

ARMDD

EXERCISE 1 TUTORIAL

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DEI-ISEP

Visual Studio 2022

Open recent

▲ This week

- Deployment Tutorial.sln 10/2/2023 7:28 PM
C:\Temp\PL3\Deployment Tutorial

- SQL Server Import and Export Tutorial.sln 10/2/2023 5:02 PM
C:\Temp\PL3\SQL Server Import and Export Tutorial

- Teste.sln 10/2/2023 4:30 PM
C:\Temp\PL3\Teste

▲ This month

- SSIS ETL Tutorial.sln 9/25/2023 7:47 PM
C:\Temp\PL2\SSIS ETL Tutorial

▲ Older

- Teste.sln 11/10/2022 5:23 PM
C:\Users\PauloOliveira\source\repos\Teste

Let's start by creating a new project for the tutorial in *Visual Studio*.

Get started



Clone a repository

Get code from an online repository like GitHub or Azure DevOps



Open a project or solution

Open a local Visual Studio project or .sln file



Open a local folder

Navigate and edit code within any folder



Create a new project

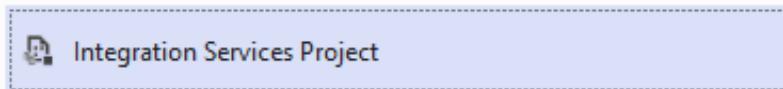
Choose a project template with code scaffolding to get started



[Continue without code →](#)

Create a new project

Recent project templates



Integration Services Project Wizard



All languages

All platforms

All project types



Import from Server (Multidimensional)

Creates a multidimensional project by extracting the metadata from an existing multidimensional on an Analysis Services server.



Integration Services Project (Azure-Enabled)

This project may be used for building high performance data integration and workflow solutions that can also be run/debugged on SSIS Platform-as-a-Service (PaaS) in Azure Data Factory.



Integration Services Project



This project may be used for building high performance data integration and workflow solutions that can be run on SSIS catalog, including extraction, transformation, and loading (ETL) operations for data warehousing.



Integration Services Import Project Wizard

A wizard that assists you in creating a new Integration Services (SSIS) project that is based on an existing one. Import from a project deployment file (.ispac extension) or from an Integration Services catalog on an instance of SQL Server.



Analysis Services Tabular Project

An Analysis Services project for creating tabular models.



Import from Server (Tabular)

Creates a tabular project by extracting the metadata from an existing tabular database on an Analysis Services server.

Next

Select *Integration Services* as the template for the project.

Configure your new project

Integration Services Project

Project name

Location

Name the project as as *Data Mart*.

The location can be anywhere you want. The location C:\Temp\ARPAD will be used in this tutorial.

Solution name 

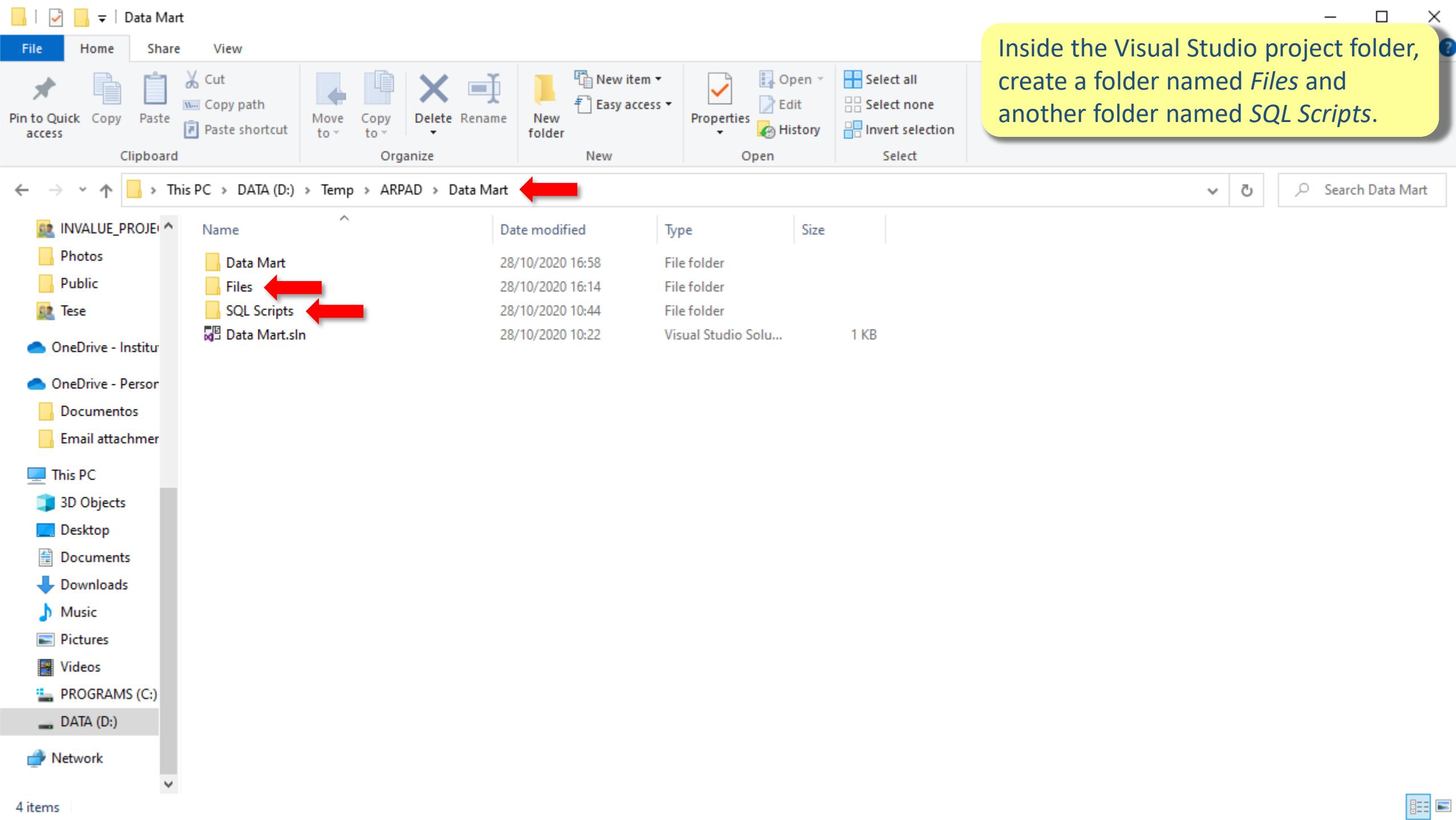
Place solution and project in the same directory

Project will be created in "C:\Temp\ARPAD\Data Mart\Data Mart\"

Back

Create





File | Home | Share | View

Cut | Copy path | Paste | Move to | Copy to | Delete | Rename | New folder | New item | Open | Select all | Properties | New | Open | Select | Invert selection

Pin to Quick access | Clipboard | Organize | New | Open | Select

This PC > DATA (D:) > Temp > ARPAD > Data Mart > Files

Search Files

INVALID_PROJECTS

Photos

Public

Tese

OneDrive - Institu

OneDrive - Perso

Documentos

Email attachmer

This PC

3D Objects

Desktop

Documents

Downloads

Music

Pictures

Videos

PROGRAMS (C:)

DATA (D:)

Network

7 items

BRAND.dat

CARD.dat

CATEGORY.dat

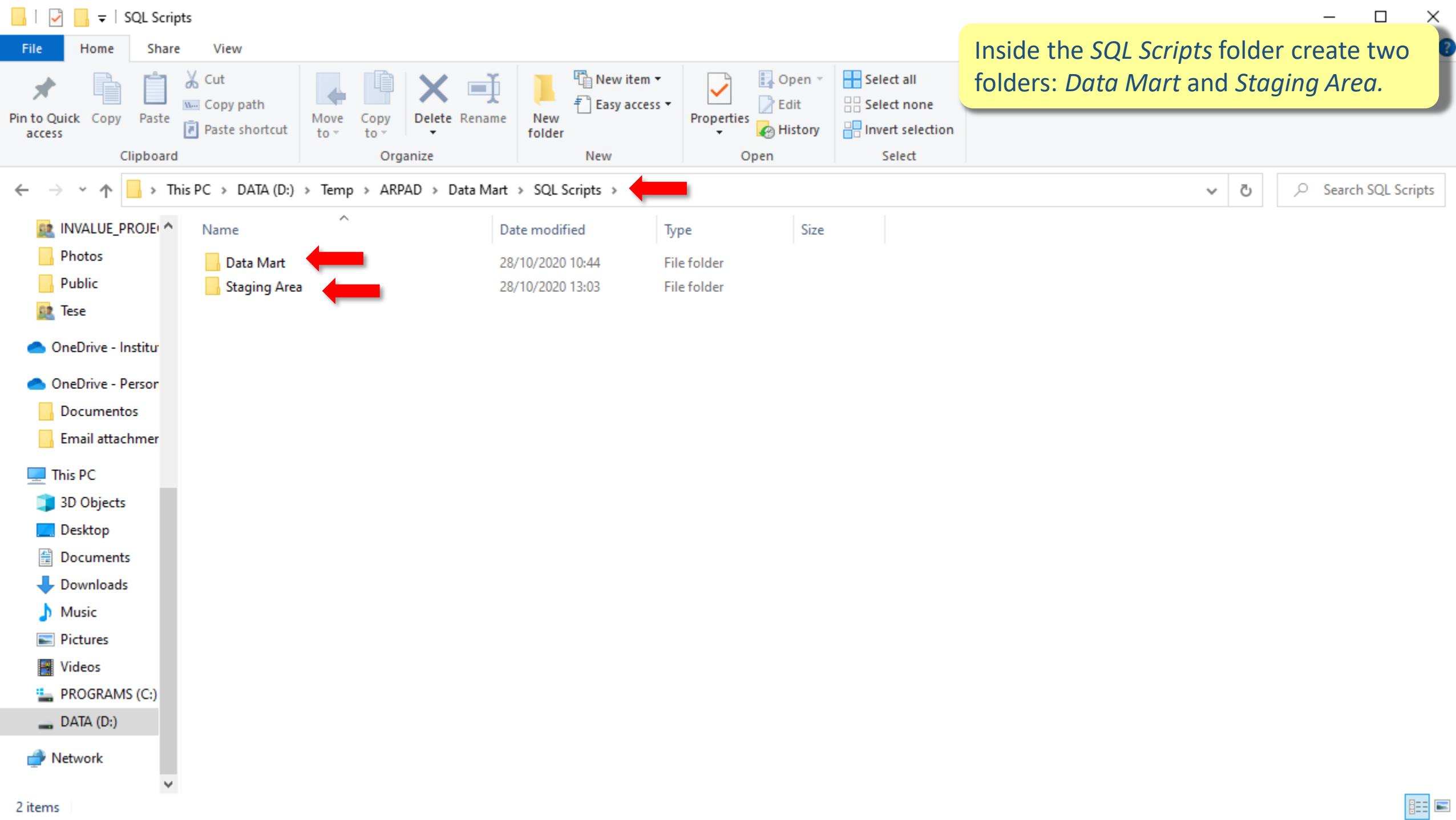
ITEM.dat

SUBCATEGORY.dat

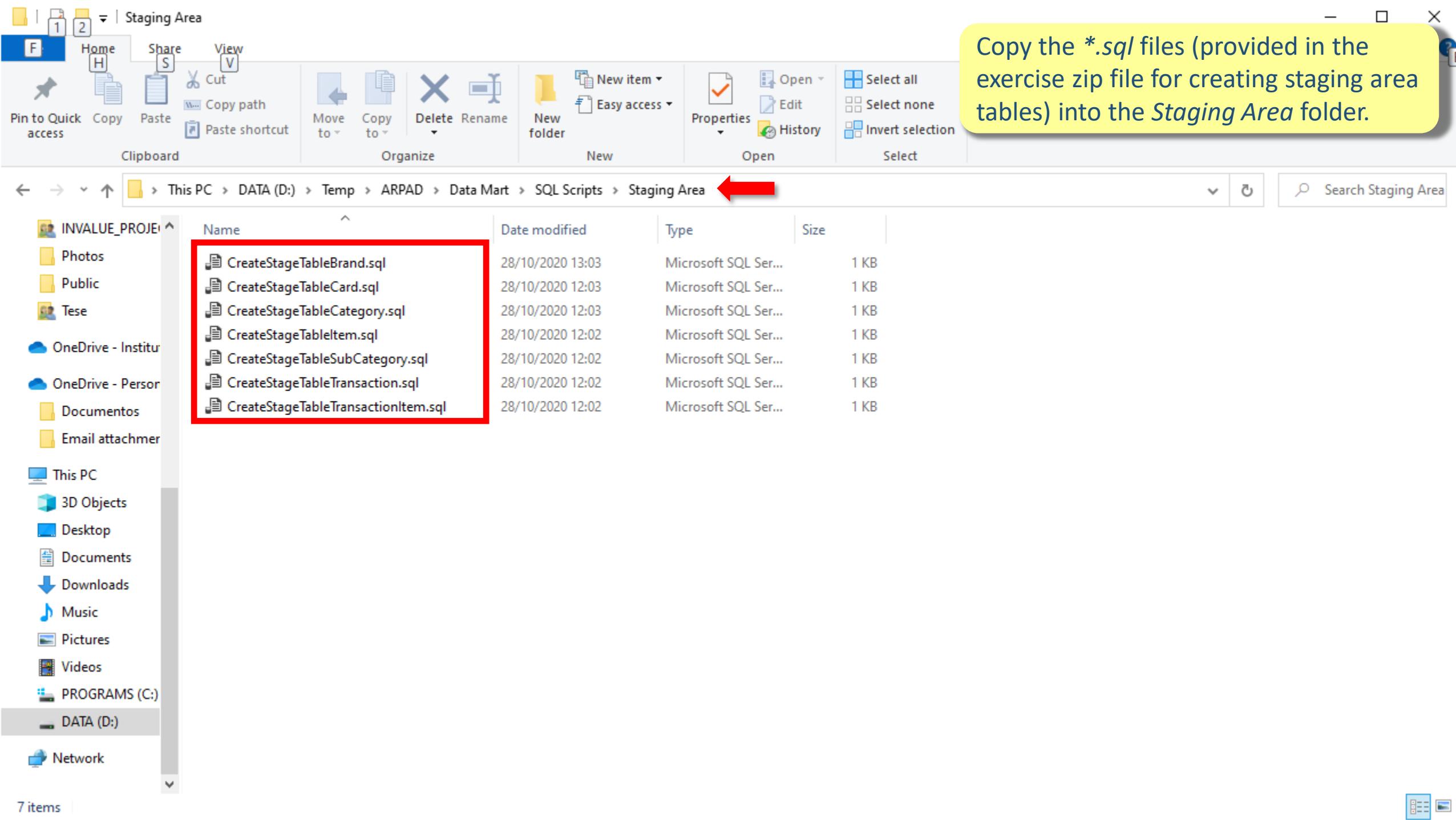
TRANSACTION.dat

TRANSACTION_ITEM.dat

Copy the *.dat files (provided in the exercise zip file) into the *Files* folder.



Copy the *.sql files (provided in the exercise zip file for creating staging area tables) into the *Staging Area* folder.



Data Mart

File Home Share View

Cut Copy Paste Delete Rename New folder Properties Select all

Copy path Paste shortcut Move to Copy to New item Open Select none Paste shortcut Invert selection

Clipboard Organize New Open Select

This PC > DATA (D:) > Temp > ARPAD > Data Mart > SQL Scripts > Data Mart

Search Data Mart

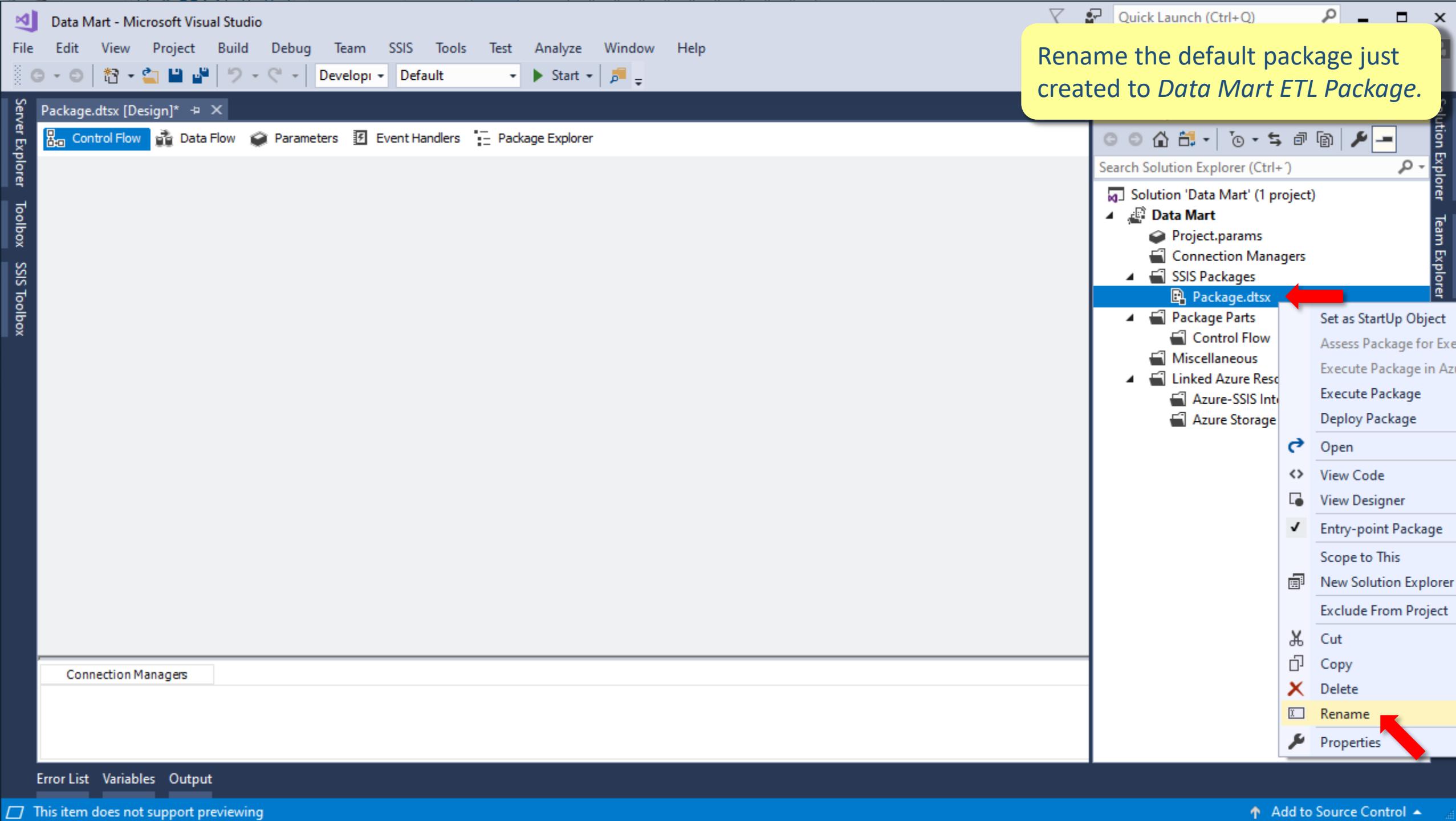
INVALUE_PROJECT

Photos Public Tese OneDrive - Institu OneDrive - Perso Documentos Email attachmer This PC 3D Objects Desktop Documents Downloads Music Pictures Videos PROGRAMS (C:) DATA (D:)

7 items

Copy the *.sql scripts files that you have created (for creating data mart tables) into the *Data Mart* folder.

Name	Date modified	Type	Size
CreateDimCard.sql	02/12/2019 10:21	Microsoft SQL Ser...	2 KB
CreateDimDate.sql	02/12/2019 10:32	Microsoft SQL Ser...	2 KB
CreateDimItem.sql	02/12/2019 10:28	Microsoft SQL Ser...	1 KB
CreateDimPaymentMethod.sql	02/12/2019 10:21	Microsoft SQL Ser...	1 KB
CreateDimStore.sql	02/12/2019 10:21	Microsoft SQL Ser...	1 KB
CreateDimTime.sql	02/12/2019 10:36	Microsoft SQL Ser...	1 KB
CreateFactSales.sql	02/12/2019 10:21	Microsoft SQL Ser...	1 KB



Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Develop Default Start

Solution Explorer

Search Solution Explorer (Ctrl+)

Solution 'Data Mart' (1 project)

Data Mart

- Project.params
- Connection Managers
- SSIS Packages
- Data Mart ETL Package.dtsx
- Package Parts
- Control Flow
- Miscellaneous
- Linked Azure Resources
- Azure-SSIS Integration Runtime
- Azure Storage

The purpose of what you going to do in the next slides is to:

- create the Staging Area database;
- Iterate through a set of SQL create table script files stored in a folder to create each table of the Staging Area database;

Connection Managers

Error List Variables Output

This item does not support previewing

Add to Source Control

Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Developer Default Start

Quick Launch (Ctrl+Q)

SSIS Toolbox

Search SSIS Toolbox

Favorites

- Data Flow Task
- Execute SQL Task**

Common

- Analysis Services Processing Task
- Bulk Insert Task
- Data Profiling Task**
- Execute Package Task
- Execute Process Task
- Expression Task
- File System Task
- FTP Task
- Hadoop File System Task
- Hadoop Hive Task
- Hadoop Pig Task
- Script Task
- Send Mail Task
- Web Service Task
- XML Task

Azure

Execute SQL Task

Executes SQL statements or stored procedures in a relational database. For example, truncate a table before starting a load, or create a foreign-key relationship after a load has completed.

Find Samples

Event Handlers Package Explorer

Drag an *Execute SQL Task* from the *SSIS Toolbox* onto the *Control Flow* area.

Server Explorer Solution Explorer

Toolbox Team Explorer

SSIS Toolbox Getting Started (SSIS) Properties

100%

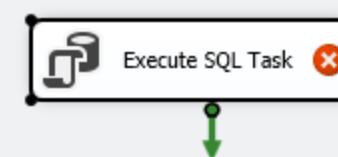
Right-click here to add a new connection manager to the SSIS package.

Error List Variables Output

Ready Add to Source Control

Package.dtsx [Design]*

Control Flow Data Flow Parameters Event Handlers Package Explorer



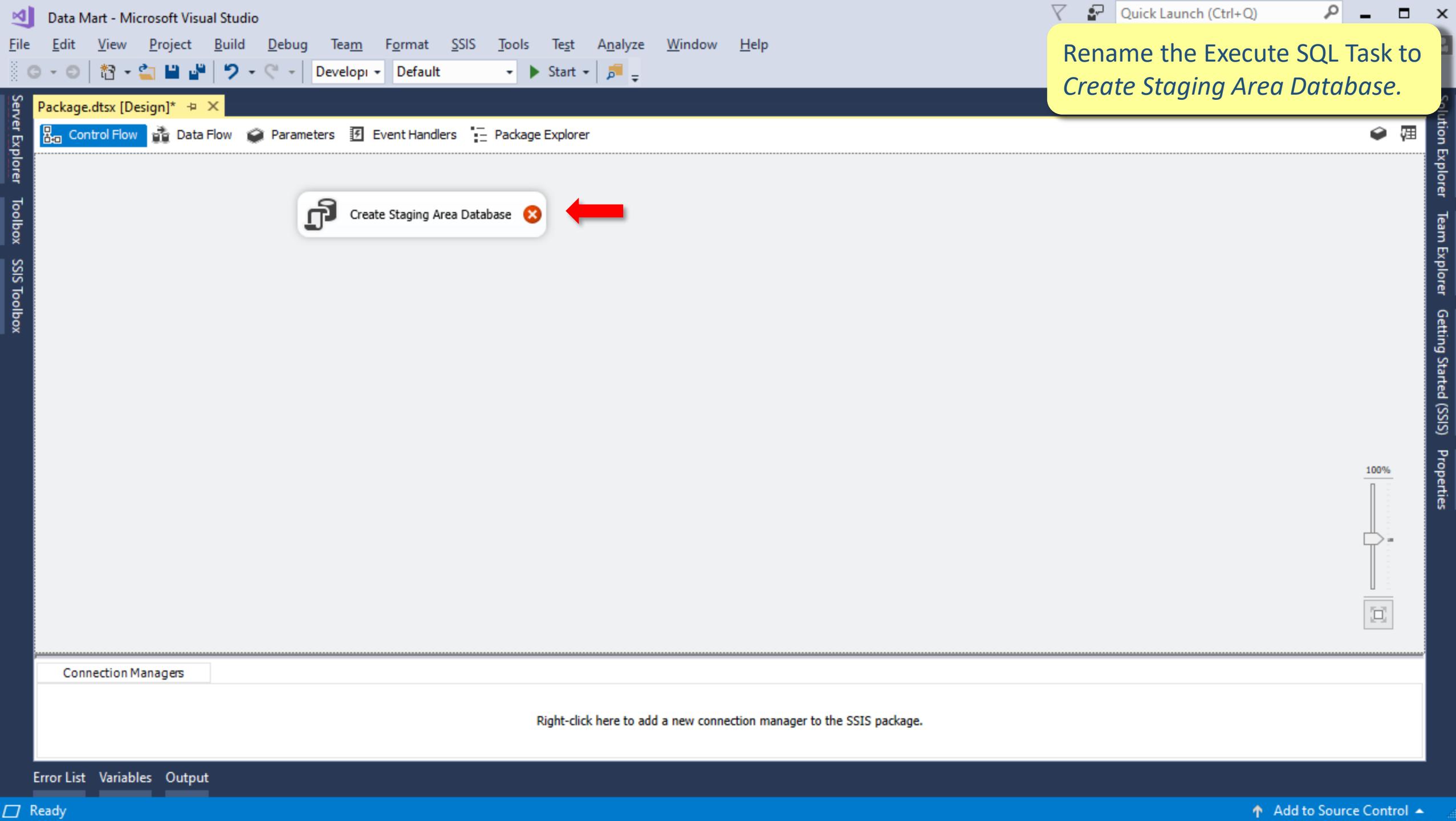
100%

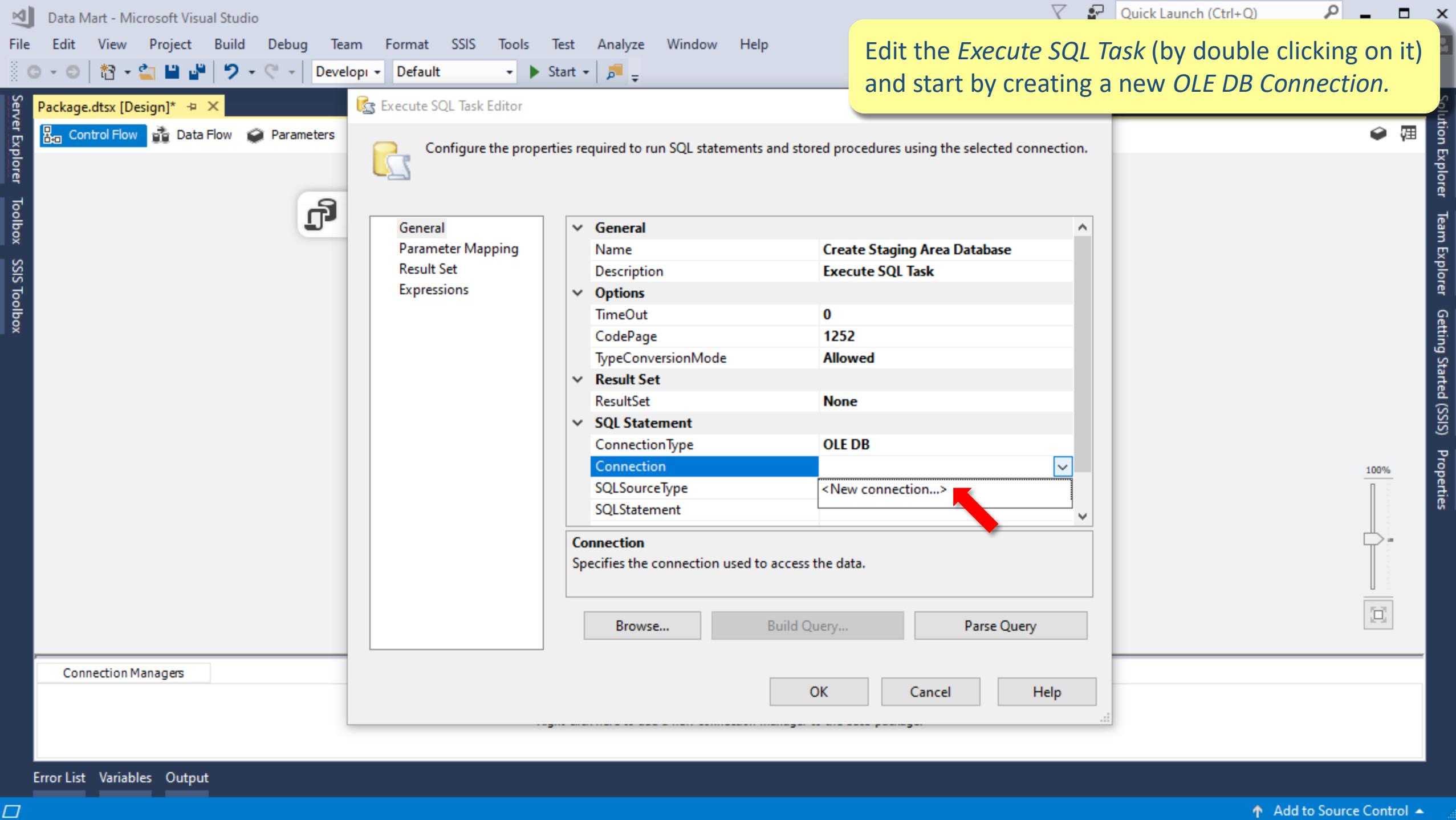


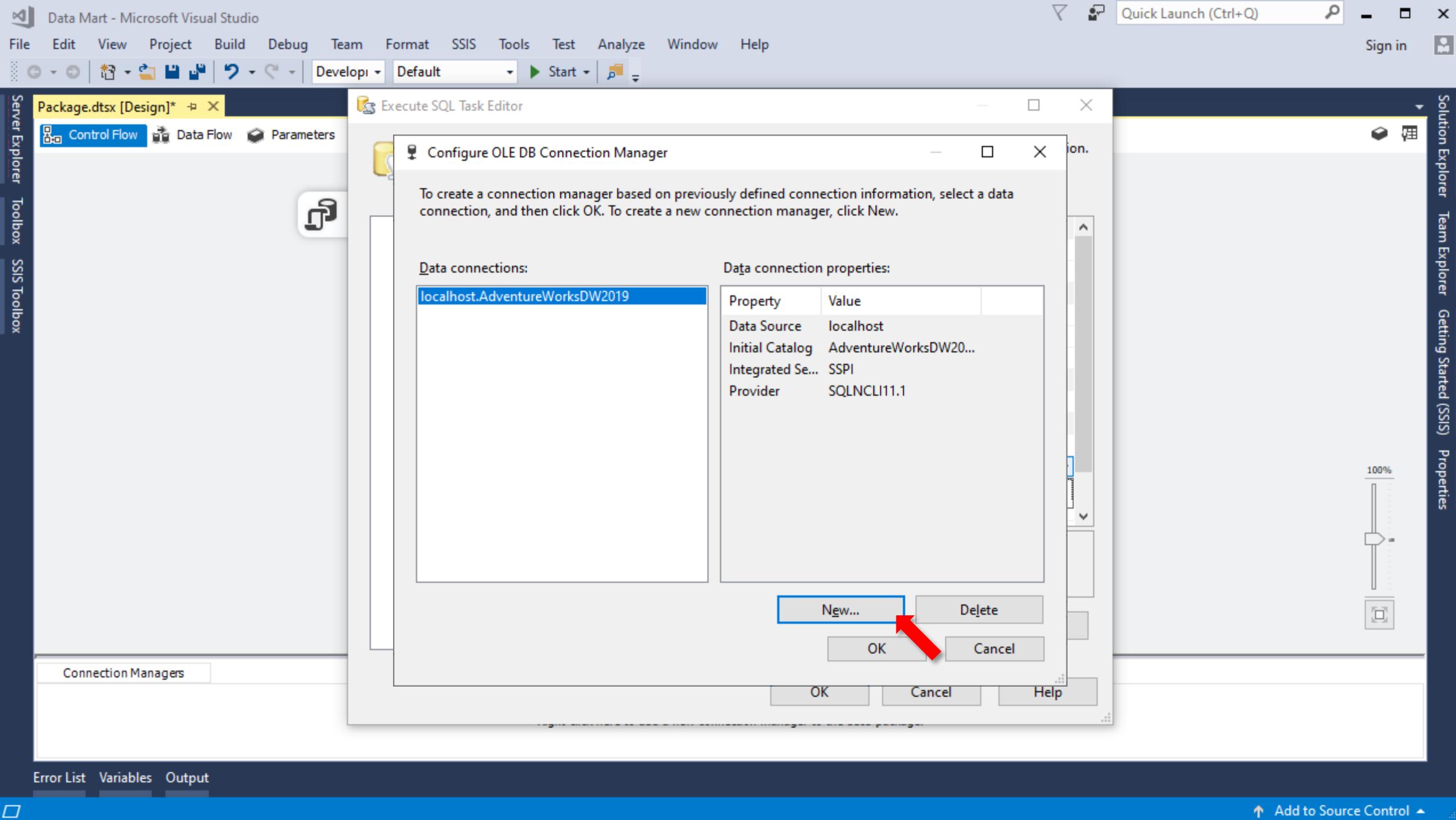
Connection Managers

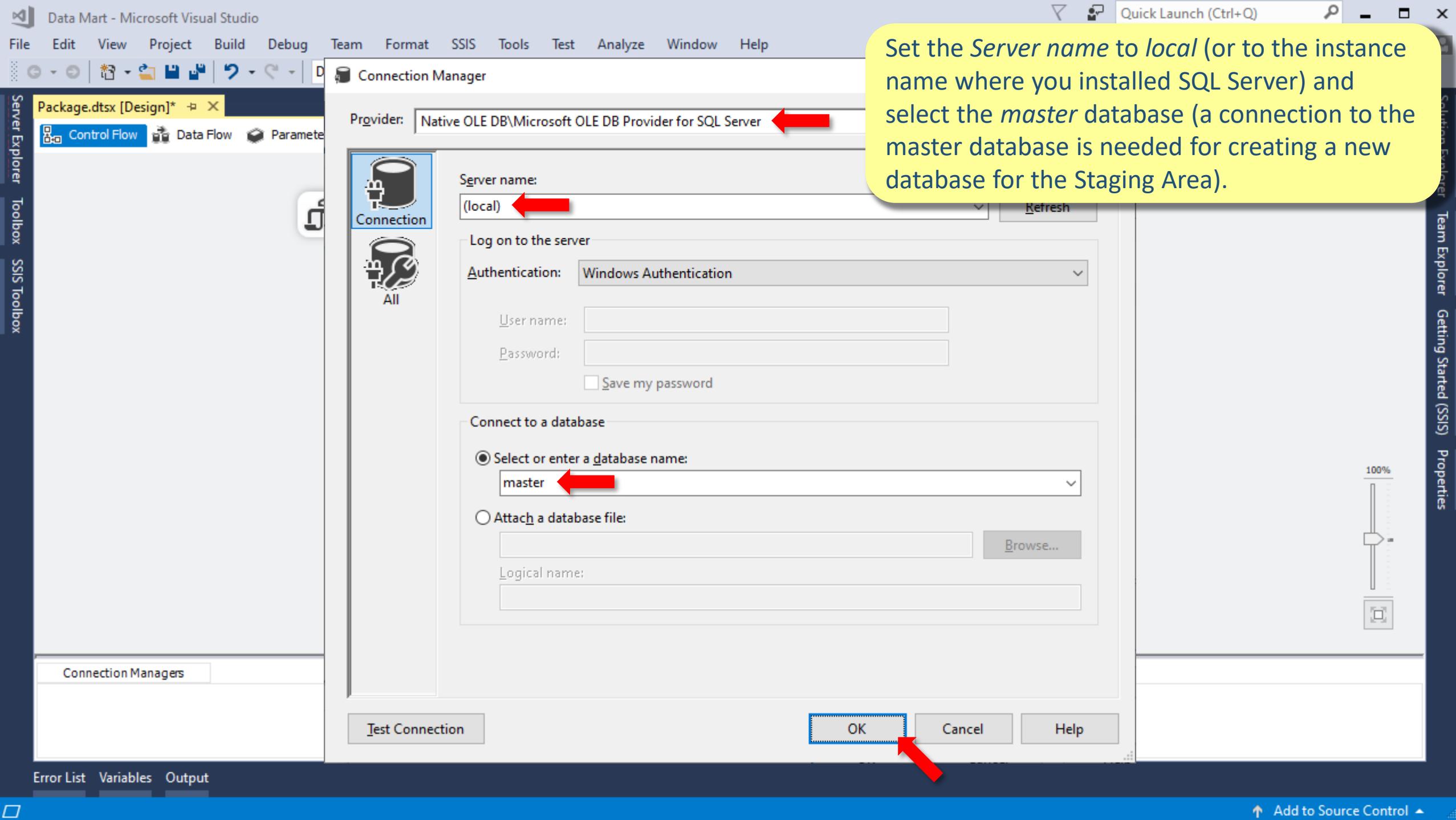
Right-click here to add a new connection manager to the SSIS package.

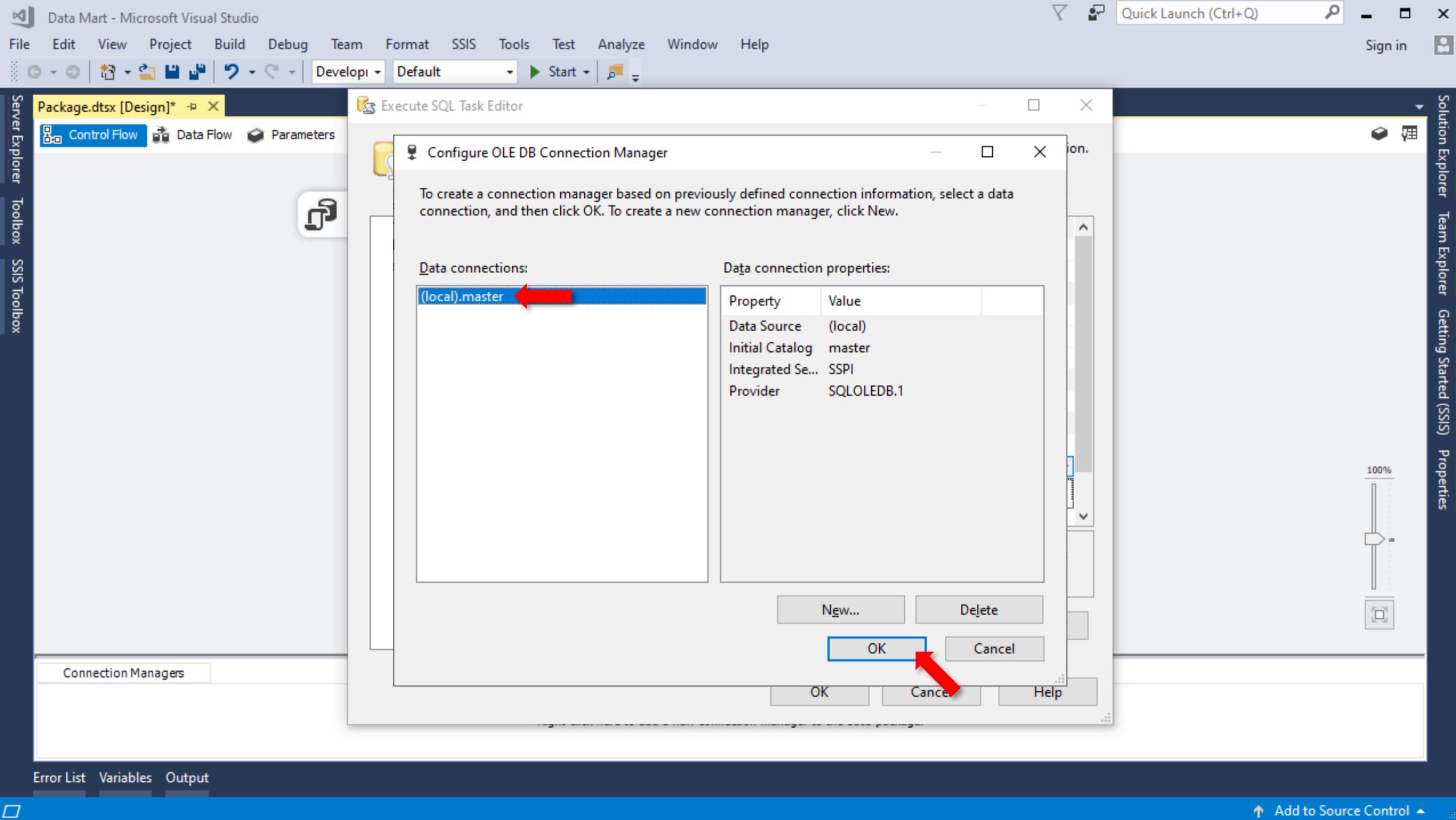
Error List Variables Output











Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team Format SSIS Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

Server Explorer Toolbox SSIS Toolbox

Package.dtsx [Design]*

Control Flow Data Flow Parameters

Execute SQL Task Editor

Configure the properties required to run SQL statements and stored procedures using the selected connection.

General Parameter Mapping Result Set Expressions

General Options Result Set SQL Statement

Name: Create Staging Area Database
Description: Execute SQL Task
TimeOut: 0
CodePage: 1252
TypeConversionMode: Allowed
ResultSet: None
ConnectionType: OLE DB
Connection: (local).master
SQLSourceType: Direct input
SQLStatement
IsQueryStoredProcedure: False
BypassPrepare: True

SQLStatement
Specifies the query to be run by the task.

