

# *Module 2*

## **HOW TO USE** *MANAGEMENT STUDIO*

# Objectives

## Applied

Use the Management Studio to do any of the following management tasks:

- Start or stop an instance of SQL Server for developer
- Enable a remote connection to a database
- Navigate through the objects of a database
- Attach, detach, back up, or restore a database
- Set the compatibility level for a database
- View the database diagrams for a database
- View the column definitions for a table in a database
- View or modify the data of a table in a database
- Modify the column definitions for a table in a database

# Objectives

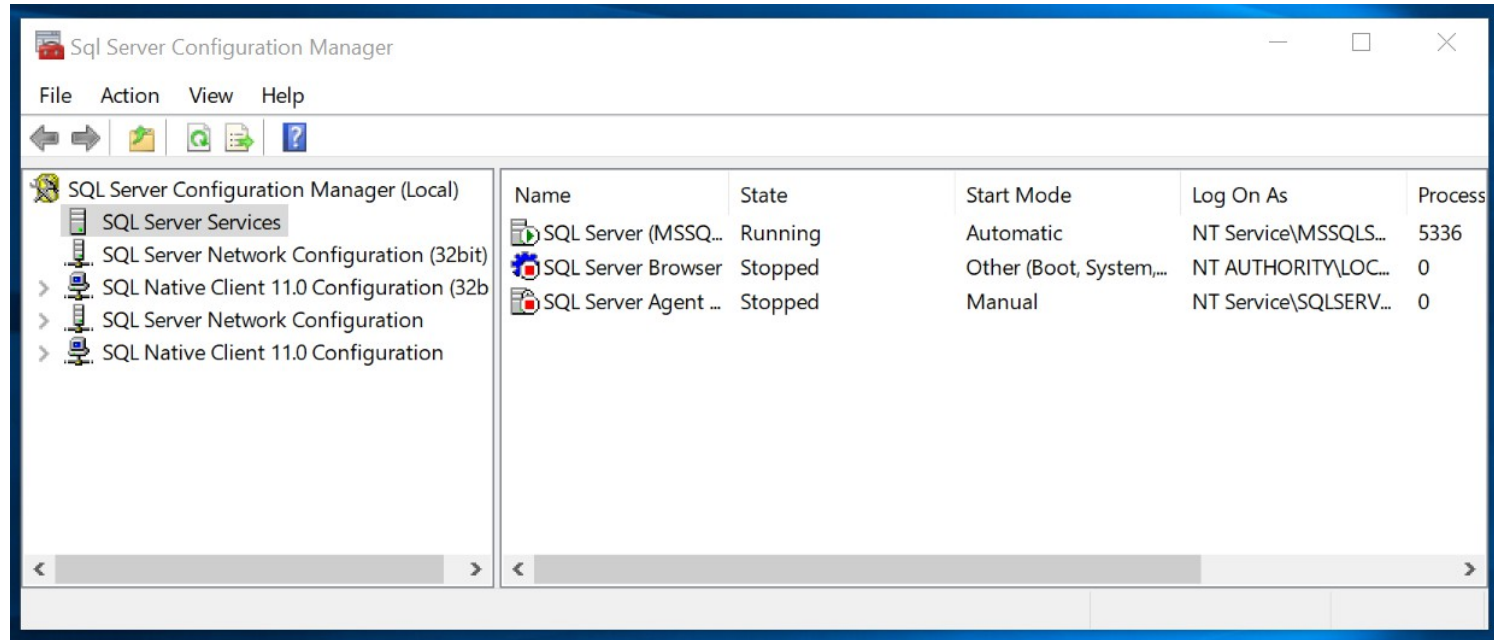
- Use the Management Studio to run, open, and save SQL queries.
- Use the Query Designer to build and run queries.
- Use SQL Server documentation to look up information about SQL Server.

## Knowledge

- Briefly describe the function of each of these client tools: the Management Studio, the Query Designer, and SQL Server documentation.
- Distinguish between Windows authentication and SQL Server authentication for connecting to a SQL Server database.
- Describe what “compatibility level” means when it is applied to SQL Server.

# SQL Server Configuration Manager

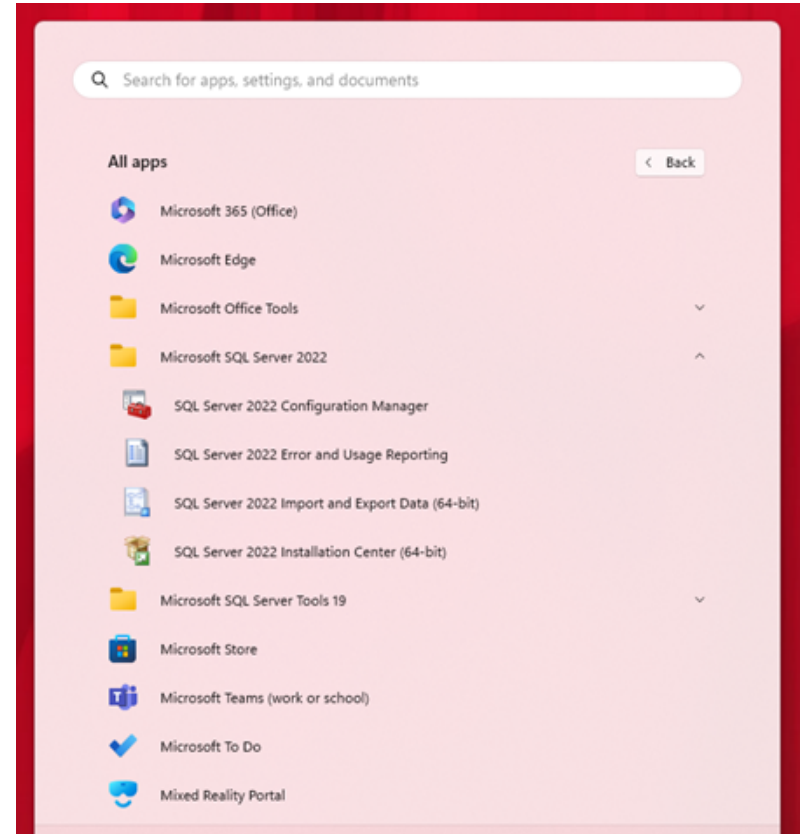
- **SQL Server Configuration Manager:** A graphical tool that you can use to **start** and **stop** the database server.



