

SQL Server

for Microsoft Access Users

Beginner Level 1

The book cover features the title 'SQL Server' in large blue letters, 'For Access Users' in red and black, and 'Level 1' in purple. A 'Beginner' badge is on the left. A photo of Richard Rost, a 2025 Microsoft MVP, is shown with a '5 MVP' star badge. The central image depicts a server rack connected to three desktop monitors displaying Access databases. A bulleted list of topics is on the right, and the SQL Learning Zone logo is at the bottom right.

SQL Server 

Beginner **For Access Users**

Level 1

- Why SQL Server for Access?
- Installing SQL Server, SSMS
- Creating Tables & Fields
- Differences in T-SQL
- Creating a Query & View
- Connecting Access to SQLS


Richard Rost
2025 Microsoft MVP


MVP
Microsoft
Most Valuable
Professional



Course Handbook

By Richard Rost

Published by SQL Learning Zone

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SQLLearningZone.com

Welcome

Welcome to SQL Server for Microsoft Access Users, Beginner Level 1, by SQL Learning Zone. I am your instructor, Richard Rost.

This handbook supplements the full video course. Follow it alongside the recordings or use the explanations, editable code, screenshots, and lesson quizzes as a study guide.

I suggest watching each recording once to get the big picture, then following along in a learning copy of your database. Screenshot timestamps are relative to the recording named in each lesson heading.

Work through the lessons in order. Keep backups and verify your own connections and results before applying changes to a live system.



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Introduction (14:13)

Welcome to SQL Server for Microsoft Access Users, Beginner Level 1. This course extends the database skills you already have in Access by moving the data engine to SQL Server. Access continues to provide the forms, reports, and user interface; SQL Server stores the data, processes requests, and enforces server permissions.



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00:00:04 SQL Server for Access Users — Beginner Level 1 course overview

Before you begin

Be comfortable with Access tables, queries, forms, reports, and the idea of a split database. In a split Access application, each user has a front end, while shared data lives in a backend. Here, SQL Server takes over that backend role. Basic networking awareness will help when the lessons move from one computer to several computers on a local network.

You should understand primary keys, relationships, normalization, and basic SQL SELECT queries. VBA programming is not required at this level. The course uses SQL Server Express and SQL Server Management Studio (SSMS), with Microsoft Access as the client application. The installation recording demonstrates the 2025 SQL Server release; screen details can differ in other versions.

Your route through Beginner Level 1

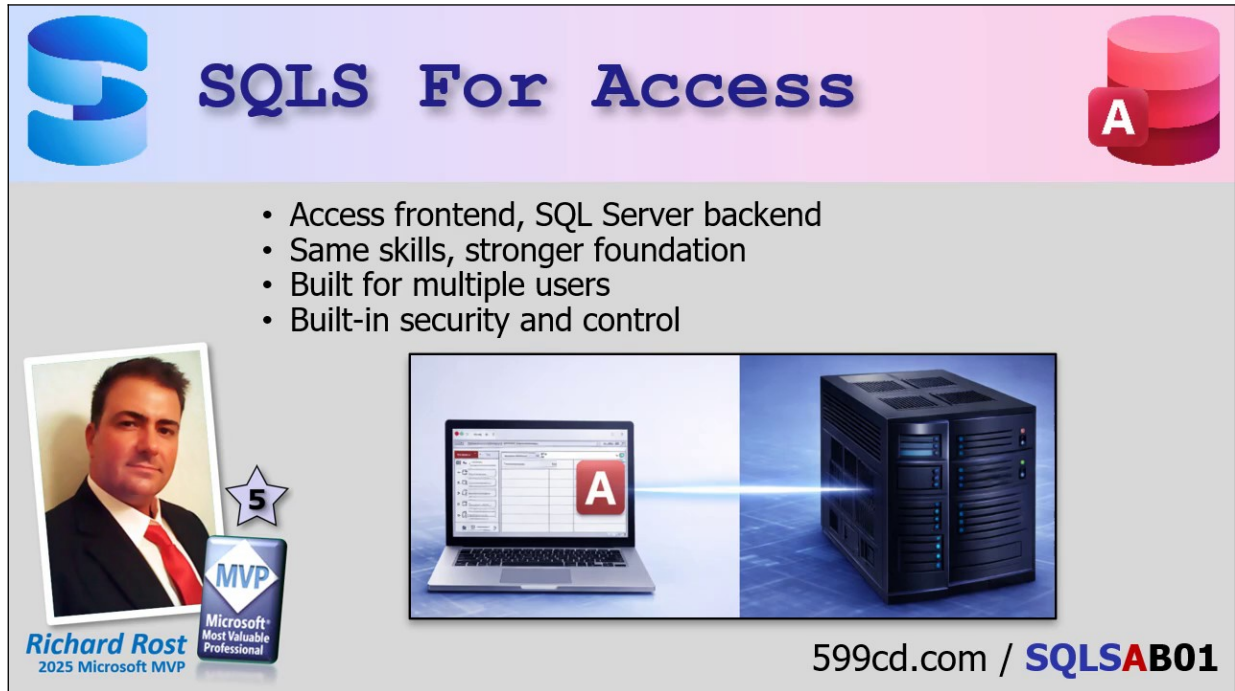
The lessons build one connected system in manageable stages. Follow them in order so the server, sample table, security settings, and Access links are ready when later lessons use them.

- 01. Welcome to SQL Server.** Understand the engine/front-end division, security, performance, scalability, and prerequisites.
- 02. Installing SQL Server.** Install Express and SSMS locally; learn instance names and Windows Authentication.
- 03. Exploring the Server Interface.** Navigate Object Explorer and create the course database.
- 04. Creating a Customer Table.** Set up fields, a primary key, an identity column, and appropriate text sizes.
- 05. Additional Data Types.** Add number, money, date/time, and bit fields; meet schemas, constraints, and indexes.
- 06. Entering and Importing Data.** Edit rows in SSMS and use Excel to prepare sample Access data.
- 07. Date/Time Precision.** Change the date/time field to datetime2(3) using ALTER TABLE to better accommodate Access fractional seconds.
- 08. Remote Connections.** Configure local-network connectivity and work through TCP/IP, Browser, firewall, and authentication issues.
- 09. Windows Logins.** Understand local accounts and Windows authentication across computers.
- 10. Connecting Access.** Use ODBC and a file DSN to link Access to live SQL Server tables.
- 11. Queries and Views.** Build server-side filtering and sorting, save a view, and use it from Access.
- 12. SQL Differences.** Compare Access SQL and T-SQL syntax and consider linked-table naming during migration.
- 13. Questions and Answers.** Resolve practical questions about connections, editions, performance, and the roles of Access and SQL Server.

A final Review recording recaps the level and introduces the next stage. Screenshot timestamps in this handbook are relative to the recording identified by the lesson heading. Follow along in a learning database before applying changes to a production system.

01. Welcome to SQL Server (26:46)

SQL Server is a database engine that runs as a service. Your users continue to work in an Access application, while SQL Server handles storage and data requests behind it. You keep the front-end skills and much of the application you have already built; the backend becomes a separate service designed to control shared access to data.



SQLS For Access

- Access frontend, SQL Server backend
- Same skills, stronger foundation
- Built for multiple users
- Built-in security and control

Richard Rost
2025 Microsoft MVP

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00:00:45 Access supplies the front end; SQL Server supplies the backend

What changes, and what stays in Access

Keep creating forms, reports, and user interfaces in Access. Queries and VBA can still be part of the Access front end, although some data-processing logic will move to the server. SQL Server is not a replacement form designer. SSMS, introduced in the next lesson, is the administration tool used to build and manage the server objects.

The course focuses on SQL Server Express installed on a local Windows computer. The server can be the same machine you use for development, or a different computer on the office network. Cloud hosting and a Windows domain are not prerequisites for this local learning setup. Hosted SQL Server is a separate deployment option, not a requirement for using a server backend.

Security: requests instead of direct file access

A shared Access backend is a file. Users who need to change its data ordinarily need filesystem access to it, which creates the risk of the file being copied, deleted, or damaged. With SQL Server, clients submit requests to the database engine instead of opening the active database files directly. The server checks the identity and the permissions granted to it.



SQLS Security Model



- No database file access
- Server enforces permissions
- Per-user authentication
- Centralized control





Richard Rost
2025 Microsoft MVP



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00:04:32 The server provides a central place to enforce data permissions

Different users can be given different permissions. For example, one role might read a table while another can update it. Richard illustrates this with a restaurant: the client makes a request, and the server controls what is returned. This is a useful way to understand the difference between access to a shared file and controlled access through a service.

Important qualification: Server permissions must be configured correctly. Moving a table does not automatically protect every kind of sensitive data, prevent an authorized reader from copying results, or establish compliance with a particular rule. The lesson's security comparison describes the architecture and its capabilities, not a guarantee supplied by installation alone.



Tip from Rick

Even a small office can benefit from controlling access to the shared data. Choose the backend based on the data and the risks, not only the number of users.

Performance: do the work near the data

A server-side query can filter and process a large table where it is stored, then return a much smaller result set to Access. That reduces the data that needs to cross the network. A SQL Server **view** is a saved query definition that can expose selected data to a client; later lessons build one and connect it to Access.



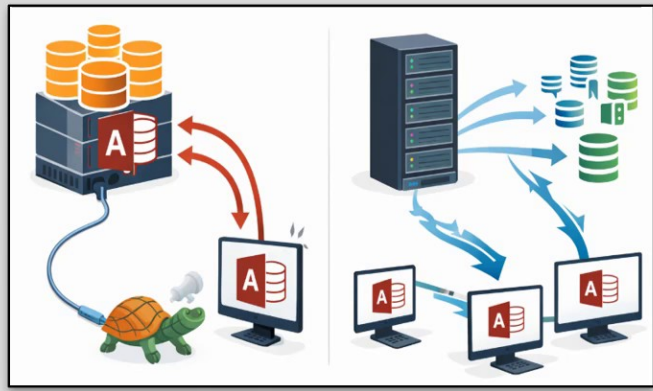
SQLS Performance Boost



- Server-side queries
- Less network traffic
- Faster results
- Scales better



Richard Rost
2025 Microsoft MVP



599cd.com / **SQLSAB01**

00:09:10 Server-side queries can reduce network traffic

The recording uses a large orders table and a small requested result to illustrate the benefit. The practical aim is to send the necessary results, rather than unnecessarily transferring a large amount of source data for client-side work. This matters for a single demanding user as well as for many users sharing a network.

Performance qualification: An Access file query does not invariably transfer every record, and a linked SQL Server table does not guarantee that every operation runs remotely. Query design, indexes, expressions, and the way Access submits the request affect where processing happens. The migration is an opportunity to improve the design; it is not an automatic speed guarantee.

Growth without abandoning the front end

The client/server division gives the application room to grow. More users can share the same managed backend while continuing to run Access front ends. Hardware, edition limits, workload, and application design still matter. Richard's experience with larger installations illustrates the potential of the architecture, rather than a promised capacity for every Express installation.

Skills and expectations

Bring a working understanding of tables, primary keys, relationships, normalization, and basic data integrity. Know how queries support forms and reports. You should be comfortable reading or writing SELECT statements with WHERE and ORDER BY and understand simple joins. If those concepts are unfamiliar, review them before trying to diagnose server-specific problems.

VBA is optional for this beginner level. You can design tables, link them to Access, and use queries, forms, and reports without writing VBA. Programming becomes useful later for calling server logic, managing connections, and building workflows that do not rely solely on linked tables.

What you will build

First install the database engine and SSMS. Then create the course database and customer table, enter sample data, configure a local-network connection, and link Access to the server. You will build queries and views and compare Access SQL with SQL Server's Transact-SQL, commonly called **T-SQL**.

How the wider series develops

Beginner material establishes the working environment and core objects. Expert material goes deeper into T-SQL, views, pass-through queries, performance, indexing, and security. Developer material adds Access-side VBA, programmatic connections, and more advanced workflows. These are directions for the wider series, not features that must all be mastered before this level.



Tip from Rick

Learn the basic setup and table design deliberately before adding automation. Understanding the objects and their relationships makes later troubleshooting much easier.

Richard brings his Access teaching and practical SQL Server experience to the course and invites feedback as it develops. The key idea is consistent: you remain an Access developer, with SQL Server providing a stronger foundation for the data. The next lesson installs the two tools needed to begin.

Quiz

LESSON 01

Q1. What is the main role of SQL Server in relation to Microsoft Access?

- A. SQL Server replaces Microsoft Access entirely
- B. SQL Server is used only for creating forms and reports
- C. SQL Server serves as a secure, scalable backend for Access databases
- D. SQL Server is a version of Access with extra features

Q2. Which resource is optional for a small local SQL Server Express setup?

- A. A computer running a supported operating system
- B. A cloud hosting subscription
- C. The SQL Server database engine
- D. Storage for the database files

Q3. How does Access interact with SQL Server when used together?

- A. Access stores forms and reports; SQL Server stores data
- B. Access and SQL Server store the same data redundantly
- C. SQL Server provides a user interface for Access users
- D. Access communicates directly with the SQL Server database files

Q4. What is a security advantage of a SQL Server backend?

- A. Every user needs direct file access
- B. The server checks permissions on data requests
- C. The data files are copied to each workstation
- D. All connected users become administrators

Q5. A client requests data from SQL Server. Which component decides whether the request is allowed?

- A. The Access form caption
- B. The server and its configured permissions
- C. The client computer name alone
- D. The shared folder icon

Q6. Why can server-side filtering improve performance?

- A. It always compresses the database
- B. It can return only the needed rows over the network
- C. It copies every table to each workstation
- D. It changes the network cable speed

Q7. What is a "view" in SQL Server terminology?

- A. A front-end form for entering data
- B. A pre-defined set of user permissions
- C. A saved query that runs on the server
- D. A physical backup of a table

Q8. Which background best prepares an Access user to learn SQL Server?

- A. No database experience
- B. Advanced server administration only
- C. Comfort with tables, queries, and database design
- D. Web graphics experience only

Q9. Which skill is optional when first using SQL Server as an Access backend?

- A. Creating tables and queries
- B. Understanding relationships
- C. Writing VBA procedures
- D. Understanding basic SELECT queries

Q10. What does moving to SQL Server allow your Access application to do?

- A. Eliminate Access as a development platform
- B. Gain improved security, scalability, and performance
- C. Stop using queries entirely
- D. Automatically migrate forms and reports to SQL Server

Q11. What supports growth when SQL Server is used behind Access?

- A. Every user must store a separate copy of the data
- B. A new database design is required for every user
- C. A server-centered architecture that can support larger workloads
- D. Replacing all forms with server configuration screens

Q12. Which knowledge remains important when moving data from Access to SQL Server?

- A. Advanced animation techniques
- B. Creating a Windows domain
- C. Table design, relationships, and normalization
- D. Cloud billing administration

Q13. What risk arises when users have write access to a shared Access backend file?

- A. They can never edit records
- B. They may be able to copy or delete the file
- C. The file becomes encrypted automatically
- D. Only administrators can open it

Q14. Which part of your application do you continue to build in Access when using SQL Server?

- A. Data storage and backup routines
- B. Forms, reports, and user interface elements
- C. Server configuration tools
- D. Hardware management modules

Q15. If basic SQL is unfamiliar, what should an Access user review before working with server queries?

- A. Only form colors and fonts
- B. SELECT, WHERE, ORDER BY, and basic joins
- C. Only Windows desktop shortcuts
- D. How to avoid using queries

Q16. How does SQL Server usually change an existing Access application?

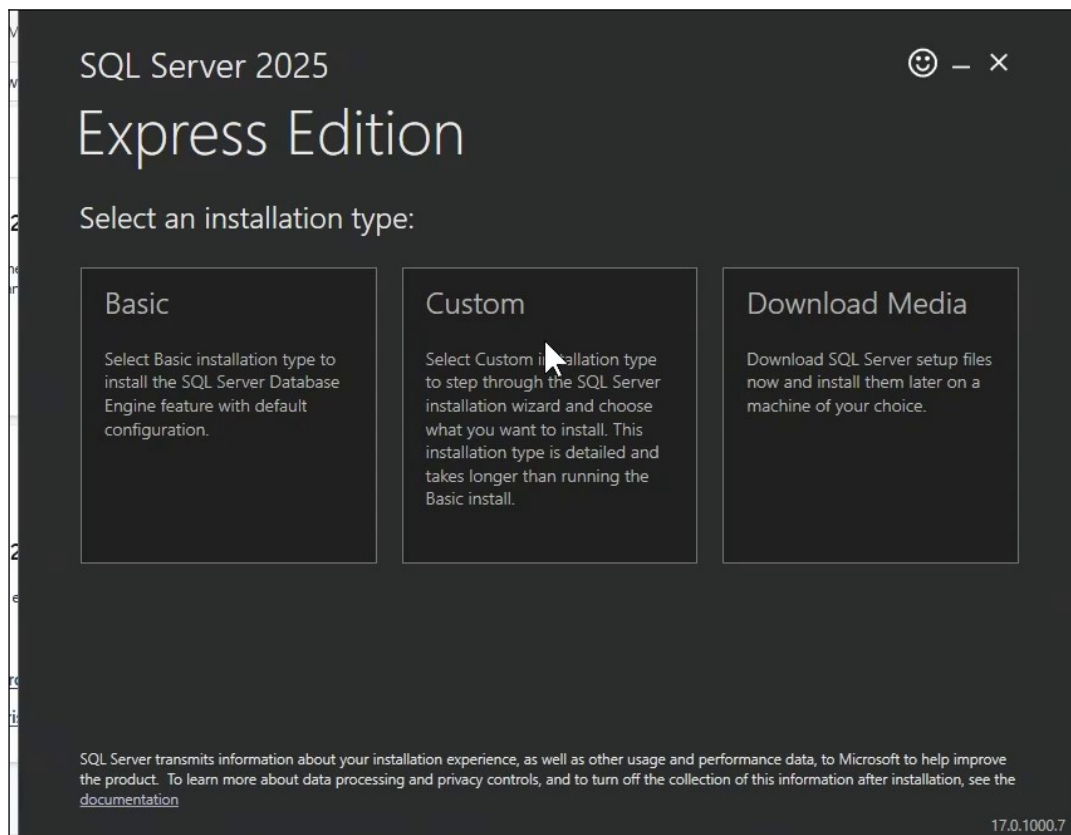
- A. It discards the Access front end
- B. It removes the need for Access skills
- C. It strengthens the backend while retaining the Access front end
- D. It automatically rewrites every query

02. Installing SQL Server (24:14)

Install two separate components: **SQL Server Express**, the database engine, and **SQL Server Management Studio (SSMS)**, the tool used to administer it. This walkthrough follows the local SQL Server 2025 installation shown in the recording. Keep the server on the local computer or intended office network; public-internet deployment is outside this setup.

Download Express and choose Custom

Open Microsoft's SQL Server downloads page and select **Express**. Run the downloaded installer and choose **Custom**. This exposes the settings so you can understand them, even though the lesson keeps most defaults. The download target is a temporary location for installation media; it is not the eventual database-file location.



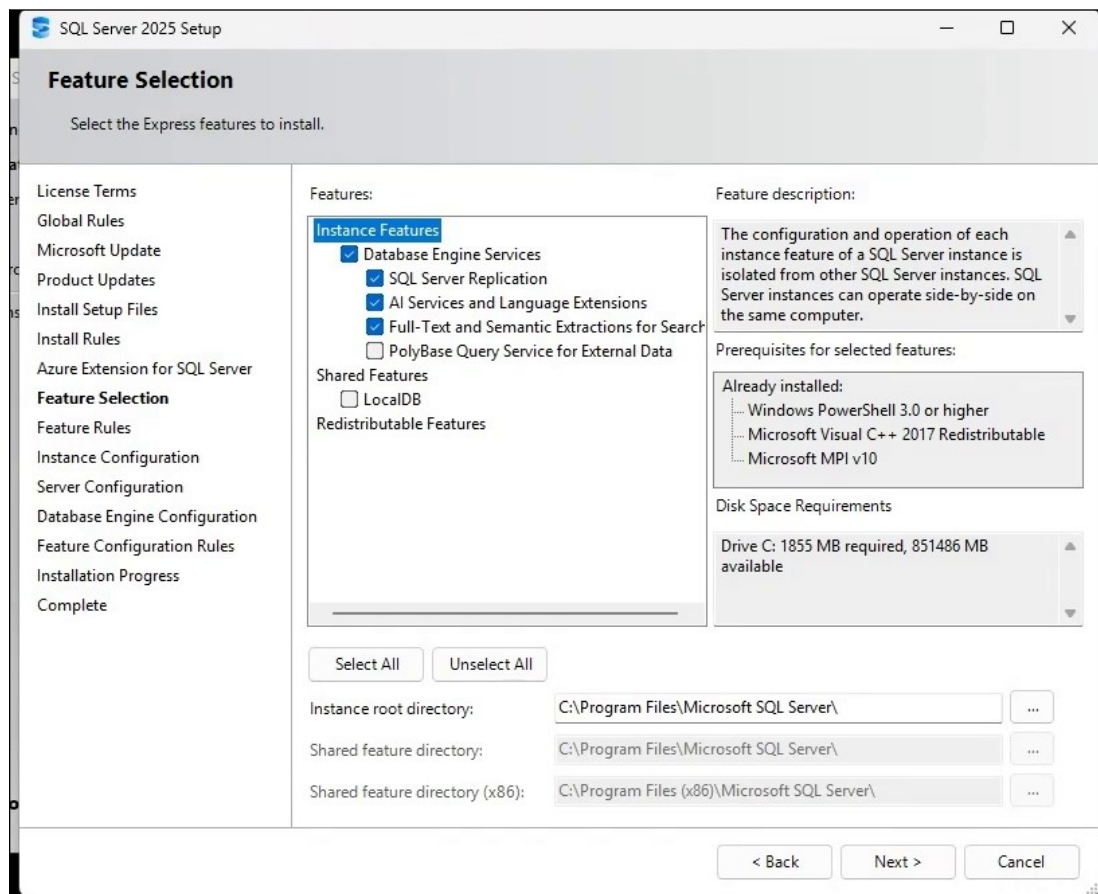
00:01:13 Choose Custom to review the installation settings

When the Installation Center opens, select **New SQL Server standalone installation or add features to an existing installation**. Review and accept the license terms to continue. Choose your Microsoft Update preference intentionally. Richard schedules updates himself in the demonstration; this is a maintenance preference, not advice to leave the product unpatched.

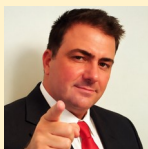
Checks and feature selection

The Install Rules page performs preliminary checks. Investigate blocking errors before proceeding. The demonstrated Windows Firewall warning is expected for the local setup; it does not mean the firewall should be disabled. Remote connectivity and the relevant firewall rules are handled later in the course.

On the Azure Extension page, turn off the Azure extension for this local course setup. Azure-related management is not needed to create and use the local database. On Feature Selection, ensure **Database Engine Services** is selected. Other displayed features are not the focus of these beginner lessons.



00:07:48 Database Engine Services is the core feature for the backend

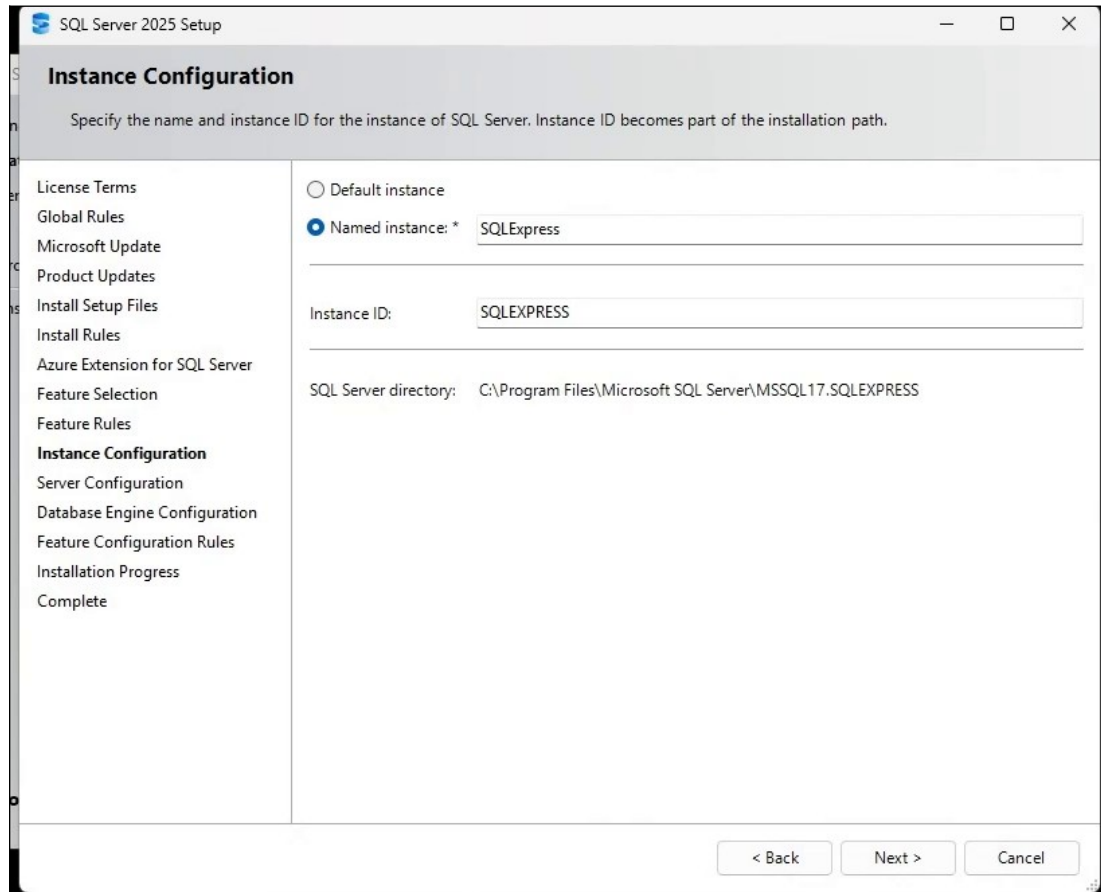


Tip from Rick

Keep this exercise in-house. Exposing a database server to the public internet is a separate security and deployment task, not a shortcut to getting the local lesson working.

Name the instance and keep service defaults

An **instance** is an installation of the SQL Server engine. It is not the same thing as a database: one instance can contain many databases. Keep the demonstrated named instance **SQLEXPRESS**. Clients identify a named instance using the computer name, a backslash, and the instance name.