Browse... Build Query... Parse Query

OK Cancel Help

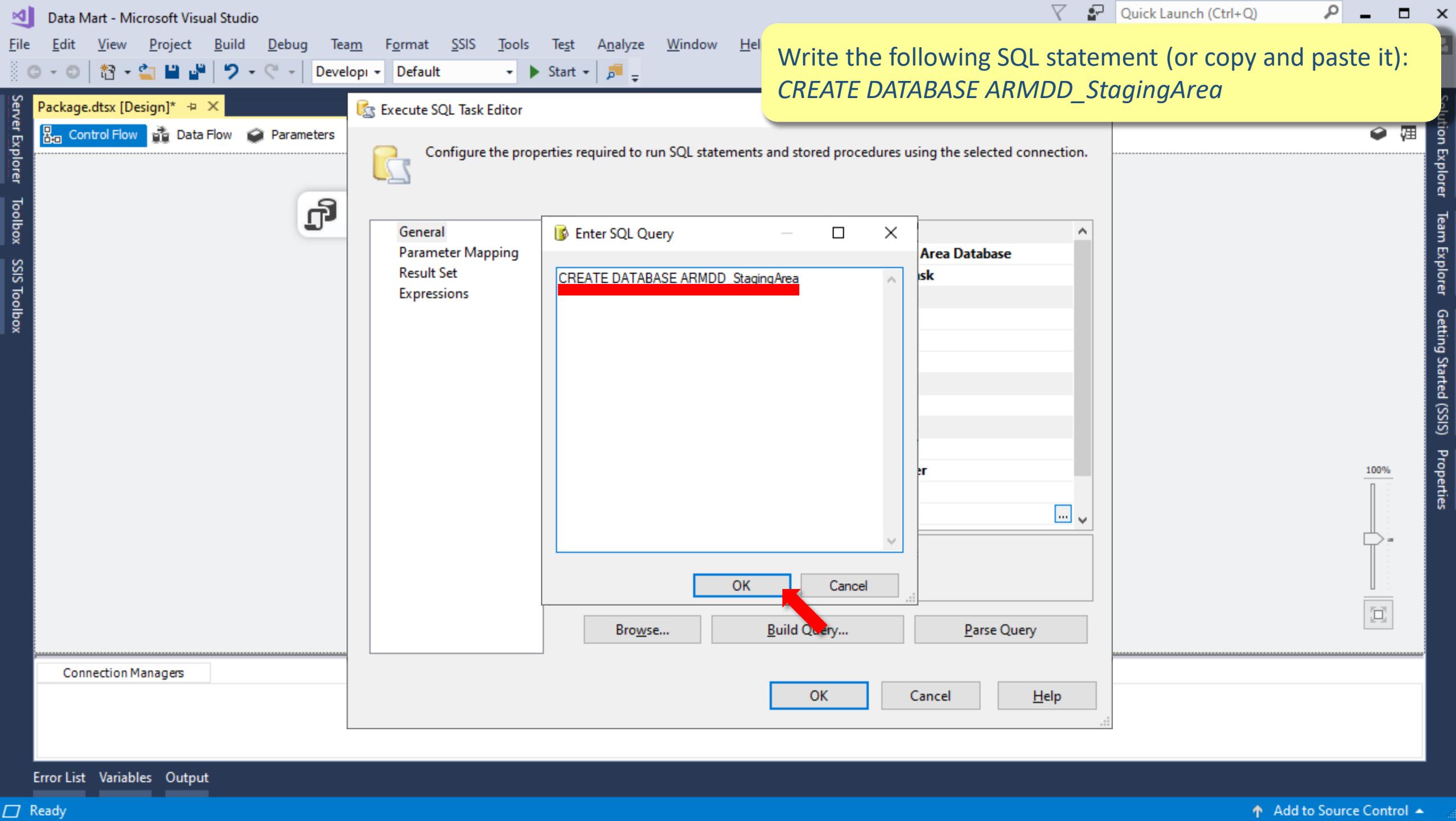
100%

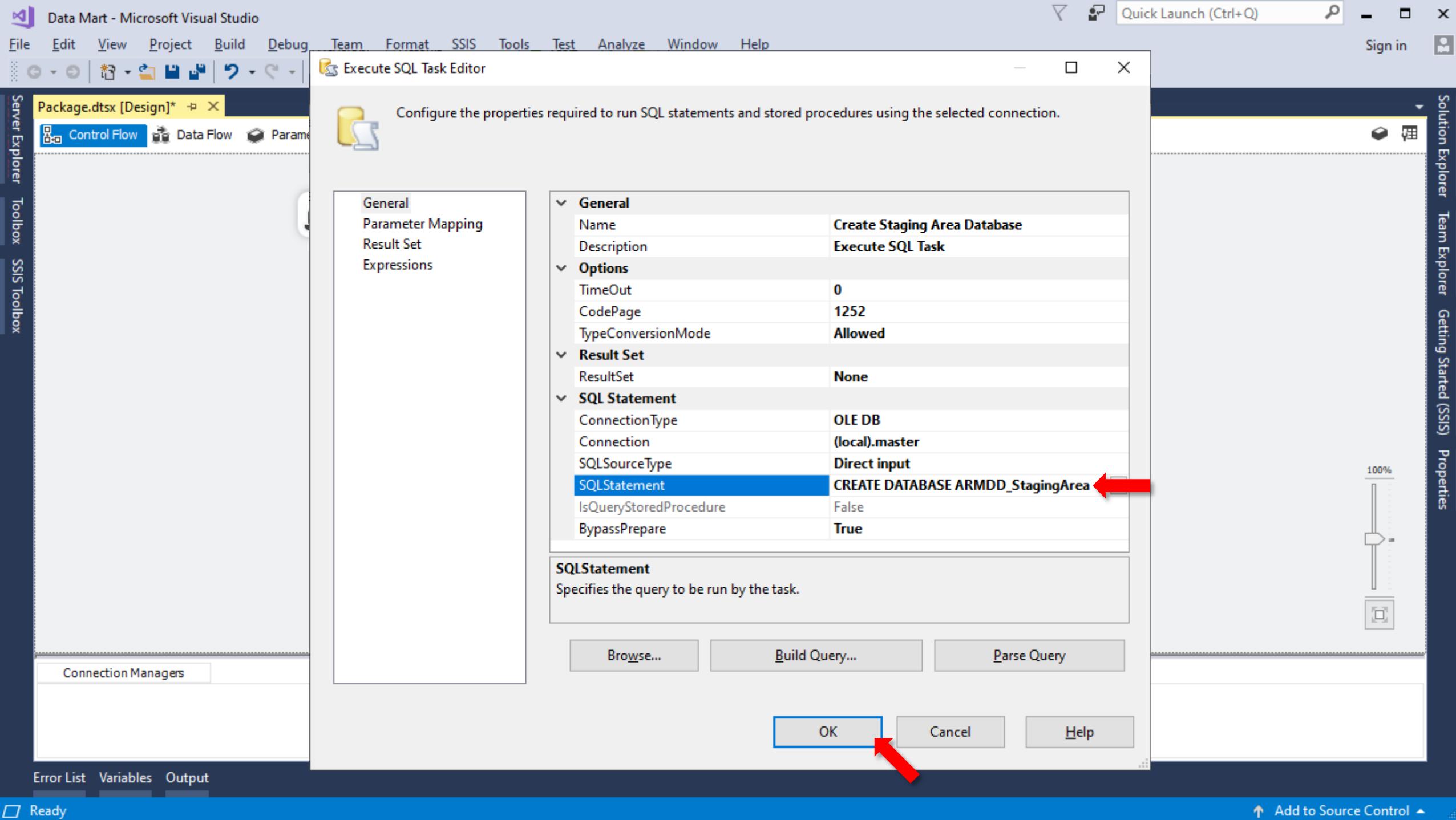
Edit the **SQL Statement** property in order to introduce the SQL statement for creating the Staging Area database.

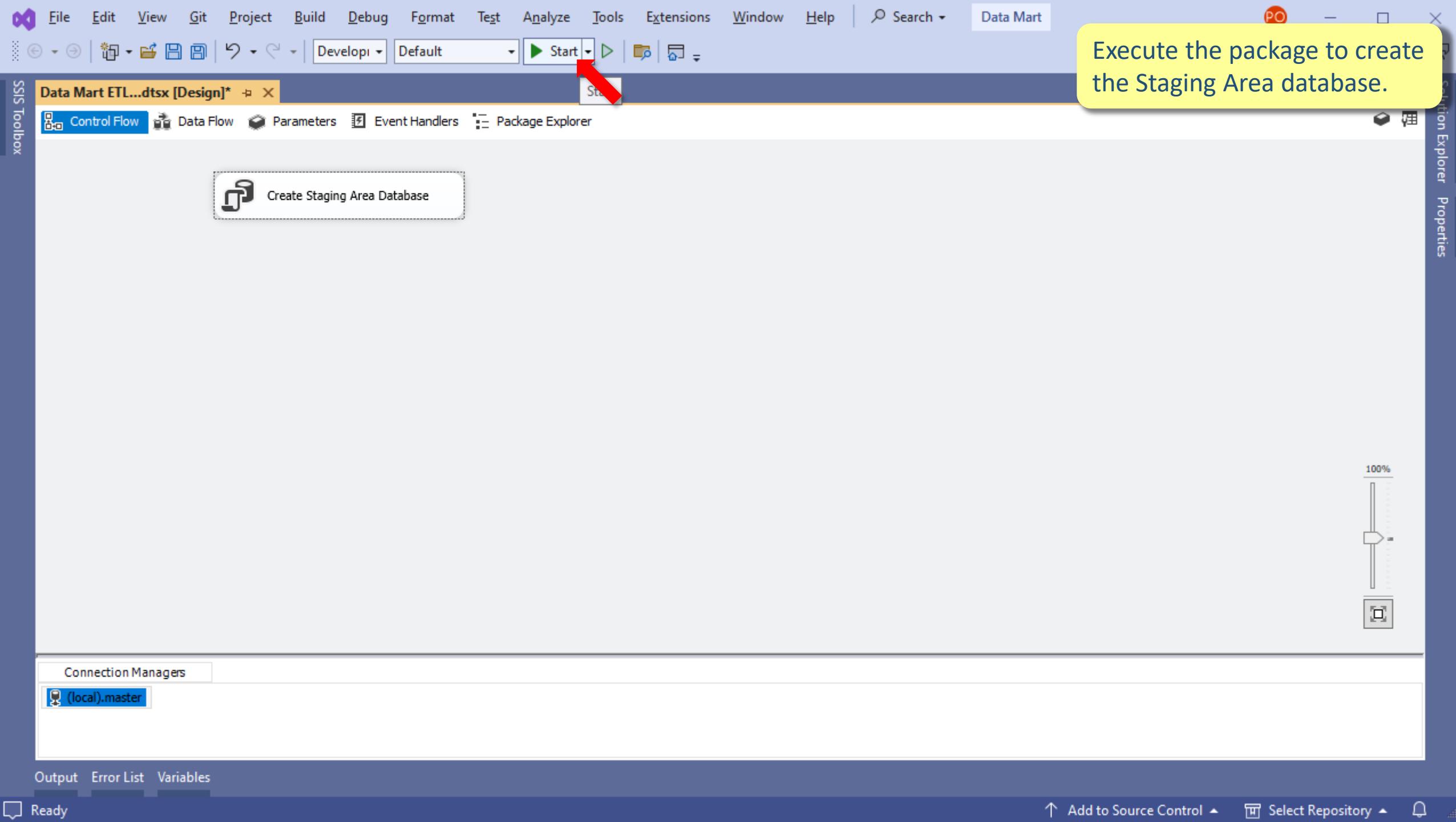
Red arrows point to the **SQLSourceType** dropdown and the **...** button next to it.

Error List Variables Output

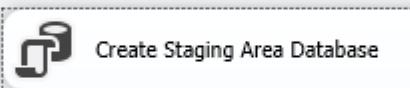
Add to Source Control







Execute the package to create
the Staging Area database.



