

Inteligencia de Negocios

Crear un proyecto y un paquete básico con SSIS

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y Valderrama



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Objetivos de la lección

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Paso a paso de los puntos relevantes de la lección

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Ejecución de la lección

ETL

Extract, transform and load

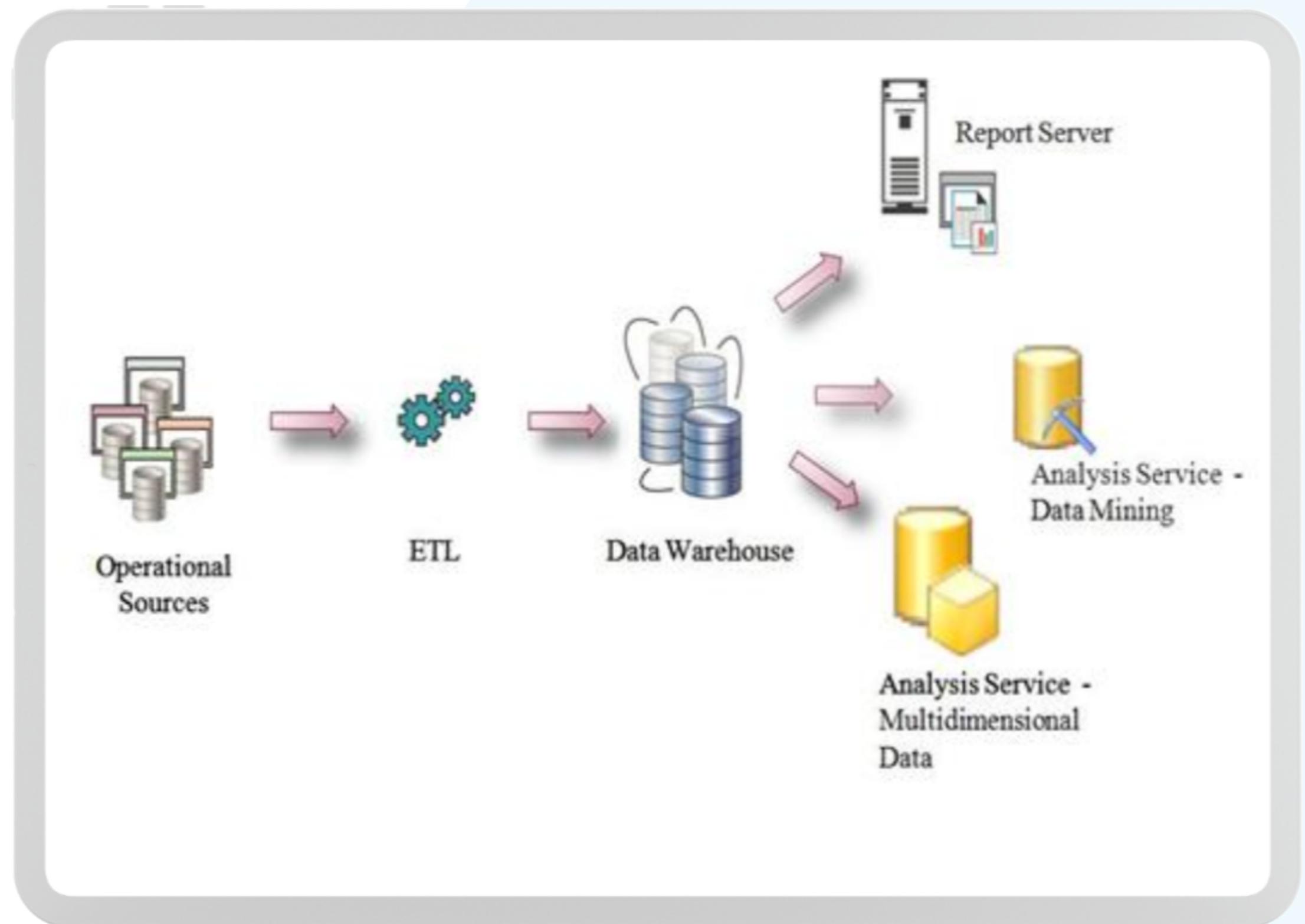


Microsoft®
SQL Server®
Integration Services

El Objetivo



Reformatear la data a
una tabla propia...



Relación de la lección con el curso de BI



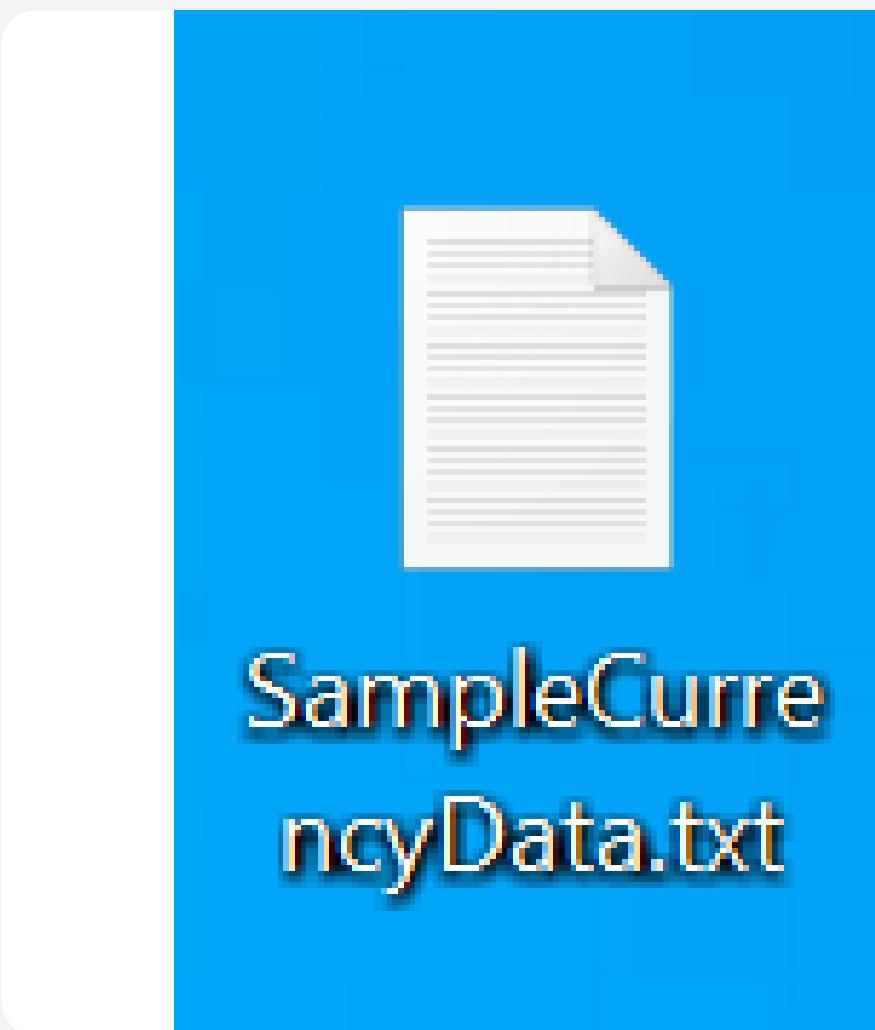
CARACTERÍSTICAS DE SQL SERVER BUSINESS INTELLIGENCE

El poder clave de SSIS es su capacidad de transformación y migración de datos. SSIS proporciona herramientas de almacenamiento de datos como la extracción y la transformación de datos.

ETLs

ETL (Extract, Transform, Load) es un proceso que consiste en extraer datos de diferentes fuentes de datos, manipularlos según los cálculos del negocio y cargar los datos modificados en un almacén de datos diferente.

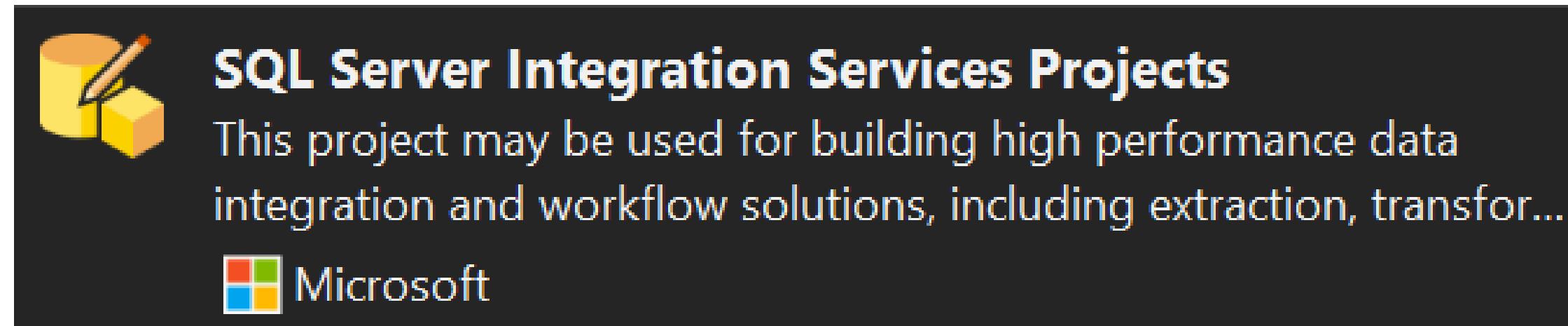
Prerrequisitos



Data Warehouse

- [AdventureWorksDW2019.bak ↗](#)
- [AdventureWorksDW2017.bak ↗](#)
- [AdventureWorksDW2016.bak ↗](#)
- [AdventureWorksDW2016_EXT.bak ↗](#)
- [AdventureWorksDW2014.bak ↗](#)
- [AdventureWorksDW2012.bak ↗](#)

Prerequisito 1



Modifying — Visual Studio Community 2019 — 16.11.19

Workloads Individual components Language packs Installation locations

Windows using C++.

Gaming (2)

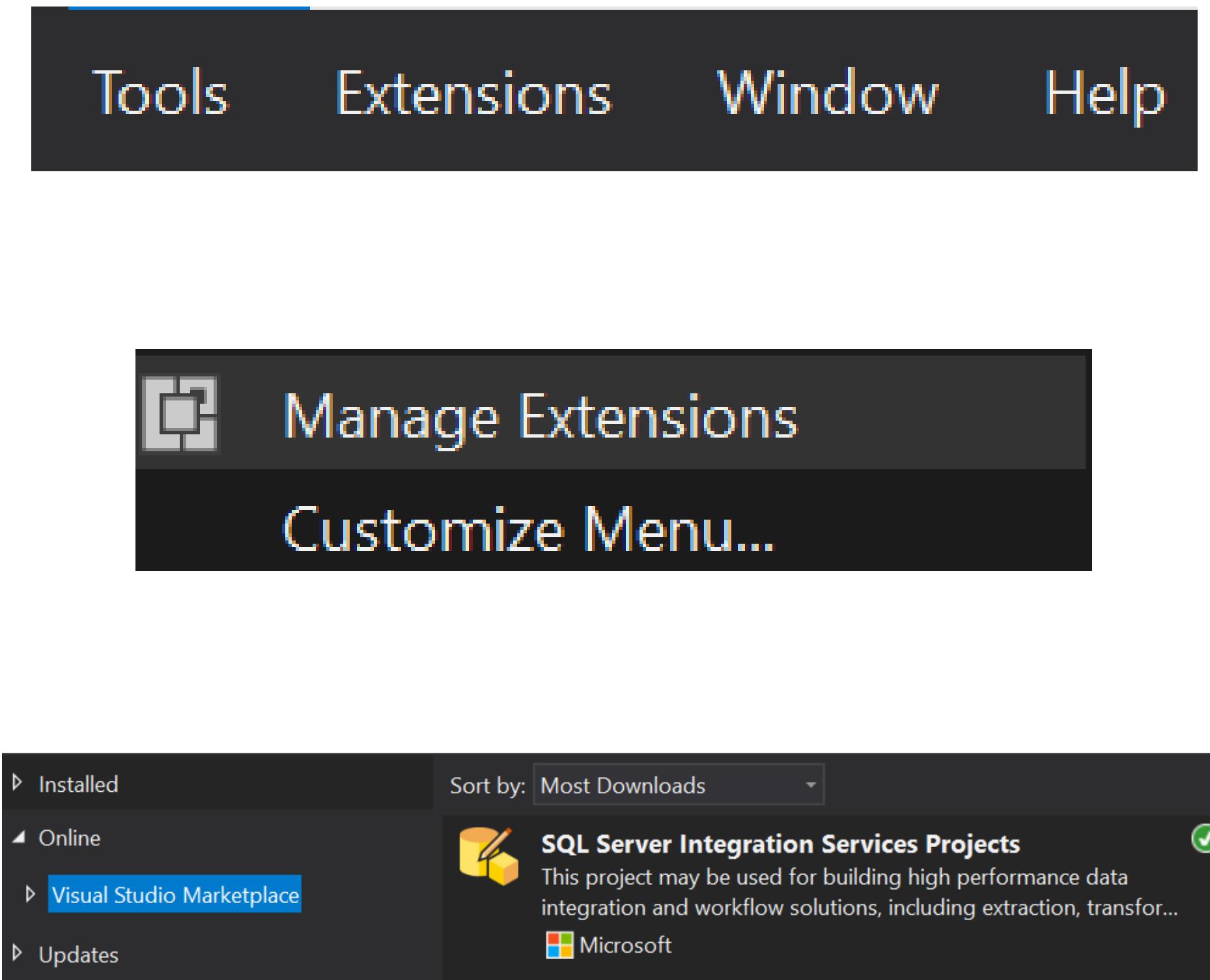
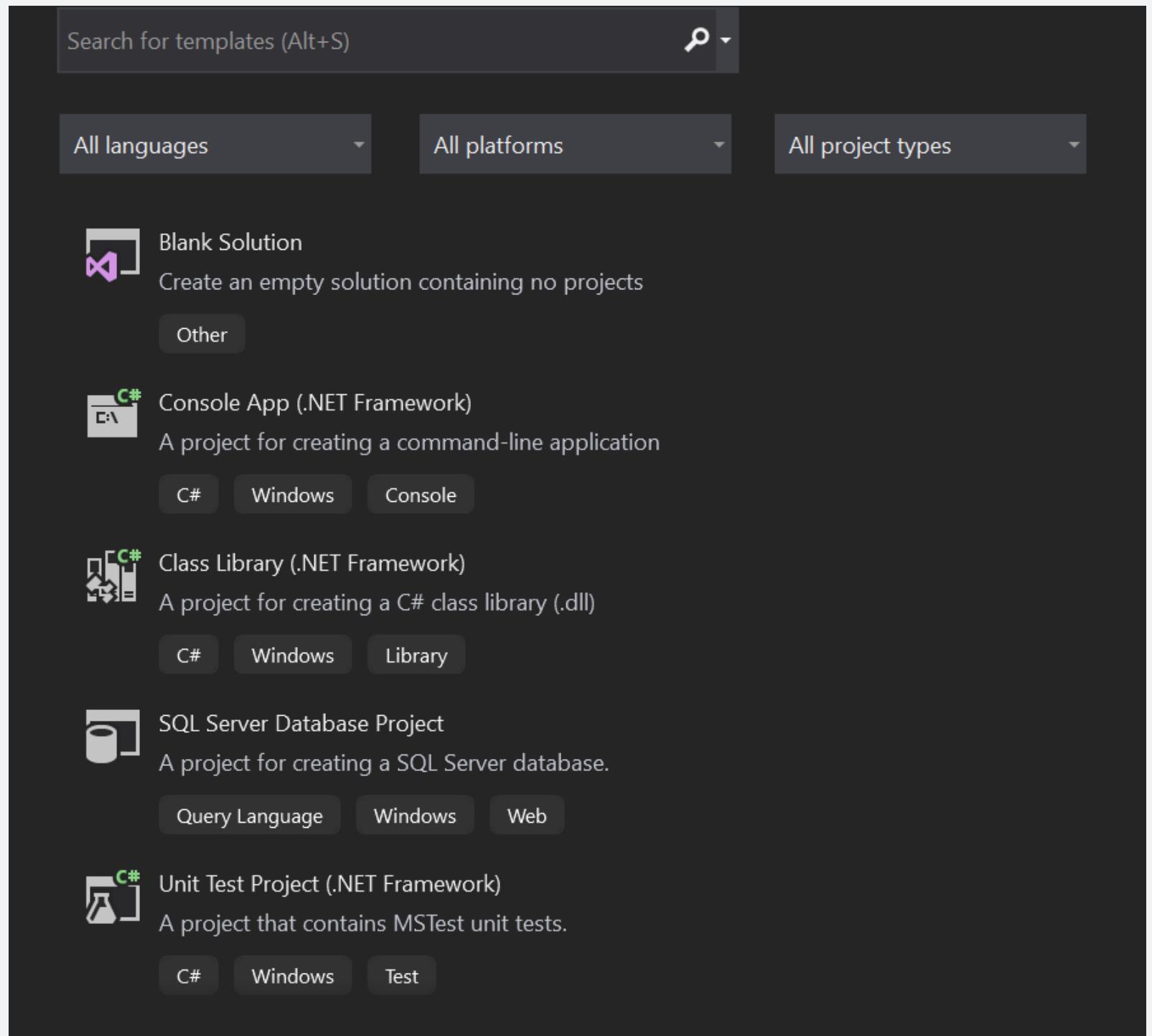
-  **Game development with Unity**
Create 2D and 3D games with Unity, a powerful cross-platform development environment.
-  **Game development with C++**
Use the full power of C++ to build professional games powered by DirectX, Unreal, or Cocos2d.

Other Toolsets (6)

-  **Data storage and processing**
Connect, develop, and test data solutions with SQL Server, Azure Data Lake, or Hadoop.
-  **Data science and analytical applications**
Languages and tooling for creating data science applications, including Python and F#.

Installation details

- ▶ **Visual Studio core editor**
- ▼ **Data storage and processing**
 - ▼ Optional
 - SQL Server Data Tools
 - Azure Data Lake and Stream Analytics Tools
 - .NET Framework 4 – 4.6 development tools
 - F# desktop language support
- ▶ **Individual components**



Prerequisite 2

SQL Server Integration Services (SSIS) Tutorial Files

Important! Selecting a language below will dynamically change the complete page content to that language.