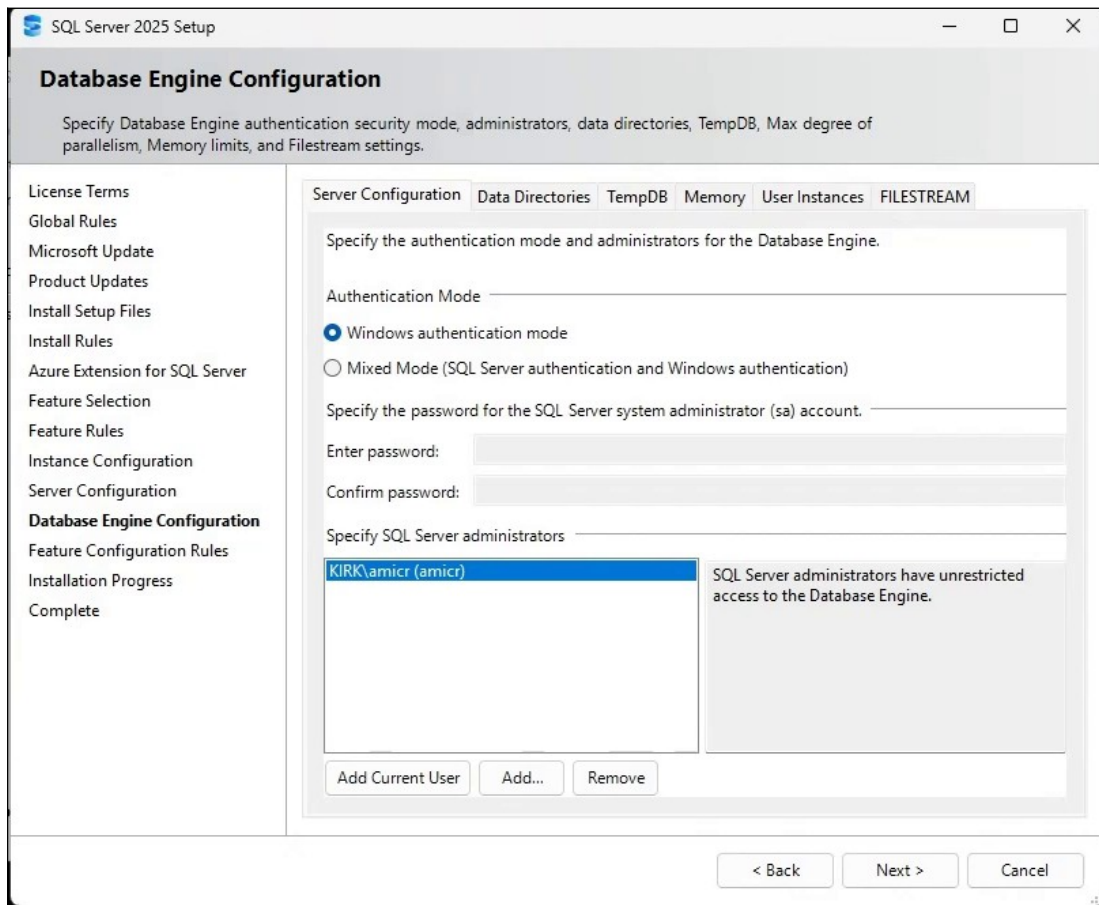
00:08:40 Keep the SQLEXPRESS named instance for this walkthrough

On Server Configuration, the recording keeps the default service accounts and startup settings. The database engine starts automatically. SQL Server Browser remains off until it is needed for the later network connection lesson. A service account controls the Windows context in which a service runs; it is distinct from the user identity used to connect through SSMS.

You do not need to install another instance merely to create another database. Keep one instance for the course and create the database inside it in Lesson 03.

Windows Authentication and installation

On Database Engine Configuration, select **Windows authentication mode**. SSMS will use your Windows identity instead of asking for a separate SQL login password. The demonstration shows the installing Windows account in the SQL Server administrators list. This is the learning setup; ordinary application users should not be made server administrators just to connect.



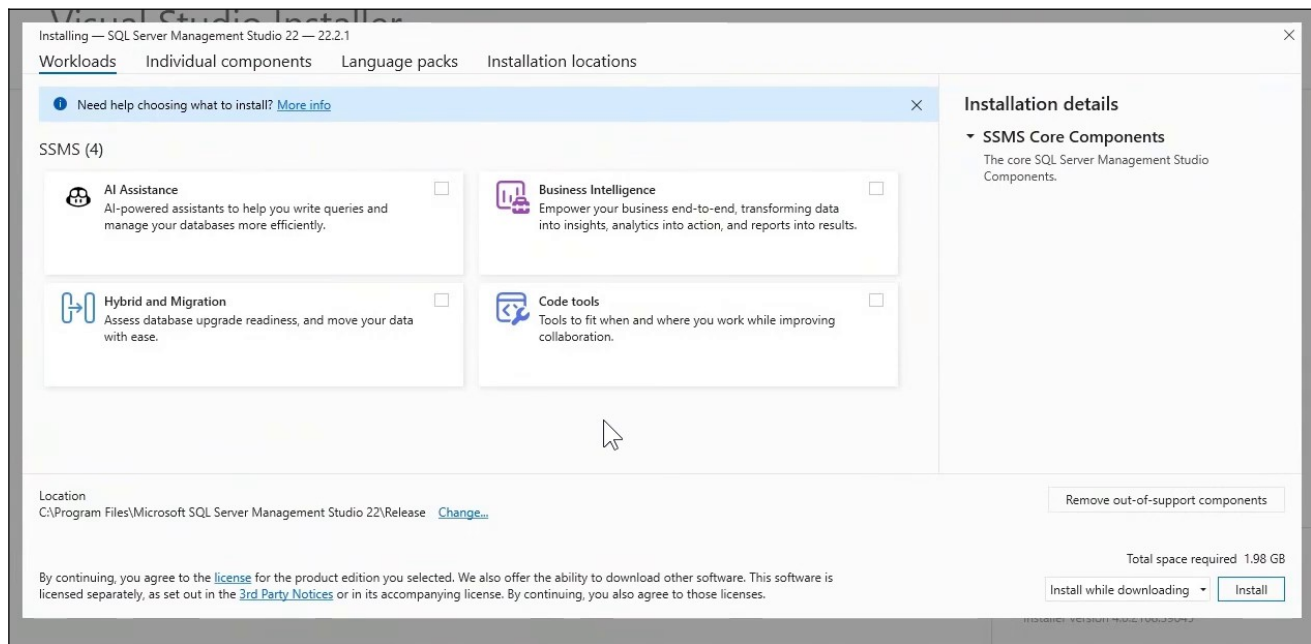
00:11:40 The demonstration uses Windows authentication mode

A domain controller is not essential to the small-office approach discussed in the lesson. In a workgroup, suitable local Windows accounts must exist and SQL Server access must be configured. Matching the appropriate user's local account credentials across machines is discussed here and developed in later lessons; a Windows account by itself is not a grant of database permissions.

Continue the installation and wait for completion. Confirm that the required features succeeded. At this point the engine is installed; the next step is to install its management interface.

Install and launch SSMS

Follow the SSMS download link from the Installation Center to Microsoft's installer. In the recording, the main link needs an alternate download link lower on the page. Website layout may differ; the goal is the SSMS installer, not a particular page position.



00:16:08 The SSMS installer offers optional workloads; the lesson uses the defaults

Run the installer, choose **Continue**, keep the default components, and install. Additional AI, business intelligence, and migration options are not needed for these lessons. If installation requests a Windows restart, restart before continuing. Open SQL Server Management Studio from Start and optionally pin it to the taskbar.

SSMS may invite you to sign in with a Microsoft or GitHub account for settings or connected features. The lesson chooses **Skip and add accounts later**. That sign-in is different from authenticating to your SQL Server instance.

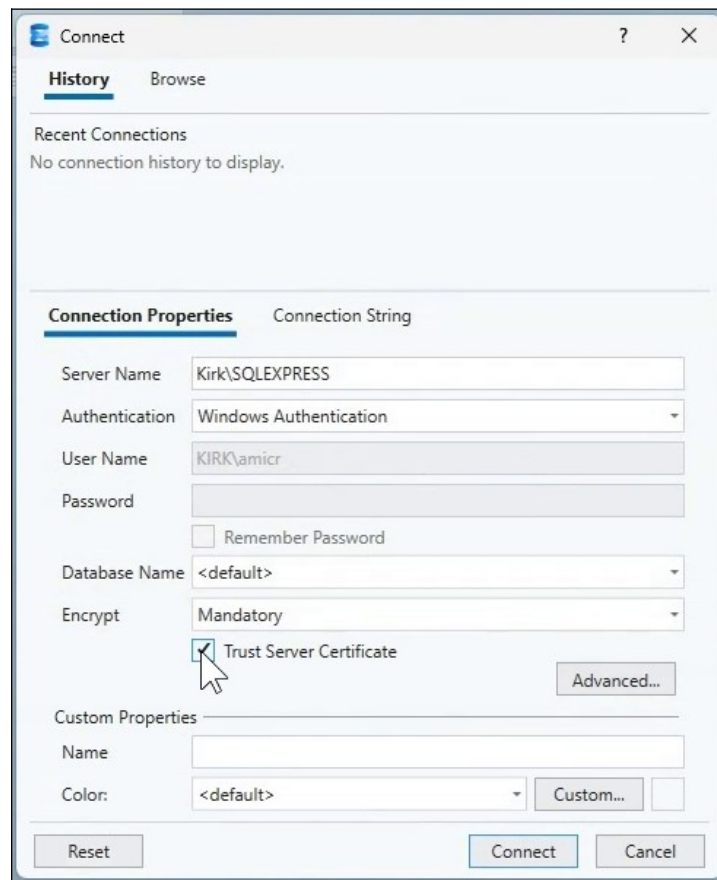
Learn the process before automating migration

The course builds and migrates objects deliberately so you can see what is created and why. Migration tools can help with later projects, but review their choices and results. Richard's preference for a manual first pass is a teaching approach, not a claim that every migration tool necessarily fails.

Connect to the local instance

In the Connect dialog, enter the computer name and named instance. The demonstrated computer is Kirk, so its server name is shown below. Substitute your own computer name; do not copy the instructor's name unless it actually identifies your machine. Leave **Windows Authentication** selected.

Kirk\SQLEXPRESS



00:21:33 The local connection uses the named instance and Trust Server Certificate

The first attempt in the recording raises an untrusted-certificate error. For this known local training server, Richard selects **Trust Server Certificate** and reconnects. The connection remains configured for encryption, but this option bypasses certificate validation. It is not proof that an unknown server is safe. Use a properly trusted certificate for a production configuration, as the recording also advises.

Click **Connect**. A successful connection opens Object Explorer with the server and instance at the top. Lesson 03 uses that tree to create the course database. Installing the engine, installing SSMS, and connecting to an instance are three distinct steps; check each one before troubleshooting the next.

Quiz

LESSON 02

Q1. Why choose Custom installation when learning SQL Server Express?

- A. It installs only one feature automatically
- B. It exposes the setup options for review
- C. It enables every remote connection automatically
- D. It always downloads faster

Q2. When SQL Server asks for the download target location during installation, what is being requested?

- A. The location where your future databases will be stored.
- B. The location for the SQL Server Management Studio files.
- C. The temporary location for SQL Server installer files.
- D. The network location for remote clients.

Q3. A local installation reports a Windows Firewall warning but no blocking errors. What is a reasonable next step?

- A. Disable the firewall permanently
- B. Review the warning and continue; configure rules when remote access is needed
- C. Reinstall Windows
- D. Switch to a paid SQL Server edition

Q4. Which deployment matches a local, in-house SQL Server setup?

- A. Expose its database port to the public internet
- B. Disable Windows Authentication
- C. Keep access within the intended local environment
- D. Allow every inbound service through the firewall

Q5. What is a SQL Server instance?

- A. One user connection
- B. A separate physical computer
- C. An installation of the database engine on a machine
- D. A database license file

Q6. If you want to create more than one database, what do you need to do?

- A. Install an additional SQL Server instance for each database.
- B. Create multiple databases inside the same instance.
- C. Purchase a separate license for every database.
- D. Use Azure cloud for more than one database.

Q7. Which feature stores and serves the data for an Access backend?

- A. PolyBase
- B. Replication Services
- C. Database Engine Services
- D. Reporting Services

Q8. Which mode uses a Windows identity to authenticate to SQL Server?

- A. Mixed mode alone
- B. SQL authentication with a separate password
- C. Windows Authentication
- D. Anonymous authentication

Q9. Can Windows Authentication be used without a Windows domain?

- A. No; every installation needs a domain controller
- B. Yes, with suitable Windows accounts and SQL Server access configuration
- C. Only if all users are administrators
- D. Only by replacing it with SQL logins

Q10. What is the role of SQL Server Management Studio (SSMS)?

- A. Store data as the database engine
- B. Provide tools to administer and query SQL Server
- C. Replace Windows networking
- D. License Access installations

Q11. What should you do when setup requests a Windows restart?

- A. Ignore the request
- B. Restart only on Windows 11
- C. Restart before continuing the setup checks
- D. Remove both installed products

Q12. Which value identifies a named SQL Server instance in an SSMS connection?

- A. The query language
- B. The cloud region
- C. The computer name plus instance name
- D. The product license key

Q13. For a known local training server with a self-signed certificate, which setting is the demonstrated temporary workaround?

- A. Reinstall SQL Server
- B. Trust Server Certificate
- C. Disable Windows Authentication
- D. Delete the database

Q14. What is the limitation of selecting Trust Server Certificate?

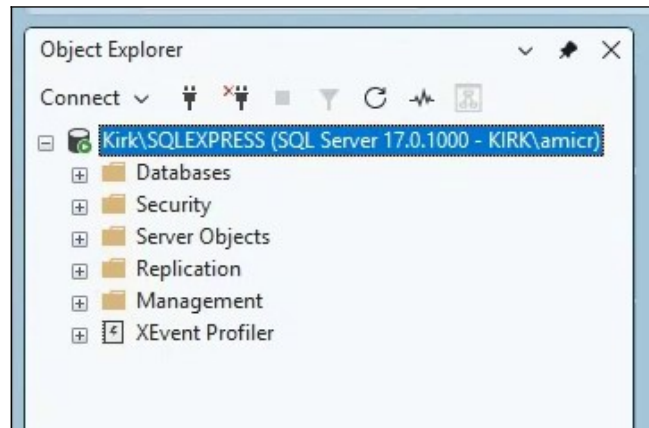
- A. It makes an unknown server universally safe
- B. It removes the need for authentication
- C. It bypasses certificate validation; it does not replace a properly trusted certificate
- D. It forces every client to trust the certificate

Q15. Why learn a manual migration before relying on a migration wizard?

- A. Wizards can never transfer data
- B. Wizards always delete the source
- C. Understanding the choices helps you check and control the result
- D. Wizards are incompatible with every Access database

03. Exploring the Server Interface (17:09)

SSMS Object Explorer is the navigation tree for your connected SQL Server environment. The top node identifies the server and instance, followed by folders for its databases and administrative features. The screenshot shows the course instance; your computer name, account, and version may differ.



00:00:32 Object Explorer confirms the connected server and named instance

Read the hierarchy

The computer hosts the SQL Server **instance**. Inside that instance are **databases**, and inside each database are objects such as tables and views. Expand the tree to navigate this hierarchy. Most beginner work will take place under Databases, not in every administrative branch you can see.

Security relates to identities and permissions. Replication concerns distributing data between servers; Express can receive replicated data as a subscriber in the scenario discussed, but does not provide the publisher/distributor roles. Management and XEvent Profiler lead into administration and diagnostics. Seeing a folder in SSMS does not mean every capability is included in the connected edition.



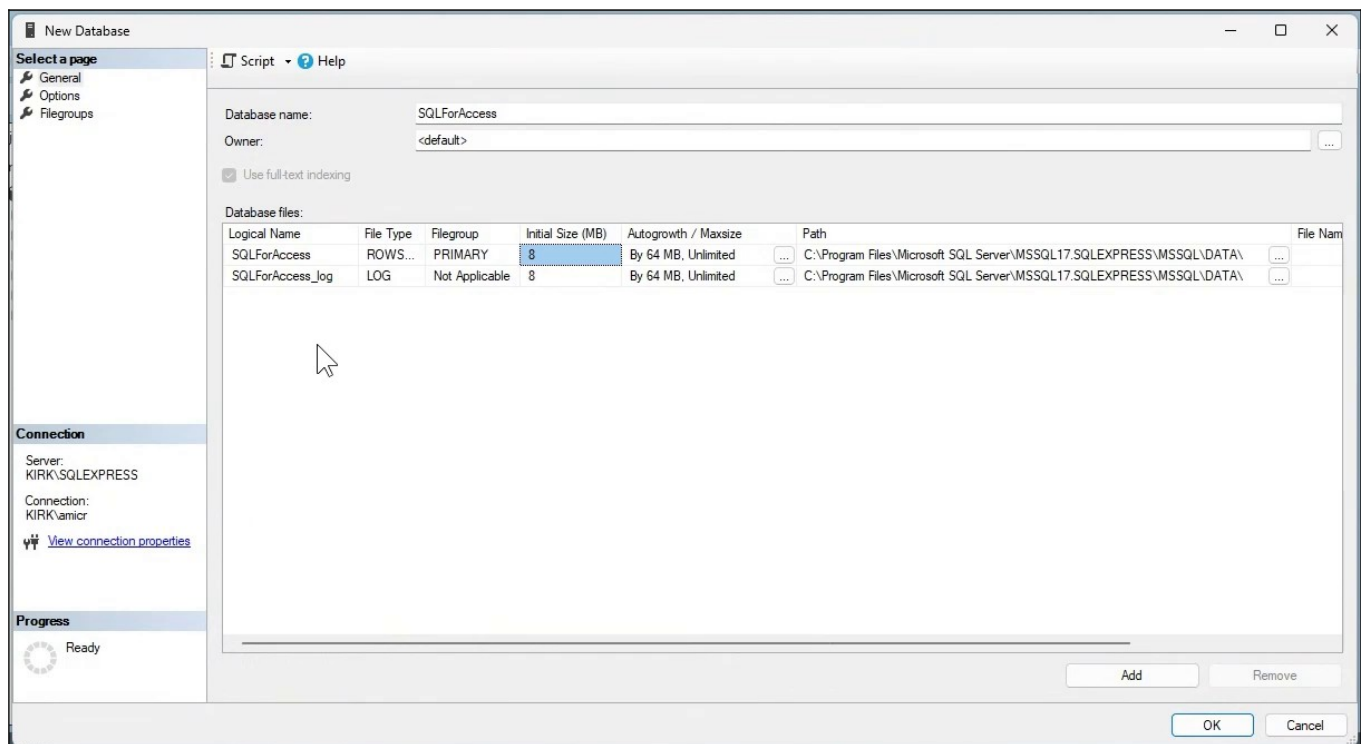
Tip from Rick

If an unfamiliar operation asks “Are you sure?” and you do not understand the effect, cancel and investigate first. Explore the object tree without approving destructive changes.

Create the course database

Expand **Databases**. Leave the system databases alone; they support SQL Server itself and are not where you should build the course tables. Database snapshots are an advanced read-only, point-in-time facility. Neither branch is needed for this exercise.

Right-click **Databases** and choose **New Database**. The instructor initially types SQLForAccess, then corrects the final name to **SQLForAccessUsers** before creation. Use that final name consistently in the lessons that follow. Keep Owner and the remaining beginner settings at their defaults, then choose **OK**.



00:05:48 New Database shows separate data and transaction-log files (initial name before correction)

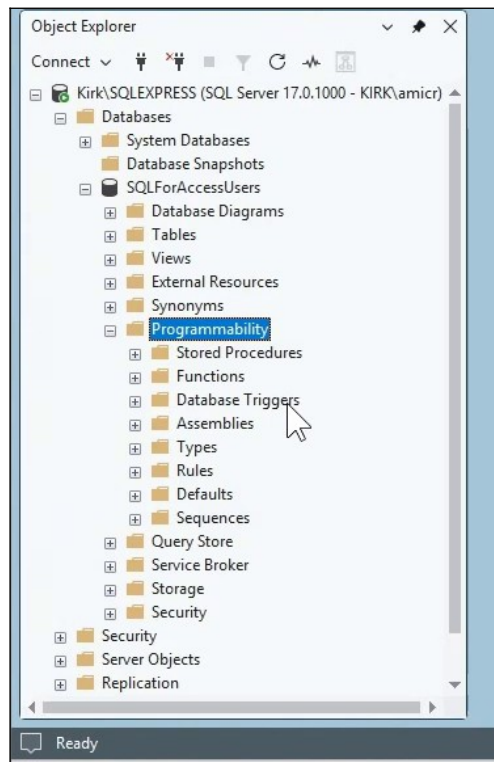
Understand the two files

The dialog shows a **ROWS data file** and a **LOG file**. The data file holds the database's stored data; the transaction log records information needed for transactional recovery. The logical names shown in the list are SQL Server identifiers, while Path and File Name identify the physical storage. A filegroup groups data files; PRIMARY is the default group used here.

Initial Size allocates starting space. Autogrowth allows the files to expand as needed, and SQL Server can reuse free space inside them. Leave the demonstrated beginner settings alone. The dialog's "Unlimited" file-growth value does not remove an edition's database-size limit. Routine shrinking is not a replacement for Access Compact and Repair and is not recommended as a regular habit in this lesson.

Keep storage stable; find the new objects

Keep the active database files in SQL Server's data location on reliable local storage for this exercise. Avoid consumer cloud-sync folders and removable USB drives: synchronization, file locking, disconnection, or changing drive letters can interfere with the running engine. Relocating active database files requires the appropriate SQL Server procedure, not a drag-and-drop move in File Explorer.



00:13:36 The new database contains Tables, Views, and server-side programmability objects

Expand **SQLForAccessUsers**. **Tables** contains the stored rows you will build next. **Views** contains saved queries that can be used as data sources, including through Access links. Database Diagrams visualize relationships. These familiar concepts help you translate your Access knowledge to the server environment.

Recognize the advanced branches

Programmability contains code objects such as stored procedures and functions; the expanded tree also introduces triggers. A stored procedure can hold a set of server-side commands, while a function returns a result usable in other expressions. A configured data-change trigger can respond on the server when its relevant changes occur through different clients, unlike an Access form event that depends on edits through that form.

Query Store supports later performance investigation. External Resources, Synonyms, Service Broker, Storage, and database Security provide further integration, messaging, storage, and permissions features. This lesson introduces their roles; it does not require configuring them. You are now ready to create the first customer table in Lesson 04.

Quiz

LESSON 03

Q1. What does Object Explorer provide in SSMS?

- A. A tree for navigating connected servers and database objects
- B. An automatic backup destination
- C. An automatic Access table generator
- D. A list that hides all system objects

Q2. What does the Databases folder contain?

- A. Only connected user names
- B. Database containers that hold tables and other objects
- C. Only backup files
- D. Only remote servers

Q3. How does SQL Server normally manage database space?

- A. Files can grow and freed internal space can be reused; routine shrinking is not the equivalent of Access Compact and Repair
- B. Every database must be shrunk daily
- C. Files cannot grow after creation
- D. Free space is never reused

Q4. Where should you store your SQL Server database files for best stability and performance?

- A. An internal hard drive or SSD within your computer
- B. A USB external drive
- C. A cloud-synced folder like OneDrive or Dropbox
- D. Your Downloads directory

Q5. What is the purpose of the 'Security' section in SQL Server Management Studio?

- A. To display file locations for backup
- B. To control who can log in, users, and permissions
- C. To manage linked servers
- D. To display query performance

Q6. Which replication role is available to SQL Server Express?

- A. Publisher and distributor
- B. Subscriber receiving replicated data
- C. Distributor only
- D. Cloud folder synchronization service

Q7. What is a database snapshot conceptually?

- A. A read-only view of database contents at a point in time
- B. A scheduled full backup
- C. A removable-drive backup copy
- D. A live editable duplicate

Q8. In the database creation dialog, what are the two types of files created by default?

- A. Data file and transaction log file
- B. Backup file and temp file
- C. System file and resource file
- D. Table file and query file

Q9. What is the 'Programmability' folder mainly for?

- A. Holding backup schedules
- B. Managing code objects like stored procedures, functions, and triggers
- C. Setting up user passwords
- D. Viewing system logs

Q10. What can an enabled data-change trigger do?

- A. Schedule all operating-system maintenance
- B. Run server-side logic in response to configured data changes
- C. Draw table relationships
- D. Replace every login

Q11. When starting a basic database, which objects are the main focus before advanced features?

- A. Replication and Service Broker
- B. Tables and views
- C. External resources and synonyms
- D. Monitoring traces only

Q12. How should an existing SQL Server data file be relocated?

- A. Through the appropriate SQL Server administration process
- B. By dragging the active file in File Explorer
- C. By copying it into a sync folder
- D. Only by deleting the database

Q13. What is a SQL Server view?

- A. A separate physical copy of all table data
- B. A saved query that can be used as a data source
- C. A password collection
- D. A server hardware monitor

Q14. How does a configured server-side data-change trigger differ from an Access form After Update event?

- A. It can respond to the configured changes made through different clients
- B. It runs only when that Access form is edited
- C. It must always be started manually
- D. It works only with external files

Q15. Why avoid active SQL Server data files in a consumer cloud-sync folder?

- A. Sync activity and file locking can interfere with database operation
- B. It makes all queries slower but is always reliable
- C. It replaces SQL Server backups automatically
- D. SQL Server requires cloud synchronization

04. Creating a Customer Table (20:31)

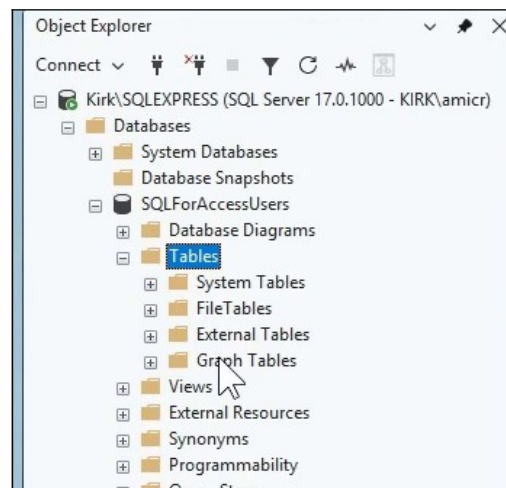
Build the first user table in SQLForAccessUsers. The table follows the familiar customer example from the Access TechHelp template, but its fields are created in SQL Server. Begin with the identity key and text fields; Lesson 05 adds the remaining data types.