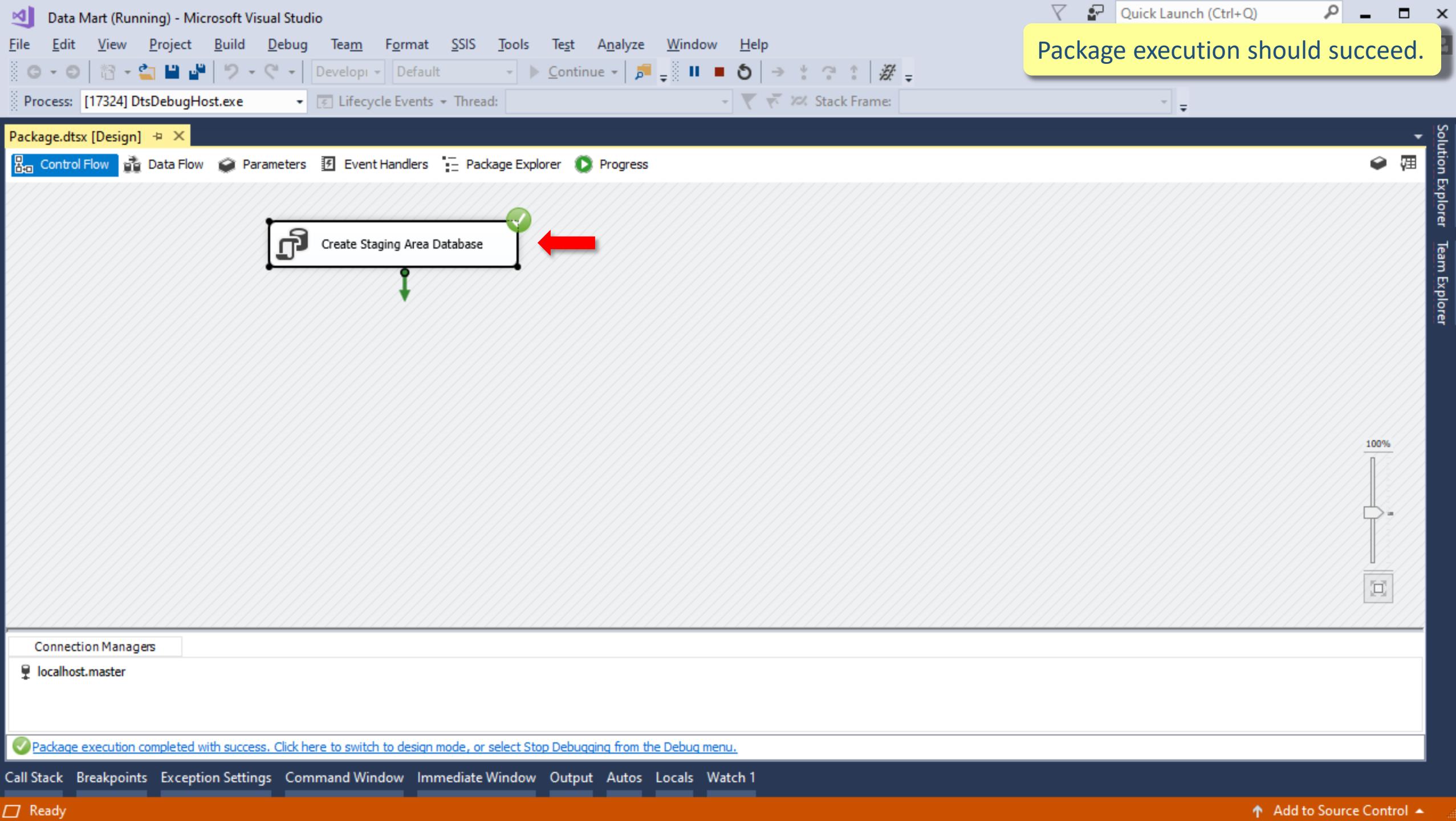
Connection Managers

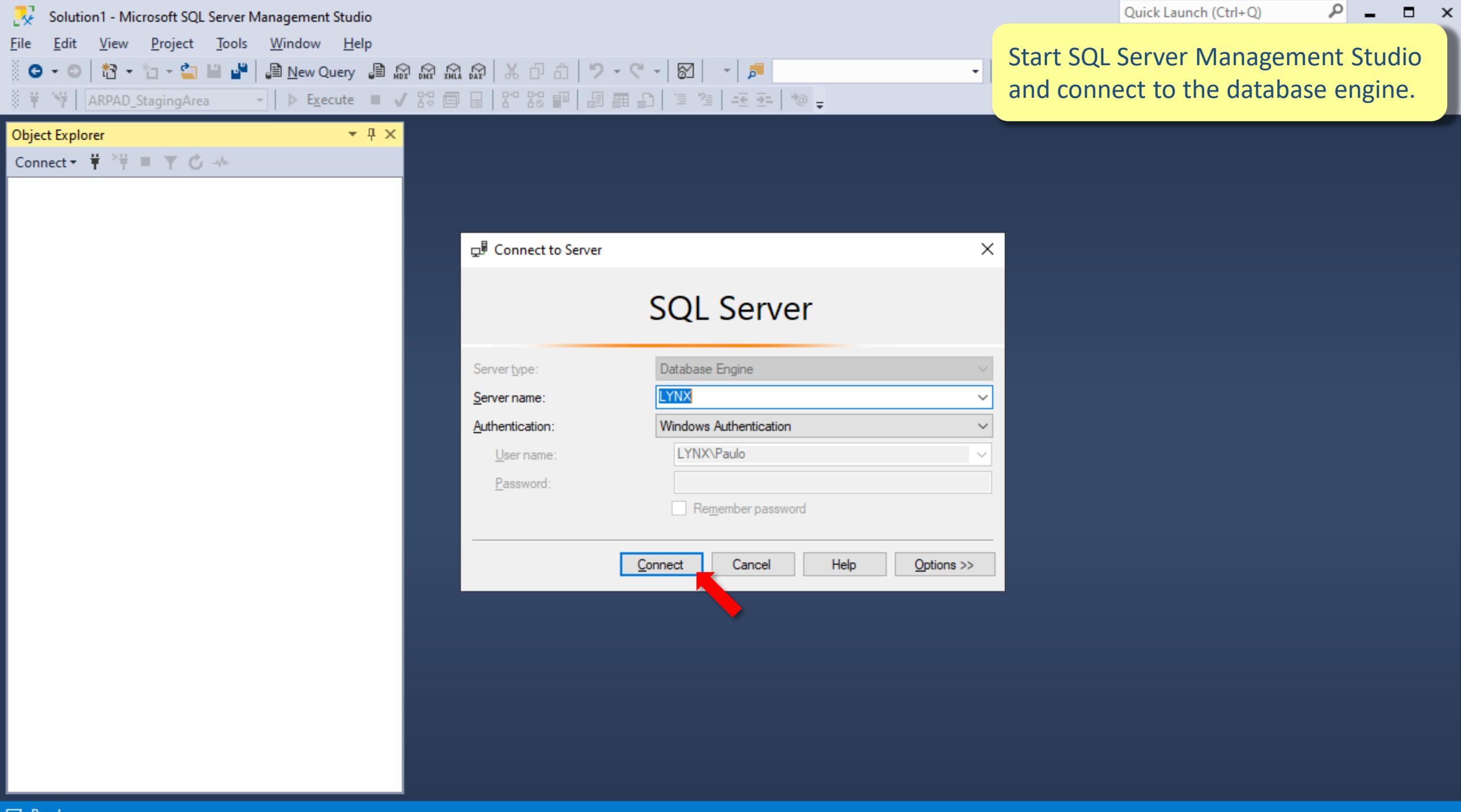
(local).master

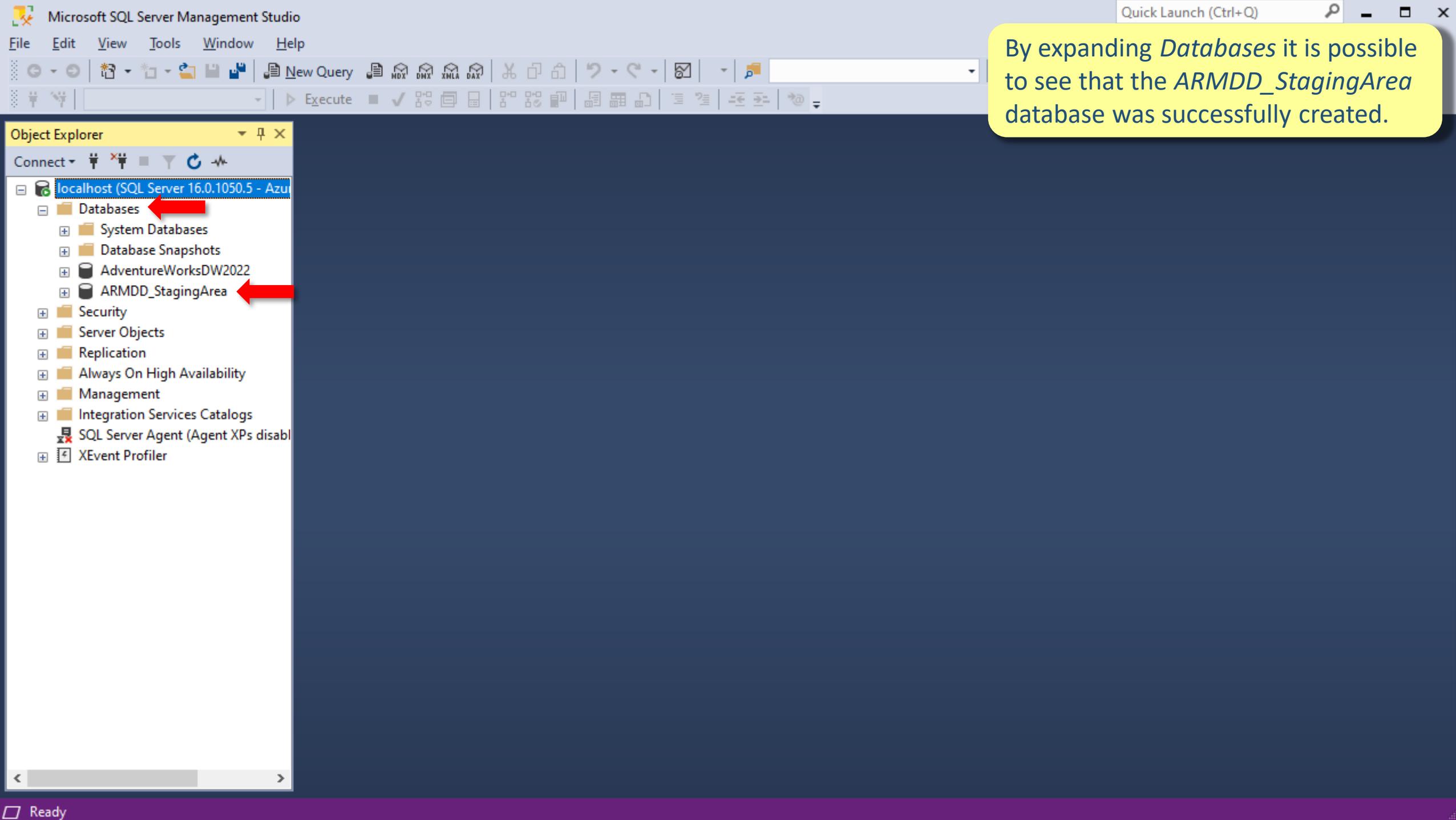
Output Error List Variables

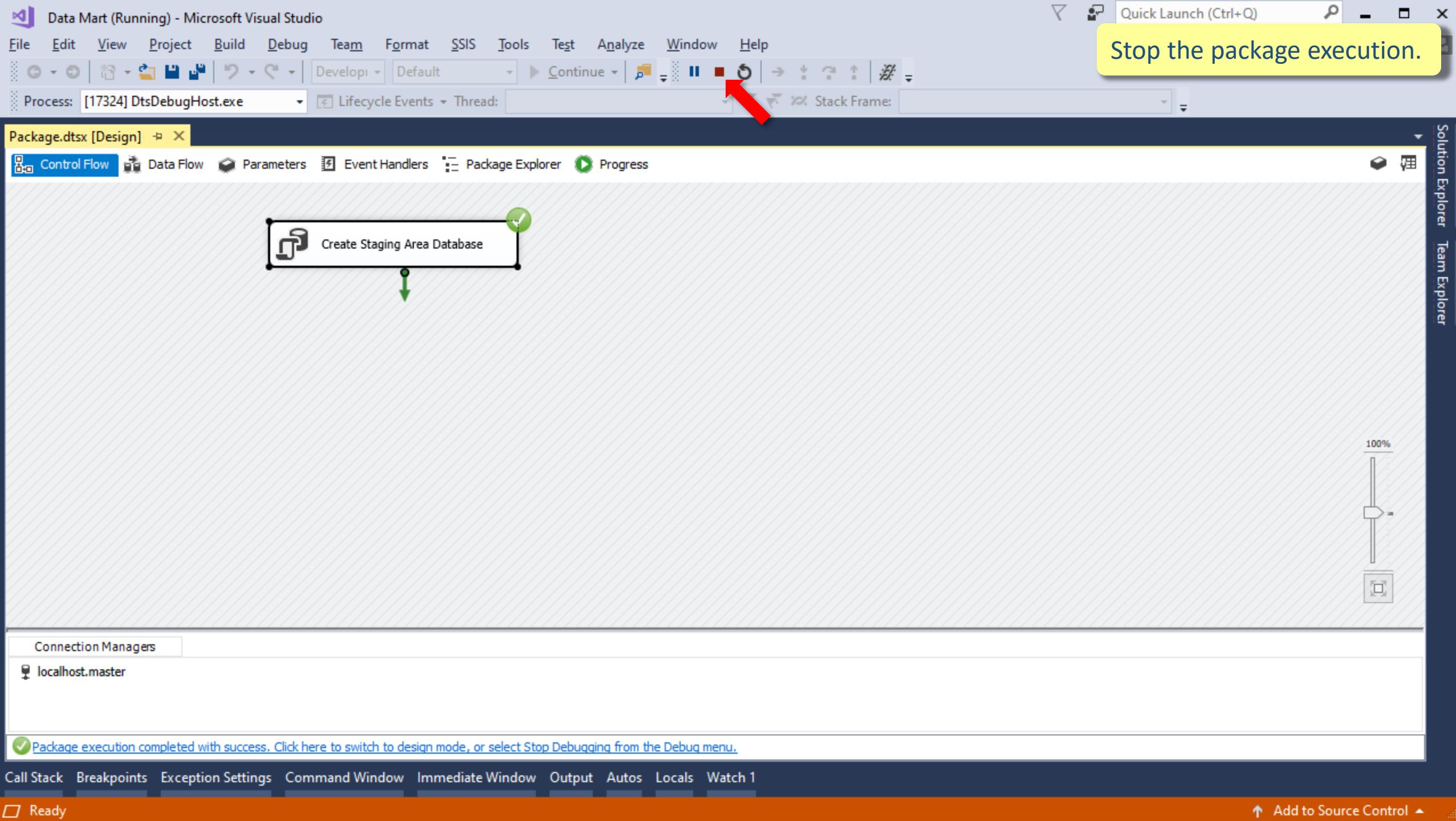
Ready

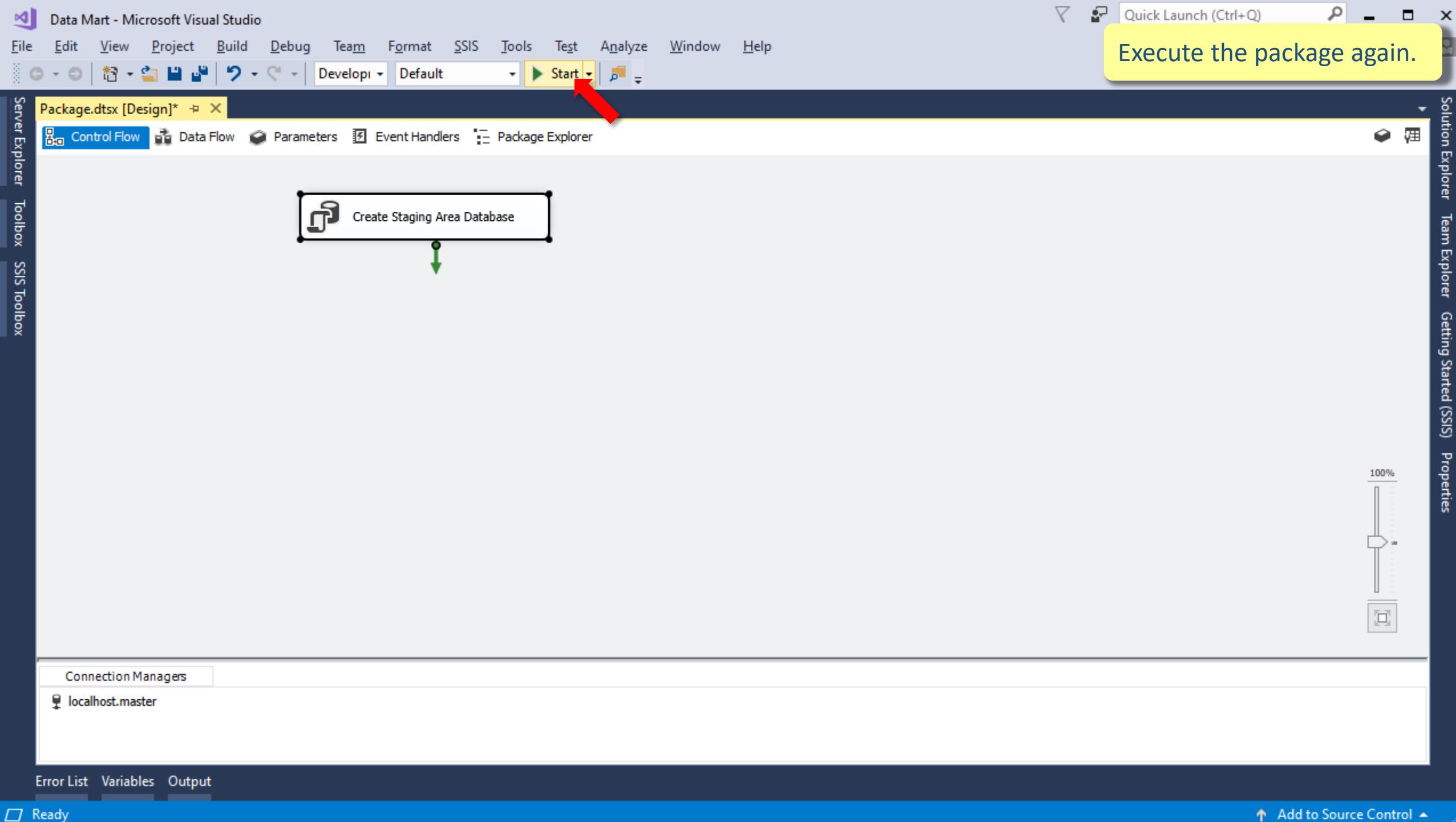
Add to Source Control Select Repository

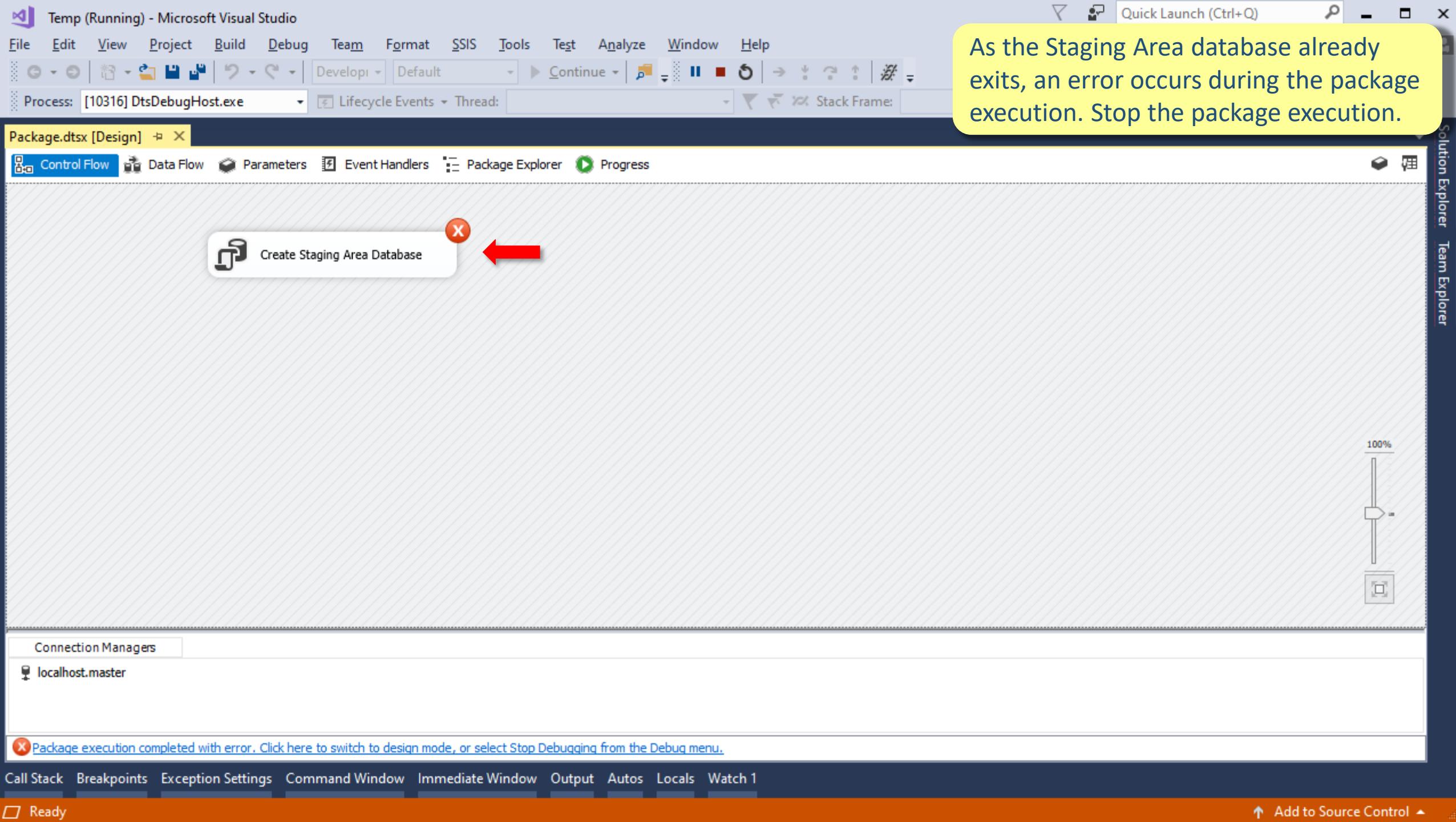




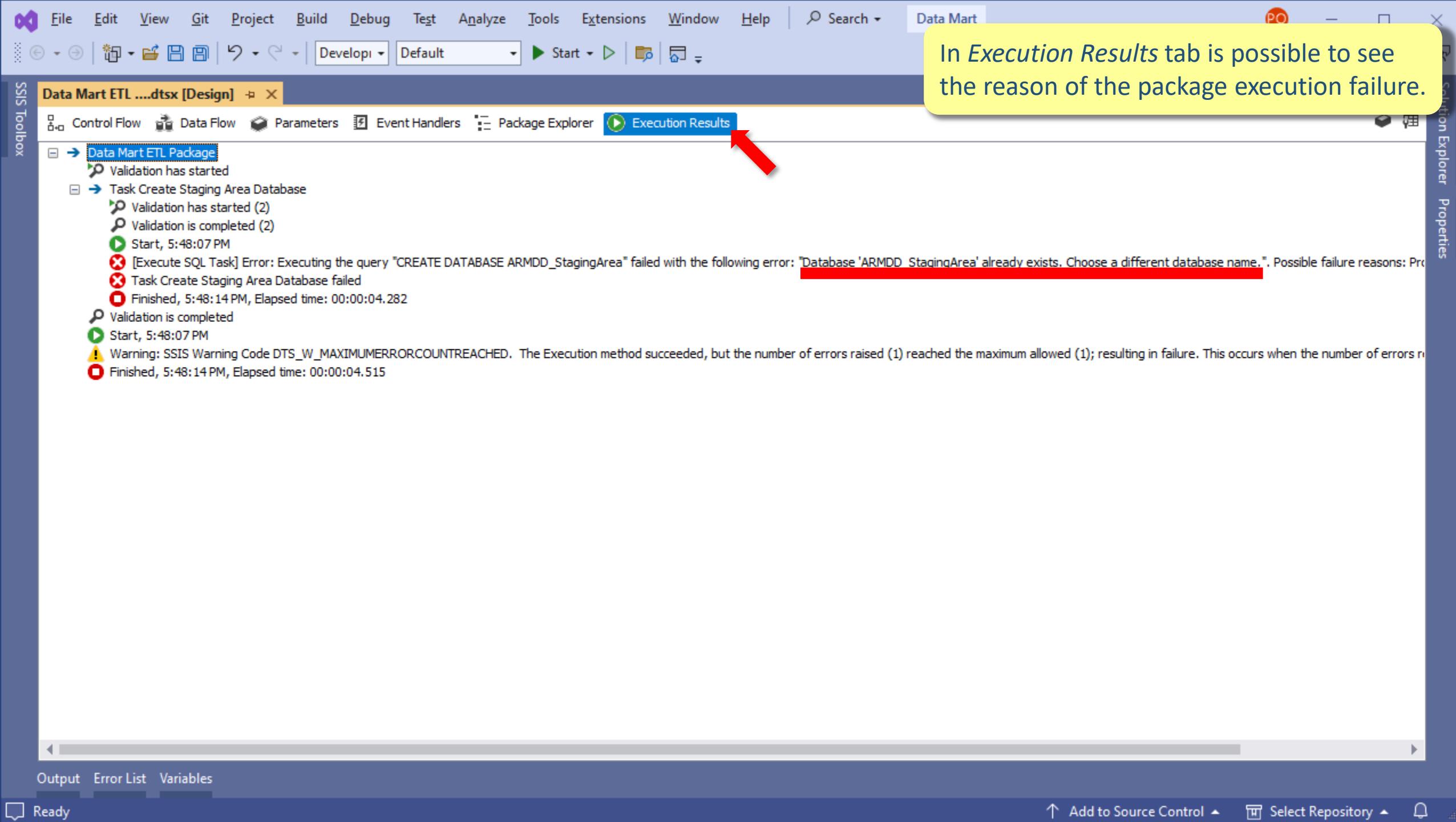




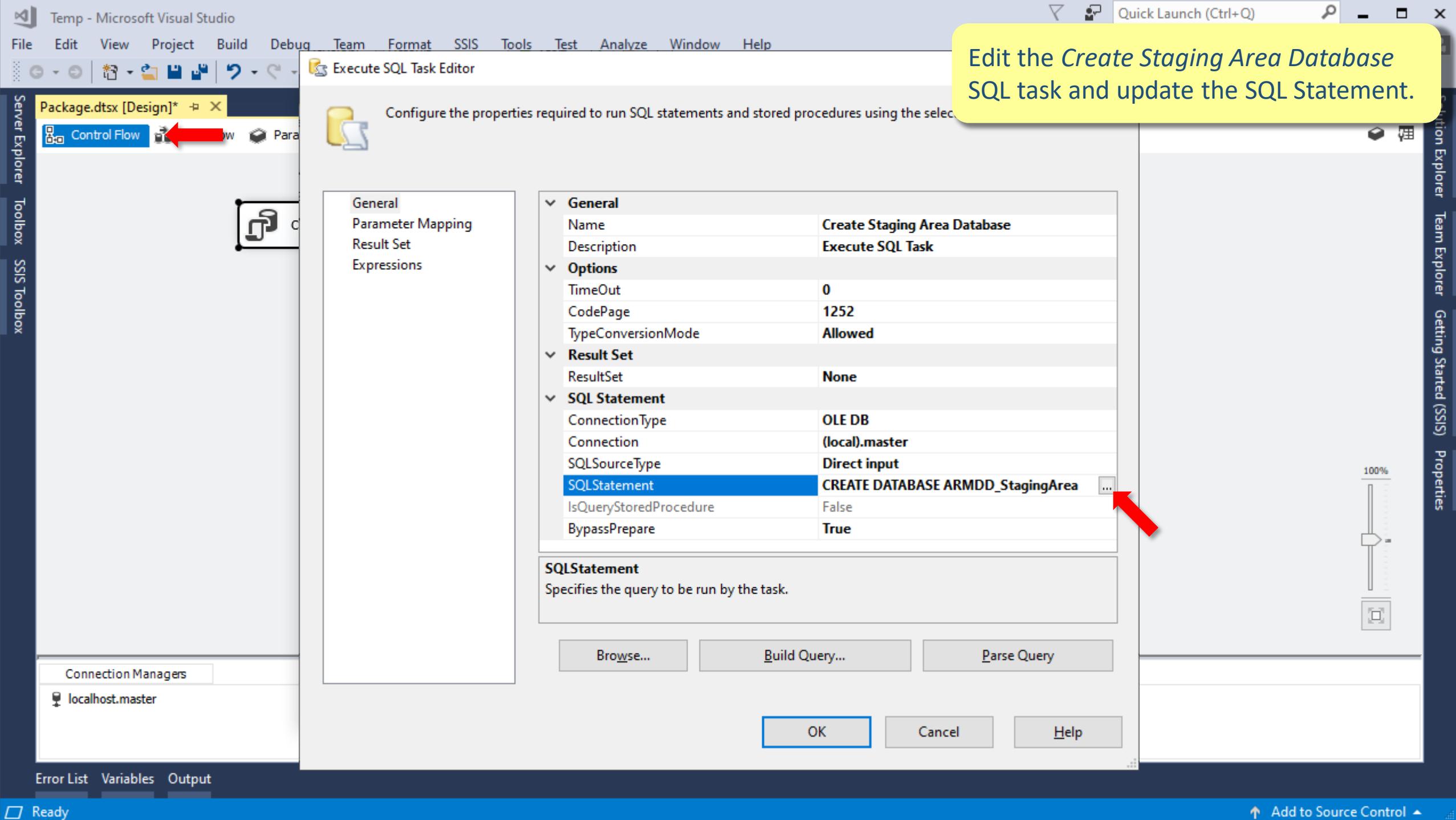


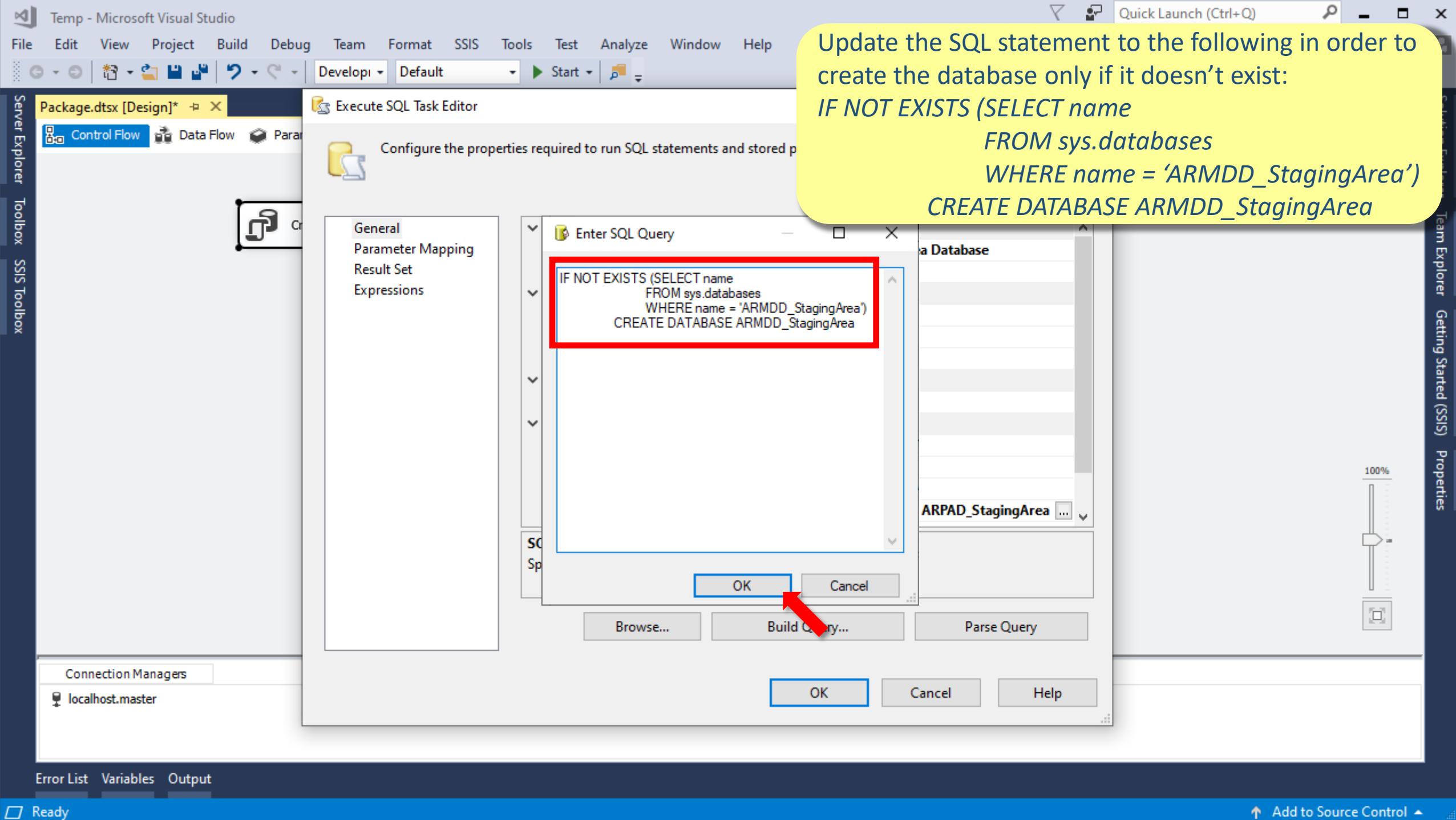


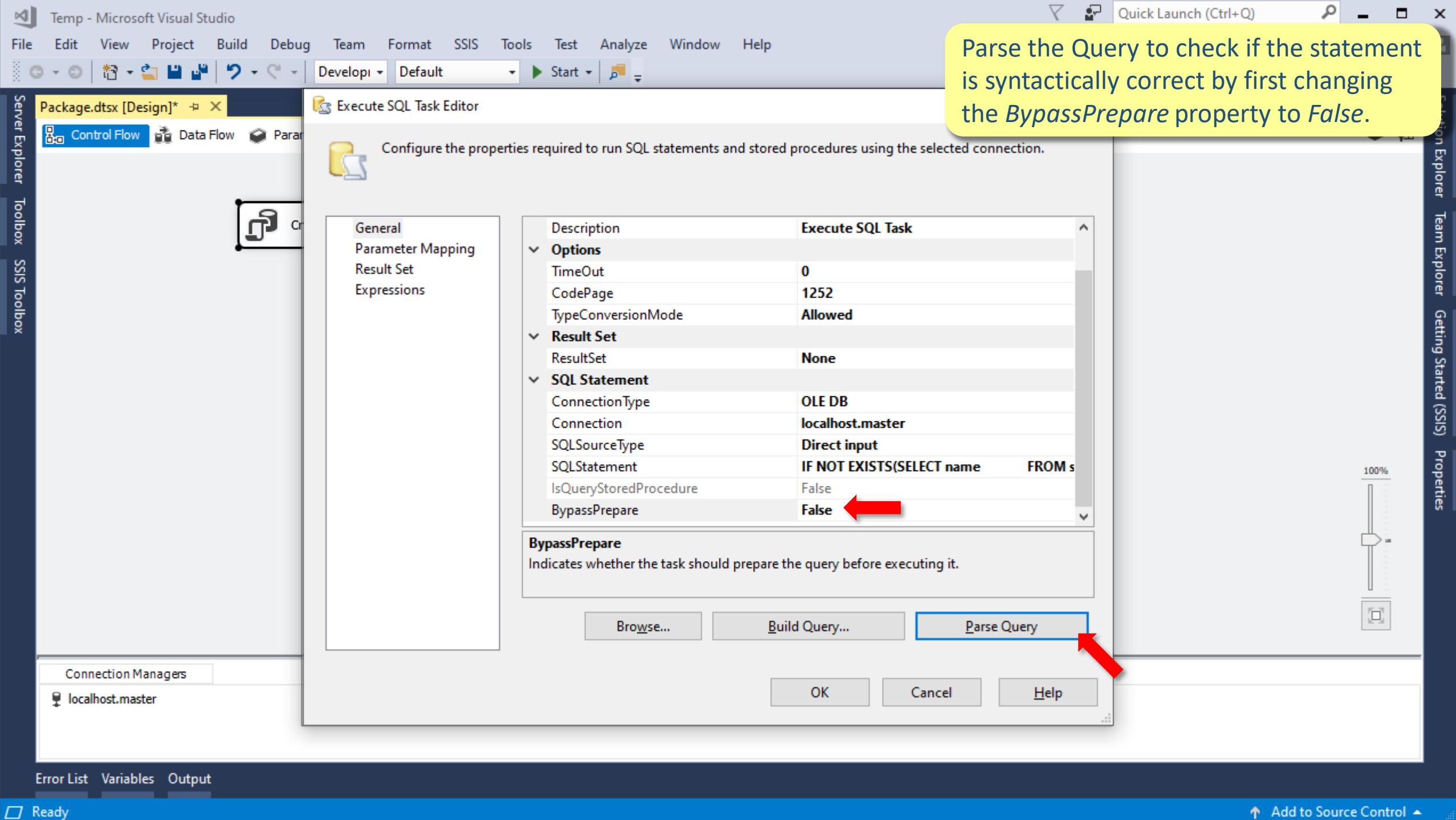
As the Staging Area database already exists, an error occurs during the package execution. Stop the package execution.

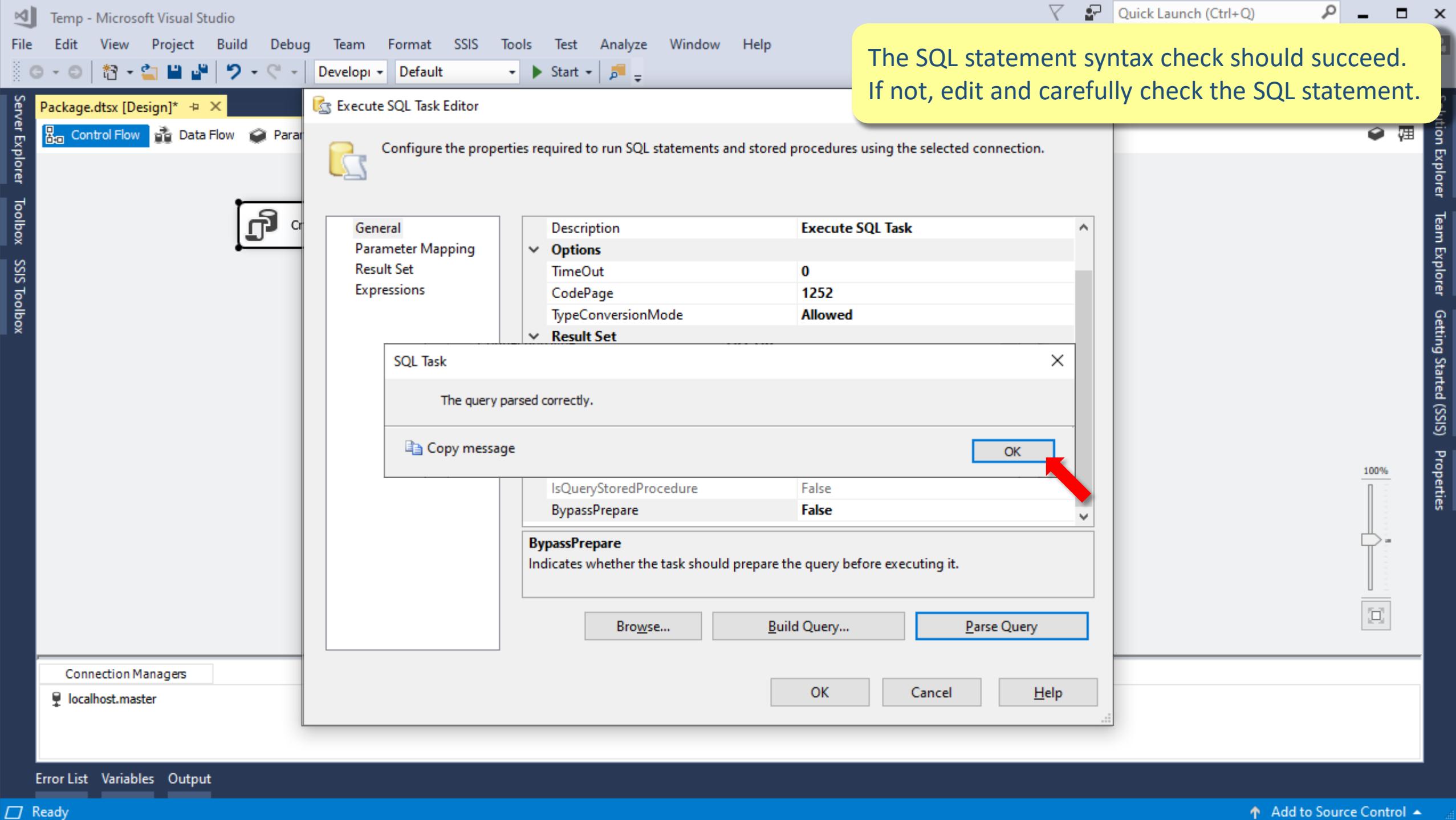


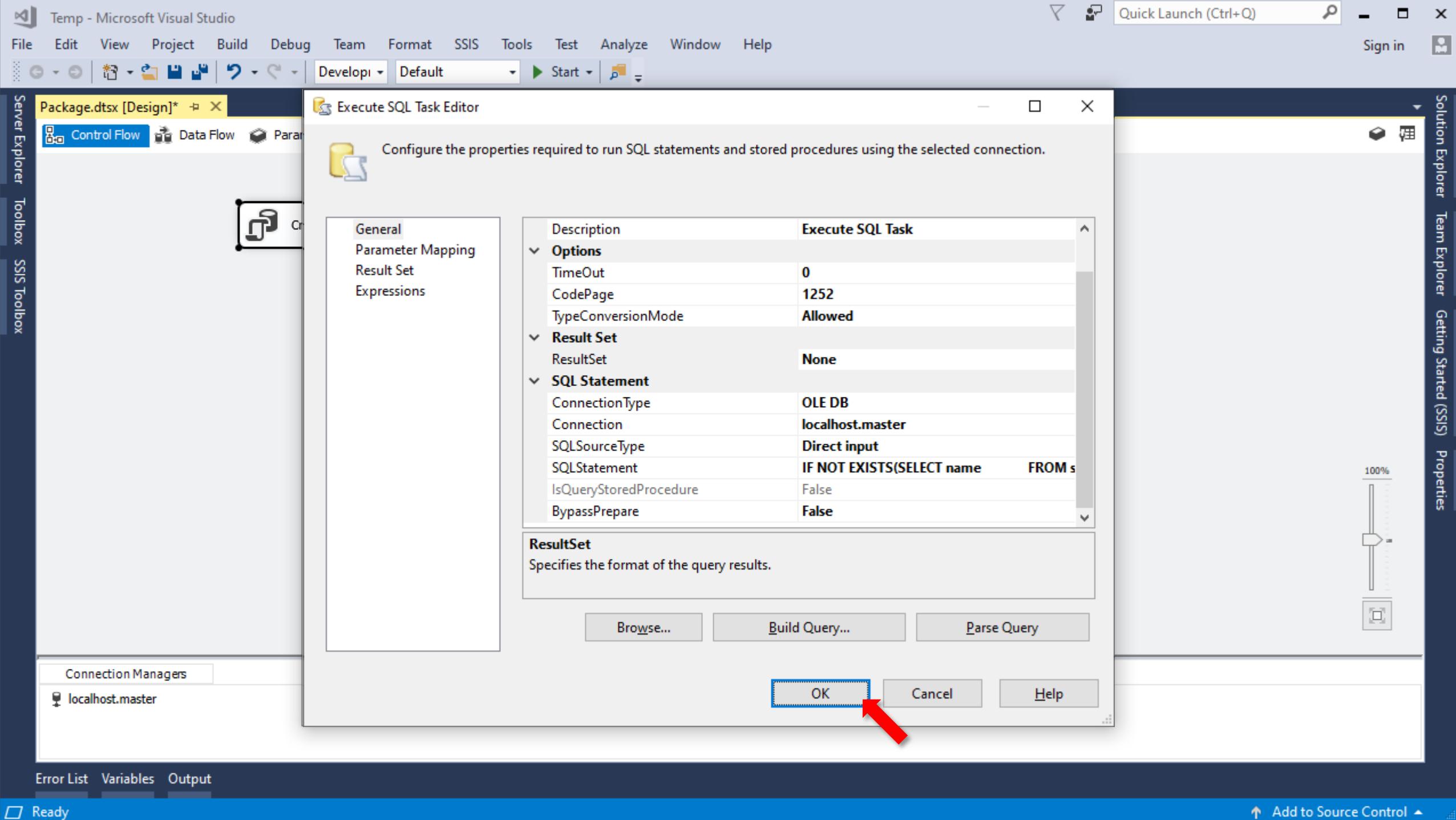
In *Execution Results* tab is possible to see the reason of the package execution failure.

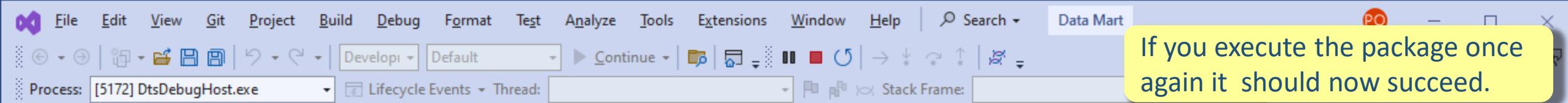












Data Mart ETLdtsx [Design] X

Control Flow Data Flow Parameters Event Handlers Package Explorer Progress

Create Staging Area Database

100%

Connection Managers

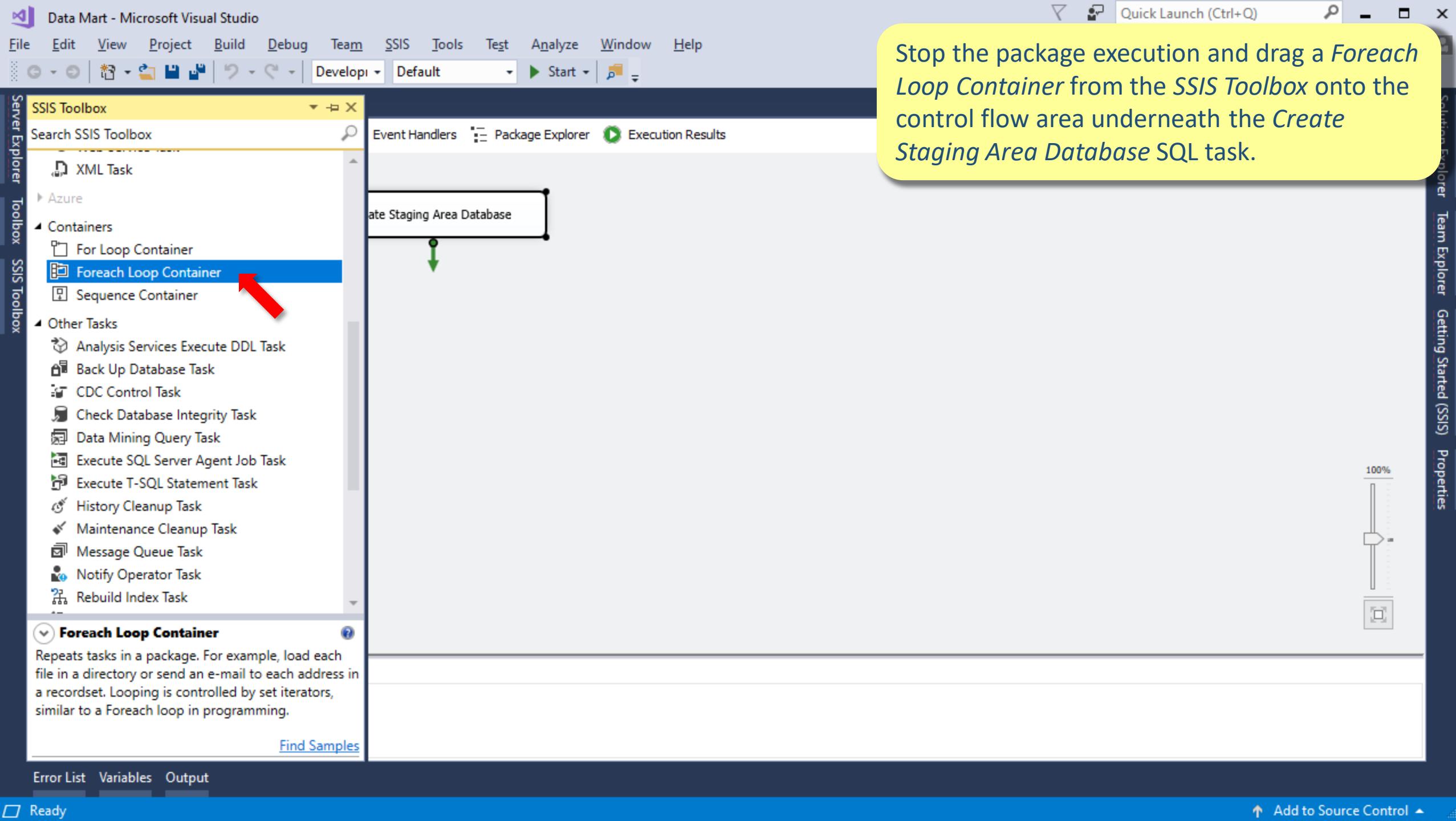
(local).master

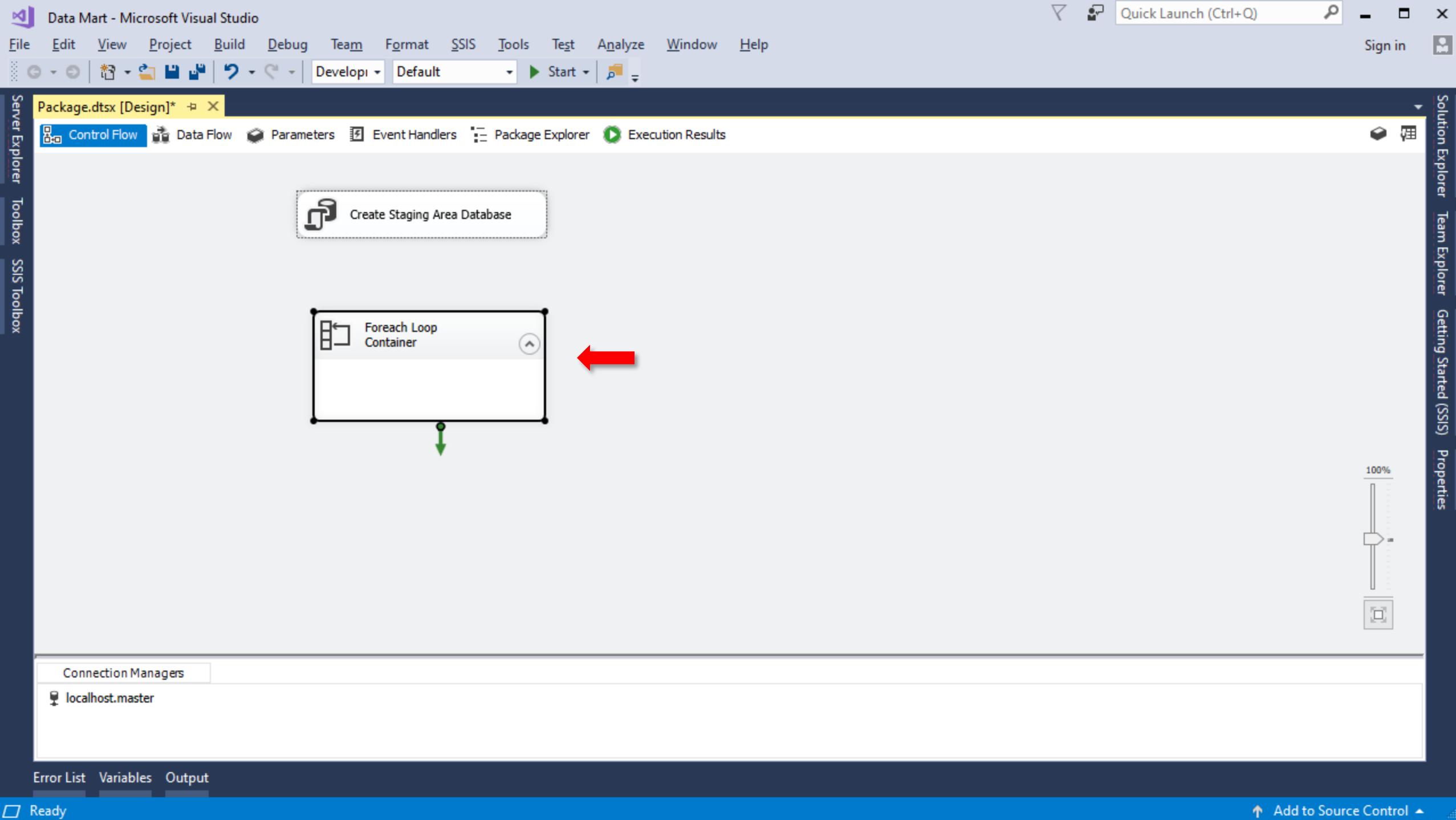
✓ Package execution completed with success. Click here to switch to design mode, or select Stop Debugging from the Debug menu.

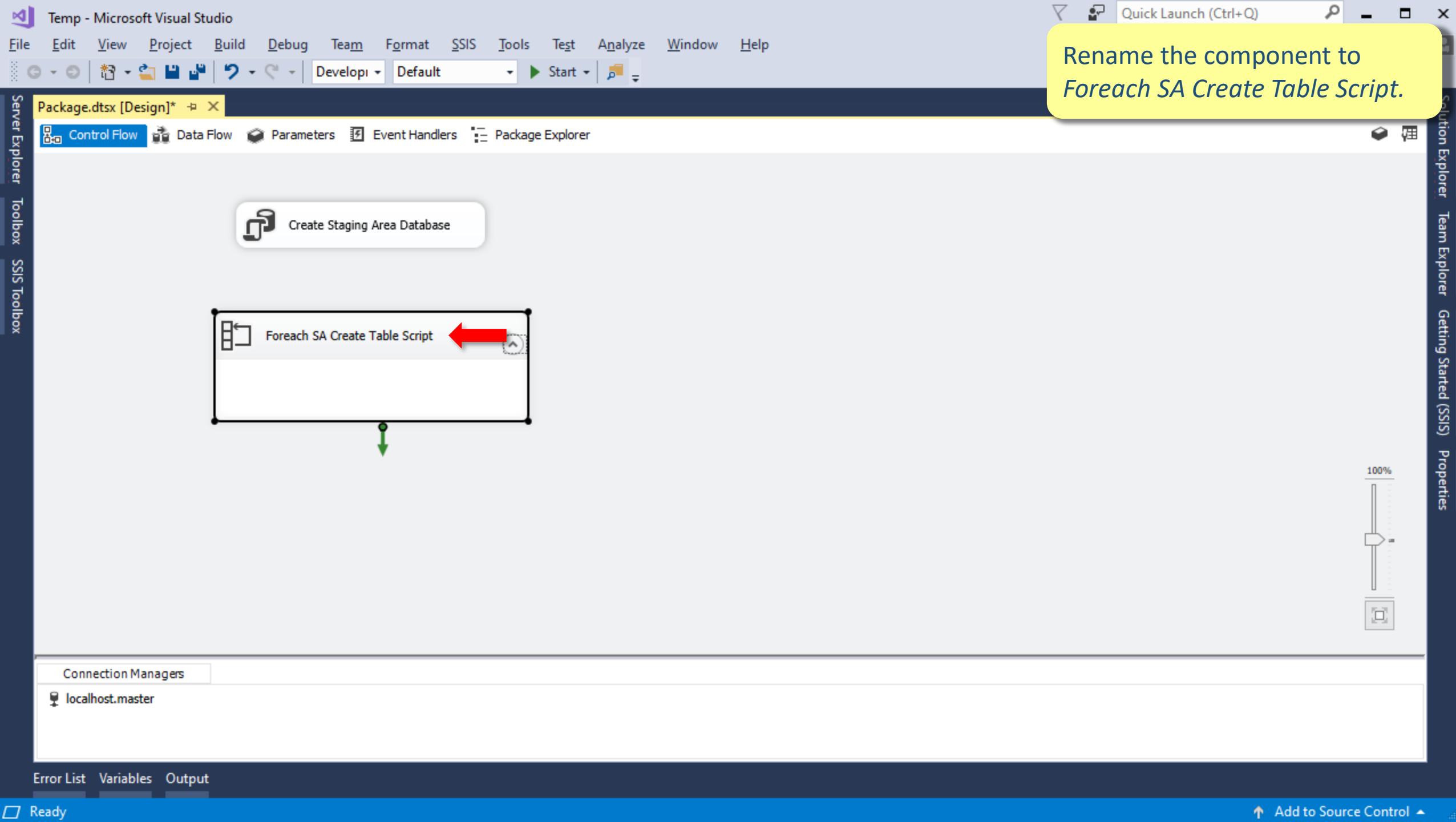
Autos Locals Watch 1

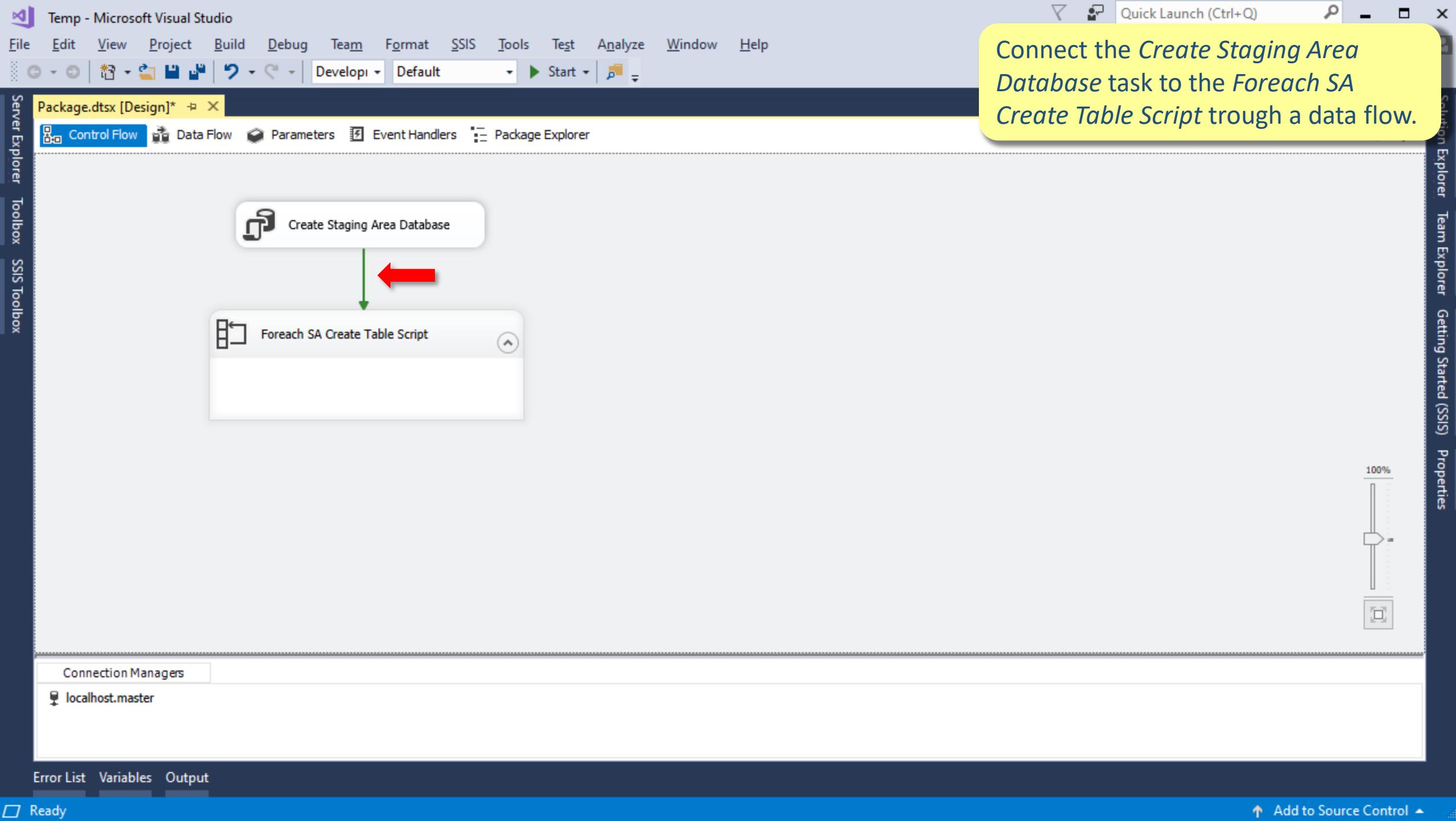
Ready

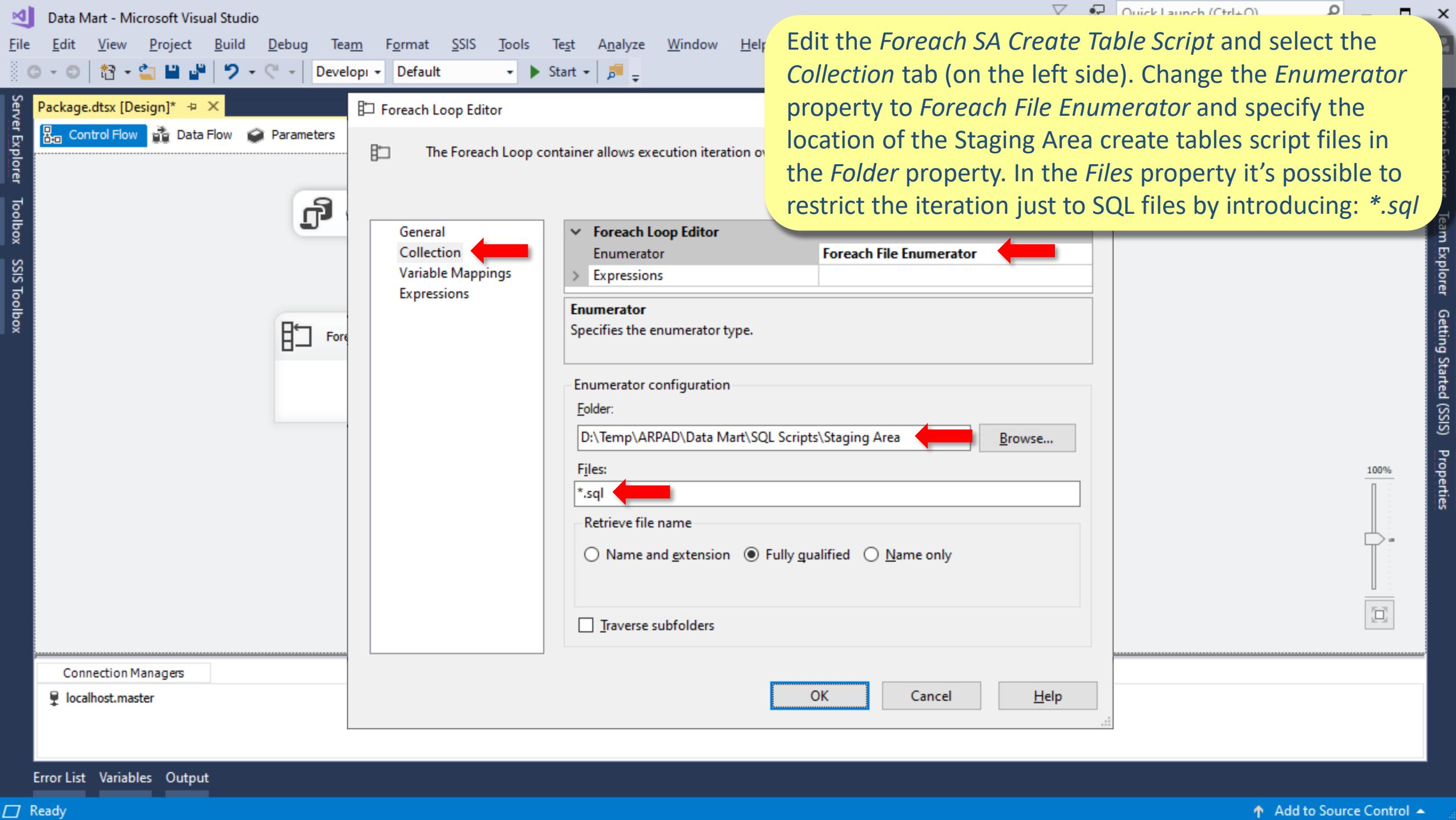
Add to Source Control Select Repository

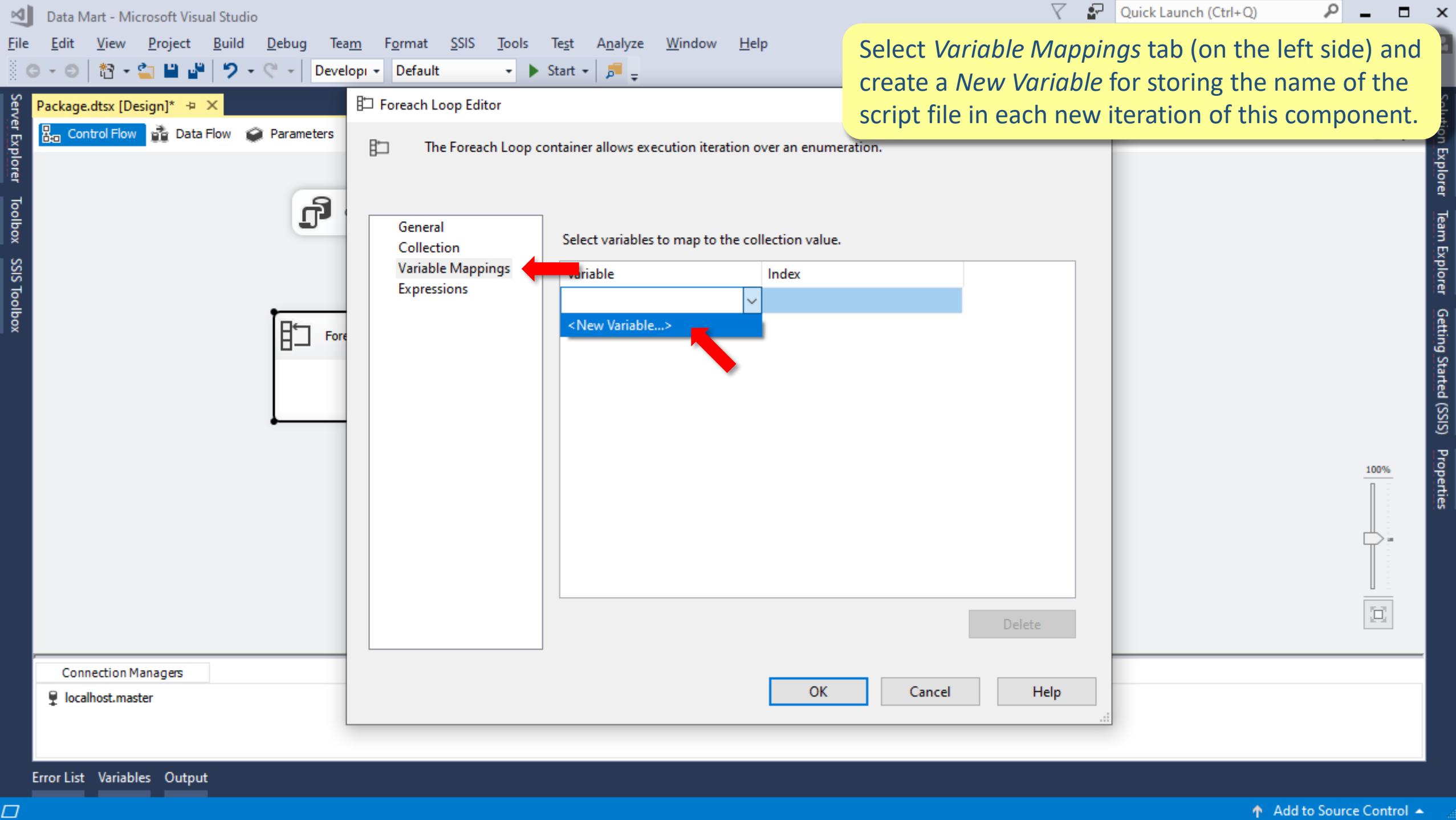


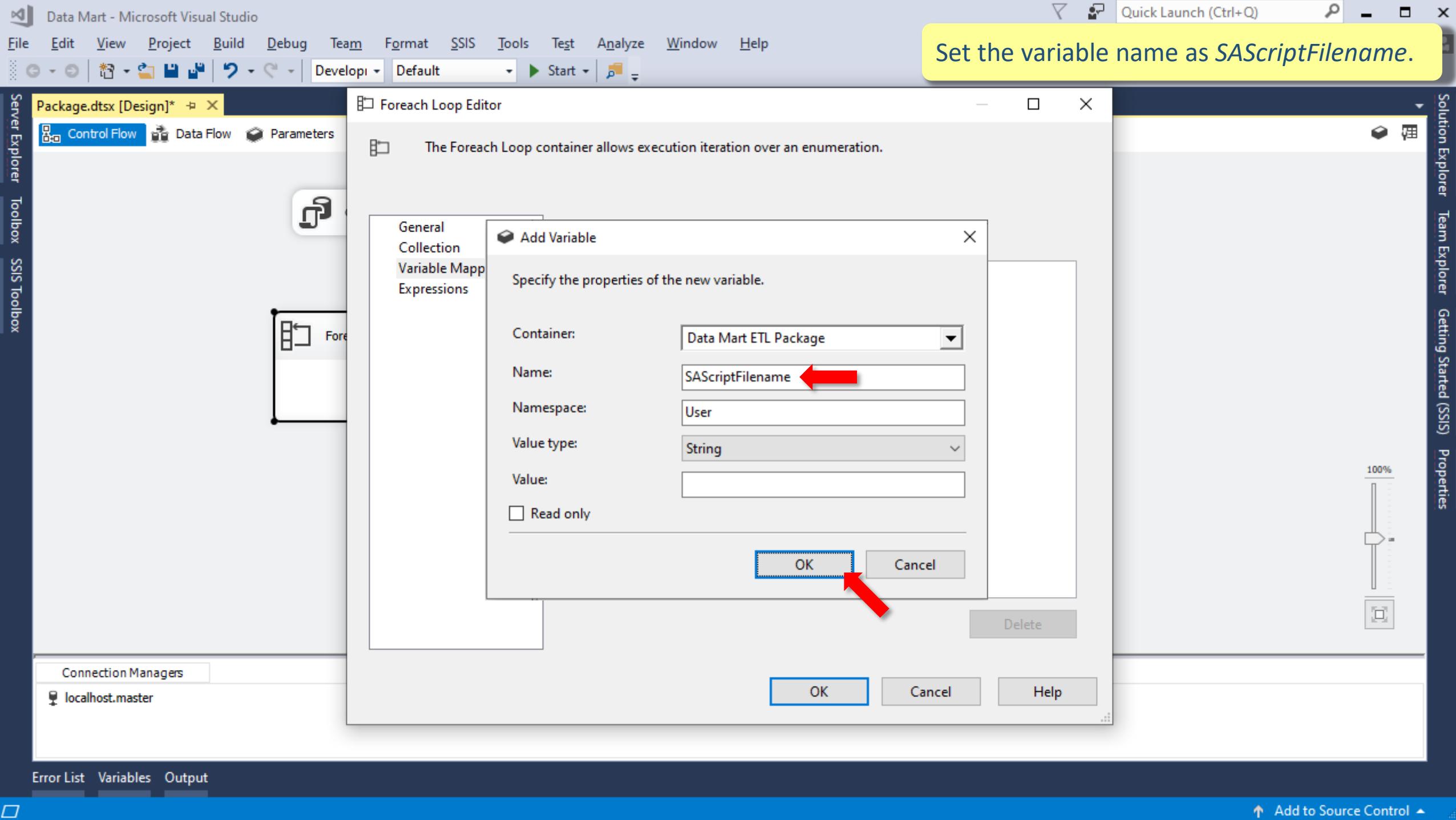


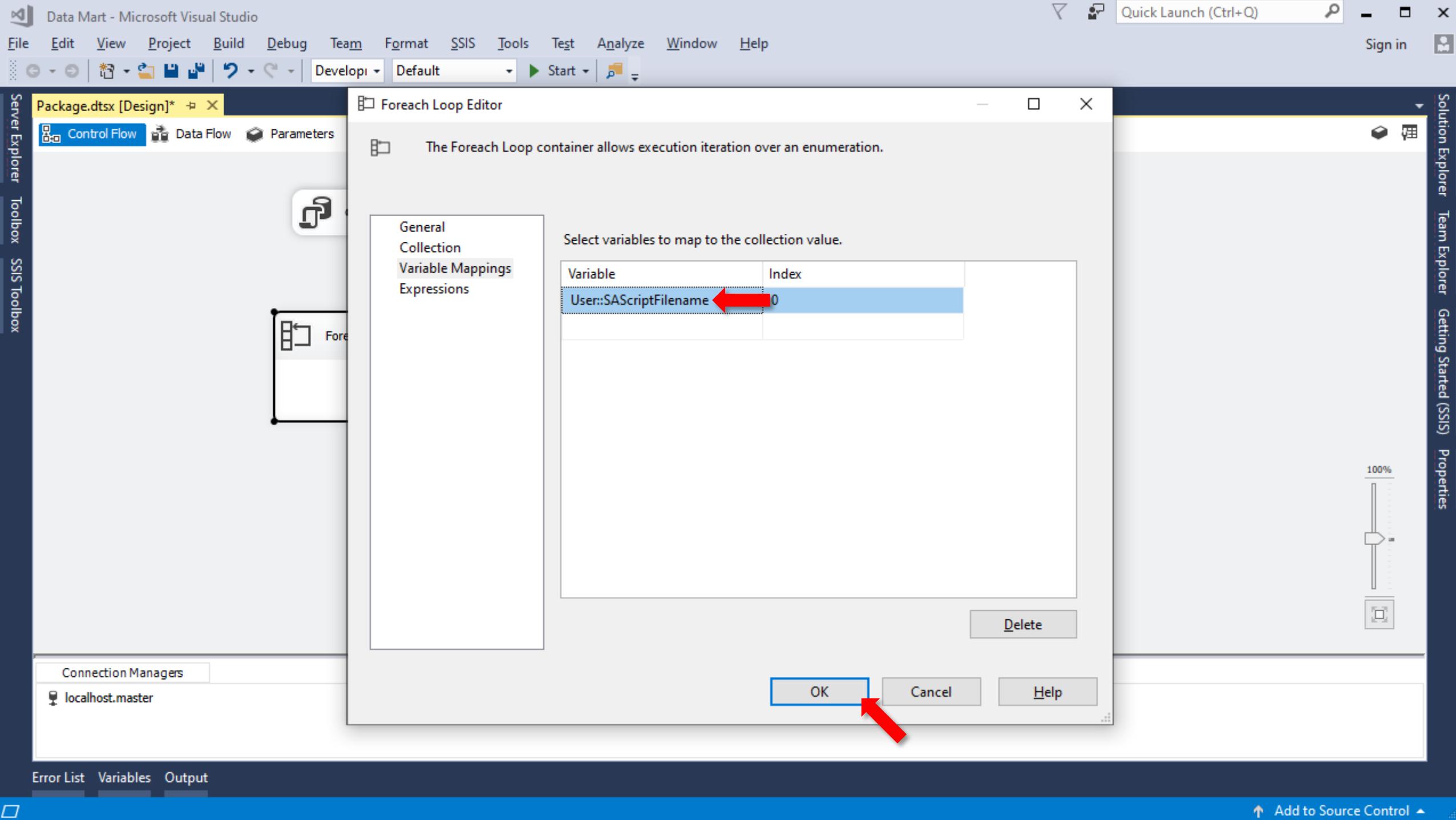












Temp - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Develop Default Start

SSIS Toolbox Search SSIS Toolbox

Favorites Data Flow Task Execute SQL Task

Common Analysis Services Processing Task Bulk Insert Task Data Profiling Task Execute Package Task Execute Process Task Expression Task File System Task FTP Task Hadoop File System Task Hadoop Hive Task Hadoop Pig Task Script Task Send Mail Task Web Service Task XML Task

Execute SQL Task

Execute SQL Task

Executes SQL statements or stored procedures in a relational database. For example, truncate a table before starting a load, or create a foreign-key relationship after a load has completed.

