

Module 1

Introduction to Microsoft SQL
Server

Module Overview

- The Basic Architecture of SQL Server
- SQL Server Editions and Versions
- Getting Started with SQL Server Management Studio

Lesson 1: The Basic Architecture of SQL Server

- Relational Databases
- About the Course Sample Database
- Client Server Databases
- Queries

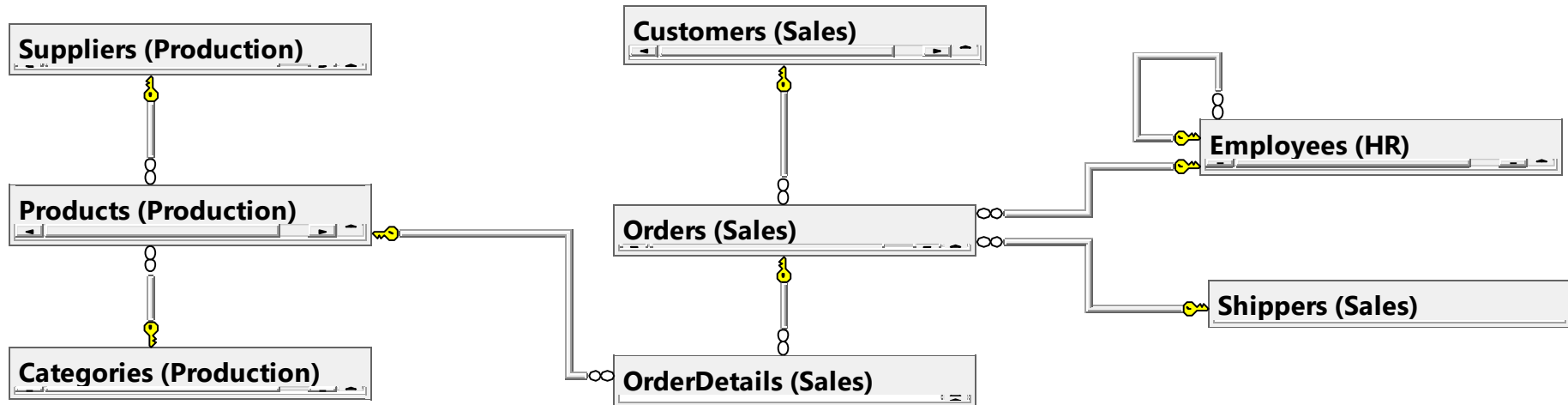
Relational Databases

- SQL Server is a relational database management system
- Databases contain objects and data
- Each database has multiple tables
- Tables are joined together to extract meaningful information



About the Course Sample Database

- TSQL Database



Client Server Databases

- The client software is separate from the server database engine
- Client/Server refers to the separation of functionality—not where the software is actually located
- Client software and server database engine can be on the same machine
- Databases can access data in other databases over a network

Queries

- T-SQL is a set-based language
- T-SQL is written in scripts with **.sql** extension
- **GO** keyword separates batches

```
CREATE TABLE dbo.Employees
(
    EmployeeID int PRIMARY KEY,
    LastName nvarchar(25),
    FirstName nvarchar(25)
);
GO

INSERT INTO dbo.Employees
    (EmployeeID, LastName, FirstName)
VALUES
    (121, N'O'Neil, N'Carlene');
GO
```

Lesson 2: SQL Server Editions and Versions

- SQL Server Versions
- SQL Server Editions

SQL Server Versions

- SQL Server Versions

| Version | Release Year |
|---------|--------------|
| 2017 | 2017 |
| 2016 | 2016 |
| 2014 | 2014 |
| 2008 R2 | 2010 |
| 2008 | 2008 |
| 2005 | 2005 |
| 2000 | 2000 |
| 7.0 | 1998 |
| 6.5 | 1996 |
| 6.0 | 1995 |
| 4.2.1 | 1994 |
| 4.2 | 1992 |
| 1.1 | 1991 |
| 1.0 | 1989 |

