Report

Laboratory Work 2

Dmitry Ladutsko

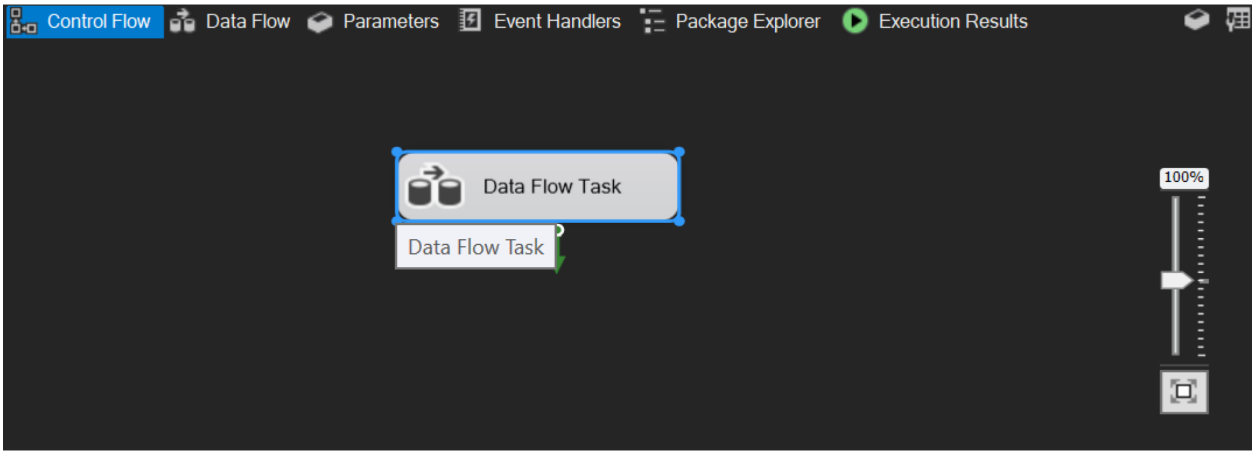
August 26, 2022

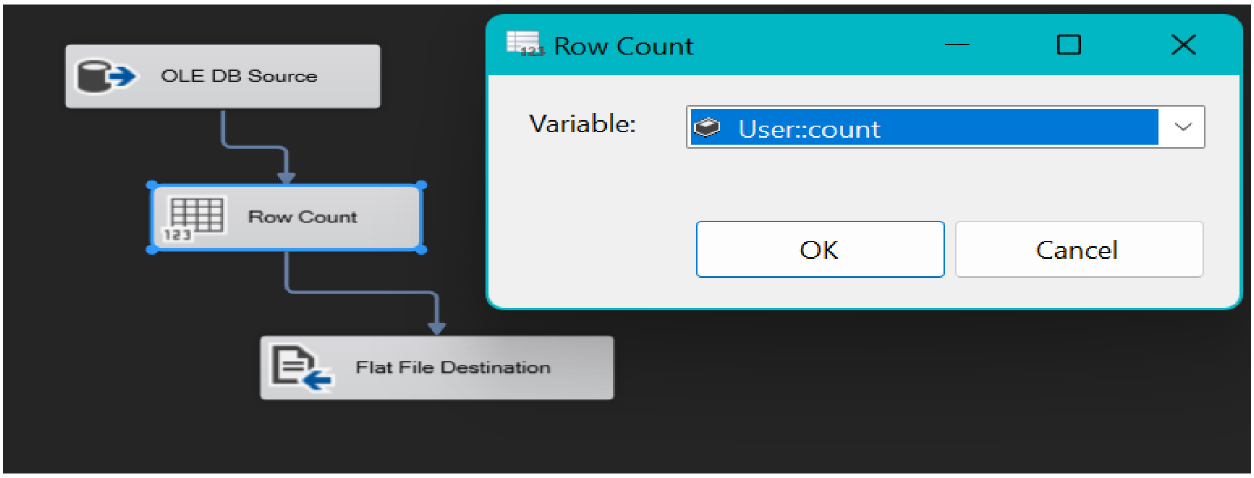
1. Developing Integration Services Solutions

1.1. Exercise 1: Creating an Integration Services Project and implementing a package

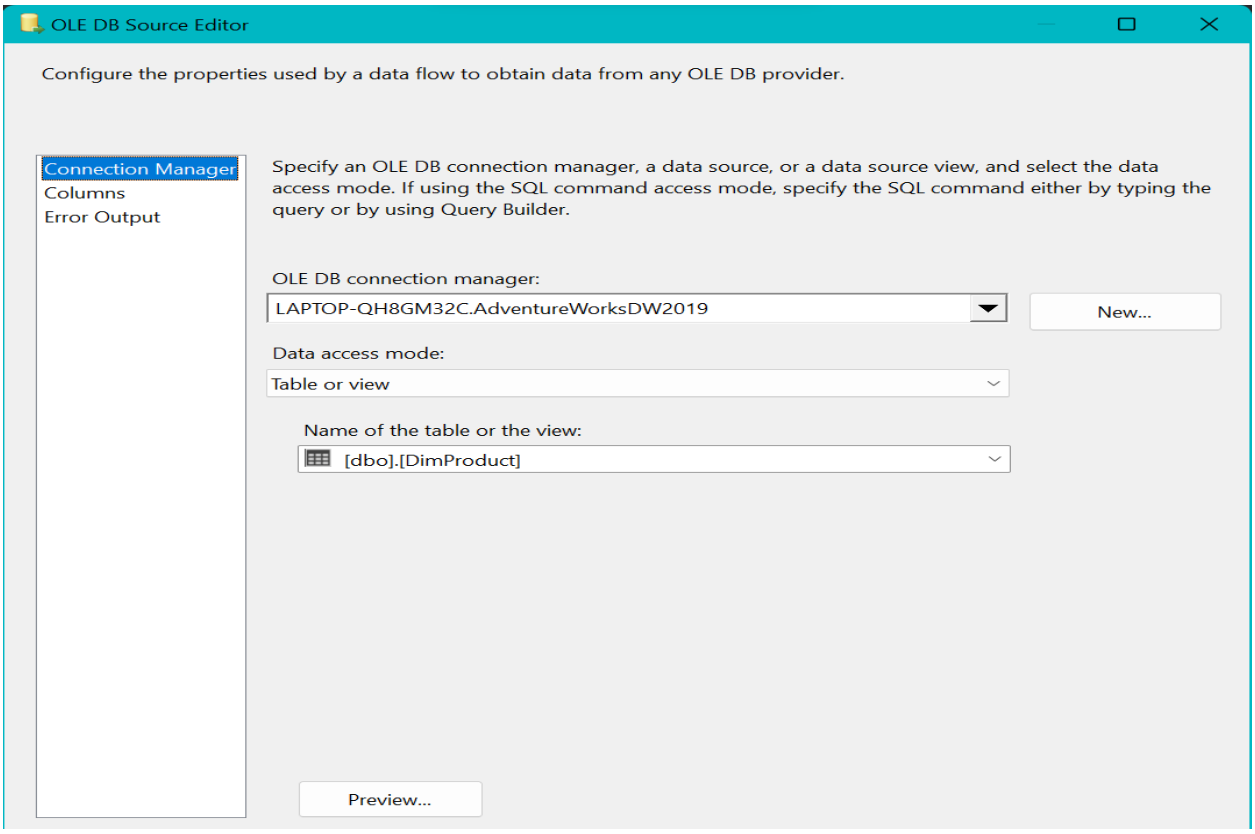
The Marketing department has requested a list of products from the Adventure Works database. They want the list in the format of a comma-delimited text file. The file must include all columns from the products table. You also want to view the number of rows returned each time you generate the file so the package should have a variable which stores the number of exported rows. The package must send an e-mail message after the Products.txt file is created (using event handler). The body of the message should contain the total number of rows which have been exported.