# Accessing SQL Server Configuration Manager

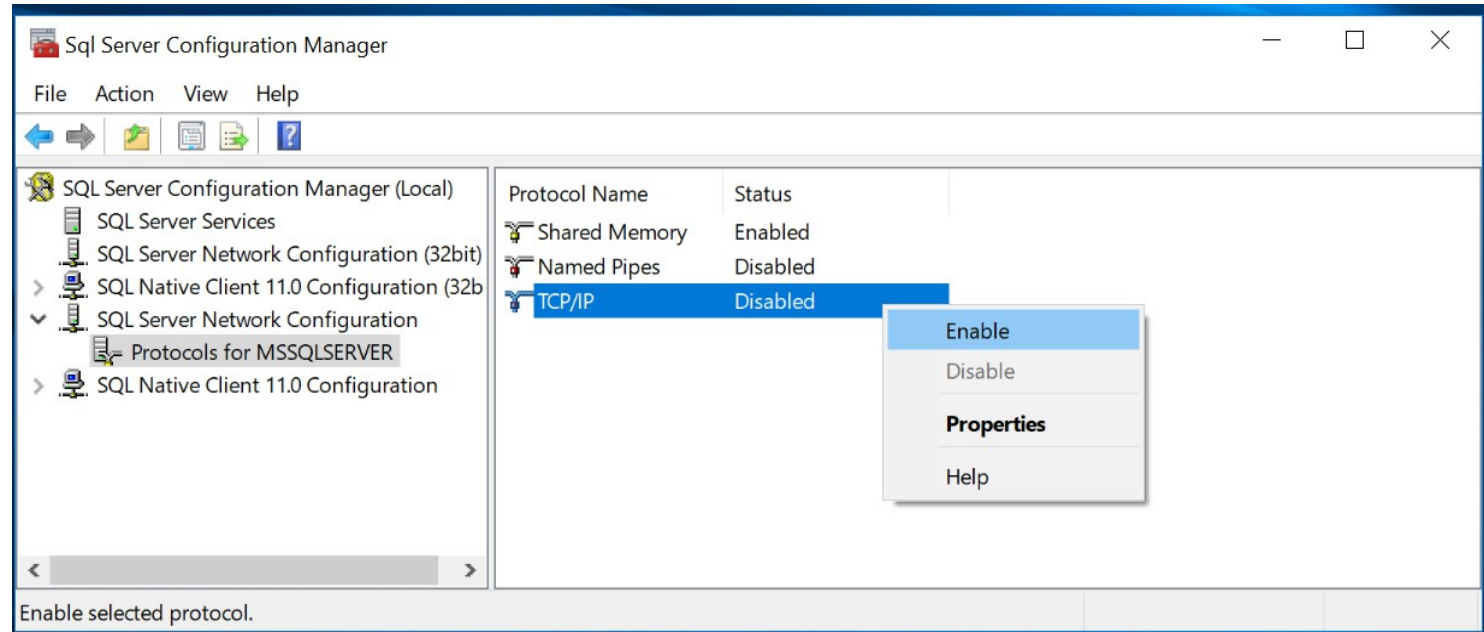
## ❖ Steps

- Start (Bottom tabs of your PC)
- All Apps
- Scroll down until you see Microsoft SQL Server 2022 Folder
- Expand Microsoft SQL Server 2022 Folder
- Double-click on SQL Server 2022 Configuration Manager
- SQL Server Configuration Manager (Now open)



# SQL Server Network Configuration

- **Network Configuration:** Remote connection is disabled by default.
- **To enable remote connection:** Follow the steps below in this figure.



# Window Authentication Connection

- **Connect to Management Studio: Using Windows authentication**
  - Windows authentication: SQL Server uses the login name and password currently operating the PC to verify that those credentials are authorized to connect to the database server.

The screenshot shows the 'Connect to Server' dialog box. The title bar says 'Connect to Server'. The main heading is 'SQL Server'. Below this, there are four fields: 'Server type:' with a dropdown menu showing 'Database Engine'; 'Server name:' with a dropdown menu showing '18FALLALXL01'; 'Authentication:' with a dropdown menu showing 'Windows Authentication'; and 'User name:' with a dropdown menu showing 'AD\Fallal'. Below the 'User name' field is a 'Password:' field which is empty. There is a 'Remember password' checkbox which is unchecked. At the bottom, there are four buttons: 'Connect', 'Cancel', 'Help', and 'Options >>'. The 'Connect' button is highlighted with a blue border.

# SQL Server Authentication Connection

- ❑ **Connect to Management Studio:** Using SQL Server authentication
  - SQL Server authentication: It requires Username and password provided by the database administrator or the credentials created if a fresh copy has been locally installed by user.

