U3M1.LW.Introduction to SQL Server 2012 Integration Services

Shkrabatouskaya Vera
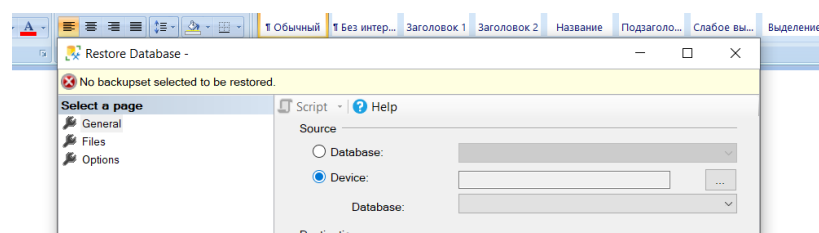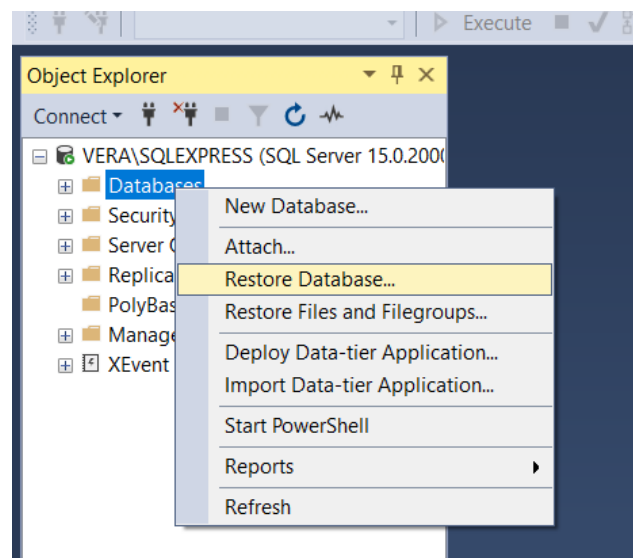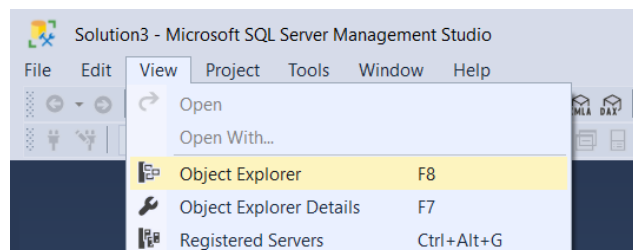
https://github.com/VeraShkrabatouskaya/DataMola_Data-Camping-2022
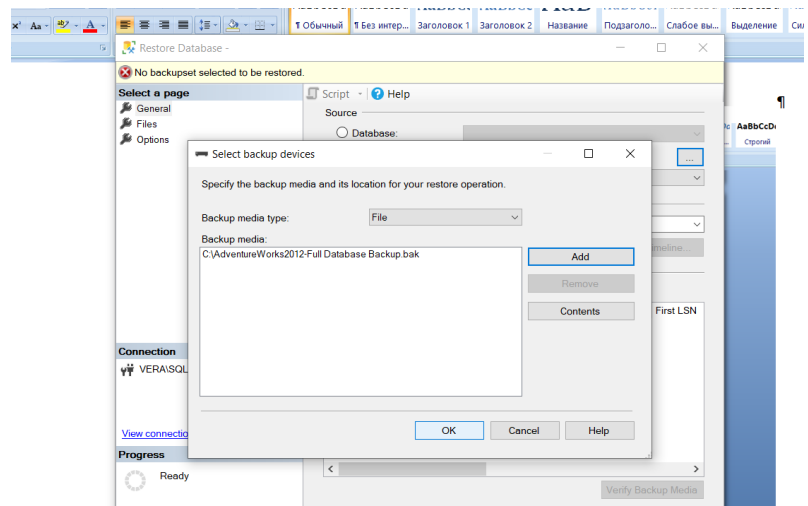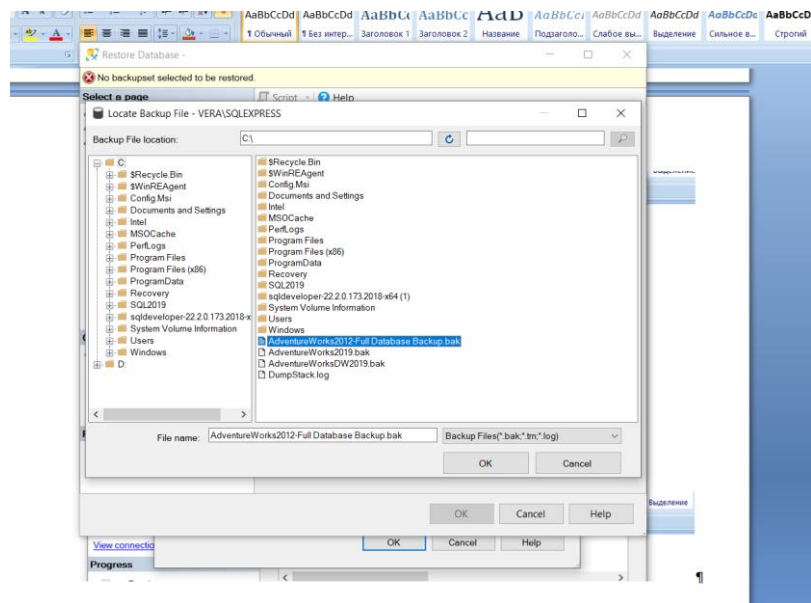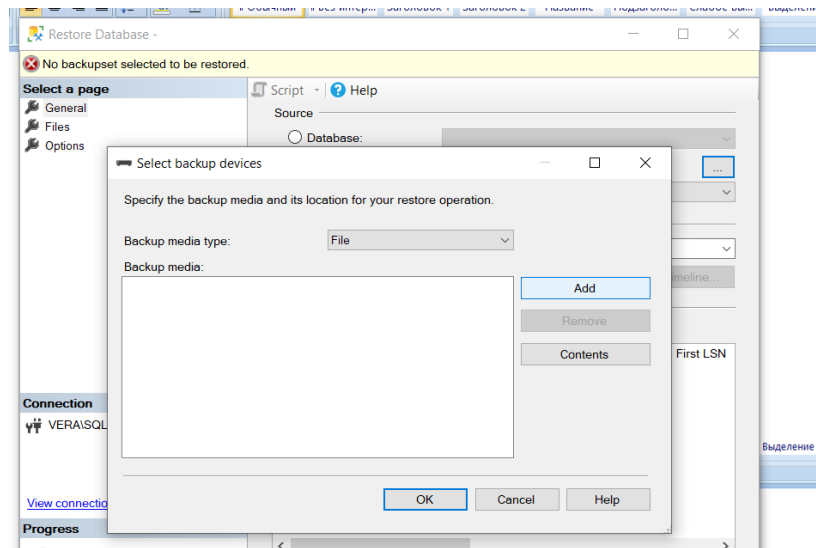
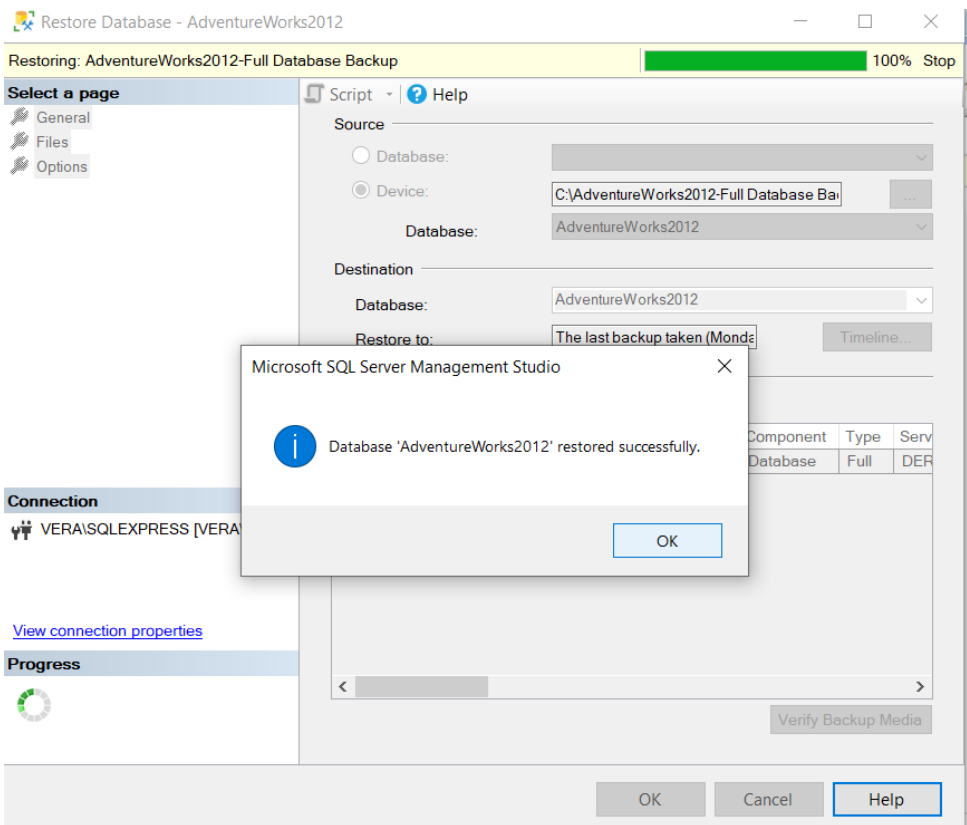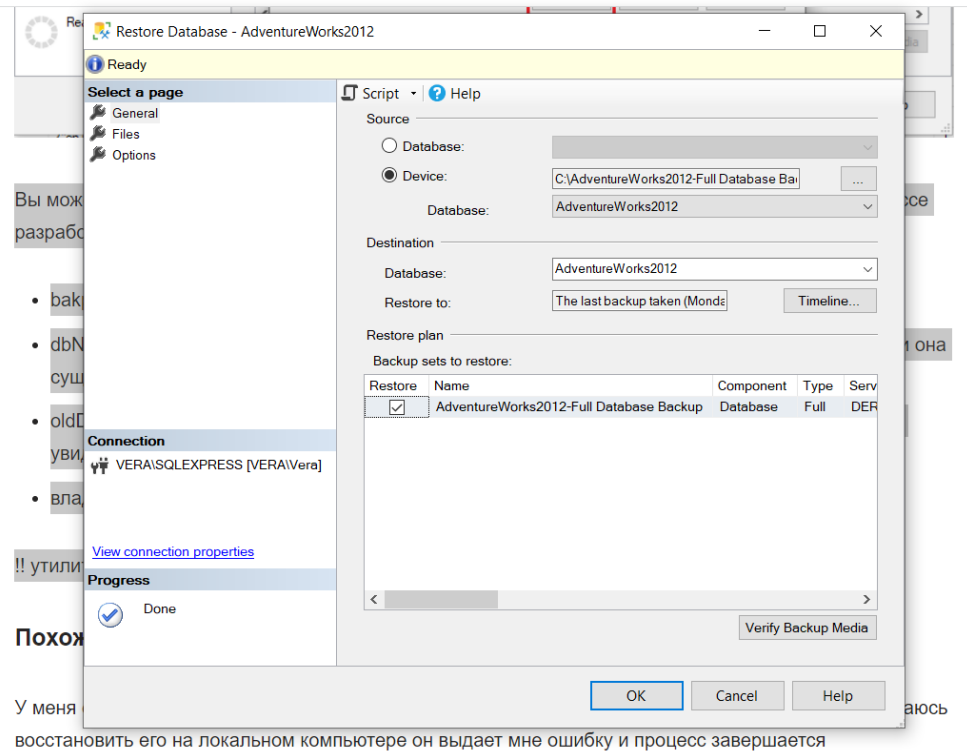## 1. Lab 1: Introduction to SQL Server Integration Services