Result: SSIS solution and the output file (Product.txt).





Variable: User::count



OLE DB Source Editor

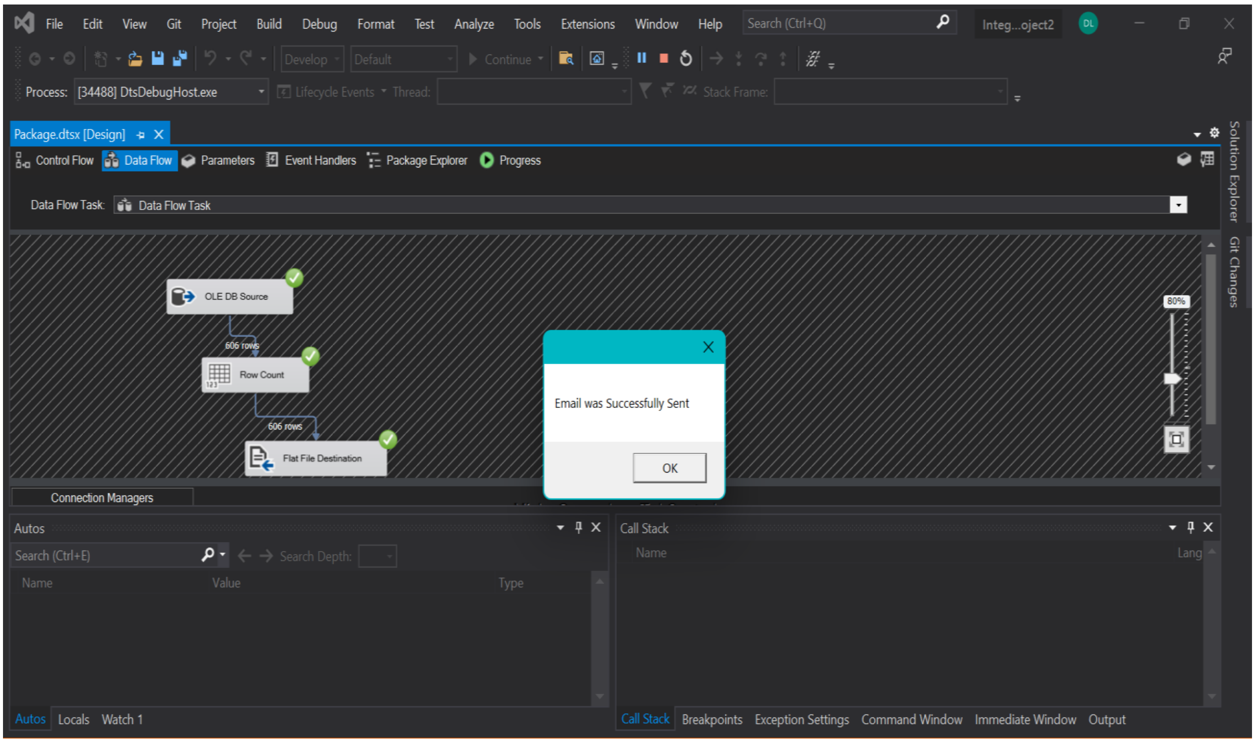
Configure the properties used by a data flow to obtain data from any OLE DB provider.

Specify an OLE DB connection manager, a data source, or a data source view, and select the data access mode. If using the SQL command access mode, specify the SQL command either by typing the query or by using Query Builder.

OLE DB connection manager: LAPTOP-QH8GM32C.AdventureWorksDW2019

Data access mode: Table or view

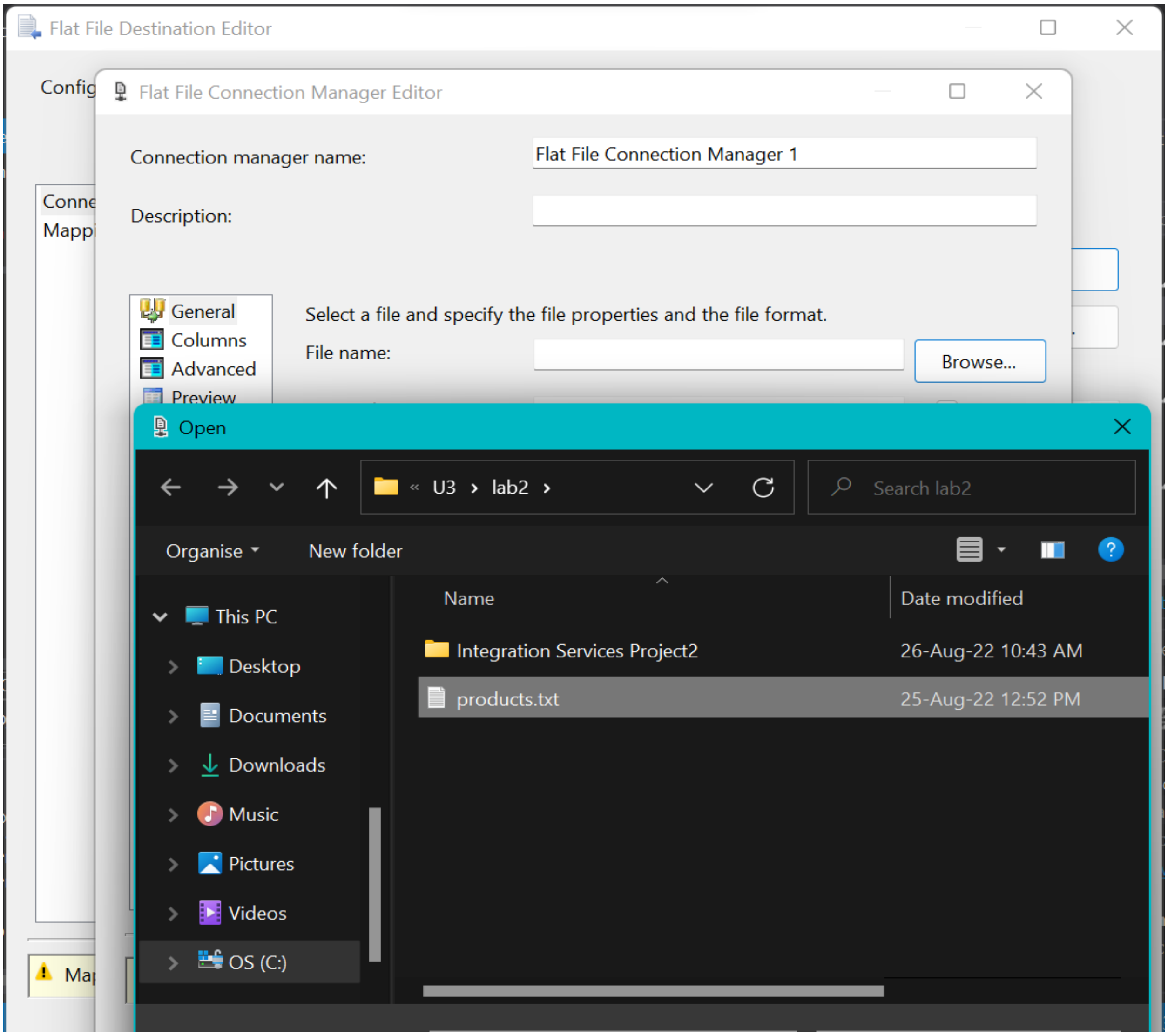
Name of the table or the view: [dbo].[DimProduct]