A few interface and edition clarifications

The Connect dialog has a Browse tab for locating local or discoverable network instances. This supplements typing the computer and instance name; it does not remove the need for working network configuration and permissions. The lesson also clarifies that Express can support full-text search with the appropriate installed feature, while database snapshots are not an Express capability. Neither feature is needed for this table.

Create a regular user table

Expand SQLForAccessUsers and locate **Tables**. Right-click Tables and choose **New > Table**. The other branches serve specialized purposes: system tables support the engine; FileTables, external tables, and graph tables are advanced features. For this exercise, use a normal table and leave the system objects alone.



00:06:15 The Tables branch contains the user tables and specialized table categories



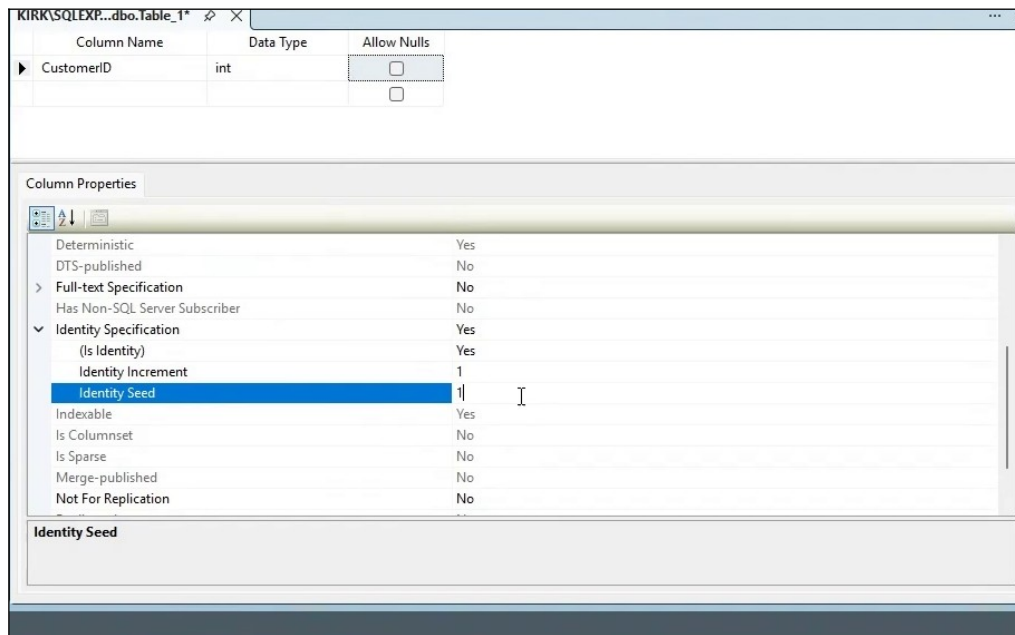
Tip from Rick

For ordinary documents and pictures, a path or URL in the table is often enough. Store the files separately unless a specific design requirement justifies database file storage.

Document storage with special security or compliance requirements needs its own evaluation. Binary storage and FileTables are options to investigate; putting a file in the database is not, by itself, proof that every requirement has been met.

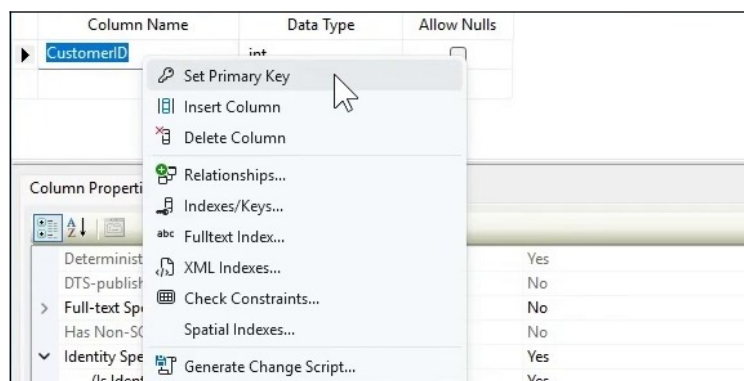
Identity generation and the primary key

In the designer, add **CustomerID**, choose **int**, and clear **Allow Nulls**. This is the integer identifier. In Column Properties below the grid, expand **Identity Specification**, set **(Is Identity)** to **Yes**, and keep Identity Seed and Identity Increment at 1. SQL Server will generate a sequence of values for new rows.



00:09:35 Identity Specification controls generated values for CustomerID

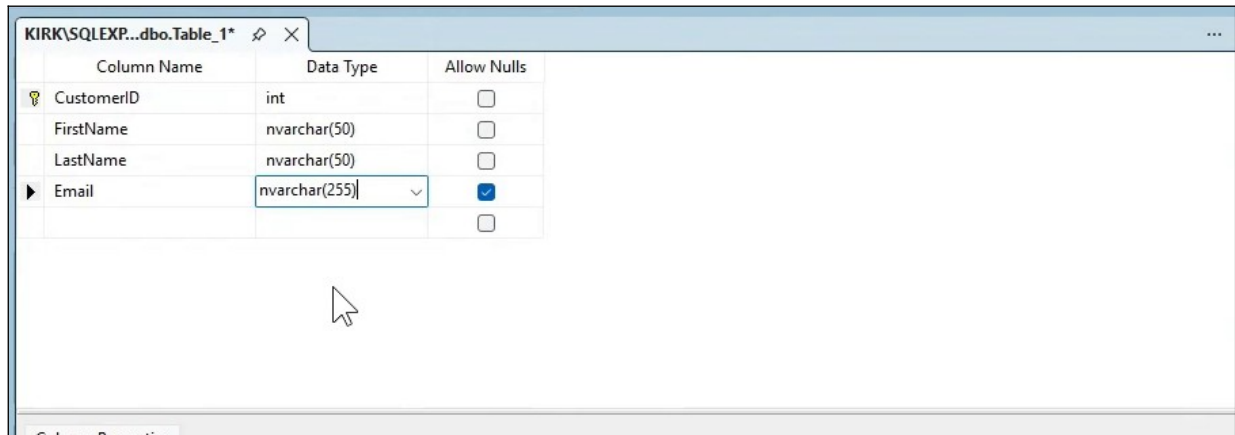
An identity property is not the primary-key constraint. Right-click the CustomerID row selector and choose **Set Primary Key** separately. The key icon identifies the primary-key column. The key supplies the uniqueness and non-null requirement; identity supplies generated numbers. Keeping those roles separate prevents a common mistake when moving from Access AutoNumber fields.



00:10:16 Set Primary Key is a separate designer command

Choose text types and meaningful lengths

Add **FirstName** as **nvarchar(50)** and **LastName** as **nvarchar(50)**, clearing Allow Nulls for both. Add **Email** as **nvarchar(255)** and leave Allow Nulls selected. These are the lengths used for this learning table, not universal limits for every application. Design the limits around the data you need to store.



Column Name	Data Type	Allow Nulls
CustomerID	int	☐
FirstName	nvarchar(50)	☐
LastName	nvarchar(50)	☐
Email	nvarchar(255)	☒

00:12:35 Names are required; Email allows NULL in the demonstrated table

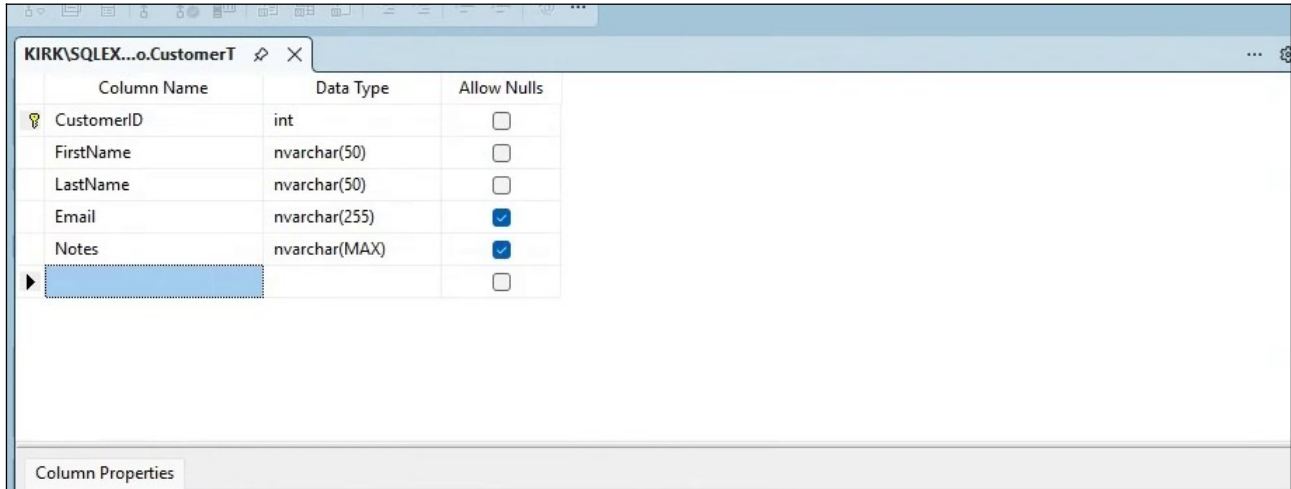
The variable-length **nvarchar** type stores Unicode text and is a useful default when names and addresses may contain international characters. **varchar** uses the column collation's encoding; modern UTF-8 collations can also support Unicode. The practical recommendation here is still **nvarchar**, without assuming **varchar** is limited to ASCII in every configuration.

char and **nchar** are fixed-length types; **varchar** and **nvarchar** are variable-length types. The **n** forms explicitly use Unicode. For **nvarchar(n)**, **n** specifies byte-pairs, with a maximum of 4000; a supplementary Unicode character can use two byte-pairs. Thus the declared length is not always the same as the number of visible characters.

Avoid making every field as large as possible. Meaningful limits express the design and can matter for indexing and performance. Variable-length storage does not reserve every unused character merely because you declared a large limit. For genuinely long text, use **nvarchar(max)** rather than the older **ntext** type.

Finish the first version of CustomerT

Add **Notes** as **nvarchar(max)** and allow NULL. Save the table as **CustomerT**. The saved tab identifies it as **dbo.CustomerT**; **dbo** is the schema, which is introduced further in the next lesson. If the table does not immediately appear in the object tree, refresh the Tables branch.



Column Name	Data Type	Allow Nulls
CustomerID	int	☐
FirstName	nvarchar(50)	☐
LastName	nvarchar(50)	☐
Email	nvarchar(255)	☒
Notes	nvarchar(MAX)	☒
		☐

00:19:40 The saved CustomerT contains the key, required names, and optional text fields

Read the required-value setting correctly

Clearing Allow Nulls means the column cannot contain NULL. This has the same required-value intent as setting an Access field's Required property to Yes. Leaving Allow Nulls selected permits an absent value; it does not make the column a key or supply a default. An empty string and NULL are different values, so a complete business rule may require more than this checkbox.

Use names you can reference easily

The example uses descriptive names with no spaces. Avoid SQL reserved words and awkward punctuation so queries remain easy to read. Underscores are legal; omitting them is the instructor's naming preference, not a SQL Server restriction. Apply a consistent naming scheme as you add the numeric, date/time, and Boolean fields next.

Quiz

LESSON 04

Q1. Which SQL Server column property generates successive numeric IDs during inserts?

- A. Identity
- B. Allow Nulls
- C. Collation
- D. Default schema

Q2. An identity column must also be the table's primary key. What additional step establishes that role?

- A. Allow NULL values
- B. Set it as the primary key
- C. Change it to varchar
- D. Rename it to ID

Q3. Which variable-length type explicitly stores Unicode text?

- A. char
- B. int
- C. nvarchar
- D. text

Q4. What is the largest allowed n in nvarchar(n), before choosing nvarchar(max)?

- A. 255 byte-pairs
- B. 1000 byte-pairs
- C. 65535 byte-pairs
- D. 4000 byte-pairs

Q5. Why is nvarchar a useful default for text that may contain international characters?

- A. It explicitly supports Unicode
- B. It always uses less space than varchar
- C. It guarantees faster queries
- D. It is exclusive to Express

Q6. For ordinary customer documents managed as external files, what would the table usually store?

- A. Every file converted to a date
- B. The file path or URL
- C. An OLE object for every document
- D. A separate server instance per file

Q7. Which naming approach simplifies references to SQL Server columns?

- A. Start every name with a number
- B. Use punctuation in every name
- C. Use clear names without spaces or reserved words
- D. Reuse SQL keywords without delimiters

Q8. Clearing Allow Nulls has the same required-value intent as which Access field setting?

- A. Indexed = No
- B. Default Value = Null
- C. Required = No
- D. Required = Yes

Q9. Why choose text lengths deliberately rather than making every column very large?

- A. Length choices can affect index design and performance
- B. Every unused character always occupies disk space
- C. Large columns cannot use Unicode
- D. SQL Server forbids text over 255 characters

Q10. What are system tables in SQL Server?

- A. User-created tables
- B. Tables SQL Server uses internally to manage itself
- C. Tables linked to external data
- D. Tables for storing files

Q11. What is the primary difference between CHAR/NCHAR and VARCHAR/NVARCHAR data types?

- A. Numeric versus text data
- B. Unicode versus ASCII support
- C. Fixed length versus variable length
- D. Permanent versus temporary storage

Q12. When is nvarchar(max) appropriate?

- A. The value is always a single digit
- B. Every short code needs an index
- C. The column stores only dates
- D. Long text may exceed nvarchar(n)'s 4000-byte-pair limit

Q13. Which of these is NOT a recommended data type for storing modern text data in SQL Server?

- A. NTEXT
- B. NVARCHAR
- C. NVARCHAR(MAX)
- D. VARCHAR

Q14. How should document storage with special security requirements be approached?

- A. Assume a binary field guarantees compliance
- B. Evaluate database/file-storage options and their security controls
- C. Ignore backup and access permissions
- D. Convert every file name to char

Q15. A text field is designed for at most 50 Unicode byte-pairs. Which declaration expresses that limit?

- A. nvarchar(255)
- B. nvarchar(max)
- C. nvarchar(50)
- D. int

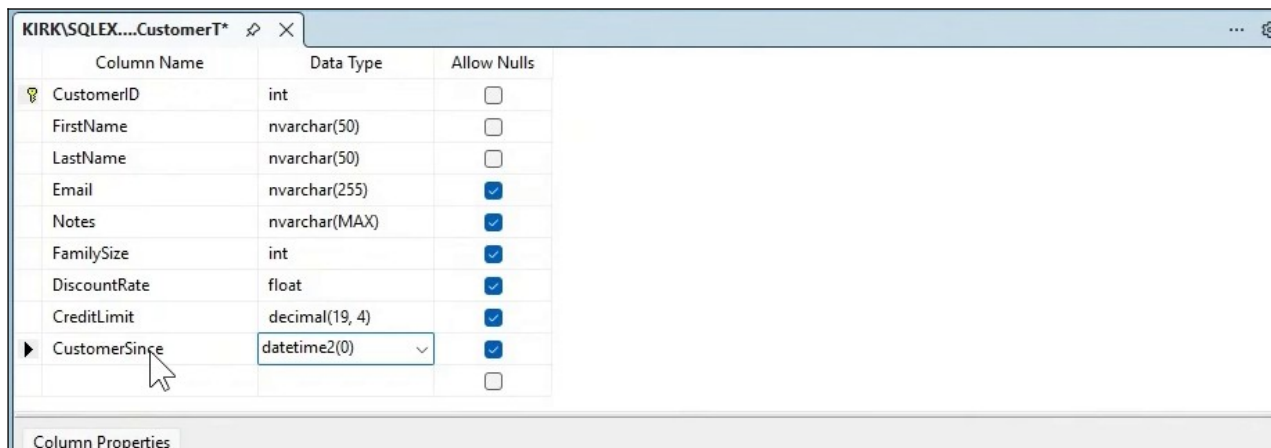
05. Additional Data Types (20:15)

Continue the CustomerT design by adding whole numbers, fractional values, a credit limit, a date/time value, and a Boolean flag. The chosen data type describes how SQL Server stores and evaluates the value. Display formats in Access or a spreadsheet are a separate concern.

Whole numbers, approximate numbers, and exact numbers

Add **FamilySize** as **int**. A count does not need a fractional part. Add **DiscountRate** as **float**, which is an approximate numeric type comparable in purpose to an Access Double. Leave Allow Nulls selected for these fields in the demonstrated table.

Add **CreditLimit** as **decimal(19,4)**. The first number is precision: 19 total decimal digits. The second is scale: four digits to the right of the decimal point, leaving up to 15 to the left. This is an exact numeric choice for the lesson's currency-style values. Check ranges and mappings when migrating real Access Currency fields; matching four decimal places does not guarantee identical ranges in every system.



Column Name	Data Type	Allow Nulls
CustomerID	int	☐
FirstName	nvarchar(50)	☐
LastName	nvarchar(50)	☐
Email	nvarchar(255)	☒
Notes	nvarchar(MAX)	☒
FamilySize	int	☒
DiscountRate	float	☒
CreditLimit	decimal(19, 4)	☒
CustomerSince	datetime2(0)	☒

00:06:06 CreditLimit uses decimal(19,4) in the table design

A float can represent many values only approximately, making it a poor default for amounts that require exact decimal arithmetic. SQL Server also has a money type; it has not been removed or deprecated. The decimal type lets you choose the precision and scale explicitly. Neither declaration determines the currency symbol displayed by the client.



Tip from Rick

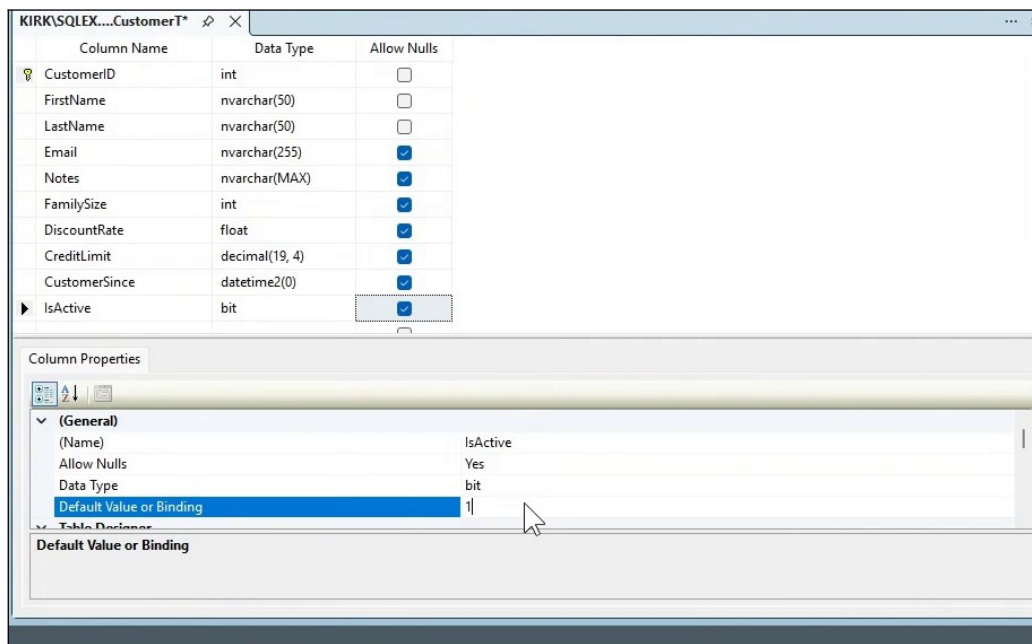
Choose the type for what the value means. A count, a rate, and a monetary amount may all look like numbers on screen, but they have different storage and precision requirements.

Dates, times, and Boolean values

Add **CustomerSince** as **datetime2(0)**, following this stage of the recording. The zero means no fractional-second digits: dates and times are stored to whole seconds. A **date** column stores only the date. The datetime2 family supports a wider modern date/time design with a selected precision, rather than relying on the older datetime type.

Course correction: Lesson 07 changes CustomerSince to **datetime2(3)** for the Access integration used in this course. If you are following the lessons in sequence, make the change there. The final course table uses three fractional-second digits, not the initial zero shown in this lesson.

Add **IsActive** as **bit** and set its Default Value or Binding to **1**. A default supplies a value when the insert does not supply one; it is not a required-value rule. Allow Nulls remains selected in the recording, so this column can also contain NULL. Clear that option in a design only if the business rule requires every row to have a true/false value.

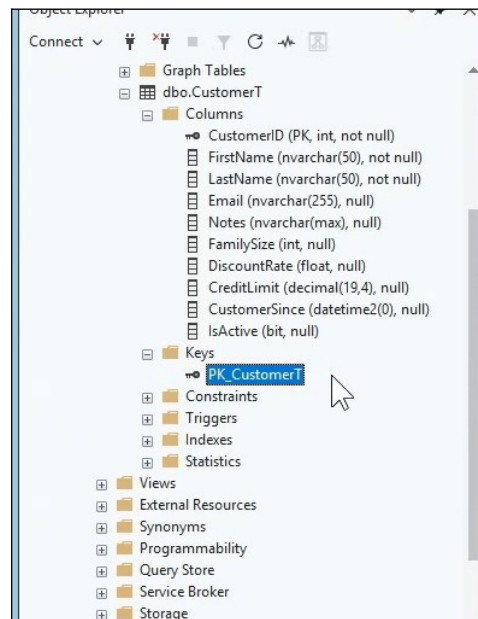


00:08:50 The bit field uses a default of 1 in Column Properties

SQL Server bit uses 1 for true and 0 for false. Access Yes/No conventionally uses -1 for true and 0 for false. Be aware of this difference when writing comparisons or moving data. The lesson uses 1 and 0 for direct SQL Server entry. Save the updated table before leaving the designer.

Recognize the objects behind the design

Expand `dbo.CustomerT` in Object Explorer and open **Columns**. You can inspect each column's name, type, and nullability without reopening the designer. The prefix **dbo** names the schema: a logical container for database objects, not a separate physical database file. More advanced applications can use additional schemas.



00:11:10 Columns and Keys expose the saved table definition and primary-key constraint

The **Keys** branch includes the primary-key constraint. A primary key enforces uniqueness and is backed by a unique index; a foreign key expresses a relationship to a referenced key. Do not assume that merely naming a field `CustomerID` creates either relationship or index. Those design choices must be made explicitly.

Constraints, triggers, and indexes

A **constraint** enforces a rule at the database level. The point is to keep the rule in effect regardless of which authorized client submits the change. Access also supports table-level validation; the important contrast is with a rule implemented only in a particular form or its code.

A configured data-change **trigger** runs server-side logic for specified INSERT, UPDATE, or DELETE events. An **index** can help SQL Server find, sort, or join selected data efficiently. Index benefits depend on the query and workload, and indexes also have maintenance costs. SQL Server does not automatically create a useful index on every column you might search or join.

The table tree also includes Statistics and other advanced branches. Recognize them for now; this lesson does not require building triggers or tuning indexes. The recording closes with an invitation to explore related training and membership options. Current offerings are available from SQL Learning Zone; the practical next step here is to enter sample rows into `CustomerT`.

Quiz

LESSON 05

Q1. Which type is the straightforward choice for a count with no fractional part?

- A. float
- B. int
- C. datetime2
- D. bit

Q2. Why is float not recommended for storing money values in SQL Server?

- A. It uses too much storage space
- B. It does not allow decimal points at all
- C. It stores approximate values which can lead to rounding errors
- D. It is only available in legacy versions of SQL Server

Q3. What does the decimal data type's precision and scale represent in SQL Server?

- A. Precision is the number of decimal places, scale is the number of whole digits
- B. Both are the same and represent the total digits allowed
- C. Scale is the storage space required, precision is the performance impact
- D. Precision is the total number of digits, scale is the number of digits to the right of the decimal point

Q4. Which exact numeric declaration allows 19 total digits, including four fractional digits?

- A. decimal(19,4)
- B. decimal(10,2)
- C. float(19,4)
- D. decimal(4,19)

Q5. What control does decimal(p,s) provide?

- A. The screen currency symbol
- B. Exact numeric precision and scale
- C. The Windows date format
- D. A table's sort order

Q6. Which modern SQL Server type stores both a date and a time with selectable fractional-second precision?

- A. date
- B. int
- C. datetime2
- D. bit

Q7. What does datetime2(0) represent in SQL Server?

- A. Date only, no time part
- B. Date and time with milliseconds
- C. Time only, no date
- D. Date and time up to the nearest second, no fractional seconds

Q8. What is true about Boolean (yes/no) values in SQL Server versus Microsoft Access?

- A. SQL Server uses bit type, Access uses yes/no; SQL Server true is 1, Access true is -1
- B. Both store true as 1 internally
- C. Access uses 0 for true and 1 for false
- D. Both store values as string 'true' or 'false'

Q9. What is a SQL Server schema such as dbo?

- A. A separate server
- B. A logical container for database objects
- C. A backup file format
- D. An external data source

Q10. Where can you inspect a table's primary-key constraint in SSMS Object Explorer?

- A. Under server backups
- B. Under the Windows taskbar
- C. Under the table's Keys folder
- D. Only inside an Access form

Q11. In SQL Server, what is a constraint?

- A. A menu option for deleting data
- B. A backup type for tables
- C. Only a naming convention for primary keys
- D. A rule enforced at the database level to maintain data integrity

Q12. What can a configured data-change trigger do?

- A. Run server-side logic on specified INSERT, UPDATE, or DELETE events
- B. Rename every column
- C. Replace all indexes
- D. Disable authentication

Q13. What is one purpose of an appropriate index?

- A. Replace every backup
- B. Help selected searches, sorts, and joins
- C. Prevent a table from growing
- D. Format all displayed values

Q14. What is a possible effect of omitting useful indexes on frequently searched or joined columns?

- A. The table cannot be saved
- B. Every statement raises an error
- C. Some queries may run more slowly
- D. Existing rows are deleted

Q15. Why enforce a required-value rule in the database rather than only in Access form code?