The Marketing department at Adventure Works requires a current list of the currencies used in the AdventureWorks2012 database. They want the list in the format of a comma-delimited text file.
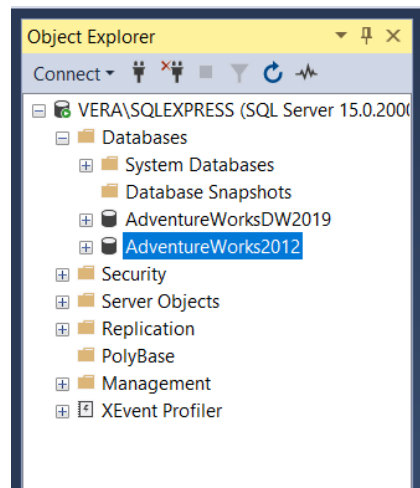
1.1. Exercise 1: Using the Import and Export Wizard Scenario

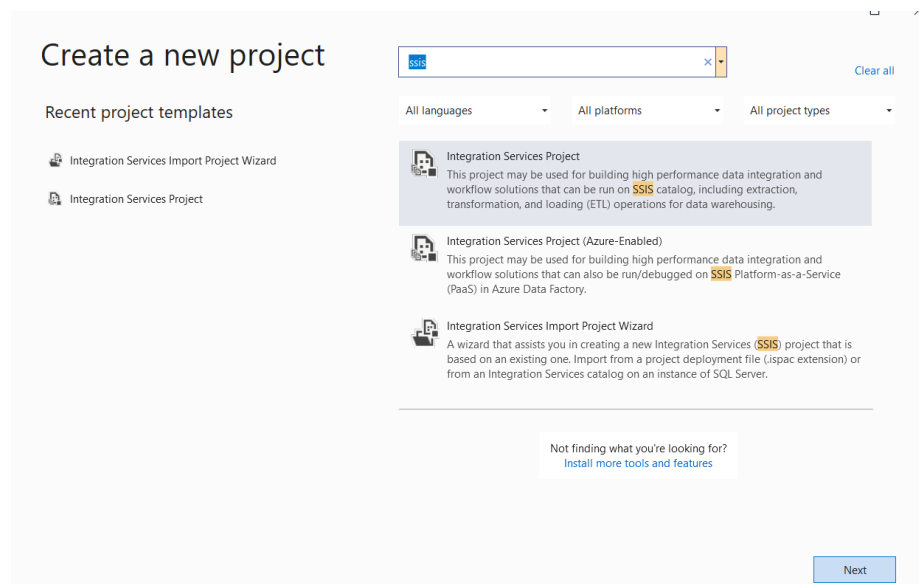Let's load the AdventureWorks2012 database into Microsoft SQL Server.

Restore Database -

No backupset selected to be restored.

Select a page

General
Files
Options

Script ▾ Help

Source

○ Database:

Select backup devices

Specify the backup media and its location for your restore operation.

Backup media type: File

Backup media:

Add
Remove
Contents

First LSN

Connection

VERA\SQL

View connectio

Progress

OK   Cancel   Help

Restore Database -

No backupset selected to be restored.

Select a page

Script ▾ Help

Locate Backup File - VERA\SQLEXPRESS

Backup File location: C:\

- C:
  - $Recycle.Bin
  - $WinREAgent
  - Config.Msi
  - Documents and Settings
  - Intel
  - MSOCache
  - PerfLogs
  - Program Files
  - Program Files (x86)
  - ProgramData
  - Recovery
  - SQL2019
  - sqldeveloper-22.2.0.173.2018-x
  - System Volume Information
  - Users
  - Windows
- D:

- $Recycle.Bin
- $WinREAgent
- Config.Msi
- Documents and Settings
- Intel
- MSOCache
- PerfLogs
- Program Files
- Program Files (x86)
- ProgramData
- Recovery
- SQL2019
- sqldeveloper-22.2.0.173.2018-x64 (1)
- System Volume Information
- Users
- Windows
- AdventureWorks2012-Full Database Backup.bak
- AdventureWorks2019.bak
- AdventureWorksDW2019.bak
- DumpStack.log

File name: AdventureWorks2012-Full Database Backup.bak   Backup Files(*.bak;*.trn;*.log)

OK   Cancel

OK   Cancel   Help

View connectio

Progress

Restore Database -

No backupset selected to be restored.

Select a page

General
Files
Options

Script ▾ Help

Source

○ Database:

Select backup devices

Specify the backup media and its location for your restore operation.

Backup media type: File

Backup media:

C:\AdventureWorks2012-Full Database Backup.bak

Add
Remove
Contents

First LSN

Connection

VERA\SQL

View connectio

Progress

Ready

OK   Cancel   Help

Verify Backup Media

Вы мож

разраб

- bak
- dbN

  суш

- old

  уви,

- вла

!! утили

Похож

У меня восстановить его на локальном компьютере он выдает мне ошибку и процесс завершается

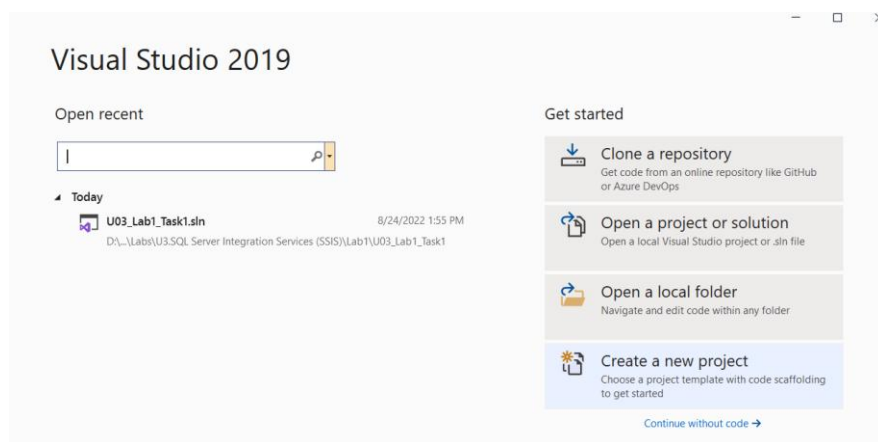Let's create a new project in Visual Studio 2019.