Process: [34488] DtsDebugHost.exe

Data Flow Task: Data Flow Task

Email was Successfully Sent



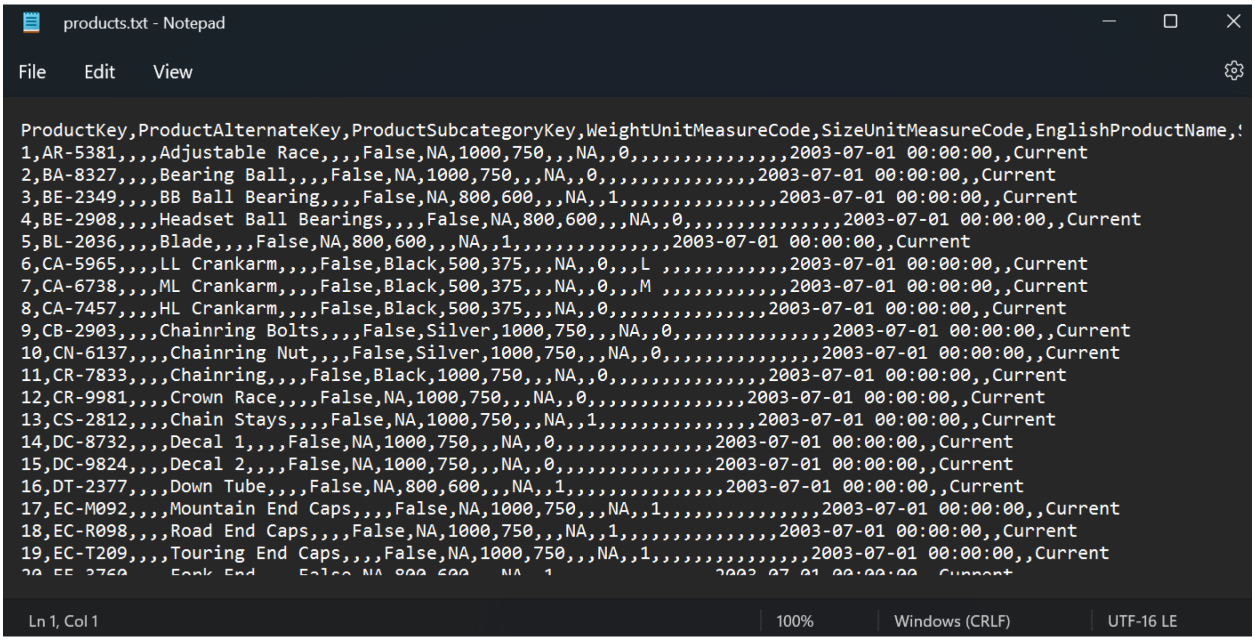
Connection manager name: Flat File Connection Manager 1

Description:

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

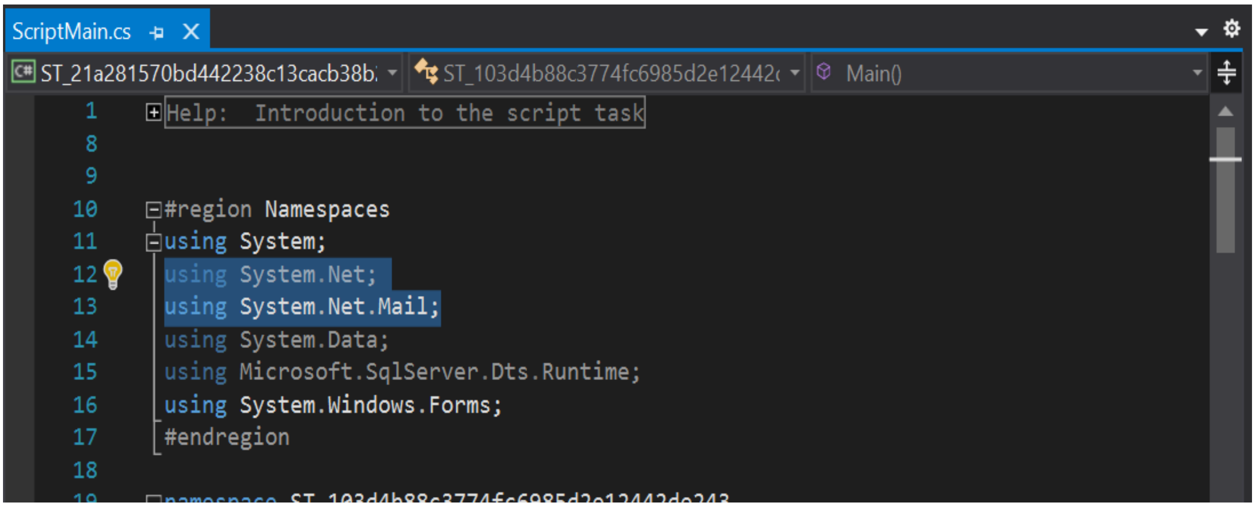
File name:

Name	Date modified
Integration Services Project2	26-Aug-22 10:43 AM
products.txt	25-Aug-22 12:52 PM