Connect to Server

SQL Server

Server type: Database Engine

Server name: 18FALLALXL01

Authentication: SQL Server Authentication

Login: Abdou

Password: \*\*\*\*\*

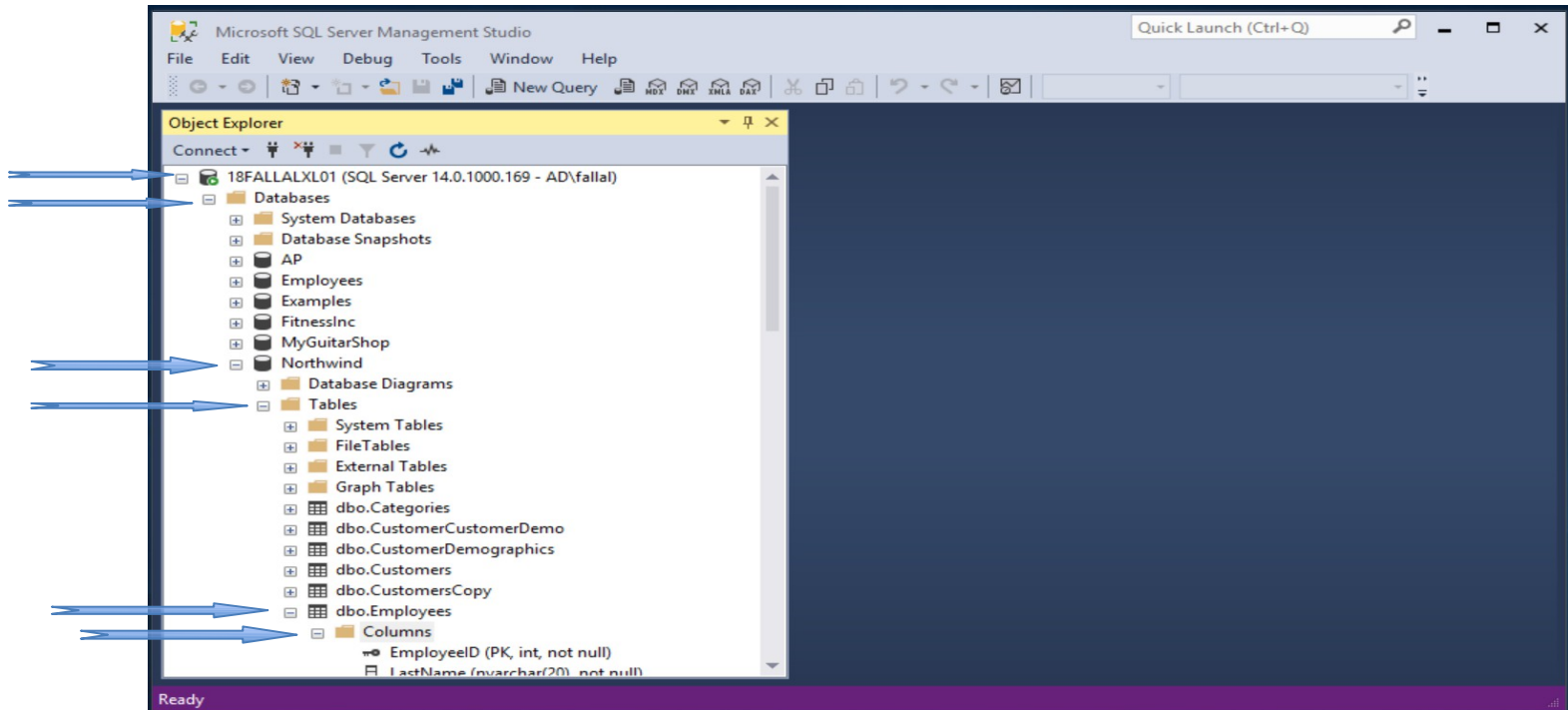
☐ Remember password

Connect Cancel Help Options >>



# Navigating Management Studio

- ❑ **Object Explorer:** It allows user to inspect objects in a server, manage the server and databases.

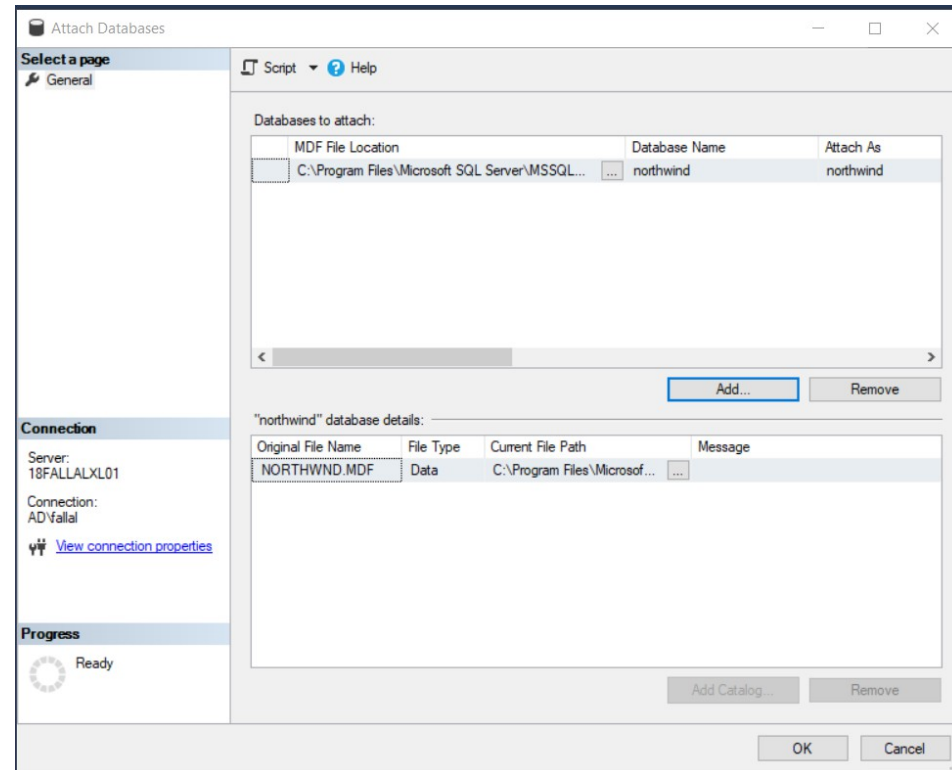


# ATTACH DATABASES (Method 1)

- Using a downloaded Zip file

## ❖ Steps

- Download the Database Zip file and unzip it in the SQL Server Default Directory:  
**C:\Program Files\Microsoft SQL Server\MSSQL16.MSSQLSERVER\MSSQL\DATA**
- Right-click the Databases folder in Object Explorer in Management Studio and select the Attach command to display the Attach Databases dialog box. (as shown here).
- Click the Add... button, navigate to the directory you've saved the unzipped database files.
- Select the .MDF file(it will automatically add the .LDF transaction log file).
- Click OK and the database will be attached



# ATTACH DATABASES (Method 2)

- Using a **.sql** file (as shown here)



Northwind.sql

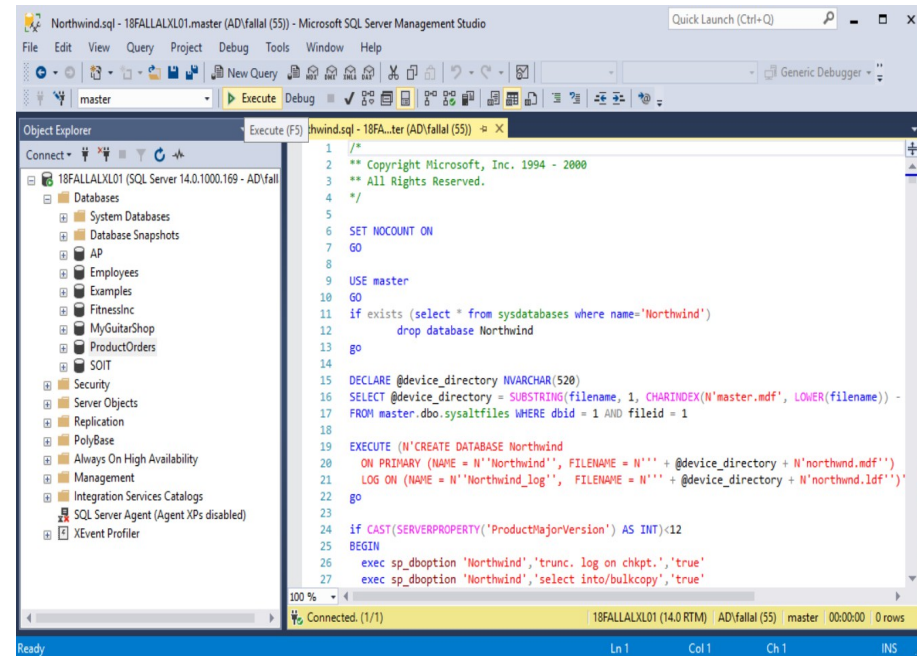
## Steps

- Double-click on the **.sql** file (This file will open automatically in Management Studio if it is already installed).
- Click the **Execute** button in Management Studio Toolbar or Press (F5) to attach the database.