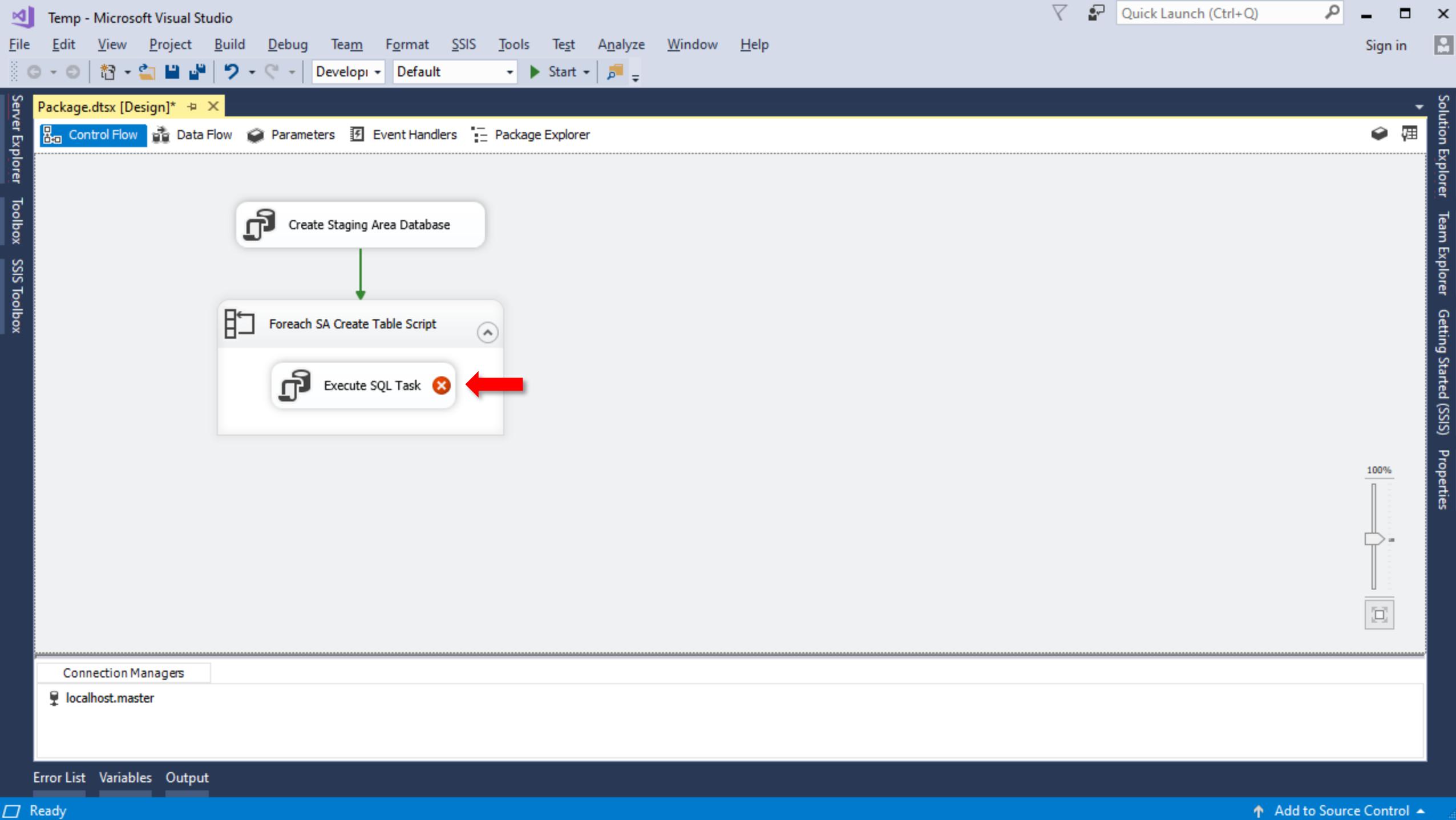
Find Samples

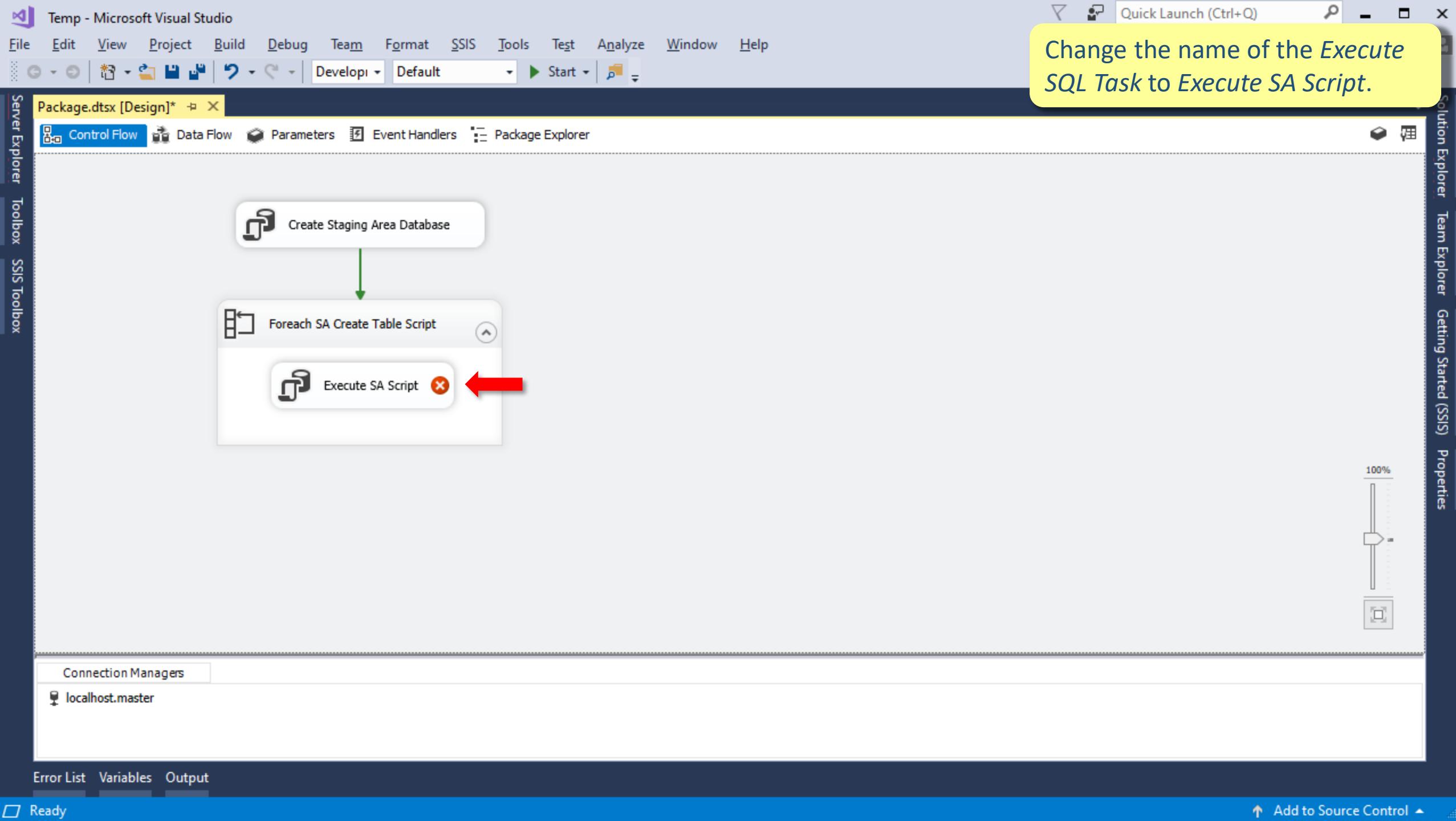
Error List Variables Output

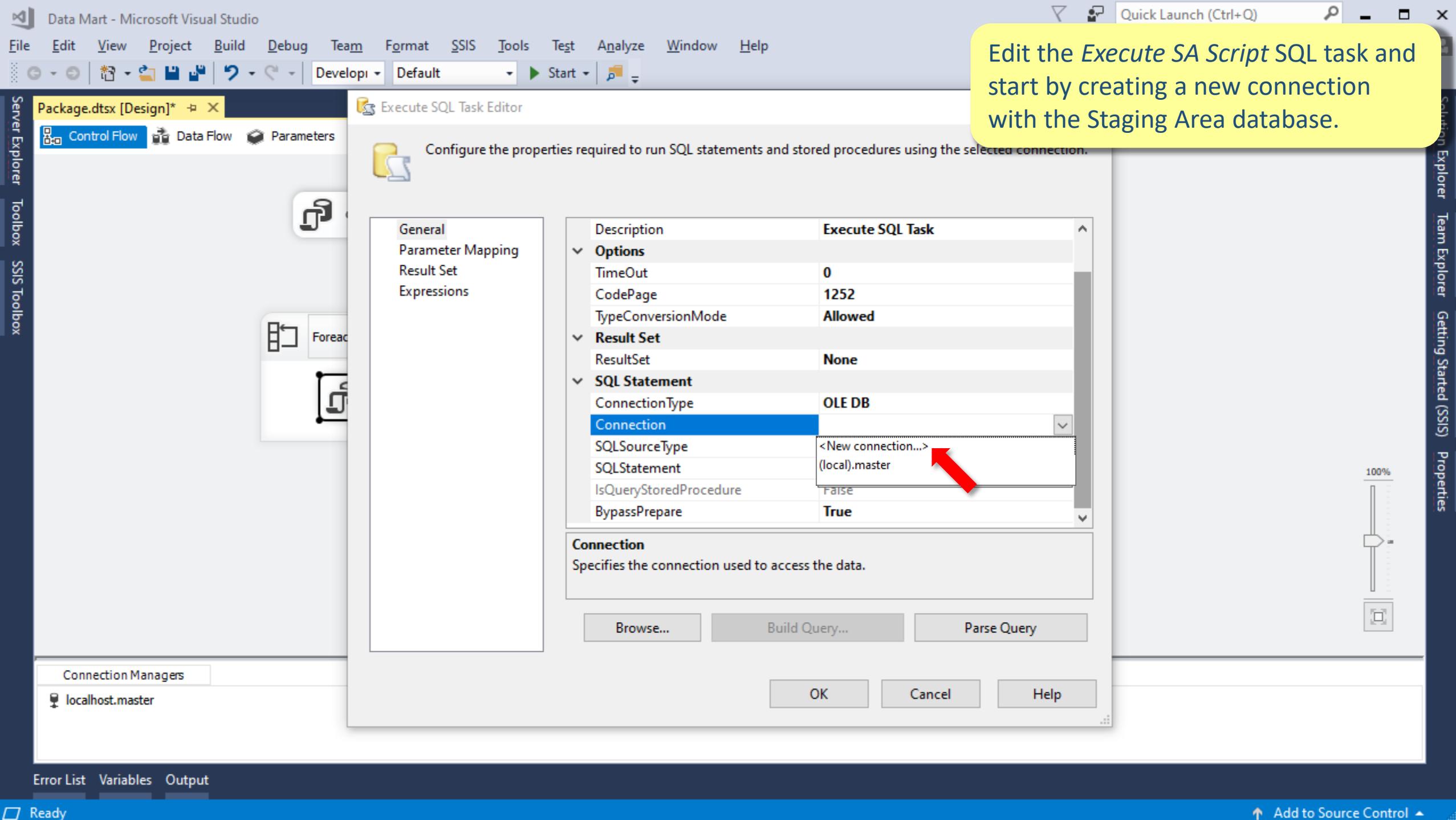
Ready Add to Source Control

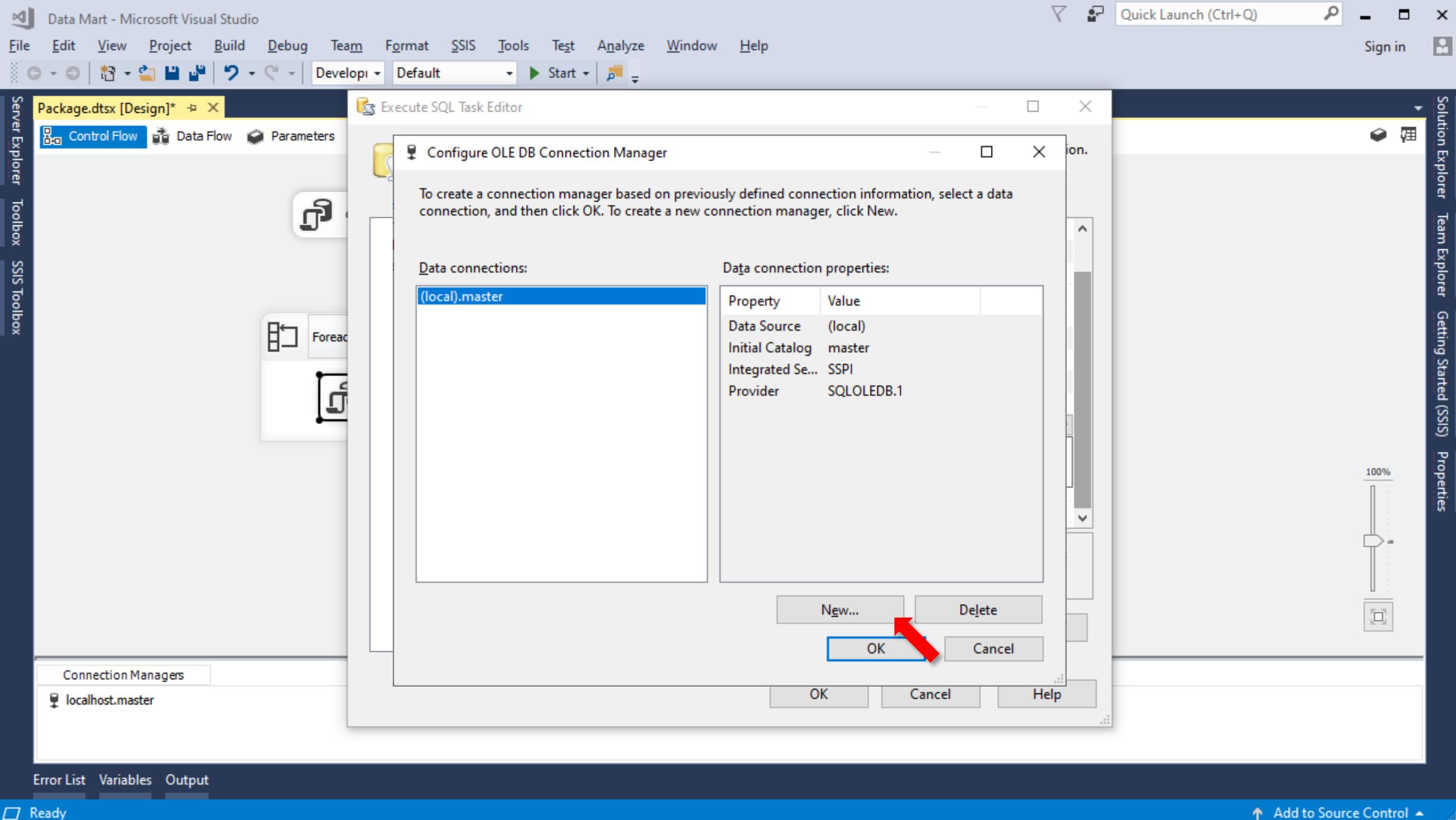
Quick Launch (Ctrl+Q)

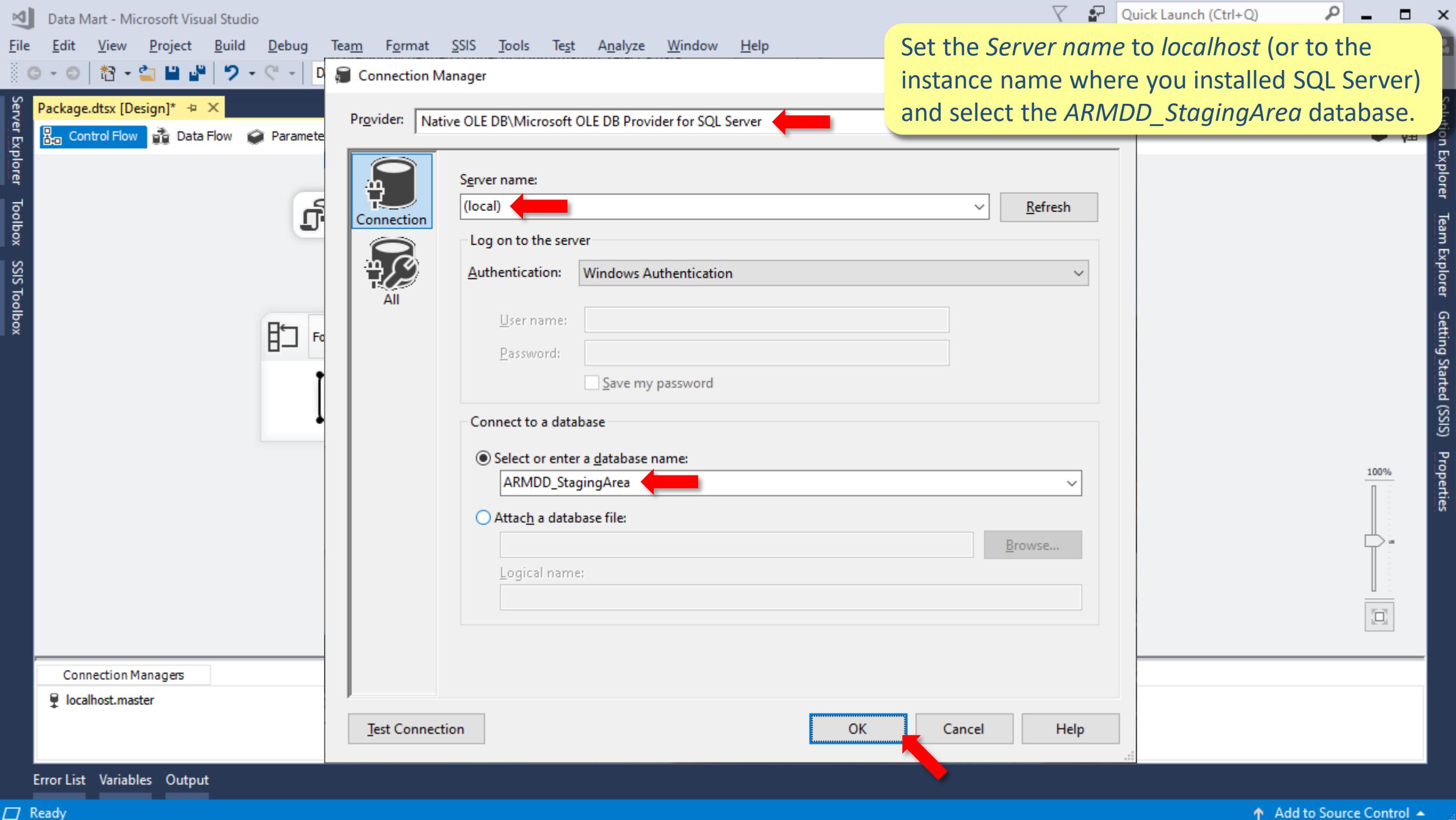
Drag an *Execute SQL Task* from the *SSIS Toolbox* to the inside of the *ForEach SA Create Table Script* component.

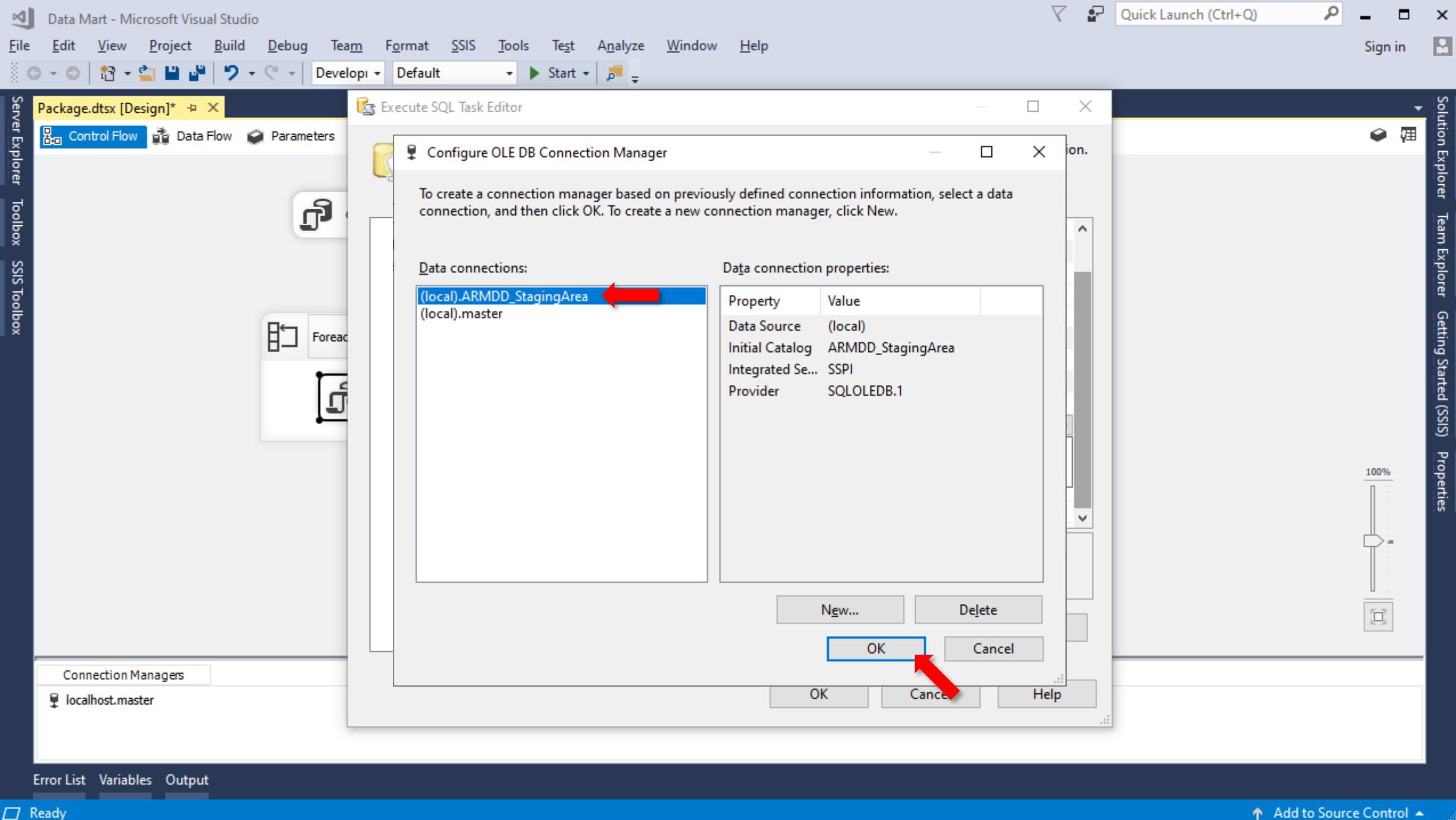












Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team Format SSIS Tools Test Analyze Window Help

Execute SQL Task Editor

Configure the properties required to run SQL statements and stored procedures using the selected connection.

General

Name: Execute SA Script
Description: Execute SQL Task

Options

TimeOut: 0
CodePage: 1252
TypeConversionMode: Allowed

Result Set

ResultSet: None

SQL Statement

ConnectionType: OLE DB
Connection: (local).ARMDD_StagingArea
SQLSourceType: File connection
FileConnection: <New connection...>
IsQueryStoredProcedure: True
BypassPrepare: True

FileConnection

Specifies the connection to the file that contains the query.

Browse... Build Query... Parse Query

OK Cancel Help

Server Explorer Toolbox SSIS Toolbox

Package.dtsx [Design]

Control Flow Data Flow Parameters

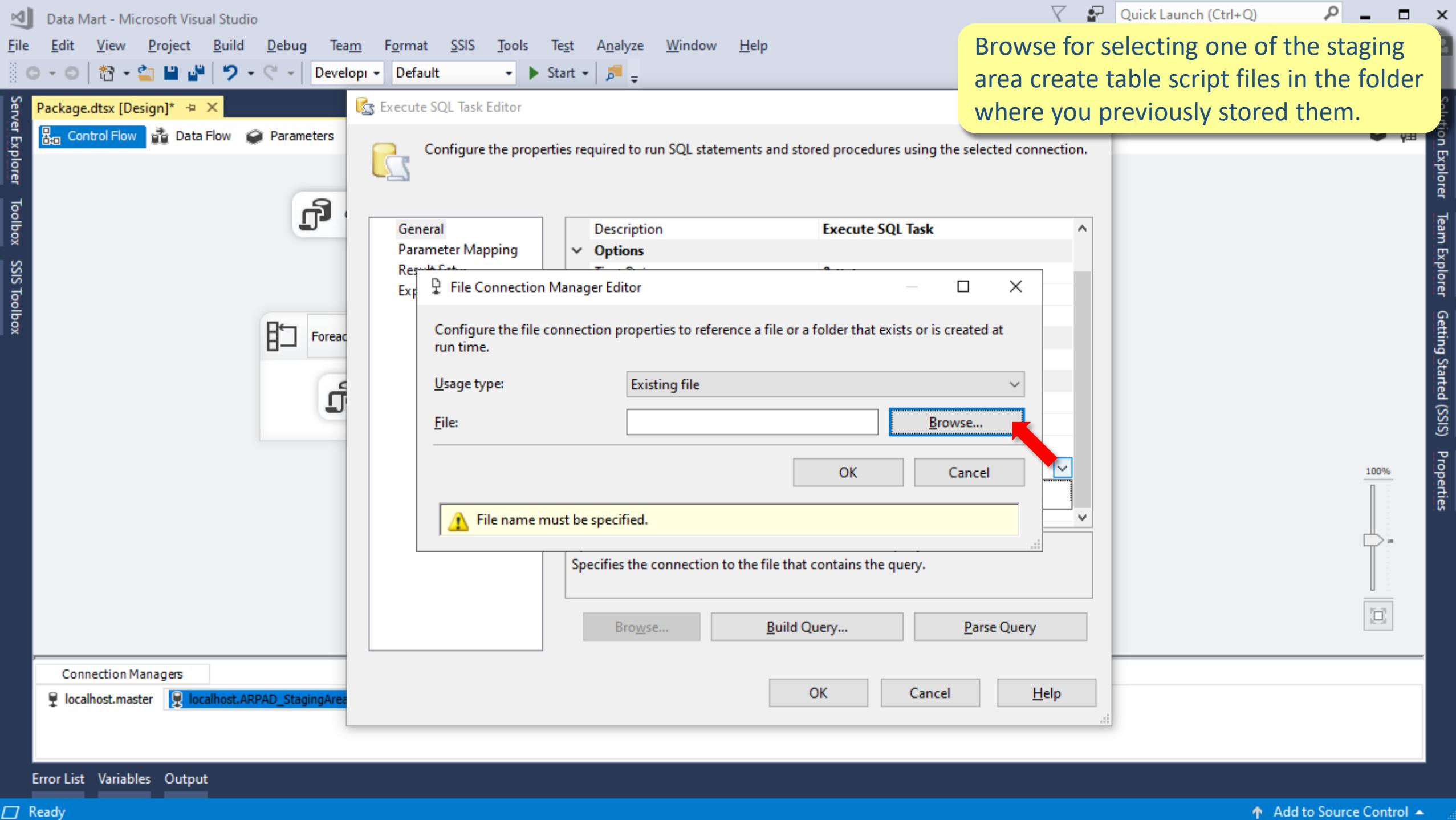
Connection Managers

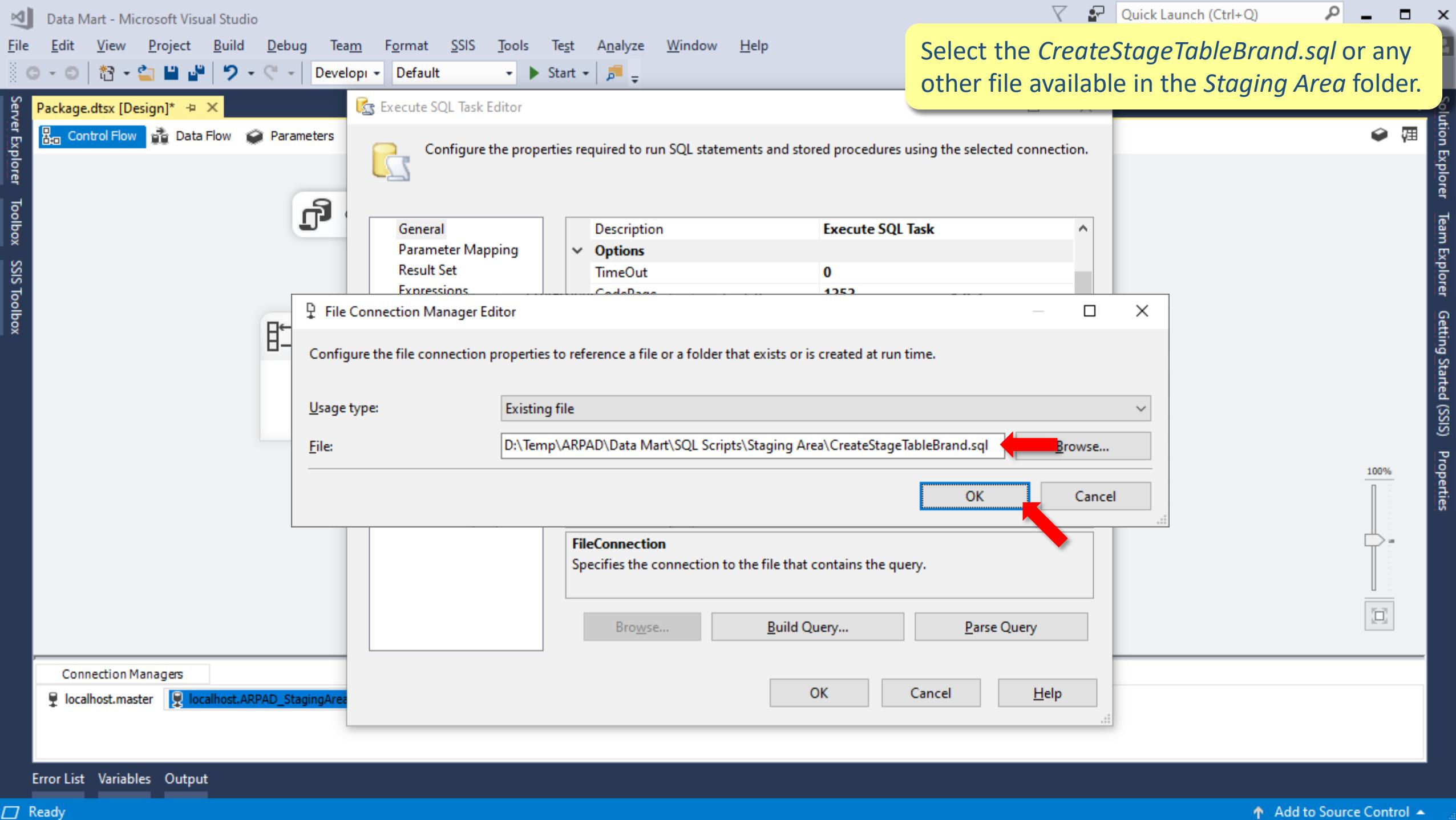
localhost.master localhost.ARPAD_Stagi

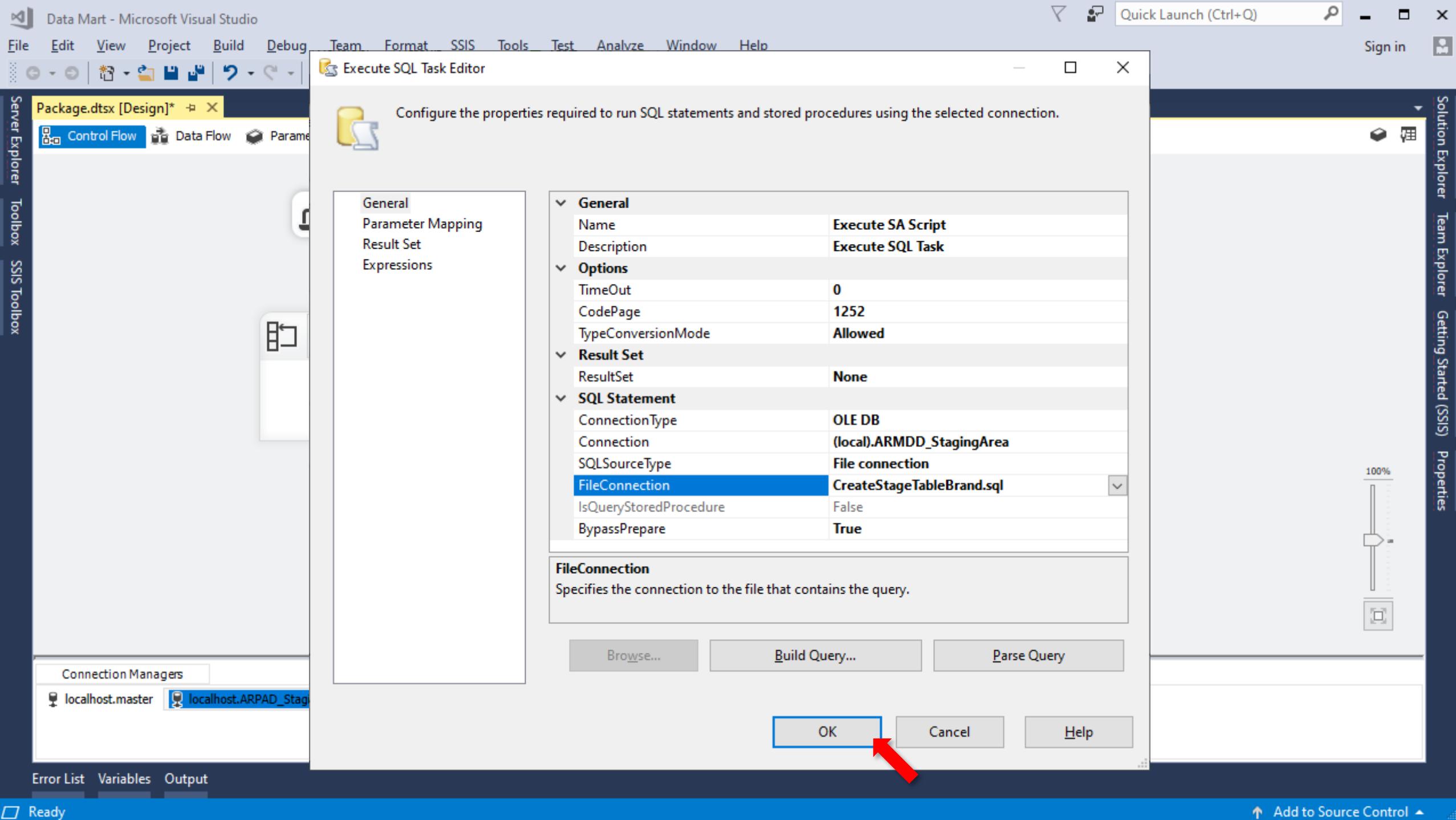
Error List Variables Output

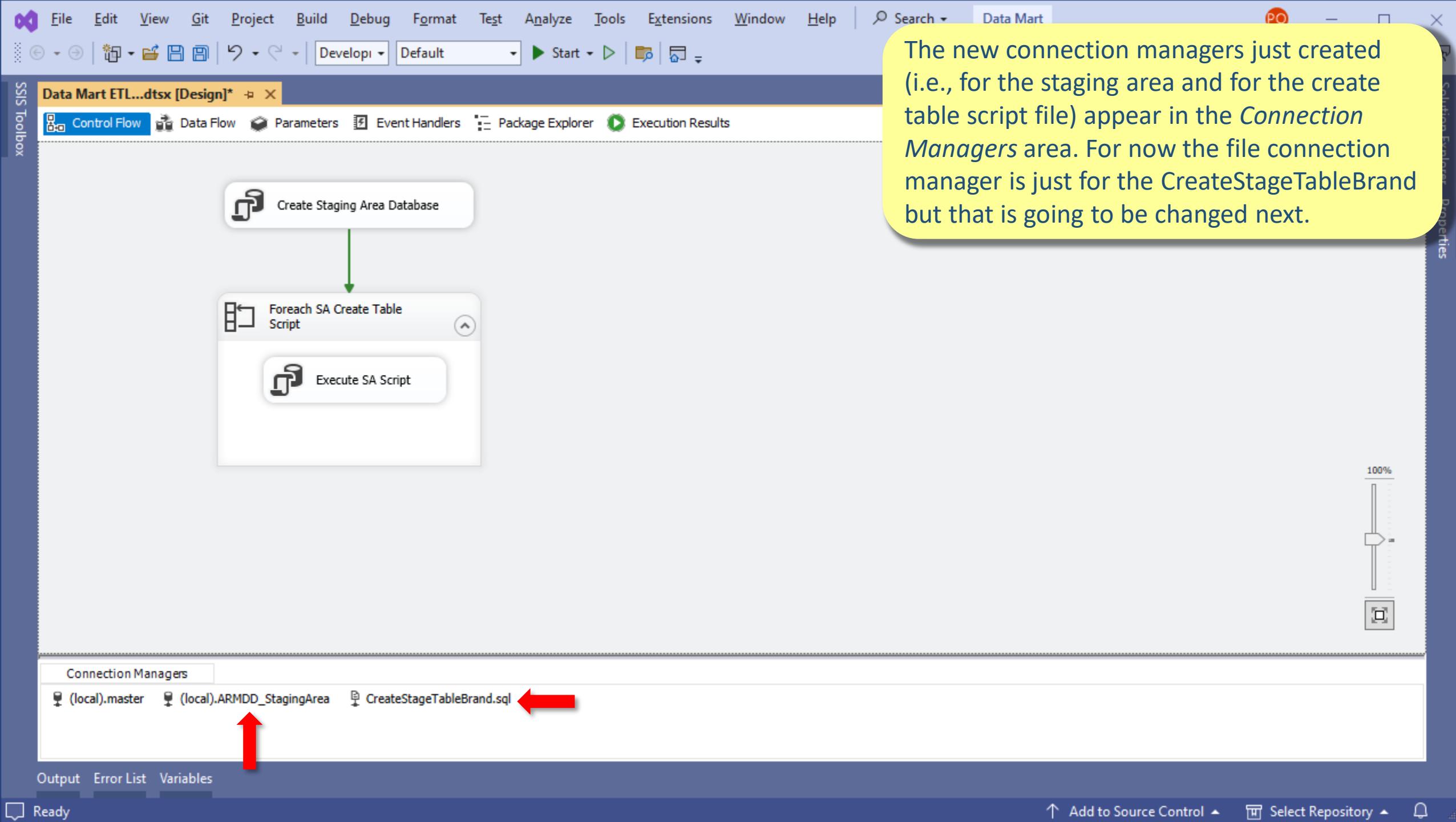
Quick Launch (Ctrl+Q)

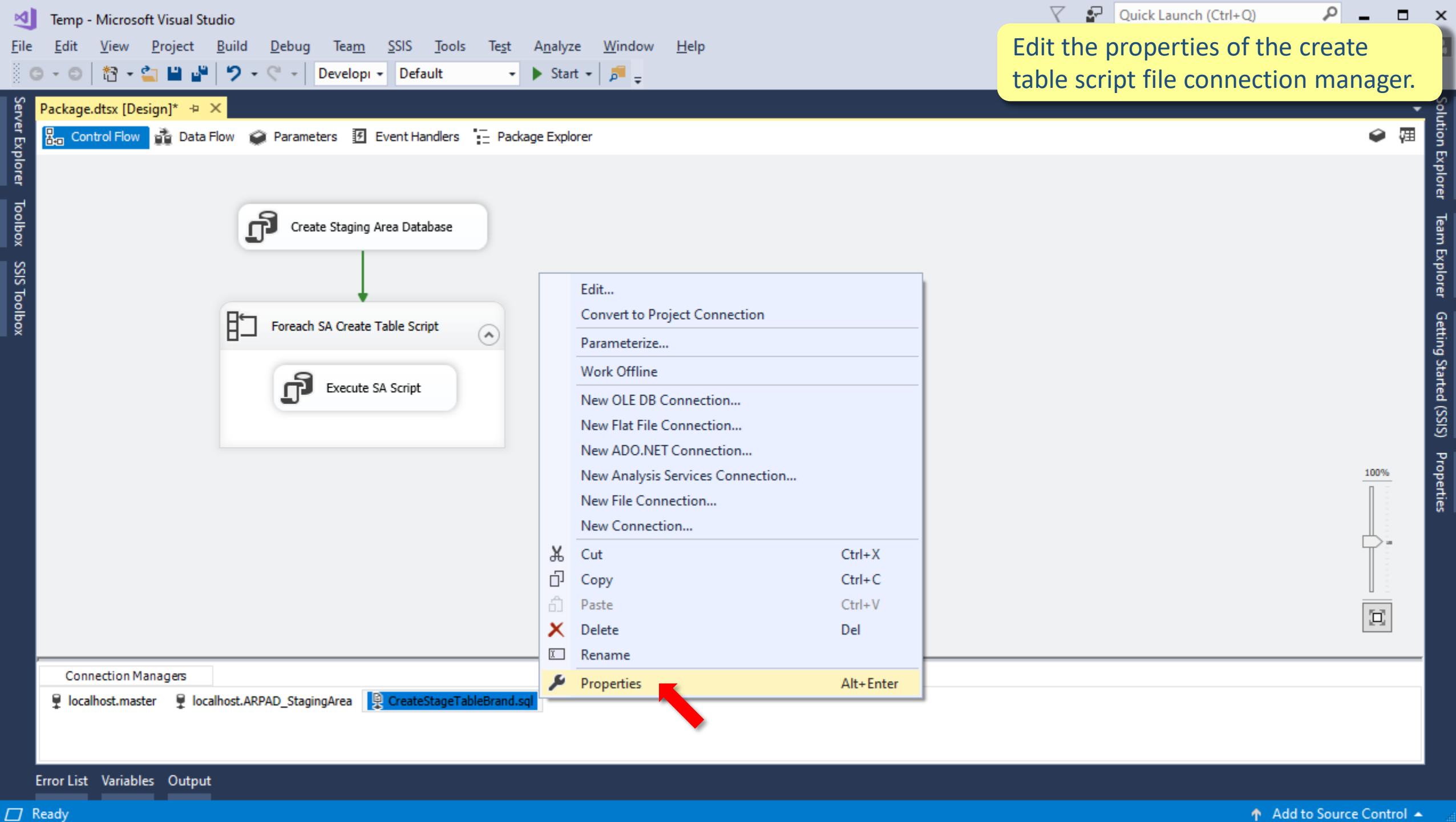
Create a *File connection* to the SQL create tables script files of the staging area.