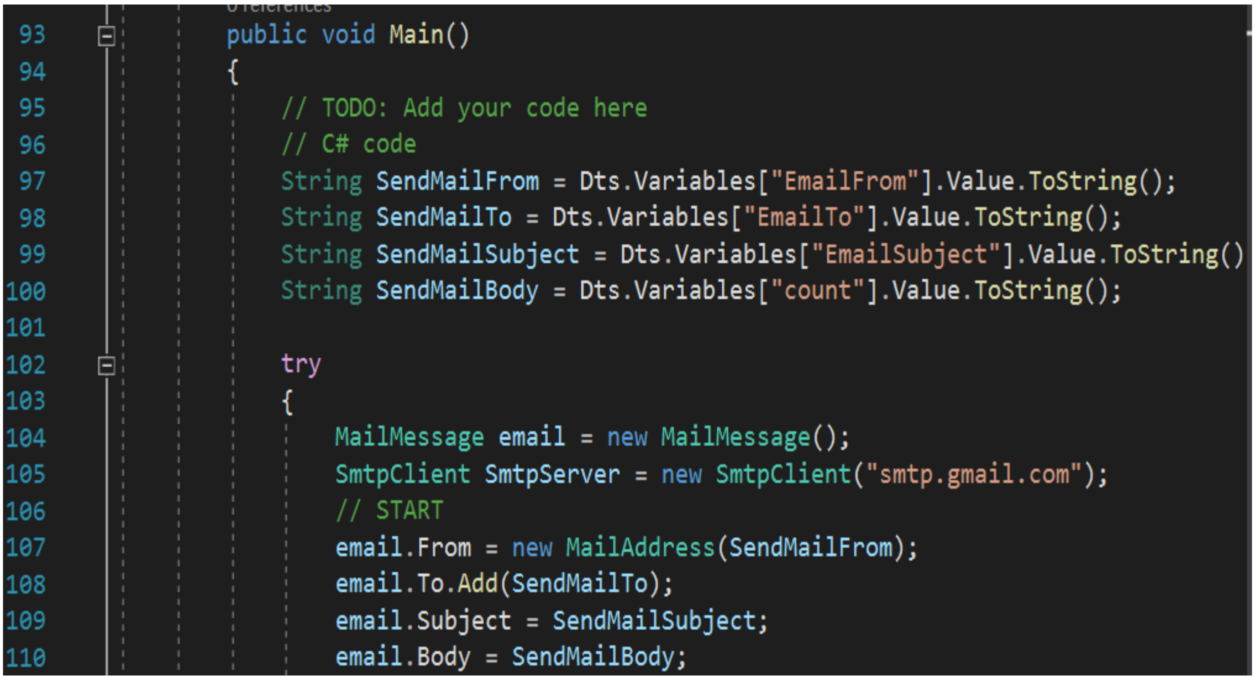


```
ProductKey,ProductAlternateKey,ProductSubcategoryKey,WeightUnitMeasureCode,SizeUnitMeasureCode,EnglishProductName,
1,AR-5381,,,,Adjustable Race,,,,False,NA,1000,750,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
2,BA-8327,,,,Bearing Ball,,,,False,NA,1000,750,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
3,BE-2349,,,,BB Ball Bearing,,,,False,NA,800,600,,,NA,,1,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
4,BE-2908,,,,Headset Ball Bearings,,,,False,NA,800,600,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
5,BL-2036,,,,Blade,,,,False,NA,800,600,,,NA,,1,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
6,CA-5965,,,,LL Crankarm,,,,False,Black,500,375,,,NA,,0,,,L ,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
7,CA-6738,,,,ML Crankarm,,,,False,Black,500,375,,,NA,,0,,,M ,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
8,CA-7457,,,,HL Crankarm,,,,False,Black,500,375,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
9,CB-2903,,,,Chainring Bolts,,,,False,Silver,1000,750,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
10,CN-6137,,,,Chainring Nut,,,,False,Silver,1000,750,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
11,CR-7833,,,,Chainring,,,,False,Black,1000,750,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
12,CR-9981,,,,Crown Race,,,,False,NA,1000,750,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
13,CS-2812,,,,Chain Stays,,,,False,NA,1000,750,,,NA,,1,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
14,DC-8732,,,,Decal 1,,,,False,NA,1000,750,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
15,DC-9824,,,,Decal 2,,,,False,NA,1000,750,,,NA,,0,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
16,DT-2377,,,,Down Tube,,,,False,NA,800,600,,,NA,,1,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
17,EC-M092,,,,Mountain End Caps,,,,False,NA,1000,750,,,NA,,1,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
18,EC-R098,,,,Road End Caps,,,,False,NA,1000,750,,,NA,,1,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
19,EC-T209,,,,Touring End Caps,,,,False,NA,1000,750,,,NA,,1,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
20,FE-3760,,,,Fork End,,,,False,NA,800,600,,,NA,,1,,,,,,,,,,,,,,,,2003-07-01 00:00:00,,Current
```

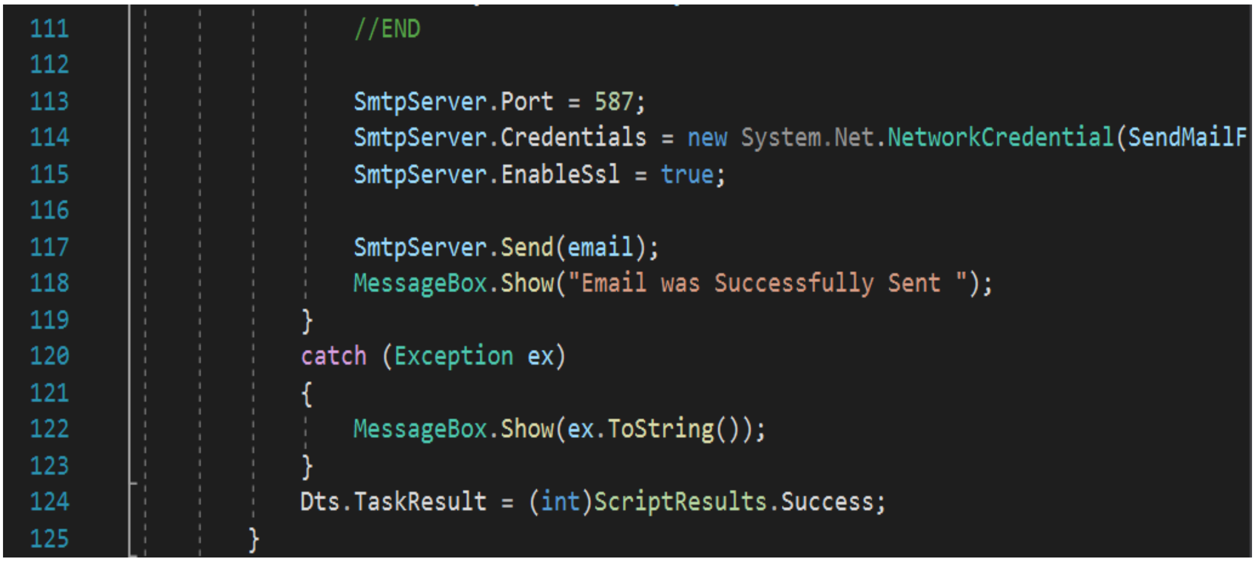
Ln 1, Col 1 | 100% | Windows (CRLF) | UTF-16 LE


ScriptMain.cs
ST_21a281570bd442238c13cacb38b
ST_103d4b88c3774fc6985d2e12442
Main()