Language:

English

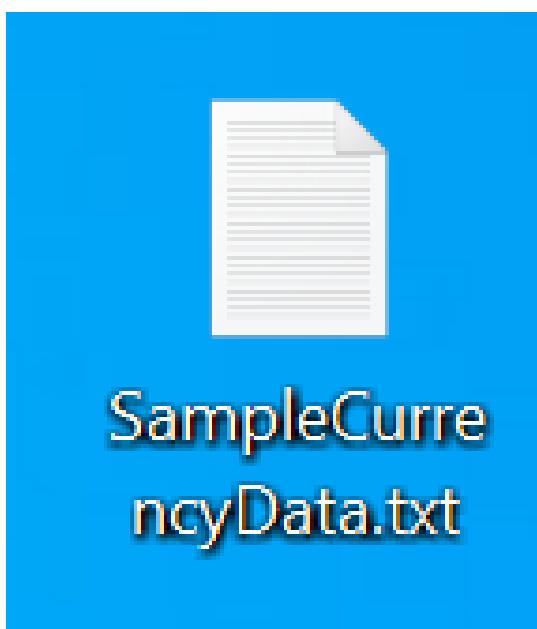
[Download](#)



SampleCurrencyData.txt

August 21

Aldo Afranchi



Prerrequisito 3



Express

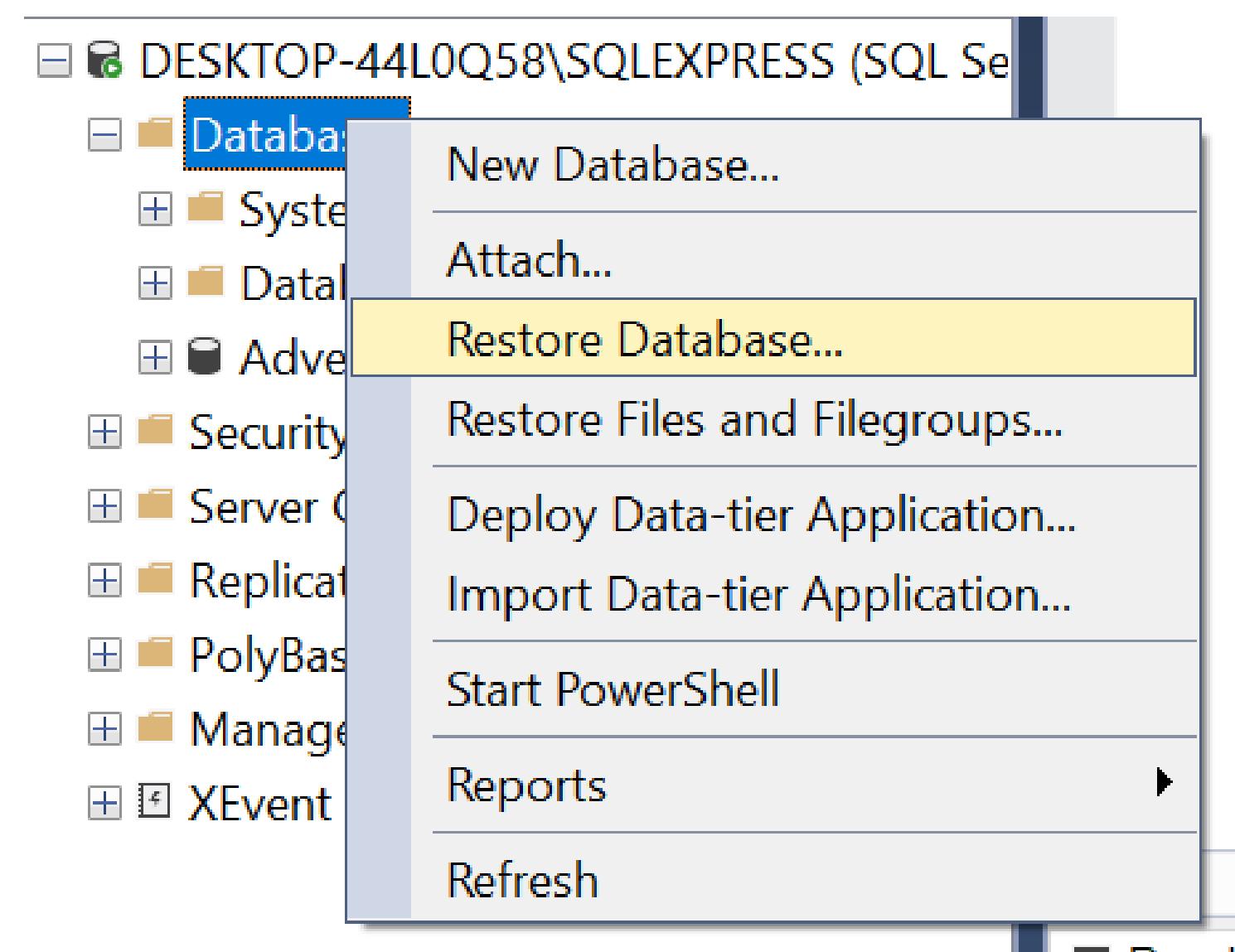
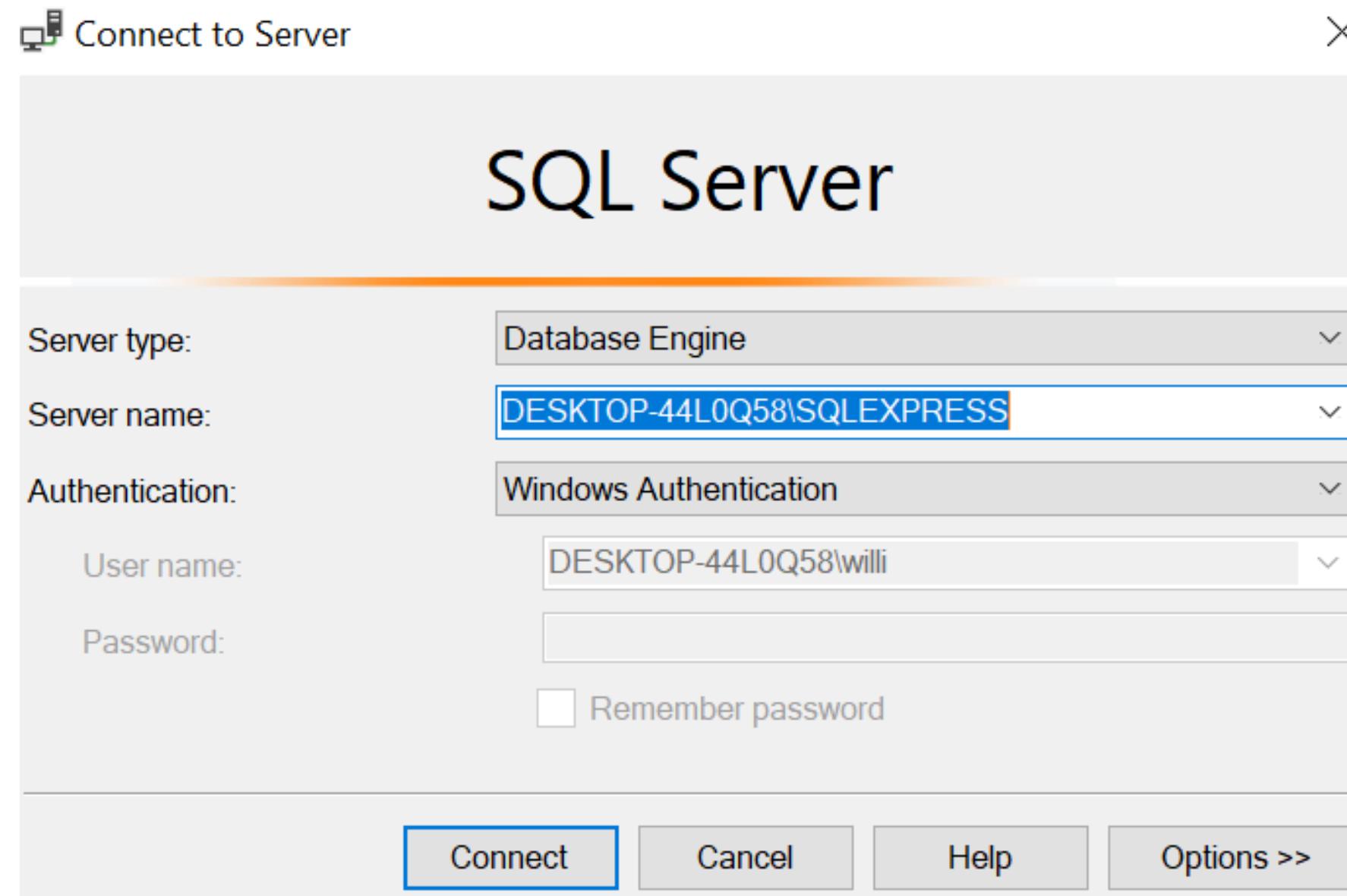
SQL Server 2019 Express is a free edition of SQL Server, ideal for development and production for desktop, web, and small server applications.

[Download now >](#)

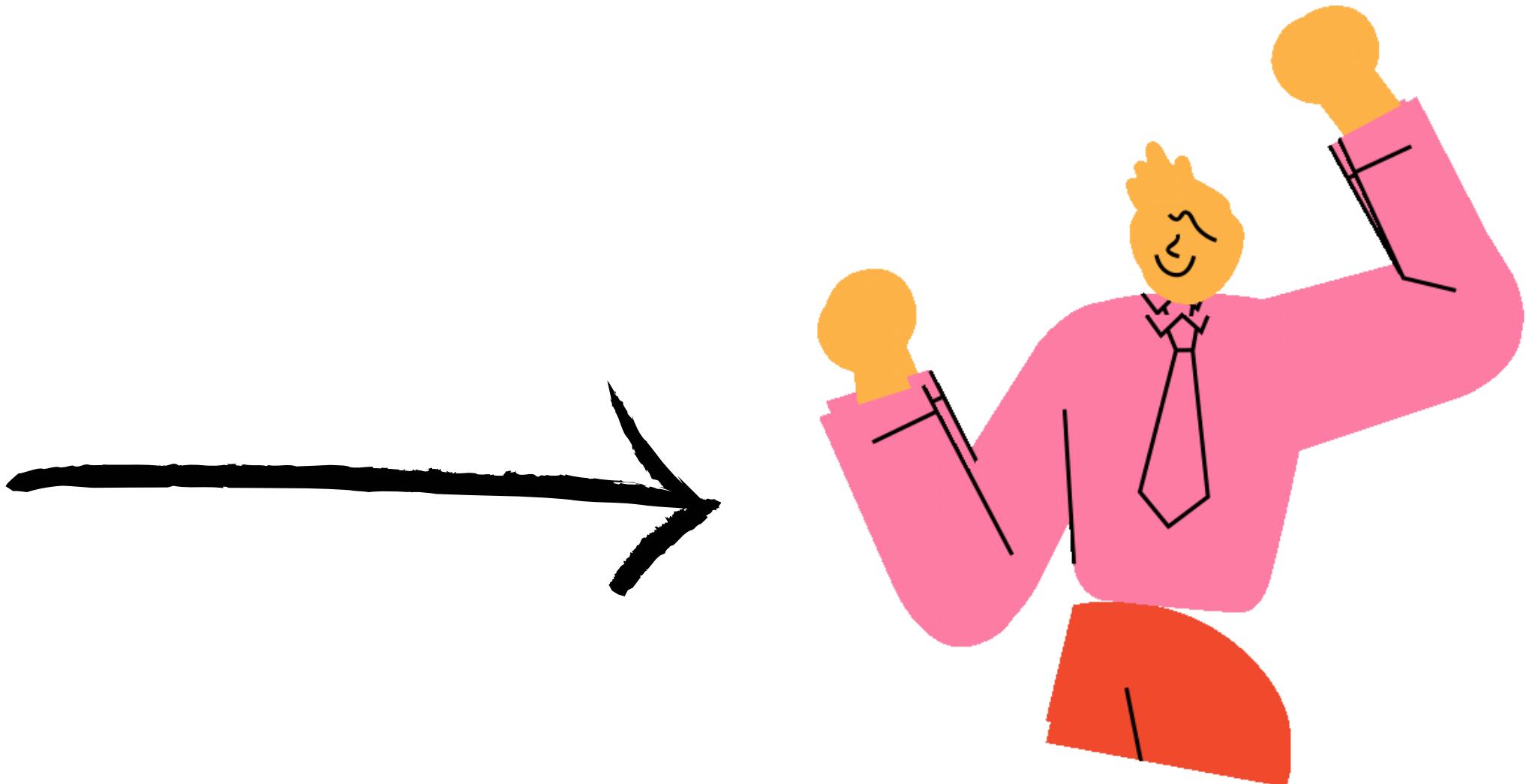
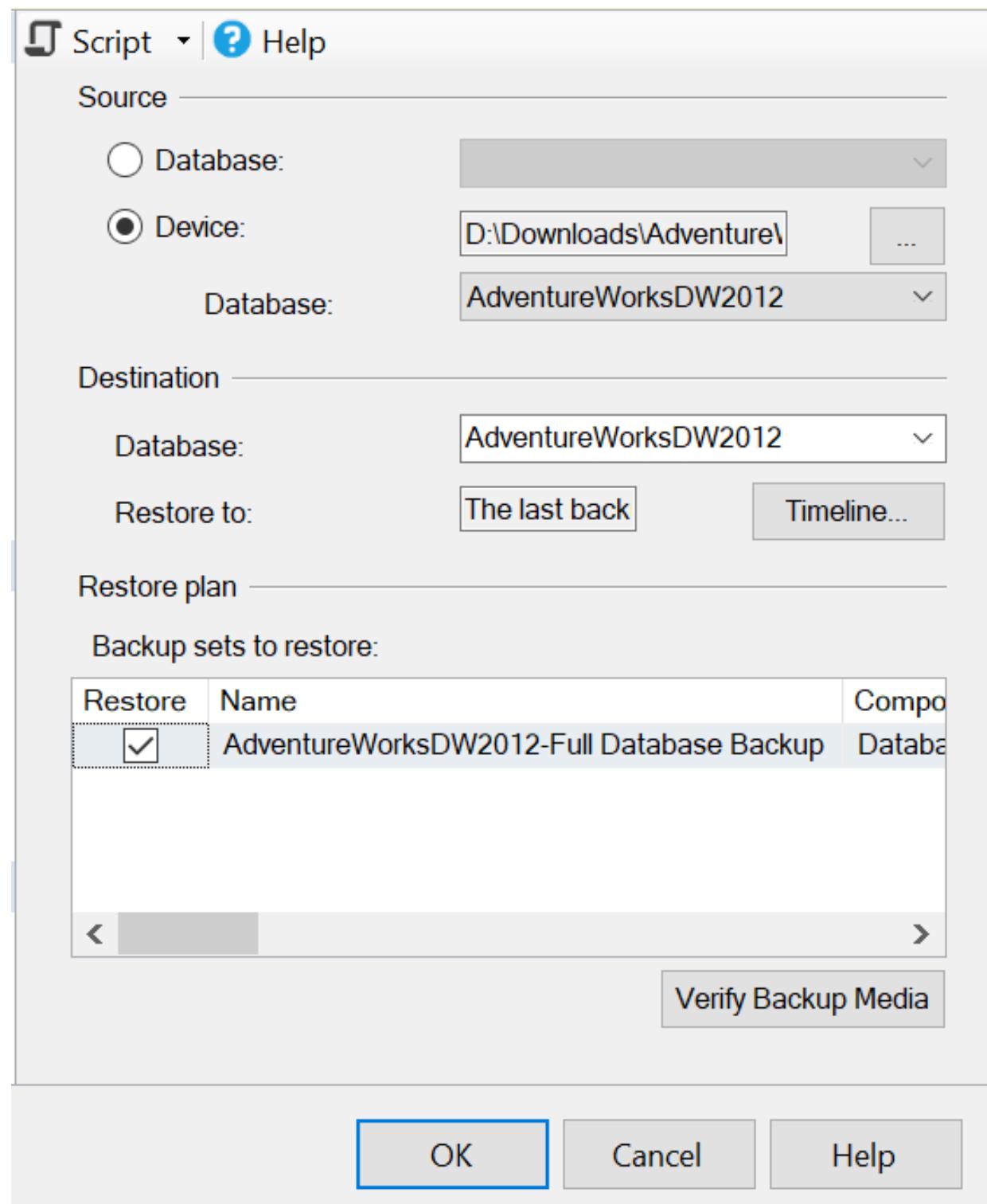


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Management

Prerequisito 3



Prerequisito 3



Lección 1-1

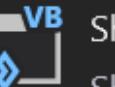
Create a new project

Recent project templates

A list of your recently accessed templates will be displayed here.

