Implementing In-Memory SQL Database Objects

Getting Started

Overview

Database development is more than just creating a table with rows and columns. This course introduces features and technologies for developing a database. It includes topics including logical table design, table implementation, implementing data integrity with constraints, creating indexes, and designing and implementing views.

To complete the labs in this course, you will need to set up a lab environment that includes the **AdventureWorksDW** sample database. This document explains how to achieve this using a local instance of SQL Server and downloading and attaching the sample database.

Each module in this course consists of:

- An online video presentation.
- A hands-on lab.

The recommended approach for this course is to complete each module in turn; first watching the online presentation, then completing the lab, and finally answering the review questions for that module. Then, when you're comfortable with what you've learned, move onto the next module and repeat the process. You can complete the course as quickly or slowly as you want, though we recommend pacing yourself to ensure that you absorb the lessons from each module before progressing to the next one.

Each lab consists of a document that contains a number of progressively complex challenges, which you should be able to complete by using the information that was presented in the online presentation as well as the references to further information that are provided in the lab itself. Suggested solution scripts are provided for each lab.

What You'll Need

- A Microsoft Windows* computer

- If you do not have an edition of SQL Server, you will need to install SQL Server Evaluation Edition

Setup SQL Server

Install SQL Server

1. Browse to https://www.microsoft.com/en-GB/evalcenter/evaluate-sql-server-2016 and download and run the installer.
2. Choose a **Custom** installation option, and download the installation media to your local computer.
3. If the **SQL Server Installation Center** window does not appear, in the folder where you extracted the files, run **Setup.exe**. Then, in the **SQL Server Installation Center** window, on the **Installation** page, click **New SQL Server stand-alone installation or add features to an existing installation**.
4. In the SQL Server Setup window; if there are any issues, resolve them by installing any prerequisite software or making any required configuration changes. Then re-run setup.
5. On the **License Terms** page, accept the license terms and click **Next**.
6. On the **Feature Selection** page, select all features and ensure that the installation location has sufficient disk space. Then click **Next**.
7. On the **Instance Configuration** page, select **Default instance** and click **Next** (note, if you wish, you can install a named instance instead of a default instance – if you do this, when you connect to your SQL Server instance you must specify the name **(local)*instance_name***.)
8. On the **Server Configuration** page, do not change the default selections (unless you are comfortable configuring service accounts). Just click **Next**.
9. On the **Database Engine Configuration** page, select **Mixed Mode (SQL Server authentication and Windows authentication)**, enter a suitable password for the system administrator account (and make a note of it!), and click **Next**.
10. When installation is complete. Click **Close**.
11. Close the SQL Server Installation center window.
12. Restart your computer if you have been prompted to do so.
13. Start SQL Server Installation Center.
14. On the **Installation** page, click **Install SQL Server Management Tools**.
15. Click **Download SQL Server Management Studio**.
16. Click **Save**.
17. When the download had completed, click **Run**.
18. Click **Install**.
19. If a User Account Control **dialog box** appears, click **Yes**.
20. Pin the **SQL Server 2016 Management Studio** app to the taskbar – this will make it easier to find when you want to use it.

Install the AdventureWorksDW Sample Database

1. Browse to http://msftdbprodsamples.codeplex.com/releases/view/55330, and click the link to download **AdventureWorksDW2012 Data File** (be careful to choose this download and not any

of the others!) Save the **AdventureWorksDW2012_Data.mdf** file to the **Data** folder for the SQL Server instance you installed (by default, this is C:\Program Files\Microsoft SQL Server\MSSQL13.MSSQLSERVER\MSSQL\DATA). Note, you may be prompted to confirm that you want to grant your user account permission to access this location.

2. Start SQL Server Management Studio, and when prompted, enter or select the following options and click **Connect**:
    - **Server type**: Database Engine
    - **Server name**: (local) (or (local)*instance_name* if you installed a named instance)
    - **Authentication**: SQL Server Authentication
    - **Login**: sa
    - **Password**: *The password you specified during installation*
3. If the Object Explorer pane is not visible, on the **View** menu, click **Object Explorer**. Then in Object Explorer, right-click **Databases** and click **Attach**.
4. In the **Attach Databases** dialog box, under the **Databases to attach** list, click **Add**. Then browse to the folder where you downloaded **AdventureWorksDW2012_Data.mdf**, select it, and click **OK**.
5. In the **Attach Databases** dialog box, click **OK**.
6. In Object Explorer, expand the databases folder and verify that the **AdventureWorksDW2012** database is listed.
7. On the toolbar, click **New Query**. Then in the **Available Databases** list, ensure that **AdventureWorksDW2012** is select and type the following query: SELECT * FROM dbo.DimProduct;
8. On the toolbar, click **Execute**, and verify that a table of product data is returned.
9. Close SQL Server Management Studio without saving any files.