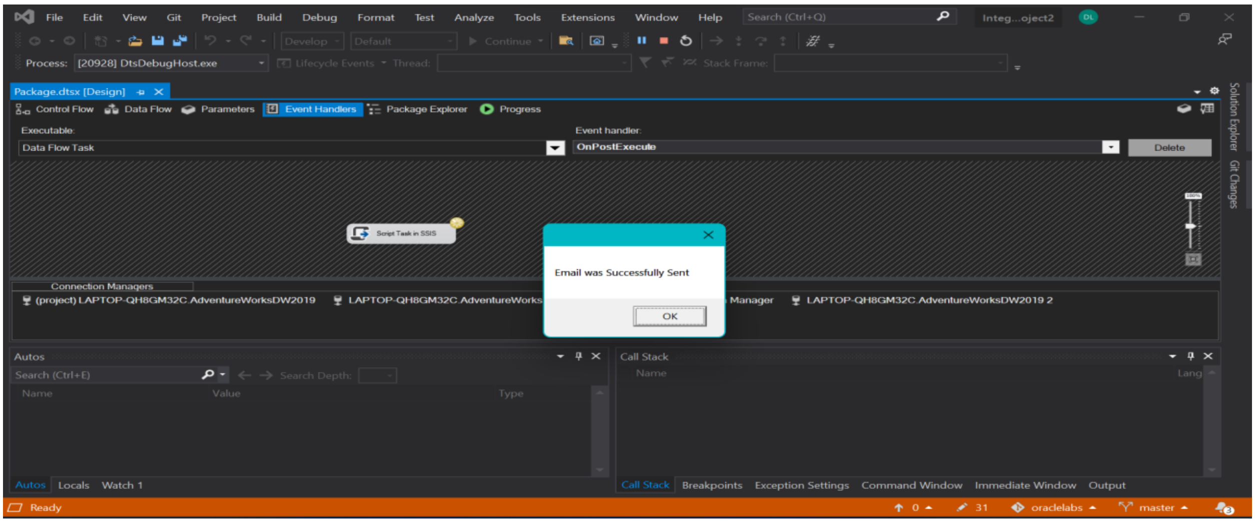
```
Help:  Introduction to the script task


#region Namespaces
using System;
using System.Net;
using System.Net.Mail;
using System.Data;
using Microsoft.SqlServer.Dts.Runtime;
using System.Windows.Forms;
#endregion

namespace ST_103d4b88c3774fc6985d2e12442de243
```



```
0 references
public void Main()
{
    // TODO: Add your code here
    // C# code
    String SendMailFrom = Dts.Variables["EmailFrom"].Value.ToString();
    String SendMailTo = Dts.Variables["EmailTo"].Value.ToString();
    String SendMailSubject = Dts.Variables["EmailSubject"].Value.ToString()
    String SendMailBody = Dts.Variables["count"].Value.ToString();

    try
    {
        MailMessage email = new MailMessage();
        SmtpClient SmtpServer = new SmtpClient("smtp.gmail.com");
        // START
        email.From = new MailAddress(SendMailFrom);
        email.To.Add(SendMailTo);
        email.Subject = SendMailSubject;
        email.Body = SendMailBody;
```



```
        //END

        SmtpServer.Port = 587;
        SmtpServer.Credentials = new System.Net.NetworkCredential(SendMailF
        SmtpServer.EnableSsl = true;

        SmtpServer.Send(email);
        MessageBox.Show("Email was Successfully Sent ");
    }
    catch (Exception ex)
    {
        MessageBox.Show(ex.ToString());
    }
    Dts.TaskResult = (int)ScriptResults.Success;
}
```

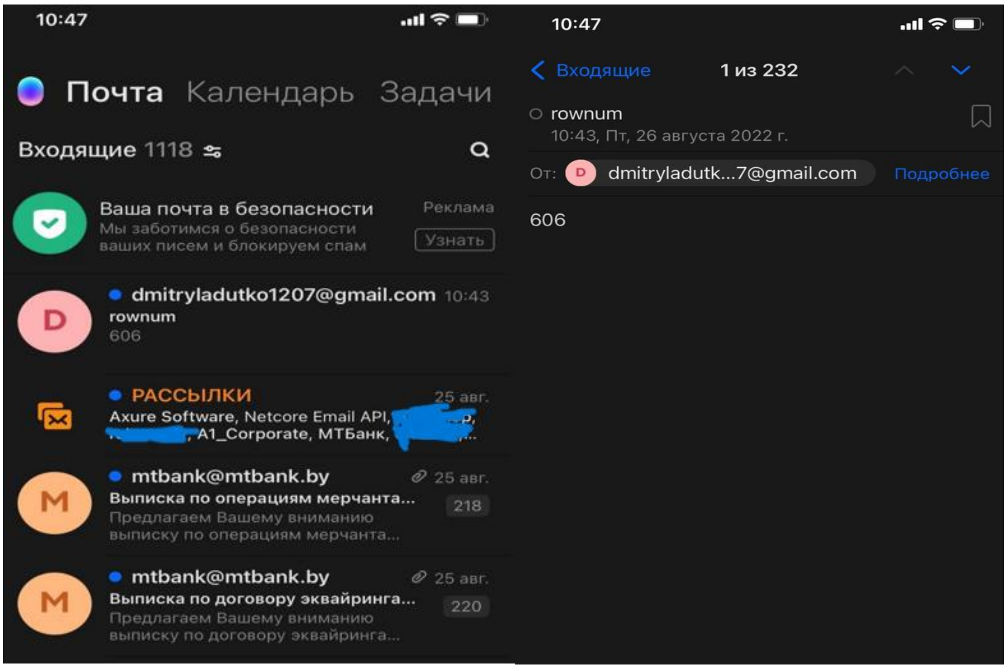


Process: [20928] DtsDebugHost.exe

Executable: Data Flow Task

Event handler: OnPostExecute

Email was Successfully Sent



10:47

Почта Календарь Задачи

Входящие 1118

Ваша почта в безопасности
Мы заботимся о безопасности ваших писем и блокируем спам
Реклама
Узнать

dmitryladutko1207@gmail.com 10:43
rownum
606

РАССЫЛКИ 25 авг.
Axure Software, Netcore Email API, [redacted] A1_Corporate, МТБанк, ...

mtbank@mtbank.by 25 авг.
Выписка по операциям мерчанта... 218
Предлагаем Вашему вниманию выписку по операциям мерчанта...

mtbank@mtbank.by 25 авг.
Выписка по договору эквайринга... 220
Предлагаем Вашему вниманию выписку по договору эквайринга...

10:47

Входящие 1 из 232

rownum
10:43, Пт, 26 августа 2022 г.

От: D dmitryladutk...7@gmail.com Подробнее

606

1.2. Exercise 2: Creating a package to keep list of files from a directory

You need to create SSIS package that reads all file names from a directory (which is a parameter for the package) and saves them to a table in the database. The table should include at least two columns:

ID – Unique Id for a file

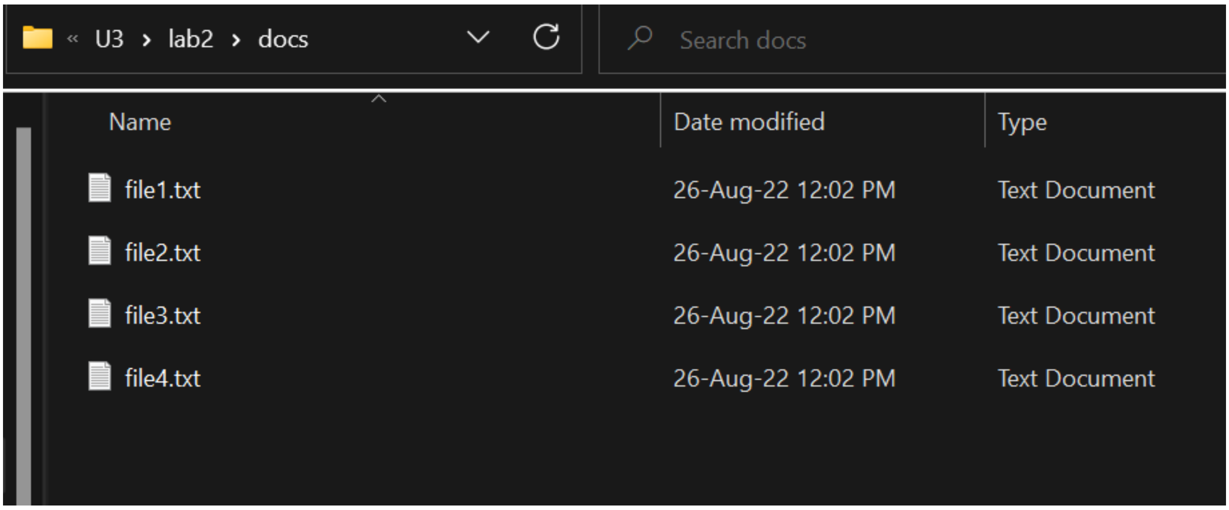
FileFullPath – Full path for a file

ID column should be generated in SSIS package (using sequences on DB level is not allowed)

Additionally, you can add column CreationTime. This is not obligatory but you will get +1 bonus point if you find how to populate it.