- A. It removes all client permissions
- B. It works only while the form is open
- C. It permits NULL values everywhere
- D. It also applies to other clients writing to that table

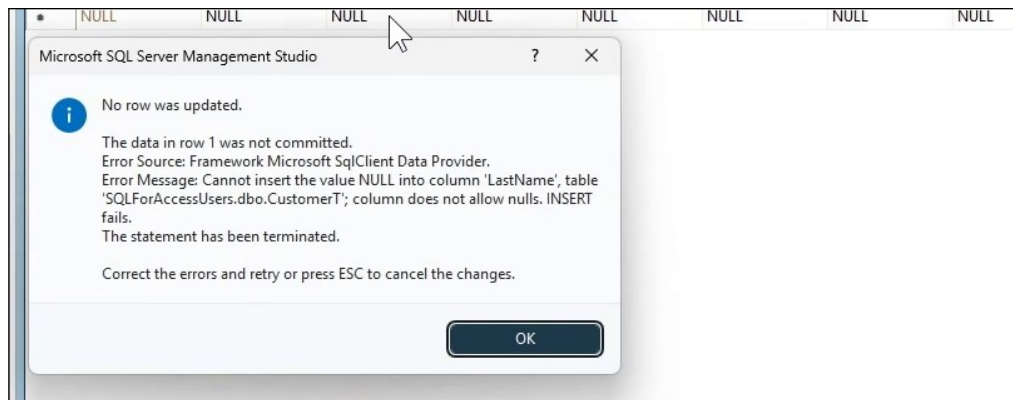
06. Entering and Importing Data (14:13)

SSMS can edit table data directly, which is useful when developing and testing. Ordinary users should still work through the Access front end. Direct table changes can bypass validation implemented only in Access forms, even though SQL Server continues to enforce its own constraints.

Open an editable grid and add a row

Right-click **dbo.CustomerT** and choose **Edit Top 200 Rows**. This opens an editing grid; **Select Top 1000 Rows** instead creates a query for viewing results. Start in the new row and enter the customer's first and last names. Leave CustomerID alone because it is the server-generated identity.

The pencil marker identifies an edited row that has not yet been saved. Moving off the row attempts to write it. In the recording, entering only FirstName fails because LastName is required. The error says that no row was updated and identifies the NULL value in LastName. Supply the missing value, then try saving the row again.



00:02:56 A NOT NULL column prevents the incomplete new row from being saved

A different message then reports that the row was committed successfully, but SSMS could not retrieve it. That is not the same as an insert failure. Rerun the grid query or close and reopen the view to check what is stored before trying another insert. Otherwise you could create a duplicate while responding to a refresh problem.

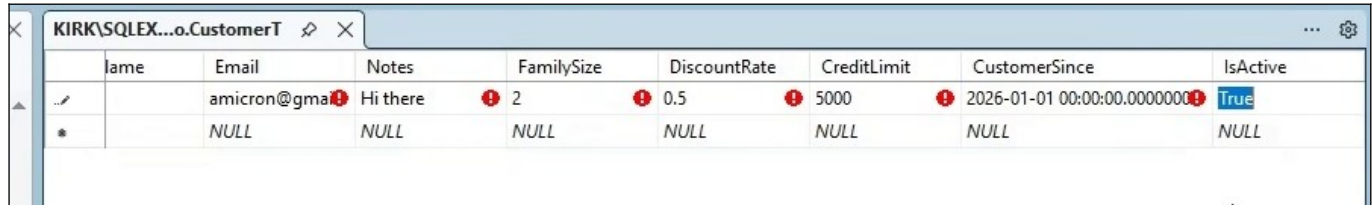


Tip from Rick

Read the complete error message. “No row was updated” and “successfully committed, but could not retrieve” describe different outcomes and need different next steps.

Finish the sample record

Enter the remaining values in columns that apply: email, notes, a whole-number FamilySize, a fractional DiscountRate, a numeric CreditLimit, CustomerSince, and IsActive. In this design, 10 percent is stored as 0.1 and 50 percent as 0.5. The percentage display you may later use in Access is separate from the stored fraction.



	ame	Email	Notes	FamilySize	DiscountRate	CreditLimit	CustomerSince	IsActive
...		amicron@gmail.com	Hi there	2	0.5	5000	2026-01-01 00:00:00.0000000	True
*		NULL	NULL	NULL	NULL	NULL	NULL	NULL

00:07:00 The editing grid contains the added numeric, date/time, and bit fields

Use plain numeric amounts for CreditLimit. Enter an appropriate date for CustomerSince and use 1 or 0 for the bit value. Year-month-day is an unambiguous date component order; what SSMS displays can differ from what an Access form displays. A table grid is an administrative tool, not the final user interface.

Understand when the identity appears

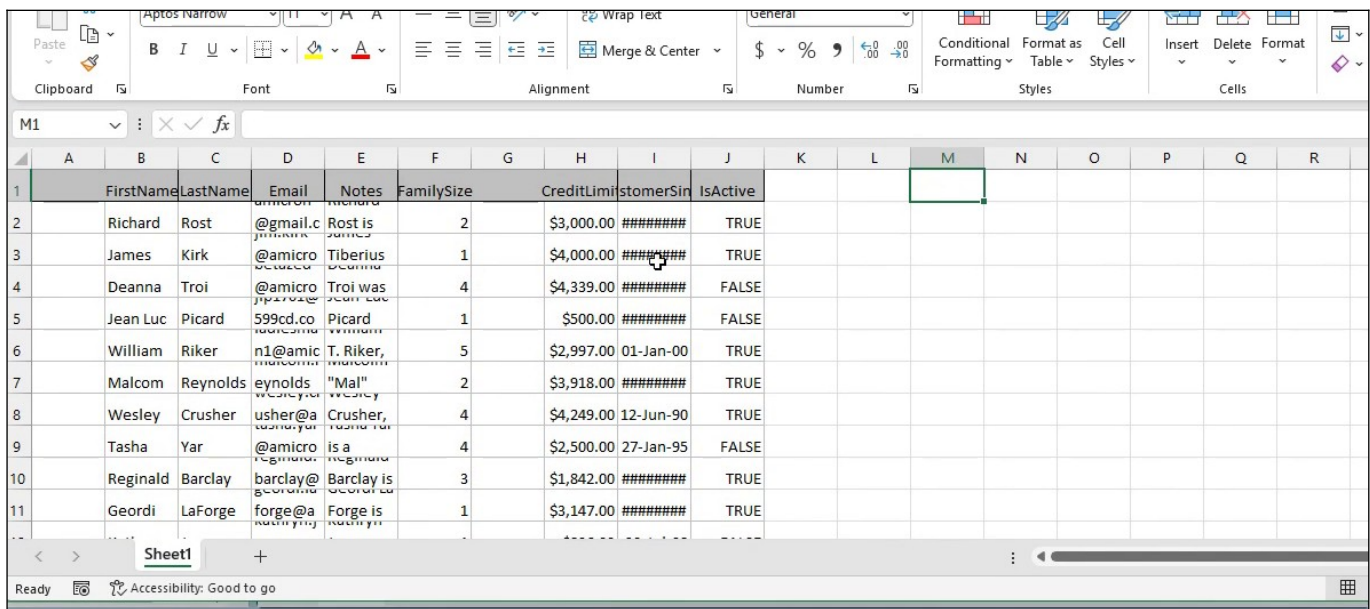
An identity value is generated when SQL Server processes the insert, not merely when you begin typing in the grid. In this workflow, leaving the edited row causes the grid to submit it. Insert a parent record successfully before using its generated ID for related child records. Do not assume that identity values are gapless: test inserts and failed or rolled-back work can leave gaps.

Check the stored row after saving it. The recording's ID values reflect prior test work; your generated numbers do not need to match. The important checks are that the row exists, the required names are present, and each value is in the correct field.

Prepare a small Access sample in Excel

For this demonstration, copy sample rows from the Access TechHelp customer table into Excel. Excel acts as a staging area where columns can be rearranged and formats inspected. This is a convenient way to prepare disposable learning data, not a complete production migration process.

Match the destination order exactly: **CustomerID, FirstName, LastName, Email, Notes, FamilySize, DiscountRate, CreditLimit, CustomerSince, IsActive**. Clear the old Access ID values while retaining the blank first column. Remove source fields that do not exist in the destination, insert a blank DiscountRate column, and move the remaining columns into their target positions.



	CustomerID	FirstName	LastName	Email	Notes	FamilySize	DiscountRate	CreditLimit	CustomerSince	IsActive
1		Richard	Rost	@gmail.c	Rost is	2		\$3,000.00	#####	TRUE
2		James	Kirk	@amicro	Tiberius	1		\$4,000.00	#####	TRUE
3		Deanna	Troi	@amicro	Troi was	4		\$4,339.00	#####	FALSE
4		Jean Luc	Picard	599cd.co	Picard	1		\$500.00	#####	FALSE
5		William	Riker	n1@amic	T. Riker,	5		\$2,997.00	01-Jan-00	TRUE
6		Malcom	Reynolds	eynolds	"Mal"	2		\$3,918.00	#####	TRUE
7		Wesley	Crusher	usher@a	Crusher,	4		\$4,249.00	12-Jun-90	TRUE
8		Tasha	Yar	@amicro	is a	4		\$2,500.00	27-Jan-95	FALSE
9		Reginald	Barclay	barclay@	Barclay is	3		\$1,842.00	#####	TRUE
10		Geordi	LaForge	forge@a	Forge is	1		\$3,147.00	#####	TRUE

00:10:34 Excel provides a staging grid for rearranging the sample fields

Exclude the heading row from the data rectangle you will paste. Keep the blank CustomerID placeholders because the target grid still has that first column, while SQL Server will generate new IDs. Inspect the entire rectangle for shifted columns before copying it.

Clean numeric and date formatting

In the first paste attempt, currency formatting creates conversion problems. Change CreditLimit in Excel to a plain **Number** format so the clipboard values do not contain currency symbols. Set CustomerSince to a suitable date display and inspect the actual dates. Formatting cannot repair an incorrect underlying value; check the source data as well.

Paste rows and verify the result

Copy the prepared data rectangle. In SSMS, select the new-row selector and paste the rows into the editing grid. Match the whole-row layout rather than assuming a selection of arbitrary source columns will be mapped automatically. Required columns and SQL Server data-type rules still apply.

KIRKSQLEXP...o.CustomerT

	Cust...	FirstName	LastName	Email	Notes	FamilySize	DiscountRate	CreditLimit	CustomerSince	IsActive
37	Richard	Rost	amicron@g...	Richard R...	2	NULL	3000.0000	1955-11-05 00:00:...	True	
38	James	Kirk	jim.kirk@a...	James Ti...	1	NULL	4000.0000	2003-02-01 00:00:...	True	
39	Deanna	Troi	betazed@a...	Deanna T...	4	NULL	4339.0000	1999-05-05 00:00:...	False	
40	Jean Luc	Picard	jlp1701@59...	Jean-Luc ...	1	NULL	500.0000	1987-11-01 00:00:...	False	
41	William	Riker	ladiesman1...	William T...	5	NULL	2997.0000	2000-01-01 00:00:...	True	
42	Malcom	Reynolds	malcom.rey...	Malcolm ...	2	NULL	3918.0000	1989-12-13 00:00:...	True	
43	Wesley	Crusher	wesley.crus...	Wesley C...	4	NULL	4249.0000	1990-06-12 00:00:...	True	
44	Tasha	Yar	tasha.yar@a...	Tasha Yar...	4	NULL	2500.0000	1995-01-27 00:00:...	False	
45	Reginald	Barclay	reginald.bar...	Reginald ...	3	NULL	1842.0000	1995-09-20 00:00:...	True	
46	Geordi	LaForge	geordi.lafor...	Geordi La...	1	NULL	3147.0000	1996-11-22 00:00:...	True	
47	Kathryn	Janeway	kathryn.jan...	Kathryn J...	1	NULL	896.0000	1998-07-30 00:00:...	False	
48	Tom	Paris	tom.paris@...	Tom Pari...	0	NULL	2468.0000	1998-11-04 00:00:...	False	
49	Benjamin	Sisko	benjamin.si...	Benjamin...	3	NULL	1288.0000	2003-07-08 00:00:...	True	
50	Julian	Bashir	julian.bashir...	Dr. Julian ...	0	NULL	113.0000	2003-10-02 00:00:...	True	
51	Miles	O'Brien	miles.obrie...	Miles O'B...	5	NULL	1124.0000	2004-05-03 00:00:...	True	
52	Christopher	Pike	christopher....	Christop...	4	NULL	4227.0000	2004-07-19 00:00:...	True	
53	Mr.	Spock	mr.spock@...	Spock is ...	0	NULL	2006.0000	2006-07-04 00:00:...	True	
54	Mr.	Worf	mr.worf@a...	Worf is a ...	0	NULL	1560.0000	2012-10-05 00:00:...	True	
55	Mr.	Data	mr.data@a...	Data is an...	2	NULL	200.0000	2013-10-14 00:00:...	True	
56	Nyota	Uhura	nyota.uhura...	Nyota Uh...	1	NULL	3233.0000	2015-10-15 00:00:...	True	
57	Hoban	Washburne	hoban.wash...	Hoban " ...	2	NULL	2008.0000	2015-12-24 00:00:...	True	

34 of 34

00:12:18 The corrected sample data appears in CustomerT after the paste

The demonstration removes failed trial rows before repeating the corrected paste. Only do that with the disposable sample rows you intend to replace. With important data, use a planned, backed-up import process and validate the outcome instead of repeating bulk edits until the display looks right.

Check before moving on

Review names, credit limits, dates, and active flags across several rows. Confirm that the values landed in the intended columns and that SQL Server generated the identity values. Reopen or refresh the grid if necessary to confirm what is actually stored. The rows now provide data for later queries and for the Access connection lessons.

The next recording revisits CustomerSince precision before more data is imported. It changes datetime2(0) to datetime2(3), a practical adjustment for the Access integration used by this course.

Quiz

LESSON 06

Q1. Which SSMS command opens a grid for entering and editing table rows?

- A. Generate Scripts
- B. Back Up Database
- C. Edit Top 200 Rows
- D. New Login

Q2. When is a new identity value generated for an ordinary inserted row?

- A. When the grid first opens
- B. Only when SSMS closes
- C. When the first column is highlighted
- D. When SQL Server processes the row insert

Q3. What does a pencil indicator beside a row in the SSMS editing grid identify?

- A. An edited row awaiting a save
- B. A completed backup
- C. A row selected for deletion
- D. A new database login

Q4. A column is NOT NULL and has no default. An insert supplies NULL for it. What happens?

- A. The row is saved with NULL
- B. SQL Server rejects the insert
- C. The column becomes nullable
- D. SQL Server invents a value

Q5. Which numeric pair represents true and false for a SQL Server bit value?

- A. 2 and 1
- B. -1 and 1
- C. 1 and 0
- D. 100 and 0

Q6. A rate is stored as a fraction, where 1 means 100 percent. What value represents 50 percent?

- A. 50
- B. 500
- C. 0.05
- D. 0.5

Q7. Why use Excel to prepare a small sample of Access data for pasting into an SSMS grid?

- A. It helps rearrange columns and remove unwanted formatting
- B. It guarantees correct data types
- C. It automatically grants permissions
- D. SQL Server accepts data only from Excel

Q8. When pasting data rows into an SSMS table grid, what should you do with the spreadsheet header?

- A. Paste it as the first customer
- B. Exclude it from the copied data rectangle
- C. Move it below the data
- D. Convert it to numbers

Q9. A clipboard currency value includes a dollar sign and fails numeric conversion. What is a useful preparation step?

- A. Delete all fractions
- B. Change the value to a percentage
- C. Use plain numeric formatting before copying
- D. Store it in a date column

Q10. Which date component order is year-first and avoids day/month-order ambiguity?

- A. Day-month-year
- B. Month-day-year
- C. Year-day-month
- D. Year-month-day

Q11. Before pasting whole rows into an SSMS grid, what must the source columns match?

- A. The target column order and compatible data types
- B. The source workbook's tab colors
- C. The alphabetical order of field names
- D. Only the first target column

Q12. Why be cautious with direct grid edits or clipboard imports outside the Access front end?

- A. They always disable SQL Server constraints
- B. They can bypass validation implemented only in Access forms
- C. They automatically create a rollback backup
- D. They cannot affect existing data

07. Date/Time Precision (9:51)

Before building on the imported data, update the earlier date/time choice. The course now uses **datetime2(3)** for CustomerSince instead of datetime2(0). Three fractional-second digits retain milliseconds, which is a practical fit for the client values discussed in this Access integration example.

Storage precision is not the display format

A date/time value can contain a fractional second even when its screen format hides it. datetime2(0) stores whole seconds; datetime2(3) stores three fractional-second digits; datetime2(7) supports seven. Choose the precision required by the application rather than inferring it from the way an Access form displays the value.

The lesson's recommendation is an interoperability adjustment, not a claim that datetime2(0) is invalid. SQL Server normally rounds when converting to lower datetime2 precision. Conversion or update failures can instead arise in the client, driver, parameter, or string-formatting path. Matching the intended client precision can reduce those avoidable mismatches, but it does not guarantee that every import error disappears.



Tip from Rick

Use datetime2(3) for this course's Access integration. It avoids repeatedly stripping milliseconds just to fit a whole-second field, while keeping the intended precision clear.

A small storage trade-off

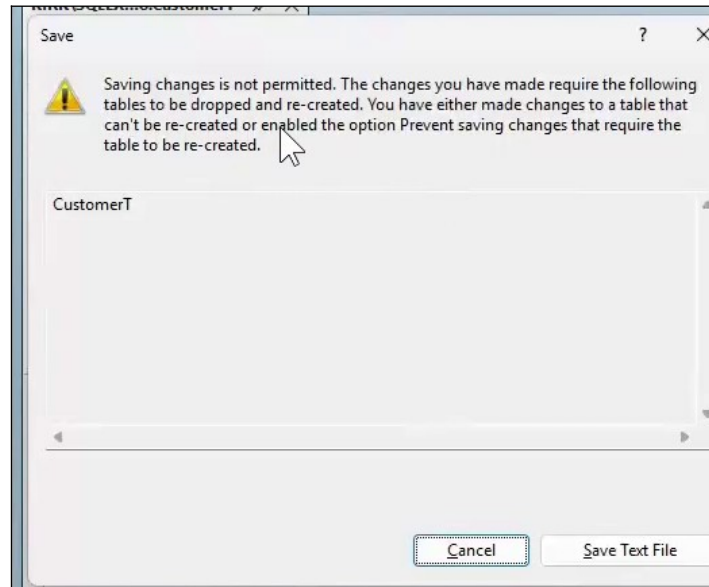
For uncompressed rowstore data, datetime2(0), datetime2(3), and datetime2(7) use 6, 7, and 8 bytes respectively. Other representations can differ. In this design, the extra byte from zero to three fractional digits is a modest trade-off for retaining milliseconds. A system that genuinely needs only whole seconds can still deliberately choose datetime2(0).

The designer and the engine

The designer and the SQL Server engine have different roles. SSMS may block the designer's table-recreation plan even when the engine supports a direct alteration. A SQL statement still has to be valid, permitted, and compatible with the existing data and dependencies. This demonstrated change prepares the table for the later connection and query work.

Make the supported change with ALTER TABLE

The recording first tries changing the type through the table designer. SSMS reports that saving would require dropping and recreating CustomerT. Choose **Cancel**, then close the designer without saving. Do not approve a table recreation merely to get past a warning.

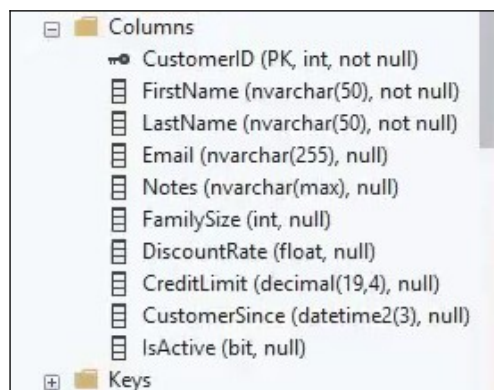


00:03:45 The designer blocks its proposed table recreation

Open **New Query** and make sure the database selector is **SQLForAccessUsers**. Enter the two-line statement shown in the recording. It changes the existing CustomerSince column to datetime2(3); it does not create a new table or delete its rows.

```
ALTER TABLE CustomerT
ALTER COLUMN CustomerSince DateTime2(3)
```

Choose **Execute**. The recording shows successful completion. Select CustomerT in Object Explorer and refresh it with **F5**. Expand Columns and check that CustomerSince now reports datetime2(3). The tree may show the old definition until it is refreshed.



00:05:00 After refreshing Object Explorer, CustomerSince reports datetime2(3)

Quiz

LESSON 07

Q1. Why choose datetime2(3) when a client supplies millisecond timestamps?

- A. datetime2(0) is not a valid type
- B. It always uses less storage
- C. It stores dates as text
- D. It retains three fractional-second digits

Q2. Extra fractional seconds cause trouble in an Access-to-SQL Server update. Which explanation is accurate?

- A. Client/driver conversions can fail even though SQL Server can round reduced precision
- B. SQL Server never accepts a fractional second
- C. All dates are converted to text automatically
- D. Every such import must succeed

Q3. How many digits of fractional seconds does DateTime2(3) store?

- A. 1
- B. 3
- C. 2
- D. 7

Q4. The SSMS designer blocks a supported column change because its plan would recreate the table. What alternative can be evaluated?

- A. Reinstall Windows
- B. Delete every database
- C. Use an appropriate ALTER TABLE statement
- D. Rename the Access form

Q5. For uncompressed rowstore data, how many bytes do datetime2(0), (3), and (7) use respectively?

- A. 4, 4, and 4
- B. 8, 7, and 6
- C. The count equals the column number
- D. 6, 7, and 8

Q6. What is a practical benefit of a millisecond-capable destination for millisecond client data?

- A. It reduces avoidable precision mismatches
- B. It prevents every possible update error
- C. It validates every business rule
- D. It removes the need for an ODBC driver

Q7. What normally happens when SQL Server converts a datetime2 value to a lower fractional-second precision?

- A. It multiplies the seconds by ten
- B. It rounds to the destination precision
- C. It rejects every value that includes seconds
- D. It converts the column permanently to text

Q8. Why can a valid ALTER TABLE change succeed when the SSMS designer blocks its own proposed save?

- A. SQL statements bypass all permissions
- B. The designer and engine use different data
- C. The designer may plan a table recreation while the engine supports a direct alteration
- D. The database becomes read-only

Q9. Why align column precision with the required client data instead of stripping fractions at every write?

- A. It guarantees faster network hardware
- B. It eliminates authentication
- C. It guarantees no data loss in any column
- D. It avoids repeated manual conversion logic

Q10. A design requires date and time only to whole seconds. Which datetime2 declaration expresses that precision?

- A. datetime2(0)
- B. datetime2(7)
- C. datetime2(3)
- D. nvarchar(max)

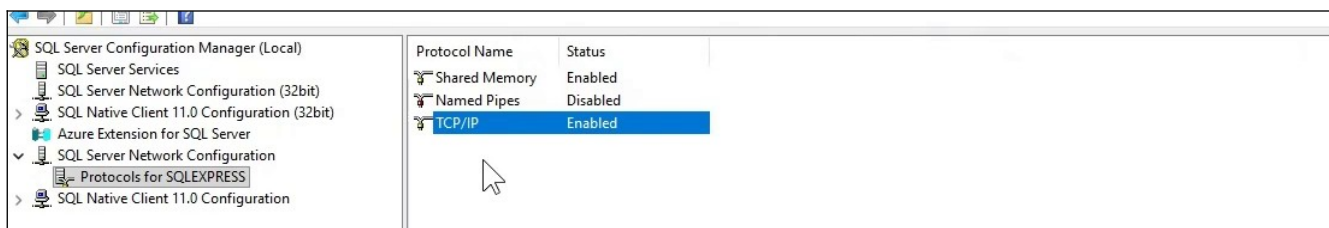
08. Remote Connections (28:18)

Move from working directly on the server to connecting through SSMS on another computer in the same local network. Start with the core configuration, then work through the diagnostics if the connection fails. A missing server in a browse list does not, by itself, mean the server is unavailable.

Check the foundation on the server

Confirm that the SQL Server service is running and that you can connect locally with SSMS. If the local connection fails, fix that first. Basic file-sharing tests can also help confirm that the computers can communicate and use Windows credentials. SQL Server does not require a shared backend folder, however, and successful file sharing does not prove that the SQL port or database permissions are correct.

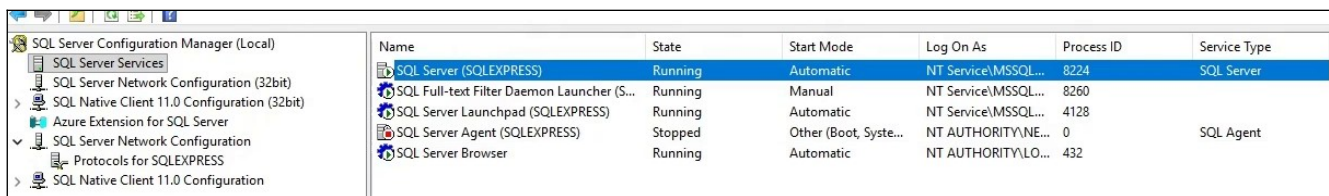
Open **SQL Server Configuration Manager** from Start. Expand **SQL Server Network Configuration**, then select **Protocols for SQLEXPRESS** for the instance being used. In the demonstration, TCP/IP is disabled. Right-click **TCP/IP** and choose **Enable**. The message explains that the change takes effect after the database-engine service is restarted.



00:05:05 TCP/IP is enabled for the SQLEXPRESS instance

Start Browser and restart the engine

Select **SQL Server Services**. Open SQL Server Browser properties, select the **Service** tab, and set Start Mode to **Automatic** for this learning setup. Start Browser. Then right-click **SQL Server (SQLEXPRESS)** and choose **Restart** so the TCP/IP change takes effect. Restarting interrupts active sessions, so choose an appropriate time on a shared server.



00:06:05 SQL Server services show the engine and Browser running

Browser helps clients locate named-instance connection information. It does not execute queries or grant permission to data. SQL Server Agent, also visible in the service list, is an automation feature of other editions; Express does not provide Agent job scheduling. It is not required for these connections.