SQL Server Editions

- SQL Server Editions

| Main Editions | Other Editions |
|-----------------------|----------------|
| Enterprise | Developer |
| Standard | Express |
| Business Intelligence | Compact |
| Azure SQL Database | |
| | |

Lesson 3: Getting Started with SQL Server Management Studio

- Starting SSMS
- Connecting to SQL Server
- Working with Object Explorer
- Script Files and Projects
- Executing Queries
- Using SQL Server Technical Documentation
- Demonstration: Introducing Microsoft SQL Server

Starting SSMS

- Launch SSMS from the Windows Start screen
 - Or type **SSMS** into the Search Programs and Files box
- Connect to a SQL Server instance
 - Or work disconnected
- Settings available in Tools, Options include:
 - Fonts and colors, line numbering, and word wrap
 - Which windows open when SSMS is launched
- Useful windows include:
 - Query Editor
 - Object Explorer
 - Solution Explorer

Connecting to SQL Server

- Connecting to SQL Server requires three pieces of information:
 - Instance name
 - Use the form host/instance, except for the default instance
 - Database name
 - A default database can be assigned to a logon
 - Authentication
 - Windows Authentication or SQL Server Authentication
 - Account must be provisioned by a database administrator

Working with Object Explorer

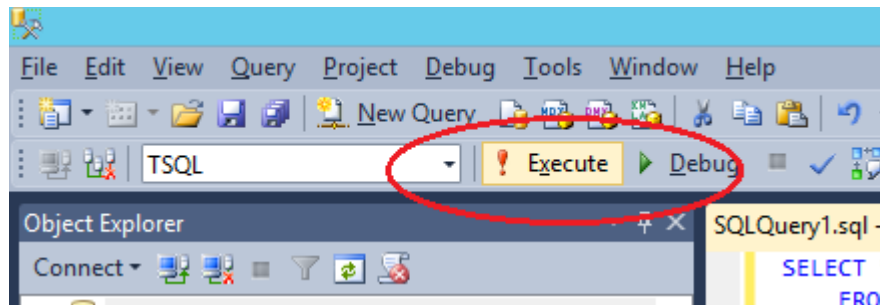
- Object Explorer is a hierarchical, graphical view of SQL Server objects
- Explore objects in the default instance, and additional named instances
- Right-click for context-sensitive menu with frequently used commands
- Create T-SQL scripts of object definitions, and send to the query window, clipboard or a file
- Start a new query window by right-clicking a database
 - Changing the selected object does not change the existing connection

Script Files and Projects

- T-SQL scripts are text files with a .sql extension
- SSMS can open, edit, and execute code in script files
- SSMS allows you to organize script files into:
 - Solutions (*.ssmssln)
 - Projects (*.ssmssqlproj)
- Opening a solution is a convenient way to open all relevant files
- You will use projects on this course

Executing Queries

- To execute queries in SSMS:
 - Open a saved script, or write a new query
 - Three ways to execute the query:
 - From the Query menu, select **Execute**
 - Press **F5**
 - Click the **Execute** toolbar button



Using SQL Server Technical Documentation

- Product documentation for SQL Server is online in Microsoft Docs
- Help is also available from:
 - SSMS query window (context-sensitive when you highlight a keyword)
 - SSMS Help menu
 - Windows Start menu

Demonstration: Introducing Microsoft SQL Server

In this demonstration you will see how to:

- Use SSMS to connect to an on-premises instance of SQL Server
- Explore databases and other objects
- Work with T-SQL scripts

Lab: Working with SQL Server Tools

- Exercise 1: Working with SQL Server Management Studio
- Exercise 2: Creating and Organizing T-SQL Scripts

Logon Information

Virtual machine: **20761C-MIA-SQL**

User name: **ADVENTUREWORKS\Student**

Password: **Pa55w.rd**

Estimated Time: 30 minutes

Lab Scenario

The Adventure Works Cycles Bicycle Manufacturing Company has adopted SQL Server as its relational database management system. You need to retrieve business data from several SQL Server databases. In the lab, you will begin to explore the new environment, and become acquainted with the tools for querying SQL Server.

Module Review and Takeaways

- Review Question(s)