<u>**Result**:</u> SSIS solution and the package.

Note. Let's create table for storing ID, FileFullPath, CreationTime of files

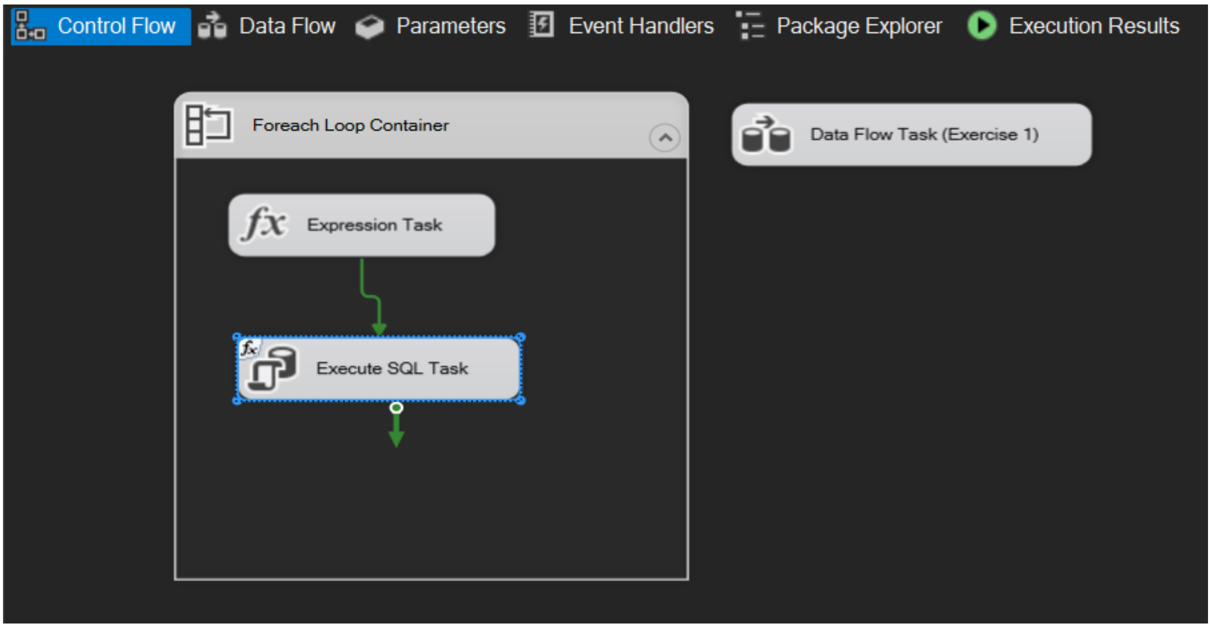


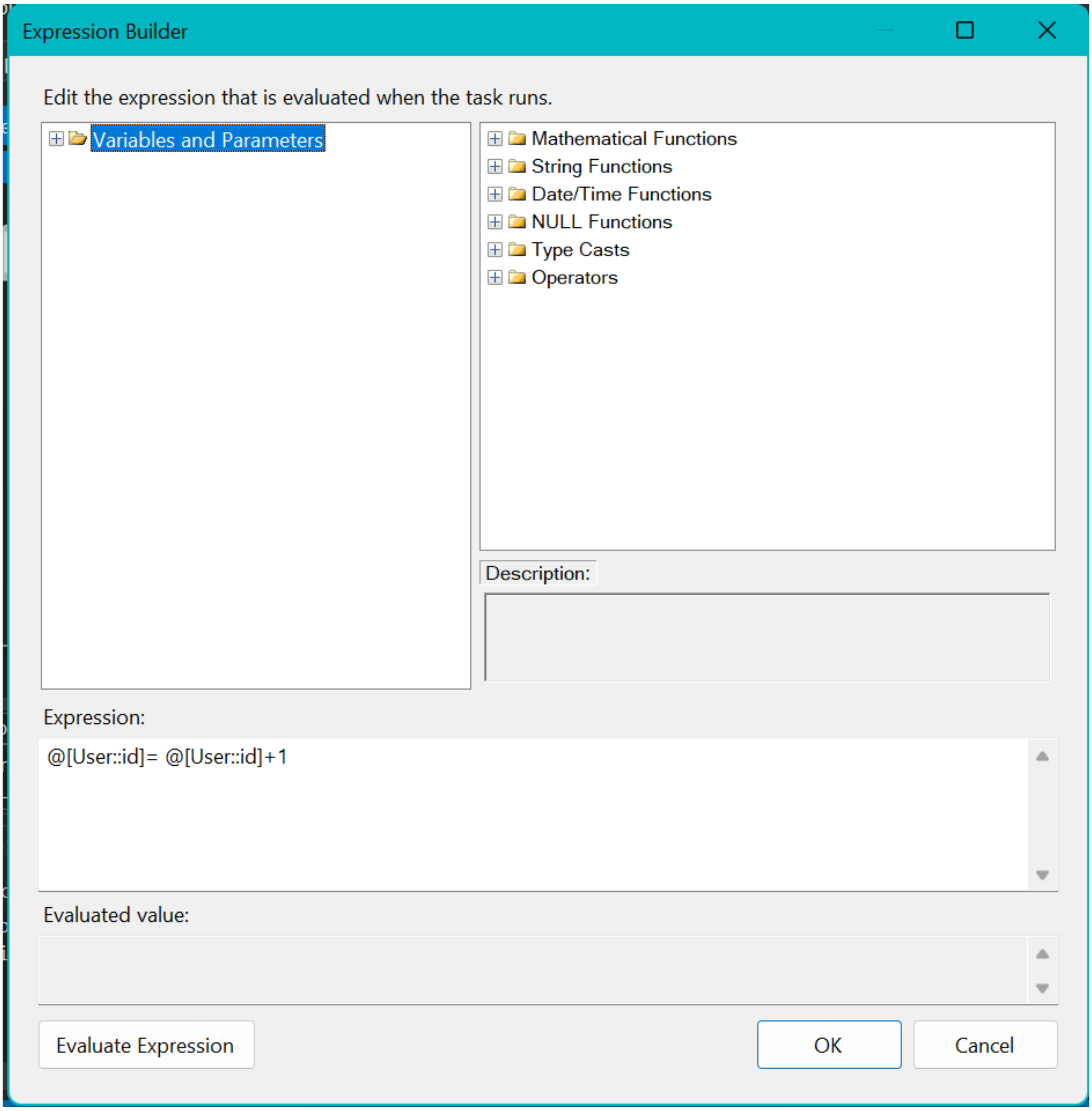
« U3 › lab2 › docs

Search docs

Name	Date modified	Type
file1.txt	26-Aug-22 12:02 PM	Text Document
file2.txt	26-Aug-22 12:02 PM	Text Document
file3.txt	26-Aug-22 12:02 PM	Text Document
file4.txt	26-Aug-22 12:02 PM	Text Document