Temp - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

Edit the Expressions of the connection manager.

Package.dtsx [Design]*

Control Flow Data Flow Parameters Event Handlers Package Explorer

Create Staging Area Database

Foreach SA Create Table Script

Execute SA Script

Connection Managers

localhost.master localhost.ARPAD_StagingArea CreateStageTableBrand.sql

Error List Variables Output

Add to Source Control

Properties

CreateStageTableBrand.sql Connection

Identification

- PackagePath \Package.Connections[CreateStageTableBrand]

Misc

- ConnectByProxy False
- ConnectionString FILE
- ConnectionString D:\Temp\ARPAD\Data Mart
- DataSourcesID
- DelayValidation False
- Description

Expressions

- FileUsageType 0
- HasExpressions False
- ID {E23E6B86-F29D-4137-A84B-}
- Name CreateStageTableBrand.sql
- Qualifier
- SupportsDTCTransactions False

Expressions

A collection of expressions. The evaluation result of each expression is assigned to a property and replac...

```
graph TD; A[Create Staging Area Database] --> B[Foreach SA Create Table Script]; B --> C[Execute SA Script]
```

Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

Edit the *ConnectionString* property.

Package.dtsx [Design]

Control Flow Data Flow Parameters Event Handlers Package Explorer Execution Results

Properties

CreateStageTableBrand.sql Connection

Identification

- PackagePath \Package.Connections[CreateStageTableBrand.sql]

Misc

- ConnectByProxy False
- ConnectionManagerType FILE
- ConnectionString D:\Temp\ARPAD\Data Mart\CreateStageTableBrand.sql
- DataSourceID
- DelayValidation False
- Description

Expressions

- FileUsageType 0
- HasExpressions False
- ID {1C00B16C-B0B3-466F-B616-000000000000}
- Name CreateStageTableBrand.sql
- Qualifier
- SupportsDTCTransactions False

Connection Managers

- localhost.master
- localhost.ARPAD_StagingArea
- CreateStageTableBrand.sql

Error List Variables Output

Add to Source Control ▾

The screenshot shows the Microsoft Visual Studio interface for an SSIS package named "Package.dtsx". A yellow callout box in the top right corner contains the text "Edit the *ConnectionString* property.". In the center, a "Property Expressions Editor" dialog is open, showing a single row with "ConnectionString" in the "Property" column and a blue ellipsis button in the "Expression" column. Two red arrows point to these elements: one to the "ConnectionString" cell and another to the ellipsis button. The "ConnectionString" property is also highlighted in the "Properties" pane on the right, which displays its value as "CreateStageTableBrand.sql Connection". The "ConnectionString" property is listed under the "Misc" category. The "Expressions" category is also visible in the properties pane. At the bottom left, the "Connection Managers" pane lists "localhost.master", "localhost.ARPAD_StagingArea", and "CreateStageTableBrand.sql". The "CreateStageTableBrand.sql" item is selected and highlighted in blue. The bottom right corner contains a tooltip for the "Expressions" section, stating: "A collection of expressions. The evaluation result of each expression is assigned to a property and replac...".

Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Develop Default Start

Package.dtsx [Design]

Control Flow Data Flow Parameters

Server Explorer Toolbox SSIS Toolbox

Drag the SAScriptFilename variable into the Expression field.

Expression Builder

Specify the expression for the property: ConnectionString.

Variables and Parameters

User::SAScriptFilename

Mathematical Functions
String Functions
Date/Time Functions
NULL Functions
Type Casts
Operators

Description:

Expression:

Evaluated value:

Evaluate Expression OK Cancel

Connection Managers

localhost.master localhost.ARPAD_StagingArea CreateStageTableBrand.sql

CreateStageTableBrand.sql Connection

Identification

PackagePath \Package.Connections[CreateStageTableBrand]

Misc

ConnectByProxy False
ConnectionManagerType FILE
ConnectionString D:\Temp\ARPAD\Data Mart\CreateStageTableBrand.sql
DataSourceID
DelayValidation False
Description
Expressions

FileUsageType 0
HasExpressions False
ID {1C00B16C-B0B3-466F-B616-
Name CreateStageTableBrand.sql
Qualifier
SupportsDTCTransactions False

Expressions

A collection of expressions. The evaluation result of each expression is assigned to a property and replaced.

Error List Variables Output

Add to Source Control

Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

Sign in

Server Explorer

Toolbox

SSIS Toolbox

Package.dtsx [Design]

Control Flow Data Flow Parameters

Expression Builder

Specify the expression for the property: ConnectionString.

Variables and Parameters

- Mathematical Functions
- String Functions
- Date/Time Functions
- NULL Functions
- Type Casts
- Operators

User::SAScriptFilename

Description:

Expression: `@User::SAScriptFilename`

Evaluated value:

Evaluate Expression OK Cancel

Properties

CreateStageTableBrand.sql Connection

Identification

- PackagePath: \Package.Connections[CreateStageTableBrand]

Misc

- ConnectByProxy: False
- ConnectionManagerType: FILE
- ConnectionString: D:\Temp\ARPAD\Data Mart\CreateStageTableBrand.sql
- DataSourceID:
- DelayValidation: False
- Description:

Expressions

- FileUsageType: 0
- HasExpressions: False
- ID: {1C00B16C-B0B3-466F-B616-000000000000}
- Name: CreateStageTableBrand.sql
- Qualifier:
- SupportsDTCTransactions: False

Expressions

A collection of expressions. The evaluation result of each expression is assigned to a property and replac...

Connection Managers

- localhost.master
- localhost.ARPAD_StagingArea
- CreateStageTableBrand.sql

Error List Variables Output

Add to Source Control

The screenshot shows the Microsoft Visual Studio interface for an SSIS package named 'Package.dtsx'. In the center, the 'Expression Builder' dialog is open, prompting for an expression to set the 'ConnectionString' property. The 'Expression' field contains the variable reference '@User::SAScriptFilename'. A red arrow highlights this field. At the bottom right of the dialog, another red arrow points to the 'OK' button, which is used to confirm the expression. To the right of the dialog, the 'Properties' window displays the connection manager settings, including the connection name 'CreateStageTableBrand.sql' and its properties like 'ConnectionString' and 'Name'. The 'Expressions' section is also visible in the properties window. The bottom of the screen shows the 'Connection Managers' list, which includes 'localhost.master', 'localhost.ARPAD_StagingArea', and 'CreateStageTableBrand.sql'. The status bar at the bottom indicates 'Ready'.

Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Develop Default Start

Package.dtsx [Design] X

Control Flow Data Flow Parameters Event Handlers Package Explorer Execution Results

Server Explorer Toolbox SSIS Toolbox

Property Expressions Editor

Property expressions:

Property	Expression
ConnectionString	@[User::SAScriptFilename]

OK Cancel Delete

Connection Managers

- localhost.master
- localhost.ARPAD_StagingArea
- CreateStageTableBrand.sql

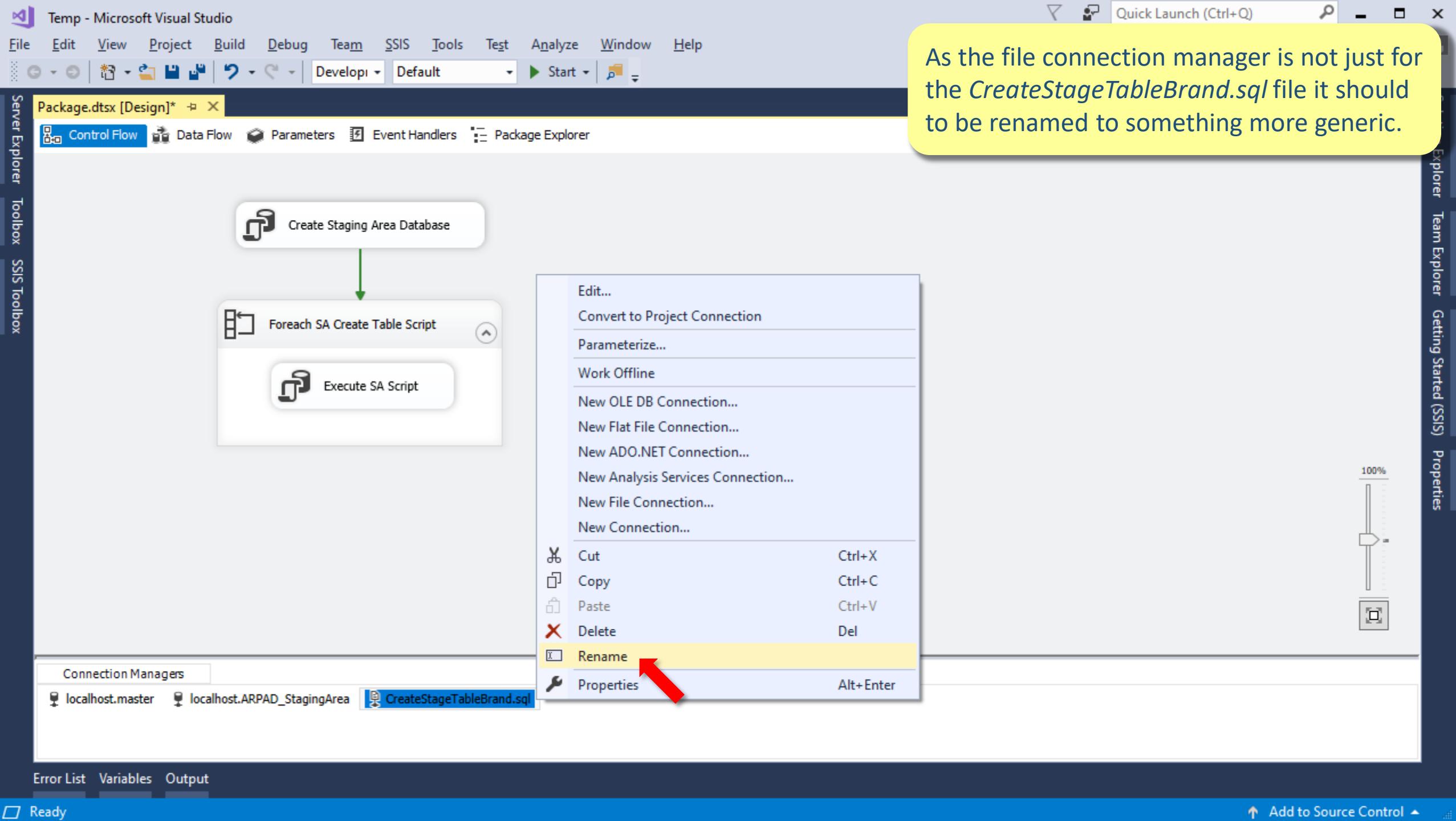
Expressions
A collection of expressions. The evaluation result of each expression is assigned to a property and replac...

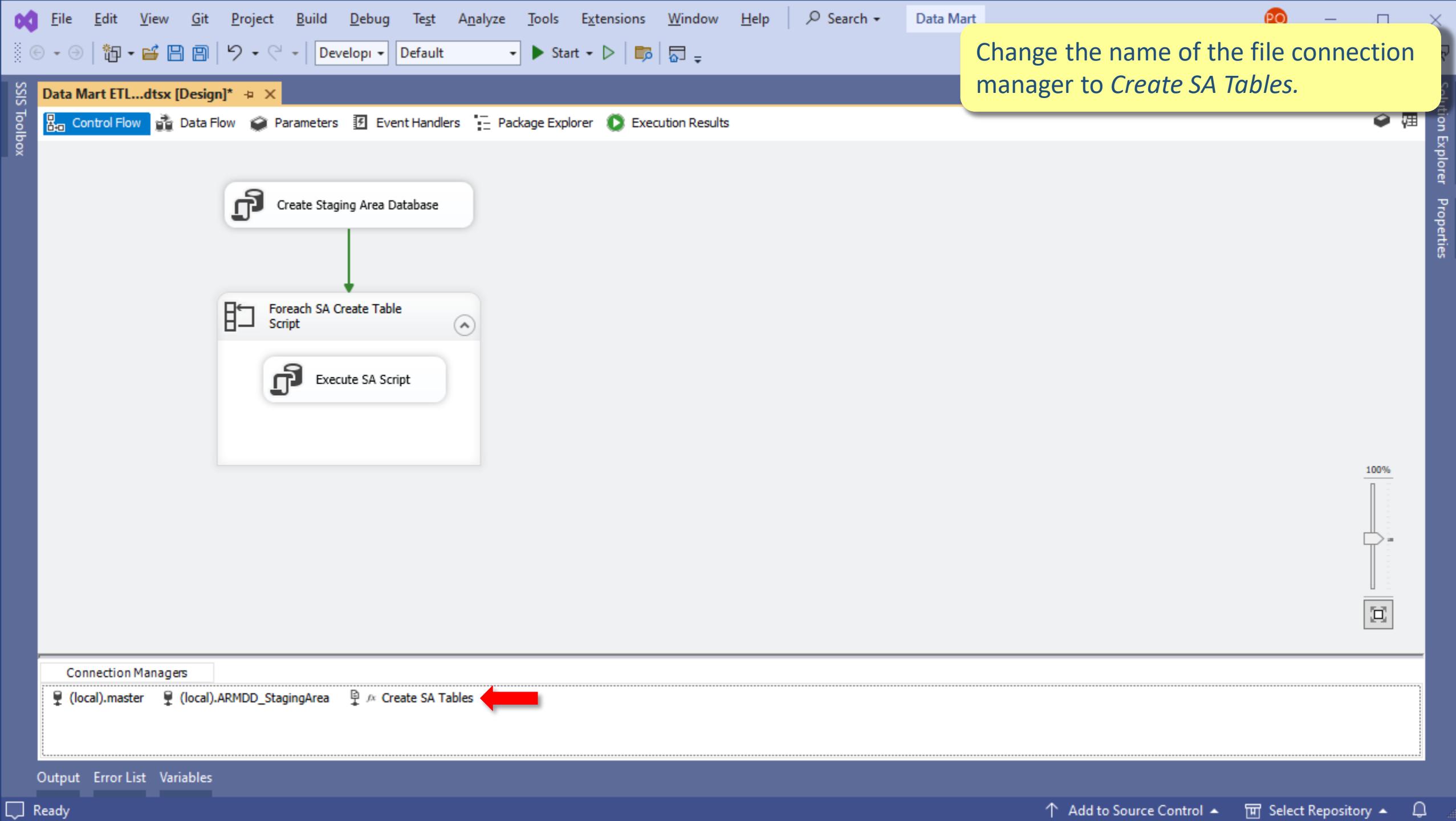
By using the `SAScriptFilename` variable as the `ConnectionString` this means that the file connection changes according to the value of this variable in each new iteration of the `ForEach` component. This way the file connection is not attached anymore to just a single create table script file. In each iteration, the file connection is attached to a new file.

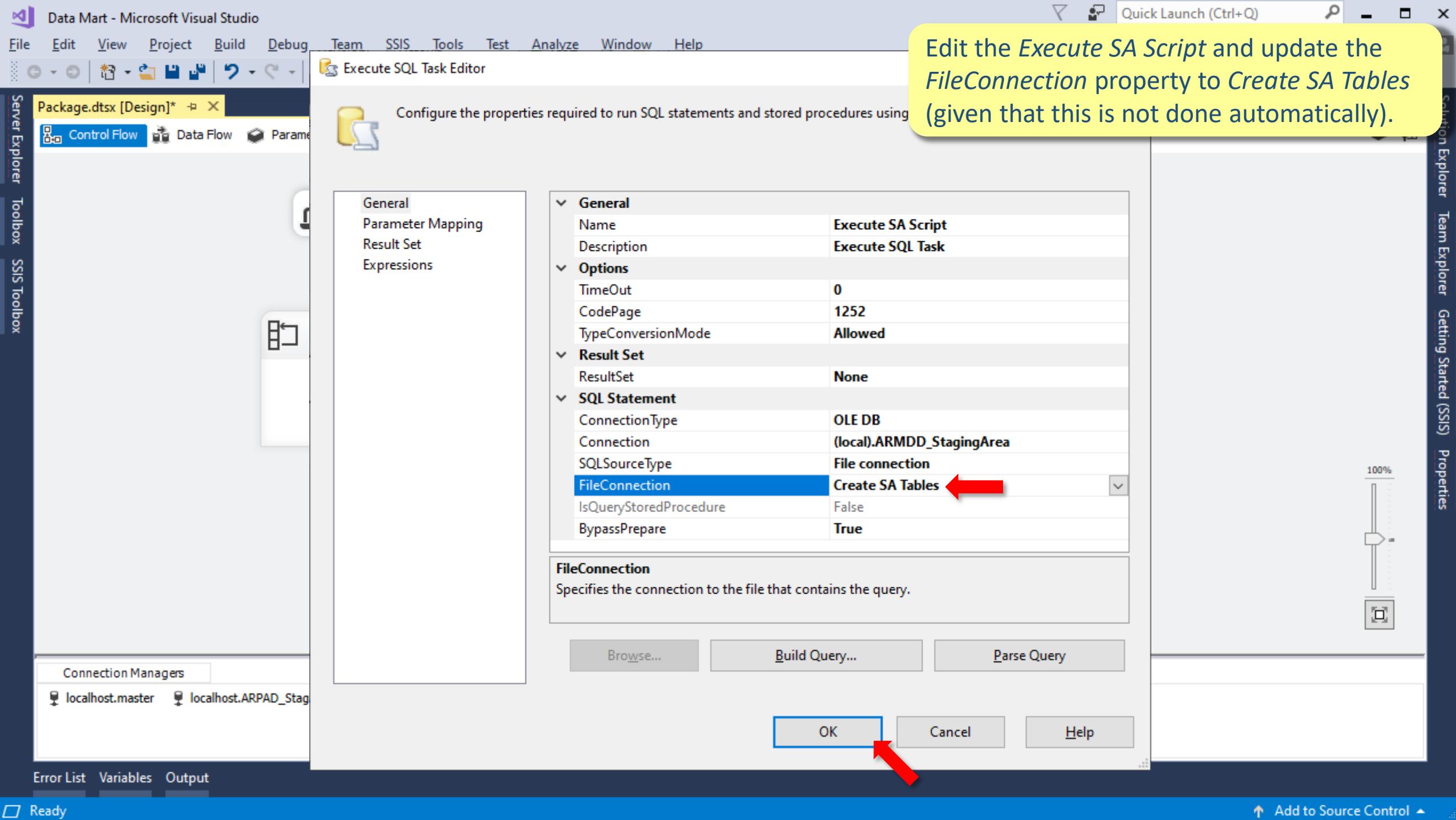
OK

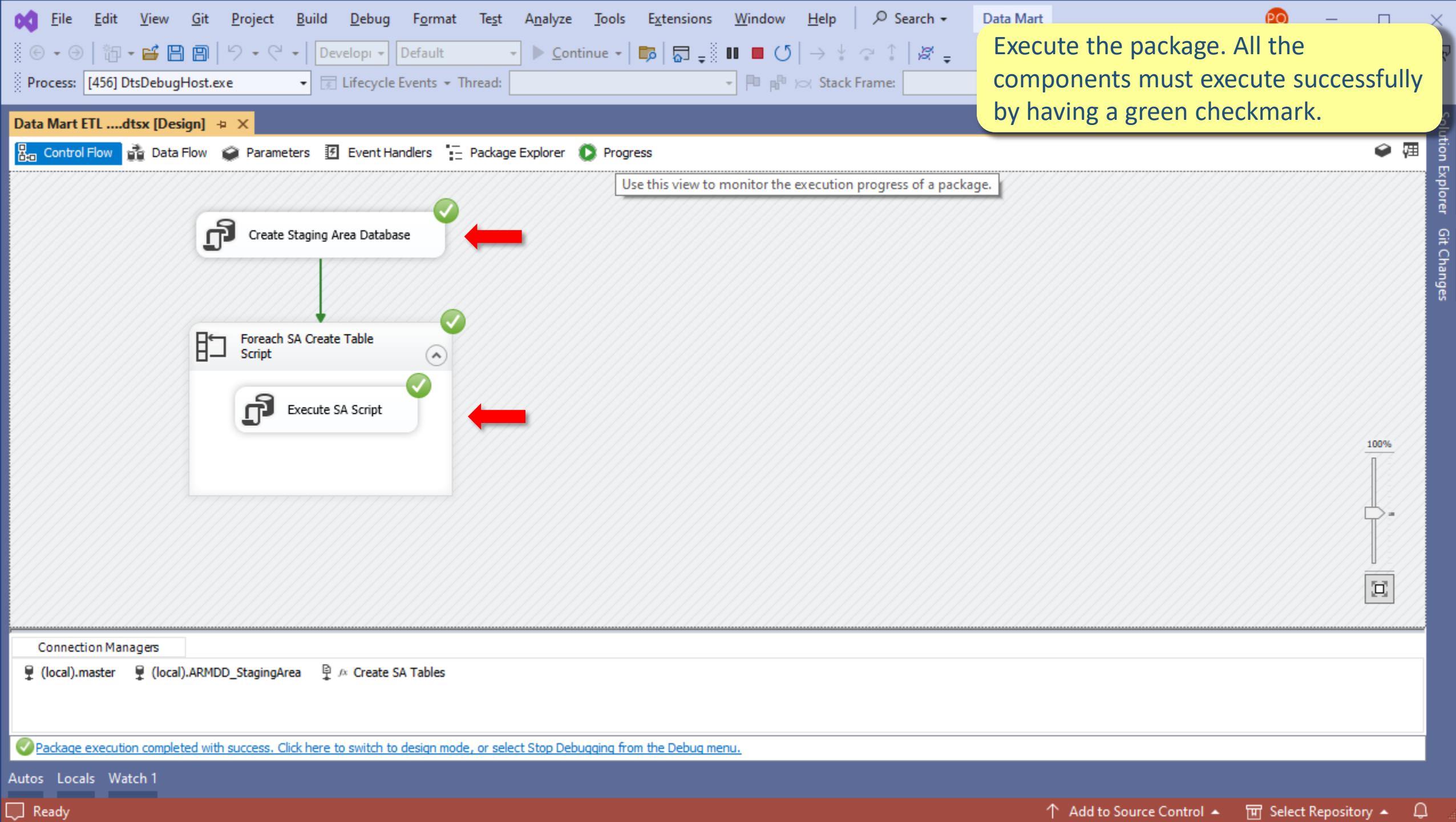
ConnectionString	D:\Temp\ARPAD\Data Mart
ConnectionString	D:\Temp\ARPAD\Data Mart
DataSourceID	
DelayValidation	False
Description	
Expressions	
FileUsageType	0
HasExpressions	False
ID	{1C00B16C-B0B3-466F-B616-...
Name	CreateStageTableBrand.sql
Qualifier	
SupportsDTCTransactio	False

Ready Add to Source Control









Microsoft SQL Server Management Studio

File Edit View Tools Window Help

New Query HDX DMX XMLA DAX Execute

Object Explorer

localhost (SQL Server 16.0.1050.5 - AzureAI)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorksDW2022
 - ARMDD_StagingArea
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.Brand
 - dbo.Card
 - dbo.Category
 - dbo.Item
 - dbo.SubCategory
 - dbo.Transaction
 - dbo.Transaction_Item
 - Dropped Ledger Tables
- Views
- External Resources
- Synonyms
- Programmability
- Query Store
- Service Broker
- Storage
- Security

Ready

Using SQL Server Management Studio it is possible to check that the Staging Area tables were successfully created. You may have to refresh the database tables.

If the package is once again executed, you get an error.

Control Flow

```
graph TD; A[Create Staging Area Database] --> B[Foreach SA Create Table Script]; B --> C[Execute SA Script];
```

Connection Managers

- (local).master
- (local).ARMDD_StagingArea
- Create SA Tables

Package execution completed with error. Click here to switch to design mode, or select Stop Debugging from the Debug menu.

Autos Locals Watch 1

Ready Add to Source Control Select Repository

Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Developer Default Start Package Explorer Execution Results

Package.dtsx [Design]

Control Flow Data Flow Parameters Event Handlers Package Explorer Execution Results

Package

- Validation has started
- Task Create Staging Area Database
 - Validation has started (2)
 - Validation is completed (2)
 - Start, 11:53:59
 - Progress: Executing query "IF NOT EXISTS (SELECT name FROM sys.databases WHERE...". - 100 percent complete
 - Finished, 11:53:59, Elapsed time: 00:00:00.156
- Foreach Staging Area Script File
 - Validation has started
 - Task Execute SA Script
 - Validation has started (2)
 - Validation is completed (2)
 - Start, 11:53:59
 - [Execute SQL Task] Error: Executing the query "--IF NOT EXISTS (SELECT name FROM sys.tables WHERE..." failed with the following error: "There is already an object named 'Brand' in the database.". Possible failure reasons: Problem with the query, problem with the query processor or with the system tables. Error code 1811.
 - Task Execute SA Script failed
 - Finished, 11:53:59, Elapsed time: 00:00:00.015
 - Validation is completed
 - Start, 11:53:59
 - Warning: SSIS Warning Code DTS_W_MAXIMUMERRORCOUNTREACHED. The Execution method succeeded, but the number of errors raised (1) reached the maximum allowed (1); resulting in failure. This occurs when the number of errors reaches the limit of 1000.
 - Finished, 11:53:59, Elapsed time: 00:00:00.047
- Validation is completed
- Start, 11:53:59
- Warning: SSIS Warning Code DTS_W_MAXIMUMERRORCOUNTREACHED. The Execution method succeeded, but the number of errors raised (1) reached the maximum allowed (1); resulting in failure. This occurs when the number of errors reaches the limit of 1000.
- Finished, 11:53:59, Elapsed time: 00:00:00.500

In the *Execution Results* tab (at design time) or in the *Progress* tab (at runtime) it's possible to see the reason of the failure: "There is already an object named 'Brand' in the database", so the Create Table Brand fails its execution.

Error List Variables Output

Ready Add to Source Control

CreateStageTableBrand.sql - LYNX.ARPAD_StagingArea (LYNX\Paulo (60))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DML XMLA DAX

ARPAD_StagingArea Execute

Object Explorer

Connect LYNX (SQL Server 15.0.2070.41 - LYNX\Paulo)

Databases
System Databases
Database Snapshots
AdventureWorksDW2019
ARPAD_StagingArea
Database Diagrams
Tables
System Tables
FileTables
External Tables
Graph Tables
dbo.Brand
dbo.Card
dbo.Category
dbo.Item
dbo.SubCategory
dbo.Transaction
dbo.Transaction_Item
Views
External Resources
Synonyms
Programmability
Service Broker
Storage
Security
Security
Server Objects
Replication
PolyBase

CreateStageTableBr...a (LYNX\Paulo (60))*

```
IF NOT EXISTS (SELECT name FROM sys.tables WHERE name = 'Brand')
    CREATE TABLE [dbo].[Brand]
    (
        [BrandCode] [char](9),
        [BrandDescription] [nvarchar](50)
    )
ELSE
    TRUNCATE TABLE Brand
```

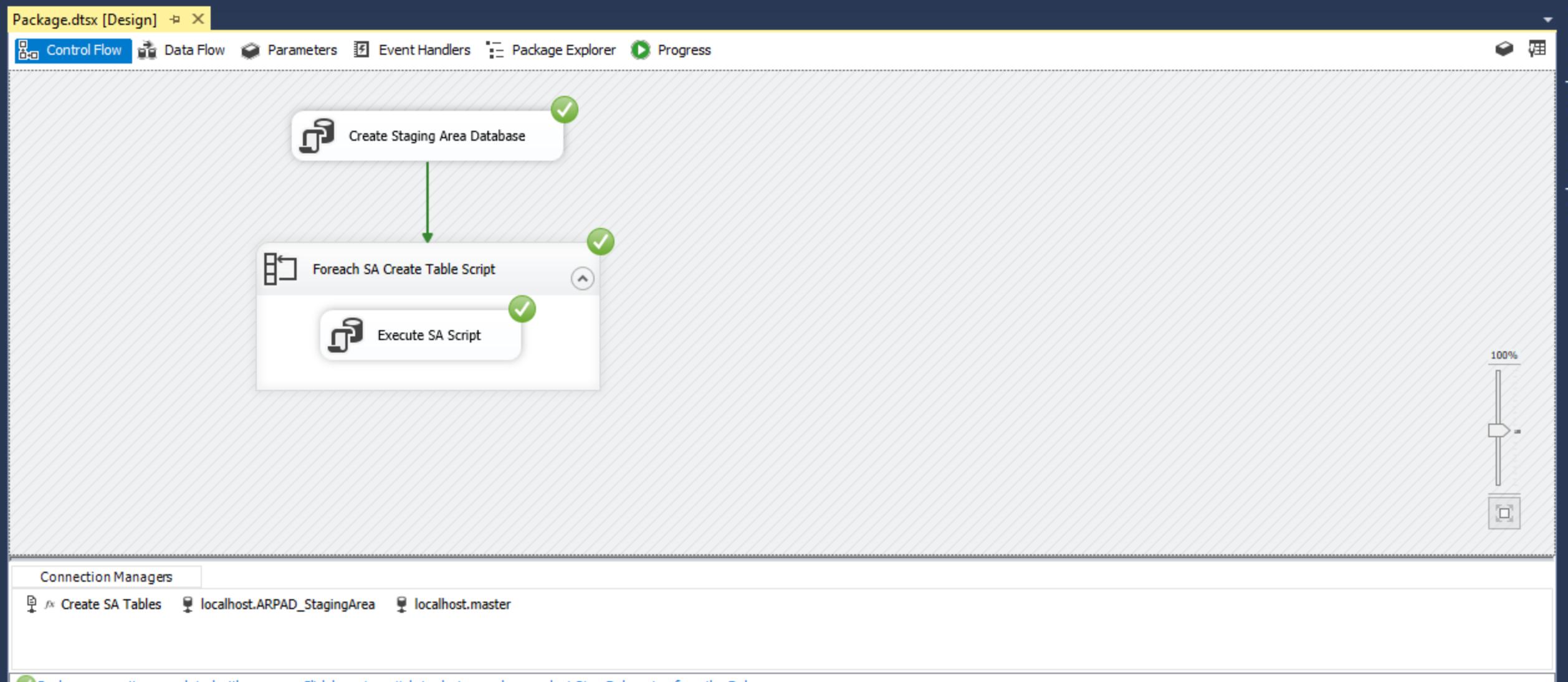
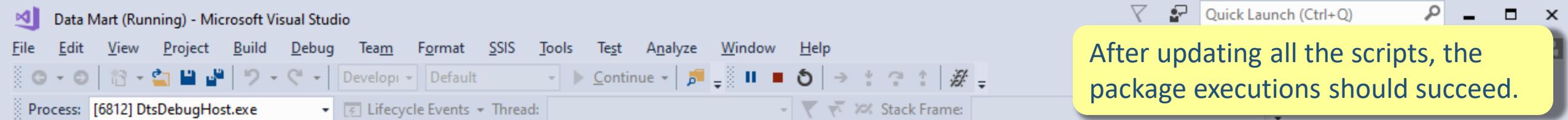
100 %

Connected. (1/1) LYNX (15.0 RTM) | LYNX\Paulo (60) | ARPAD_StagingArea | 00:00:00 | 0 rows

Ln 8 Col 1 Ch 1 INS

Quick Launch (Ctrl+Q)

You can use SQL Server Management Studio to view and edit the *CreateStageTableBrand.sql*. The script needs to be updated in order to just create the table if it yet doesn't exist. If it already exists, all its data should be deleted/truncated. Update not only this script as presented, but also all the other create table scripts of the staging area. Otherwise, you will get the same error. Every time you change a script you should check its syntax before saving.



Connection Managers

Create SA Tables localhost.ARPAD_StagingArea localhost.master

✓ Package execution completed with success. Click here to switch to design mode, or select Stop Debugging from the Debug menu.

Call Stack Breakpoints Exception Settings Command Window Immediate Window Output Autos Locals Watch 1

Ready

Add to Source Control ▾

The purpose of what you should do next (by yourself) is to:

- create the Data Mart database (*ARMDD_DataMart*)
- Iterate through a set of SQL create table script files stored in a folder to create each table of the Data Mart database

Basically, you need to repeat the same previous steps, but now for the Data Mart database using the Data Mart script files.

The screenshot shows the SSIS Control Flow Designer with two parallel foreach loops. The left loop, labeled 'Create Staging Area Database', contains a 'Foreach SA Create Table Script' container with an 'Execute SA Script' task. The right loop, labeled 'Create Data Mart Database', contains a 'Foreach DM Create Table Script' container with an 'Execute DM Script' task. Both loops have green checkmarks indicating successful execution. Red arrows point from the text instructions above to the 'Create Data Mart Database' and 'Execute DM Script' components.

Control Flow Data Flow Parameters Event Handlers Package Explorer Progress

Data Mart ETLdtsx [Design] X

Create Staging Area Database

Foreach SA Create Table Script

Execute SA Script

Create Data Mart Database

Foreach DM Create Table Script

Execute DM Script

Connection Managers

(local).master (local).ARMDD_StagingArea Create SA Tables (local).ARMDD_DataMart Create DM Tables

Package execution completed with success. Click here to switch to design mode, or select Stop Debugging from the Debug menu.

Autos Locals Watch 1

Ready Add to Source Control Select Repository

CreateDimCard.sql - LYNX.master (LYNX\Paulo (57))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DML XMLA DAX

master Execute

Object Explorer

Connect LYNX (SQL Server 15.0.2070.41 - LYNX\Paulo)

Databases System Databases Database Snapshots AdventureWorksDW2019 ARPAD_StagingArea Security Server Objects Replication PolyBase Always On High Availability Management Integration Services Catalogs SQL Server Agent (Agent XPs disabled) XEvent Profiler

CreateDimCard.sql...r (LYNX\Paulo (57))*

```
IF NOT EXISTS (SELECT name FROM sys.tables where name = 'DimCard')
CREATE TABLE [dbo].[DimCard](
    [CardKey] [int] IDENTITY(1,1) NOT NULL,
    [CardID] [char](11) NOT NULL,
    [City] [nvarchar](50) NOT NULL,
    [Region] [nvarchar](50) NOT NULL,
    [PostalCode] [nvarchar](10) NOT NULL,
    [CardStartDateKey] [int] NOT NULL,
    [Gender] [nvarchar](6) NOT NULL,
    [DateOfBirthKey] [int] NOT NULL,
    [MaritalStatus] [nvarchar](10) NOT NULL,
    [NumChildren] [tinyint] NULL,
    [YoungestChildren] [tinyint] NULL,
    [EffectiveDate] [datetime] NOT NULL,
    [ExpiredDate] [datetime] NULL,
    [IsCurrent] [nvarchar](3) NOT NULL
CONSTRAINT [PK_DimCard] PRIMARY KEY CLUSTERED
(
    [CardKey] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON)
ON [PRIMARY]
```

100 %

Connected. (1/1)

LN 22 Col 1 Ch 1 INS

LYNX (15.0 RTM) | LYNX\Paulo (57) | master | 00:00:00 | 0 rows

Update the Data Mart create tables script files in order to create the tables only if they don't yet exist. Otherwise, nothing should be done. You don't want to delete all the Data Mart data every time the package runs.

Microsoft SQL Server Management Studio

File Edit View Tools Window Help

New Query MDX DMX XMLA DAX Execute

Object Explorer

Connect (refresh icon) → ARMDD_DataMart → Tables (red arrows)

After the package execution, Data Mart tables should also be created in the Data Mart database. You may need to refresh the databases.