(After Executing query runs its course, the following message should appear at the bottom of the query editor:

**Query executed successfully**

- Right-click the **Databases** folder in Object Explore and click refresh.
- (The new database should now appear)



# SQL Server Default Directory

- The default directory for SQL Server 2022 databases:

**C:\Program Files\Microsoft  
SQLServer\MSSQL16.MSSQLSERVER\MSSQL\DATA**

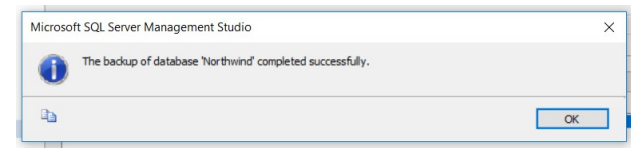
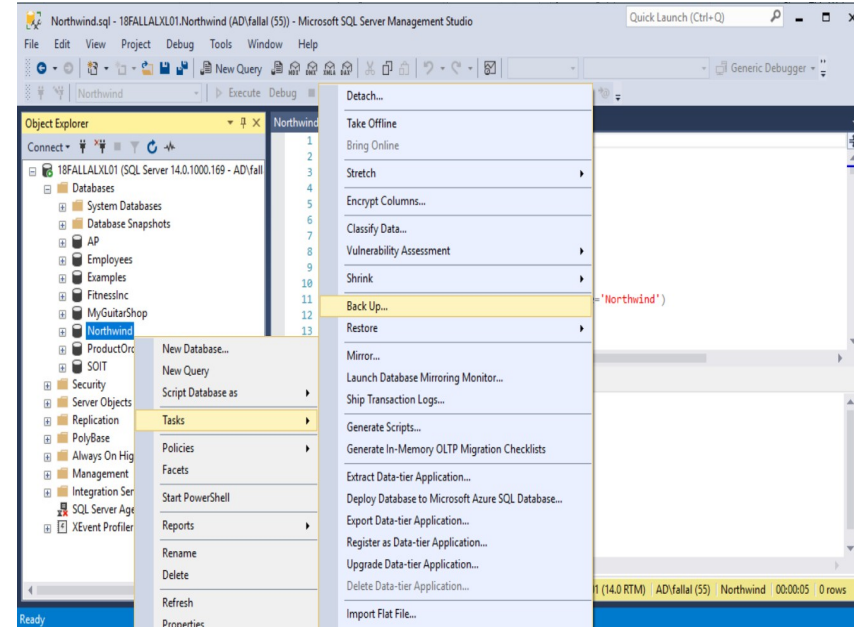
- Preferred location to unzip Database files

# Database Back Up

## □ How to back up a Database

### ❖ Steps

- Right click on the desired Database
- Select Tasks
- Select Back Up  
(The Back Up Database window will appear)
- Click the OK button  
(The following message should appear:  
**The backup of database 'Database name' completed successfully**)  
as shown is this figure.



# Database Back Up Default Directory

- The default directory for SQL Server 2022 Database Backups:

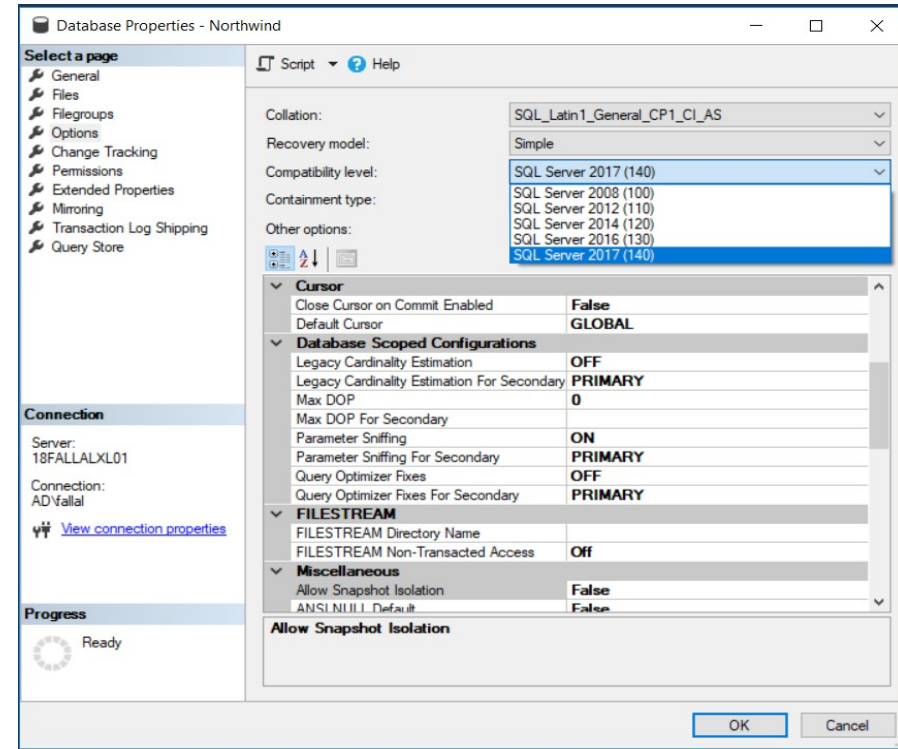
**C:\Program Files\Microsoft SQL Server\MSSQL16.MSSQLSERVER\MSSQL\Backup**