Note. I created 4 .txt files to later take their file paths and insert them into table

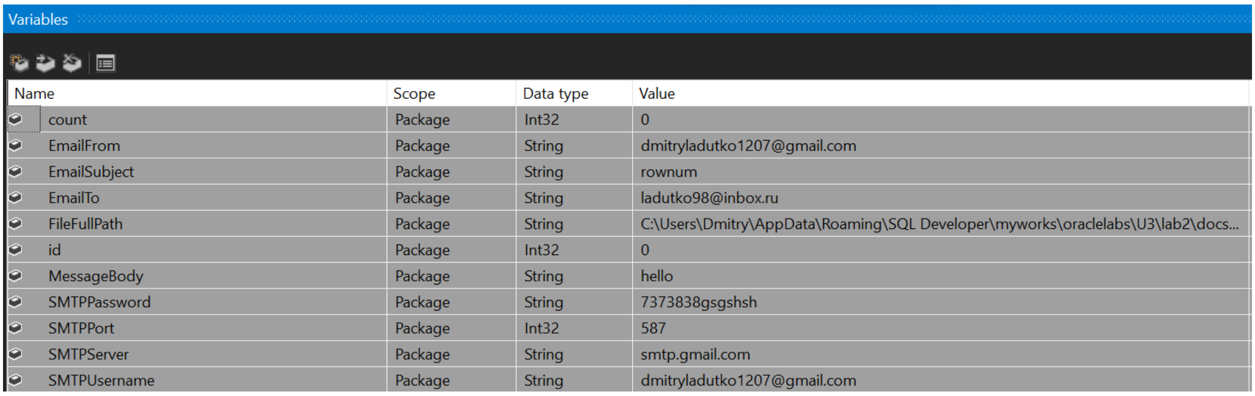




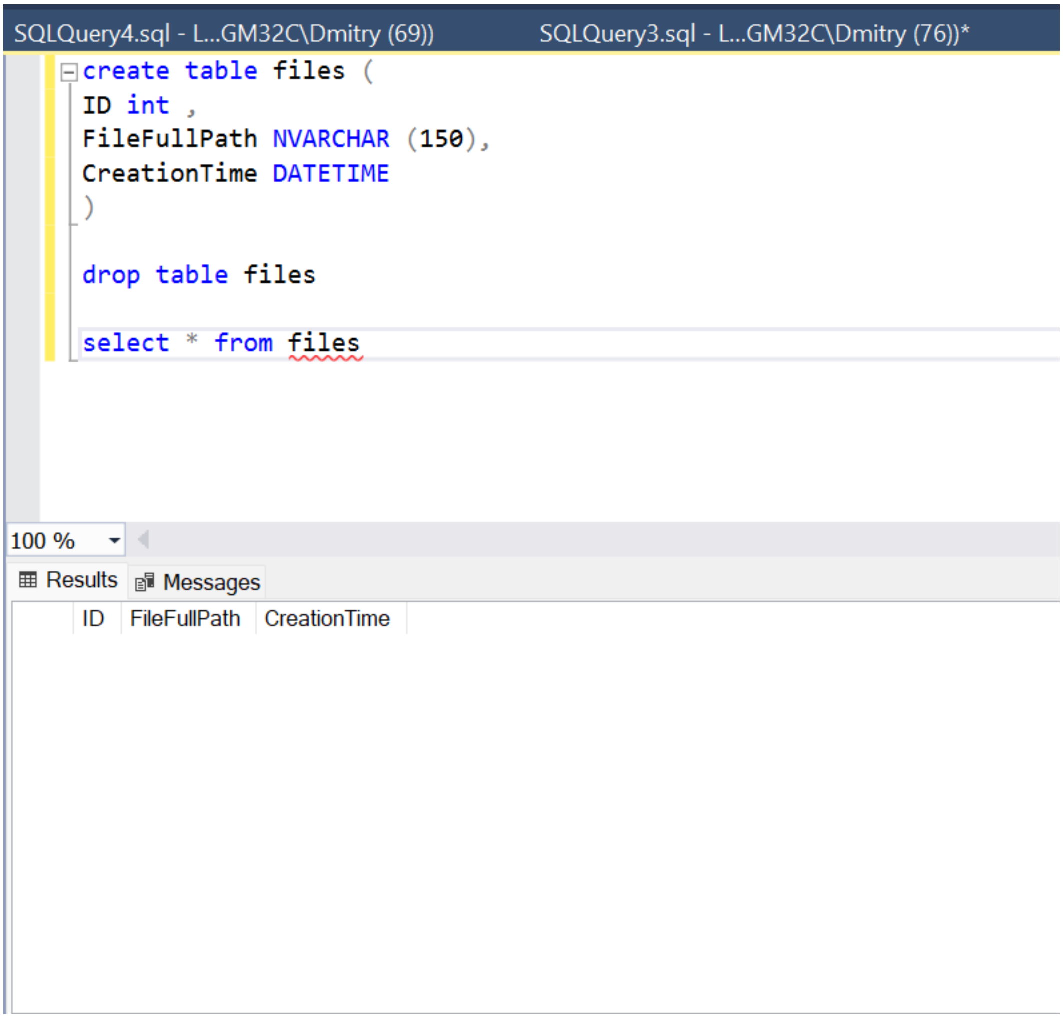
Edit the expression that is evaluated when the task runs.

Expression:

```
@[User::id]= @[User::id]+1
```



Name	Scope	Data type	Value
count	Package	Int32	0
EmailFrom	Package	String	dmitryladutko1207@gmail.com
EmailSubject	Package	String	rownum
EmailTo	Package	String	ladutko98@inbox.ru
FileFullPath	Package	String	C:\Users\Dmitry\AppData\Roaming\SQL Developer\myworks\oraclelabs\U3\lab2\docs...
id	Package	Int32	0
MessageBody	Package	String	hello
SMTPPassword	Package	String	7373838gsgshsh
SMTPPort	Package	Int32	587
SMTPServer	Package	String	smtp.gmail.com
SMTPUsername	Package	String	dmitryladutko1207@gmail.com



