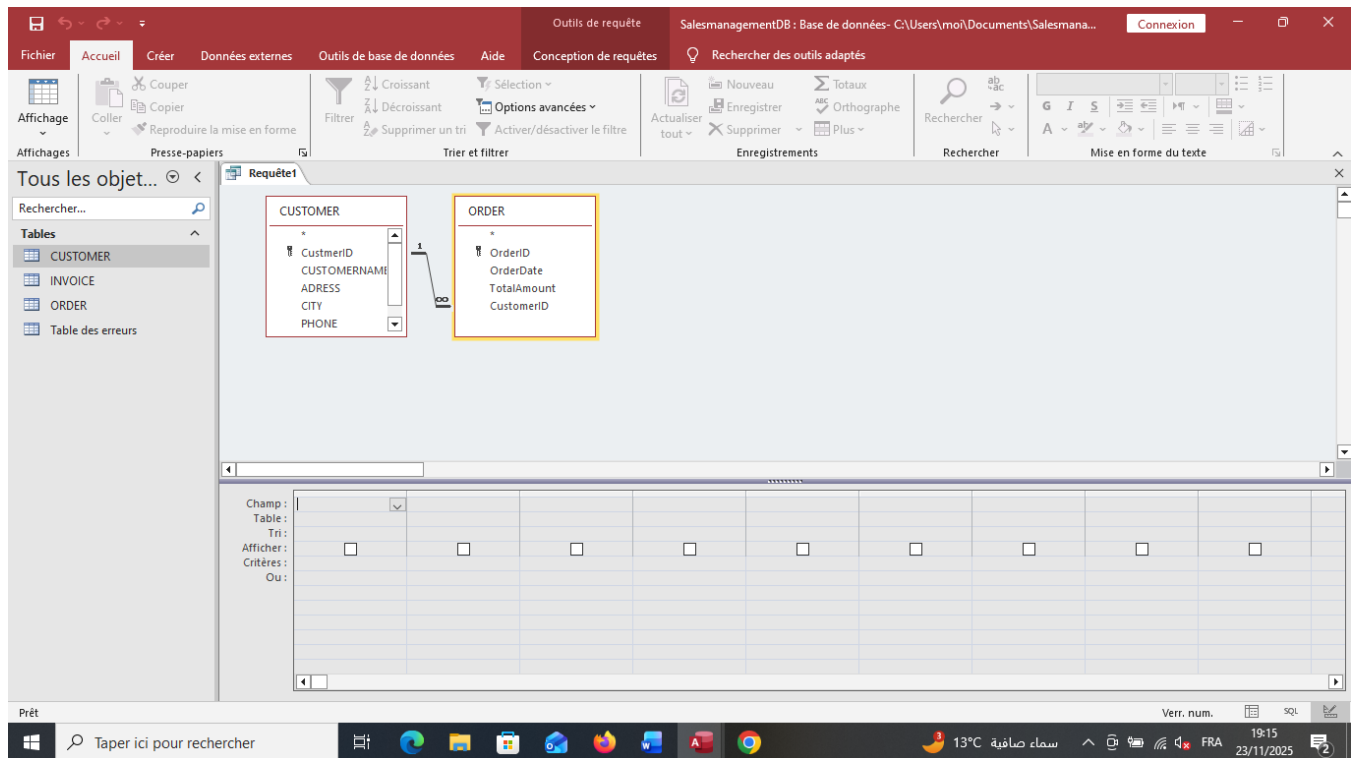
✅STEP 3 — Check the Relationship Access must show a line between:

Customers.CustomerID → Orders.CustomerID If the line is not there, drag

CustomerID from Customers and drop it on CustomerID in Orders.

✅STEP 4 — Choose the Fields

Double-click the following fields to add them to the query grid:

From Customers table:

⭐ CustomerName

⭐ City

From Orders table:

⭐ OrderID

⭐ OrderDate

⭐ TotalAmount

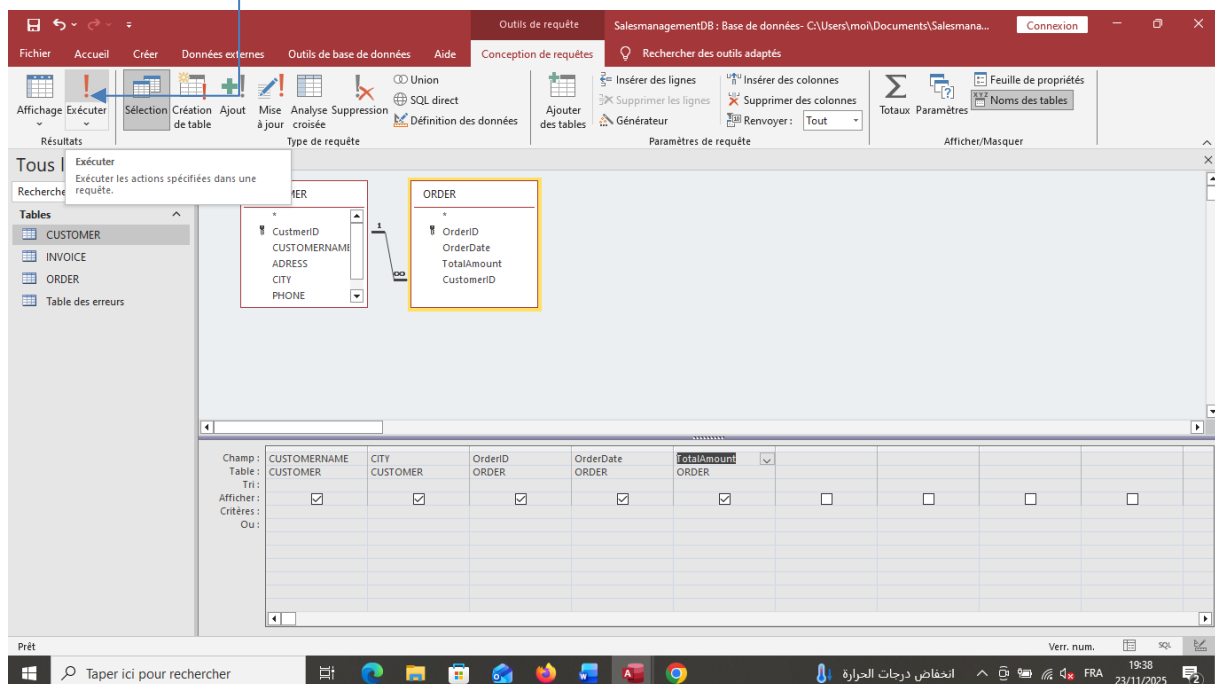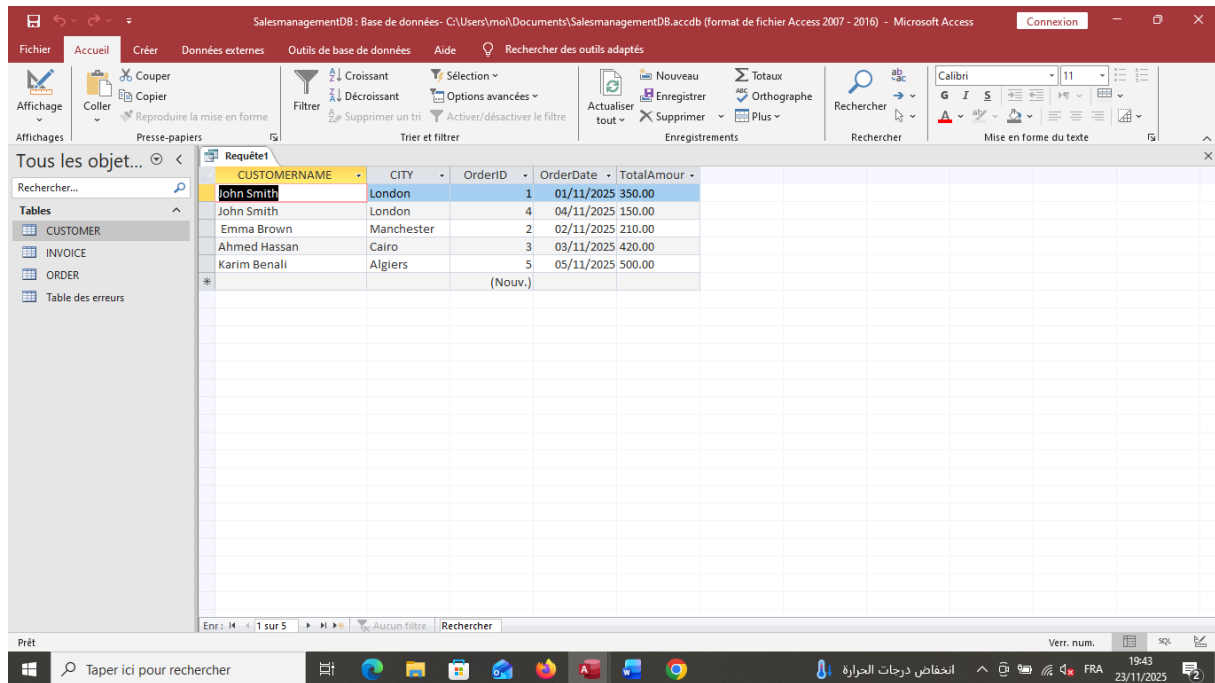The fields will appear in the bottom design grid.
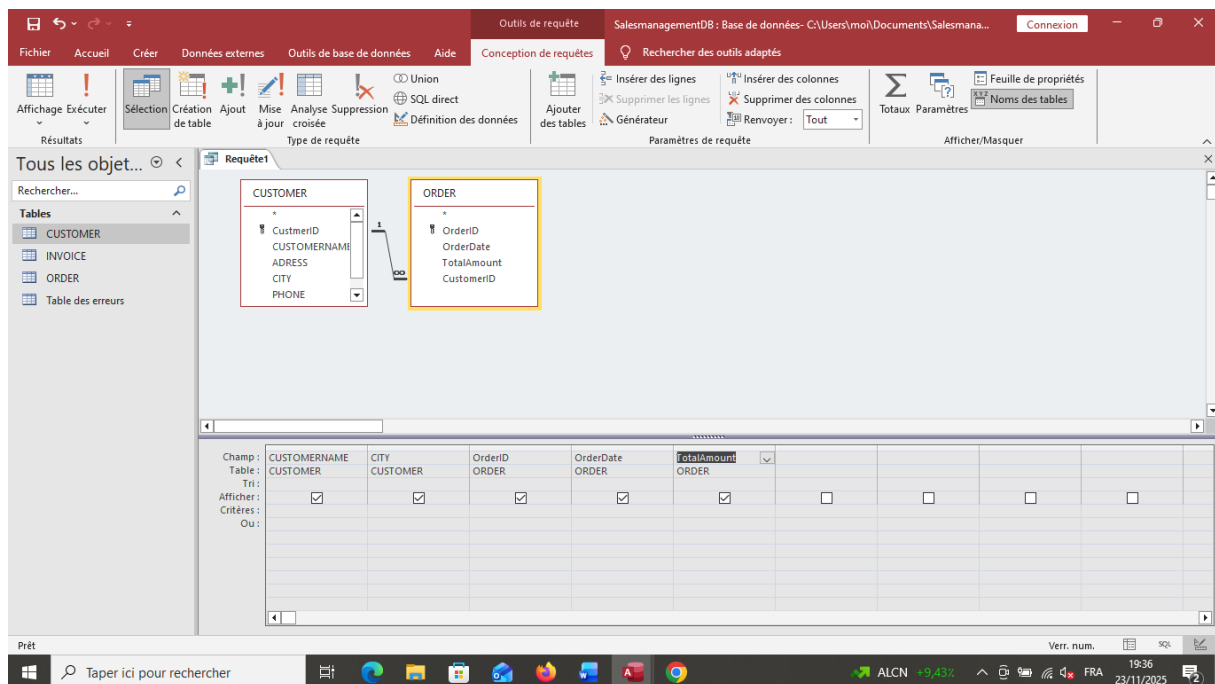
✅ STEP 5 — Run the Query

1. Go to the Design tab.

2. Click Run (the red exclamation mark !).

Click Run

Your results will appear showing: | CustomerName | City | OrderID | OrderDate
| TotalAmount |

✅ STEP 6 — Save the Query Press Ctrl + S Name the query:

Orders_by_Customer Click OK Your query is now saved and ready to

use.

✅

Fichier   Accueil   Créer   Données externes   Outils de base de données   Aide   ⊘ Rechercher des outils adaptés

CUSTOMERNAME	CITY	OrderID	OrderDate	TotalAmour
John Smith	London	1	01/11/2025	350.00
John Smith	London	4	04/11/2025	150.00
Emma Brown	Manchester	2	02/11/2025	210.00
Ahmed Hassan	Cairo	3	03/11/2025	420.00
Karim Benali	Algiers	5	05/11/2025	500.00
*		(Nouv.)		

Tous les objet...

Rechercher...

Tables
- CUSTOMER
- INVOICE
- ORDER
- Table des erreurs

Requêtes
- order_by_customer

Enr : ◄ ◄ 1 sur 5 ► ►► ► Aucun filtre   Rechercher

Prêt