# Database Compatibility Level Settings

## ▣ Set Database Compatibility Level

### ❖ Steps

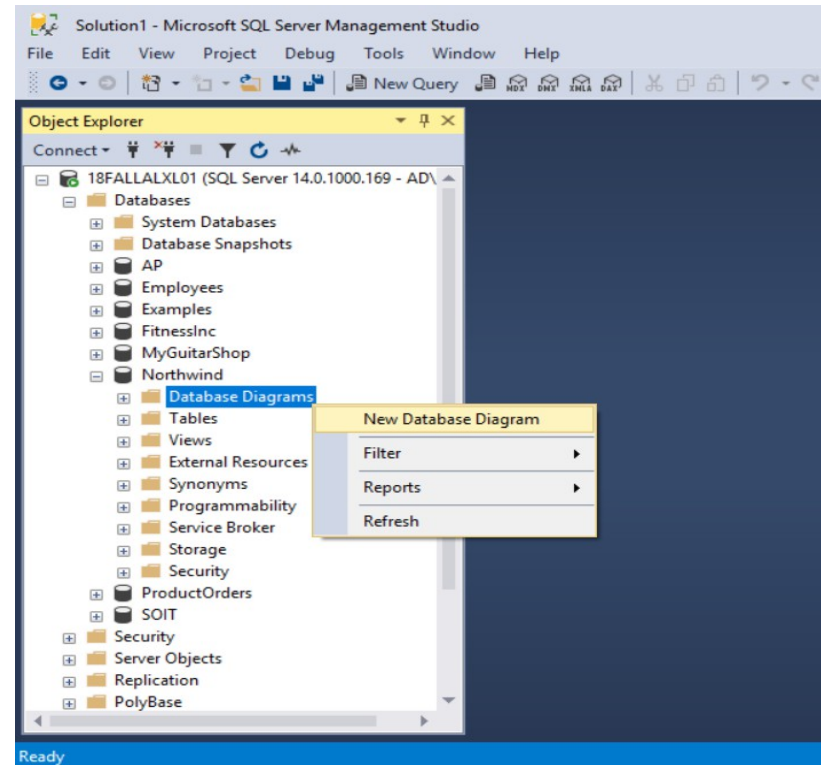
- Right click on the desired Database
- Select Properties
- Click on Option
- Select SQL Server 2022 from the Compatibility Level drop-down list shown on the upper-right hand side of the Database Properties window.
- Click OK



# Create Database Diagram

## ❖ Steps

- Expand the desired Database by clicking the + sign
- Right-click on the Database Diagrams folder
- Select New Database Diagram
- Highlight all the tables in Add table window
- Click on Add
- Click Close
- Click on Save all or press Ctrl+Shift+S from the Management Studio Toolbar.
- Give the new Diagram a name and Click OK.



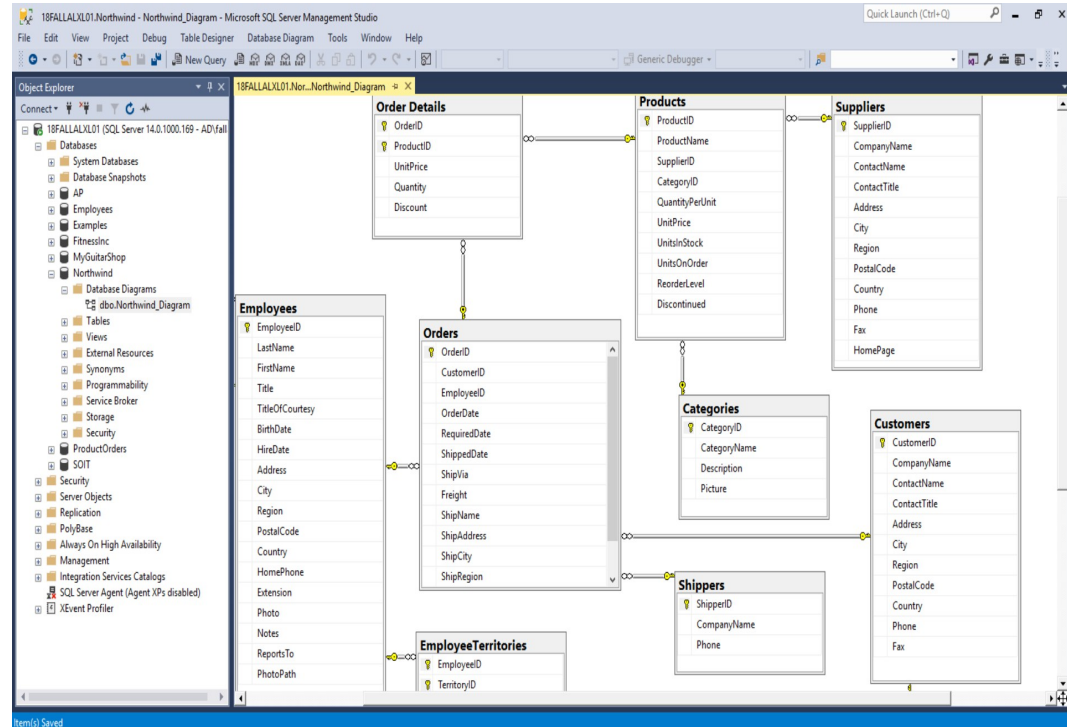


# NORTHWIND Database Diagram

## View the Relationships in NORTHWIND Database

### Steps

- Expand the desired Database by clicking the + sign
  - Expand the Database Diagrams folder by clicking the + sign
  - Double-click on the desired Database Diagram to open it.
- (For example **dbo.Northwind\_Diagram** as shown in this figure)

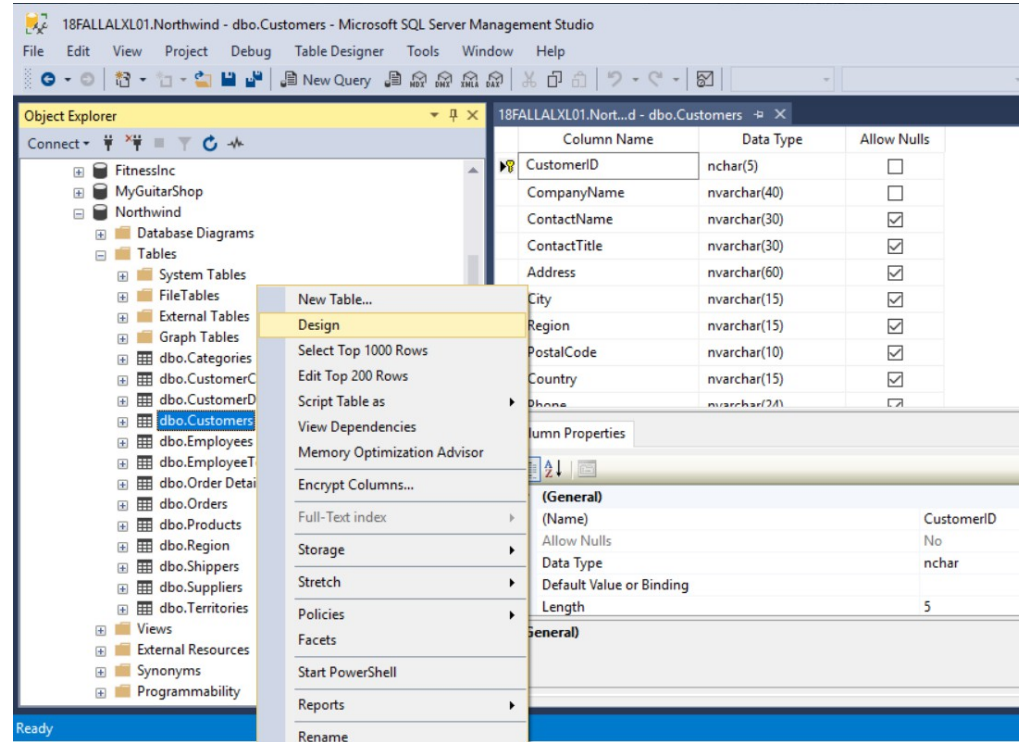


# Table Details (Columns)

- View and Modify the columns for a table

## ❖ Steps

- Expand the Tables folder by clicking the + sign
- Right-click on the desired Table
- Select the Design command (To view the Table's details)
- Right-click on the desired column and select the Properties command to modify its properties