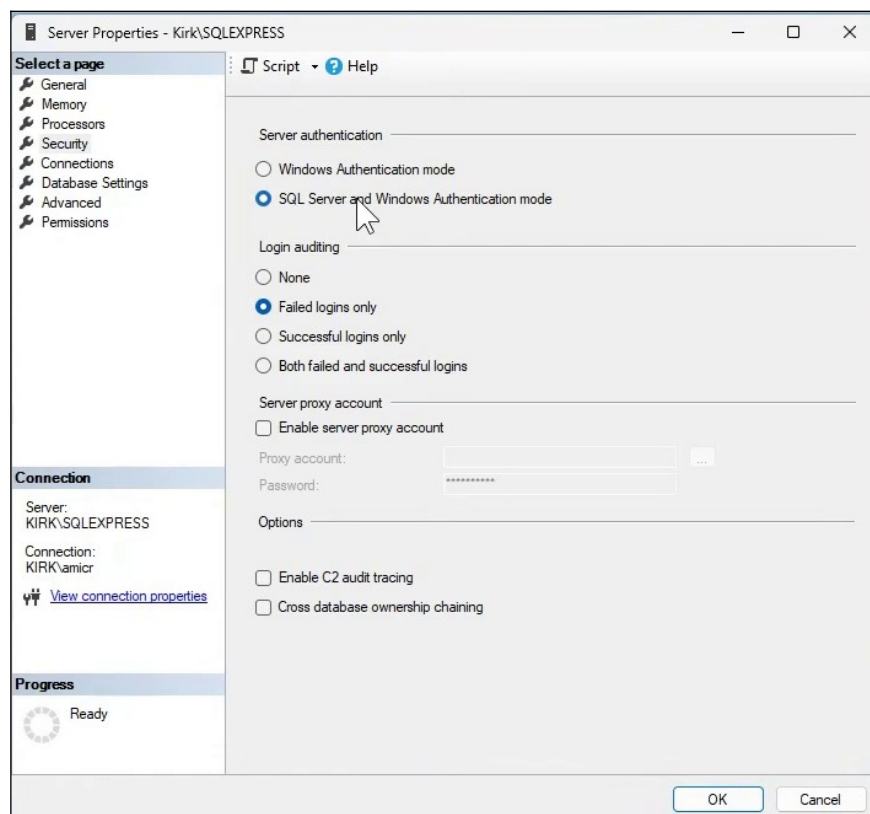
Network profile and authentication mode

On the server, open **Settings > Network & internet** and inspect the connection properties. Use the **Private** profile for your trusted home or office LAN, as demonstrated. Do not mark an untrusted public network Private just to make discovery easier. Firewall rules apply according to the active profile; the profile is one part of the configuration, not an authentication mechanism.

Choose how users will authenticate

Windows Authentication uses the current Windows identity. The workgroup approach in this course uses matching local Windows accounts and separately configured SQL Server access. SQL Server authentication uses a login and password maintained by SQL Server. It can be simpler when Windows identities differ across PCs, although saving SQL passwords in an Access front end has security implications discussed in Lesson 09.

The earlier installation used Windows-only mode. To allow SQL logins as well, open SSMS on the server, right-click the server node, and select **Properties > Security**. Choose **SQL Server and Windows Authentication mode**. This is commonly called mixed mode. Save the change and restart the database-engine service through Configuration Manager.



00:09:48 Mixed mode enables both SQL Server and Windows authentication

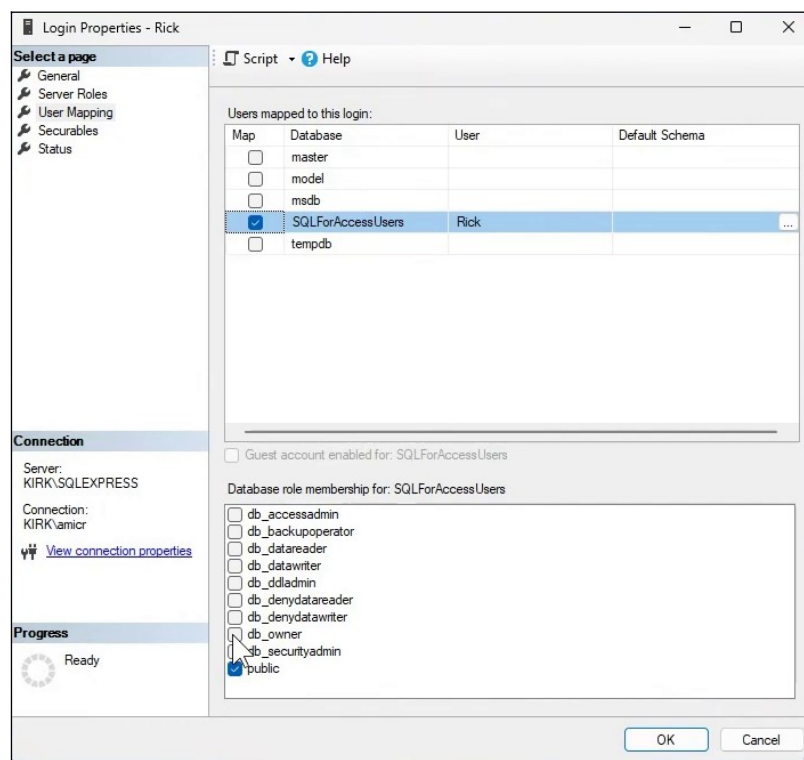
Reconnect with your existing authorized Windows login to configure the new accounts. Enabling mixed mode does not create a login or grant it database access. Those are separate steps.

Create SQL logins and map database permissions

Under the server's **Security > Logins**, right-click **Logins** and choose **New Login**. Enter the intended login name, choose **SQL Server authentication**, and supply its password. The recording uses simple demonstration credentials and relaxes password options to get the training setup working. Use suitable passwords and account policies for a real deployment; do not copy the demonstration password into production.

An account for database design

For the developer's learning account, select **User Mapping**, check **SQLForAccessUsers**, and select **db_owner** in the database-role list. This grants broad control over that database, including its design and data. It does not mean every application user needs that role, nor is it the same as being a server-level sysadmin.



00:12:05 User Mapping assigns the login to a database and its roles

An account for ordinary data access

Create another SQL login for the data-access demonstration. In User Mapping, select **SQLForAccessUsers** first, then select **db_datareader** and **db_datawriter**. Together these roles allow broad reading, inserting, updating, and deleting of user-table data without giving **db_owner** design control. A read-only scenario needs only the reading permission appropriate to its purpose.

Richard uses a shared Users login to illustrate the mechanism. Individual accounts and narrower permissions are developed later. The broad database roles shown here are a learning starting point, not a claim that all users should see and change every table in a real application.

Connect from the workstation; diagnose the address

Open SSMS on the workstation and choose **Connect**. Browsing the network may not list the server. Enter the known server name instead. For a named instance, use the computer and instance name, such as the demonstrated form below. Substitute your own names.

`Kirk\SQLEXPRESS`

If name resolution is uncertain, a Command Prompt on the workstation can test the demonstrated server name. On the server, `ipconfig` shows the IPv4 address of the relevant adapter. Compare the address carefully if several adapters are listed.

`ping Kirk`
`ipconfig`

A ping reply checks basic reachability; a failed ping can also mean ICMP is blocked. It does not conclusively diagnose SQL Server. The recorded server address is 192.168.2.108. Use the address of your own server and select the intended authentication method. Keep the server address stable if client connections depend on it.

The port must match the instance

Technical clarification: The recording connects successfully through TCP 1433. A named instance such as SQLEXPRESS can instead use a dynamic or different fixed port. Opening 1433 is effective only when the target instance actually listens there. Check the TCP/IP configuration and the instance's listening port if your setup differs. Browser uses UDP 1434 to help locate named instances; a client configured with the exact TCP endpoint does not need Browser for that lookup.



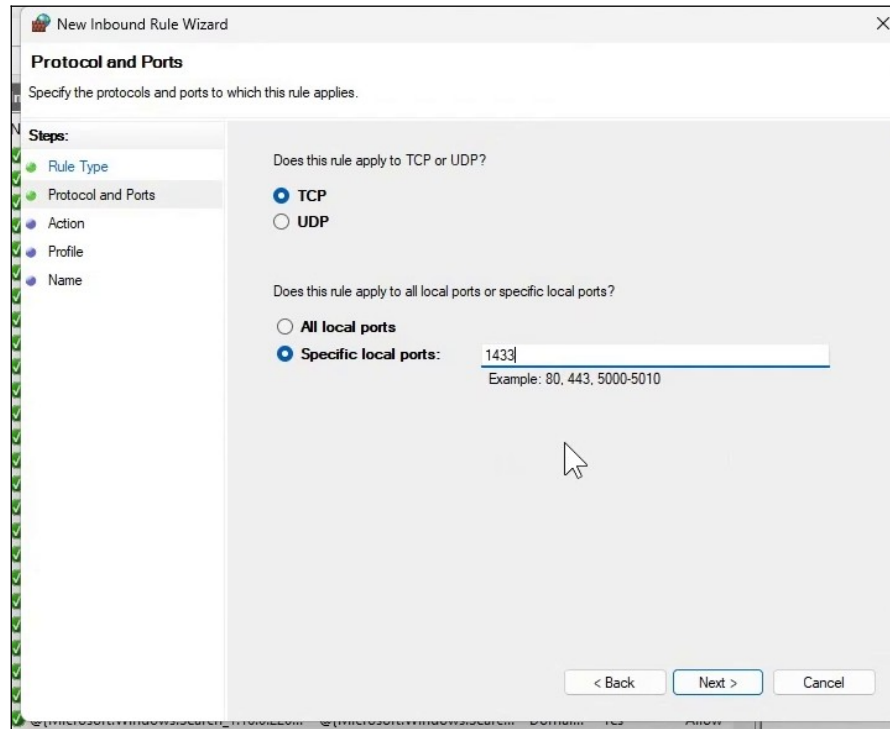
Tip from Rick

Do not stop at "it is missing from Browse." Test the actual server or instance address and read the exact connection error. Discovery, network reachability, and permission to a database are separate checks.

The server name, instance, and port identify where to connect. The login identifies who is connecting. Database mapping determines what that login can do after the connection succeeds.

Allow the intended connection through Windows Firewall

On the server, open **Windows Defender Firewall with Advanced Security**. Inspect existing inbound rules first. For the demonstrated TCP 1433 endpoint, right-click **Inbound Rules** > **New Rule**, choose **Port**, choose **TCP**, and enter **1433** under Specific local ports. Use the actual configured port if yours differs.



00:17:39 The demonstrated inbound rule permits TCP 1433

Choose **Allow the connection**, then select the applicable trusted network profiles. The recording selects Domain and Private and leaves Public off. Give the rule a recognizable name and finish. Keep the firewall enabled; allow the needed traffic rather than disabling protection altogether.

Return to the workstation and retry SSMS. The recording connects promptly after the rule is added, then expands the course database and its tables. It also tests the computer name successfully. This confirms the demonstrated environment, not a promise that every failure is caused by the same firewall setting.

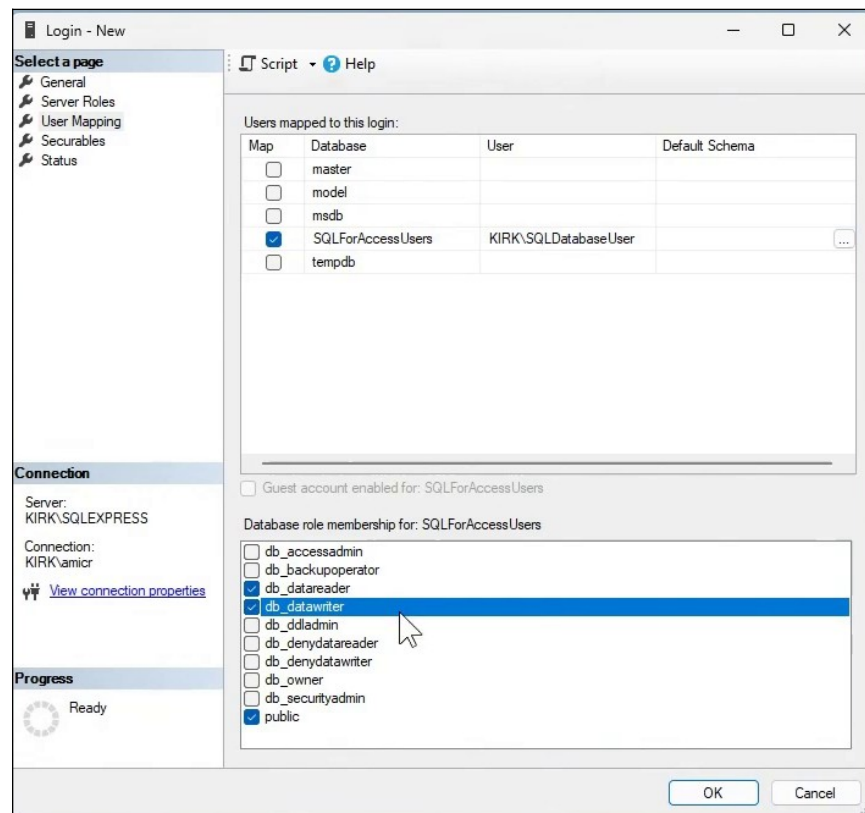
If the connection still fails

Check the running instance, correct address and instance name, enabled TCP/IP, completed service restart, actual listening port, matching firewall rule/profile, and login settings. A successful connection followed by missing objects or permission errors calls for checking the database and user mapping. Collect the exact error before seeking network or database-administration help.

Windows Authentication across workgroup computers

The alternative demonstration uses Windows credentials. On the server, open **Settings > Accounts > Other users > Add account**. Choose the option for someone whose sign-in information you do not have, then **Add a user without a Microsoft account**. Create the intended local account. The corresponding account on the workstation must have matching credentials for this workgroup approach.

In server-side SSMS, create a new login with **Windows authentication**. Choose **Search**, enter the local user, and choose **Check Names**. Confirm the resolved computer-name and user-name combination. Then map the login to SQLForAccessUsers and give it the required database roles. A Windows account existing on the PC is not itself a grant of database access.



00:22:15 The Windows login is mapped to SQLForAccessUsers with data roles

On the workstation, sign in as the matching local Windows account and connect through SSMS using **Windows Authentication**. SSMS uses that Windows identity instead of a separately entered SQL password. In the recording, the Spock workstation connects successfully to the Kirk server using this setup.

Microsoft-account sign-ins can introduce additional identity-mapping details in a small workgroup. They are not inherently unsupported. Lesson 09 explains why Richard switches his learning workstation to a local account and how to verify the identity SQL Server recognizes. Domain environments use their centrally managed identity model rather than copying this workgroup arrangement blindly.

Quiz

LESSON 08

Q1. A fresh Express instance accepts local connections but TCP/IP is disabled. What needs attention before remote TCP clients can connect?

- A. Network protocol and firewall configuration
- B. Only the table names
- C. Only the desktop wallpaper
- D. The Access form captions

Q2. What does successful file sharing between two PCs help you check?

- A. The SQL Server listening port is certainly open
- B. Some basic network and Windows-authentication functions
- C. All database permissions are already correct
- D. SQL Server requires shared database files

Q3. Which protocol is enabled in SQL Server Configuration Manager for the remote TCP connections used here?

- A. HTTP
- B. FTP
- C. TCP/IP
- D. SMTP

Q4. What does SQL Server Browser help clients find?

- A. The contents of every table
- B. The password for a login
- C. Missing backup files
- D. Named-instance connection information

Q5. Why check the Windows network profile on a trusted office LAN?

- A. Firewall/discovery rules can depend on the active profile
- B. Private prevents every attack
- C. Public disables all security
- D. The profile determines SQL data types

Q6. A SQL Server instance is confirmed to listen on TCP 1433. Which inbound port should its matching firewall rule permit?

- A. TCP 80
- B. TCP 1433
- C. TCP 443
- D. TCP 3306

Q7. A server is absent from the SSMS browse list. What is a useful next test?

- A. Reinstall Windows immediately
- B. Delete the database
- C. Enter the known server/instance or its correct address and port
- D. Disable authentication

Q8. What distinguishes SQL Server authentication from Windows authentication?

- A. It is always more secure
- B. It requires a domain controller
- C. It grants administrator rights automatically
- D. It uses a SQL login instead of relying on the current Windows identity

Q9. What change is required before creating usable SQL-authenticated connections on a Windows-only instance?

- A. Enable mixed mode and restart the engine
- B. Rename the database
- C. Disable TCP/IP
- D. Make the network Public

Q10. Which database roles permit broad reading and modification of user-table data without granting db_owner?

- A. db_owner
- B. db_datareader and db_datawriter
- C. db_backupoperator only
- D. db_securityadmin only

Q11. For the demonstrated matching-local-account workgroup approach, what is required?

- A. Identical computer names
- B. A Microsoft account on every PC
- C. Matching local credentials plus configured SQL login/database access
- D. Disabling Windows Defender

Q12. Why keep a server's IP address stable when clients connect by IP?

- A. To activate SQL licensing
- B. To guarantee faster queries
- C. To replace database backups
- D. So client connection settings keep pointing to the server

Q13. What does db_owner grant within its database?

- A. Broad control over database configuration, design, and data
- B. Read-only access
- C. Only procedure execution
- D. Only backup access

Q14. Service, address, protocol, port, firewall, and login checks still do not resolve a connection failure. What is a sensible next step?

- A. Delete the instance immediately
- B. Collect the exact error and seek qualified network/database help
- C. Disable all passwords
- D. Assume data corruption

Q15. Why can workgroup Windows-authentication troubleshooting become confusing with Microsoft accounts?

- A. They never allow file sharing
- B. They require SQL Server Agent
- C. Identity mapping can differ from the simple local-account name expected
- D. They force every user to be a database owner

09. Windows Logins (16:35)

How you sign in to Windows affects the identity used by a Windows-authenticated SQL Server connection. This lesson switches the existing workstation from a Microsoft-account sign-in to a local Windows account, then verifies the login SQL Server recognizes. This is a practical workgroup setup choice, not a requirement for every SQL Server installation.

Why the identity model matters

A SQL-authenticated Access linked-table connection can save a username and password in the front-end file. If the password is saved, someone with that file may be able to extract it. Windows Authentication avoids embedding a separate SQL password for the connection by using the Windows identity and its configured server permissions.

Local Windows accounts make names and matching credentials easier to track in the small-office, peer-to-peer environment used here. A domain environment has centrally managed identities and may not need this change. Microsoft accounts can also work with Windows Authentication; Richard's preference for local accounts is about predictability and troubleshooting, not a blanket prohibition.

Before changing the Windows sign-in

This procedure switches the sign-in for the existing Windows account. It does not reinstall Windows or intentionally remove the installed programs, local files, or Access databases. Save open work before signing out, and know the current credentials needed to verify the change.

Cloud-related services may need attention afterward. OneDrive synchronization or Edge synchronization may pause until you sign in again. Store apps, Office activation, or other Microsoft-connected apps can request another sign-in. Windows Hello or a PIN may need reconfiguration. Richard's own machines required few adjustments, but that experience is not a guarantee for every PC.



Tip from Rick

If device encryption or BitLocker is in use, make sure the recovery key is backed up before changing the account setup. Keep the distinction between your Windows sign-in and separate app sign-ins clear.

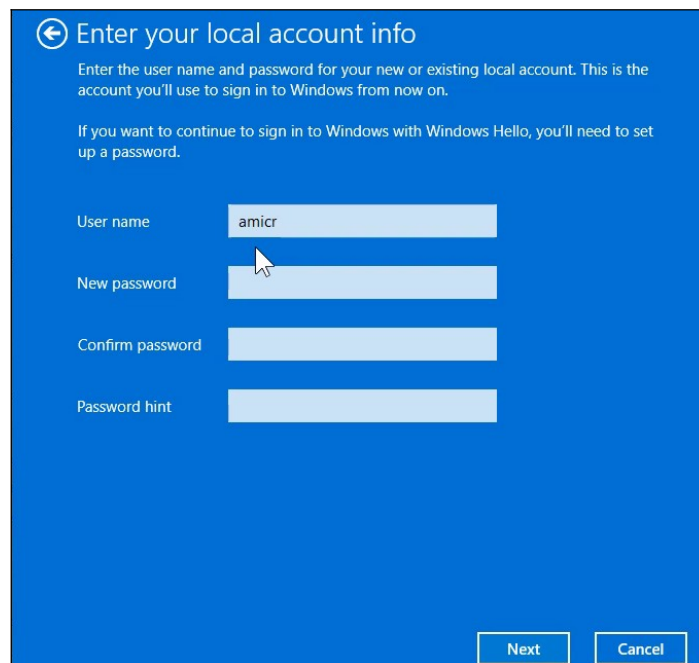
Switch the existing account in Windows Settings

In Windows 11, open **Settings > Accounts > Your info**. Under Account settings, select **Sign in with a local account instead**. Review the confirmation and choose Next. Windows asks you to verify the current account; the recording omits the private credential entry.



00:09:00 Your info contains the option to sign in with a local account instead

Enter the local username and password details, confirm the password, and supply a hint as requested. The instructor retains the existing local username so it matches the accounts already configured on his other PCs. Use the intended account for your environment; the displayed instructor username is not something you need to copy.



00:09:46 Enter the local-account credentials for the sign-in change

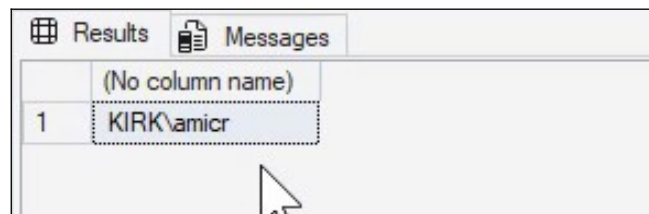
Choose **Sign out and finish** after saving your work. Sign back in with the local account. Richard also restarts his workstation; the important step is to complete the sign-out/sign-in transition. Your desktop and installed applications should remain, while some separately connected services may ask you to sign in again.

Connect and inspect the recognized login

Open SSMS and connect to the same server using **Windows Authentication**. In the demonstration, the workstation and server have matching local usernames and passwords, and SQL Server already has the appropriate login and database mapping. No SQL-login password is entered in the connection dialog.

Open **New Query**, enter this statement, and choose **Execute**. It returns the name of the current security context. This is a useful way to check the identity recognized by SQL Server instead of assuming that the friendly Windows display name is the login name.

```
SELECT SUSER_SNAME()
```



	(No column name)
1	KIRK\amirc

00:11:52 The query result identifies the Windows login recognized by SQL Server

The result in the recording identifies the server's local Windows account. Your result will reflect your own login and environment. In a workgroup, confirm the intended account on each computer and the server-side SQL login and database permissions. Matching local credentials does not automatically grant access to every database.

Keep Microsoft-account support in perspective

A Microsoft-account sign-in may resolve to an identity that is less obvious than a simple local computer-name and username. Inspect what SQL Server actually recognizes before assigning permissions. The lesson emphasizes that Microsoft accounts are supported; the local-account approach removes some variables when learning or administering a small workgroup.

SQL Server authentication remains an option, and it does not inherently require permanently storing a password in an Access file. The specific concern is a saved password in a distributed front end. Later developer material discusses programmatic connections; this beginner course proceeds with Windows Authentication and live linked tables.

Quiz

LESSON 09

Q1. What is an advantage of Windows authentication for an Access front end?

- A. It automatically syncs all apps
- B. It uses the Windows identity without saving a SQL password in the front end
- C. It eliminates all database permissions
- D. It permits anonymous access

Q2. What risk arises if a SQL-authenticated linked-table connection saves its password in an Access file?

- A. Access can no longer read any table
- B. SQL authentication stops working
- C. Someone with the file may extract those credentials
- D. The entire database becomes encrypted

Q3. Why might local Windows accounts simplify a small workgroup setup?

- A. They automatically enable cloud sync
- B. They eliminate SQL permissions
- C. They replace database backups
- D. Their identities and matching credentials are easier to track across PCs

Q4. What can complicate Microsoft-account authentication in a peer-to-peer setup?

- A. Identity mapping that is harder to diagnose
- B. An absolute lack of SQL Server support
- C. Automatic removal of local files
- D. A mandatory database-size reduction

Q5. What normally remains in place when switching the existing Windows sign-in from a Microsoft account to a local account?

- A. An automatic Windows reinstall
- B. Installed programs and local files
- C. A guaranteed sign-out from every app
- D. A new copy of every SQL database

Q6. Which setup supports the demonstrated local-account Windows authentication between two workgroup PCs?

- A. Identical computer names only
- B. A shared SQL administrator password in every form
- C. Matching local credentials and the required SQL permissions
- D. A disabled firewall and no Windows passwords

Q7. What should you verify before assigning SQL permissions to a Windows login?

- A. Only the person's display name
- B. The current desktop theme
- C. The database file extension
- D. The Windows identity SQL Server actually recognizes

Q8. Does using SQL Server authentication require saving its password in an Access file?

- A. No; saved passwords create the exposure discussed, while Windows authentication avoids a SQL password
- B. Yes; every connection permanently saves it
- C. No; authentication is always anonymous
- D. Yes; it automatically encrypts the entire front end

Q9. How is a local Windows account commonly identified in the server's Windows-login name?

- A. SQLServer\SA for every user
- B. ComputerName\UserName
- C. A database table name
- D. Only the Access file name

Q10. If a Microsoft-account identity differs from the name you expected, what should you do before changing permissions?

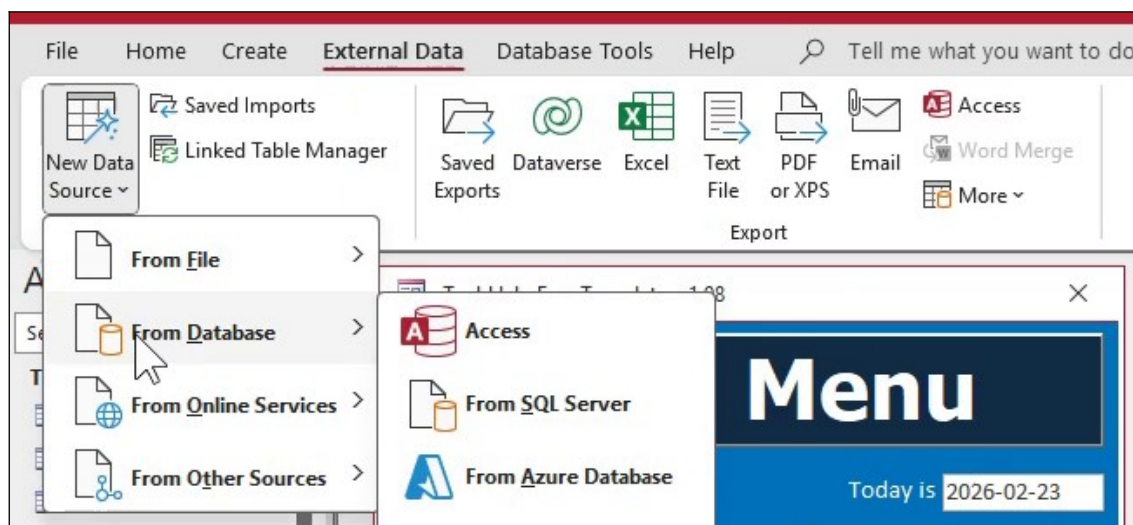
- A. Assume all Microsoft accounts are unsupported
- B. Delete the Access file
- C. Inspect the recognized identity and map the intended login accurately
- D. Grant every login db_owner

10. Connecting Access (24:10)

With the server reachable from your workstation, connect Microsoft Access to the live SQL Server table. The course uses the TechHelp Free Template as the front end. Keep its existing local sample data while testing the new link; Lesson 12 discusses replacing the old table name after the migration has been checked.