Configure your new project

Integration Services Project

Project name

U03_Lab1_Task1

Location

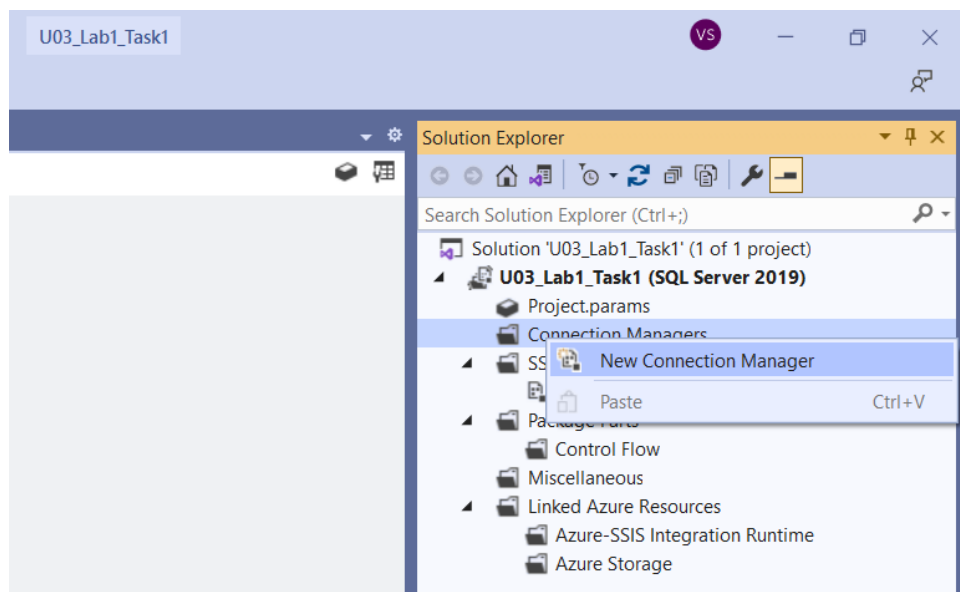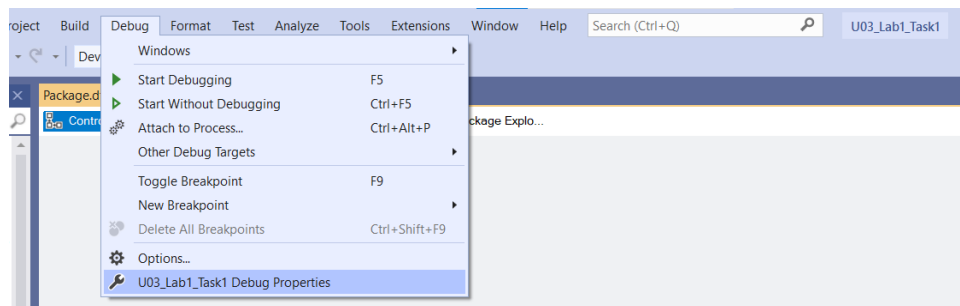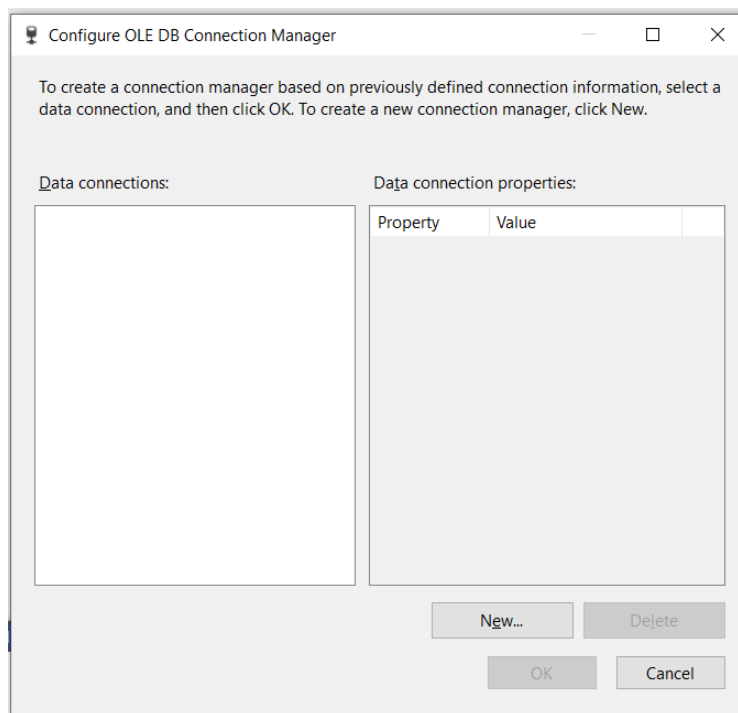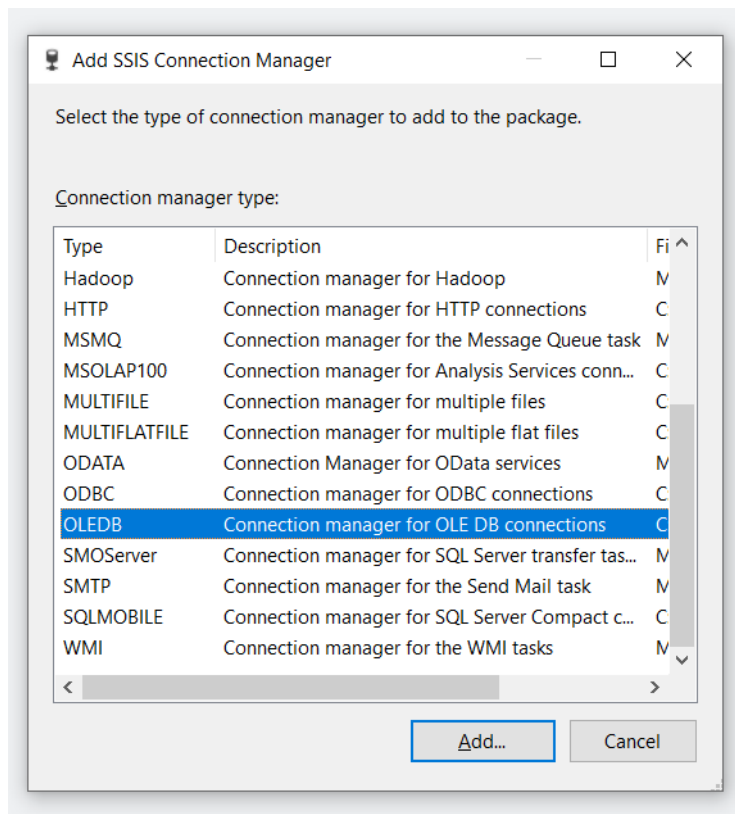D:\Vera\!Datamola_2022\Labs\U3.SQL Server Integration Services (SSIS)\Lab1\scripts

Solution name ⓘ

U03_Lab1_Task1

☑ Place solution and project in the same directory

Back   Create

---

oject | Build | Debug | Format | Test | Analyze | Tools | Extensions | Window | Help | Search (Ctrl+Q) | U03_Lab1_Task1

Windows		▶
▶ Start Debugging	F5	
▶ Start Without Debugging	Ctrl+F5	
⚙ Attach to Process...	Ctrl+Alt+P	
Other Debug Targets		▶
Toggle Breakpoint	F9	
New Breakpoint		▶
Delete All Breakpoints	Ctrl+Shift+F9	
⚙ Options...		
🔧 U03_Lab1_Task1 Debug Properties		

U03_Lab1_Task1

Solution Explorer

Search Solution Explorer (Ctrl+;)

🔲 Solution 'U03_Lab1_Task1' (1 of 1 project)
  ▲ 📦 **U03_Lab1_Task1 (SQL Server 2019)**
      📦 Project.params
      📁 Connection Managers
          | 📦 New Connection Manager |
          | 🔒 Paste | Ctrl+V |
      ▲ 📁 SS
      ▲ 📁 Package Parts
          📁 Control Flow
      📁 Miscellaneous
  ▲ 📁 Linked Azure Resources
      📁 Azure-SSIS Integration Runtime
      📁 Azure Storage

Add SSIS Connection Manager — □ ✕

Select the type of connection manager to add to the package.