- ## ❖ Steps

- 
- The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The left pane displays the Object Explorer tree with the following structure:
- Database Snapshots
  - AP
  - Employees
  - Examples
  - Fitnessinc
  - MyGuitarShop
  - Northwind
    - Database Diagrams
    - Tables
      - System Tables
      - File Tables
      - External Tables
      - Graph Tables
      - dbo.Categories
      - dbo.CustomerC...
      - dbo.CustomerI...
      - dbo.Customers
      - dbo.Employee...**
      - dbo.EmployeeT...
      - dbo.Order Data
      - dbo.Orders
      - dbo.Products
      - dbo.Region
      - dbo.Shippers
      - dbo.Suppliers
      - dbo.Territories
- A right-click context menu is open over the **dbo.Employee** table. The menu items are:
- New Table...
  - Design
  - Select Top 1000 Rows
  - Edit Top 200 Rows
  - Script Table as
  - View Dependencies
  - Memory Optimization Advisor
  - Encrypt Columns...
  - Full-Text index
  - Storage
  - Stretch
  - Policies
  - Facets
  - Start PowerShell
  - Reports
  - Rename
- The main query window on the right displays the data from the **dbo.Employee** table:
- | EmployeeID | LastName  | FirstName | Title              | TitleOfCourtesy | BirthDate           | HireDate            | Address             |
|------------|-----------|-----------|--------------------|-----------------|---------------------|---------------------|---------------------|
| 1          | Davolio   | Nancy     | Sales Represent... | Ms.             | 1948-12-08 00:00:00 | 1992-05-01 00:00:00 | 507 - 20th Ave. ... |
| 2          | Fuller    | Andrew    | Vice President ... | Dr.             | 1952-02-19 00:00:00 | 1992-08-14 00:00:00 | 908 W. Capital ...  |
| 3          | Leverling | Janet     | Sales Represent... | Ms.             | 1963-08-30 00:00:00 | 1992-04-01 00:00:00 | 722 Moss Bay B...   |
| 4          | Peacock   | Margaret  | Sales Represent... | Mrs.            | 1937-09-19 00:00:00 | 1993-05-03 00:00:00 | 4110 Old Redm...    |
| 5          | Buchanan  | Steven    | Sales Manager      | Mr.             | 1955-03-04 00:00:00 | 1993-10-17 00:00:00 | 14 Garrett Hill     |
| 6          | Suyama    | Michael   | Sales Represent... | Mr.             | 1963-07-02 00:00:00 | 1993-10-17 00:00:00 | Coventry Hous...    |
| 7          | King      | Robert    | Sales Represent... | Mr.             | 1960-05-29 00:00:00 | 1994-01-02 00:00:00 | Edgeham Hollo...    |
| 8          | Callahan  | Laura     | Inside Sales Co... | Ms.             | 1958-01-09 00:00:00 | 1994-03-05 00:00:00 | 4726 - 11th Av...   |
| 9          | Dodsworth | Anne      | Sales Represent... | Ms.             | 1966-01-27 00:00:00 | 1994-11-15 00:00:00 | 7 Houndstooth ...   |
| NULL       | NULL      | NULL      | NULL               | NULL            | NULL                | NULL                | NULL                |
- The status bar at the bottom indicates "Cell is Read Only."

# SELECT Statement (Completion List)

New Query Button or **Ctrl+N**

The screenshot shows the Microsoft SQL Server Management Studio interface. The 'Object Explorer' on the left lists various database objects. The 'Query Editor Window' is open, displaying a new query with the following text:

```
1 SELECT LastName, FirstName, Title
2 FROM Em
```

An IntelliSense completion list is shown for the 'FROM' clause, listing various tables and views. The 'Employees' table is highlighted. A label 'table Northwind.dbo.Employees' points to this entry.

The 'Results' tab at the bottom shows the output of the query, which is a table with 9 rows and 3 columns: LastName, FirstName, and Title.

LastName	FirstName	Title
Davolio	Nancy	Sales Representative
Fuller	Andrew	Vice President, Sales
Leverling	Janet	Sales Representative
Peacock	Margaret	Sales Representative
Buchanan	Steven	Sales Manager
Suyama	Michael	Sales Representative
King	Robert	Sales Representative
Callahan	Laura	Inside Sales Coordinator
Dodsworth	Anne	Sales Representative

The status bar at the bottom indicates 'Query executed successfully.' and shows the current file path and row count.