Search for templates (Alt+S) 

All languages  All platforms  All project types 

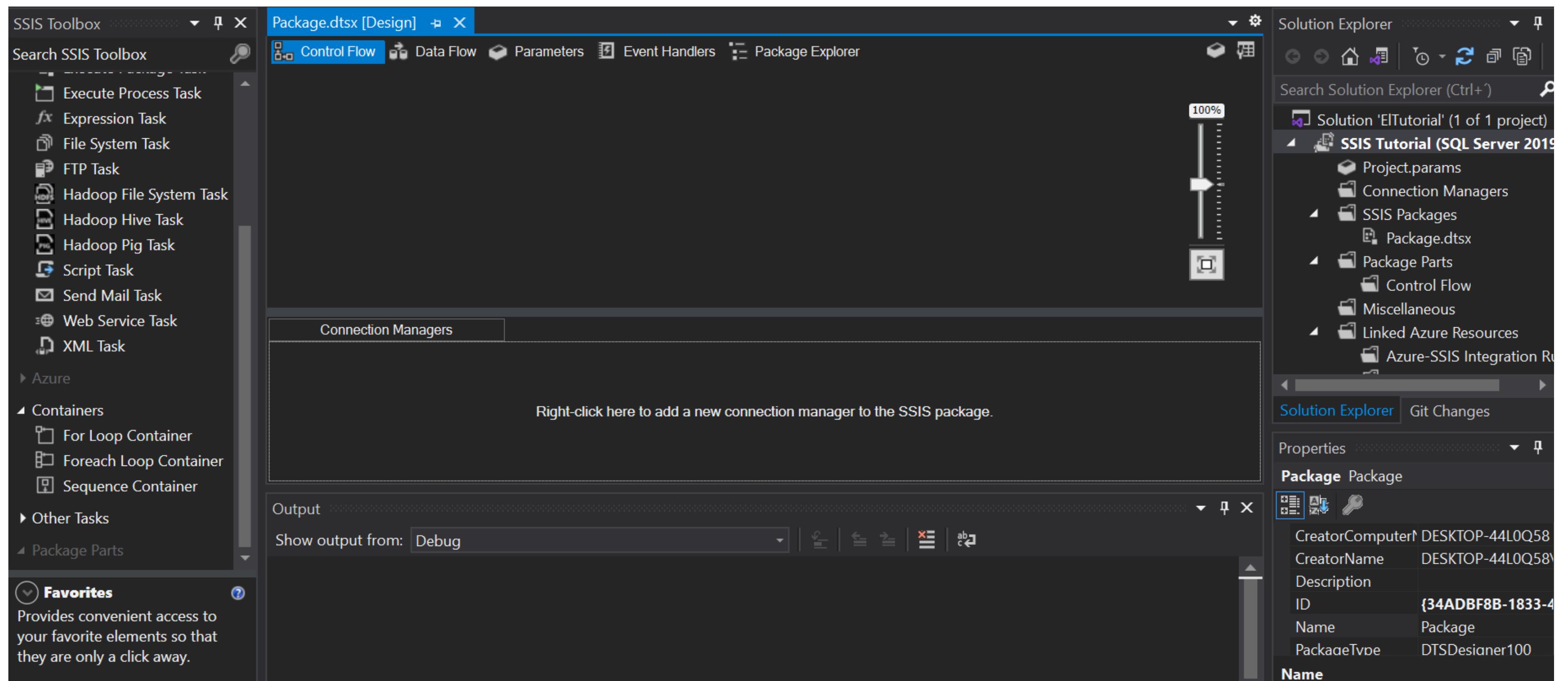
 **Shared Project**
Shared Project
Visual Basic Windows Desktop

 **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.

Lección 1-1

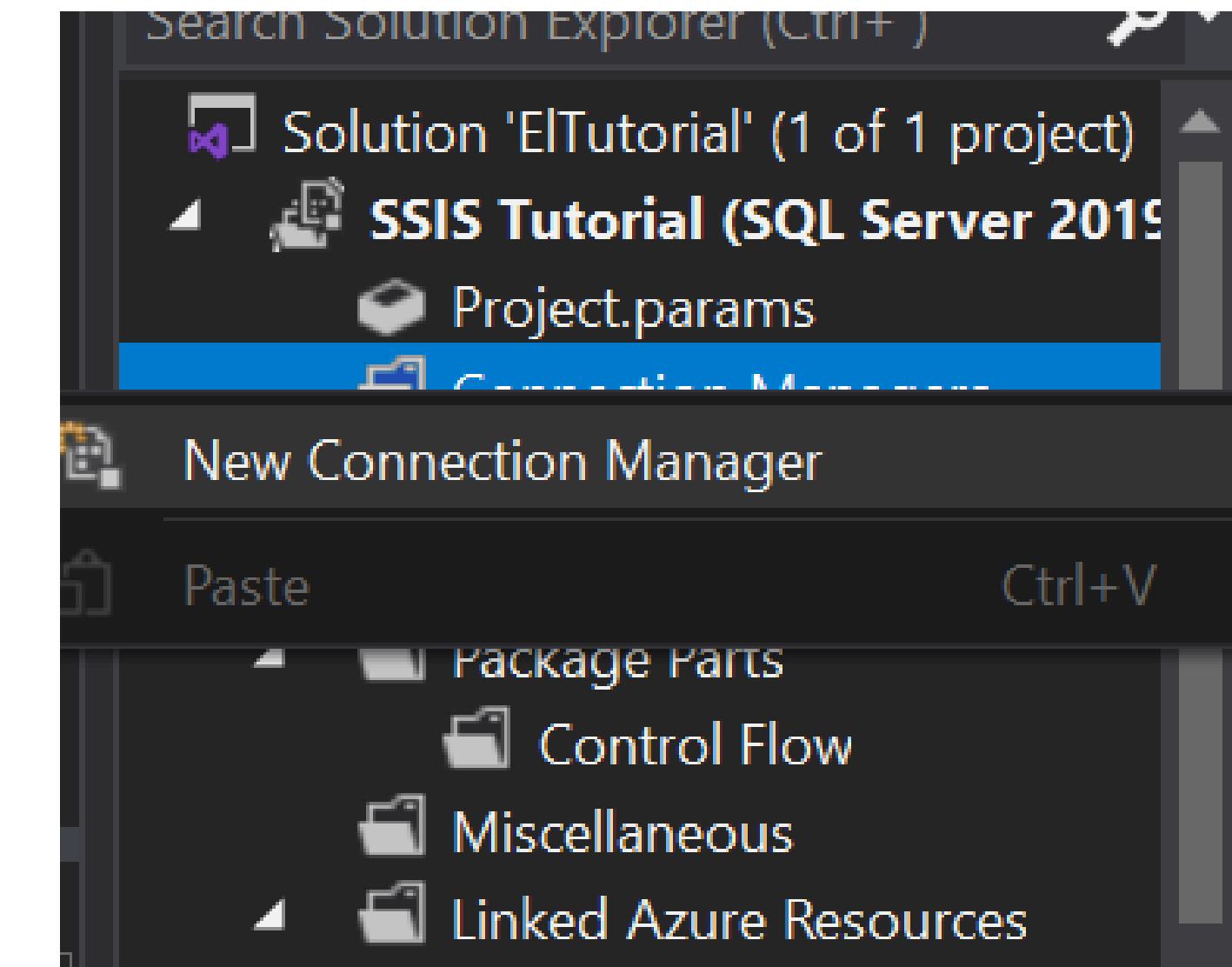
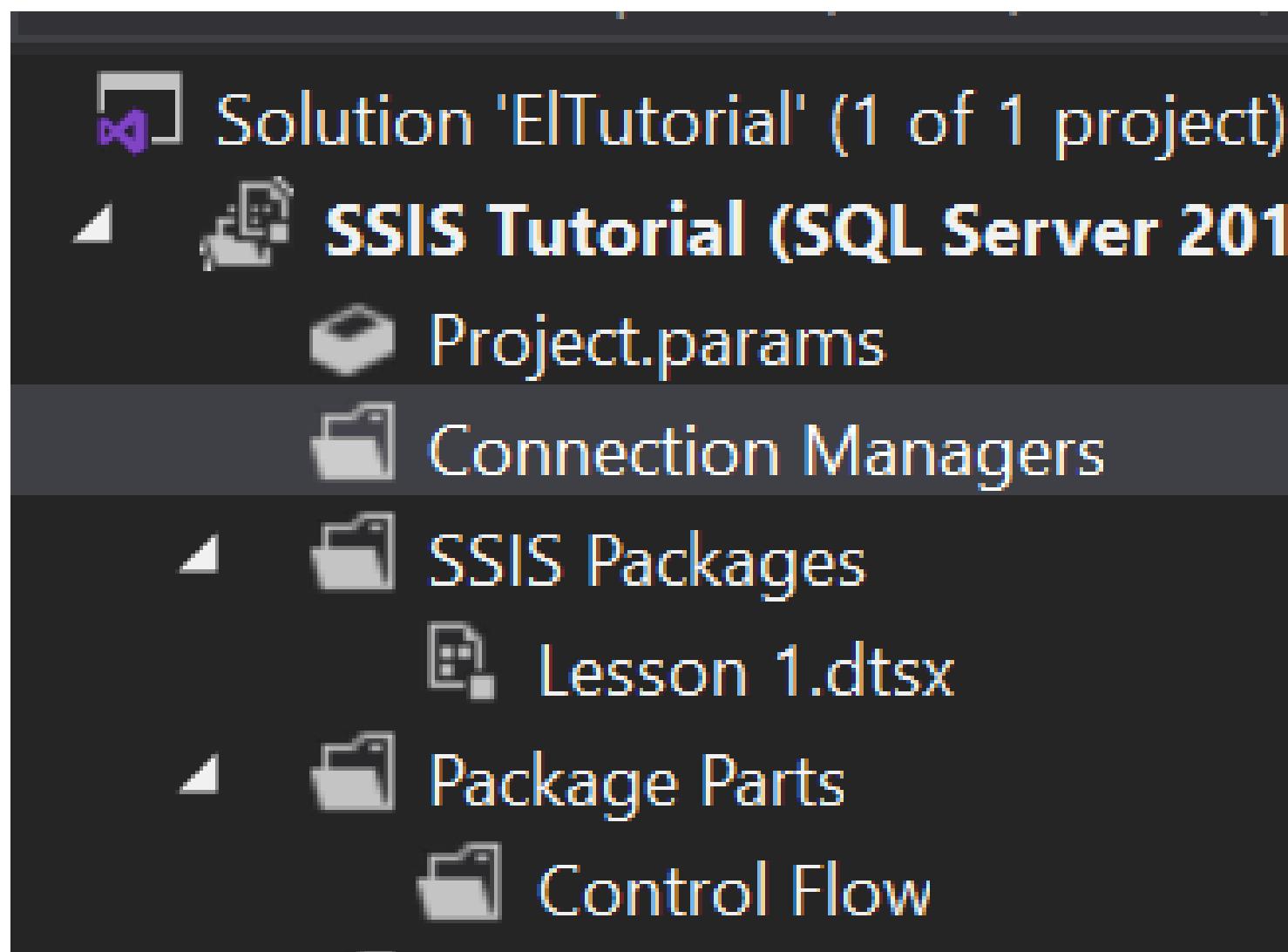


The screenshot shows the SSIS Designer interface with the following details:

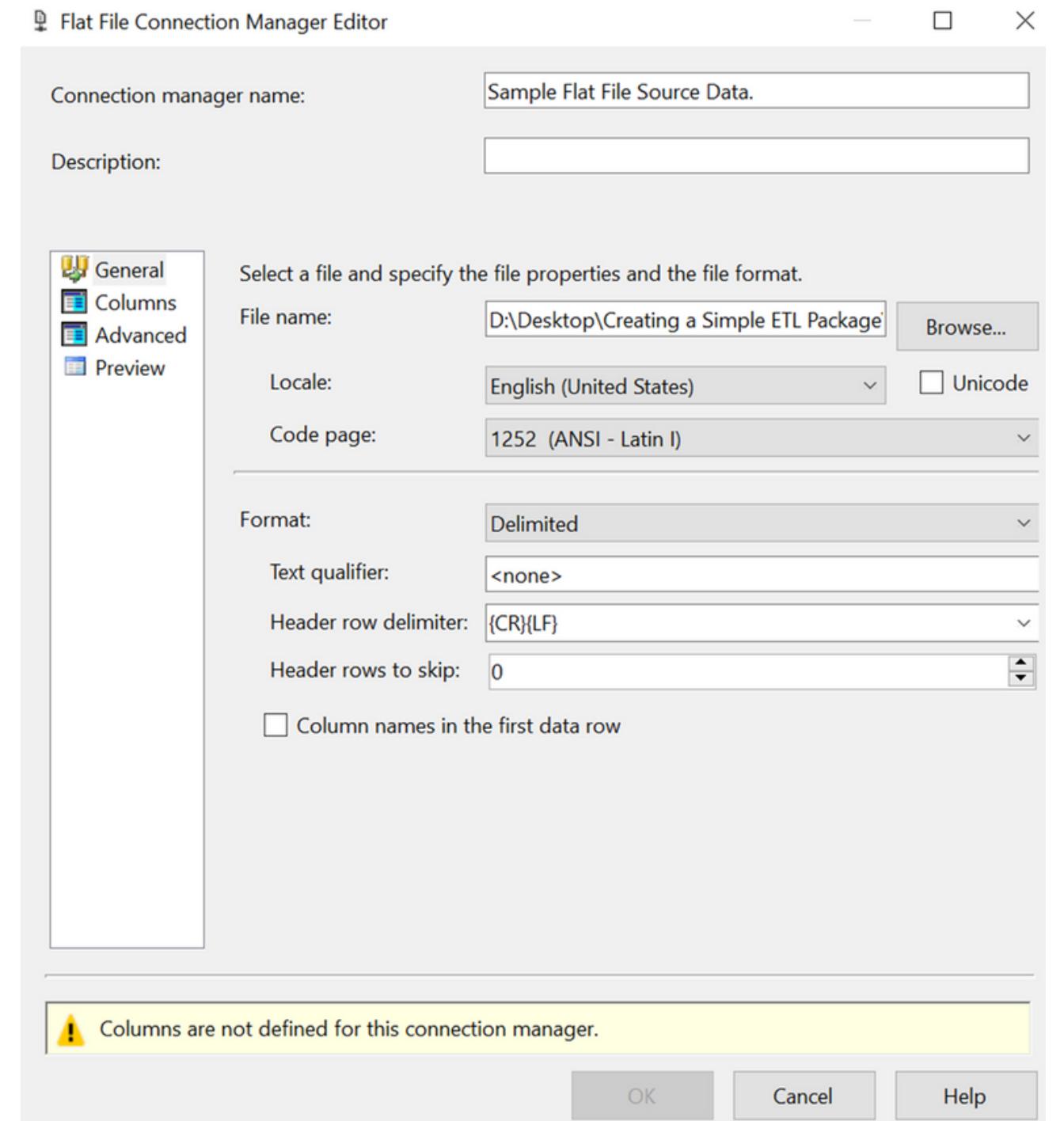
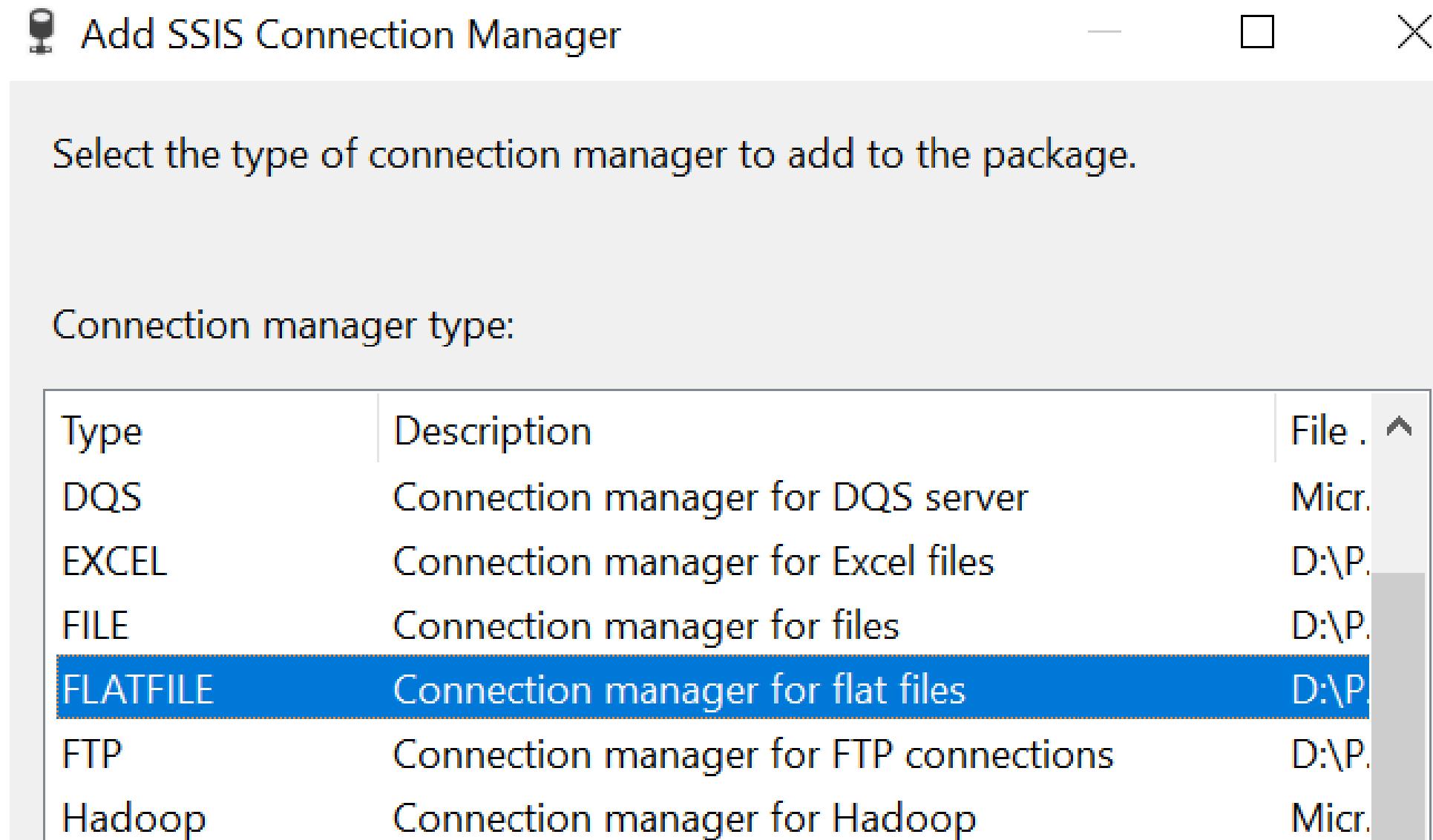
- SSIS Toolbox:** On the left, the toolbox is open with the **Control Flow** tab selected. It lists various tasks: Execute Process Task, Expression Task, File System Task, FTP Task, Hadoop File System Task, Hadoop Hive Task, Hadoop Pig Task, Script Task, Send Mail Task, Web Service Task, and XML Task. It also includes sections for **Azure**, **Containers** (For Loop Container, Foreach Loop Container, Sequence Container), **Other Tasks**, and **Package Parts**.
- Package.dtsx [Design]:** The main workspace is titled "Package.dtsx [Design]". It displays the **Control Flow** tab. A placeholder for a connection manager is shown with the text "Right-click here to add a new connection manager to the SSIS package." and a small icon.
- Solution Explorer:** On the right, the Solution Explorer shows the project structure for "Solution 'ELTutorial' (1 of 1 project)". It includes the **SSIS Tutorial (SQL Server 2019)** folder, which contains **Project.params**, **Connection Managers**, **SSIS Packages** (with **Package.dtsx**), **Package Parts** (with **Control Flow**), **Miscellaneous**, and **Linked Azure Resources** (with **Azure-SSIS Integration R**).
- Properties:** The properties window on the far right shows the following details for the package:

CreatorComputer	DESKTOP-44L0Q58
CreatorName	DESKTOP-44L0Q58
Description	
ID	(34ADBF8B-1833-4
Name	Package
PackageType	DTSSDesigner100
Name	

Lección 1-2



Lección 1-2



Lección 1-2

Configure the properties of each column.

Column 0
Column 1
Column 2
Column 3



Configure the properties of each column.