Ready

Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Develop Default Start

Solution Explorer

Search Solution Explorer (Ctrl+)

Solution 'Data Mart' (1 project)

- Data Mart
 - Project.params
 - Connection Managers
 - SSIS Packages
 - Data Mart ETL Package.dtsx
 - Package Parts
 - Control Flow
 - Miscellaneous
 - Linked Azure Resources
 - Azure-SSIS Integration Runtime
 - Azure Storage

The purpose of what you going to do in the next slides is to:

- Load the data into the Staging Area tables by iterating through a set of files (.dat files) stored in a folder;
- Load the *dat* file data into a table with the same name;

Connection Managers

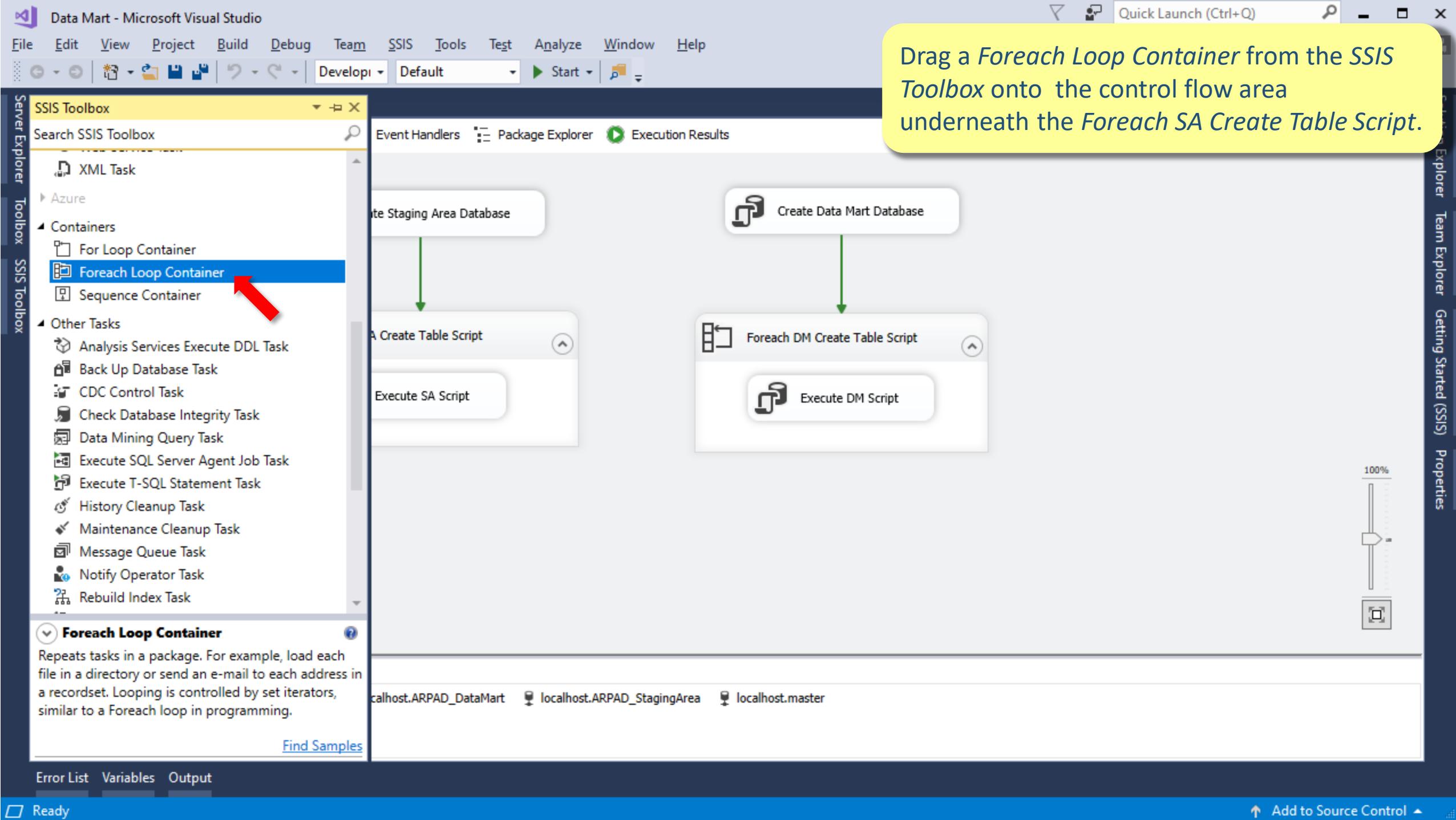
Create DM Tables Create SA Tables localhost.ARPAD_DataMart localhost.ARPAD_StagingArea localhost.master

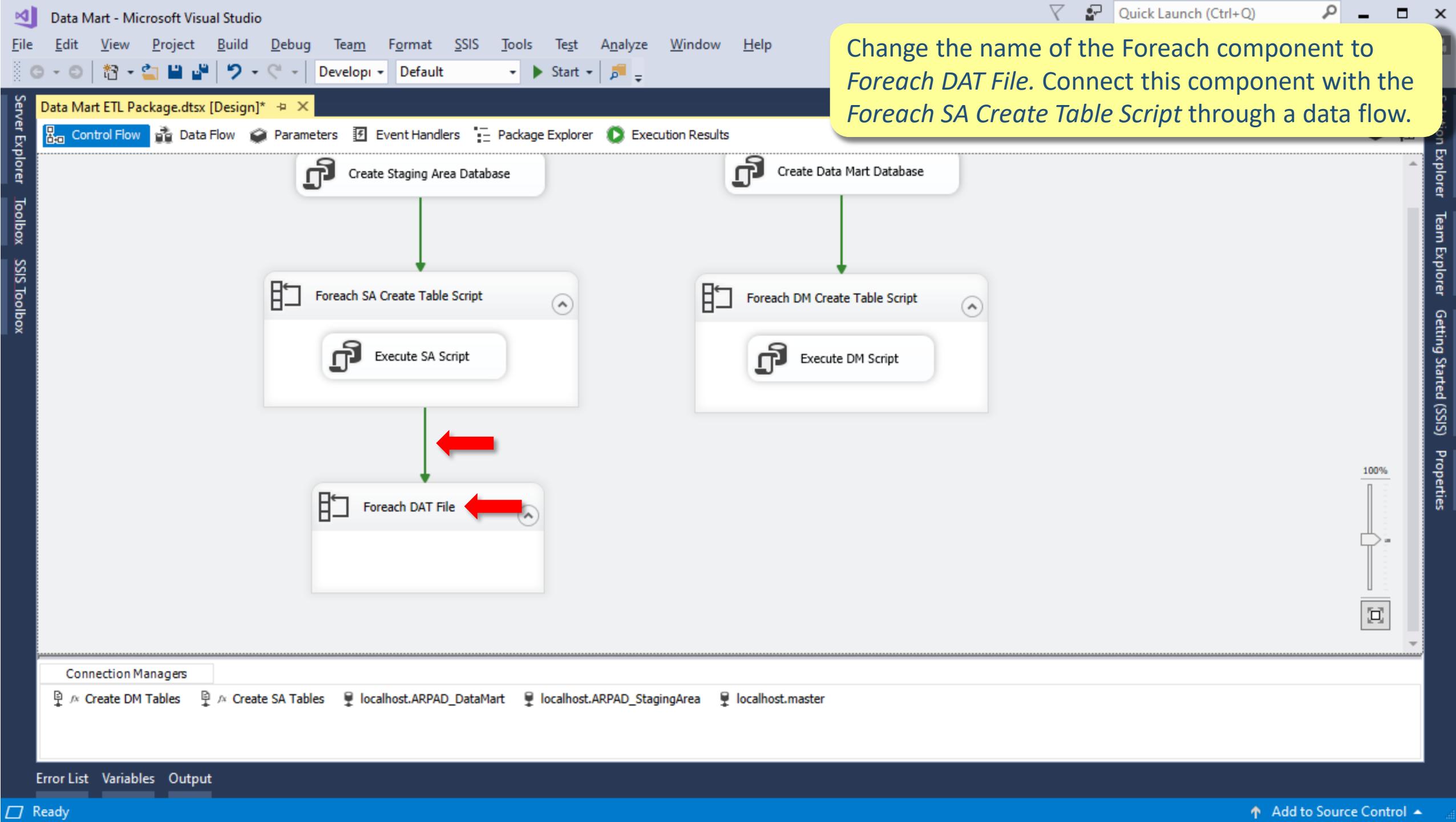
Error List Variables Output

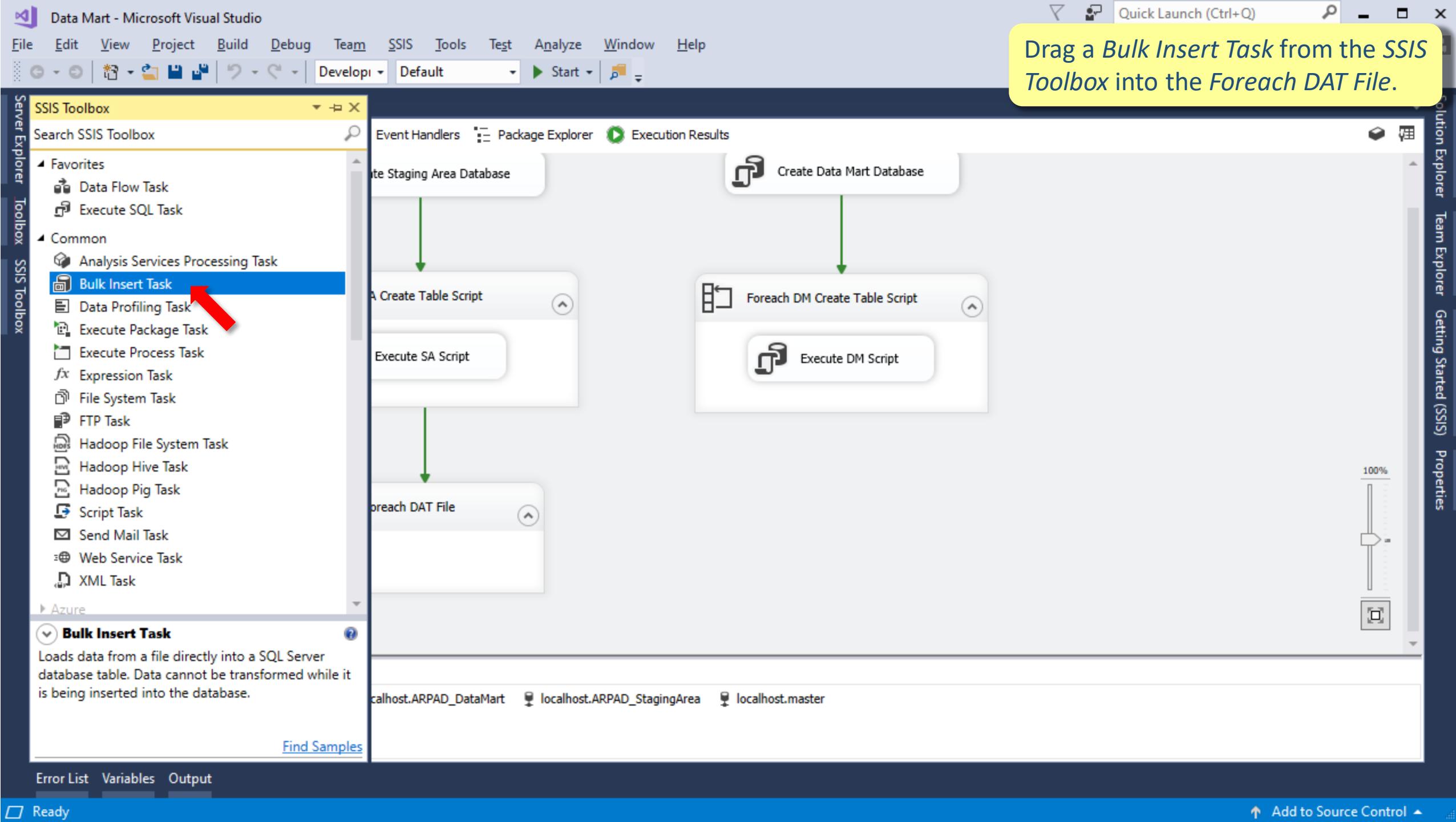
This item does not support previewing Add to Source Control

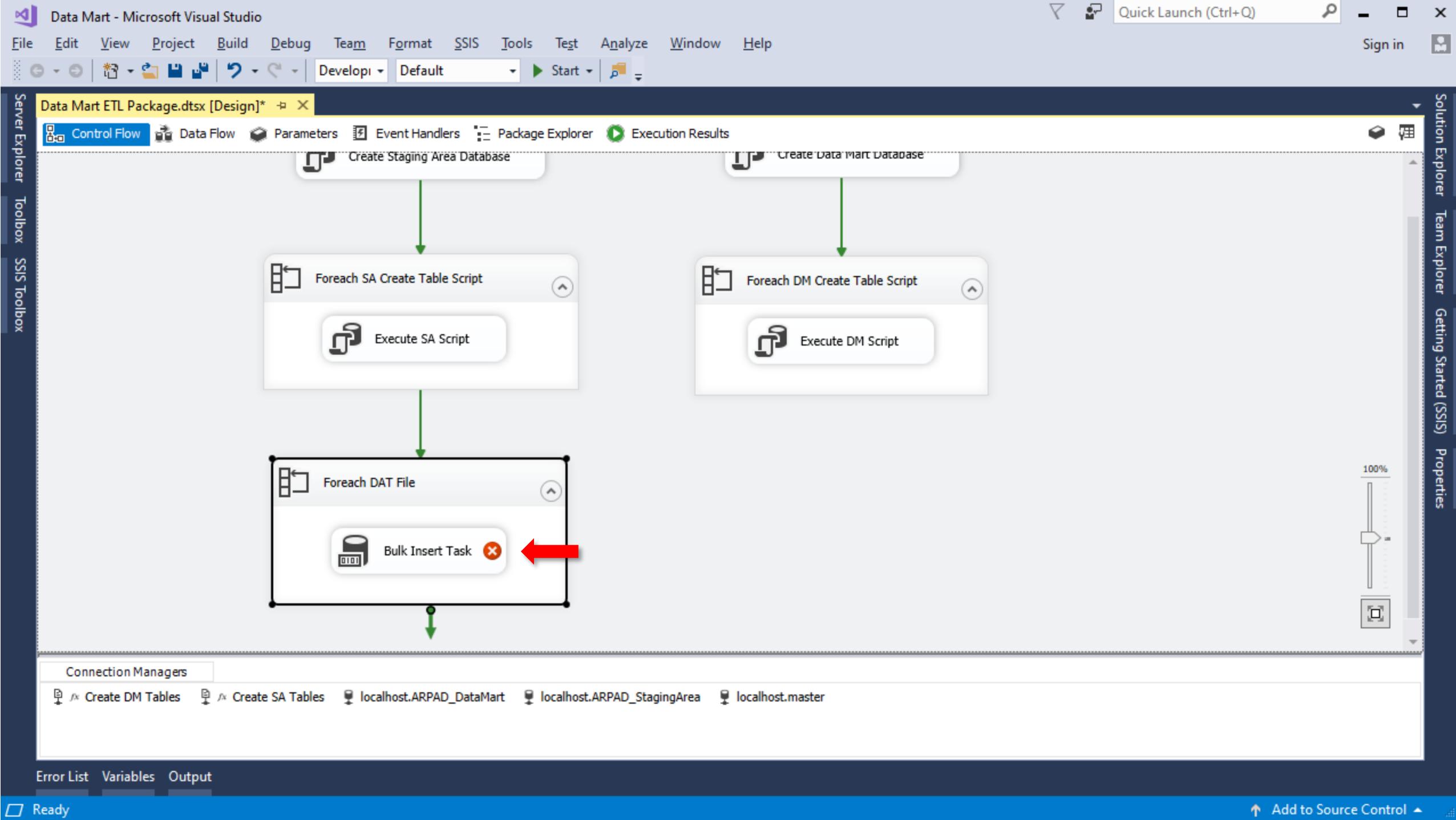
Server Explorer Toolbox SSIS Toolbox

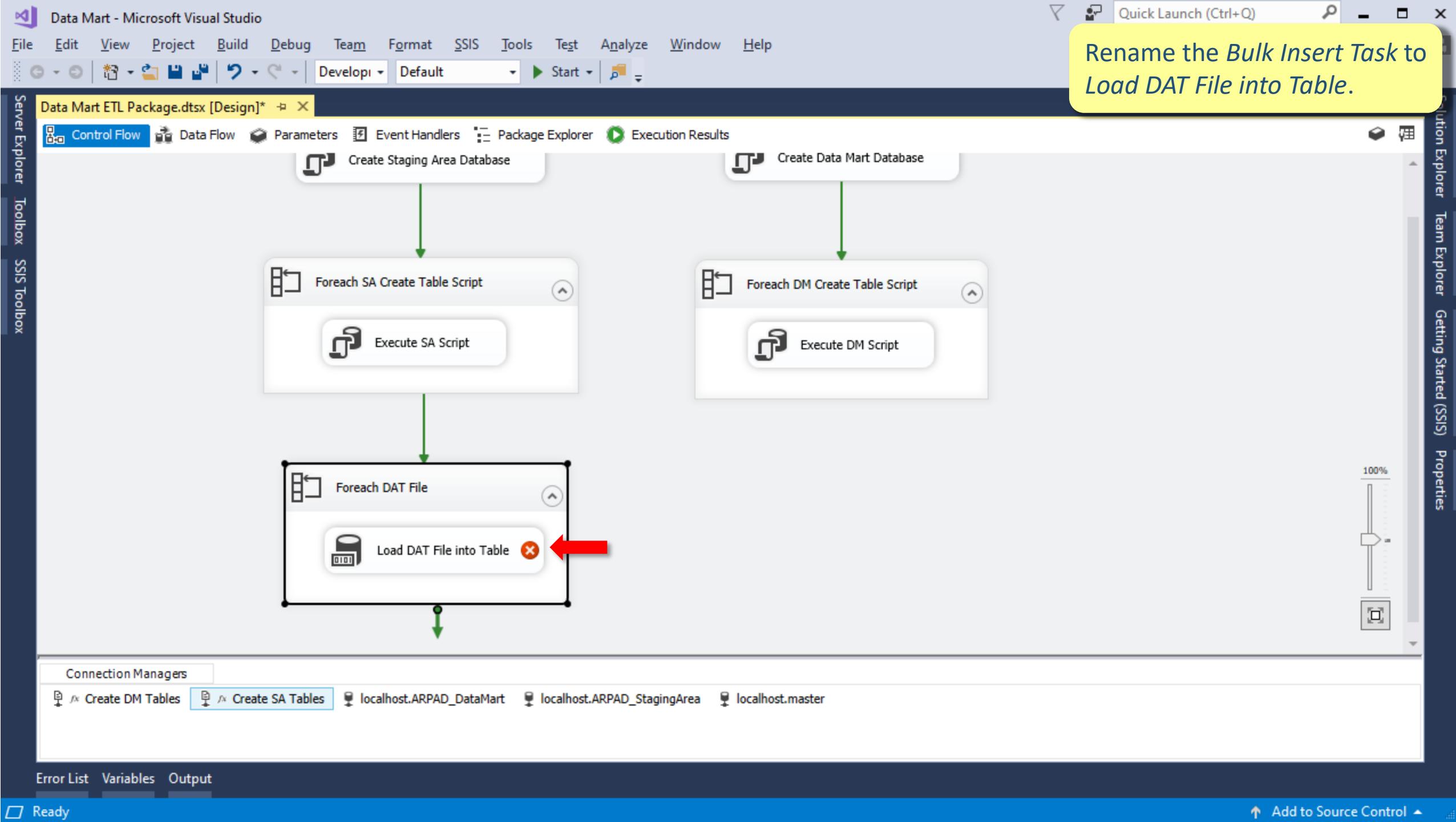
Sign in

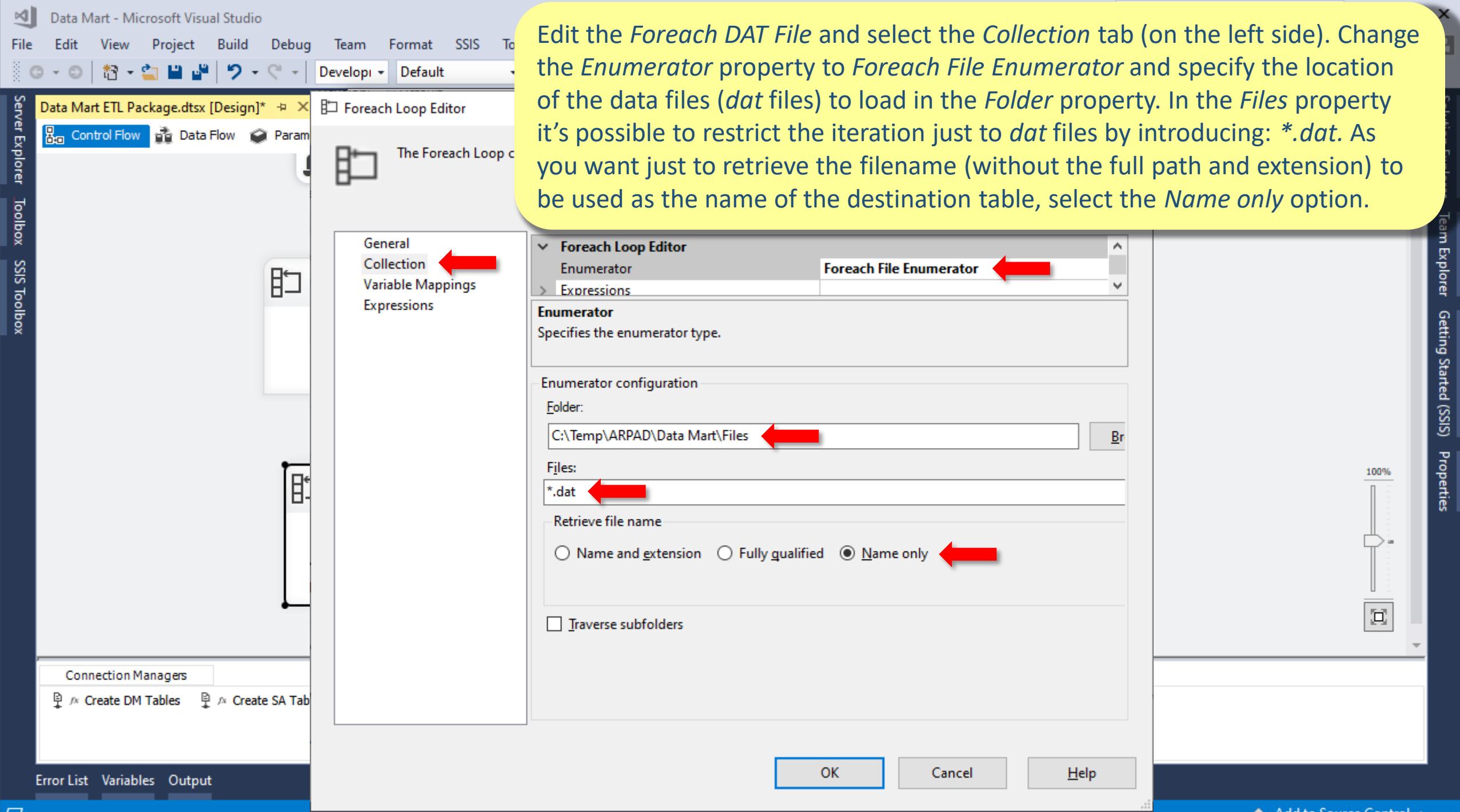


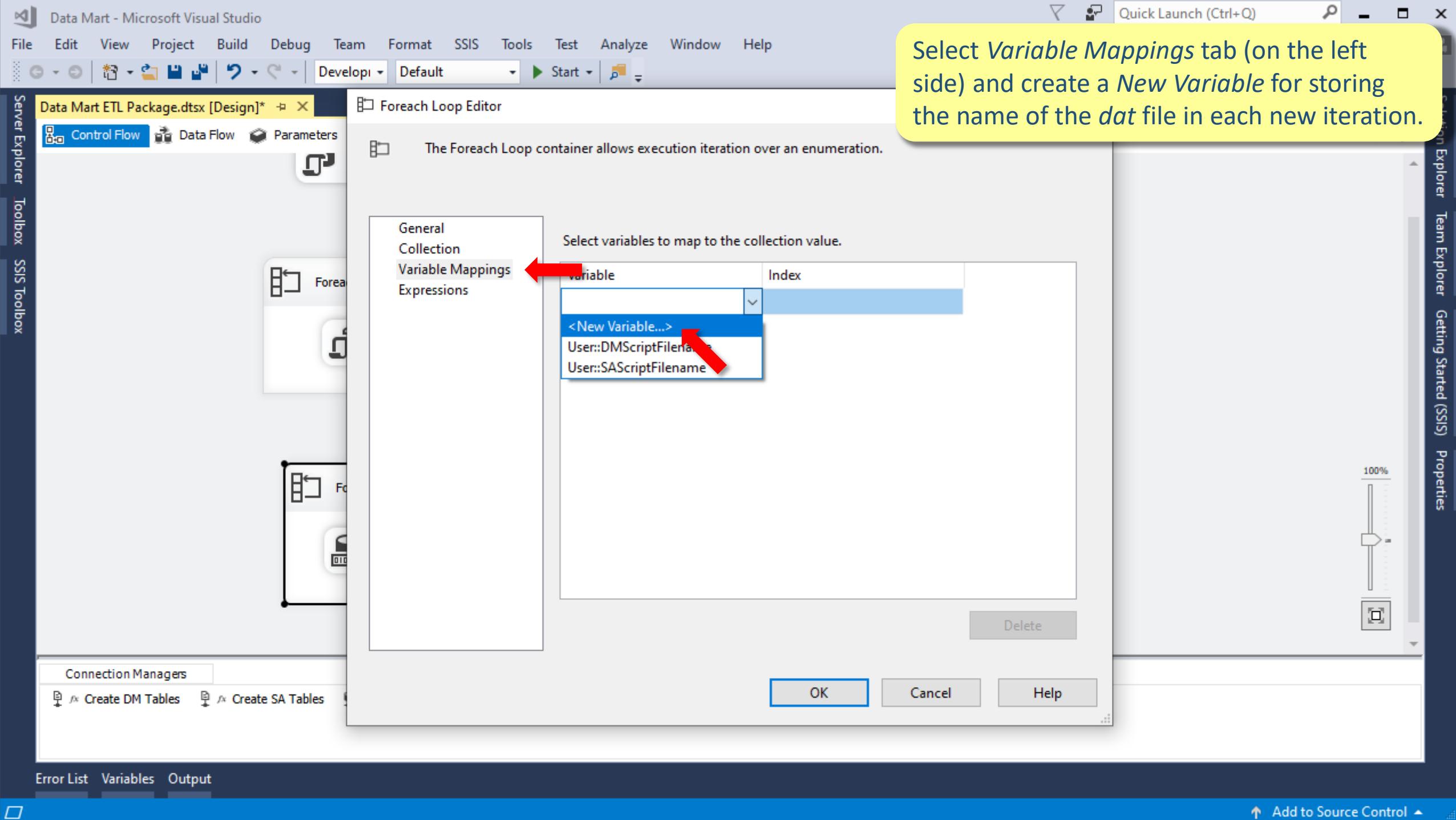


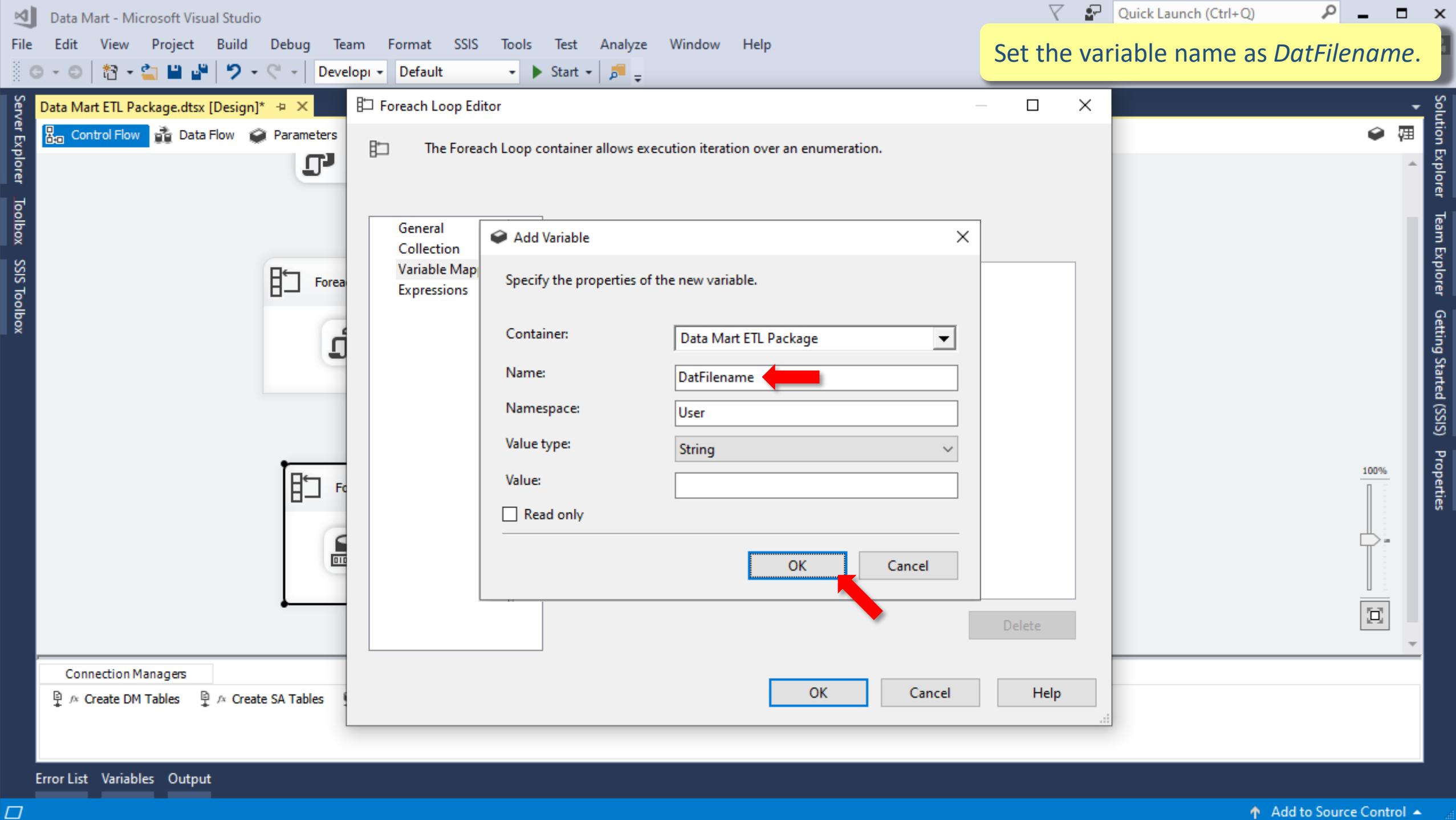


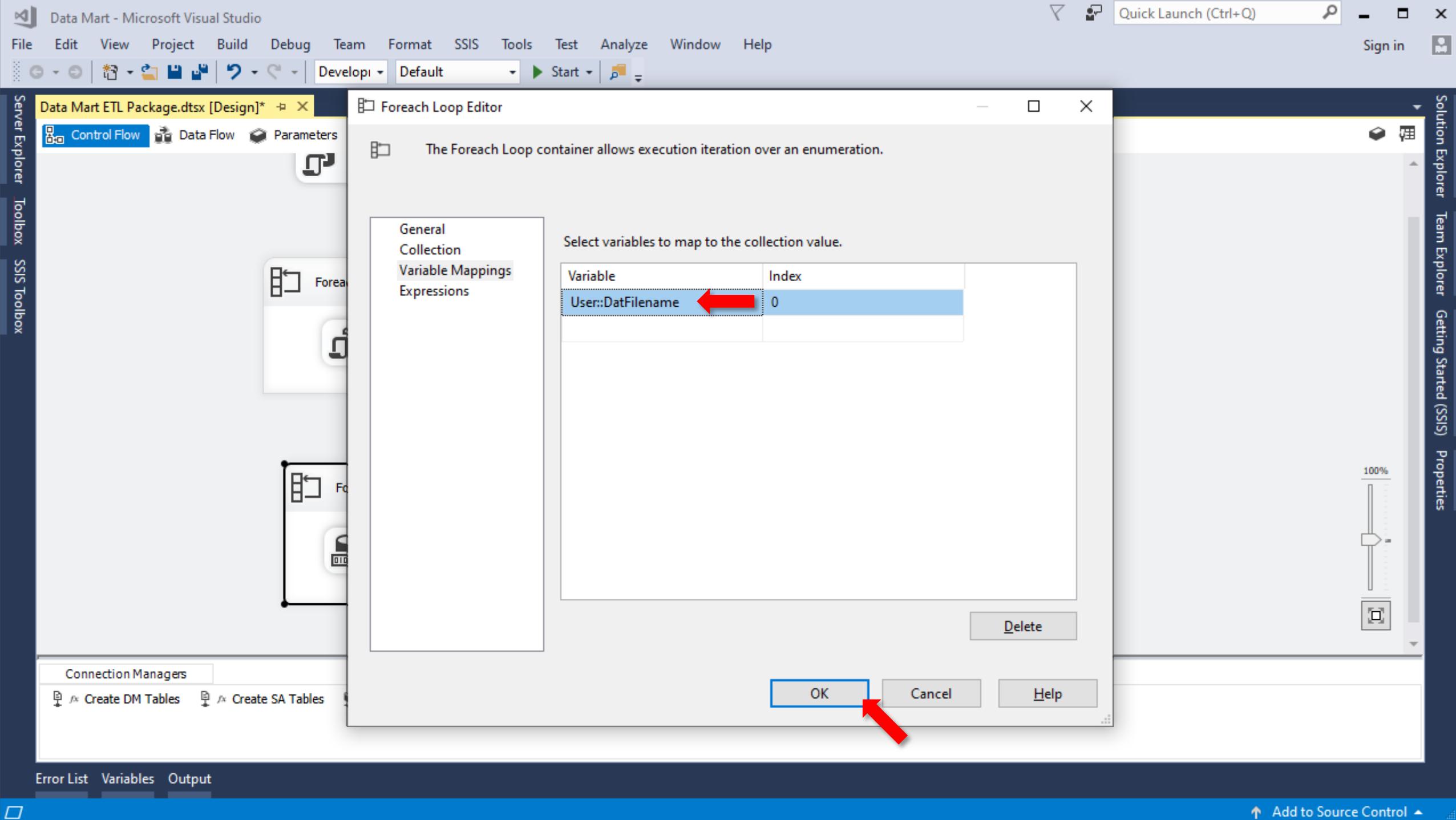


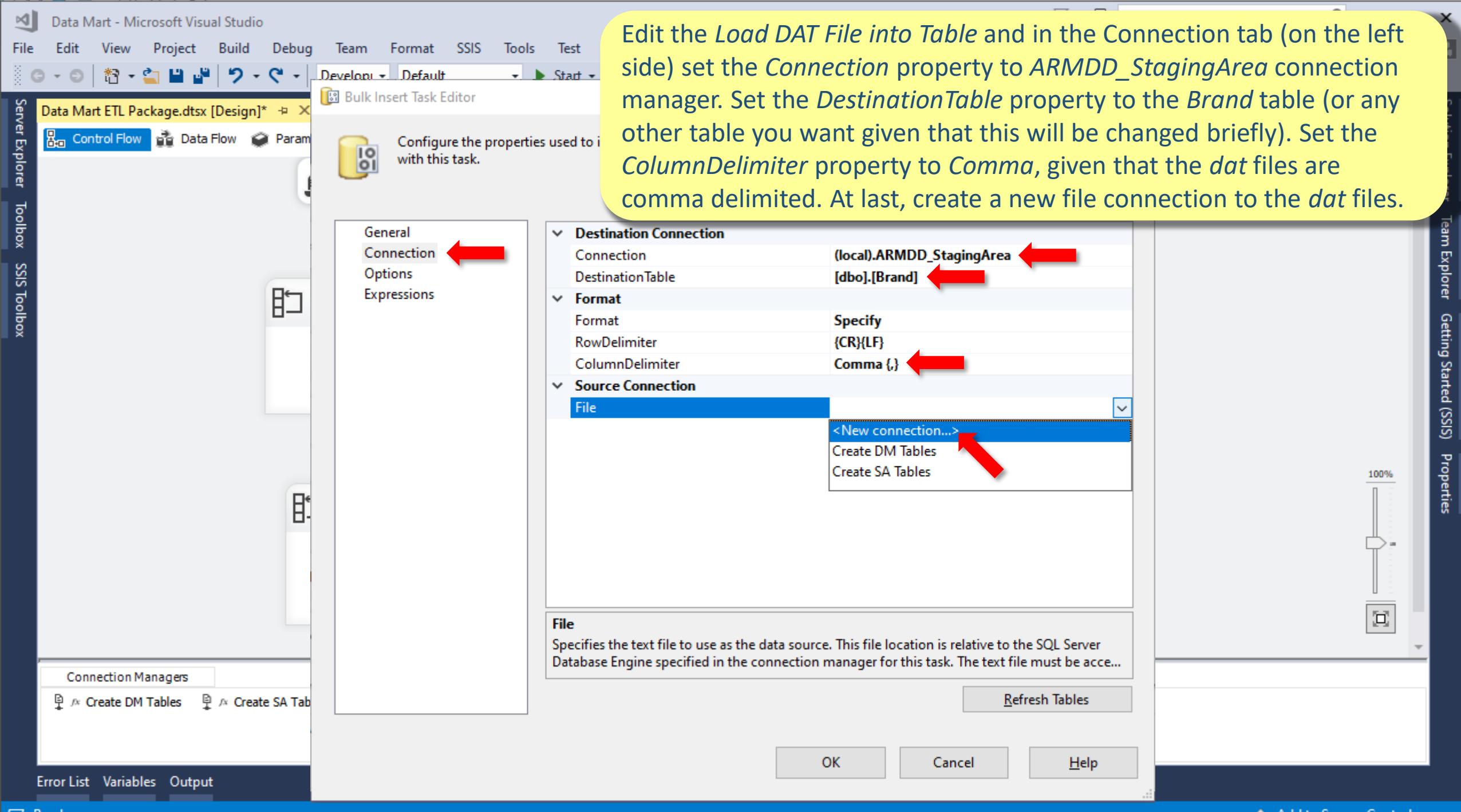


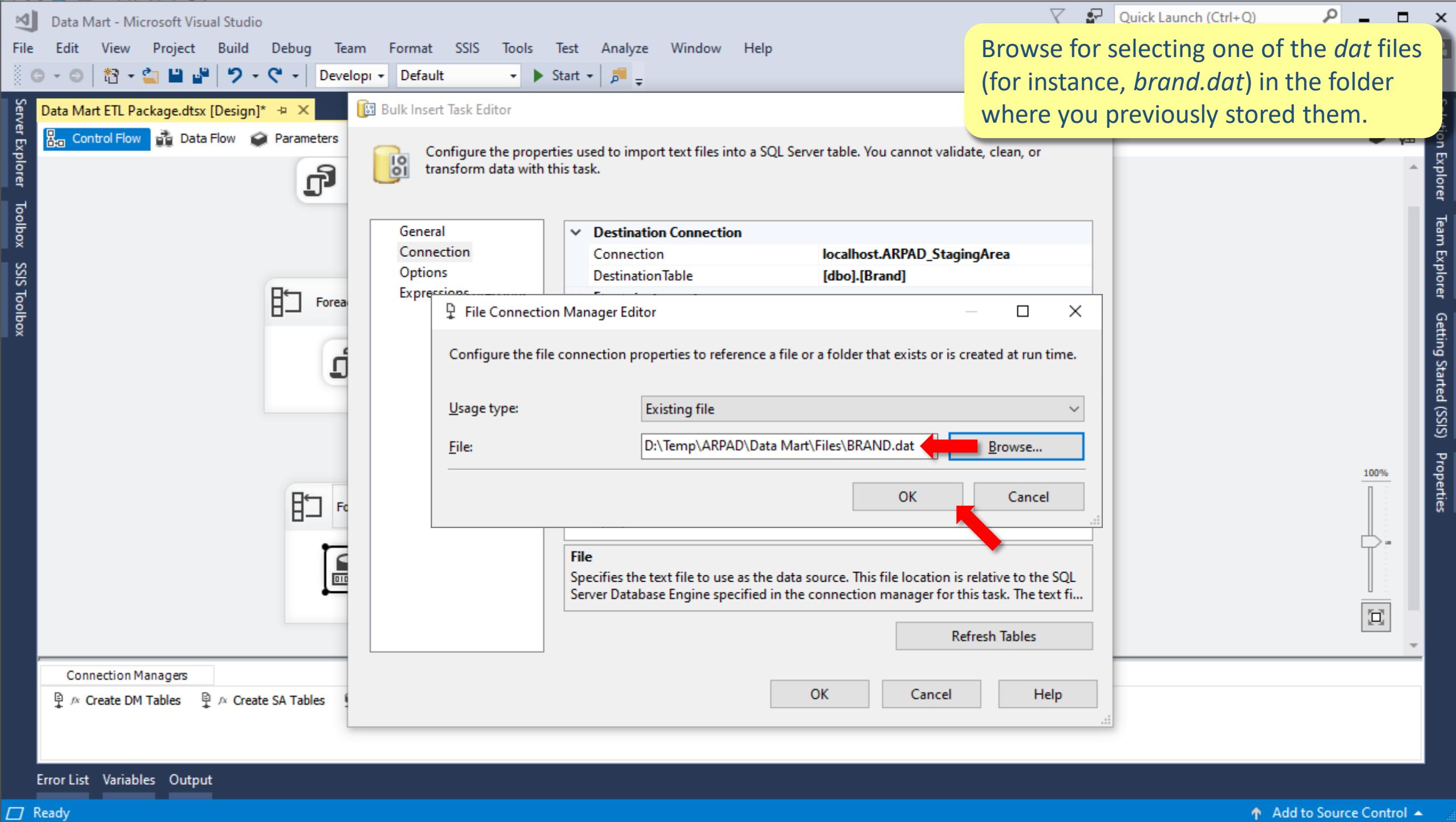












Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team Format SSIS Tools Test Analyze Window Help

Quick Launch (Ctrl+Q) Sign in

Bulk Insert Task Editor

Configure the properties used to import text files into a SQL Server table. You cannot validate, clean, or transform data with this task.

Control Flow Data Flow Param

General Connection Options Expressions

Destination Connection

- Connection: (local).ARMDD_StagingArea
- DestinationTable: [dbo].[Brand]

Format

- Format: Specify
- RowDelimiter: (CR)(LF)
- ColumnDelimiter: Comma (,)

Source Connection

- File: BRAND.dat

File

Specifies the text file to use as the data source. This file location is relative to the SQL Server Database Engine specified in the connection manager for this task. The text file must be acce...