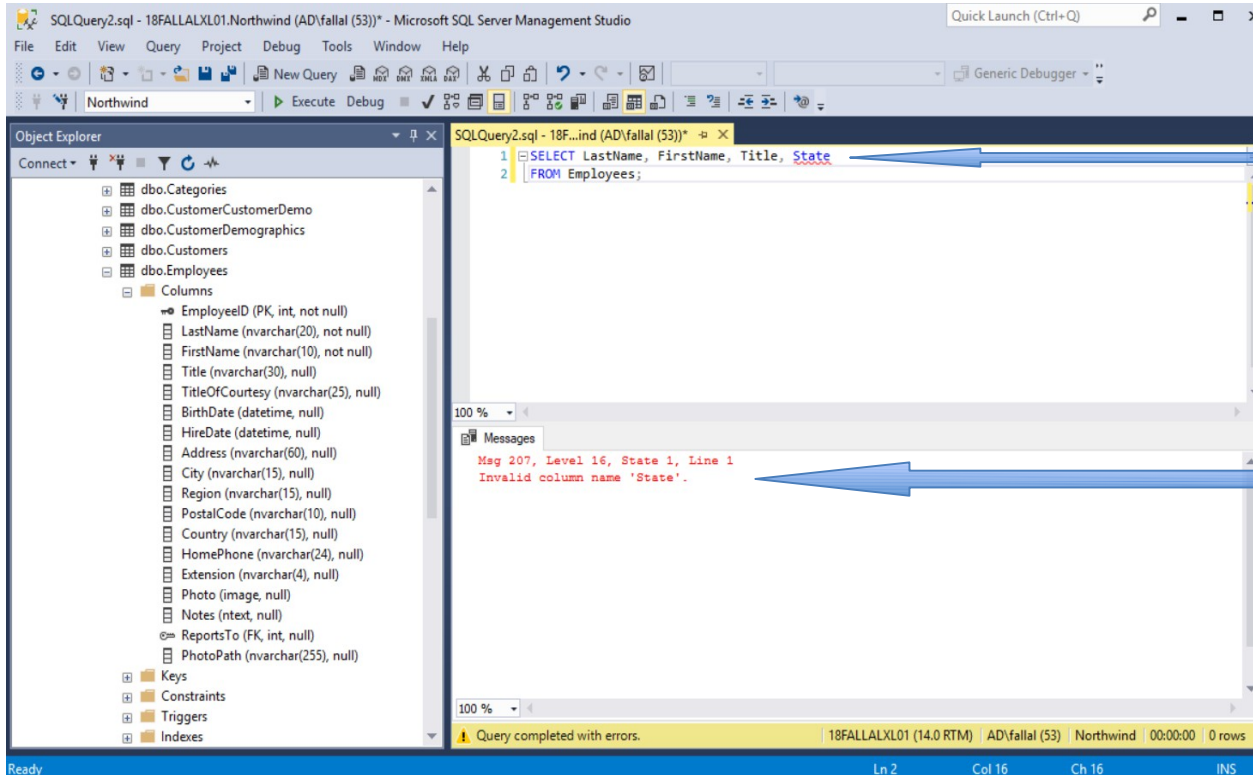
Select Statement

Query Editor Window

IntelliSense feature **ON**

Result Tab

# Management Studio ERROR message



State column doesn't exist  
in the Employees table

ERROR message

# USUAL SOURCES OF ERRORS

- Wrong database selection from the Available Databases combo box
- Misspelled names (Table or column)
- Misspelled keywords
- Character string closing quotation mark omission.

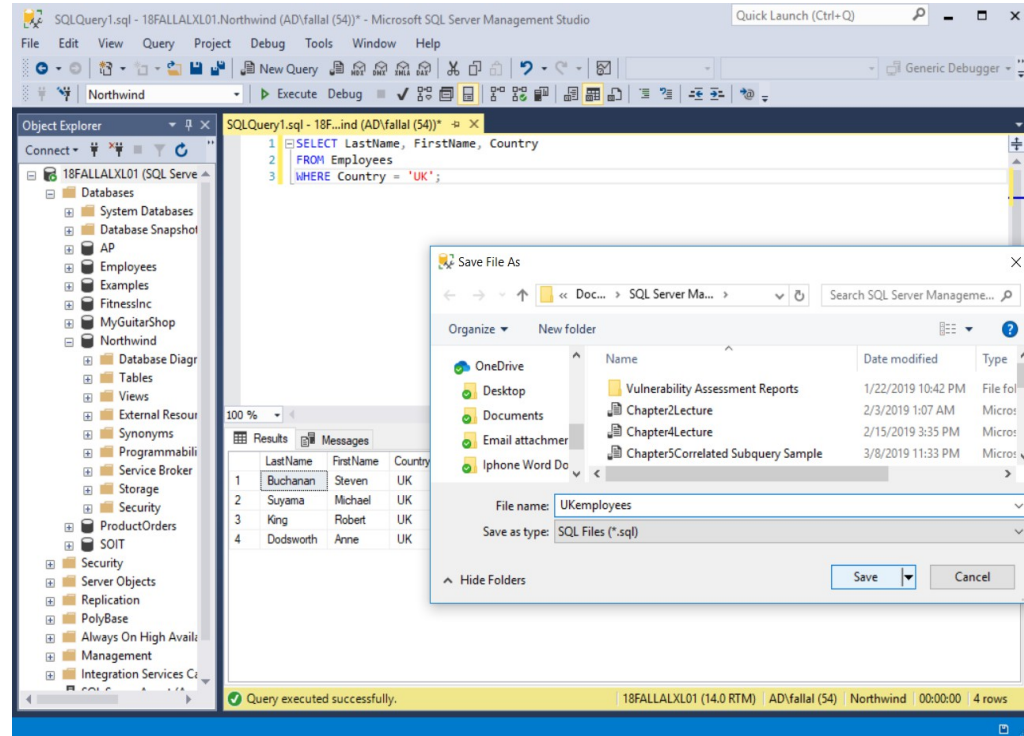


# Save a Query

## □ To Save a Query

### ❖ Steps

- Write the desired query
- Execute the query to make sure of the correct results were obtained
- Click the Save button in Toolbar or press Ctrl+S
- Give an appropriate name to the query
- Click Save

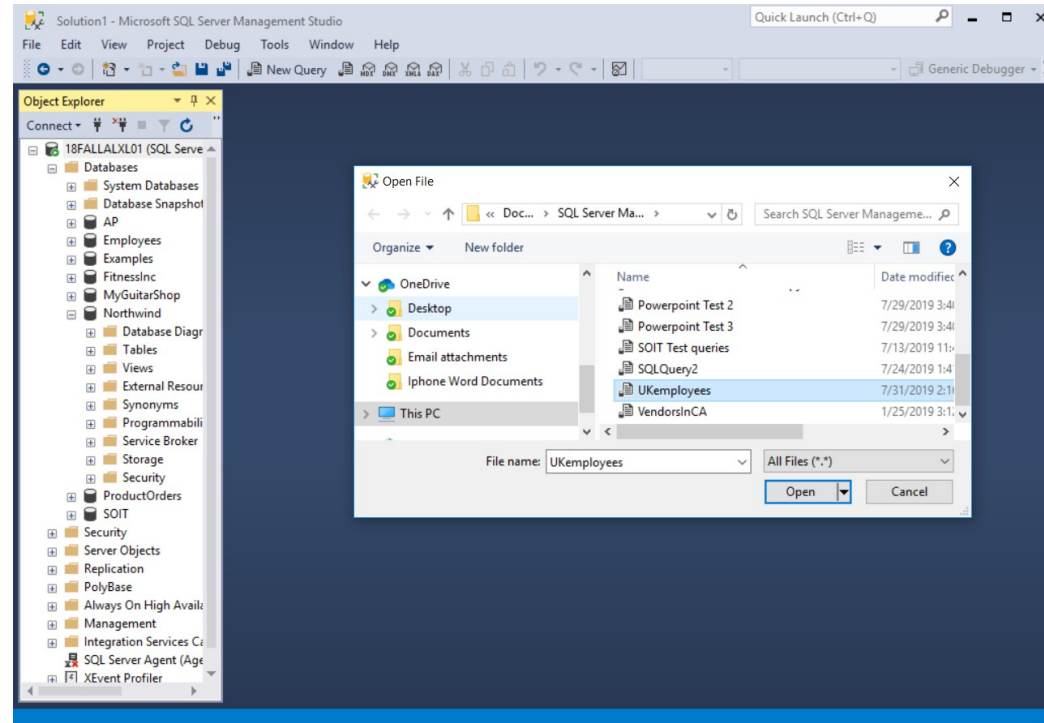


# Open a saved Query

- ❑ To Open a saved Query

## ❖ Steps

- Click on open file button next to save button in the Toolbar or press Ctrl+O
- Choose the desired file from displayed list
- Click on Open
- Choose the right Database from the available databases combo box before executing the query.