AverageRate
CurrencyID
CurrencyDate
EndOfDayRate

Lección 1-2

AverageRate
CurrencyID
CurrencyDate



DataScale	0
DataType	string [DT_STR]
OutputColumnW	3



Unicode string [DT_WSTR]

CurrencyID
CurrencyDate
EndOfDayRate



DataScale	0
DataType	date [DT_DATE]
OutputColumnW	0



database date [DT_DBDATE]

Lección 1-3

Connection manager type:

Type	Description	File . ^
Hadoop	Connection manager for Hadoop	Micros.
HTTP	Connection manager for HTTP connections	D:\P...
MSMQ	Connection manager for the Message Queue task	Micros.
MSOLAP100	Connection manager for Analysis Services conn...	D:\P...
MULTIFILE	Connection manager for multiple files	D:\P...
MULTIFLATFILE	Connection manager for multiple flat files	D:\P...
ODATA	Connection Manager for OData services	Micros.
ODBC	Connection manager for ODBC connections	D:\P...
OLEDB	Connection manager for OLE DB connections	D:\P...
SMOServer	Connection manager for SQL Server transfer tas...	Micros.
SMTP	Connection manager for the Send Mail task	Micros.
SQLMOBILE	Connection manager for SQL Server Compact c...	D:\P...
WMI	Connection manager for the WMI tasks	Micros.

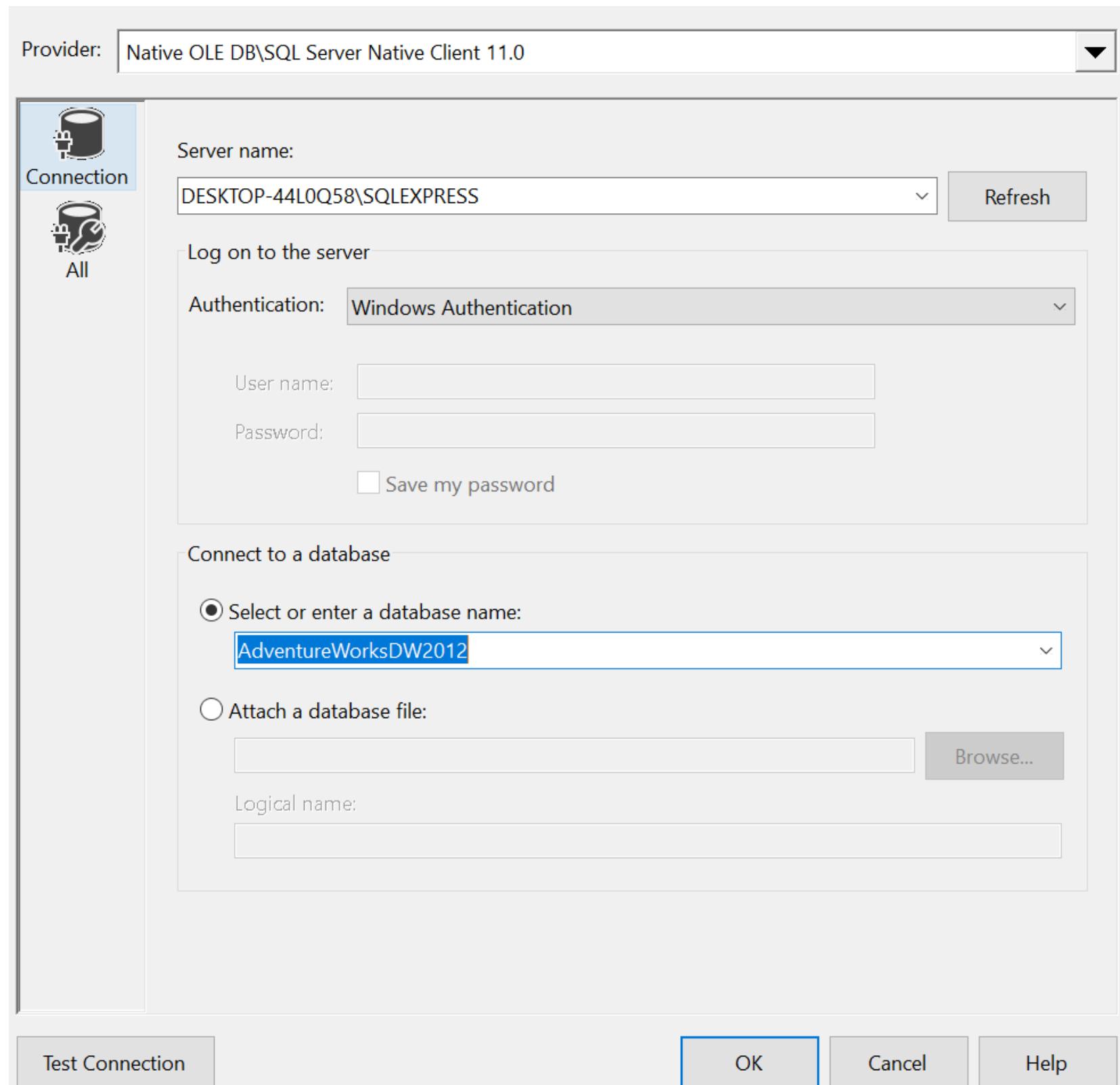
Data connections:

Data connection properties:

Property	Value

New... Delete OK Cancel

Lección 1-3

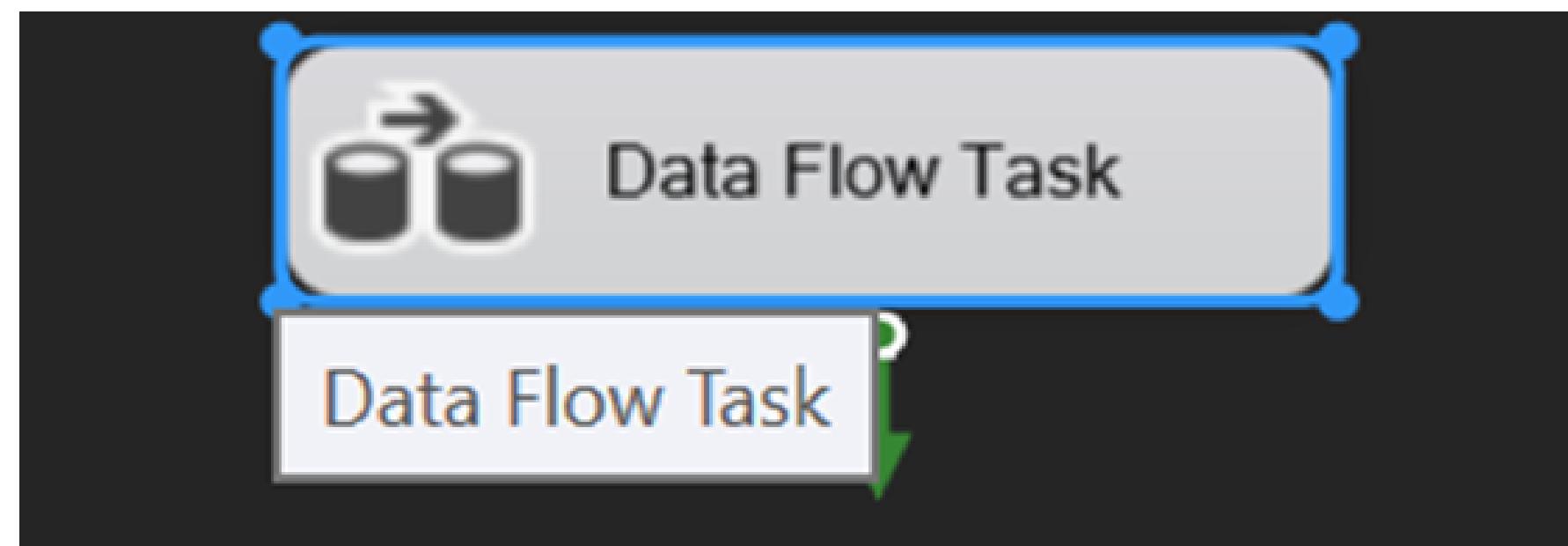
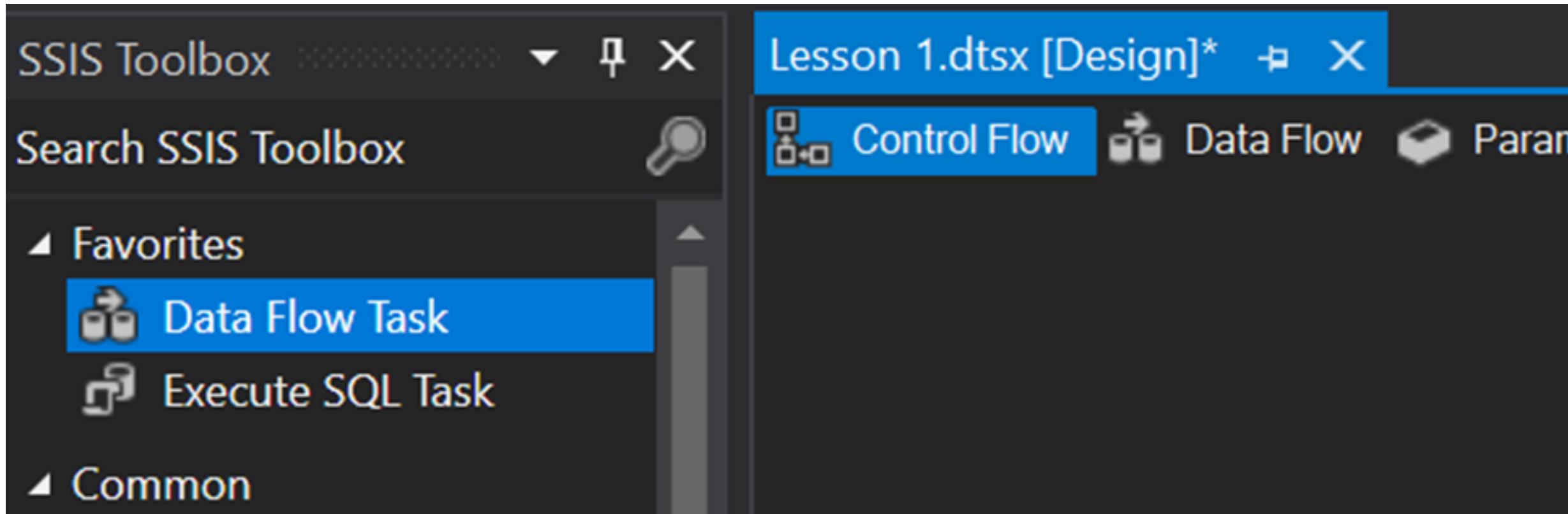


Connection Manager

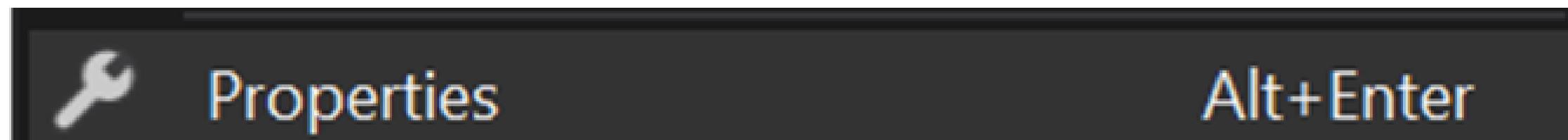
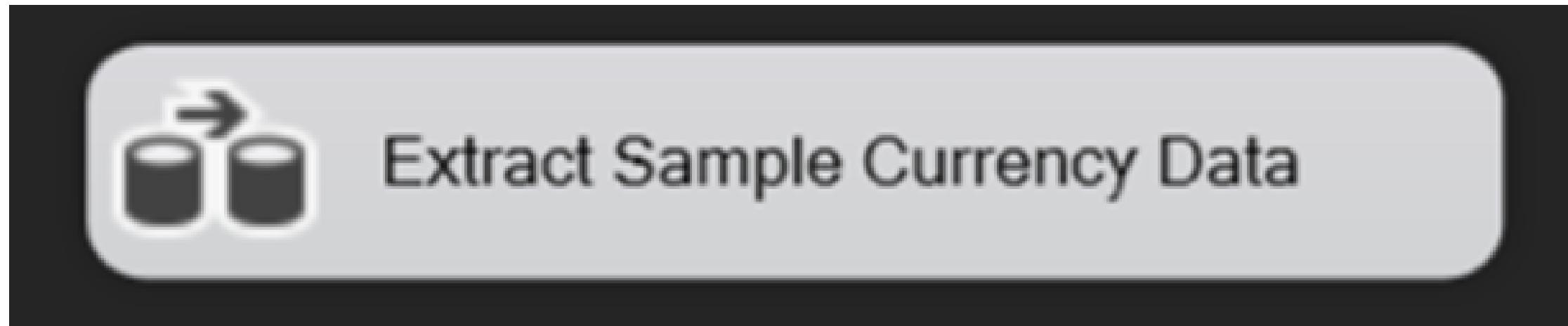
Test connection succeeded.

 Copy message

Lección 1-4



Lección 1-4



ForceExecutionResult	None
HasExpressions	False
LocaleID	English (United States)
LoggingMode	UseParentSetting

Lección 1-5

SSIS Toolbox

Buscar en el cuadro de herramientas

- Slowly Changing Dimension
- Sort
- Union All

Azure

Otras transformaciones

Otros orígenes

- CDC Source
- Excel Source
- Flat File Source
- OLE DB Source
- Origen de ADO NET

Explorador de servidores

Cuadro de herramientas

Lesson 1.dtsx [Diseño]

Control Fl... Data Fl... Paramet... Event Handl... Package Expl...

Data Flow Task: Extract Sample Currency Data

Flat File Source

Event Handl... Package Expl...

Extract Sample Currency Data

Flat File Source Editor

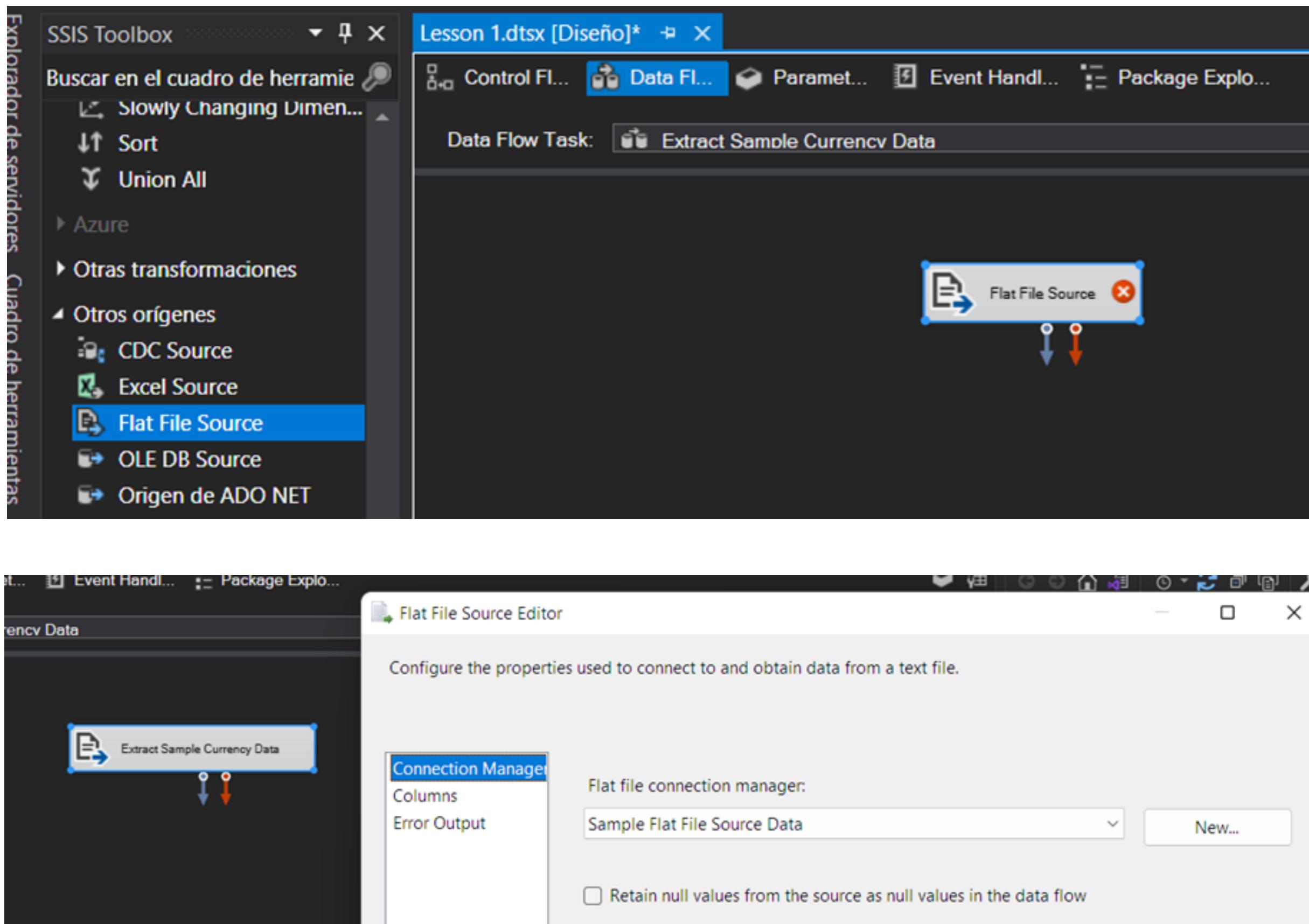
Configure the properties used to connect to and obtain data from a text file.

Connection Manager

Flat file connection manager:

Sample Flat File Source Data

Retain null values from the source as null values in the data flow



Lección 1-5

Configure the properties used to connect to and obtain data from a text file.

Connection Manager
Columns
Error Output

Available External Colu...

<input checked="" type="checkbox"/> Name
<input checked="" type="checkbox"/> AverageRate
<input checked="" type="checkbox"/> CurrencyID
<input checked="" type="checkbox"/> CurrencyDate

External Column Output Column

AverageRate	AverageRate
CurrencyID	CurrencyID
CurrencyDate	CurrencyDate
EndOfDayRate	EndOfDayRate

Propiedades

Extract Sample Currency Data Data Flow Component

ComponentClassID {FC58D298-4FC7-413C-9E80-...