Refresh Tables

OK Cancel Help

Solution Explorer Team Explorer Getting Started (SSIS) Properties

100%

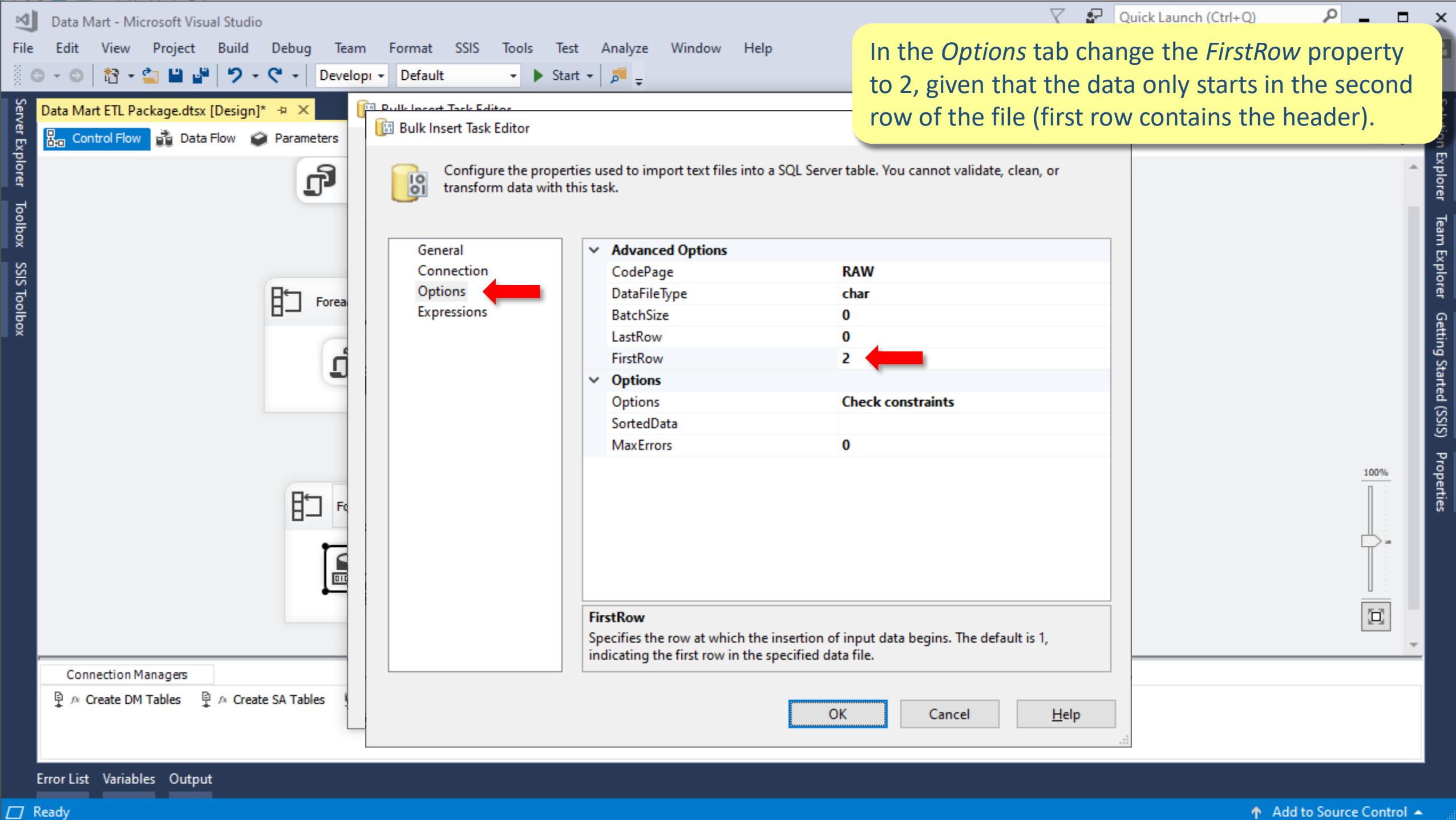
Connection Managers

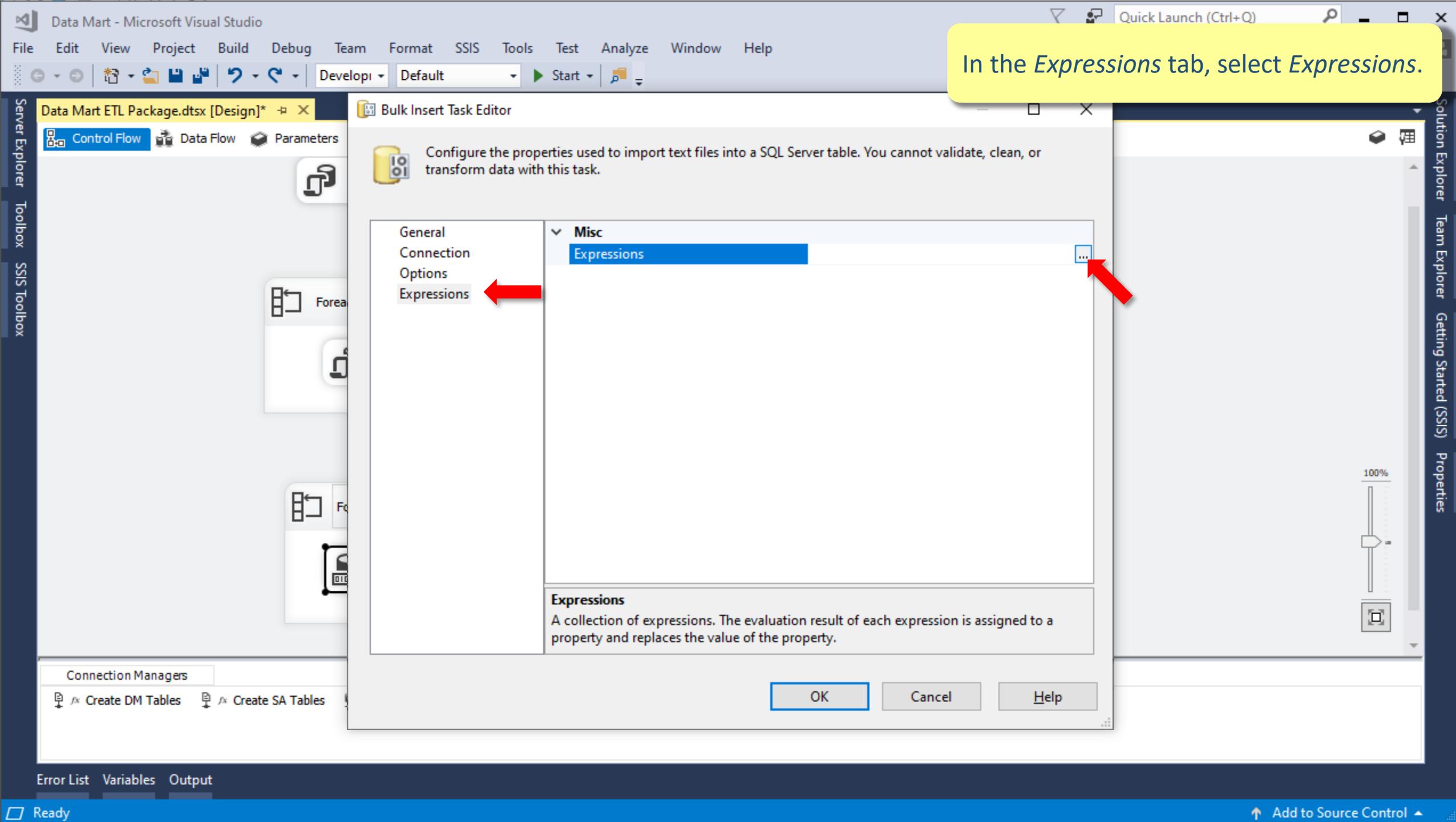
Create DM Tables Create SA Tab

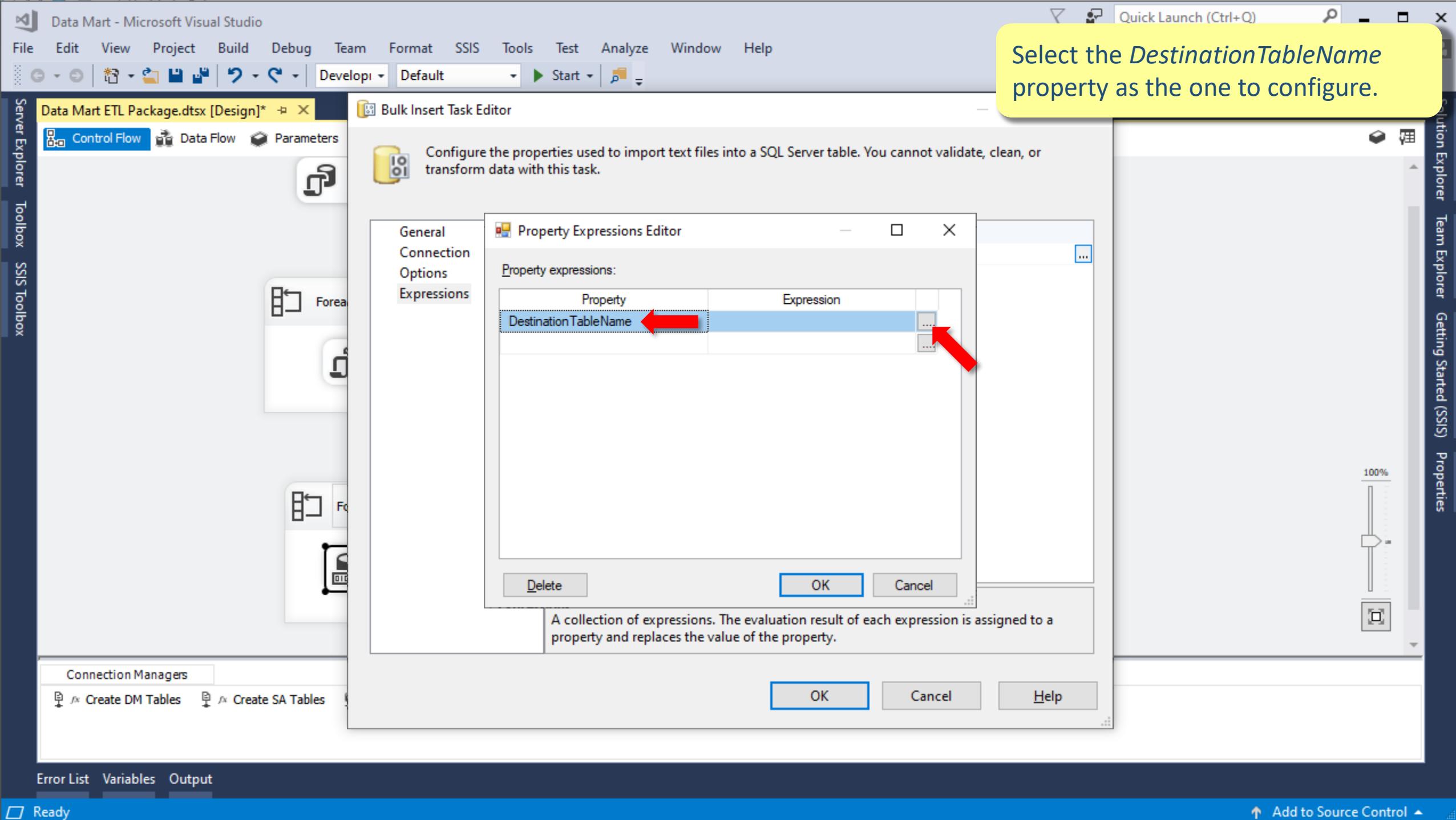
Error List Variables Output

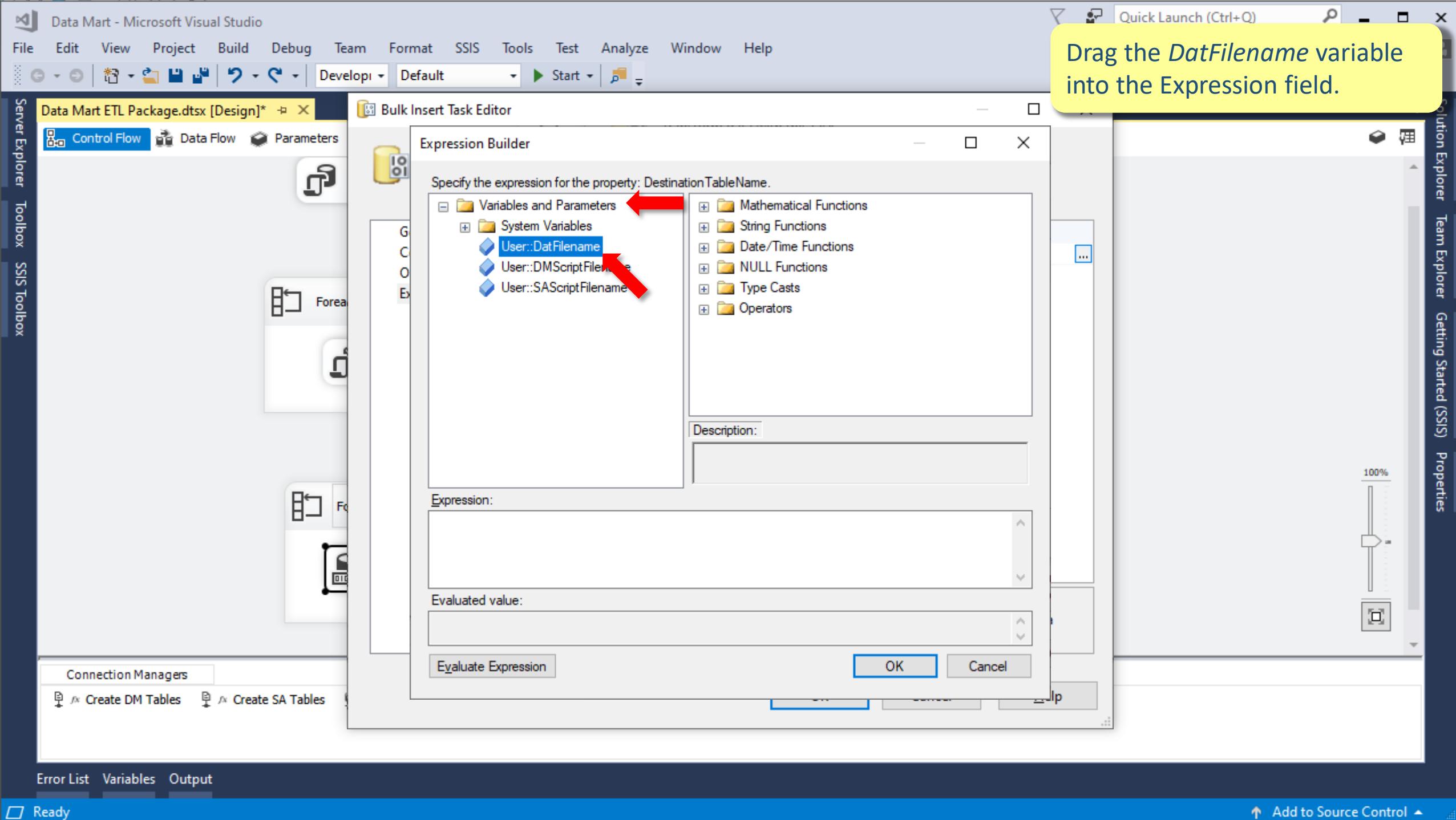
Add to Source Control

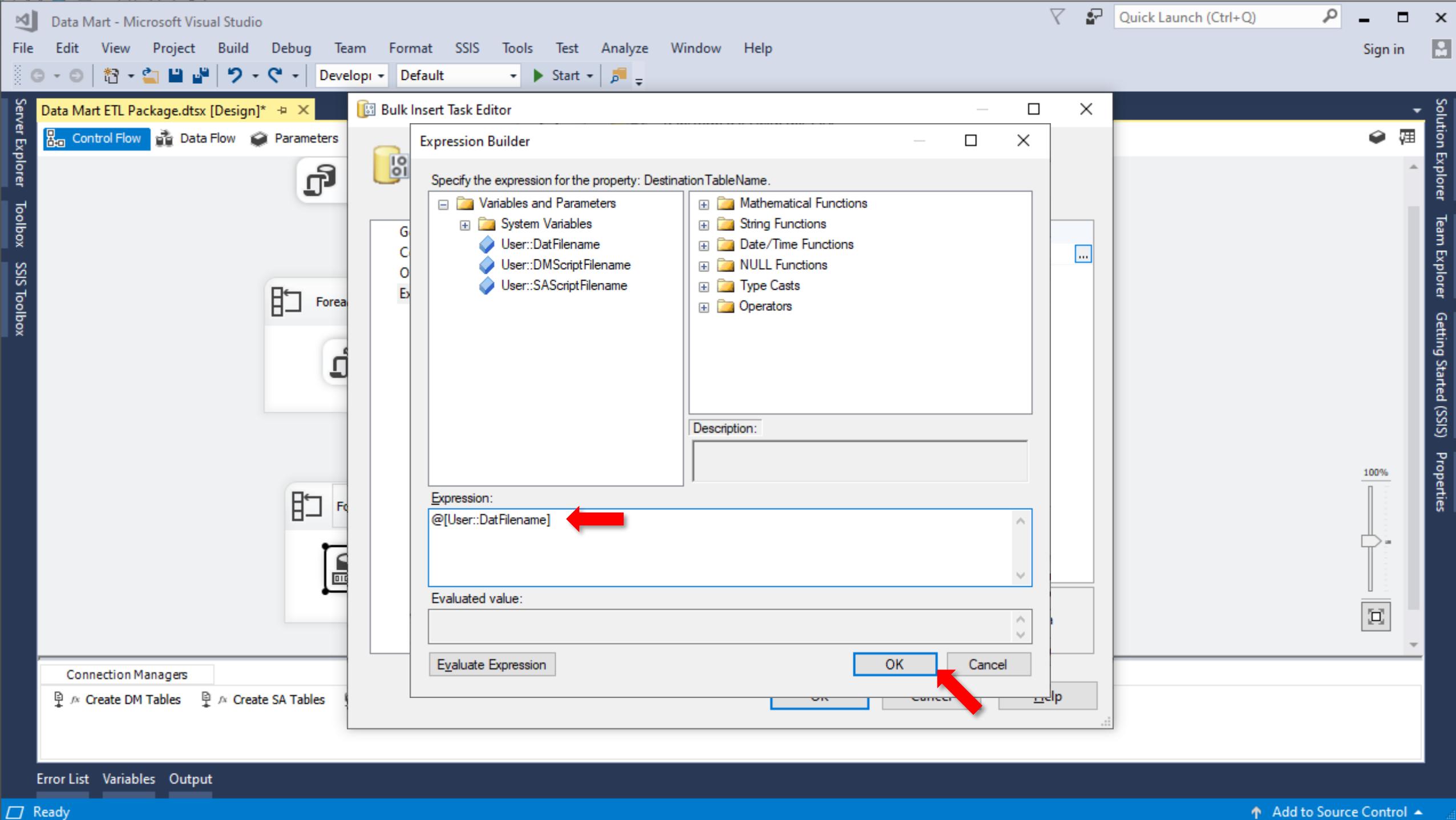
The screenshot shows the 'Bulk Insert Task Editor' dialog box within the Microsoft Visual Studio interface. The 'File' field in the 'Source Connection' section is highlighted with a red arrow. The 'File' field contains the value 'BRAND.dat'. The 'Source Connection' section is expanded, showing the 'File' field under 'File'. The 'Destination Connection' section is also expanded, showing the 'Connection' and 'DestinationTable' fields. The 'Format' section shows the 'Format' as 'Specify', 'RowDelimiter' as '(CR)(LF)', and 'ColumnDelimiter' as 'Comma (,)'. The 'General' tab is selected in the left navigation pane. The 'File' field is the target of a red arrow pointing from the left side of the image.

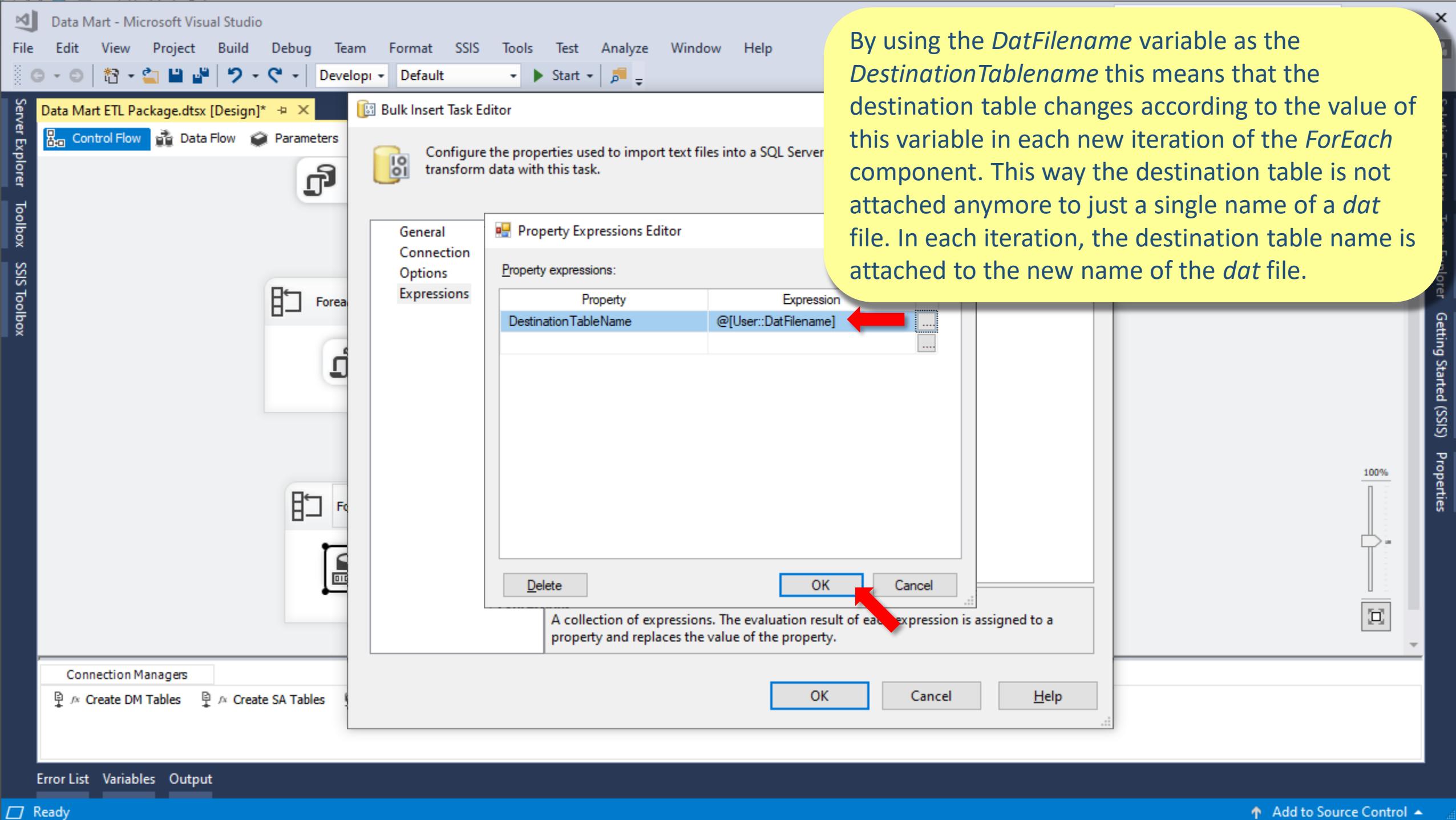


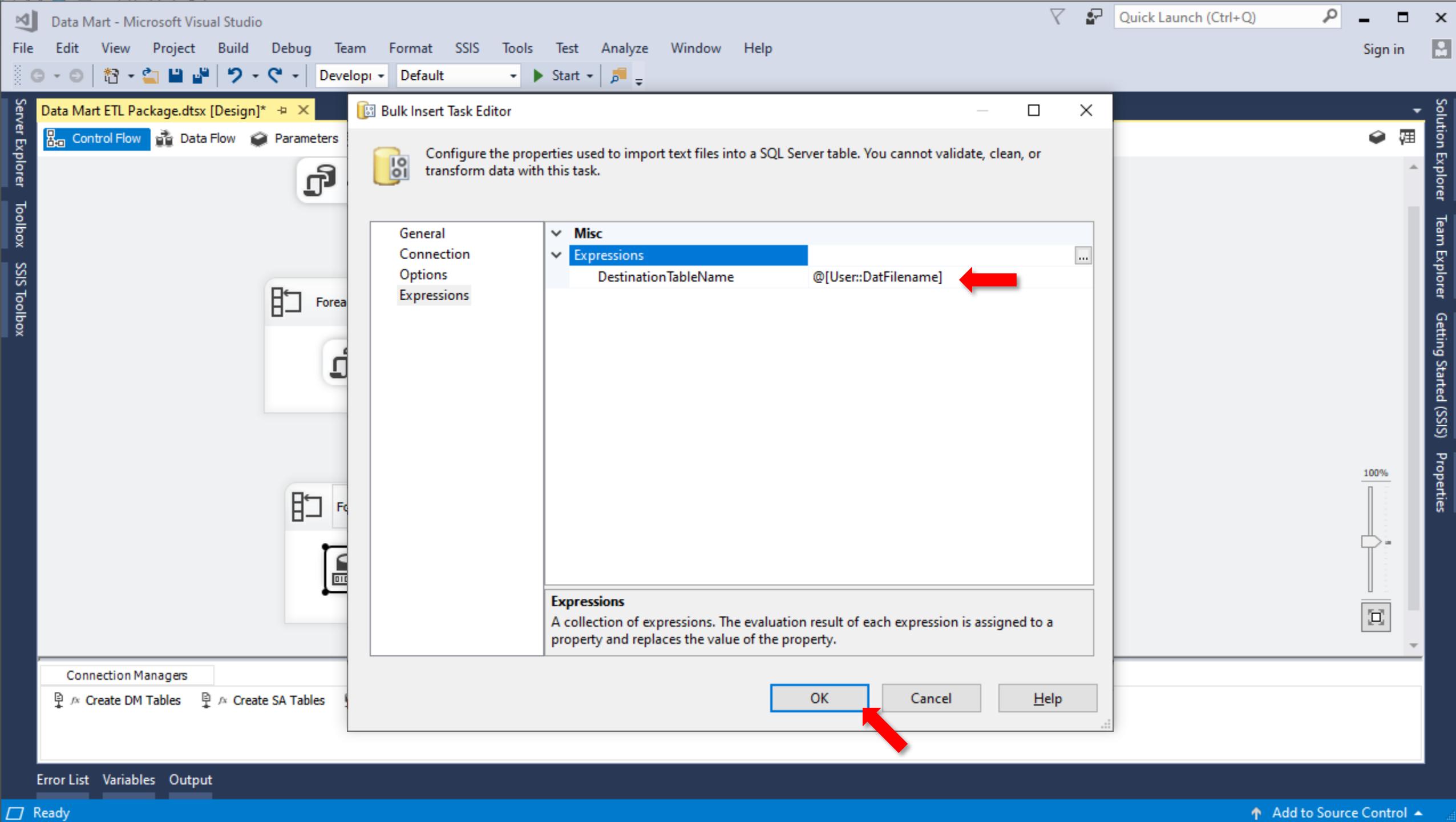


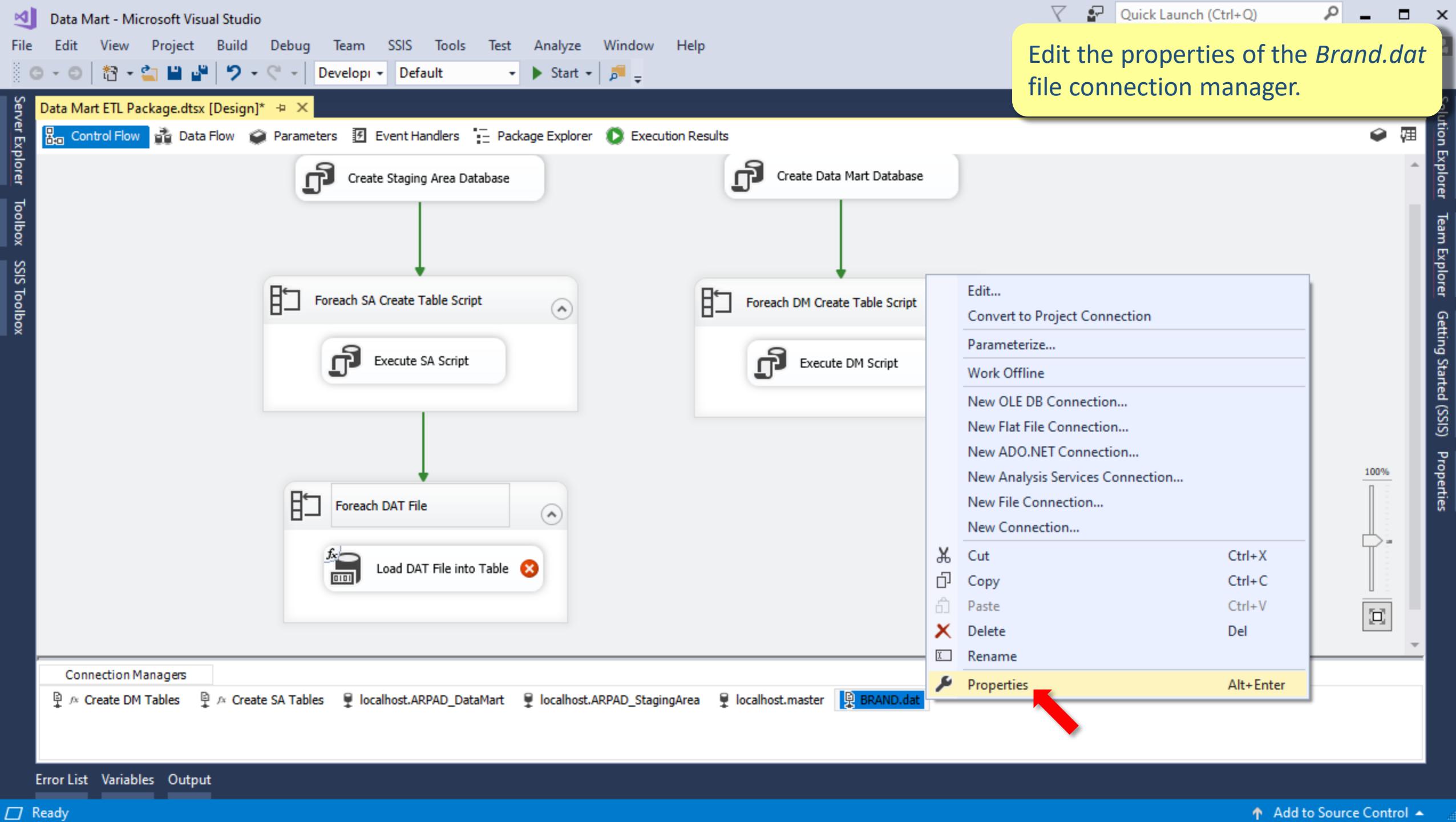












Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

Edit the expressions of the connection manager.

Data Mart ETL Package.dtsx [Design]*

Control Flow Data Flow Parameters Event Handlers Package Explorer Execution Results

```
graph TD; A[Create Staging Area Database] --> B[Create Data Mart Database]; B --> C[Foreach SA Create Table Script]; C --> D[Execute SA Script]; D --> E[Foreach DM Create Table Script]; E --> F[Execute DM Script]; F --> G[Foreach DAT File]; G --> H[Load DAT File into Table]
```

Properties

BRAND.dat Connection

Identification

- PackagePath \Package.Connections[BRAND.dat]

Misc

- ConnectByProxy False
- ConnectionManagerType FILE
- ConnectionString D:\Temp\ARPAD\Data Mart\BRAND.dat
- DataSourceID
- DelayValidation False
- Description
- Expressions**
- FileUsageType 0
- HasExpressions False
- ID {66F74779-54DC-4649-AD83-000000000000}
- Name BRAND.dat
- Qualifier
- SupportsDTCTransactions False

... (Red arrow pointing to the ellipsis button in the Expressions section)

Connection Managers

- Create DM Tables
- Create SA Tables
- localhost.ARPAD_DataMart
- localhost.ARPAD_StagingArea
- localhost.master
- BRAND.dat**

Error List Variables Output

Add to Source Control ▾

Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

Edit the *ConnectionString* property.

Data Mart ETL Package.dtsx [Design]*

Control Flow Data Flow Parameters Event Handlers Package Explorer Execution Results

Create Staging Area Database Create Data Mart Database

Foreach SA Create Table Script Execute SA Script

Foreach DAT File Load DAT File into T

Property Expressions Editor

Property	Expression
ConnectionString	...

OK Cancel Delete

Properties

BRAND.dat Connection

Identification

PackagePath \Package.Connections[BRAND.dat]

Misc

ConnectByProxy False
ConnectionManagerType FILE
ConnectionString D:\Temp\ARPAD\Data Mart\BRAND.dat
DataSourceID
DelayValidation False
Description
Expressions

FileUsageType 0
HasExpressions False
ID {66F74779-54DC-4649-AD83-
Name BRAND.dat
Qualifier
SupportsDTCTransactions False

Connection Managers

Create DM Tables Create SA Tables localhost.ARPAD_DataMart localhost.ARPAD_StagingArea localhost.master BRAND.dat

Error List Variables Output

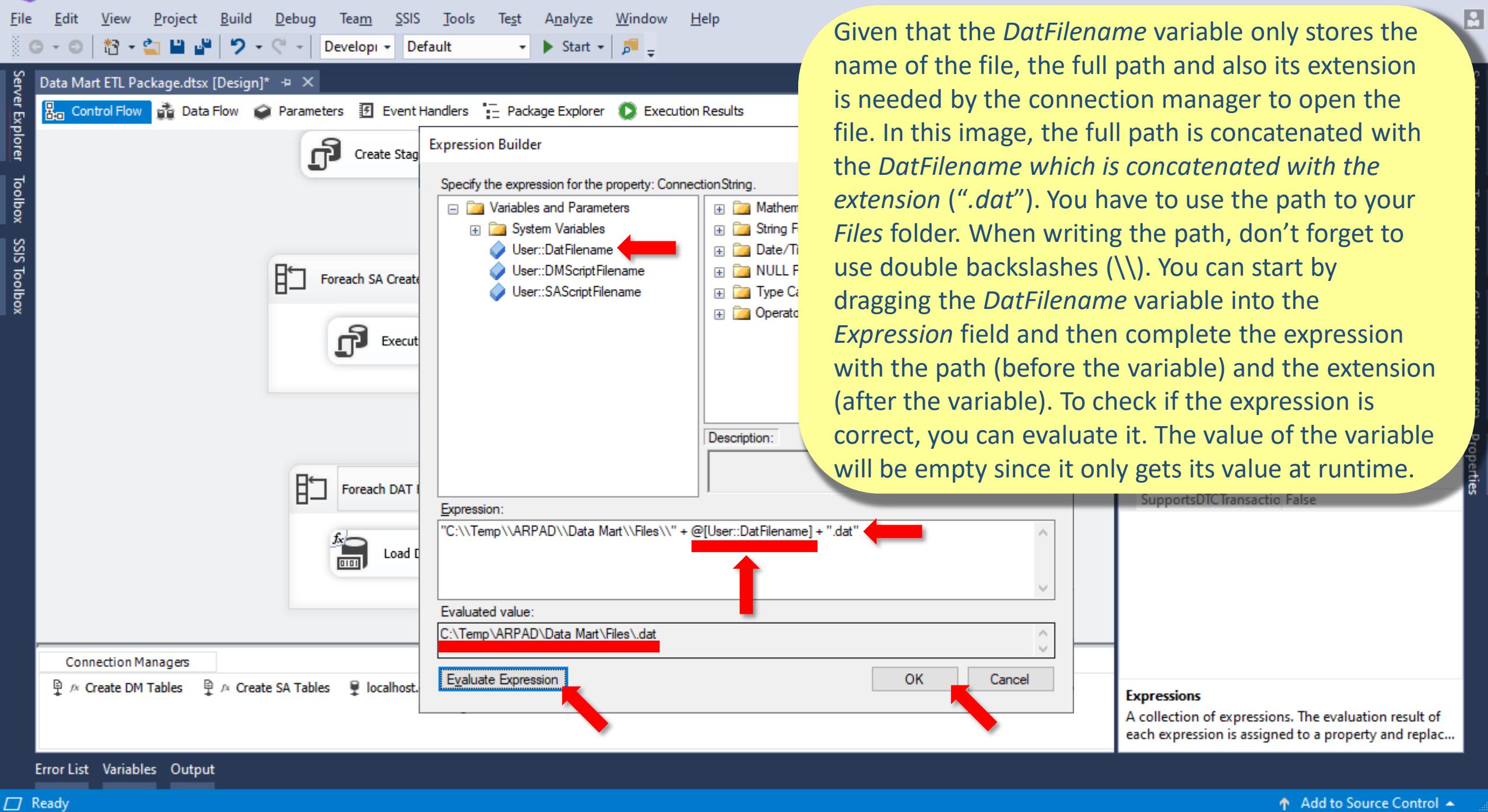
Add to Source Control

Server Explorer Toolbox SSIS Toolbox

Solution Explorer Team Explorer Getting Started (SSIS) Properties

Expressions

A collection of expressions. The evaluation result of each expression is assigned to a property and replac...



Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

Sign in

Server Explorer Toolbox SSIS Toolbox

Data Mart ETL Package.dtsx [Design]*

Control Flow Data Flow Parameters Event Handlers Package Explorer Execution Results

Create Staging Area Database Create Data Mart Database

Foreach SA Create Execute

Foreach DAT File Load Data

Property Expressions Editor

Property expressions:

Property	Expression
ConnectionString	"C:\Temp\ARPAD\Data Mart\Files\" + @[User::DatFilename] + ".dat"

OK Cancel

Connection Managers

Create DM Tables Create SA Tables localhost.ARPAD_DataMart localhost.ARPAD_StagingArea localhost.master BRAND.dat

Error List Variables Output

Add to Source Control

Properties

BRAND.dat Connection

Identification

PackagePath \Package.Connections[BRAND.dat]

Misc

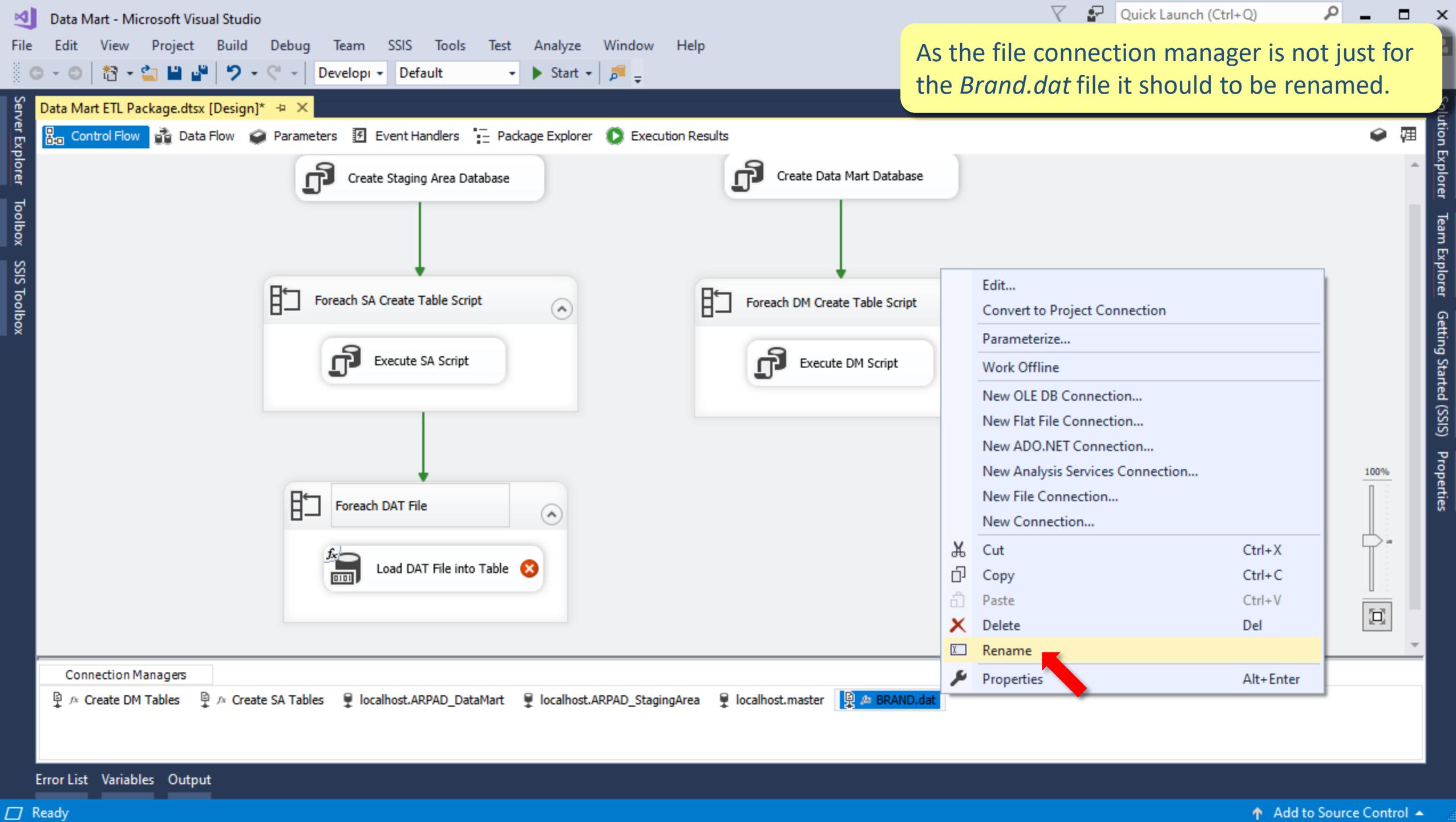
ConnectByProxy False
ConnectionManagerType FILE
ConnectionString D:\Temp\ARPAD\Data Mart\Files\BRAND.dat
DataSourceID
DelayValidation False
Description
Expressions

FileUsageType 0
HasExpressions False
ID {66F74779-54DC-4649-AD83-
Name BRAND.dat
Qualifier
SupportsDTCTransactions False

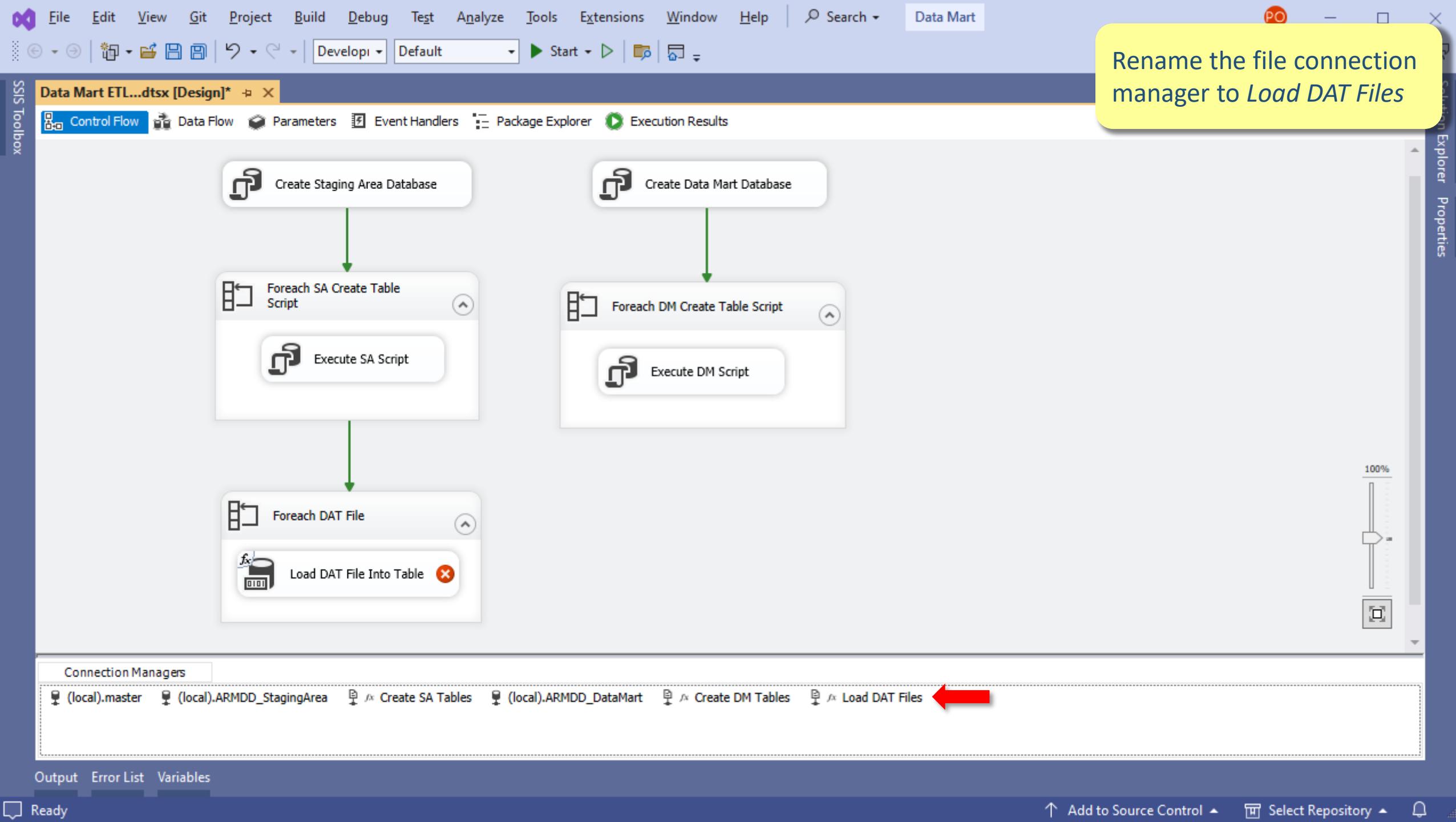
Expressions

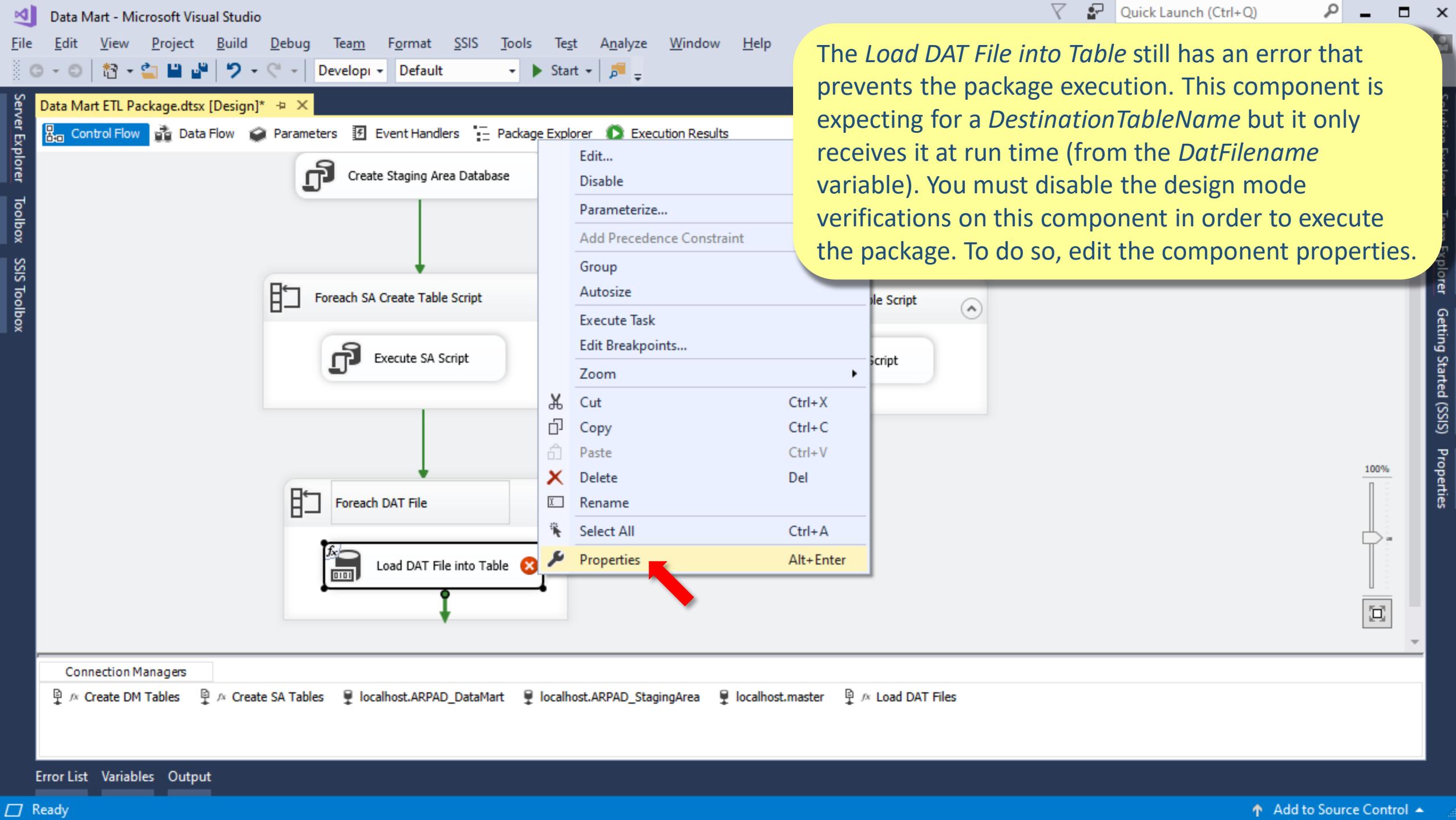
A collection of expressions. The evaluation result of each expression is assigned to a property and replac...