# Query Designer Window (Build quick queries)

## ❖ Steps

➤ Choose the desired database from the available databases combo box

➤ To display the Query designer

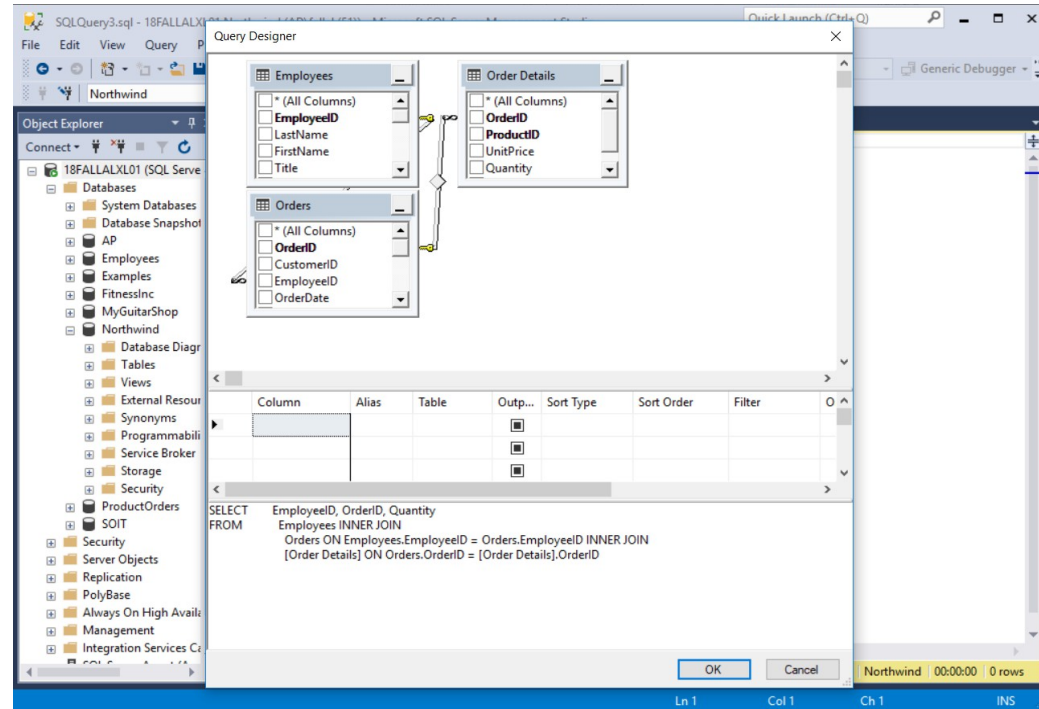
➤ Click on the new query button in Toolbar or press Ctrl+N to open the Query Editor

➤ Right-click on the Query Editor window and Select **Design Query in Editor** command or press **Ctrl+Shift+Q**

➤ Select the desired tables and click Add, Close

➤ Use the bottom of the Query Designer to write the simple, quick and easy queries.

➤ Click on OK

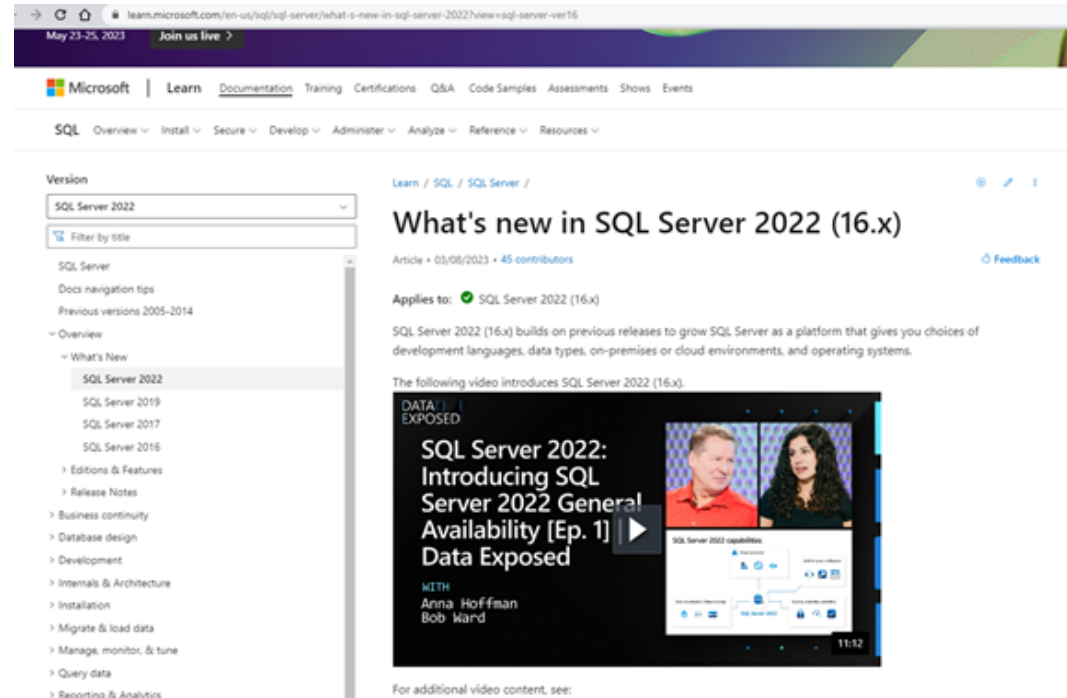


# The SQL Server Documentation

- ❑ Search for SQL Server Documentation in Google and choose the **docs.microsoft.com** link from the results.

- ❖ Useful information:

- Look up information about SQL Statements
- Look up an error message returned by SQL Server
- Look up tutorials



# SUGGESTIONS

- Watch Learn Microsoft SQL Server, The Basics on **Linkedin Learning**
- Load Microsoft SQL for Developer and Management Studio on your laptop
- Windows 8 - 10 or 11– use 2016 or Newer
- Windows 7– use 2012
- Alternative– use lab computer

# Questions?