ContactInfo Flat File Source;Microsoft Corp

Description Flat File Source

ID 1

IdentificationString Extract Sample Currency Data

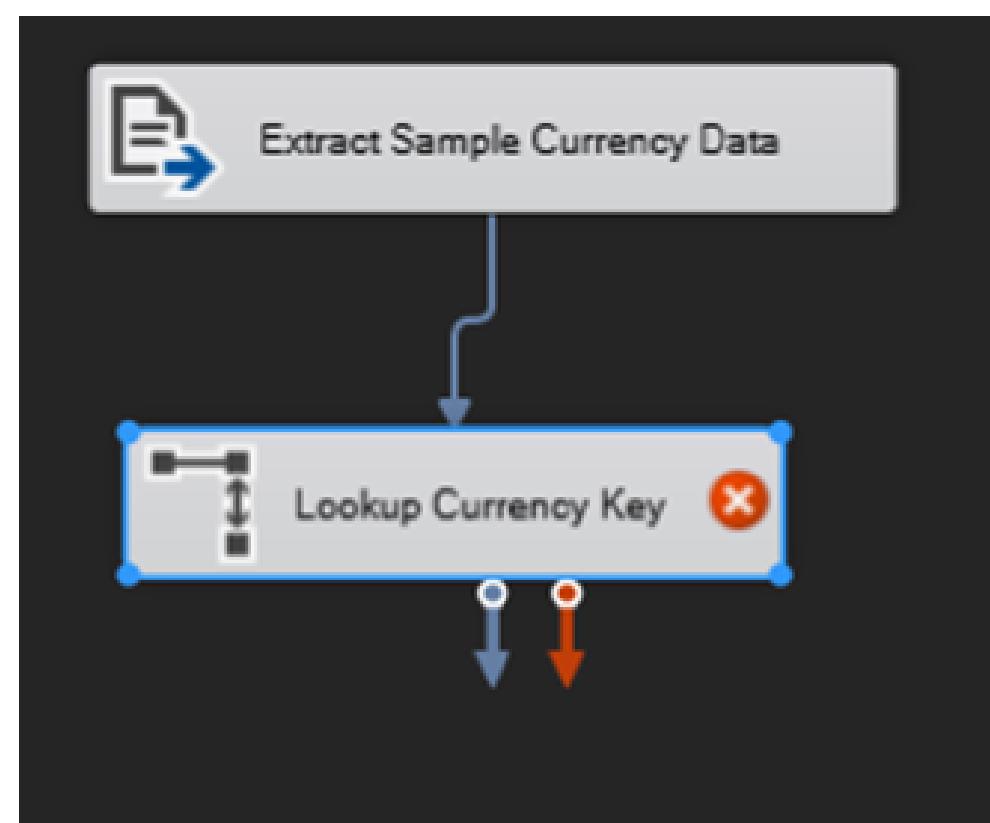
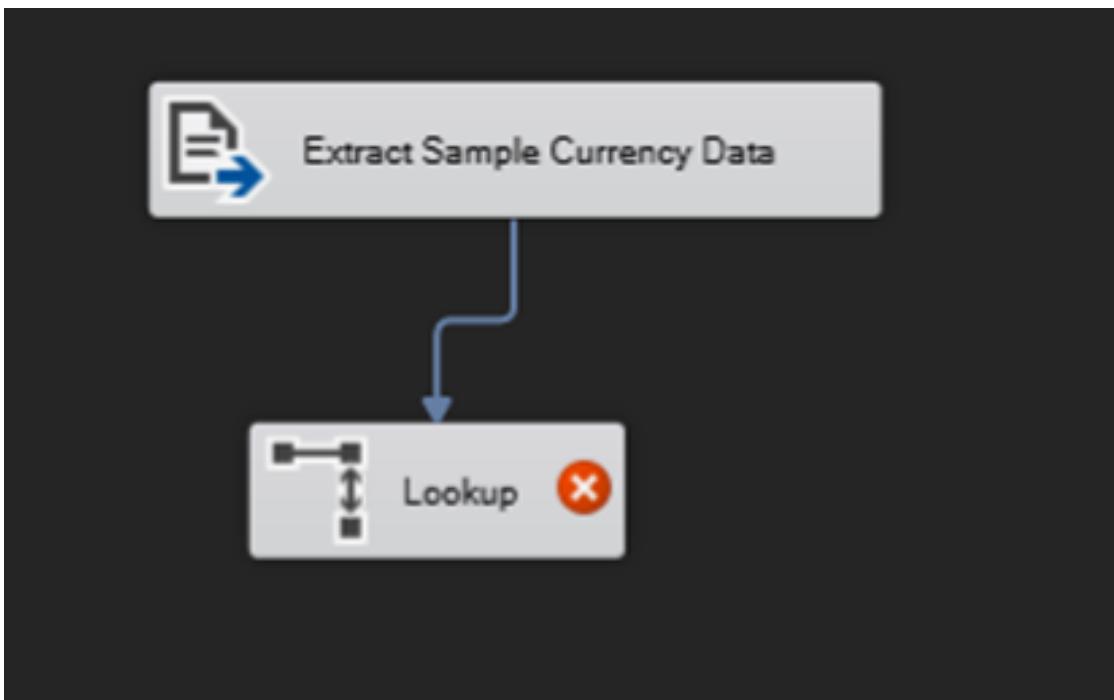
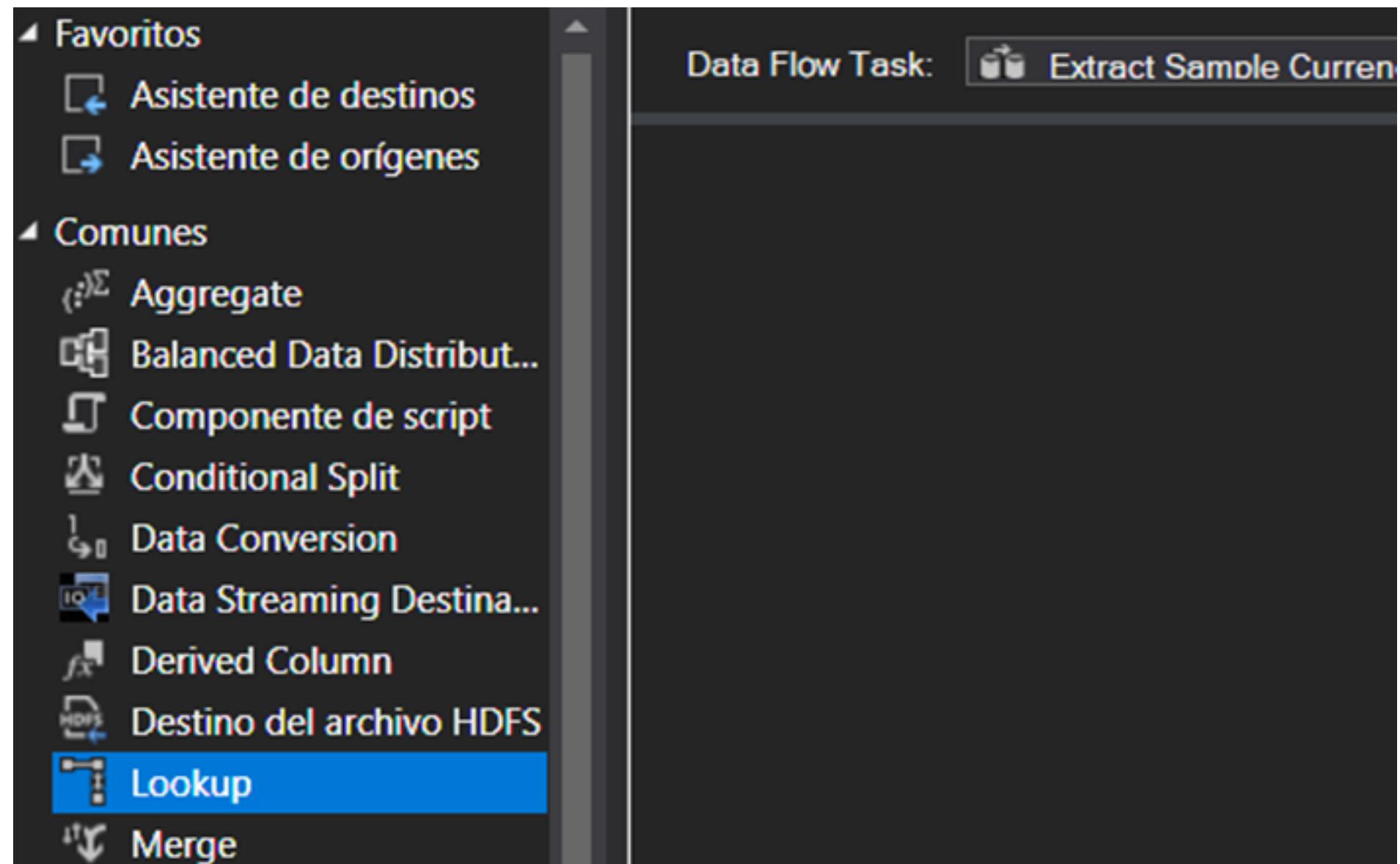
IsDefaultLocale False

LocaleID Inglés (Estados Unidos)

Name Extract Sample Currency Dat

PipelineVersion 0

Lección 1-6



Lección 1-6

Lookup Transformation Editor

This transform enables the performance of simple equi-joins between the input and a reference data set.

General

Connection

Columns

Advanced

Error Output

Cache mode

Full cache

Partial cache

No cache

Connection type

Cache connection manager

OLE DB connection manager

Specify how to handle rows with no matching entries

Fail component

General

Connection

Columns

Advanced

Error Output

Specify a data source to use. You can select a table in a data source view, a table in a database connection, or the results of an SQL query.

OLE DB connection manager:

LAPTOP-1096KIB9_SQLEXPRESS.AdventureWorksDW2012

New...

Use a table or a view:

New...

Use results of an SQL query:

```
SELECT * FROM [dbo].[DimCurrency] WHERE [CurrencyAlternateKey] IN ('ARS', 'AUD', 'BRL', 'CAD', 'CNY', 'DEM', 'EUR', 'FRF', 'GBP', 'JPY', 'MXN', 'SAR', 'USD', 'VEB')
```

Build Query...

Browse...

Parse Query

Preview...

OK

Cancel

Help

Lección 1-6

Preview Query Results

Query result (up to the first 200 rows):

CurrencyKey	CurrencyAlternateKey	CurrencyName
3	ARS	Argentine Peso
6	AUD	Australian Dollar
16	BRL	Brazilian Real
19	CAD	Canadian Dollar
103	CNY	Yuan Renminbi
29	DEM	Deutsche Mark
36	EUR	EURO
39	FRF	French Franc
98	GBP	United Kingdom Pou...
102	JPY	Yen
61	MXN	Mexican Peso
85	SAR	Saudi Riyal
100	USD	US Dollar
14	VEB	Bolivar

Close

General
Connection
Columns
Advanced
Error Output

Available Input Columns

Name
AverageRate
CurrencyID
CurrencyDate
EndOfDayRate

Available Lookup Columns

Name
CurrencyKey
CurrencyAlternateKey
CurrencyName

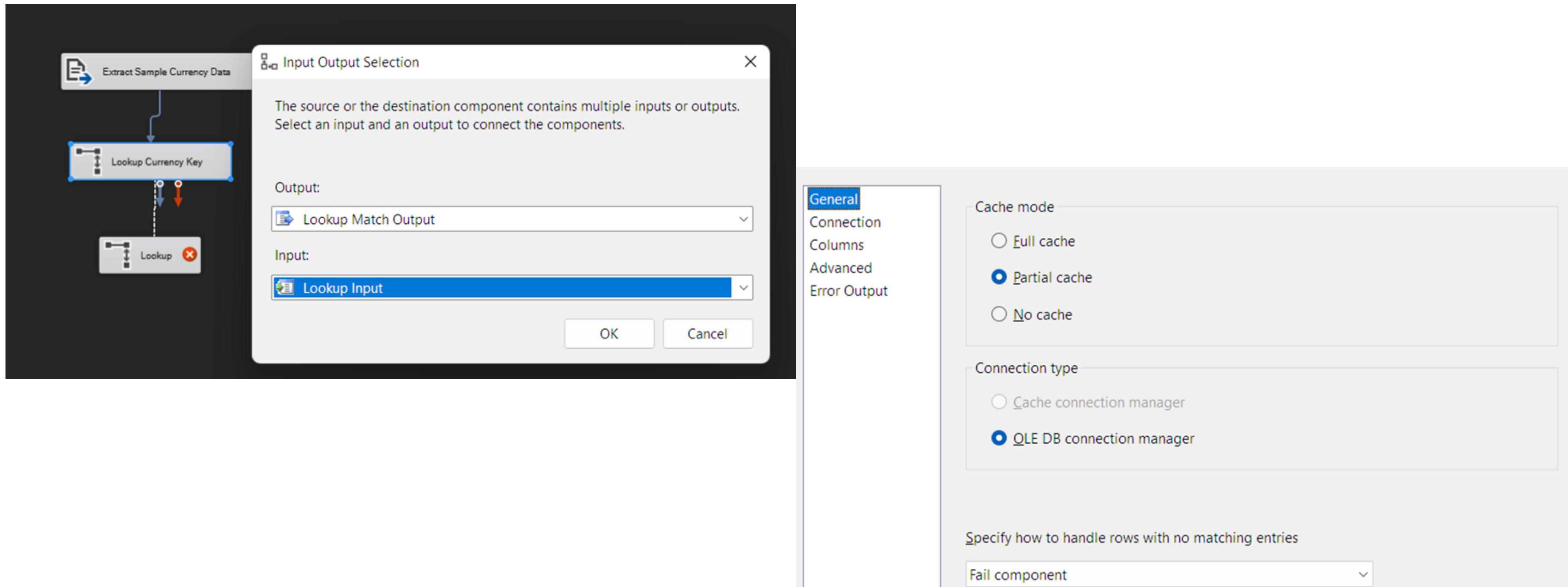
Lookup Column Lookup Operation Output Alias

CurrencyKey	<add as new column>	CurrencyKey
-------------	---------------------	-------------

Custom Properties

CacheType	Full
ConnectionType	OLEDB
DefaultCodePage	1252
NoMatchBehavior	Treat rows with no ma...

Lección 1-6

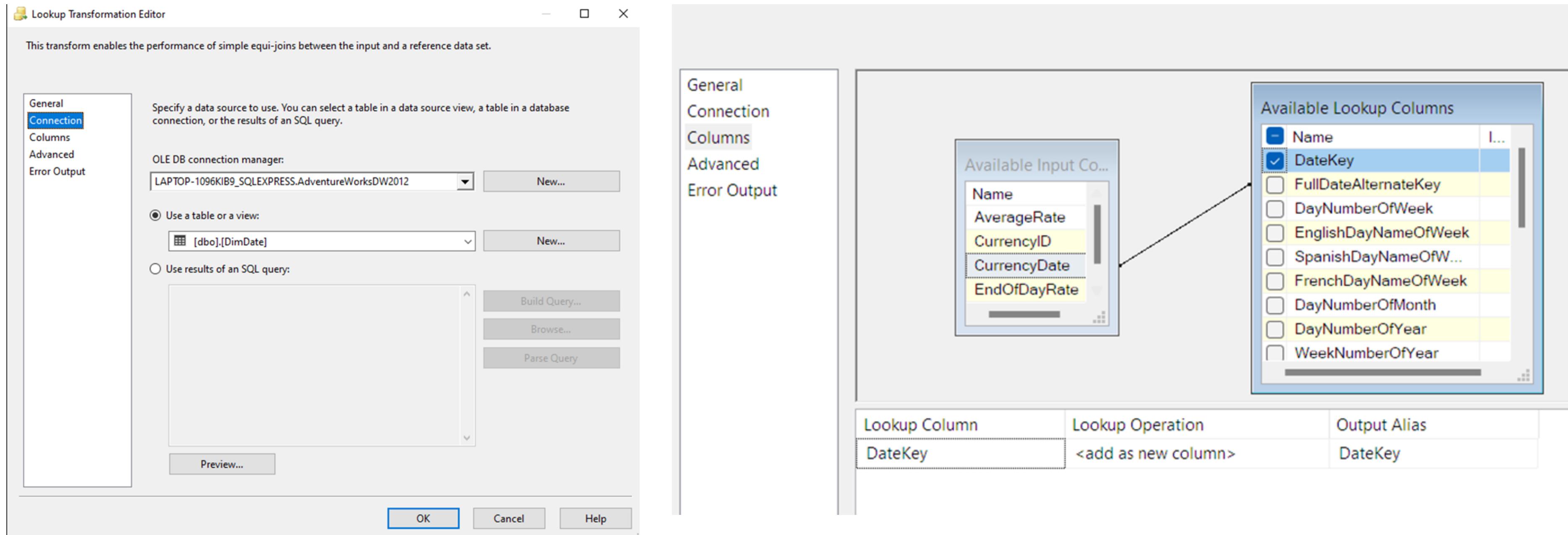


The screenshot shows the SSIS Extract Sample Currency Data package. A Lookup component is selected, and a 'Input Output Selection' dialog is open. The dialog displays the following message: 'The source or the destination component contains multiple inputs or outputs. Select an input and an output to connect the components.' The 'Output' dropdown is set to 'Lookup Match Output' and the 'Input' dropdown is set to 'Lookup Input'. The 'OK' button is highlighted in blue, indicating it is the active button.

The main configuration window on the right shows the following settings:

- General** tab selected.
- Cache mode**: Partial cache
- Connection type**: OLE DB connection manager
- Specify how to handle rows with no matching entries**: Fail component

Lección 1-6



Lección 1-6

This transform enables the performance of simple equi-joins between the input and a reference data set.