Connection manager type:

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

Add...   Cancel

Configure OLE DB Connection Manager — □ ✕

To create a connection manager based on previously defined connection information, select a data connection, and then click OK. To create a new connection manager, click New.
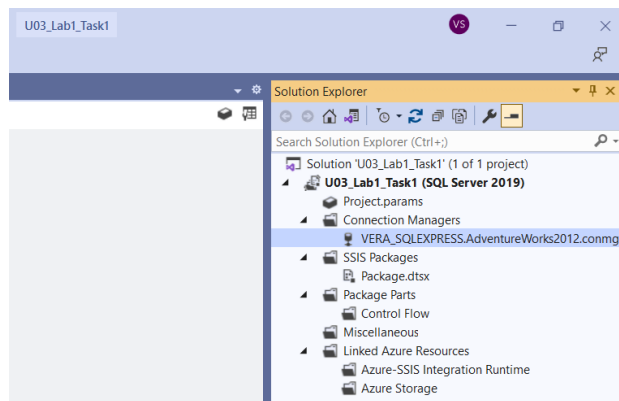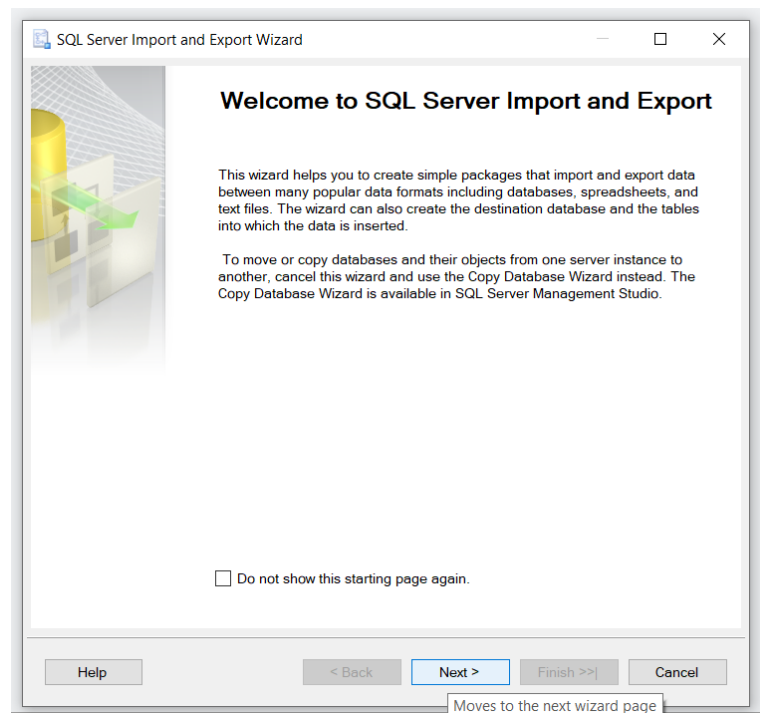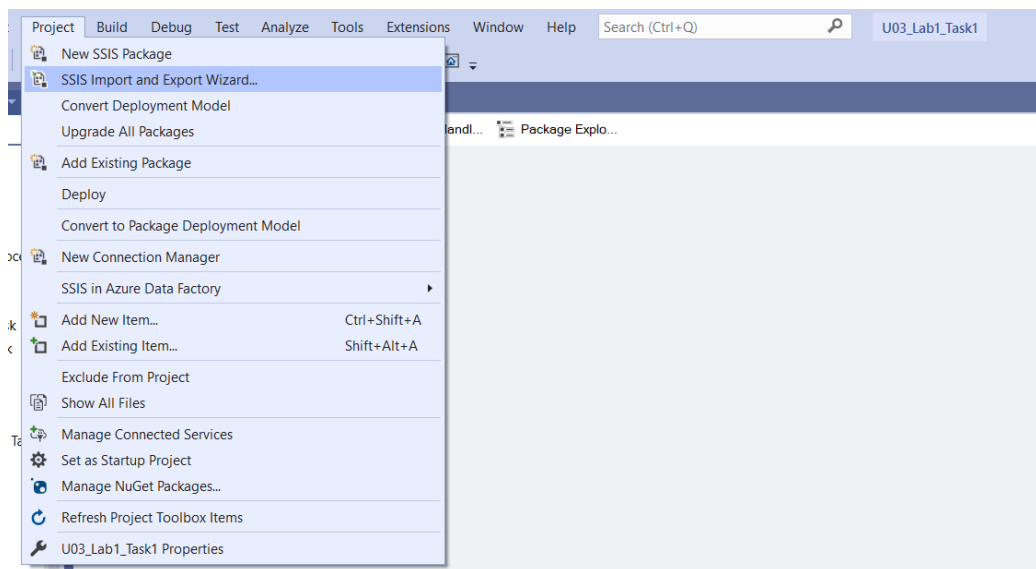
Data connections:

Data connection properties:

Property	Value	

New...   Delete

OK   Cancel

Connection Manager

Provider: Native OLE DB\SQL Server Native Client 11.0

Connection

All

Server name:
VERA\SQLEXPRESS   Refresh

Log on to the server
Authentication: Windows Authentication
User name:
Password:
☐ Save my password

Connect to a database
◉ Select or enter a database name:

| AdventureWorks2012 |
| AdventureWorksDW2019 |
| master |
| model |
| msdb |
| tempdb |

Test Connection   OK   Cancel   Help

Configure OLE DB Connection Manager

To create a connection manager based on previously defined connection information, select a data connection, and then click OK. To create a new connection manager, click New.

Data connections:

VERA\SQLEXPRESS.AdventureWorks2012

Data connection properties:

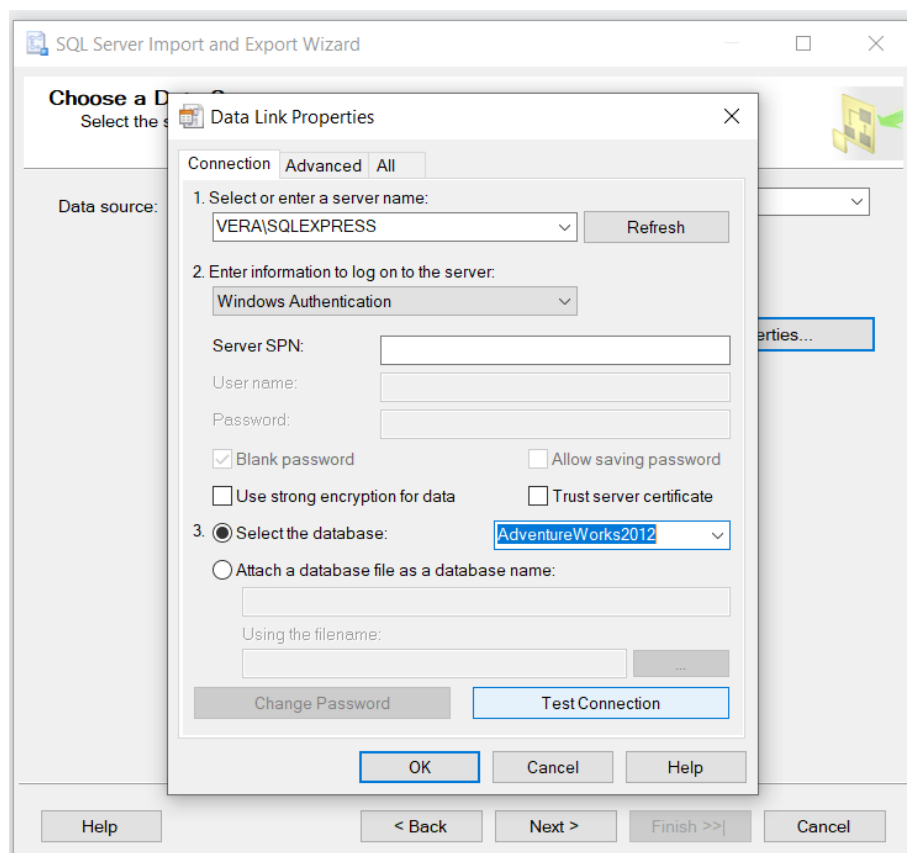| Property	Value
Data Source	VERA\SQLEXPRESS
Initial Catalog	AdventureWorks2012
Integrated Se...	SSPI
Provider	SQLNCLI11.1

New...   Delete

OK   Cancel

Let's load the package using Import and Export Wizard.

SQL Server Import and Export Wizard

Choose a Data Source
Select the source from which to copy data.

Data source: .Net Framework Data Provider for Odbc ▾

- .Net Framework Data Provider for Odbc
- .Net Framework Data Provider for Oracle
- .Net Framework Data Provider for SqlServer
- Flat File Source
- Microsoft Access (Microsoft Access Database Engine)
- Microsoft Access (Microsoft Jet Database Engine)
- Microsoft Excel
- Microsoft OLE DB Driver for SQL Server
- Microsoft OLE DB Provider for Analysis Services 13.0
- Microsoft OLE DB Provider for Analysis Services 14.0
- Microsoft OLE DB Provider for Analysis Services 9.0
- Microsoft OLE DB Provider For Data Mining Services
- Microsoft OLE DB Provider for OLAP Services 8.0
- Microsoft OLE DB Provider for Oracle
- Microsoft OLE DB Provider for Search
- Microsoft OLE DB Provider for SQL Server
- OLE DB Provider for SQL Server Integration Services
- SQL Server Native Client 11.0

> Data
>   ConnectionString
> Named ConnectionString
>   Dsn
> Source
>   Driver

Driver
The name of the ODBC Driver to use when connecting to the Data Source.

Help   < Back   Next >   Finish >>| Cancel

SQL Server Import and Export Wizard

Choose a Data Source
Select the source from which to copy data.

Data source: Microsoft OLE DB Driver for SQL Server ▾

Properties...