The screenshot shows the Microsoft Visual Studio interface for an SSIS package named "Data Mart ETL Package.dtsx". The main area displays a control flow diagram with various tasks like "Create Staging Area Database" and "Create Data Mart Database". A "Property Expressions Editor" dialog is open, allowing the configuration of property expressions. In the "ConnectionString" row of the table, a red arrow highlights the expression value: "C:\Temp\ARPAD\Data Mart\Files\" + @[User::DatFilename] + ".dat". Another red arrow points to the "OK" button at the bottom right of the dialog, indicating the next step is to confirm the changes.



As the file connection manager is not just for the *Brand.dat* file it should to be renamed.





Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

Data Mart ETL Package.dtsx [Design]*

Control Flow Data Flow Parameters Event Handlers Package Explorer Execution Results

Create Staging Area Database → Foreach SA Create Table Script → Execute SA Script

Create Data Mart Database → Foreach DM Create Table Script → Execute DM Script

Foreach DAT File → Load DAT File into Table

Properties

Load DAT File into Table Task

Execution

DelayValidation	True
Disable	False
DisableEventHandlers	False
FailPackageOnFailure	False
FailParentOnFailure	False
MaximumErrorCount	1

Forced Execution Value

ForcedExecutionValue	0
ForcedExecutionValue	Int32
ForceExecutionValue	False

Identification

Description	Bulk Insert Task
ID	{95D22A07-198E-42C7-81
Name	Load DAT File into Table
PackagePath	\Package\Foreach DAT Fil

Misc

BatchSize	0
CheckConstraints	True
CodePage	RAW
DataFileType	DTSBulkInsert_DataFileType
DestinationConnector	localhost.ARPAD_Staging
DestinationTableName	
EvenValueVariable	

DelayValidation

Indicates whether the validation of the executable is delayed until run time.

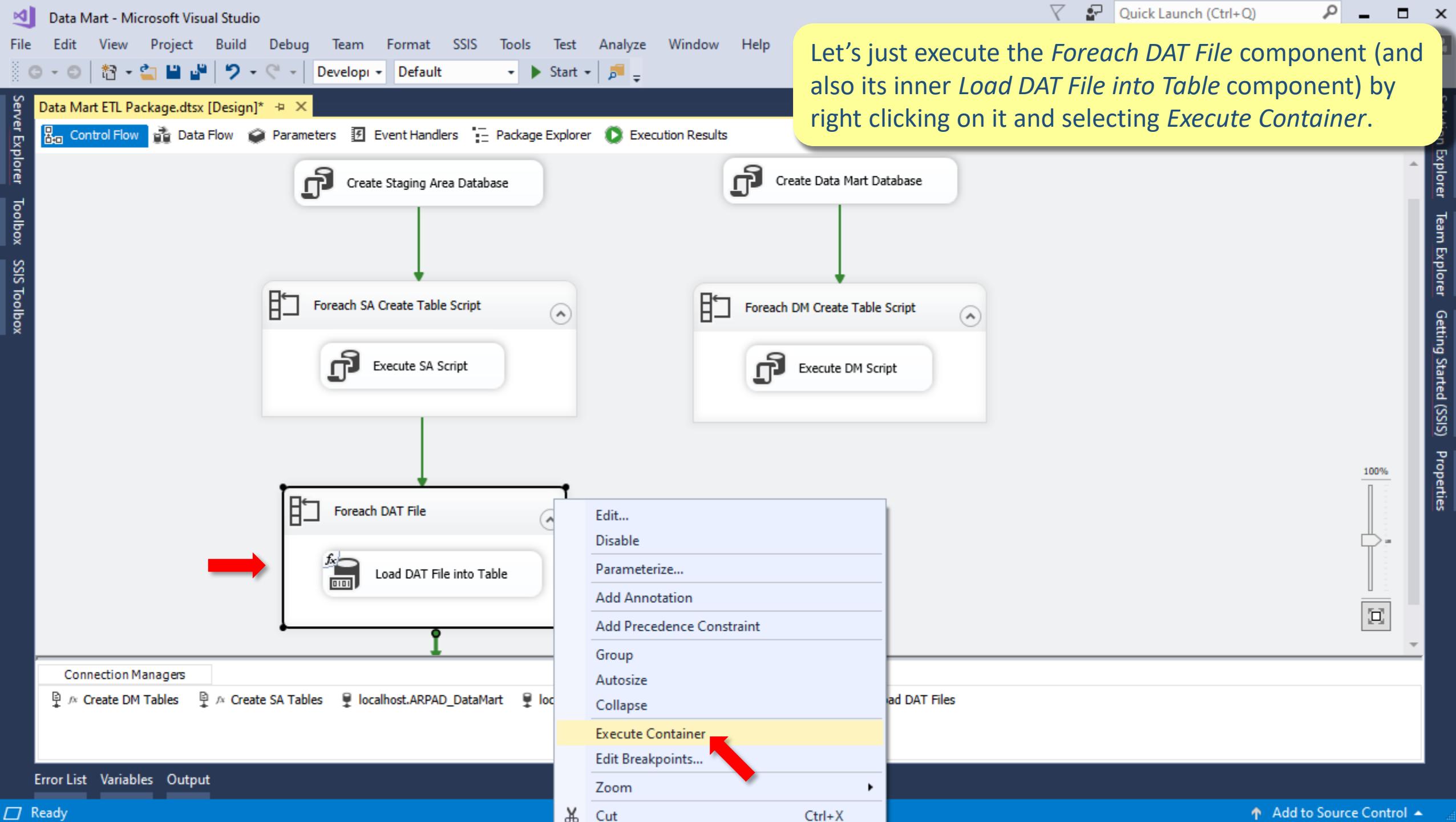
Server Explorer Solution Explorer Team Explorer Getting Started (SSIS) Properties

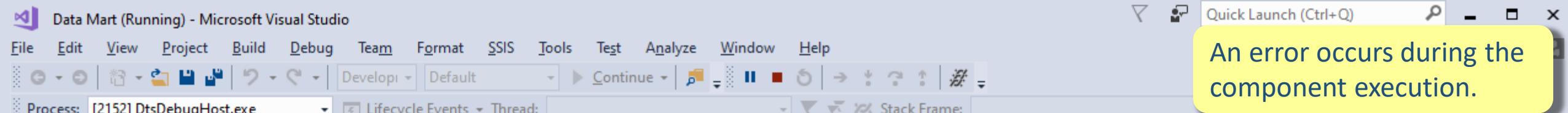
Connection Managers

- Create DM Tables
- Create SA Tables
- localhost.ARPAD_DataMart
- localhost.ARPAD_StagingArea
- localhost.master
- Load DAT Files

Error List Variables Output

Add to Source Control

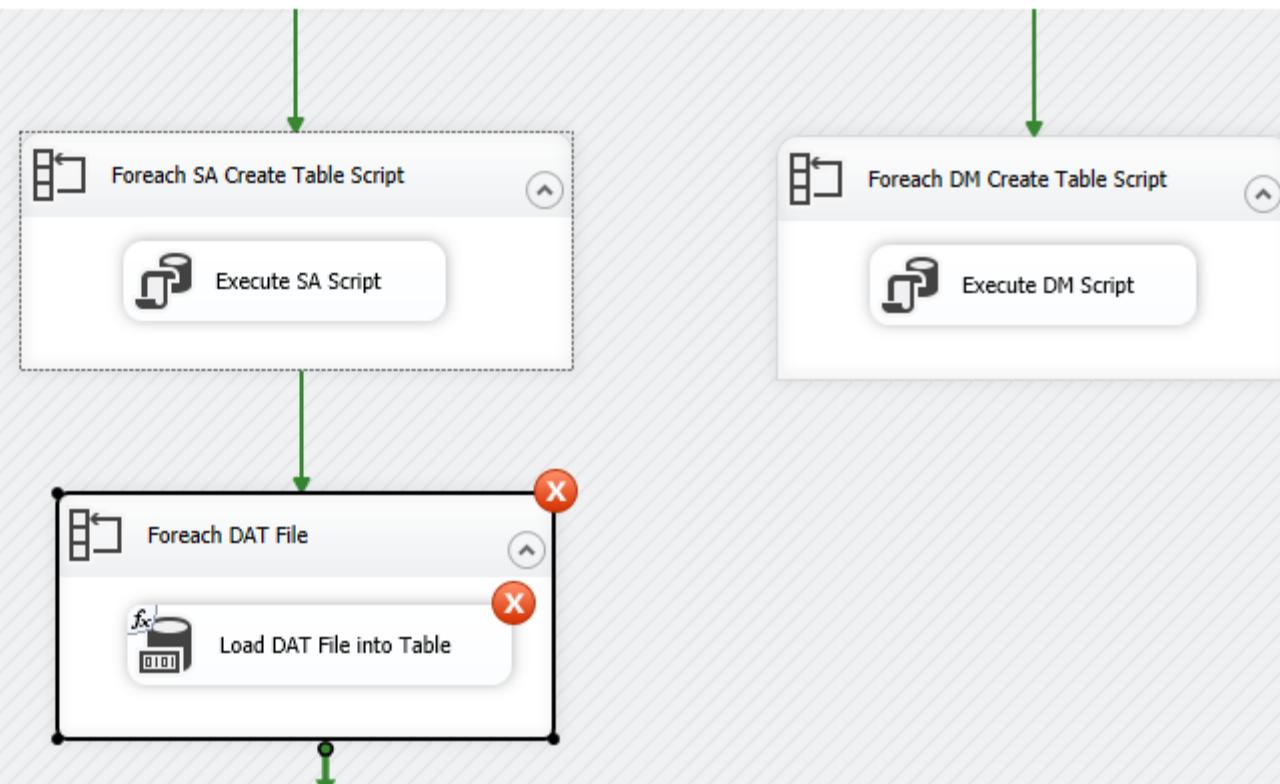




An error occurs during the component execution.

Data Mart ETL Package.dtsx [Design] X

Control Flow Data Flow Parameters Event Handlers Package Explorer Progress



Connection Managers

Create DM Tables Create SA Tables localhost.ARPAD_DataMart localhost.ARPAD_StagingArea localhost.master Load DAT Files

Package execution completed. Click here to switch to design mode, or select Stop Debugging from the Debug menu.

Call Stack Breakpoints Exception Settings Command Window Immediate Window Output Autos Locals Watch 1

Ready

Add to Source Control ▾

Data Mart - Microsoft Visual Studio

File Edit View Project Build Debug Team SSIS Tools Test Analyze Window Help

Develop Default Start

Data Mart ETL Package.dtsx [Design]

Control Flow Data Flow Parameters Event Handlers Package Explorer Execution Results

In the *Execution Results* tab or *Progress* tab is possible to see the cause of the failure. "Transaction" in a SQL reserved word, so it cannot be used as name of a (destination) table.

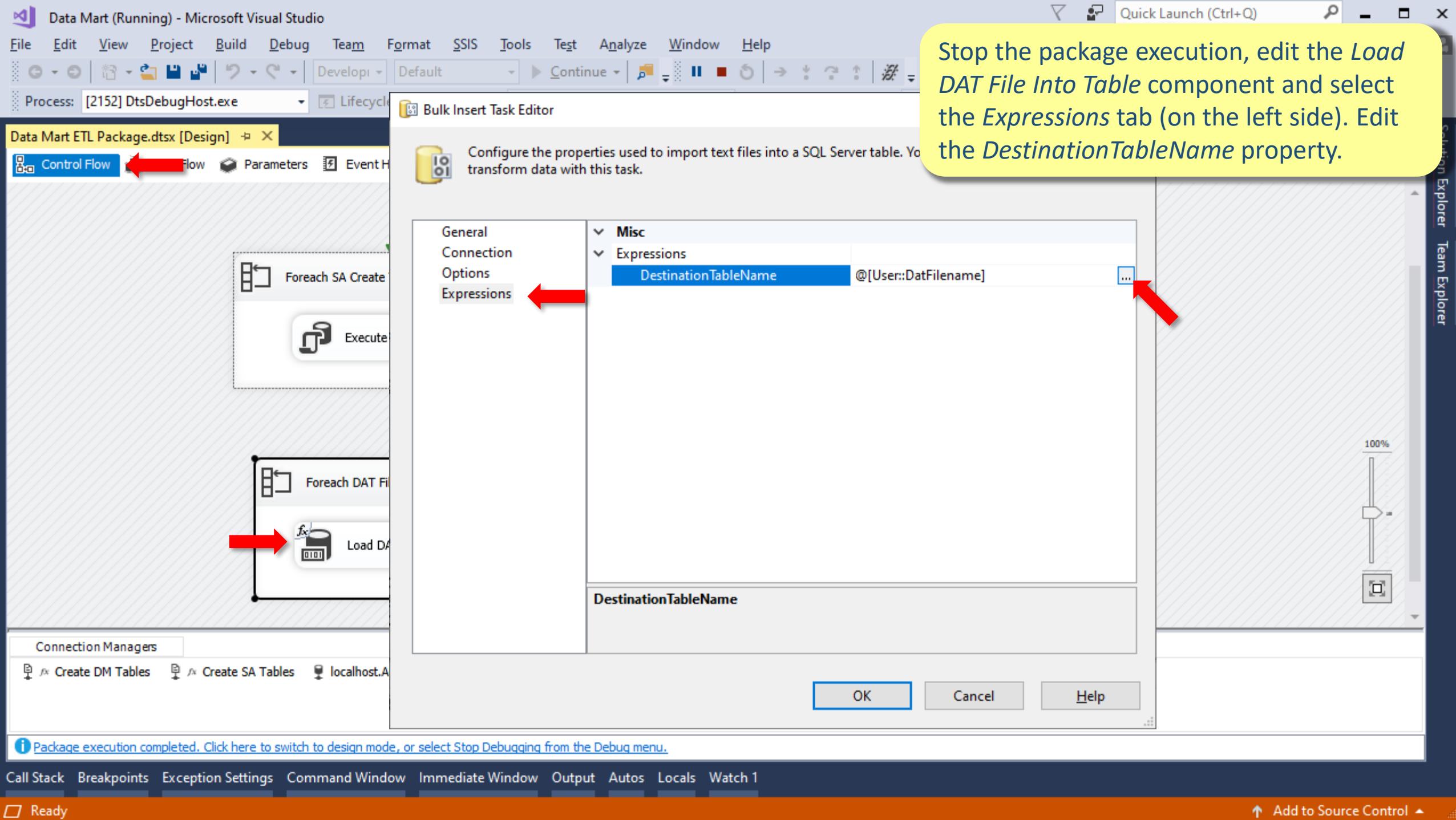
Start (6)
Validation has started (6)
Validation is completed (6)
→ Progress: The Bulk Insert task is initiated. - 0 percent complete
→ Progress: Preparing the following SQL statement: BULK INSERT BRAND FROM 'D:\Temp\ARPAD\Data Mart\Files\BRAND.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: Executing the following SQL statement: BULK INSERT BRAND FROM 'D:\Temp\ARPAD\Data Mart\Files\BRAND.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: The Bulk Insert task is completed. - 100 percent complete
→ Progress: The Bulk Insert task is initiated. - 0 percent complete
→ Progress: Preparing the following SQL statement: BULK INSERT CARD FROM 'D:\Temp\ARPAD\Data Mart\Files\CARD.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: Executing the following SQL statement: BULK INSERT CARD FROM 'D:\Temp\ARPAD\Data Mart\Files\CARD.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: The Bulk Insert task is completed. - 100 percent Progress: Preparing the following SQL statement: BULK INSERT CARD FROM 'D:\Temp\ARPAD\Data Mart\Files\CARD.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: The Bulk Insert task is initiated. - 0 percent complete
→ Progress: Preparing the following SQL statement: BULK INSERT CATEGORY FROM 'D:\Temp\ARPAD\Data Mart\Files\CATEGORY.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: Executing the following SQL statement: BULK INSERT CATEGORY FROM 'D:\Temp\ARPAD\Data Mart\Files\CATEGORY.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: The Bulk Insert task is completed. - 100 percent complete
→ Progress: The Bulk Insert task is initiated. - 0 percent complete
→ Progress: Preparing the following SQL statement: BULK INSERT ITEM FROM 'D:\Temp\ARPAD\Data Mart\Files\ITEM.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: Executing the following SQL statement: BULK INSERT ITEM FROM 'D:\Temp\ARPAD\Data Mart\Files\ITEM.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: The Bulk Insert task is completed. - 100 percent complete
→ Progress: The Bulk Insert task is initiated. - 0 percent complete
→ Progress: Preparing the following SQL statement: BULK INSERT SUBCATEGORY FROM 'D:\Temp\ARPAD\Data Mart\Files\SUBCATEGORY.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: Executing the following SQL statement: BULK INSERT SUBCATEGORY FROM 'D:\Temp\ARPAD\Data Mart\Files\SUBCATEGORY.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: The Bulk Insert task is completed. - 100 percent complete
→ Progress: The Bulk Insert task is initiated. - 0 percent complete
→ Progress: Preparing the following SQL statement: BULK INSERT TRANSACTION FROM 'D:\Temp\ARPAD\Data Mart\Files\TRANSACTION.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
→ Progress: Executing the following SQL statement: BULK INSERT TRANSACTION FROM 'D:\Temp\ARPAD\Data Mart\Files\TRANSACTION.dat' WITH(CHECK_CONSTRAINTS,CODEPAGE='RAW',DATAFILETYPE='char',FIELDTERMINATOR=',',ROWTERM
✖ [Bulk Insert Task] Error: An error occurred with the following error message: "Incorrect syntax near the keyword 'TRANSACTION'."
→ Progress: The Bulk Insert task is completed. - 100 percent complete
✖ Task Load DAT File into Table failed
✖ Stop (6)

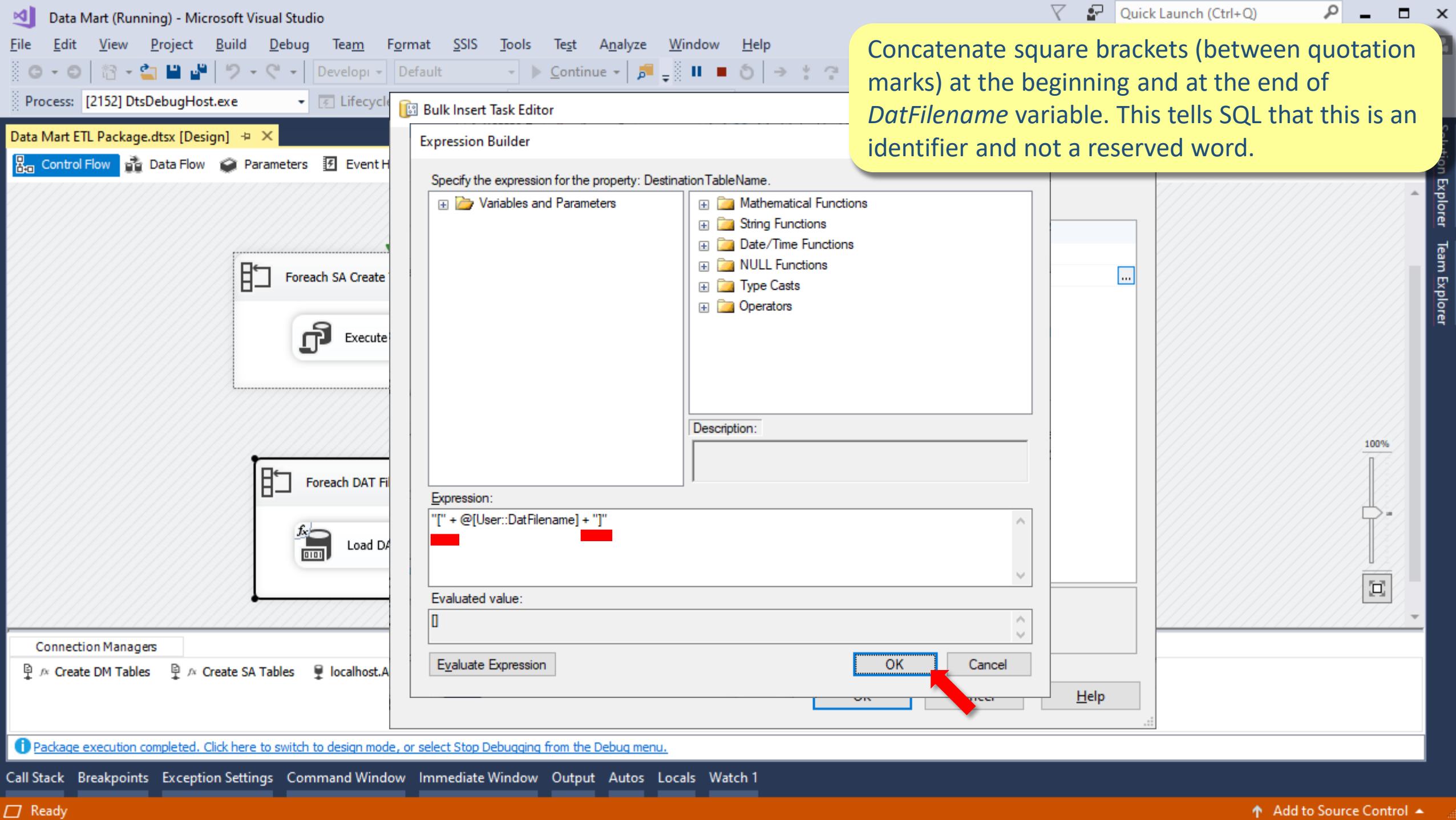
Warning: SSIS Warning Code DTS_W_MAXIMUMERRORCOUNTREACHED. The Execution method succeeded, but the number of errors raised (1) reached the maximum allowed (1); resulting in failure. This occurs when the number of errors reaches the limit defined in the MaximumErrorCount property of the package or container. The error that triggered this warning is: "Incorrect syntax near the keyword 'TRANSACTION'.".

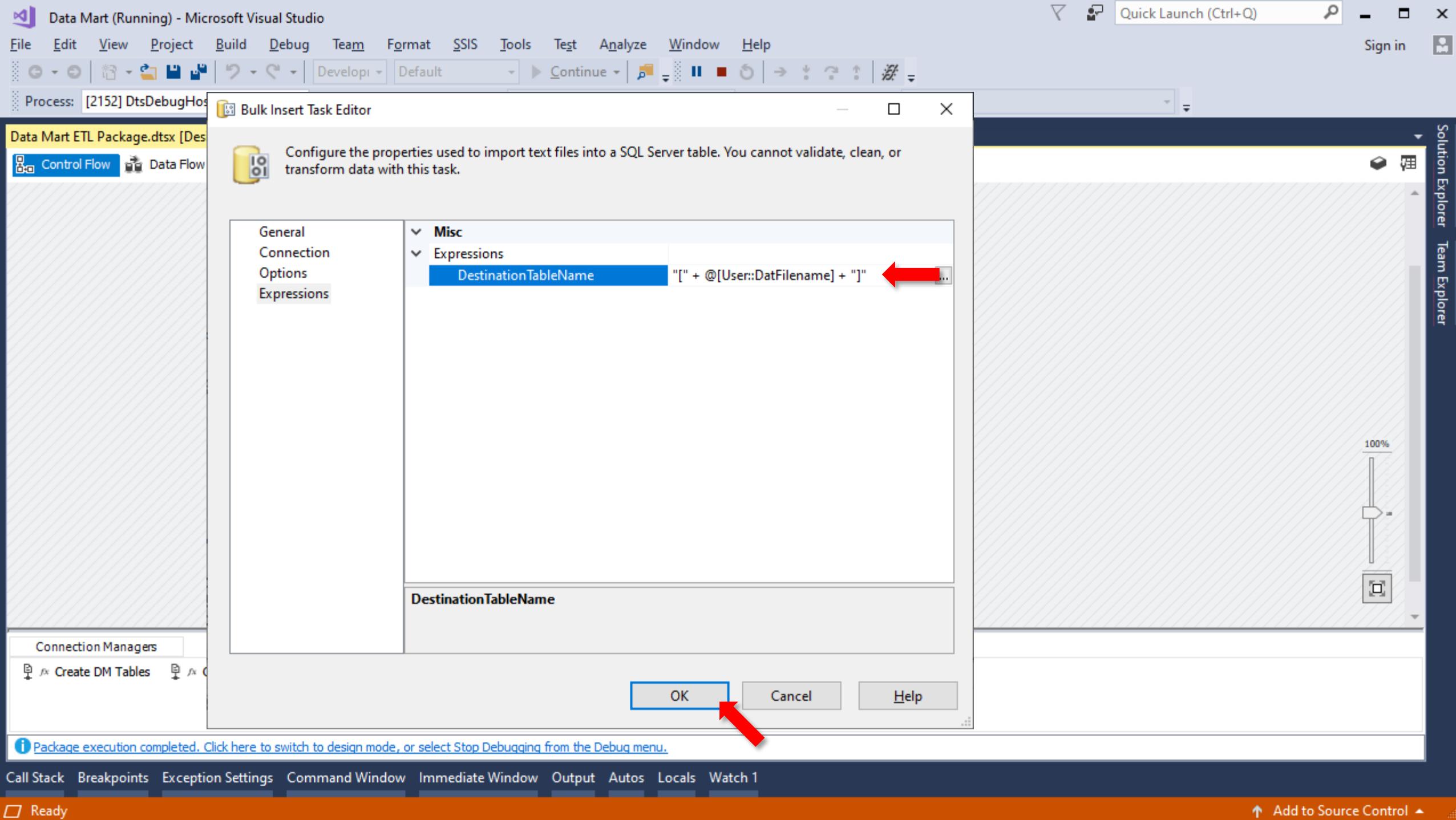
Finished, 16:53:18, Elapsed time: 00:00:18.250

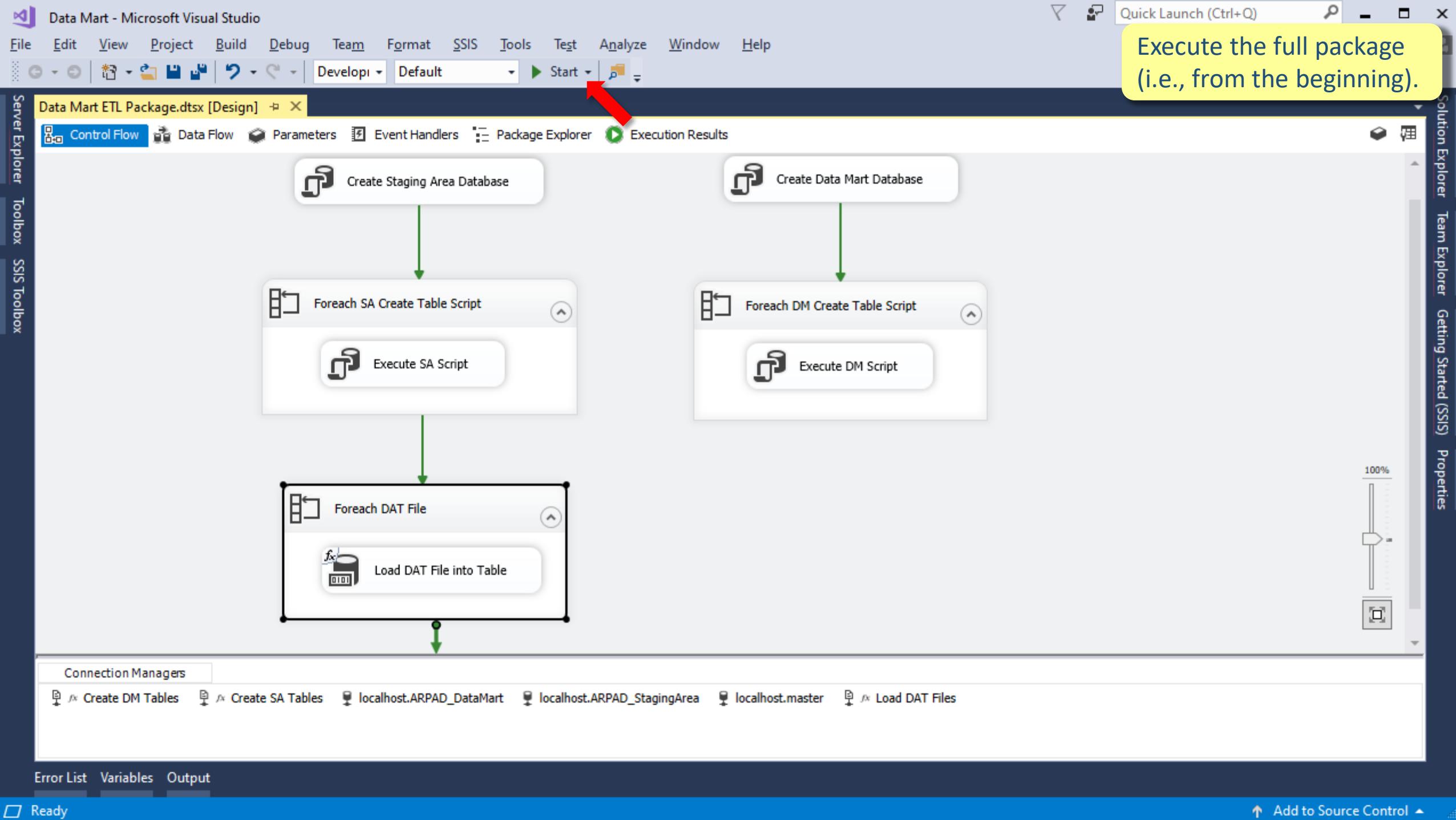
Error List Variables Output

Ready Add to Source Control









File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search Data Mart PO

Process: [11044] DtsDebugHost.exe Default Continue Lifecycle Events Thread Stack Frame

Package execution should succeed by having a green checkmark in each component.

Data Mart ETLdtsx [Design]

Control Flow Data Flow Parameters Event Handlers Package Explorer Progress

The diagram illustrates the SSIS Control Flow for a Data Mart ETL package. It consists of two parallel Foreach loops. The left loop, starting with 'Create Staging Area Database', contains an 'Execute SA Script' task. The right loop, starting with 'Create Data Mart Database', contains an 'Execute DM Script' task. Both loops then converge into a single 'Foreach DAT File' loop, which concludes with a 'Load DAT File Into Table' task. Each task in the flow has a green checkmark indicating successful execution. A progress bar on the right shows 100% completion.

Create Staging Area Database

Create Data Mart Database

Foreach SA Create Table Script

Execute SA Script

Foreach DM Create Table Script

Execute DM Script

Foreach DAT File

Load DAT File Into Table

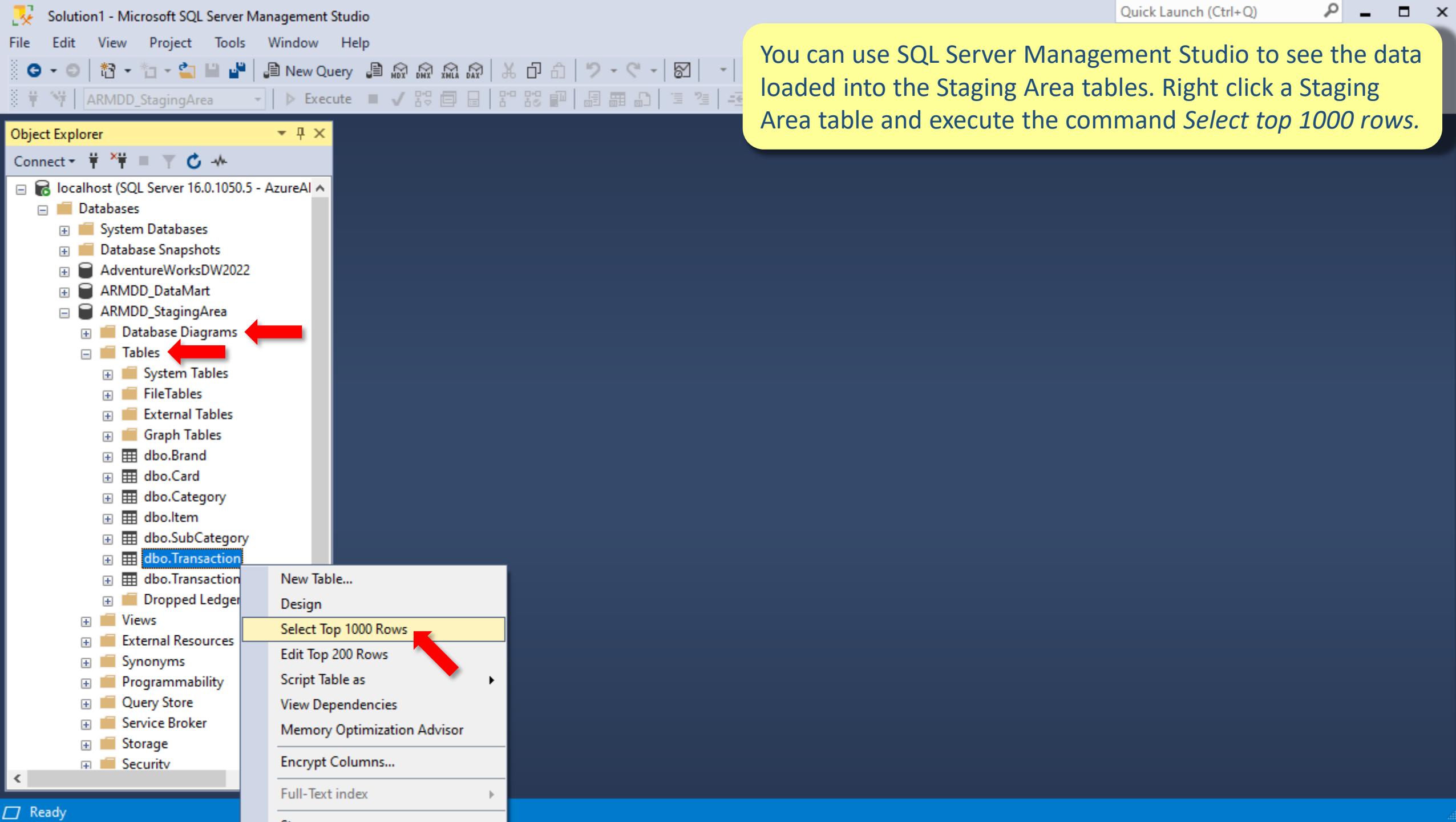
Connection Managers

(local).master (local).ARMDD_StagingArea Create SA Tables (local).ARMDD_DataMart Create DM Tables Load DAT Files

Package execution completed with success. Click here to switch to design mode, or select Stop Debugging from the Debug menu.

Autos Locals Watch 1

Add to Source Control Select Repository Ready



SQLQuery5.sql - localhost.ARMDDB_StagingArea (AzureAD\PauloOliveira (55)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

ARMDD_StagingArea Execute

As result you get the first 1000 rows of the table selected.

Object Explorer

localhost (SQL Server 16.0.1050.5 - AzureAI)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorksDW2022
 - ARMDD_DataMart
 - ARMDD_StagingArea
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.Brand
 - dbo.Card
 - dbo.Category
 - dbo.Item
 - dbo.SubCategory
 - dbo.Transaction
 - dbo.Transaction_Item
 - Dropped Ledger Tables
 - Views
 - External Resources
 - Synonyms
 - Programmability
 - Query Store
 - Service Broker
 - Storage
 - Security

SQLQuery5.sql - loc...\\PauloOliveira (55)

```
SELECT TOP (1000) [Store]
      ,[Date]
      ,[Time]
      ,[TransactionID]
      ,[CardID]
      ,[PaymentMethod]
  FROM [ARMDD_StagingArea].[dbo].[Transaction]
```

Results Messages

	Store	Date	Time	TransactionID	CardID	PaymentMethod
1	S0006	2001-05-10 00:00:00.000	1700	T10000371	C0101493868	CH
2	S0002	2001-03-14 00:00:00.000	1005	T10000057	C0101493960	CH
3	S0015	2001-09-16 00:00:00.000	1609	T10000243	C0101494024	CC
4	S0015	2001-12-01 00:00:00.000	1215	T10000130	C0101494024	CC
5	S0015	2001-02-20 00:00:00.000	1118	T10000097	C0101494024	DC
6	S0015	2001-02-06 00:00:00.000	1016	T10000055	C0101494024	DC
7	S0040	2001-02-08 00:00:00.000	906	T10000012	C0101494126	CC
8	S0040	2001-12-15 00:00:00.000	1105	T10000081	C0101494126	CC
9	S0056	2001-05-09 00:00:00.000	1502	T10000327	C0101494195	DC
10	S0006	2001-07-05 00:00:00.000	1143	T10000115	C0101494219	CC
11	S0006	2001-05-17 00:00:00.000	1510	T10000341	C0101494219	DC

Query executed successfully. | localhost (16.0 RTM) | AzureAD\PauloOliveira ... | ARMDD_StagingArea | 00:00:00 | 1,000 rows

SQLQuery5.sql - localhost.ARMD_StagingArea (AzureAD\PauloOliveira (55))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

ARMDD_StagingArea Execute

Object Explorer

localhost (SQL Server 16.0.1050.5 - AzureAI)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorksDW2022
 - ARMDD_DataMart
 - ARMDD_StagingArea
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.Brand
 - dbo.Card
 - dbo.Category
 - dbo.Item
 - dbo.SubCategory
 - dbo.Transaction
 - dbo.Transaction_Item
 - Dropped Ledger Tables
 - Views
 - External Resources
 - Synonyms
 - Programmability
 - Query Store
 - Service Broker
 - Storage
 - Security

SQLQuery5.sql - loc...\\PauloOliveira (55)*

```
SELECT *  
FROM [ARMDD_StagingArea].[dbo].[Transaction]
```

Results Messages

	Store	Date	Time	TransactionID	CardID	PaymentMethod
1	S0006	2001-05-10 00:00:00.000	1700	T10000371	C0101493868	CH
2	S0002	2001-03-14 00:00:00.000	1005	T10000057	C0101493960	CH
3	S0015	2001-09-16 00:00:00.000	1609	T10000243	C0101494024	CC
4	S0015	2001-12-01 00:00:00.000	1215	T10000130	C0101494024	CC
5	S0015	2001-02-20 00:00:00.000	1118	T10000097	C0101494024	DC
6	S0015	2001-02-06 00:00:00.000	1016	T10000055	C0101494024	DC
7	S0040	2001-02-08 00:00:00.000	906	T10000012	C0101494126	CC
8	S0040	2001-12-15 00:00:00.000	1105	T10000081	C0101494126	CC
9	S0056	2001-05-09 00:00:00.000	1502	T10000327	C0101494195	DC
10	S0006	2001-07-05 00:00:00.000	1143	T10000115	C0101494219	CC
11	S0006	2001-05-17 00:00:00.000	1510	T10000341	C0101494219	DC

Query executed successfully.

localhost (16.0 RTM) | AzureAD\PauloOliveira ... | ARMDD_StagingArea | 00:00:02 | 367,289 rows

You can see all the Staging Area table data by changing to an asterisk in the previous query.