General
Connection
Columns
Advanced
Error Output

Partial caching

Cache size (32-bit): 25 MB
Cache size (64-bit): 25 MB

Enable cache for rows with no matching entries
Allocation from cache 0 Percent (%)

Custom query

Modify the SQL statement

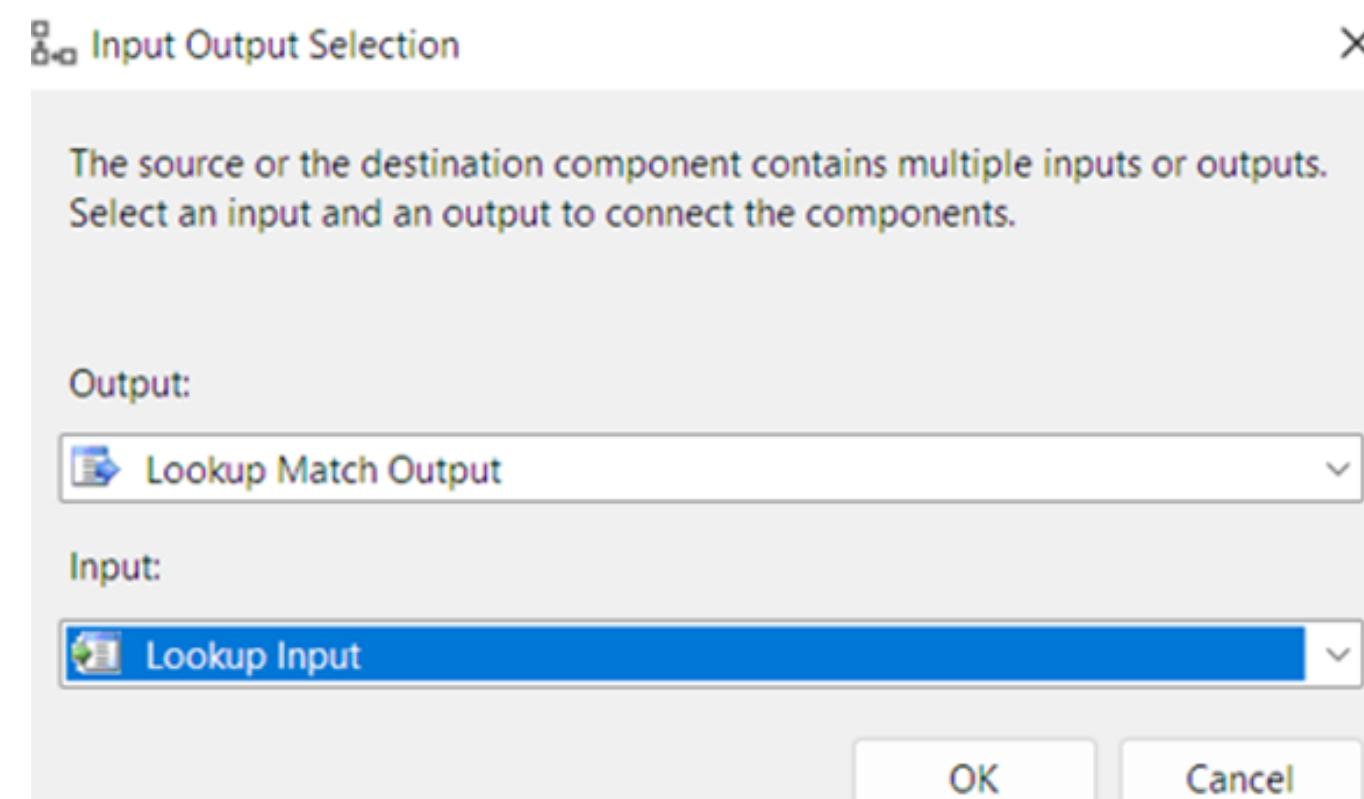
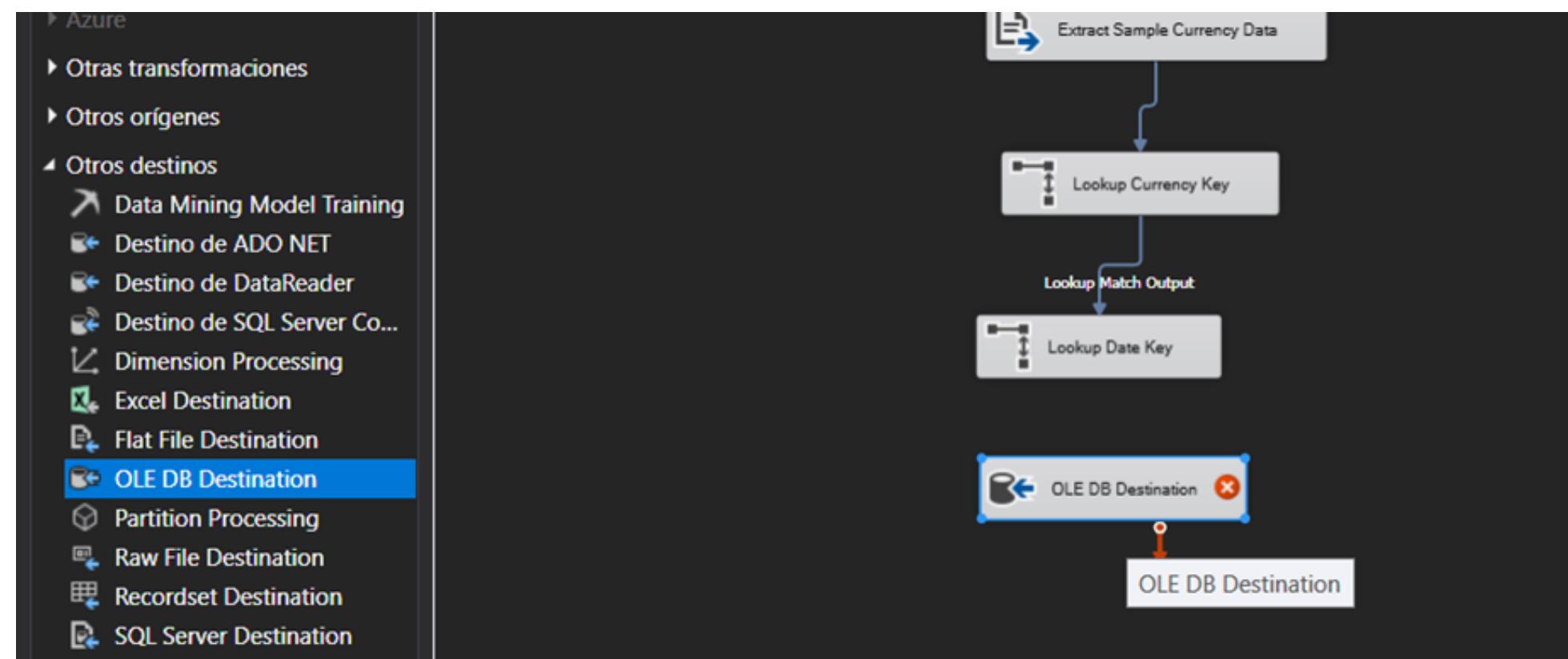
```
select * from (select * from [dbo].[DimDate]) [refTable]  
where [refTable].[FullDateAlternateKey] = ?
```

Parameters...

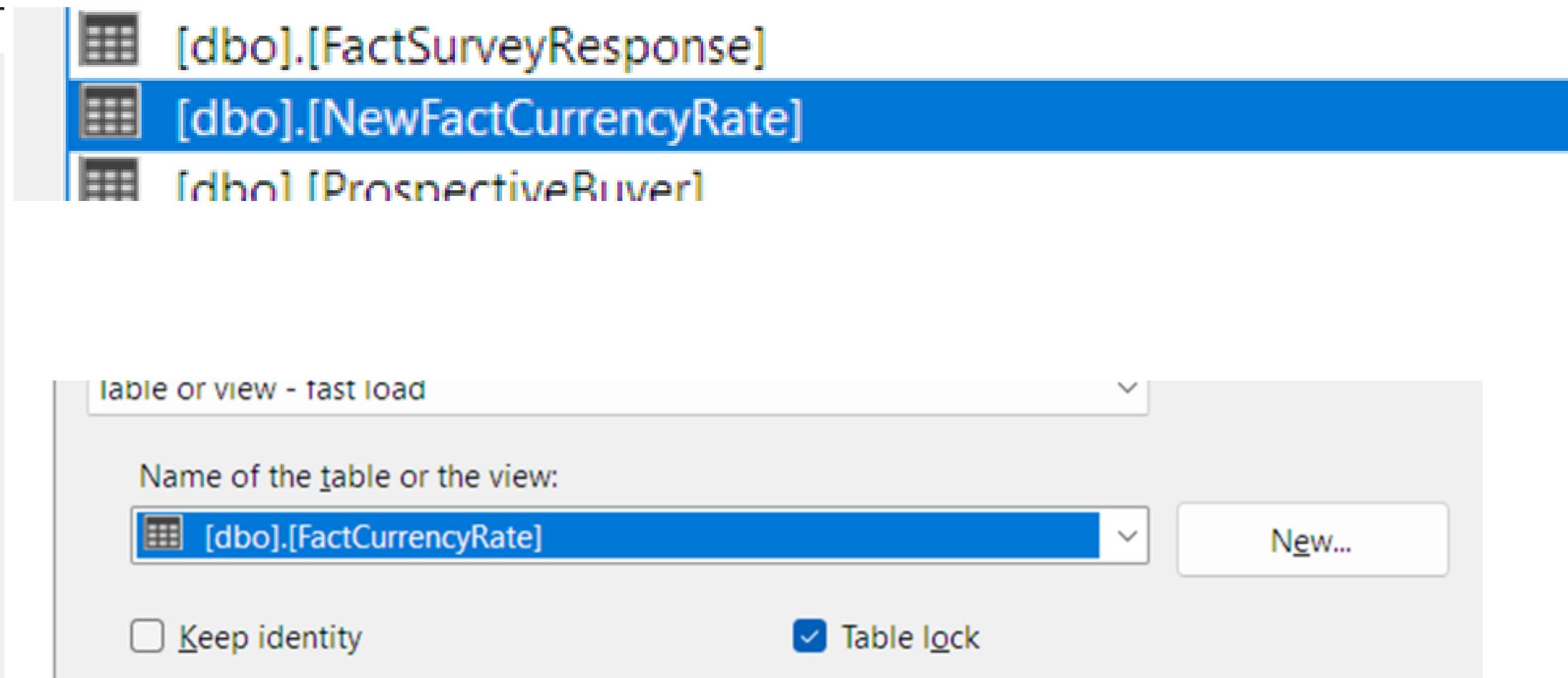
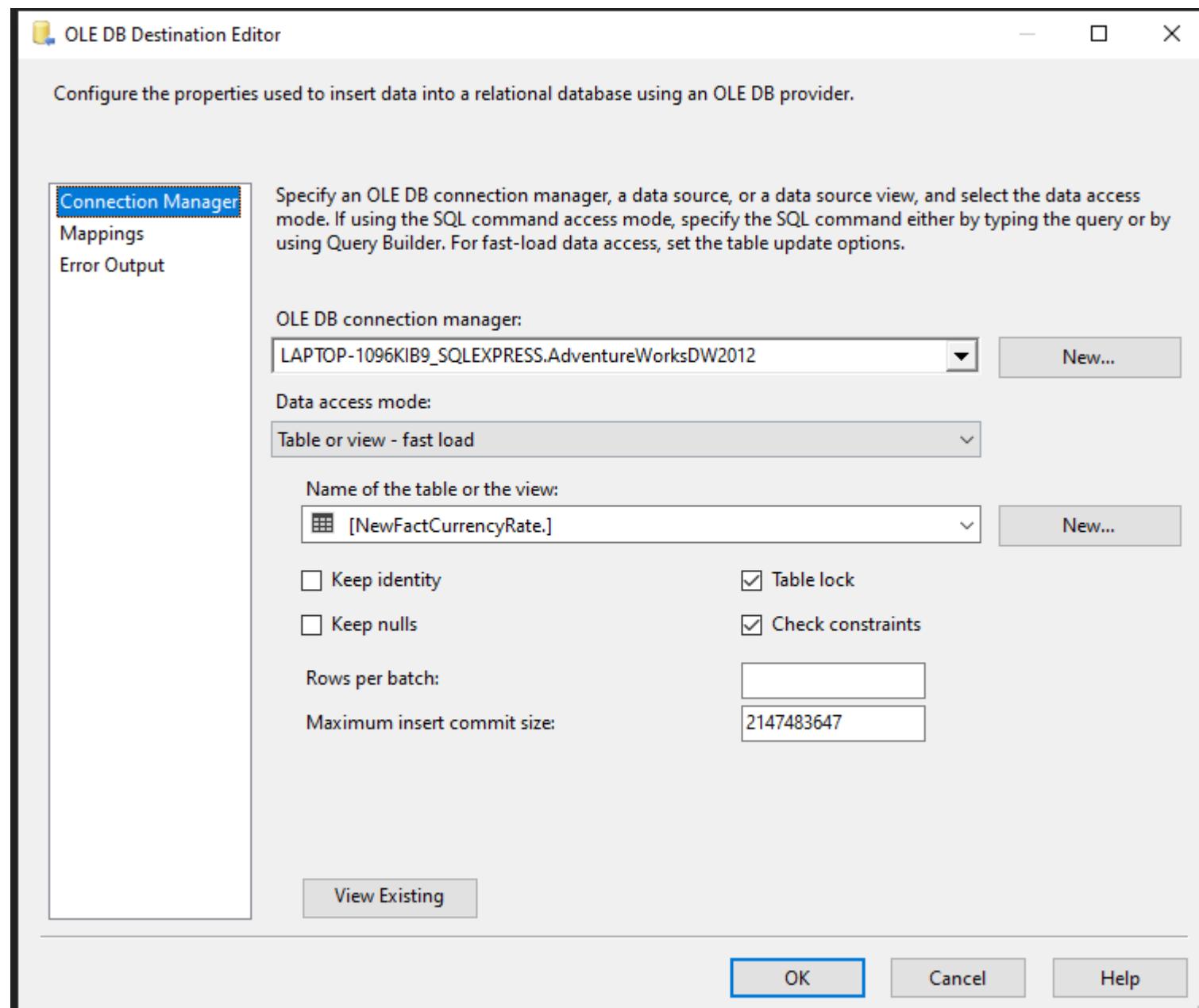
Approximate cached row size (bytes): 42

Custom Properties	
CacheType	Full
ConnectionType	OLEDB
DefaultCodePage	1252
NoMatchBehavior	Treat rows with no match as errors

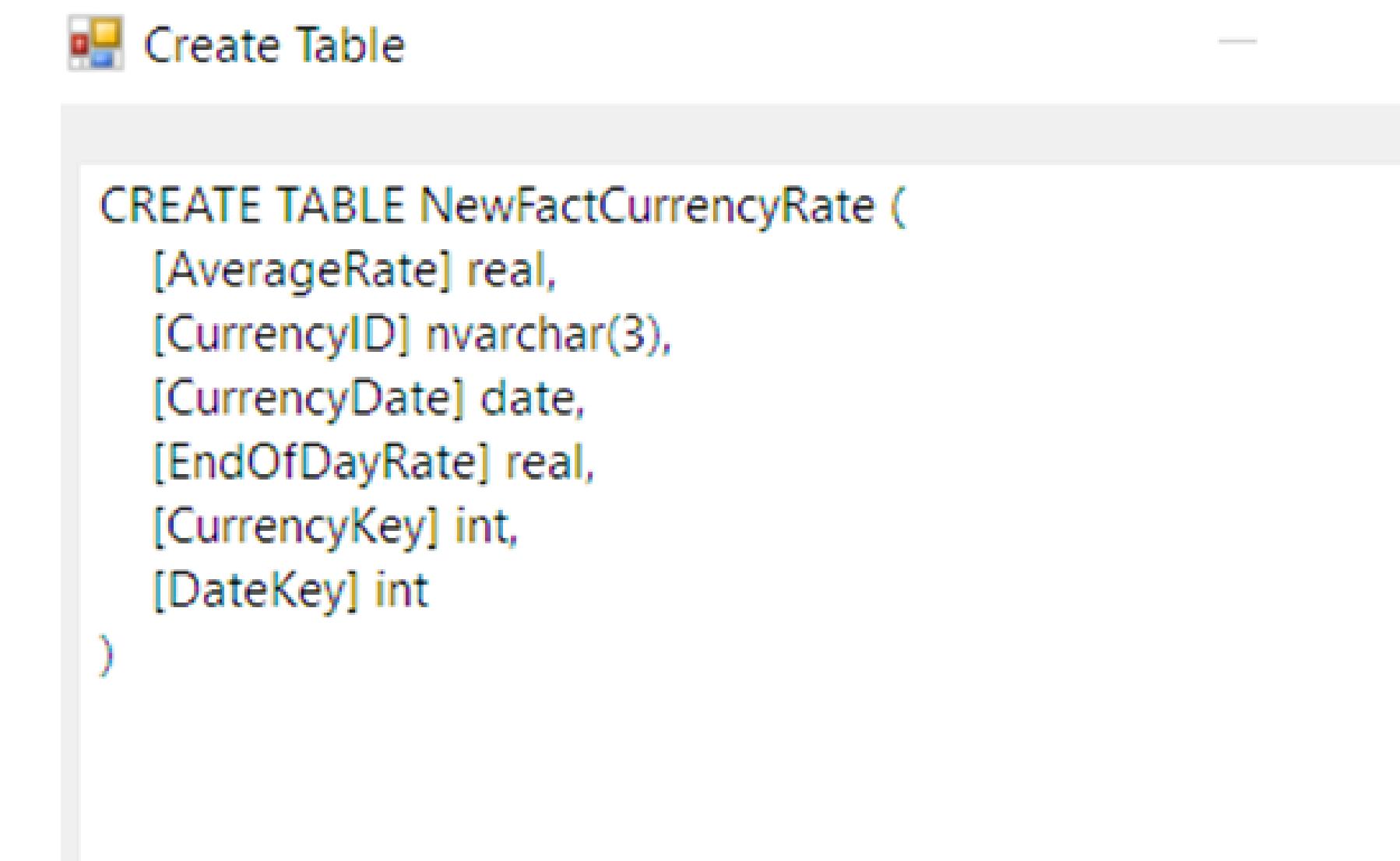
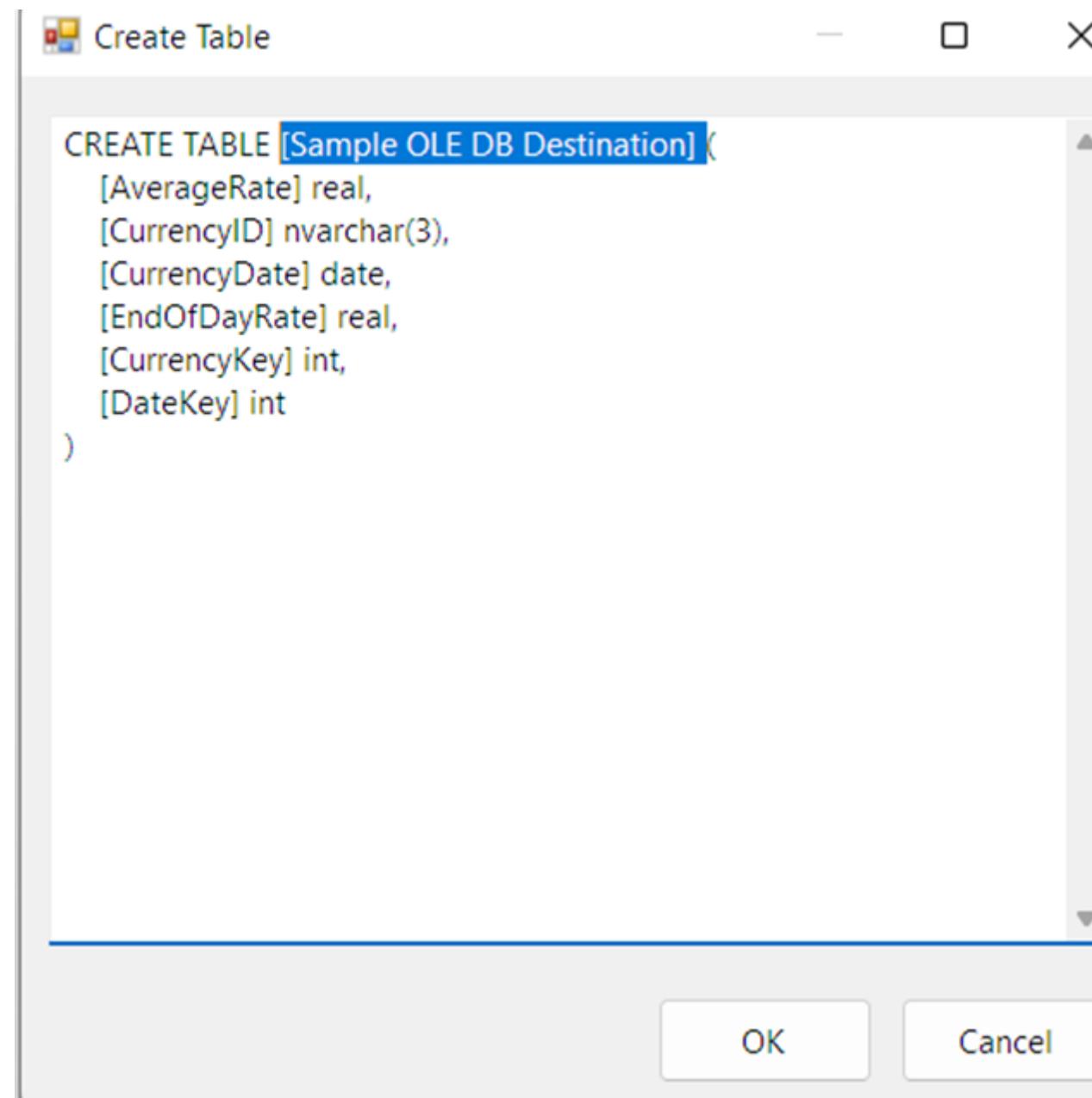
Lección 1-7