Link rather than import

In Access, choose **External Data > New Data Source > From Database > From SQL Server**. Select **Link to the data source by creating a linked table**. Importing makes a local snapshot; linking leaves the data on SQL Server and lets Access read or change it through the connection, subject to permissions.



00:02:12 Start the SQL Server link from the External Data ribbon

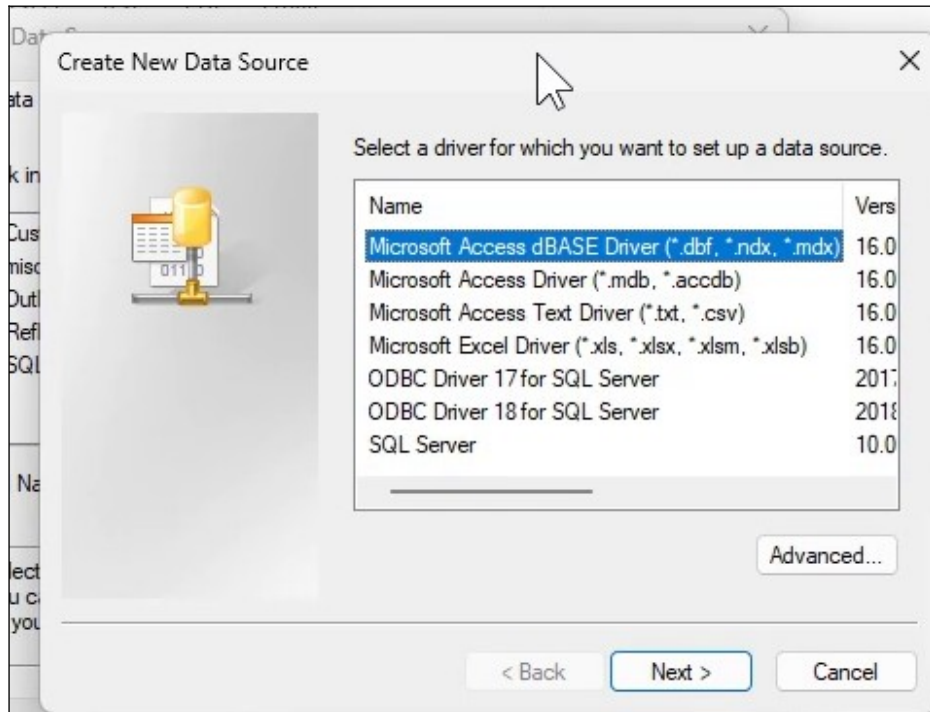
The next dialog uses **ODBC**, Open Database Connectivity, to communicate with the server. A **DSN**, Data Source Name, is a saved set of connection settings. It identifies such details as the driver, server, and database. The DSN is not the database and does not contain the customer records.

Use a file DSN for the learning setup

On the **File Data Source** tab, choose **New**. A file DSN can be copied or reused on other computers, provided those computers have the necessary driver, network access, and permissions. A machine data source is configured on that particular computer. Later material introduces DSN-less connections managed in the Access front end.

Choose the driver and connection settings

The Create New Data Source wizard lists installed drivers. The recording chooses **ODBC Driver 17 for SQL Server**. The older entry named simply SQL Server is a legacy driver; do not confuse it with the modern numbered drivers. If the intended driver is absent, install the appropriate Microsoft driver before continuing.



00:05:20 The file-DSN wizard lists the installed ODBC drivers

Richard uses Driver 17 because it works smoothly with his training environment. Driver 18 is also valid when configured correctly; its encryption and certificate defaults can make a previously unnoticed certificate problem visible. A driver downgrade is not a substitute for choosing appropriate connection security. Match the driver and configuration to the deployed Access clients and server.

Choose a recognizable file name and location for the DSN. Enter the server name in the SQL Server setup wizard, then choose the intended authentication method. This course proceeds with **Windows Authentication**, using the Windows identity and server/database permissions already configured.

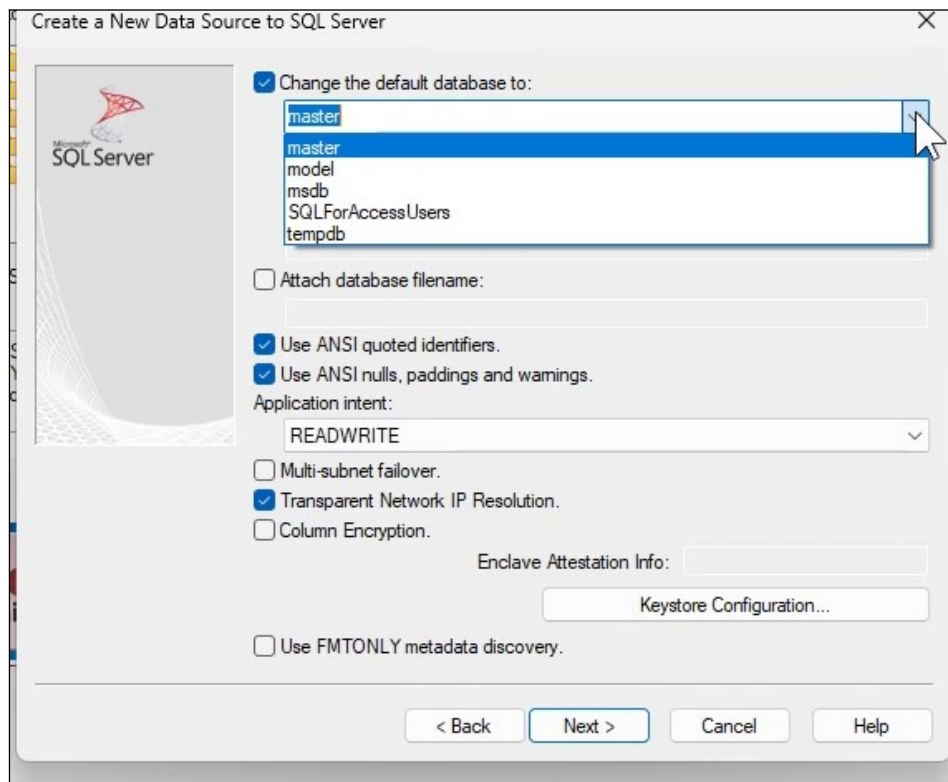
Kirk\SQLEXPRESS

The instance name above is the recorded example, not a required name. If the computer name alone does not work, include the named instance after the backslash. SQL Server Express commonly uses a named instance. The network and firewall setup still has to reach the instance actually being requested.

Select the correct default database

A successful connection test means the connection can reach and authenticate to SQL Server. It does not mean that it selected your intended database. In the first attempt, the table list contains system objects because the connection is looking at the wrong database.

Return to the DSN configuration and select **Change the default database to**. Choose **SQLForAccessUsers**, the database created in this course. The recording creates another file DSN while correcting this; use a clear name and avoid leaving several confusingly similar connection files.



00:11:18 Set the DSN default database to the course database

Finish the wizard and choose **Test Data Source**. If the test succeeds, return to Access, select the corrected file DSN, and continue. In the Link Tables dialog, select **dbo.CustomerT** and choose OK. System objects can still be listed, but the course table should now be available.



Tip from Rick

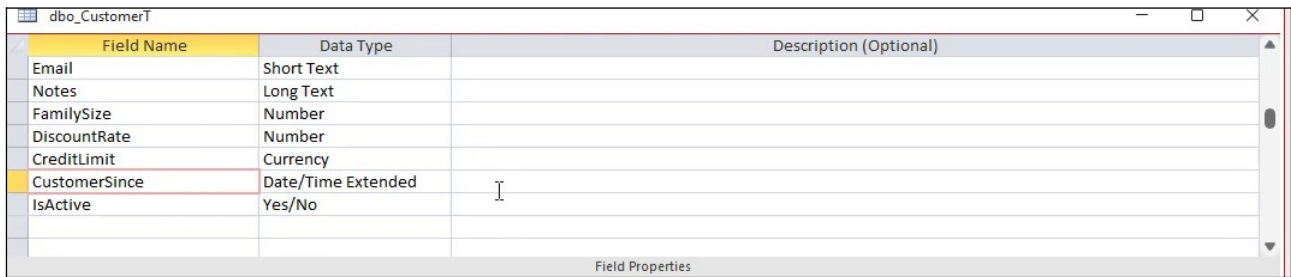
Read a successful test narrowly: it confirms a connection, not that you chose the right database or have all the permissions your application needs. Verify the actual table list before continuing.

Decide how Access will handle datetime2

The course table includes a SQL Server **datetime2** column. Access asks whether to enable support for the corresponding **Date/Time Extended** type. The displayed warning says that enabling it changes the database format and has backward-compatibility consequences. Richard selects Yes for his current learning environment.

Before making the same choice in a shared application, check every Access version that must open the front-end file. The warning shown in the recording mentions Access 2013 and earlier, but do not treat that as a guarantee for every later edition or build. Date/Time Extended support must be available in the clients you deploy.

If older clients must remain compatible, the demonstrated alternative is to decline extended support and use ordinary Date/Time mapping, with precision limitations. Test the actual values and operations your application needs. The server type and the Access display type are related, but they are not identically named.



Field Name	Data Type	Description (Optional)
Email	Short Text	
Notes	Long Text	
FamilySize	Number	
DiscountRate	Number	
CreditLimit	Currency	
CustomerSince	Date/Time Extended	
IsActive	Yes/No	

00:15:35 Access identifies the linked column as Date/Time Extended

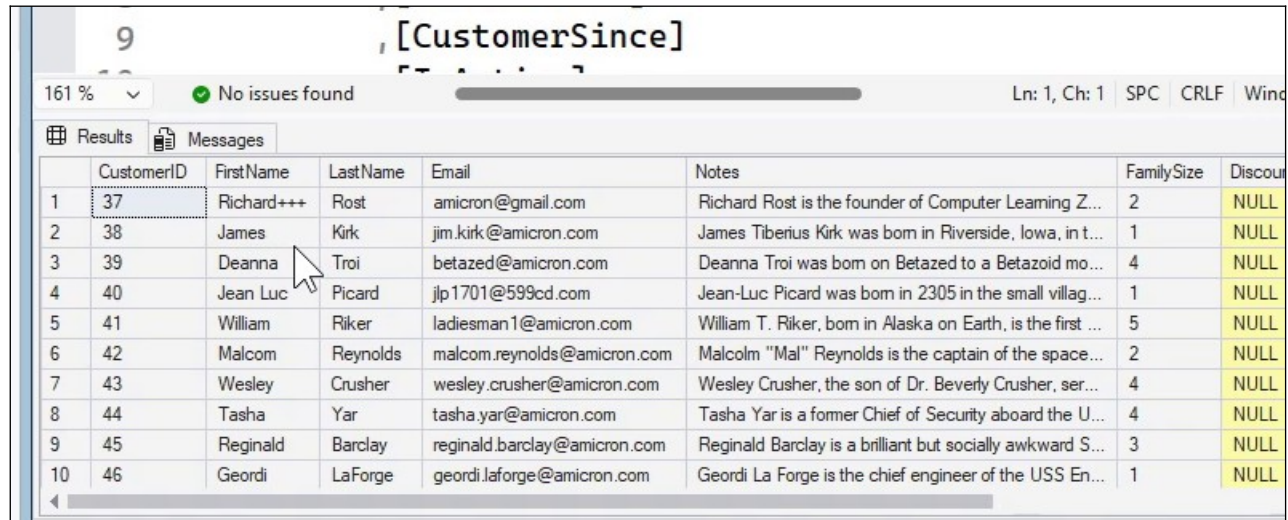
Open the linked table in Access and review its data. Its design view can show the linked field definitions, but table structure is maintained on SQL Server. Changes such as adding columns or changing data types belong on the server, followed by refreshing the Access link when its cached metadata needs updating.

Keep the linked-table name recognizable

Access initially names the link **dbo_CustomerT**. Here, dbo is the SQL Server schema. Retaining that prefix helps distinguish the new linked table from the old local CustomerT while learning. Renaming the Access link later does not rename the server table; it changes the name used by Access objects.

Verify live data and manage the DSN

Edit a sample row through the linked table, then move off that row so Access commits the change. In SSMS, query the same table again and confirm the updated value. The recording changes a first name in Access and sees that change in SQL Server. This demonstrates a live connection, rather than an imported copy.



	CustomerID	FirstName	LastName	Email	Notes	FamilySize	Discour
1	37	Richard+++	Rost	amicron@gmail.com	Richard Rost is the founder of Computer Learning Z...	2	NULL
2	38	James	Kirk	jim.kirk@amicron.com	James Tiberius Kirk was born in Riverside, Iowa, in t...	1	NULL
3	39	Deanna	Troi	betazed@amicron.com	Deanna Troi was born on Betazed to a Betazoid mo...	4	NULL
4	40	Jean Luc	Picard	jlp1701@599cd.com	Jean-Luc Picard was born in 2305 in the small villag...	1	NULL
5	41	William	Riker	ladiesman1@amicron.com	William T. Riker, bom in Alaska on Earth, is the first ...	5	NULL
6	42	Malcom	Reynolds	malcom.reynolds@amicron.com	Malcolm "Mal" Reynolds is the captain of the space...	2	NULL
7	43	Wesley	Crusher	wesley.crusher@amicron.com	Wesley Crusher, the son of Dr. Beverly Crusher, ser...	4	NULL
8	44	Tasha	Yar	tasha.yar@amicron.com	Tasha Yar is a former Chief of Security aboard the U...	4	NULL
9	45	Reginald	Barclay	reginald.barclay@amicron.com	Reginald Barclay is a brilliant but socially awkward S...	3	NULL
10	46	Geordi	LaForge	geordi.laforge@amicron.com	Geordi La Forge is the chief engineer of the USS En...	1	NULL

00:17:37 The SSMS result reflects the row edited through Access

Review connection files with ODBC Data Sources

Open the Windows **ODBC Data Sources** administrator appropriate to the Access installation's bitness. Use its **File DSN** tab to locate, configure, or remove an unused connection file. The recording uses the 64-bit administrator and removes an earlier test DSN. Your file location may differ, particularly if Documents is redirected or synchronized.

Access can copy the connection information from a file DSN into the link, so an established link may continue to work even if that particular DSN file is removed. Do not assume all DSN-based arrangements behave identically. Keep a known-good DSN available for adding or repairing links, and inspect the connection configuration before removing it.

Before moving on

Confirm that the intended table opens, a permitted test edit reaches SQL Server, and the date/time mapping suits the Access clients. Keep local and server copies clearly distinguished until the migration is validated. The next lesson creates server-side query logic as a view and links that result into Access.

Quiz

LESSON 10

Q1. What is the key difference between linking and importing SQL Server tables into Access?

- A. Importing creates a live connection while linking creates a static copy
- B. Both create static copies
- C. Linking creates a live connection while importing creates a static copy
- D. Both create live connections

Q2. Why link a SQL Server table when users need to work with its current data?

- A. It creates a permanent backup
- B. It replaces all server permissions
- C. It makes every view editable
- D. It provides a live connection to the server data

Q3. What does DSN stand for?

- A. Data Source Name
- B. Data Source Network
- C. Database Source Name
- D. Direct Server Name

Q4. What is ODBC used for in the context of Access and SQL Server?

- A. For encrypting database files
- B. For enabling Access to communicate with SQL Server
- C. For managing user permissions
- D. For creating backups of SQL Server

Q5. What is the main advantage of a file DSN over a machine data source?

- A. Supports more advanced security features
- B. Runs faster
- C. Can be copied and reused on multiple computers easily
- D. Is automatically created by Access

Q6. Why can a newer ODBC driver require certificate configuration in a setup that connected with an older driver?

- A. It cannot use Windows authentication
- B. It always uses a different database engine
- C. It requires every table to be renamed
- D. Its connection-security defaults can differ

Q7. A connection test succeeds, but the link dialog shows the wrong database's objects. What should you check?

- A. The connection's default database
- B. The Access ribbon color
- C. The form's font size
- D. The monitor resolution

Q8. Which SQL Server type can map to Access Date/Time Extended?

- A. smalldatetime
- B. datetime2
- C. timestamp
- D. varchar

Q9. Before enabling Date/Time Extended support in an Access file, what should you check?

- A. Only the database name
- B. Only the network cable
- C. Whether all required Access clients support the changed format
- D. Whether the table has a form

Q10. If older Access clients cannot use Date/Time Extended, what is the demonstrated compatibility choice?

- A. Enable it without testing
- B. Convert all dates to SQL text automatically
- C. Change only the server name
- D. Decline it and assess ordinary Date/Time mapping and precision

Q11. What does dbo identify in a SQL Server object name?

- A. The object's schema
- B. A backup copy
- C. A hidden table
- D. A read-only guarantee

Q12. How can you locate and manage an existing file DSN?

- A. Look only in System32
- B. Use the File DSN tab in the appropriate ODBC administrator
- C. Look only in Program Files
- D. Open SQL Server transaction logs

Q13. An Access link has copied the needed connection settings from a file DSN. What can happen if that DSN file is removed?

- A. The server table is deleted
- B. The Access file is deleted
- C. The existing link can still work; keep the DSN for future linking
- D. All user permissions are removed

Q14. What is the more advanced method of connecting Access to SQL Server mentioned, and where is connection info stored with it?

- A. File DSN, stored in user's registry
- B. DSN-based connection, stored on SQL Server
- C. File DSN, stored in Program Files
- D. DSN-less connection, stored in Access front end

Q15. What should you try if connecting with just the machine name does not work, especially with SQL Server Express or a named instance?

- A. Use the machine name and instance name separated by a backslash
- B. Restart Access
- C. Use "localhost" as the server name
- D. Run Access as administrator

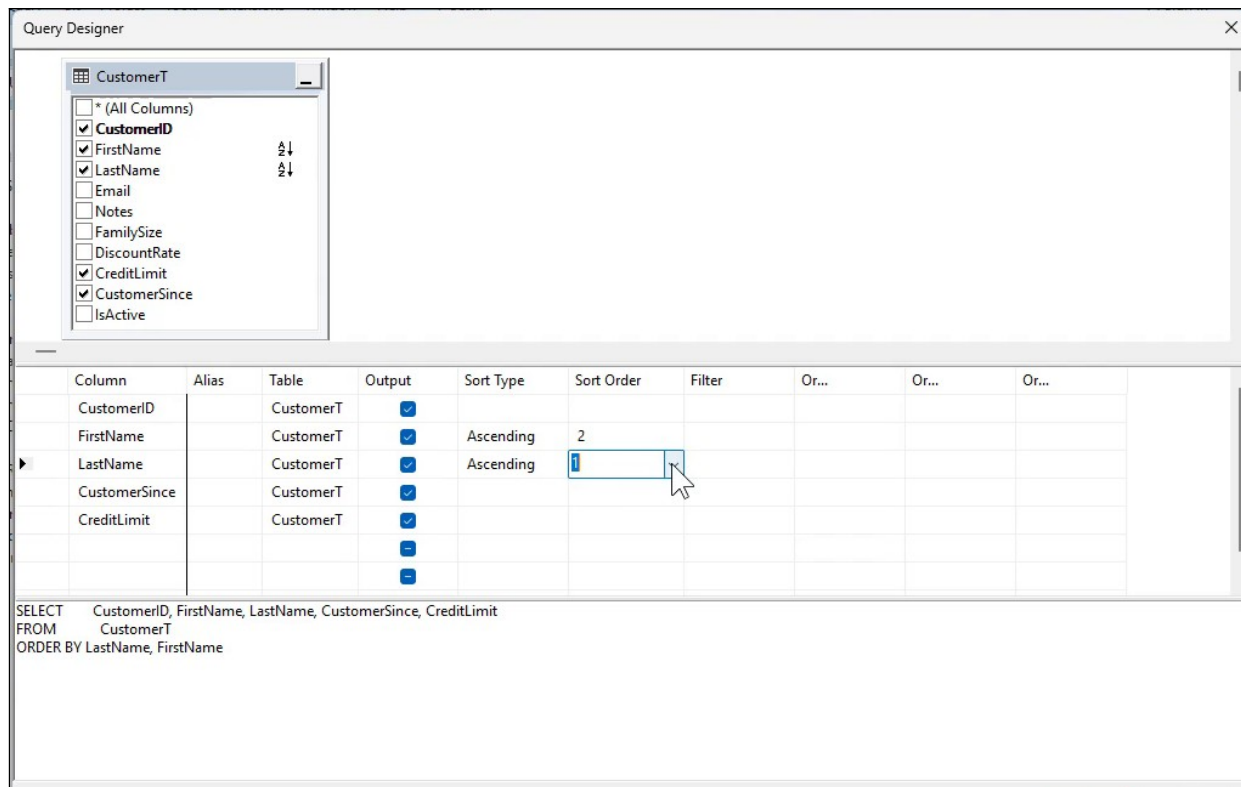
11. Queries and Views (22:50)

Build a query with the SSMS graphical designer, then save its logic as a view on SQL Server. Link that view into Access so the server can filter the data before returning it. The designer looks familiar to an Access user, but field arrangement, sort priority, and where query definitions are saved require attention.

Build the first SELECT in the designer

Connect to the course database in SSMS and choose **New Query**. Right-click in the editor and choose **Design Query in Editor**. Add CustomerT and close the Add Table dialog. Check the fields to include: CustomerID, FirstName, LastName, CustomerSince, and CreditLimit are used in the first example.

The designer places fields in rows. **Output** controls whether a field is returned, like the Access Show checkbox. A field can participate in a filter or sort without appearing in the results. **Alias** supplies a result-column name: the designer writes FirstName AS FN, while the Access design grid normally expresses that alias as FN: FirstName.



00:03:37 Sort Order numbers set priority independently of field position

Set LastName to Ascending with Sort Order 1 and FirstName to Ascending with Sort Order 2 for surname-first sorting. In the Access design grid, sort priority normally follows the fields from left to right; here, use the explicit sort-order numbers. Reordering the field list is not the same operation.

A local SQL script versus a server view

Pressing Ctrl+S in the query editor saves a **.sql file** to a chosen location. It does not create a saved query object inside the database. Reopen the script through File > Open > File or Recent Files, then execute it against the intended connection and database.

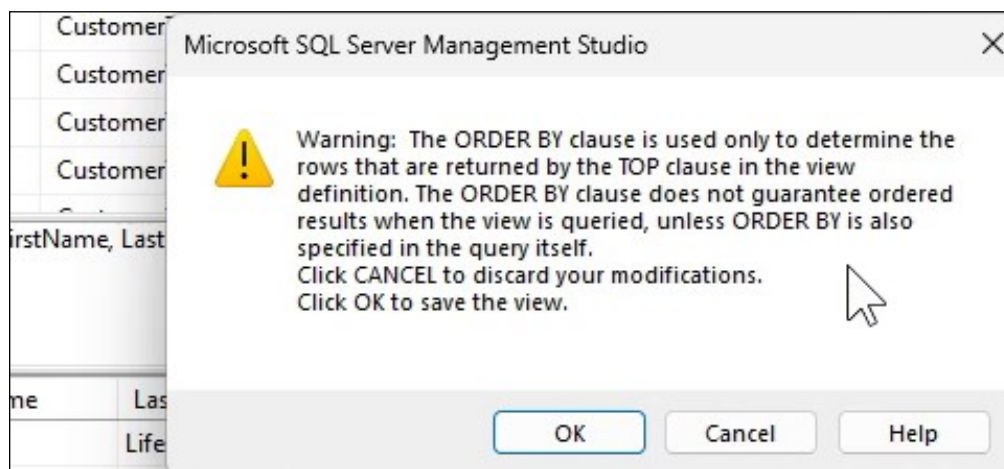
Create a view from the tested SELECT

Copy the SELECT text, then right-click the database's **Views** folder and choose **New View**. Close Add Table if you are pasting an existing statement. Paste into the SQL pane and click elsewhere so the designer updates. Right-click and choose **Execute SQL** to preview the result.

Save the view as **CustomerQ**. Richard uses a Q suffix for views so they remain recognizable as query-like objects when Access lists them among linked tables. A V suffix is also a naming choice; the suffix does not change the object type.

Understand the ORDER BY warning

The initial example contains TOP 10 and ORDER BY. SQL Server warns that ORDER BY in this context selects which rows satisfy TOP; it does not promise the order returned by a later query of the view. Put ORDER BY in the final SELECT when presentation order matters.



00:12:50 The view warning explains that its definition does not guarantee final order

For the course view, remove the experimental TOP and the inner ORDER BY when no longer needed. Keep the desired columns and filtering in the view; apply display sorting in the final query that reads it, including an Access query built over the link.

Save a useful filtered view

Revise CustomerQ to return CustomerID, FirstName, LastName, CreditLimit, and IsActive. Set CreditLimit's filter to **>= 1000**. Execute the SQL again before relying on the preview: the Query Changed indicator means the displayed rows can be stale after a design edit. Save the revised view.

```
SELECT CustomerID, FirstName, LastName, CreditLimit, IsActive
FROM dbo.CustomerT
WHERE CreditLimit >= 1000
```

The code above reproduces the final filtering logic shown in the designer, with readable spacing. The view exposes a subset of table columns and rows; it is not a separate copied customer table. Test the view from another query as demonstrated:

```
SELECT * FROM CustomerQ
```

The SELECT * here explores the already narrowed view. In finished requests, still choose fields deliberately. If the final result must be sorted, add the appropriate ORDER BY to the statement that reads the view, rather than relying on the view's internal arrangement.