Help   < Back   Next >   Finish >>| Cancel

SQL Server Import and Export Wizard

Choose a Data Source
Select the source

Data source:

Data Link Properties

Connection | Advanced | All

1. Select or enter a server name:

VERA\SQLEXPRESS   Refresh

2. Enter information to log on to the server:

Windows Authentication

Server SPN:

User name:

Password:

☑ Blank password   ☐ Allow saving password

☐ Use strong encryption for data   ☐ Trust server certificate

3. ⦿ Select the database:

| AdventureWorks2012 |
| AdventureWorks2012 |
| AdventureWorksDW2019 |
| master |
| model |
| msdb |
| tempdb |

○ Attach a database file as a databas

Using the filename:

Change Password   Test Connection

OK   Cancel   Help

Help   < Back   Next >   Finish >>| Cancel

SQL Server Import and Export Wizard

Choose a Data Source
Select the s

Data source:

Data Link Properties

Connection | Advanced | All

1. Select or enter a server name:

VERA\SQLEXPRESS   Refresh

2. Enter information to log on to the server:

Windows Authentication

Server SPN:

User name:

Password:

☑ Blank password   ☐ Allow saving password

☐ Use strong encryption for data   ☐ Trust server certificate

3. ⦿ Select the database: AdventureWorks2012

○ Attach a database file as a database name:

Using the filename:

...

Change Password   Test Connection

OK   Cancel   Help

Help   < Back   Next >   Finish >>| Cancel

SQL Server Import and Export Wizard

Choose a Destination
Specify where to copy data to.

Destination: Flat File Destination

Select a file and specify the file properties and the file format.

File name: r Integration Services (SSIS)\Lab1\scripts\U03_Lab1_Task1\Currency.txt   [Browse...]

Locale: English (United States)   ☑ Unicode

Code page: 1252 (ANSI - Latin I)

Format: Delimited

Text qualifier: <none>

☑ Column names in the first data row

[Help]   [< Back]   [Next >]   [Finish >>|]   [Cancel]

Moves to the next wizard page

SQL Server Import and Export Wizard

Specify Table Copy or Query
Specify whether to copy one or more tables and views or to copy the results of a query from the data source.

○ **Copy data from one or more tables or views**

Use this option to copy all the data from the existing tables or views in the source database.

◉ **Write a query to specify the data to transfer**

Use this option to write an SQL query to manipulate or to restrict the source data for the copy operation.

[Help]   [< Back]   [Next >]   [Finish >>|]   [Cancel]

Moves to the next wizard page

SQL Server Import and Export Wizard

Provide a Source Query
Type the SQL statement that will select data from the source database.

SQL statement:

```
SELECT[CurrencyCode],[Name]
FROM [AdventureWorks2012].[Sales].[Currency]
```

Parse   Browse...

Help   < Back   Next >   Finish >>| Cancel

Moves to the next wizard page

SQL Server Import and Export Wizard

Configure Flat File Destination

Source query: [Query]

Specify the characters that delimit the destination file:

Row delimiter: {CR}{LF}

Column delimiter: Comma {,}

Edit Mappings...   Preview...

Help   < Back   Next >   Finish >>| Cancel

SQL Server Import and Export Wizard

Configure Flat File Destination

Preview Data

Source:

```
SELECT[CurrencyCode],[Name]
FROM [AdventureWorks2012].[Sales].[Currency]
```

CurrencyCode	Name
AFA	Afghani
DZD	Algerian Dinar
ARS	Argentine Peso
AMD	Armenian Dram
AWG	Aruban Guilder
AUD	Australian Dollar
AZM	Azerbaijanian Manat
BSD	Bahamian Dollar
BHD	Bahraini Dinar
THB	Baht
PAB	Balboa

OK

Help   < Back   Next >   Finish >>| Cancel

SQL Server Import and Export Wizard

Complete the Wizard

Verify the choices made in the wizard and click Finish.

Click Finish to perform the following actions:

Source Location : VERA\SQLEXPRESS
Source Provider : MSOLEDBSQL.1

- Copy rows from [Query] to D:\Vera\!Datamola_2022\Labs\U3.SQL Server Integration Services (SSIS)\Lab1 \scripts\U03_Lab1_Task1\Currency.txt
  The new target table will be created.

- The package will be saved to the package file "D:\Vera\!Datamola_2022\Labs\U3.SQL Server Integration Services (SSIS)\Lab1\scripts\U03_Lab1_Task1\Package1.dtsx".
- The package will not be run immediately.

Provider mapping file : C:\Program Files (x86)\Microsoft Visual Studio\2019\Community\Common7\IDE \CommonExtensions\Microsoft\SSIS\160\MappingFiles\MSSQLToSSIS10.XML

Help   < Back   Next >   Finish   Cancel

Completes the wizard
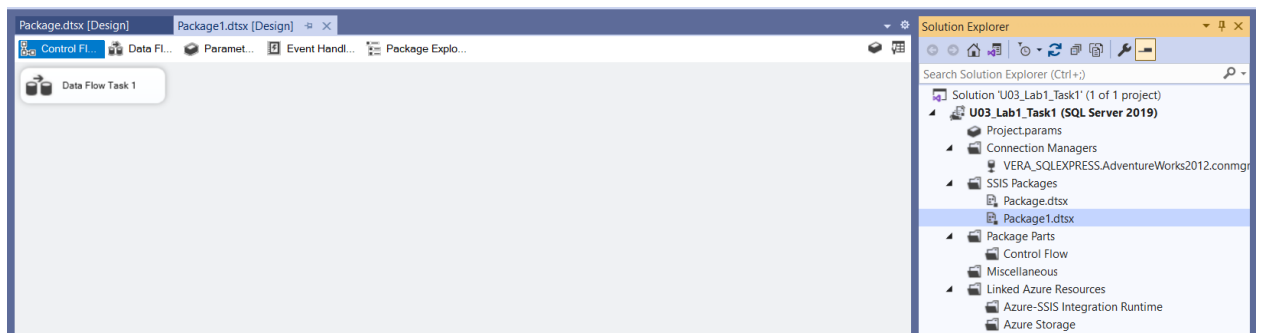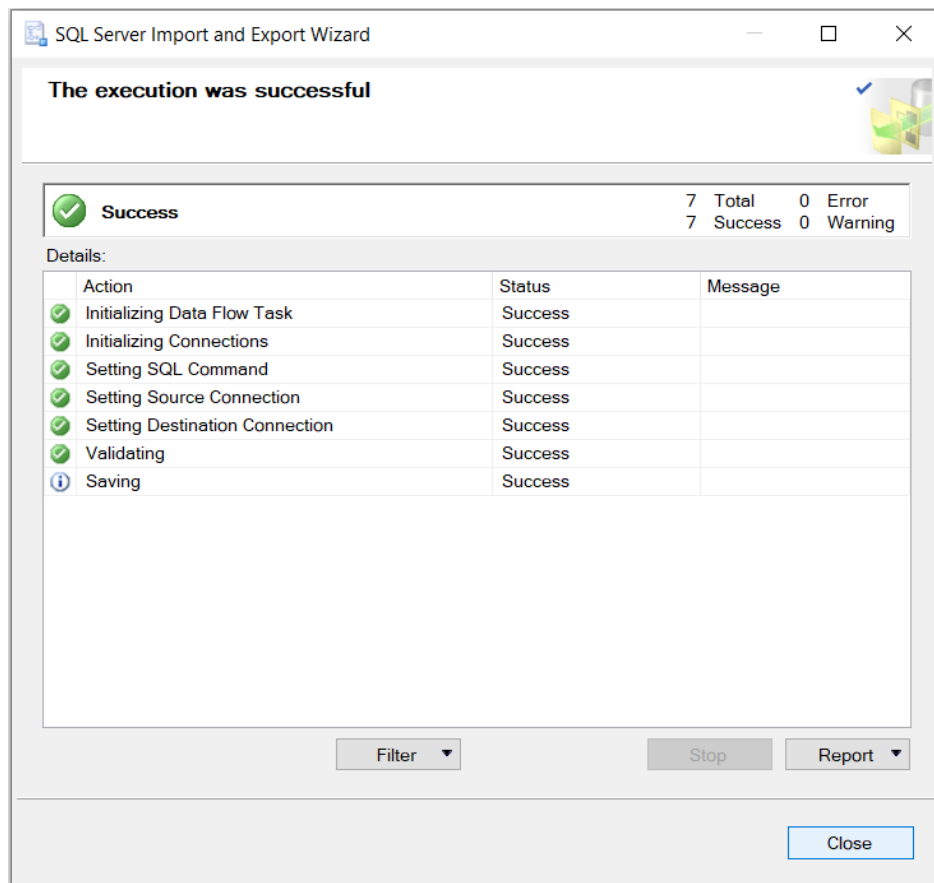
1.2. Exercise 2: Running an Integration Services Package