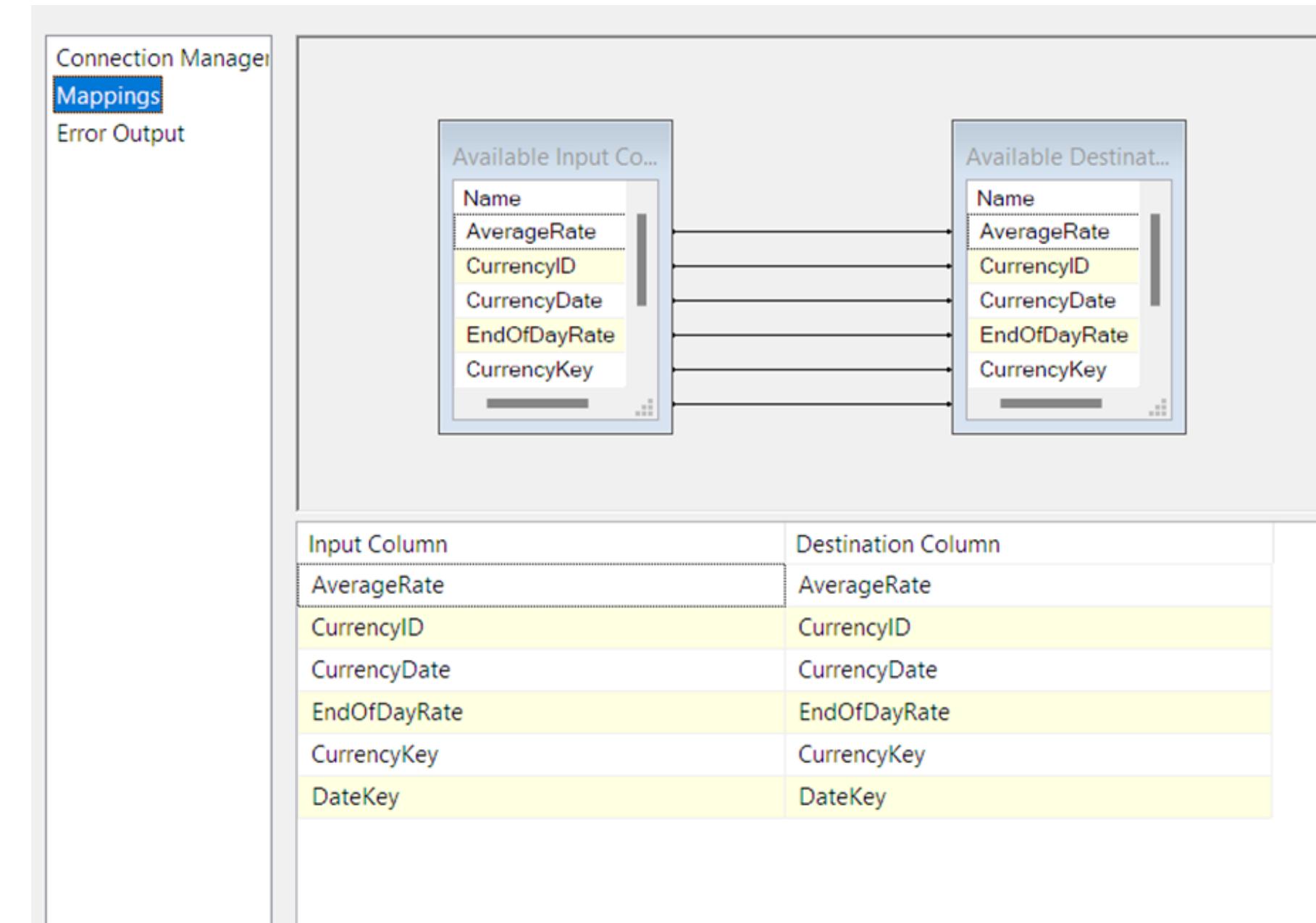
Lección 1-7



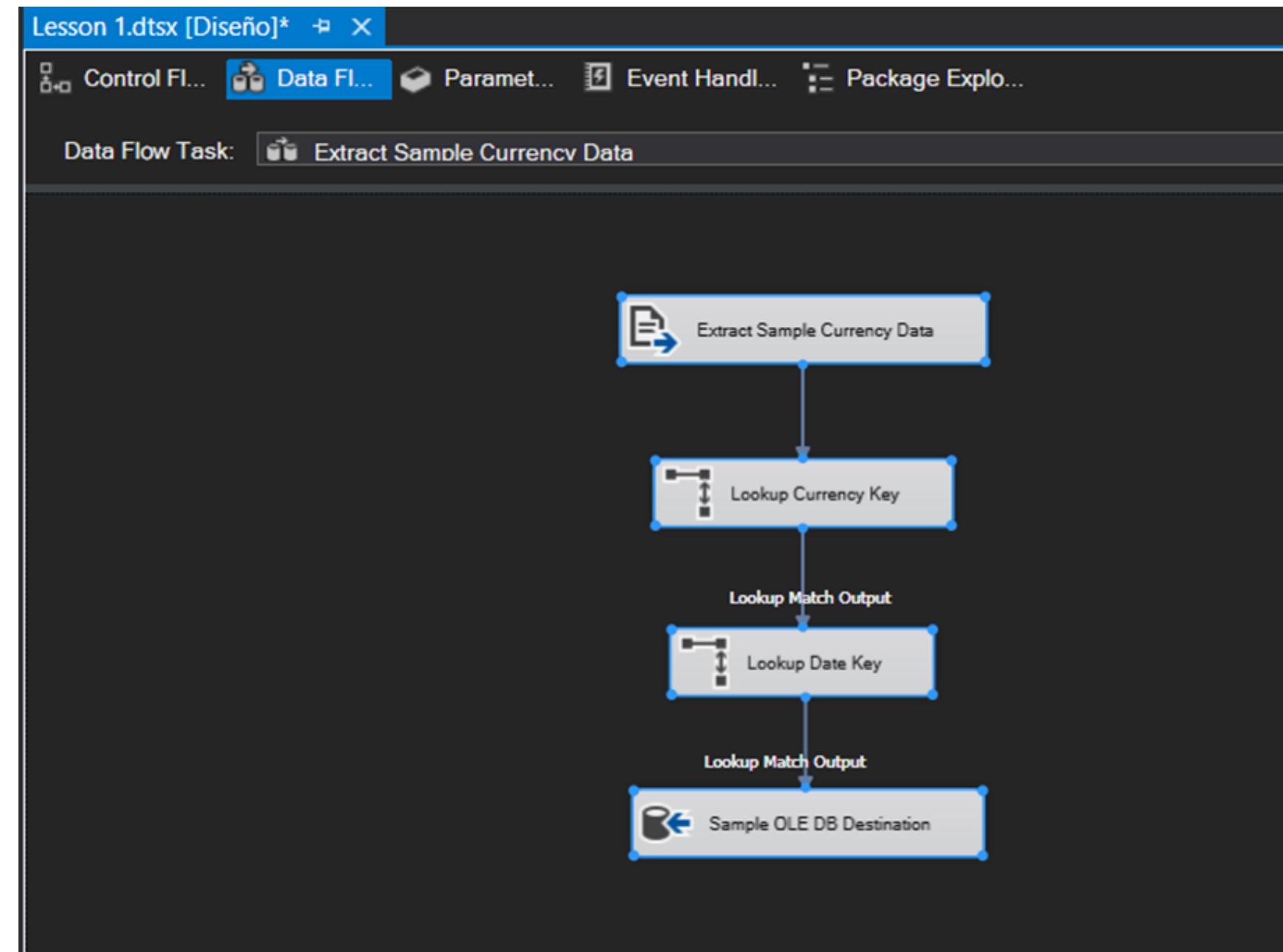
Lección 1-7



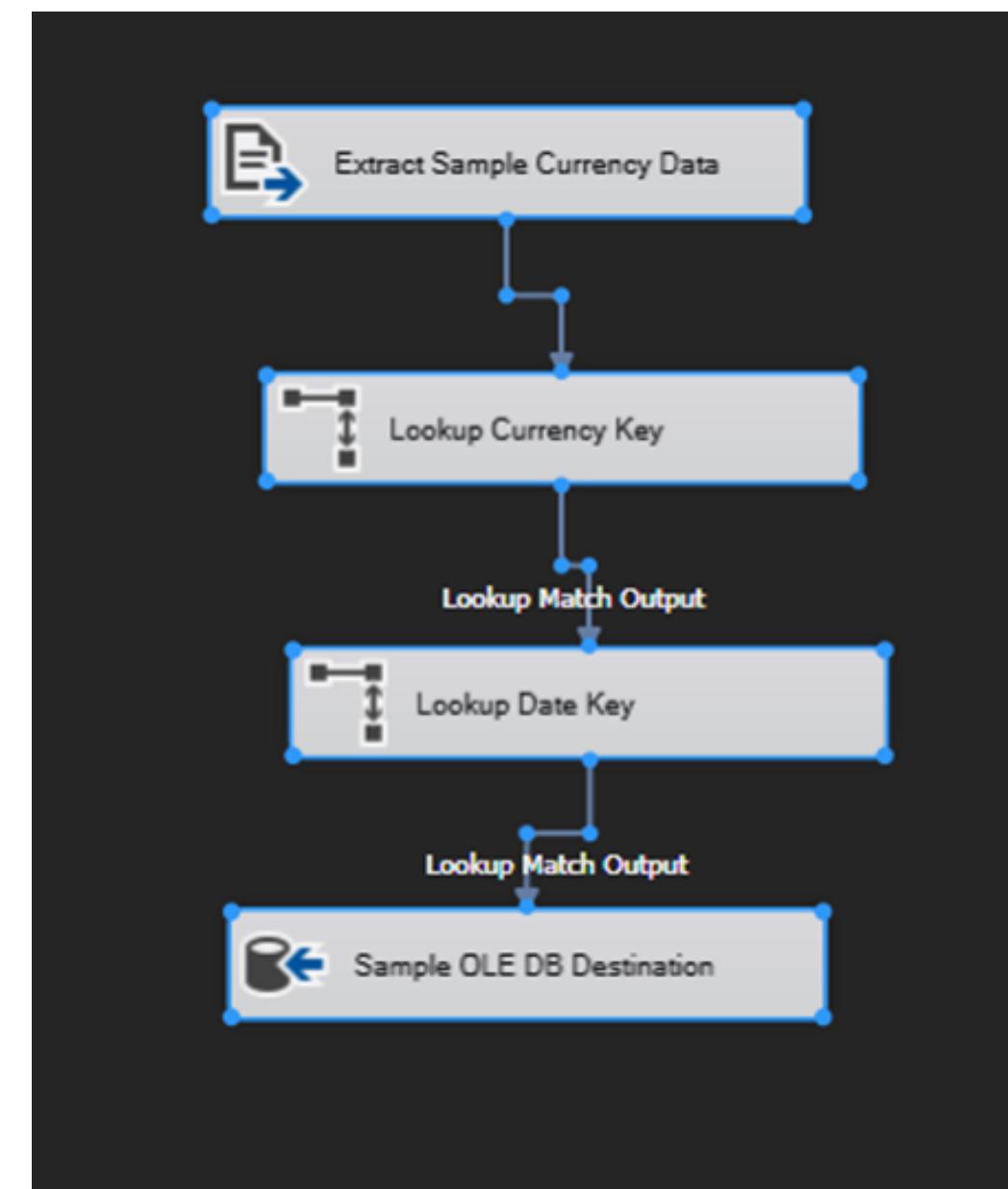
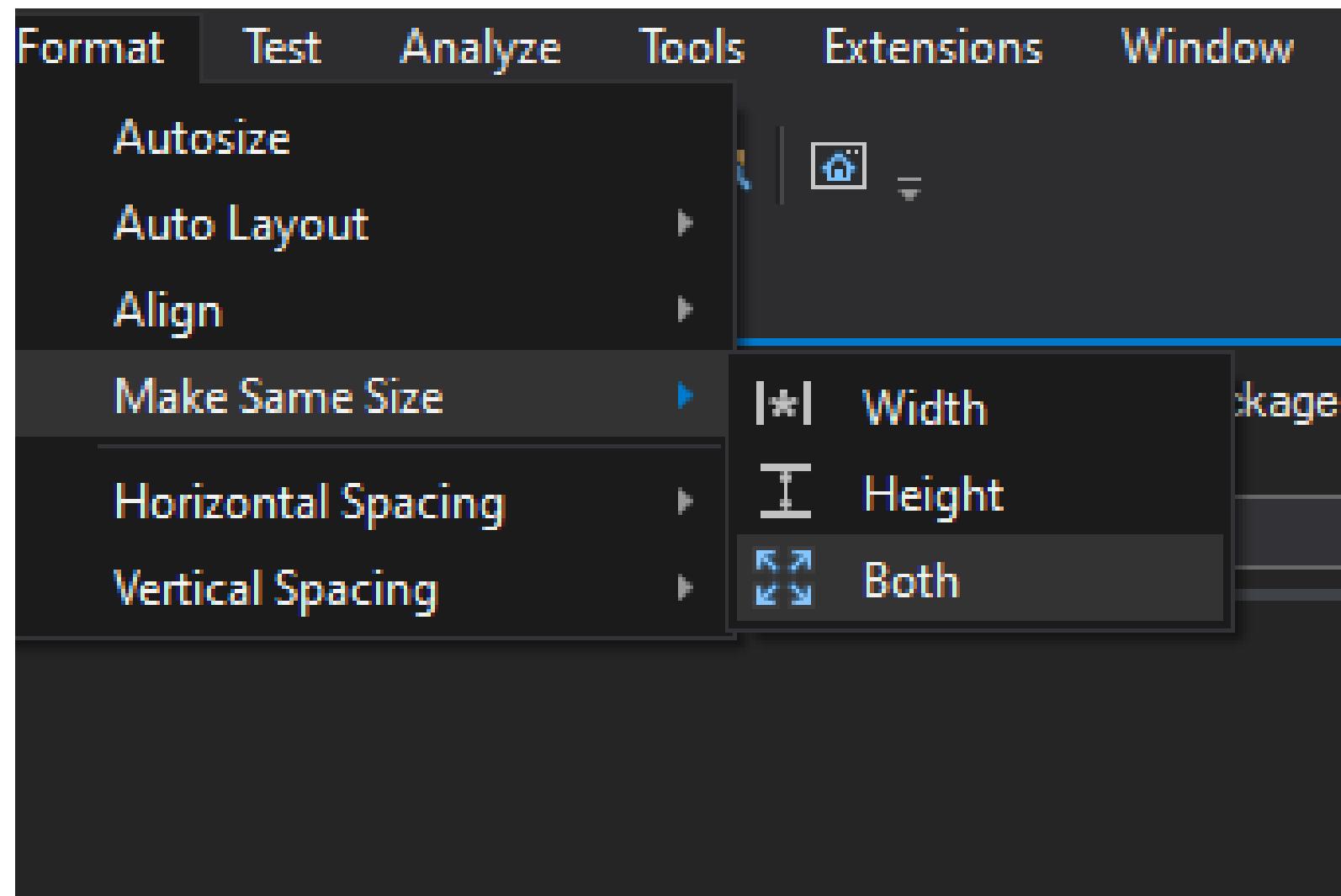
Lección 1-7



