

Querying with Transact-SQL

Lab 7 – Using Table Expressions

# Overview

In this lab, you will use views, temporary tables, variables, table-valued functions, derived tables, and common table expressions to retrieve data from the **AdventureWorksLT** database.

Before starting this lab, you should view **Module 7 – Using Table Expressions** in the Course *Querying with Transact-SQL*. Then, if you have not already done so, follow the instructions in the **Getting Started** document for this course to set up the lab environment.

If you find some of the challenges difficult, don’t worry – you can find suggested solutions for all of the challenges in the **Lab Solution** folder for this module.

# What You’ll Need

* An Azure SQL Database instance with the **AdventureWorksLT** sample database. Review the **Getting Started** document for information about how to provision this.

# Challenge 1: Retrieve Product Information

Adventure Works sells many products that are variants of the same product model. You must write queries that retrieve information about these products

## 1. Retrieve product model descriptions

Retrieve the product ID, product name, product model name, and product model summary for each product from the **SalesLT.Product** table and the **SalesLT.vProductModelCatalogDescription** view.

## 2. Create a table of distinct colors

**Tip**: Review the documentation for [Variables](https://technet.microsoft.com/en-us/library/ff848809.aspx) in Transact-SQL Language Reference.

Create a table variable and populate it with a list of distinct colors from the **SalesLT.Product** table. Then use the table variable to filter a query that returns the product ID, name, and color from the **SalesLT.Product** table so that only products with a color listed in the table variable are returned.

## 3. Retrieve product parent categories

The **AdventureWorksLT** database includes a table-valued function named **dbo.ufnGetAllCategories**, which returns a table of product categories (for example ‘Road Bikes’) and parent categories (for example ‘Bikes’). Write a query that uses this function to return a list of all products including their parent category and category.

# Challenge 2: Retrieve Customer Sales Revenue

Each Adventure Works customer is a retail company with a named contact. You must create queries that return the total revenue for each customer, including the company and customer contact names.

**Tip**: Review the documentation for the [WITH common\_table\_expression](https://technet.microsoft.com/en-us/library/ms175972.aspx) syntax in the Transact-SQL language reference.

## 1. Retrieve sales revenue by customer and contact

Retrieve a list of customers in the format *Company* (*Contact Name*) together with the total revenue for that customer. Use a derived table or a common table expression to retrieve the details for each sales order, and then query the derived table or CTE to aggregate and group the data.

# Next Steps

Well done! You’ve completed the lab, and you’re ready to learn how to summarize data by specifying grouping sets and pivoting data in **Module 8 – Grouping Sets and Pivoting Data** in the Course *Querying with Transact-SQL*.