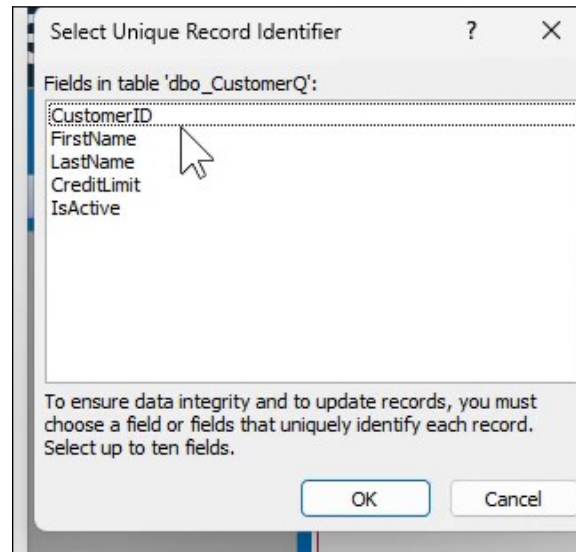
Refresh IntelliSense when new objects are underlined

The newly created CustomerQ can be underlined as an invalid object while a valid query against it runs successfully. **Ctrl+Shift+R** refreshes the local IntelliSense cache. Allow time for the update; the editor and database engine are separate components. Do not confuse stale hints with confirmed execution failures.

The recording omits dbo in some queries because the demonstrated name resolution finds that schema. Explicit schema qualification is clearer when ambiguity is possible. Its case-insensitive examples reflect the configured collation; SQL Server can also be configured with case-sensitive naming and comparisons.

Link the view into Access

In Access, follow **External Data > New Data Source > From Database > From SQL Server**, choose the link option, and reuse the working file DSN. Select **dbo.CustomerQ**. Access may then ask for a **Unique Record Identifier**.



00:16:25 This dialog asks for a unique row identifier, not the output field list

Correction confirmed in Lesson 13: Choose **CustomerID** for this simple view, because it uniquely identifies each returned row. The recording initially selects all fields after mistaking this dialog for the output-column picker. Do not repeat that step: choose the actual unique identifier, not every displayed field.

The link appears among Access tables even though its source is a SQL Server view. The course's simple view is editable when linked with an appropriate identifier and permissions. More complex views can be read-only; aggregations, joins, missing identifiers, and other design details can affect whether updates are possible.

dbo_CustomerQ					
CustomerID	FirstName	LastName	CreditLimit	IsActive	
37	Richard	Rost	\$3,000.00	☒	
38	James	Kirk	\$4,000.00	☒	
39	Deanna	Troi	\$4,339.00	☐	
41	William	Riker	\$2,997.00	☒	
42	Malcom	Reynolds	\$3,918.00	☒	
43	Wesley	Crusher	\$4,249.00	☒	
44	Tasha	Yar	\$2,500.00	☐	
45	Reginald	Barclay	\$1,842.00	☒	

00:16:35 The linked CustomerQ view shows only the filtered result in Access

The central lesson is to place suitable filtering and data work on the server, so Access receives the needed result and supplies the forms and reports. Access can also delegate many ordinary linked-table queries; views are a deliberate way to organize server-side logic, not proof that every Access query otherwise transfers the whole table.

Quiz

LESSON 11

Q1. How is sort priority set in the SSMS graphical query designer?

- A. By field order only
- B. By table name
- C. By column width
- D. By Sort Order numbers

Q2. How do criteria combine in the SSMS designer grid?

- A. AND down a filter column, OR across alternatives
- B. AND across, OR down
- C. All criteria use OR
- D. All criteria use AND

Q3. What does the N prefix in the T-SQL literal N'Example' indicate?

- A. A numeric value
- B. A Unicode string literal
- C. A NULL value
- D. A not-equal comparison

Q4. What does saving text from an SSMS query window normally create?

- A. A stored procedure automatically
- B. A view automatically
- C. A .sql script file
- D. An Access form

Q5. How can a SELECT definition be stored as a reusable SQL Server object?

- A. Save it as CSV
- B. Export it to Excel
- C. Rename the editor tab
- D. Create a view

Q6. Why use TOP while experimenting with a large table?

- A. To limit returned rows
- B. To include every column
- C. To disable filters
- D. To guarantee alphabetical order

Q7. Before reopening one of several statements in Design Query in Editor, what should you do?

- A. Edit the table
- B. Select that statement
- C. Delete the other statements
- D. Restart SSMS

Q8. A view uses TOP with ORDER BY. What does this guarantee about later queries of that view?

- A. Every later query has the same presentation order
- B. ORDER BY never affects TOP
- C. It selects the TOP rows; the outer query still needs ORDER BY to guarantee display order
- D. The view cannot be saved

Q9. Why can a filtered server view help an Access application?

- A. It forces all processing onto Access
- B. It grants server administration rights
- C. It copies every table locally
- D. It filters rows before returning the result

Q10. Why might an Access link to a SQL Server view be read-only?

- A. Its structure or missing unique row identifier can prevent updates
- B. Every view is always editable
- C. Views cannot be linked
- D. A view automatically becomes a local table

Q11. What should usually be avoided in a finished request for a few columns of a large table?

- A. A specific field list
- B. SELECT *
- C. A WHERE filter
- D. A suitable parameter

Q12. What does SSMS IntelliSense provide?

- A. Backups
- B. Record sorting
- C. Code suggestions and object-name hints
- D. User authentication

Q13. SSMS reports successful execution, but an editor red X remains and the error list is empty. What is a sensible interpretation?

- A. The server certainly rejected the query
- B. The database must be reinstalled
- C. The results must be deleted
- D. It may be an editor or IntelliSense issue; check execution messages

Q14. Where does a linked SQL Server view appear in Access?

- A. Among tables
- B. Among reports
- C. Among macros
- D. Among forms

Q15. Which design goal supports efficient Access/SQL Server applications?

- A. Always process all rows locally
- B. Let the server perform suitable data work and return needed results
- C. Retrieve every field for every form
- D. Avoid server-side filtering

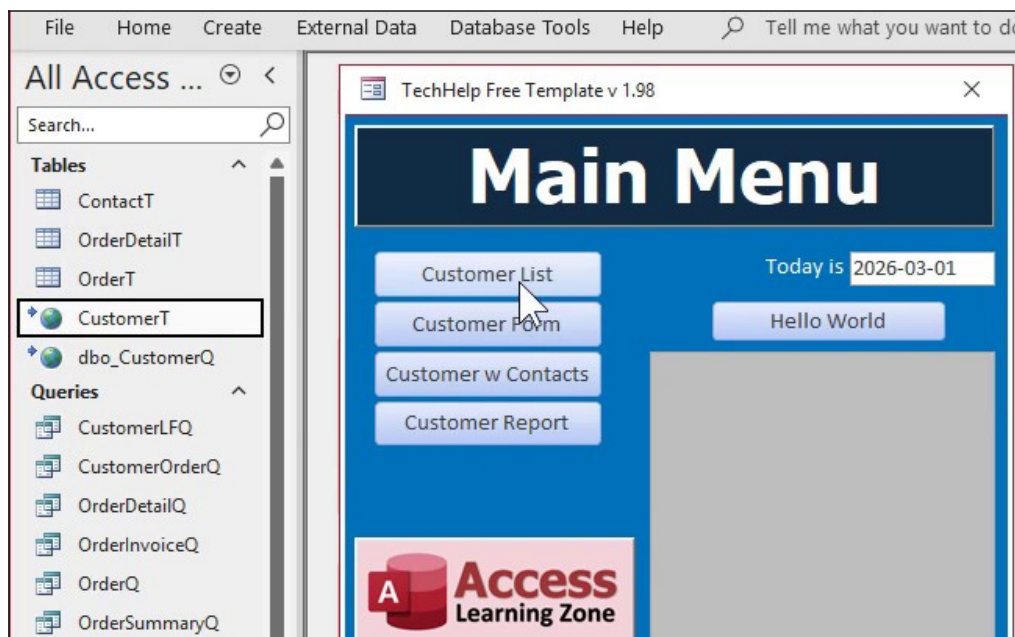
12. SQL Differences (27:43)

Moving tables to SQL Server does not turn every Access query into T-SQL. This lesson preserves existing Access table references, compares the two SQL dialects, and creates a first pass-through query. It also incorporates the instructor's end-of-lesson clarifications about NULL, query delegation, and refreshing links.

Preserve table references during migration

A new project can keep the `dbo_` prefix on Access links to make their server origin obvious. An established application may already have forms, reports, queries, combo-box row sources, and VBA referring to `CustomerT`. Renaming every reference solely because the table moved is often unnecessary.

After checking a usable backup and confirming that the intended data and structure are on the server, remove or otherwise resolve the old local table, then rename the Access link **`dbo_CustomerT`** to **`CustomerT`**. The recording deletes the old local copy only after confirming its rows were moved. Do this in the learning copy; a matching row count alone is not a complete production migration test.



00:04:50 The Access link uses the original `CustomerT` name

Access may warn about relationships involving the old local table. Review those dependencies rather than assuming that migration recreated them. Enforced relationships belong with the tables: in the Access backend before migration, and as properly defined SQL Server constraints afterward. Renaming the link changes neither the server object name nor its foreign keys.

The demonstration still has missing address fields in the migrated sample table, so not every form control immediately works. Keeping the link name preserves references; it does not cure missing fields, incompatible queries, or other design differences. Test the application objects that depend on the table.

Text, dates, and wildcard syntax

SQL Server's dialect is **Transact-SQL**, abbreviated T-SQL. A basic SELECT can be identical in both environments. The source begins by selecting the customer identifier and names:

```
SELECT CustomerID, FirstName, LastName  
FROM CustomerT
```

Use single quotes for T-SQL string literals

In the Access examples, text is enclosed in double quotes. T-SQL string literals use single quotes. Access also accepts single-quoted strings; the point is not that Access forbids them, but that you must use the correct T-SQL convention when sending SQL to the server.

```
WHERE LastName = 'Kirk'
```

Dates use different delimiters

The Access example encloses its date literal in hash marks. The corresponding T-SQL example encloses the date string in single quotes. Use an unambiguous date representation and check the target data type. These are the demonstrated WHERE fragments:

Access SQL:

```
WHERE CustomerSince < #2020-01-01#
```

T-SQL:

```
WHERE CustomerSince < '2020-01-01'
```

LIKE patterns depend on the dialect and mode

With the usual Access ANSI-89 settings, * matches multiple characters and ? matches one character. In T-SQL, use % and _ respectively. The recording changes the surname pattern from R* to R%:

Access SQL, ANSI-89 mode:

```
WHERE LastName LIKE "R*"
```

T-SQL:

```
WHERE LastName LIKE 'R%'
```

Access Options > Object Designers contains a SQL Server Compatible Syntax (ANSI-92) option. That changes Access syntax conventions, including wildcard behavior; it does not turn the Access engine into a complete T-SQL engine. Review existing queries before changing modes.

Boolean values, NULL, and current dates

Compare Yes/No and bit deliberately

Access commonly represents true as -1 and false as 0. A SQL Server bit uses 1 and 0, with NULL also possible if the column permits it. The source compares an Access true test with its T-SQL bit test:

Access SQL:

```
WHERE IsActive = True
```

T-SQL:

```
WHERE IsActive = 1
```

NULL is not an empty string

In Access, IsNull(FirstName) is a function-style test. The SQL predicate FirstName IS NULL works in Access as well as T-SQL. Richard explicitly corrects his earlier implication that the predicate is exclusive to SQL Server. For the T-SQL query, use:

```
WHERE FirstName IS NULL
```

Do not replace that predicate with a one-argument T-SQL ISNULL call; it is a different function. NULL represents a missing value, while an empty string is a present text value of zero length. In the shown syntax, an empty string is written as two double quotes in Access or two single quotes in T-SQL.

GETDATE returns a date and time

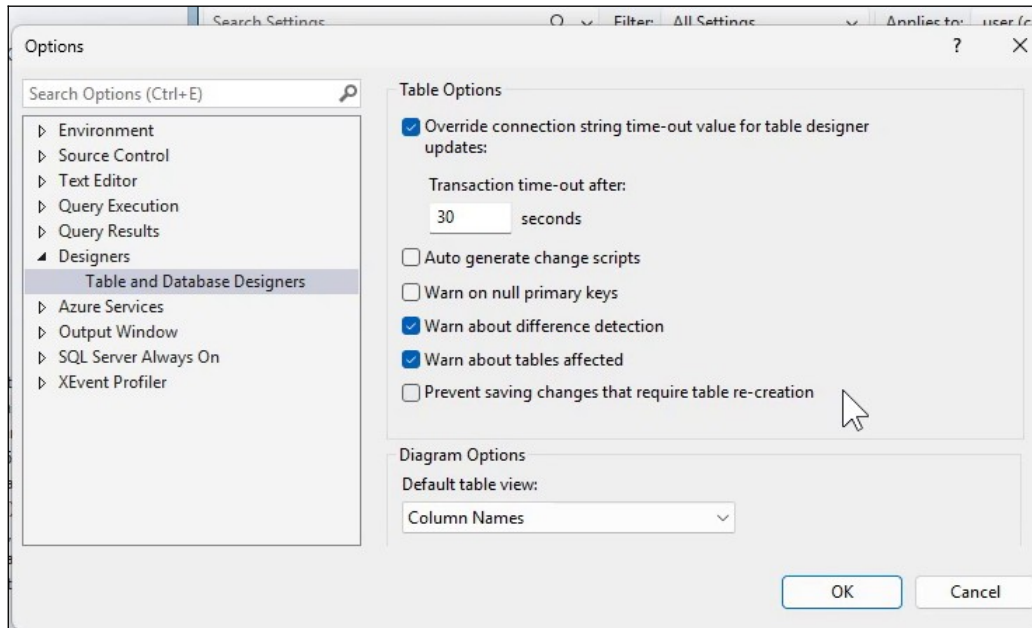
Access Date() returns the current date without a time portion, while Now() returns both. T-SQL GETDATE() returns date and time, so it is closer to Now() than Date(). The demonstrated server query is:

```
SELECT CustomerID, FirstName, LastName, CustomerSince
FROM CustomerT
WHERE CustomerSince < GETDATE()
```

The instructor also notes that casting GETDATE() to date removes the time portion. Further date functions and filtering details are reserved for later lessons; do not assume a date-only comparison and a current-timestamp comparison have identical boundaries.

A design change and a stale Access link

To demonstrate NULL, the recording tries to clear a first name, but the table does not yet permit NULL in that field. In SSMS, open the table design and allow NULL for FirstName and LastName in this training database. The designer initially blocks saving because its plan requires table recreation.



00:13:46 The SSMS designer protection setting controls table-recreation saves

The setting is under **Tools > Options > Designers > Table and Database Designers > Prevent saving changes that require table re-creation**. Richard disables it for the learning database after explaining the warning. Some designer operations rebuild a table by copying data and replacing the original. That can affect dependencies and carries risk if the operation fails.

This is not a routine instruction to bypass the warning in a live database. Backups and a reviewed change plan still matter, regardless of database size. A supported ALTER TABLE operation, as used in Lesson 07, can sometimes make a change without the designer's recreation plan.

Refresh metadata when the old rule persists

After saving the server change, the Access edit initially still fails because its link retains the earlier field definition. Close the linked table and use **Refresh Link** or the Linked Table Manager, then reopen it and test again. The source successfully clears the first name after refreshing.



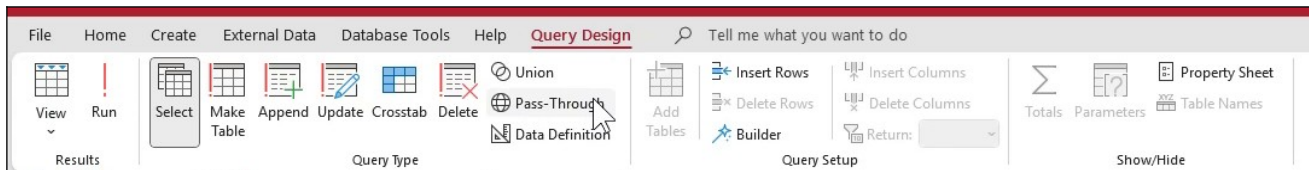
Tip from Rick

If a server design change seems to have no effect in Access, check the link metadata. Some changes are visible immediately, while others need a refresh or relink. Refreshing the link is different from simply requering displayed rows.

Create a first pass-through query

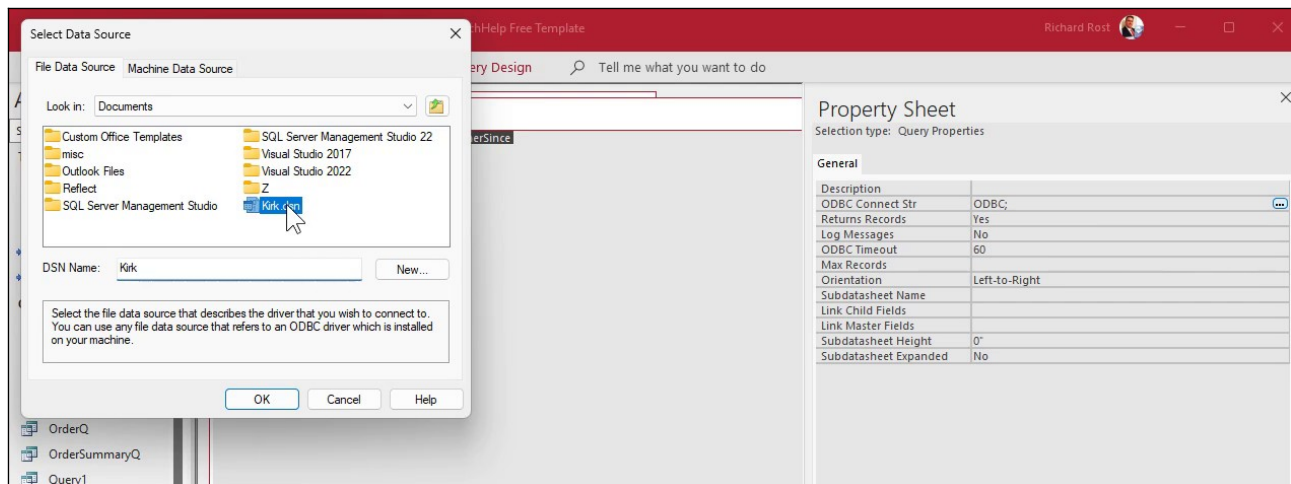
A pass-through query stores server SQL in Access and sends it to SQL Server for execution. Access does not interpret it as ordinary Access SQL. First test the intended SELECT in SSMS. The lesson reuses the GETDATE() query from the preceding section.

In Access, choose **Create > Query Design**, switch to SQL View, and paste the tested T-SQL. On the Query Design ribbon, choose **Pass-Through**. Save it as **CustomerPTQ**. Its icon distinguishes it from an ordinary Access query.



00:20:27 Choose Pass-Through on the Access Query Design ribbon

Run the query and select the working DSN when prompted. The result returns from the server. To avoid choosing the DSN on every run, open the query in Design View, display the **Property Sheet**, and use the ellipsis beside **ODBC Connect Str** to choose the connection.



00:21:22 The DSN selection fills the pass-through query connection property

The recording uses Windows Authentication and declines saving a password. Save the query with the populated connection string, then run it again. When using SQL authentication, do not casually embed a password in a front end distributed to users; runtime credential handling is a later programming topic.

Choose where the work runs

Ordinary Access queries over linked SQL Server tables can delegate substantial work to the server. Access attempts to translate supported operations. It is inaccurate to assume that every linked-table query first downloads every row. Conversely, Access-specific expressions or custom VBA can require local work and cause more data to be transferred.

Views place reusable SELECT logic on the server. Pass-through queries send explicitly written T-SQL to that server. These approaches let you control where suitable processing happens. Test with realistic data and inspect the behavior before attributing every slow query to the network or driver.

Keep the source clarifications together

Use the name Transact-SQL, not “transactional SQL.” Remember that Field IS NULL is valid in both dialects. Refresh an Access link when a structural change requires updated metadata; not every change requires rebuilding every link. Define server-side relationships explicitly after migration rather than assuming the old local relationship diagram is still enforcing them.



Tip from Rick

Learn the syntax instead of using a translation tool as a crutch. If you get stuck, an AI-assisted conversion can help, but read it, understand it, and test that it preserves the intended result before relying on it.

The practical goal is small, deliberate changes: correct delimiters and wildcards, appropriate Boolean and NULL handling, the right date function, and a connection that executes the query in the intended place. Keep a working copy of the original query so you can compare results during migration.

Quiz

LESSON 12

Q1. After a verified, backed-up migration, how can an Access link preserve existing object references?

- A. Rename the Access link to the original table name after resolving the old object
- B. Always keep a different link name
- C. Redesign every form immediately
- D. Keep two objects with exactly the same name

Q2. Which delimiter should be used for a T-SQL string literal?

- A. Double quotes only
- B. Single quotes
- C. Square brackets
- D. Hash marks

Q3. How are date literals enclosed in Access SQL?

- A. Single quotes
- B. Double quotes
- C. Pound signs (#)
- D. Parentheses

Q4. In an Access database using ANSI-89 wildcards, how does the many-character wildcard compare with T-SQL?

- A. Both use %
- B. Both use ?
- C. Access uses _; T-SQL uses *
- D. Access uses *; T-SQL uses %

Q5. In Access SQL, what function is commonly used to get the current date?

- A. Date()
- B. GetDate()
- C. CurrentDate()
- D. NowDate()

Q6. Which function is used in SQL Server TSQL to get the current date and time?

- A. Date()
- B. GetDate()
- C. CurrentDate()
- D. SysDate()

Q7. For an Access Yes/No value and a SQL Server bit, what numeric values represent true, respectively?

- A. -1 and 0
- B. 1 and TRUE
- C. -1 and 1
- D. TRUE and -1

Q8. How do you check if a field value is NULL in SQL Server TSQL?

- A. IsNull(fieldname)
- B. IsNull(fieldname) = True
- C. fieldname == NULL
- D. fieldname IS NULL

Q9. In SQL Server TSQL, which wildcard is used for a single character?

- A. _
- B. %
- C. ?
- D. *

Q10. Why refresh an Access table link after some server-side design changes?

- A. It always changes the SQL password
- B. Access may still have cached the old column metadata
- C. It restores a deleted database
- D. It recreates all server indexes

Quiz (continued)

LESSON 12

Q11. Before replacing a local Access table that participates in relationships, what should be reviewed?

- A. Only the table's display font
- B. Only the taskbar
- C. Backups, migrated data, and the relationships that removal affects
- D. Only the file extension

Q12. What is a passthrough query in Access?

- A. A query that runs only in Access syntax
- B. A VBA function that uses SQL Server
- C. A query that bypasses DSN authentication
- D. An Access query that is sent directly to SQL Server using TSQL syntax and executed there

Q13. What does the Access ANSI-92 option change?

- A. It changes supported Access SQL syntax conventions, including wildcards
- B. It creates a pass-through query automatically
- C. It converts the engine to SQL Server
- D. It rewrites all VBA

Q14. What is query delegation in the context of Access and SQL Server?

- A. Access delegates all queries to the local database
- B. Access tries to convert and run the query on the server, if possible
- C. Access always pulls data locally before processing
- D. SQL Server delegates queries back to Access

Q15. What is the main reason for the default SSMS setting "Prevent saving changes that require table recreation"?

- A. Prevents accidental data entry errors in user tables
- B. Stops table deletions
- C. Prevents structural changes that could disrupt constraints, indexes, or dependencies
- D. Blocks changing table names

Q16. Where should foreign keys for tables migrated into one SQL Server database be enforced?

- A. Only in each Access form
- B. Only in the retired Access backend
- C. Nowhere once the tables are linked
- D. In the SQL Server database after being defined there

Q17. Which of the following statements is TRUE regarding NULL and empty string in Access and SQL Server?

- A. They are different and treated separately in both environments
- B. NULL and empty string are the same in both
- C. SQL Server does not support NULLs
- D. Access treats both as NULL

Q18. Why review existing queries before changing an Access database's ANSI syntax mode?

- A. It always deletes the tables
- B. Existing wildcard expressions can behave differently
- C. It automatically changes all passwords
- D. It turns every query into VBA

Q19. If an AI tool suggests a T-SQL translation of an Access query, what should you do?

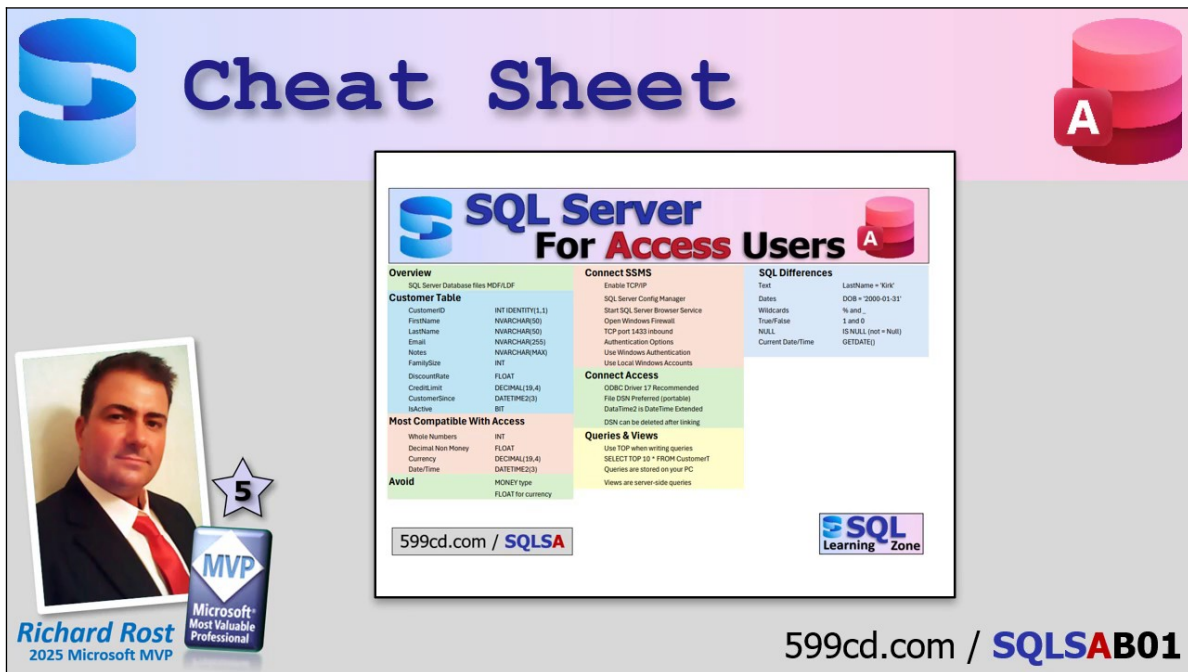
- A. Assume it is correct without reading it
- B. Treat it as a replacement for backups
- C. Inspect and test it against the intended behavior
- D. Run every generated change on production first

13. Questions and Answers (45:30)

This question-and-answer lesson addresses issues raised while Beginner Level 1 was being released. It reinforces the division between Access and SQL Server, clarifies connection security and edition choices, and corrects several details from earlier demonstrations. The supplied student questions are summarized by topic so the guidance also works as a reference.