Rename the the package from Package1 to CurrencyExport.
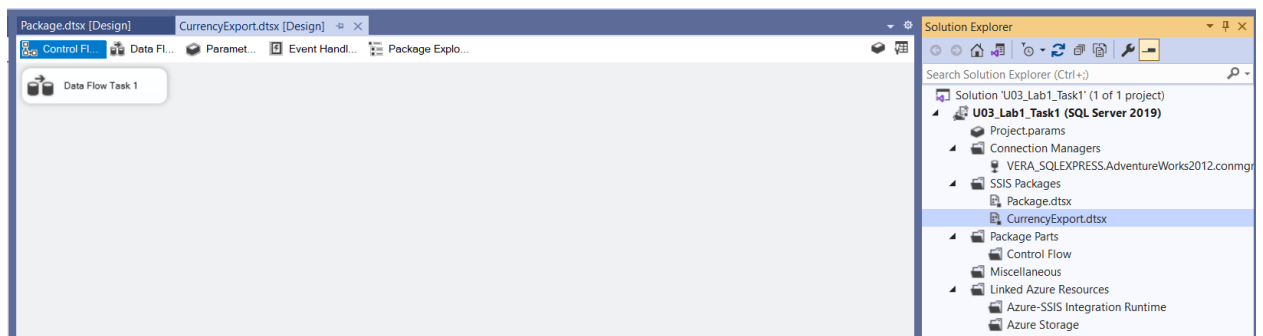
Let's run the CurrencyExport package from Visual Studio and confirm that the export completed successfully.
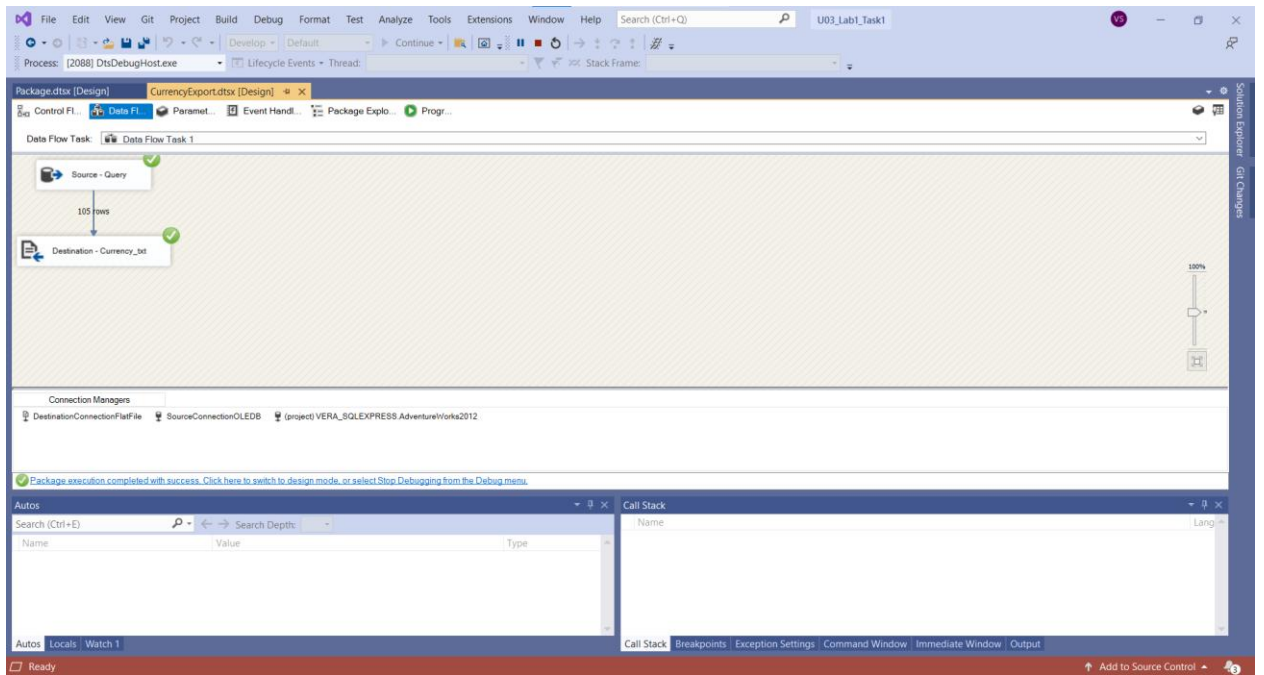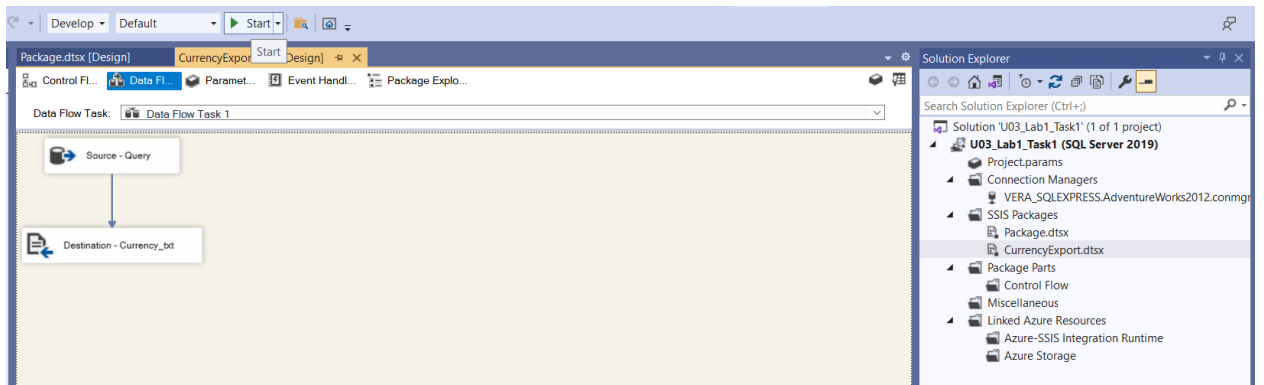
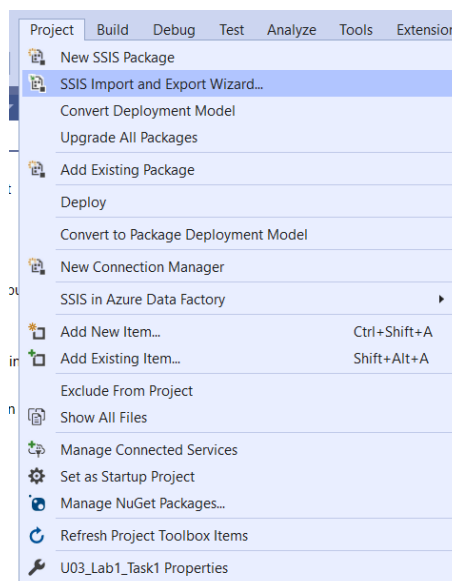Package execute completed with successful.

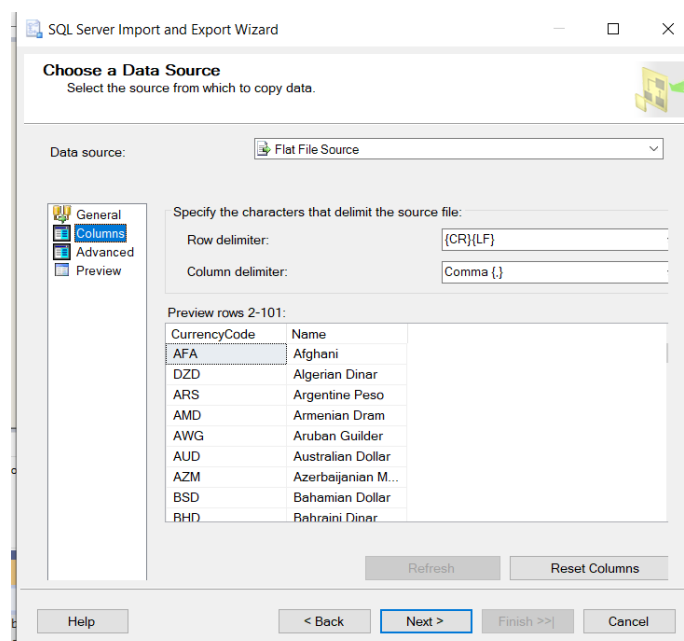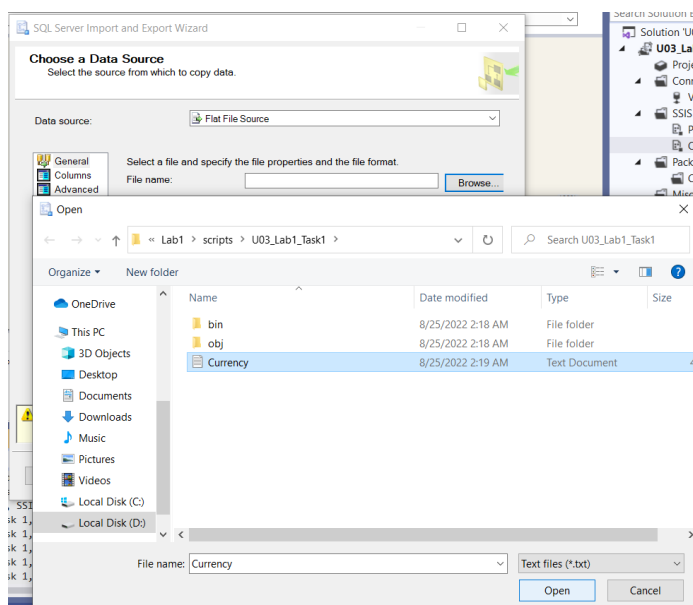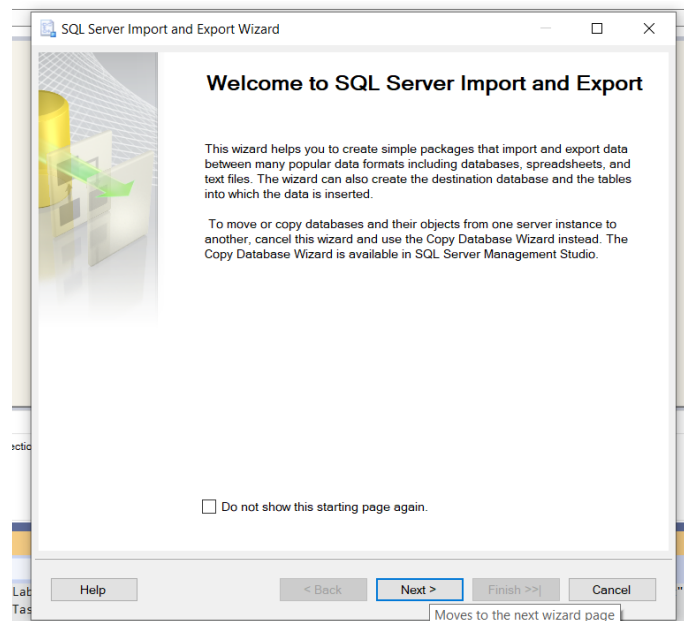Let's see how the package worked. Did the data get transferred to the file?