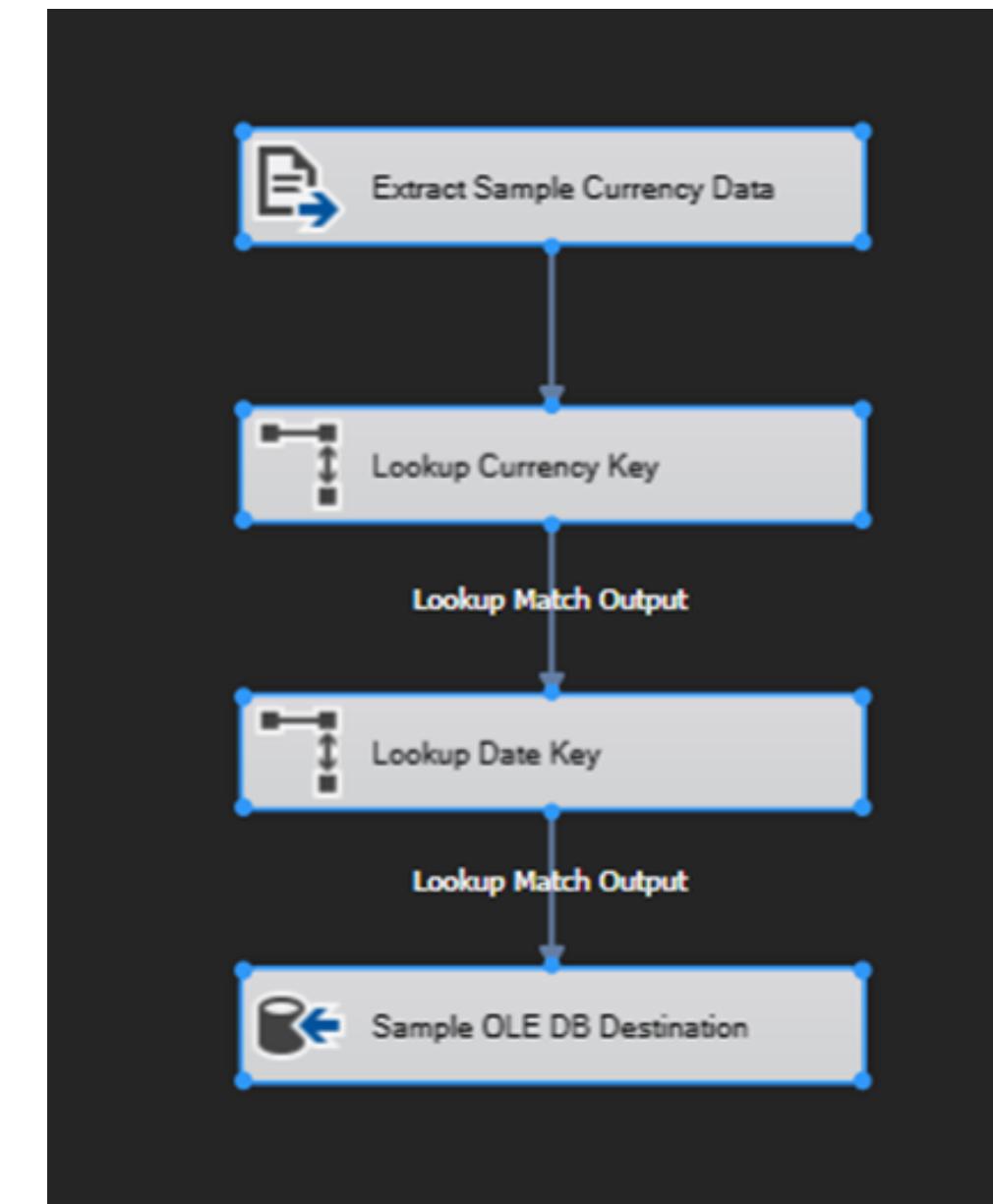
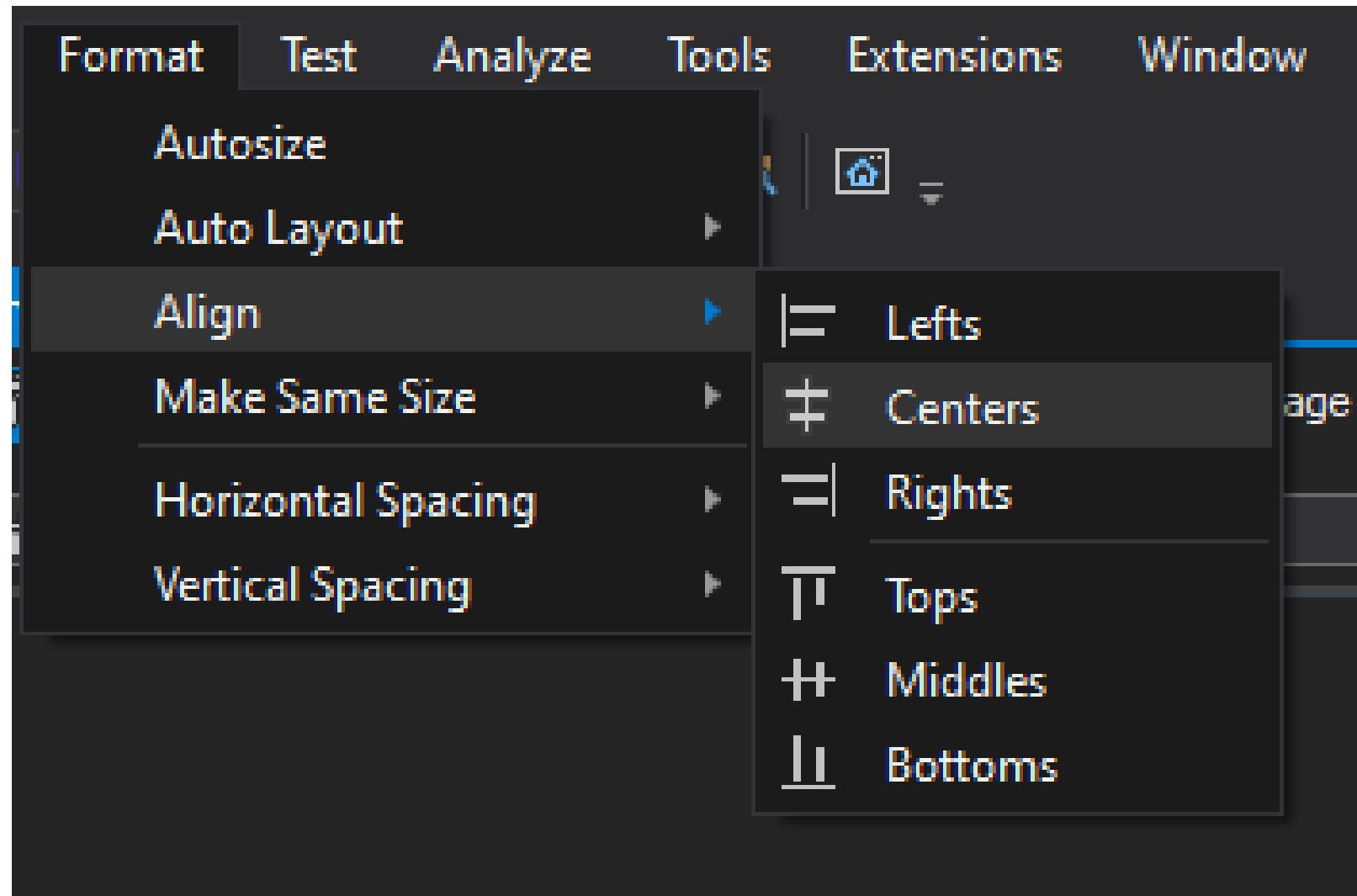
Lección 1-8



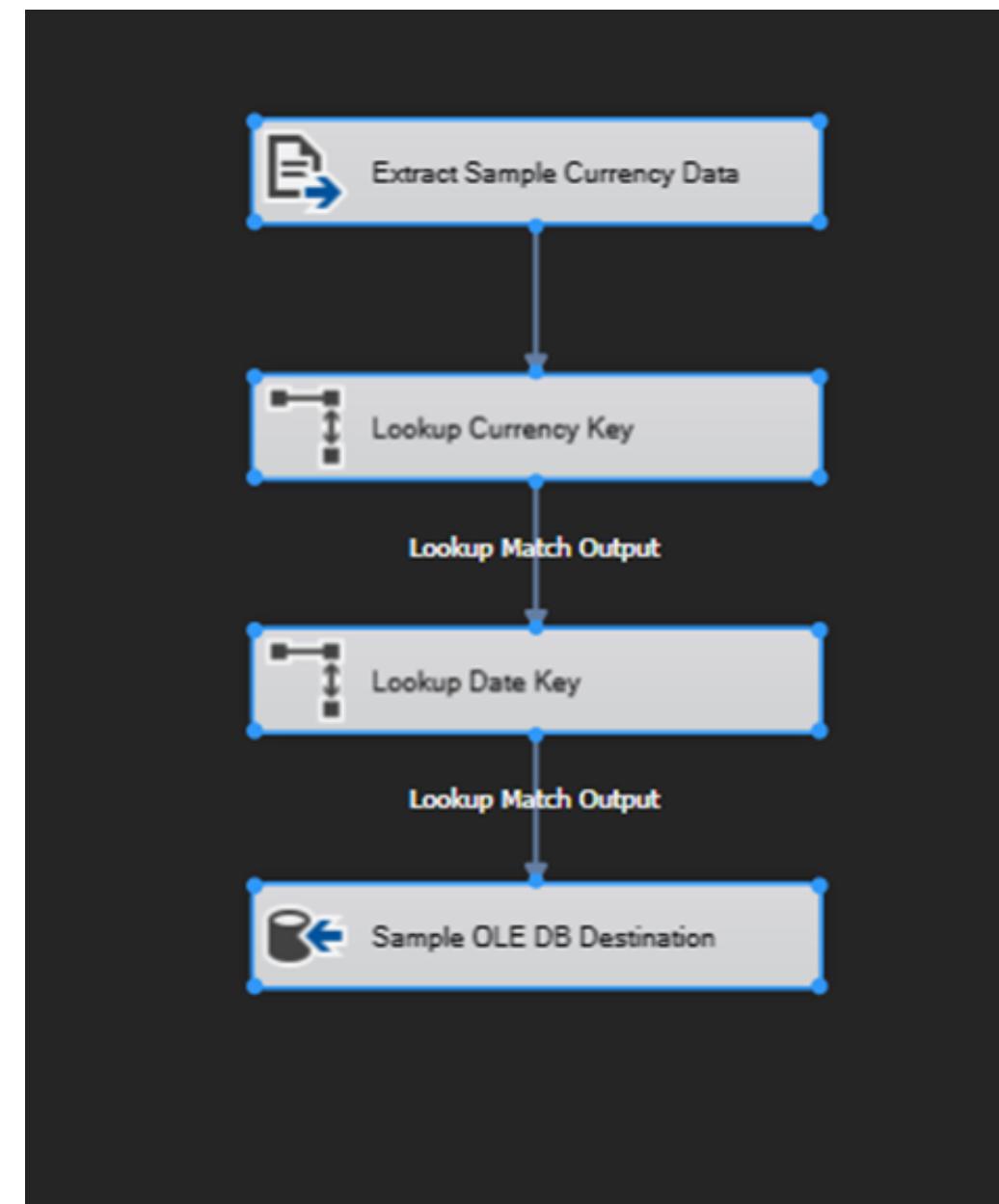
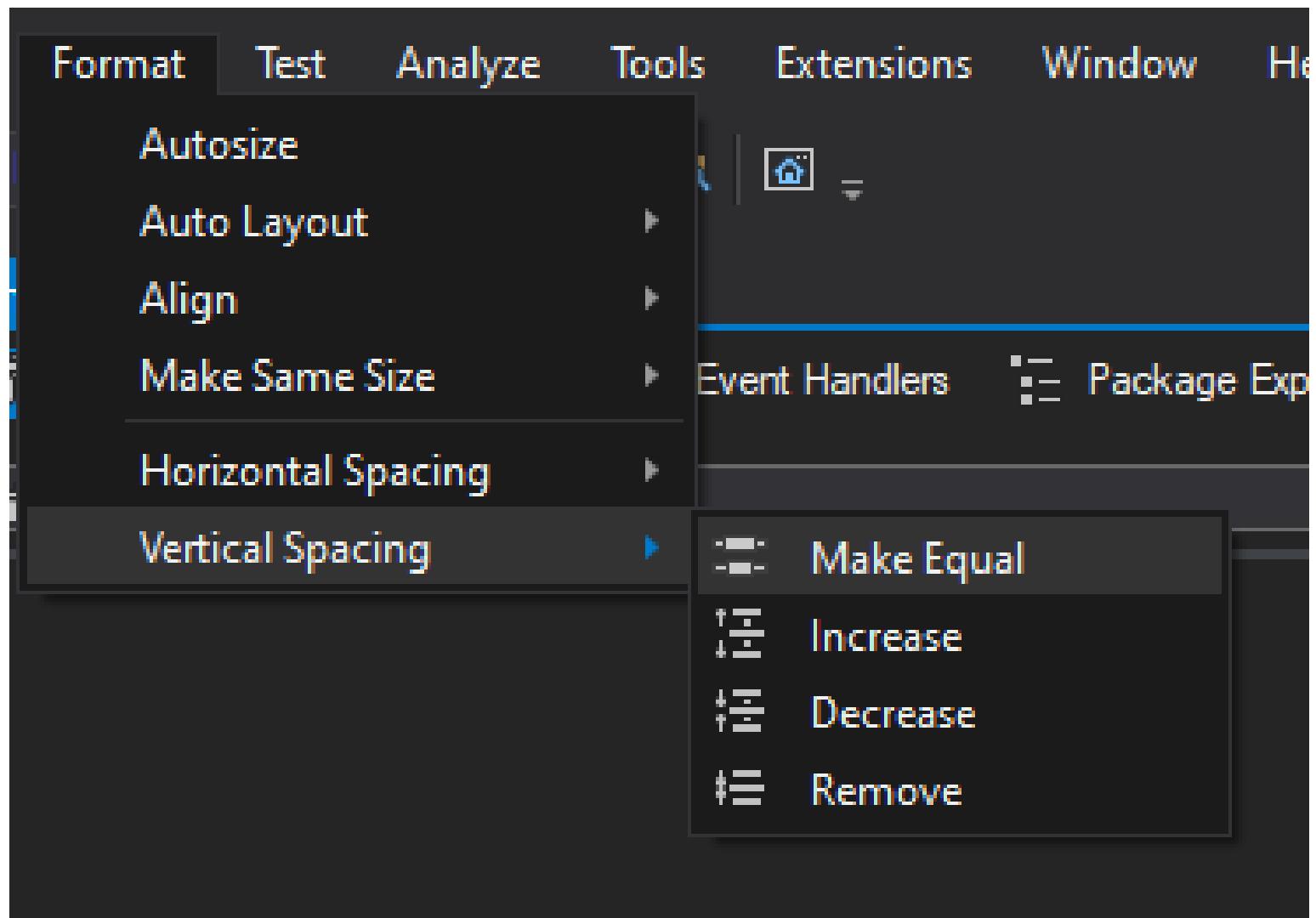
Lección 1-8



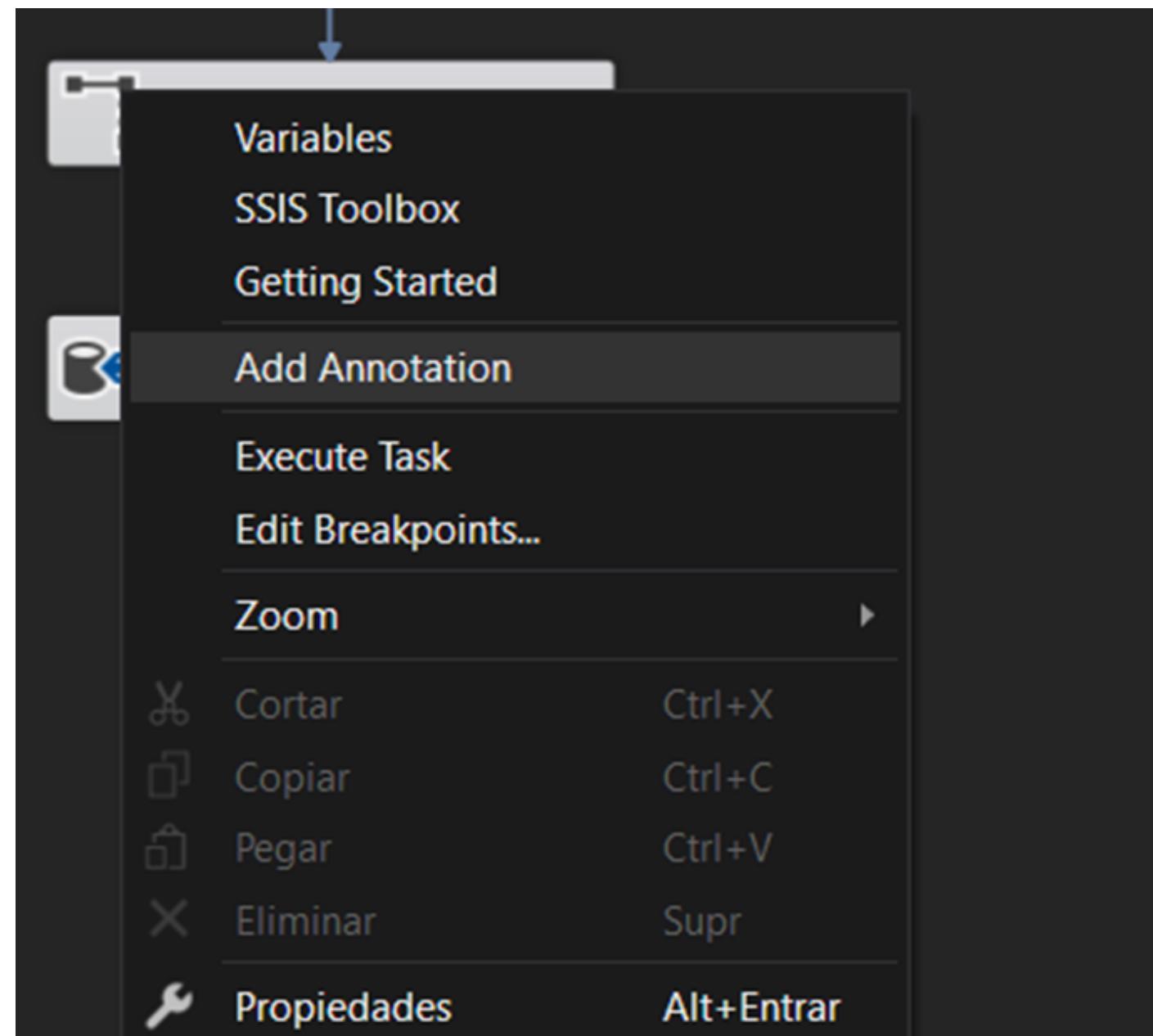
Lección 1-8



Lección 1-8



Lección 1-8



The data flow extracts data from a file, looks up values in the **CurrencyKey** column in the **DimCurrency** table and the **DateKey** column in the **DimDate** table, and writes the data to the **NewFactCurrencyRate** table.

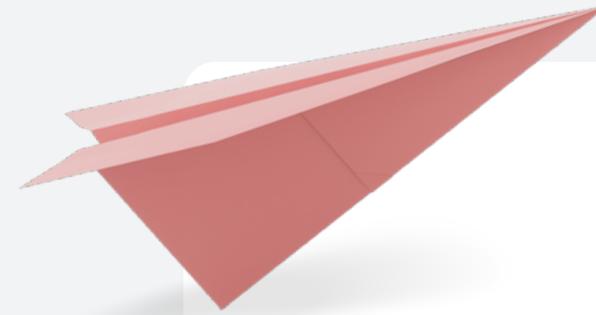
The data flow extracts data from a file, looks up values in the **CurrencyKey** column in the **DimCurrency** table and the **DateKey** column in the **DimDate** table, and writes the data to the **NewFactCurrencyRate** table.



A continuación...

Una demo





¿Tienes alguna pregunta?

Esperamos que hayas aprendido algo nuevo.