Use the course resources

Richard introduces a downloadable SQL Server for Access Users cheat sheet covering the sample table, suitable data types, connection basics, and SQL differences. Find it under the Beginner Level 1 course resources on his website. It is a companion reference that can evolve as the series develops, not a replacement for the explanations in the lessons.



The cheat sheet is titled "SQL Server For Access Users" and is presented as a slide. It includes a large "S" logo on the left and a red "A" logo on the right. The central content is organized into several sections:

- Overview:** SQL Server Database Files MDF/LDF
- Customer Table:** A table with columns: CustomerID (INT IDENTITY(1,1)), FirstName (NVARCHAR(50)), LastName (NVARCHAR(50)), Email (NVARCHAR(255)), Notes (NVARCHAR(MAX)), FamilySize (INT), DiscountRate (FLOAT), CreditLimit (DECIMAL(19,4)), CustomerSince (DATETIME2(3)), and IsActive (BIT).
- Connect SSMS:**
 - Enable TCP/IP
 - SQL Server Config Manager
 - Start SQL Server Browser Service
 - Open Windows Firewall
 - TCP port 1433 (Inbound)
 - Authentication Options
 - Use Windows Authentication
 - Use Local Windows Accounts
- Connect Access:**
 - ODBC Driver 17 Recommended
 - File DSN Preferred (portable)
 - Data Stored in Data Warehouse
 - DSN can be deleted after linking
- Queries & Views:**
 - Use TOP when writing queries
 - SELECT TOP 10 FROM Customer
 - Queries are stored on your PC
 - Views are server-side queries
- SQL Differences:**
 - Text: LenName = 'Kim'
 - Dates: DOB = '2009-03-01'
 - Wildcards: % and _
 - True/False: 1 and 0
 - NULL: IS NULL (not = Null)
 - Current DateTime: GETDATE()
- Most Compatible With Access:**
 - Whole Numbers: INT
 - Decimal Non Money: FLOAT
 - Currency: DECIMAL(19,4)
 - Date/Time: DATETIME2(3)
- Avoid:**
 - MONEY type
 - FLOAT for currency

At the bottom left, there is a photo of Richard Rost, a Microsoft MVP, with a star icon and the text "Richard Rost 2025 Microsoft MVP". At the bottom right, the URL "599cd.com / SQLSA" is displayed.

00:01:00 The course resources include a SQL Server for Access Users cheat sheet

Can SQL passwords be kept out of the saved Access file?

Yes. The discussed developer technique prompts for credentials when the application starts, opens a connection in code, and allows subsequent operations to reuse the authenticated connection. Avoiding a saved password in a DSN or linked-table definition reduces the exposure created by distributing that password inside the front-end file.

This still requires authentication and secure connection management. A password held in memory is not a claim that all risks disappear. Custom login forms, VBA, and runtime connection handling belong to later developer lessons. No unshown implementation is required for Beginner Level 1.

Authentication, permissions, and remote use

For this local-network course, Windows Authentication uses the Windows identity already signed in. SQL Server must still recognize an authorized login or group and apply database permissions. An Access application that opens without a second password prompt is not necessarily anonymous; it commonly uses this existing identity.

No prompt does not mean public access

The source also discusses shared application accounts and the public role. **Technical clarification:** granting permissions to public does not let unauthenticated people on the network connect. A connection still authenticates. Shared credentials and broadly granted rights can weaken individual accountability, so they are not equivalent to properly assigned user or group access.

Group-based permissions are easier to maintain as a team grows. Assign suitable rights to an accounting, sales, or management group, then manage its membership rather than duplicating every permission for each person. A small setup can use individual accounts. The detailed security design is developed later.

What about tablets and users outside the office?

The course focuses on Access and SQL Server communicating over a trusted local network, preferably wired. Directly exposing a home or office database port to the internet is not the next beginner step. Richard points to hosted SQL services and running the Access application through Remote Desktop as alternative approaches, with their own configuration and security requirements.

A tablet still needs an appropriate application interface or remote session; SQL Server alone does not provide the Access screens. The source mentions Azure and hosted SQL providers as separate deployment topics. Windows or other integrated identity options depend on the remote environment; SQL authentication is not universally the only possible remote method.



Tip from Rick

Keep the first working setup local and understandable. Remote access is a separate deployment decision; do not assume that opening a firewall port gives you a complete, secure application.

Choose an edition for its actual purpose

Express is the free entry edition used throughout the course. It supports real small applications as well as learning, within its edition limits. Its feature and resource limits do not mean that a beginner must buy a larger edition before creating a useful Access backend.

Developer editions are for development and testing, not production. They expose capabilities for building and evaluating applications, but a free Developer installation is not a production-license substitute. **Standard** and **Enterprise** are paid production editions with different capacities and features. **Azure SQL** is a family of hosted database offerings rather than an Express instance that you install on a local PC.

Version-specific correction

The recording refers to Express's older 10 GB per-database limit. For SQL Server 2025, used in the installation lesson, Microsoft lists a **50 GB maximum relational database size** for Express. Other limits still apply. SQL Server 2025 also distinguishes Standard Developer and Enterprise Developer editions. Check the edition and version you actually deploy; the development-only licensing distinction remains important.

This correction was checked against Microsoft's SQL Server 2025 edition documentation on September 28, 2026. It updates the version-specific fact while preserving the lesson's advice: use Express for this course, and choose another edition only when your requirements justify it.

Other operating systems and tools

SQL Server is software running on a supported operating system, not an operating system itself. Linux and container deployments exist, but the instructor does not teach their installation here. This course stays with Windows, Access, and SSMS. Other management tools and database engines are outside the demonstrated setup.

SQL Server fits the author's Access and Windows experience, including ODBC, Windows Authentication, and existing business infrastructure. MySQL and PostgreSQL are other capable engines; choosing SQL Server for this course is not a claim that every other backend is unsuitable.

When is migration worth doing?

One person, one PC, or several computers?

A modest application used by one person on one computer may work perfectly well with an Access backend, or even a single Access file. Moving to SQL Server is not mandatory simply because it is available. Benefits become more compelling with shared data across computers, larger workloads, or more demanding permission requirements.

Richard is a solo user with several computers, including a separate database machine. That still creates a network workload where server-side processing can help. Evaluate the workload and security needs rather than counting people alone. A migration also adds administration, backup, and maintenance responsibilities.

What remains in Access?

SQL Server stores data, enforces configured rules, processes queries, and manages access. Access supplies forms, reports, buttons, navigation, and the user-facing application. Users arranging reports or running saved application queries are still working through the front end. SQL Server does not automatically replace that interface.

The comparison with C# is about development tradeoffs. A custom application can offer extensive control, but Access already supplies data binding, forms, reports, and navigation. The instructor recalls the work involved in trying to build database functionality himself before discovering how much Access provided. Choose tools for the application and the skills available, rather than assuming a custom executable is always better.

SharePoint is a different kind of backend

SharePoint lists can support some small, simple Access scenarios, particularly where an organization already uses SharePoint. They do not provide the same relational-engine features or workload behavior as SQL Server. Richard favors SQL Server for more demanding relational applications; the course does not attempt a SharePoint migration or a universal comparison of every platform.

Host, storage, and table-design questions

The database engine must run as a service on a supported host. An ordinary storage-only NAS is not enough just because it can hold an Access backend file. Some devices offer additional compute or virtualization capabilities, but that requires a supported deployment rather than treating a network share as the engine.

For a small office, a modest PC may suffice. Richard describes a reasonable processor, an SSD, and about **16 GB of RAM** as a practical example, not a performance guarantee based on user count. Keep the host available when users need it and evaluate the actual queries, data volume, backups, and concurrency.

Keep transaction logging

Do not try to disable transaction logs to avoid SSD writes. Logging is central to database consistency and recovery. For the small workloads discussed, SSD wear is not a reason to remove that mechanism. Choose suitable storage, monitor it, back up the database, and manage the recovery model and log growth appropriately. Detailed recovery administration is a later topic.

Understand designer-driven recreation

The SSMS setting that prevents saving requiring table recreation exists to protect data and dependencies. A designer operation can build a replacement table, copy rows, and replace the original. Disabling the setting in a disposable training database does not make every proposed structural change safe for production.

Date-only and date/time are different requirements

SQL Server date stores no time; datetime2 stores both, with the number in parentheses controlling fractional-second precision. Choose according to the data meaning and client needs. A date/time column can hold midnight, but it can also contain other times that affect filters.



Tip from Rick

A BETWEEN range ending at midnight on the final date does not include the rest of that day. Think about the complete timestamp when defining a range; a date shown without a time can still have a time component.

NULL bits, identity values, and migration corrections

Avoid an unintended third state in checkbox fields

A nullable SQL Server bit can contain 0, 1, or NULL. The source reports confusing checkbox behavior and write conflicts when NULL reaches some Access-linked-table workflows. If the design requires a strict yes/no value, use **NOT NULL** and an appropriate default, after resolving any existing NULL rows.

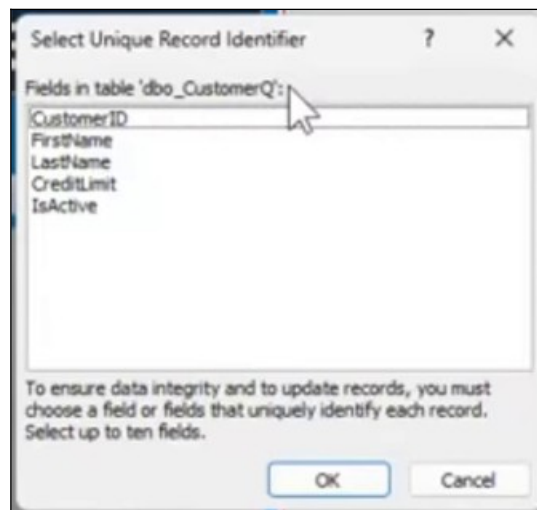
Technical clarification: a default of 0 alone does not prohibit NULL. It supplies a value for an insert that omits that column; an explicitly supplied NULL can still be stored if the column allows it. Use the required-value constraint when the rule is “never NULL.”

Identity is not a numbering cleanup tool

Identity generates successive values; it does not by itself enforce uniqueness. The primary-key or unique constraint establishes that rule. Gaps are normal. Resetting identity values is possible, but it is not the SQL Server equivalent of routine Compact and Repair and can create conflicts with existing rows or relationships. No reseeding procedure is taught here.

Correct the unique-record-identifier selection

When linking CustomerQ in Lesson 11, the dialog asked for fields that uniquely identify a row. Richard acknowledges that he initially treated it as a field-output picker. **CustomerID alone** is the appropriate identifier for that simple view. Selecting every field creates an unnecessarily broad row-identification condition and is not the general instruction to follow.



00:40:05 The instructor revisits the unique-record-identifier dialog

The handbook applies that correction in Lesson 11 as well. The source explains that the selection does not create a server index; it tells Access how to identify rows when building updates. More complex views require their own valid identifier and updateability checks.

Improve responsiveness and plan the next steps

Why can several combo boxes slow a form?

Each combo box may query its row source to fetch a list. Several large lists loaded together can create significant network traffic and waiting, especially on a slow connection. A text box generally displays a value already in the form's current record, so it does not have the same list-fetching workload.

Use efficient row-source queries, appropriate indexes, and smaller relevant result sets. Cascading choices can load only the cities for the selected state, for example. The lesson describes this pattern rather than supplying a new VBA implementation. Later lessons develop query and form optimization in more detail.

Can Access form criteria filter on the server?

Yes, with a suitable query and connection design. Server-executed queries, parameters, and views used within appropriate filtering queries can reduce the returned rows. A view itself is not a parameterized form: the surrounding request carries the criteria. Verify that the intended filtering is executed remotely instead of assuming that every expression can be delegated.

Must dozens of tables be rebuilt by hand?

No. Creating a few tables manually teaches data types and structure, but migration tools can help with a larger application. The source names **SQL Server Migration Assistant for Access (SSMA)** and suitable import/export tools. Review what a tool creates and verify the migrated data, keys, relationships, and application behavior. This lesson introduces the options rather than performing a full automated migration.

Drivers, ports, and dialects still need attention

Driver 17 and Driver 18 can both be appropriate when supported and configured for the environment. Check security defaults and test the connection instead of treating the version number as a cure-all. Similarly, firewall requirements depend on the actual instance and port configuration. Reuse the diagnostic distinctions from Lesson 08.

Core SQL concepts transfer between engines, but functions, joins, date handling, and other dialect details still differ. The purpose of these clarifications is to build understanding before adding automation. Richard invites questions and corrections as the course develops, and the next recording reviews the level and the planned learning path.

Quiz

LESSON 13

Q1. Which method avoids storing a separate SQL password in an Access front end when suitable Windows identities and permissions are configured?

- A. Saved SQL credentials in every link
- B. Windows Authentication
- C. Anonymous database access
- D. A shared administrator password

Q2. Why do most Access developers use SQL Server Express for learning and small deployments?

- A. It is feature-limited and harder to install
- B. It allows web-based front ends by default
- C. It is free, easy to install, and adequate for small applications
- D. It doesn't require network connectivity

Q3. What licensing distinction matters when choosing SQL Server Developer for a live business application?

- A. Developer is production-only
- B. Express requires a paid license
- C. Express cannot be used for learning
- D. Developer is for development and testing, not production

Q4. Which of the following statements about combo boxes in Access linked to SQL Server backends is true?

- A. Combo boxes may load slowly because each one queries SQL Server when the form opens
- B. Combo boxes always load instantly regardless of backend
- C. Combo boxes never affect performance
- D. Combo boxes work faster with server datasets than with local tables

Q5. Before disabling the SSMS designer's table-recreation warning in a training database, what should you understand?

- A. It is required for all exports
- B. Some designer changes rebuild the table and can affect data or dependencies
- C. It changes all default values
- D. It improves transaction-log speed

Q6. What is the main role of Access when paired with SQL Server as a backend?

- A. To serve as an additional database server
- B. To manage server security
- C. To provide the front end application interface for users
- D. To act as cloud storage

Q7. Why is SharePoint generally not recommended as a backend for sophisticated Access applications?

- A. It only supports single-user access
- B. SharePoint is not compatible with Access front ends
- C. SharePoint doesn't support data storage
- D. SharePoint is designed for document management and lacks mature relational database features

Q8. What is a benefit of using groups instead of individual users for security permissions in SQL Server?

- A. Assigning permissions to groups simplifies management as users come and go
- B. Groups allow user-specific encryption only
- C. Groups cannot be assigned database access
- D. There is no benefit; user accounts are required for all permissions

Q9. A modest single-user Access application already works well on one PC. Which conclusion is reasonable?

- A. Enterprise is mandatory
- B. An Access backend may remain appropriate unless other requirements justify migration
- C. Cloud hosting is mandatory
- D. SharePoint is mandatory

Q10. Why should transaction logs for SQL Server NOT be disabled on SSDs?

- A. They are optional for small systems
- B. Disabling them improves server speed
- C. They are essential for data protection, consistency, and recovery
- D. They only affect Access applications, not SQL Server

Quiz (continued)

LESSON 13

Q11. Why is an ordinary storage-only NAS insufficient by itself to run SQL Server?

- A. It cannot store any files
- B. It replaces transaction logging
- C. NAS and SQL Server are the same product
- D. SQL Server needs a supported host that runs the database-engine service

Q12. Which tools can assist with migrating many Access tables to SQL Server?

- A. SSMA for Access or suitable import/export tools, followed by validation
- B. Only manual recreation
- C. Only a screenshot of each table
- D. Only rewriting every form

Q13. What kind of mistakes can allowing null values in SQL Server bit fields (used as checkboxes in Access) cause?

- A. No issues; nulls are always safe
- B. Write conflicts or confusing behavior in Access checkboxes
- C. Improved reporting capabilities
- D. Increased performance

Q14. If performance is poor when loading forms with combo boxes pulling data from SQL Server, what is a recommended solution?

- A. Increase the form's font size
- B. Use more combo boxes
- C. Limit the number of records loaded or optimize the combo box's rowsource
- D. Use a different ODBC driver

Q15. When can a runtime credential prompt be useful with SQL Server authentication?

- A. Whenever no authentication is desired
- B. Only if every user is a server administrator
- C. Only if all tables are local
- D. When SQL authentication is needed but credentials should not be saved in the front-end file

Q16. Which statement best describes SQL Server?

- A. It is a server application that runs on Windows (and Linux in recent versions)
- B. It is an operating system
- C. It is a cloud-only tool
- D. It can only be accessed via command line tools

Q17. Why can sending form criteria in a server-executed query improve efficiency?

- A. It must increase network traffic
- B. The server can filter before returning the result
- C. It automatically creates reports
- D. It removes all capacity limits

Q18. What should guide the choice of ODBC driver for an Access deployment?

- A. Only its version number
- B. Older always means safer
- C. Support, compatibility, security configuration, and testing
- D. Access supports only Driver 13

Q19. What should you expect when moving SQL between database engines?

- A. All engines ignore SQL standards
- B. Access exactly matches every engine
- C. Every engine uses identical functions
- D. Core SQL concepts transfer, but dialect-specific syntax still needs review

Q20. Which hardware statement is reasonable for a small SQL Server Express deployment?

- A. A modest supported PC with adequate RAM and SSD may suffice; workload testing decides
- B. It always requires a rackmount server
- C. It always requires cloud hosting
- D. User count alone guarantees performance

14. Review (11:20)

Beginner Level 1 establishes a working connection between an Access front end and a SQL Server backend. You installed Express and SSMS, explored the server, designed a customer table, entered and imported sample rows, configured connectivity, and linked live data into Access.



00:00:03 Beginner Level 1 closes with a review and a look ahead

What you can now recognize and use

Access remains the place for forms, reports, and the user interface. SQL Server provides the data engine and its configured rules and permissions. You have seen primary keys, identity columns, suitable data types, local and remote connections, Windows Authentication, ODBC file DSNs, and the difference between an imported copy and a live link.

You also built a server view, linked that view into Access, compared Access SQL with T-SQL, and created a first pass-through query. These are foundations for moving appropriate filtering and processing near the data while keeping the Access application familiar to users.

The next beginner topics

The recording previews primary and foreign keys, one-to-many relationships, junction tables, normalization, lookup tables, and referential integrity. It also introduces the planned move into joins and aggregates such as COUNT, SUM, AVG, and GROUP BY. Those topics are a roadmap, not additional procedures taught in this level.

Continue at the pace that suits you

Expert and developer directions

Expert material is planned to go deeper into relational design, indexing, query tuning, and backup and restore. Developer material focuses on Access VBA and ADO connections, DSN-less connection strings, runtime credential handling, pass-through queries in code, stored procedures, triggers, transactions, and concurrency. The exact course sequence can change as Richard incorporates student feedback.

The usual dividing line is whether substantial VBA is required. Small optional programming examples may appear earlier, but this beginner level does not require you to implement the later developer techniques before continuing.

Ways to continue learning

Richard describes ordering individual courses from the website, the Learning Connection program for receiving classes on a chosen schedule, membership options with class benefits, and the Online Learning Partner option for access to an included course library while subscribed. These are different purchasing and access models; choose according to your pace and needs.

Prices, preorder dates, discounts, and membership benefits mentioned in the recording describe the offer at recording time. Consult the current website terms before purchasing rather than treating those amounts as a permanent handbook offer. Beginner Level 1 itself was released as a free introduction to the setup.

Feedback and course updates

Use the course survey to explain what worked, what was confusing, and what you would like covered next. Comments and questions help shape later lessons. The website mailing list also offers course updates with frequency preferences. The recording points to the Order, Learning Connection, Online Learning Partner, and Survey pages for these next steps.



Tip from Rick

You have a working foundation. Practice the setup and the query differences in your learning database, then use the next level to deepen the design and performance skills that make the system reliable.

Thank you for working through SQL Server for Microsoft Access Users, Beginner Level 1. Live long, and prosper.

Course Outline

Introduction (14:13)

- Course purpose and prerequisites
- The lesson sequence

01. Welcome to SQL Server (26:46)

- Engine and front-end roles
- Security, performance, and growth

02. Installing SQL Server (24:14)

- Express and SSMS installation
- Instances and local authentication

03. Exploring the Server Interface (17:09)

- Object Explorer and databases
- Tables, views, and server objects

04. Creating a Customer Table (20:31)

- Keys, identity, and text columns
- Column names and NULL rules

05. Additional Data Types (20:15)

- Numbers, dates, and bit
- Schemas, constraints, and indexes

06. Entering and Importing Data (14:13)

- Editing rows and handling errors
- Preparing clipboard data in Excel

07. Date/Time Precision (9:51)

- datetime2 precision
- ALTER TABLE and metadata refresh

08. Remote Connections (28:18)

- TCP/IP, Browser, and firewall
- SQL and Windows login mapping

09. Windows Logins (16:35)

- Local Windows account setup
- Verify the recognized login

10. Connecting Access (24:10)

- ODBC file DSNs and live links
- Date/Time Extended compatibility

11. Queries and Views (22:50)

- Query designer and saved views
- Filtering, ordering, and view links

12. SQL Differences (27:43)

- SQL dialect differences
- Pass-through queries and delegation

13. Questions and Answers (45:30)

- Security, editions, and deployment
- Performance and course corrections

14. Review (11:20)

- Level 1 recap
- Further learning and feedback

Quiz Answers

Use these answers after you have completed the lesson quizzes.

01. Welcome to SQL Server (26:46)

1-C; 2-B; 3-A; 4-B; 5-B; 6-B; 7-C; 8-C; 9-C; 10-B; 11-C; 12-C; 13-B; 14-B; 15-B; 16-C

02. Installing SQL Server (24:14)

1-B; 2-C; 3-B; 4-C; 5-C; 6-B; 7-C; 8-C; 9-B; 10-B; 11-C; 12-C; 13-B; 14-C; 15-C

03. Exploring the Server Interface (17:09)

1-A; 2-B; 3-A; 4-A; 5-B; 6-B; 7-A; 8-A; 9-B; 10-B; 11-B; 12-A; 13-B; 14-A; 15-A

04. Creating a Customer Table (20:31)

1-A; 2-B; 3-C; 4-D; 5-A; 6-B; 7-C; 8-D; 9-A; 10-B; 11-C; 12-D; 13-A; 14-B; 15-C

05. Additional Data Types (20:15)

1-B; 2-C; 3-D; 4-A; 5-B; 6-C; 7-D; 8-A; 9-B; 10-C; 11-D; 12-A; 13-B; 14-C; 15-D

06. Entering and Importing Data (14:13)

1-C; 2-D; 3-A; 4-B; 5-C; 6-D; 7-A; 8-B; 9-C; 10-D; 11-A; 12-B

07. Date/Time Precision (9:51)

1-D; 2-A; 3-B; 4-C; 5-D; 6-A; 7-B; 8-C; 9-D; 10-A

Quiz Answers (continued)

08. Remote Connections (28:18)

1-A; 2-B; 3-C; 4-D; 5-A; 6-B; 7-C; 8-D; 9-A; 10-B; 11-C; 12-D; 13-A; 14-B; 15-C

09. Windows Logins (16:35)

1-B; 2-C; 3-D; 4-A; 5-B; 6-C; 7-D; 8-A; 9-B; 10-C

10. Connecting Access (24:10)

1-C; 2-D; 3-A; 4-B; 5-C; 6-D; 7-A; 8-B; 9-C; 10-D; 11-A; 12-B; 13-C; 14-D; 15-A

11. Queries and Views (22:50)

1-D; 2-A; 3-B; 4-C; 5-D; 6-A; 7-B; 8-C; 9-D; 10-A; 11-B; 12-C; 13-D; 14-A; 15-B

12. SQL Differences (27:43)

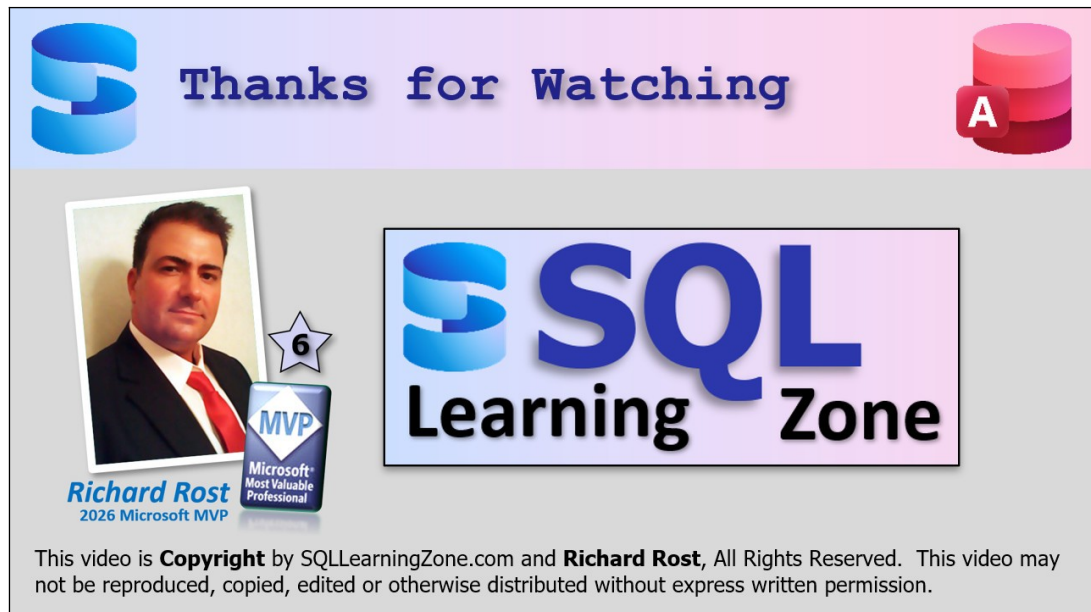
1-A; 2-B; 3-C; 4-D; 5-A; 6-B; 7-C; 8-D; 9-A; 10-B; 11-C; 12-D; 13-A; 14-B; 15-C; 16-D; 17-A; 18-B; 19-C

13. Questions and Answers (45:30)

1-B; 2-C; 3-D; 4-A; 5-B; 6-C; 7-D; 8-A; 9-B; 10-C; 11-D; 12-A; 13-B; 14-C; 15-D; 16-A; 17-B; 18-C; 19-D; 20-A

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