Result: Output file that contains the list of currencies
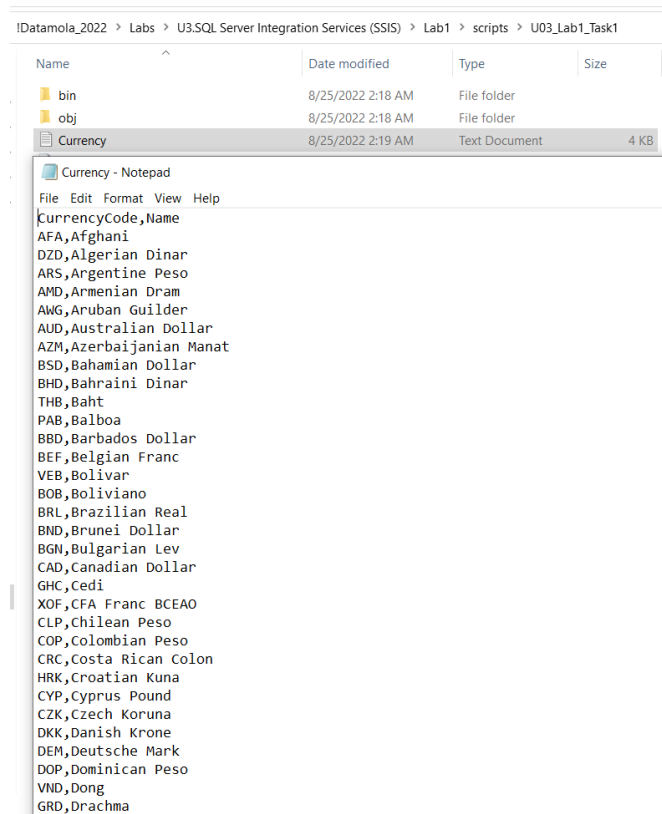
1.3. Exercise 3: Import Data Using the Import and Export Wizard

Let's Import Data from the flat file (Currency.txt) to the SQL database Using the Import and Export Wizard.

SQL Server Import and Export Wizard

Choose a Data Source
Select the source from which to copy data.

Data source: Flat File Source

- General
- Columns
- Advanced
- Preview

Configure the properties of each column.

CurrencyCode
Name

Misc
Name	CurrencyCode
ColumnDelimiter	Comma {,}
ColumnType	Delimited
InputColumnWidt	0
DataPrecision	0
DataScale	0
DataType	Unicode string [DT_
OutputColumnWi	50
TextQualified	True

Name

New   Delete   Suggest Types...

Help   < Back   Next >   Finish >>| Cancel

SQL Server Import and Export Wizard

Choose a Data Source
Select the source from which to copy data.

Data source: Flat File Source

- General
- Columns
- Advanced
- Preview

The preview shows the source file divided into the specified columns. Initial data rows that are skipped when the file is parsed during runtime, are not shown.

Data rows to skip: 0

Preview rows 2-101:

CurrencyCode	Name
AFA	Afghani
DZD	Algerian Dinar
ARS	Argentine Peso
AMD	Armenian Dram
AWG	Aruban Guilder
AUD	Australian Dollar
AZM	Azerbaijanian ...
BSD	Bahamian Dollar

Refresh

Help   < Back   Next >   Finish >>| Cancel

SQL Server Import and Export Wizard

Choose a Data Source
Select the source from which to copy data.

Data source: Flat File Source

- General
- Columns
- Advanced
- Preview

Select a file and specify the file properties and the file format.

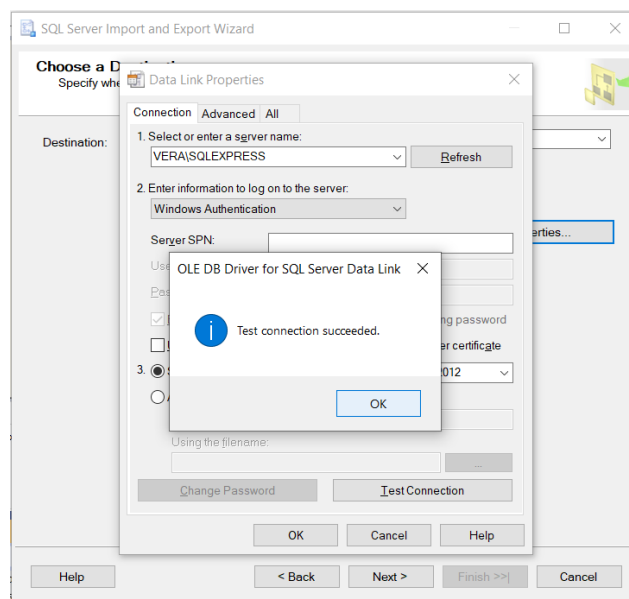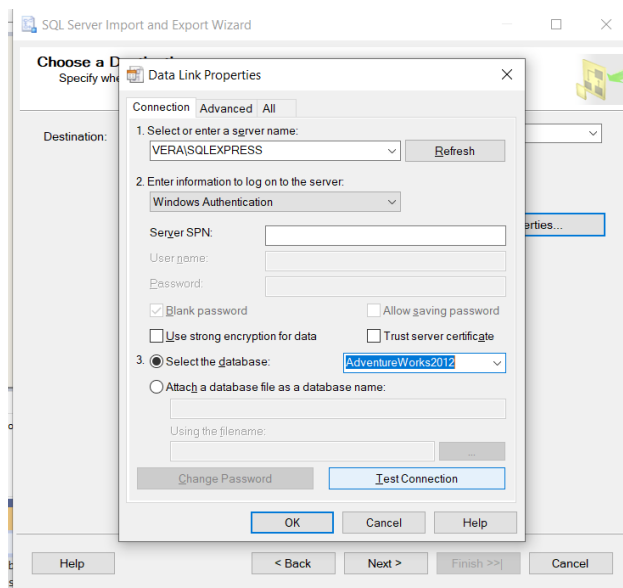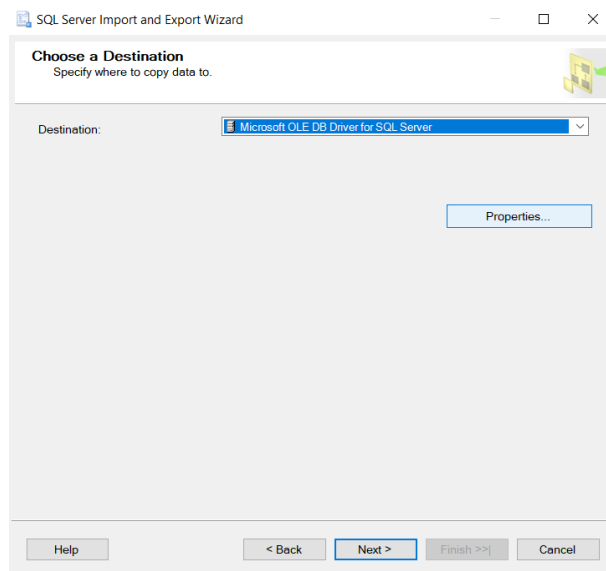|	
File name:	D:\Vera\Datamola_2022\Labs\U3.SQL Serve Browse...
Locale:	English (United States) ☑ Unicod
Code page:	1252 (ANSI - Latin I)
Format:	Delimited
Text qualifier:	<none>
Header row delimiter:	{CR}{LF}
Header rows to skip:	0

☑ Column names in the first data row

Help   < Back   Next >   Finish >>| Cancel

Moves to the next wizard page

SSIS.Pipeline: Warning: Could not open global shared m   erformance

SQL Server Import and Export Wizard

Select Source Tables and Views
Choose one or more tables and views to copy.