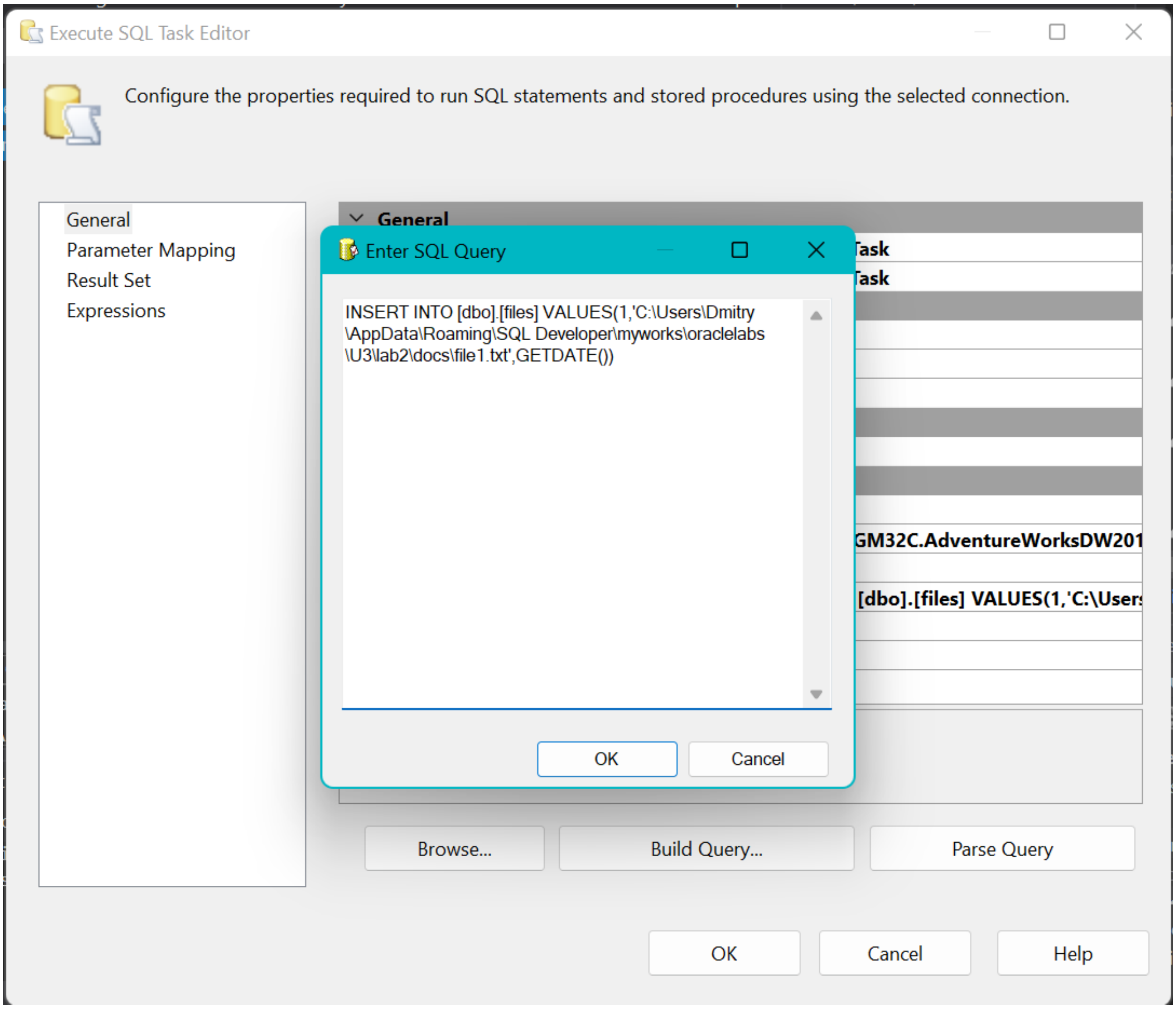
SQLQuery4.sql - L...GM32C\Dmitry (69))
SQLQuery3.sql - L...GM32C\Dmitry (76))*
100 %
Results
Messages

```
create table files (
ID int ,
FileFullPath NVARCHAR (150),
CreationTime DATETIME
)

drop table files

select * from files
```

ID	FileFullPath	CreationTime

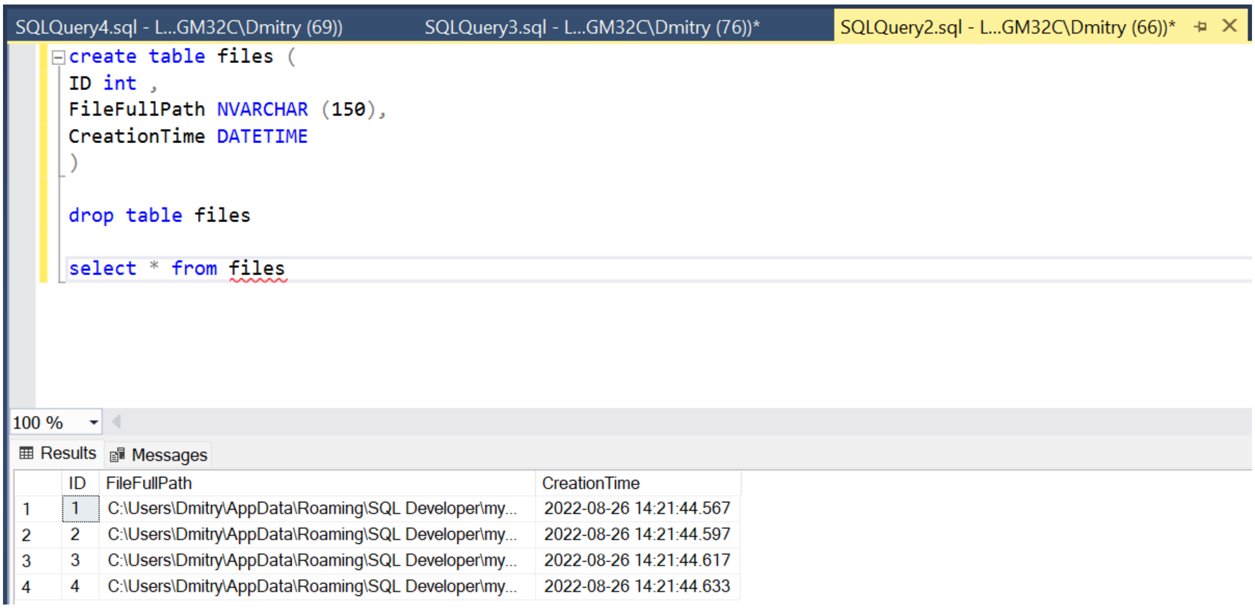
Note. As you can see we created table with 3 colums consists of id, file path and **creating time.** As it said in exercise I did not use sequences on DB level to auto – increment ID column values. I specified it in Expression task the way theat every loop I increment id value and store the new value in ID variable.

For insearting creation time I used GETDATE() system function and created column in file table of DATETIME type



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

```
INSERT INTO [dbo].[files] VALUES(1,'C:\Users\Dmitry
\AppData\Roaming\SQL Developer\myworks\oraclelabs
\U3\lab2\docs\file1.txt',GETDATE())
```



SQLQuery4.sql - L...GM32C\Dmitry (69))
SQLQuery3.sql - L...GM32C\Dmitry (76))*
SQLQuery2.sql - L...GM32C\Dmitry (66))*
100 %
Results
Messages

```
create table files (
ID int ,
FileFullPath NVARCHAR (150),
CreationTime DATETIME
)

drop table files

select * from files
```

	ID	FileFullPath	CreationTime
1	1	C:\Users\Dmitry\AppData\Roaming\SQL Developer\my...	2022-08-26 14:21:44.567
2	2	C:\Users\Dmitry\AppData\Roaming\SQL Developer\my...	2022-08-26 14:21:44.597
3	3	C:\Users\Dmitry\AppData\Roaming\SQL Developer\my...	2022-08-26 14:21:44.617
4	4	C:\Users\Dmitry\AppData\Roaming\SQL Developer\my...	2022-08-26 14:21:44.633

Laboratory Work Summary

At this Laboratory Work we practiced how we can count number of rows, send notifications **using C# code** to later use it for some periodic alerts. Practiced how we can use **for each loop containers**, how we can realise **sequences** using not only **SQL script**, but also do it in **SSIS package**, how we can **extract filename** from folder to load it into source files table.

We also **repeated** how we can **transform** SQL tables into **comma – delimited text**.