Tables and
☑ Source:
☑ D:\Ve

Data View

Sample data (up to first 200 rows)

CurrencyCode	Name
AFA	Afghani
DZD	Algerian Dinar
ARS	Argentine Pe...
AMD	Armenian Dr...
AWG	Aruban Guil...
AUD	Australian D...
AZM	Azerbaijania...
BSD	Bahamian D...
BHD	Bahraini Dinar
THB	Baht
PAB	Balboa
BBD	Barbados D...
BEF	Belgian Franc

Close

Edit Mappings... | Preview...

Help | < Back | Next > | Finish >>| | Cancel

SQL Server Import and Export Wizard

Complete the Wizard
Verify the choices made in the wizard and click Finish.

Click Finish to perform the following actions:

Destination Location : VERA\SQLEXPRESS
Destination Provider : MSOLEDBSQL.1

- Copy rows from D:\Vera\!Datamola_2022\Labs\U3.SQL Server Integration Services (SSIS)\Lab1\scripts\U03_Lab1_Task1\Currency.txt to [dbo].[Currency]
  The new target table will be created.

- The package will be saved to the package file "D:\Vera\!Datamola_2022\Labs\U3.SQL Server Integration Services (SSIS)\Lab1\scripts\U03_Lab1_Task1\Package1.dtsx".
- The package will not be run immediately.

Provider mapping file : C:\Program Files (x86)\Microsoft Visual Studio\2019\Community\Common7\IDE\CommonExtensions\Microsoft\SSIS\160\MappingFiles\SSIS10ToMSSQL.XML

Help | < Back | Next > | Finish | Cancel

SQL Server Import and Export Wizard

The execution was successful

✅ Success		7 Total	0 Error
		7 Success	0 Warning

Details:

	Action	Status	Message
✅	Initializing Data Flow Task	Success	
✅	Initializing Connections	Success	
✅	Setting SQL Command	Success	
✅	Setting Source Connection	Success	
✅	Setting Destination Connection	Success	
✅	Validating	Success	
ℹ	Saving	Success	

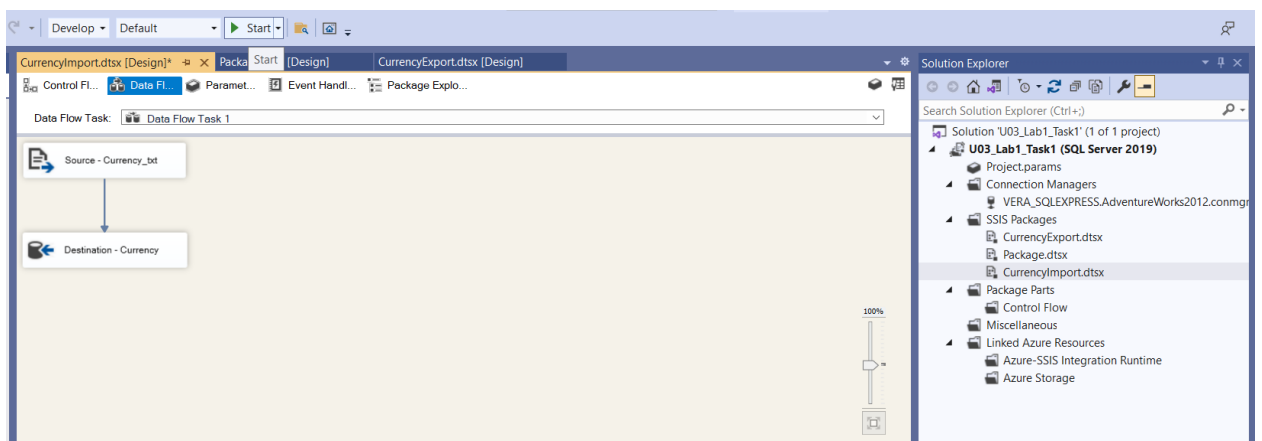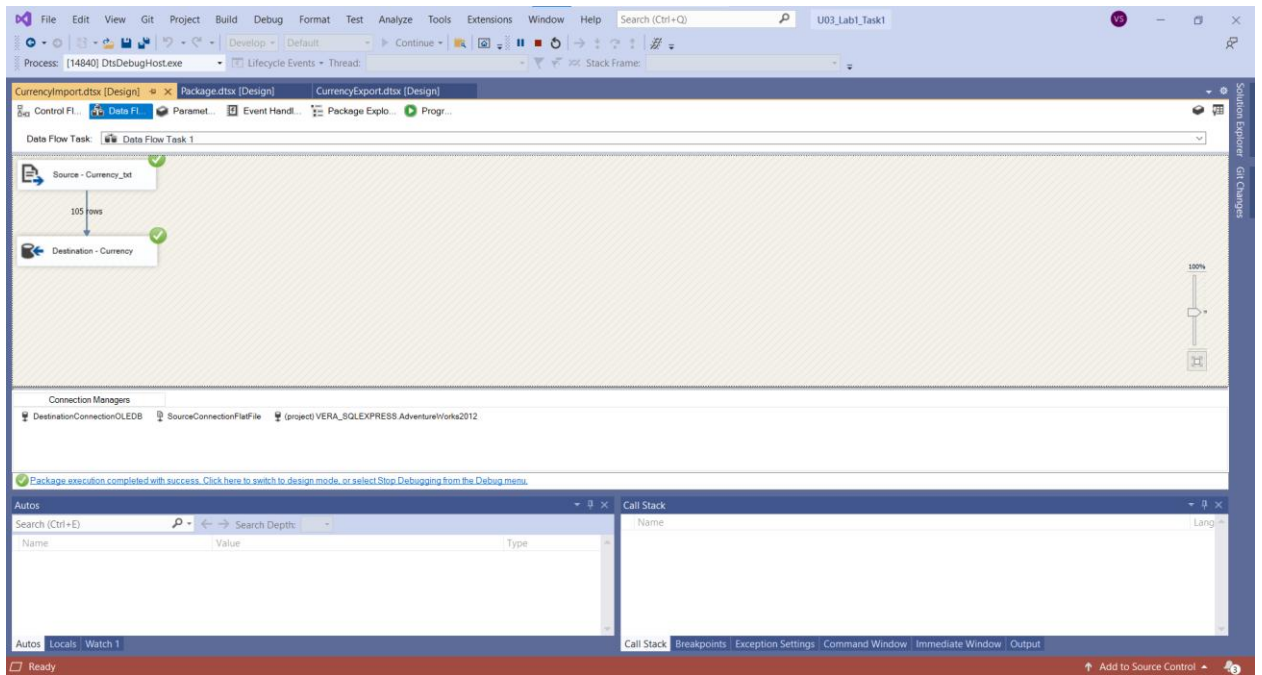Filter ▼ | Stop | Report ▼

Close

Let's rename our new package to CurrencyImport.
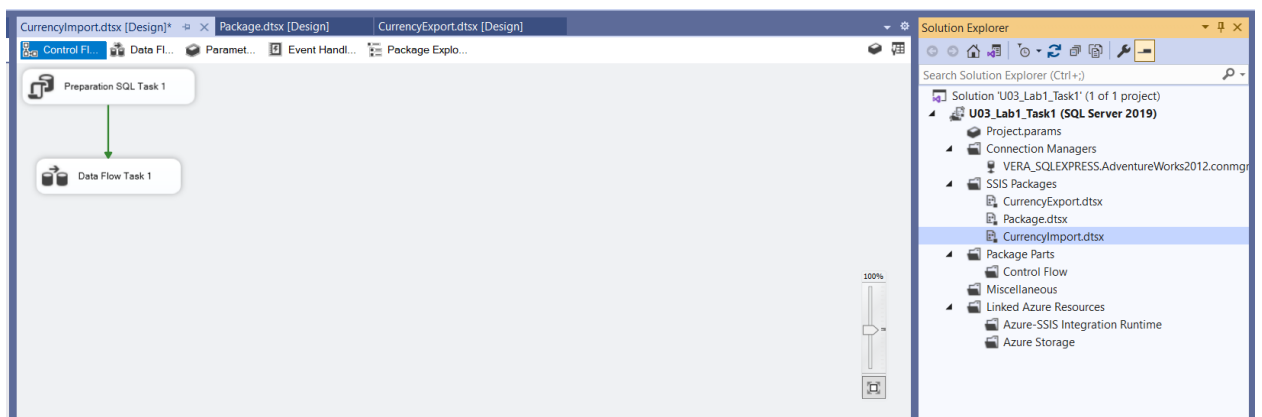
Let's start our packet to transmit data.

Package execute completed with successful.

As we can see, the data have been moved to a new table in Microsoft SQL Server.