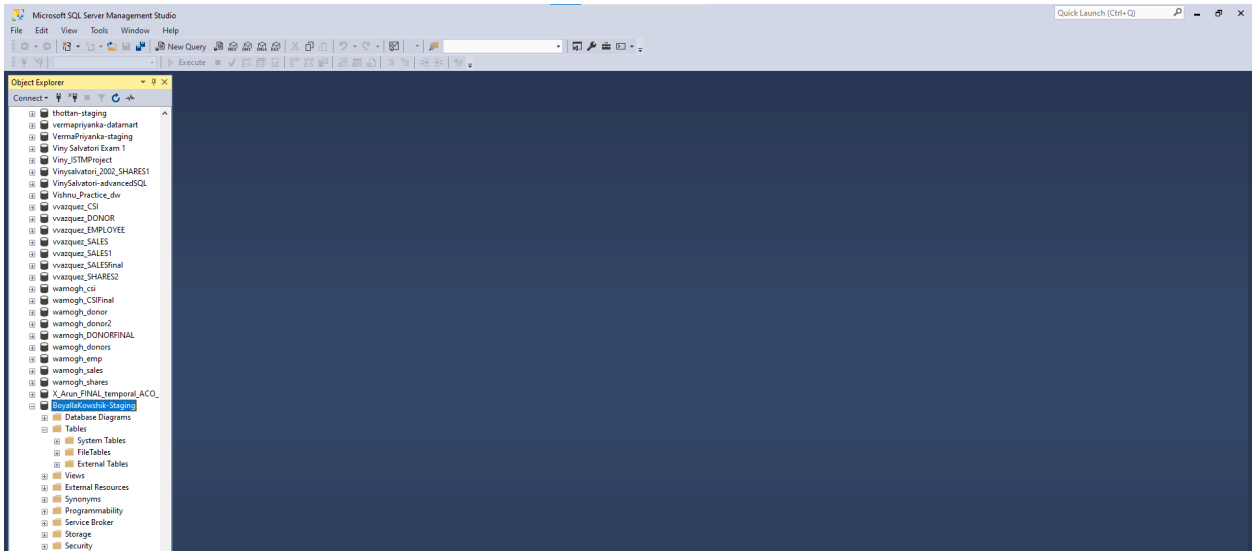
Name: Sri Sai Kowshik Reddy Boyalla
UIN: 734003625

1. Extraction Part

Creation of staging database:

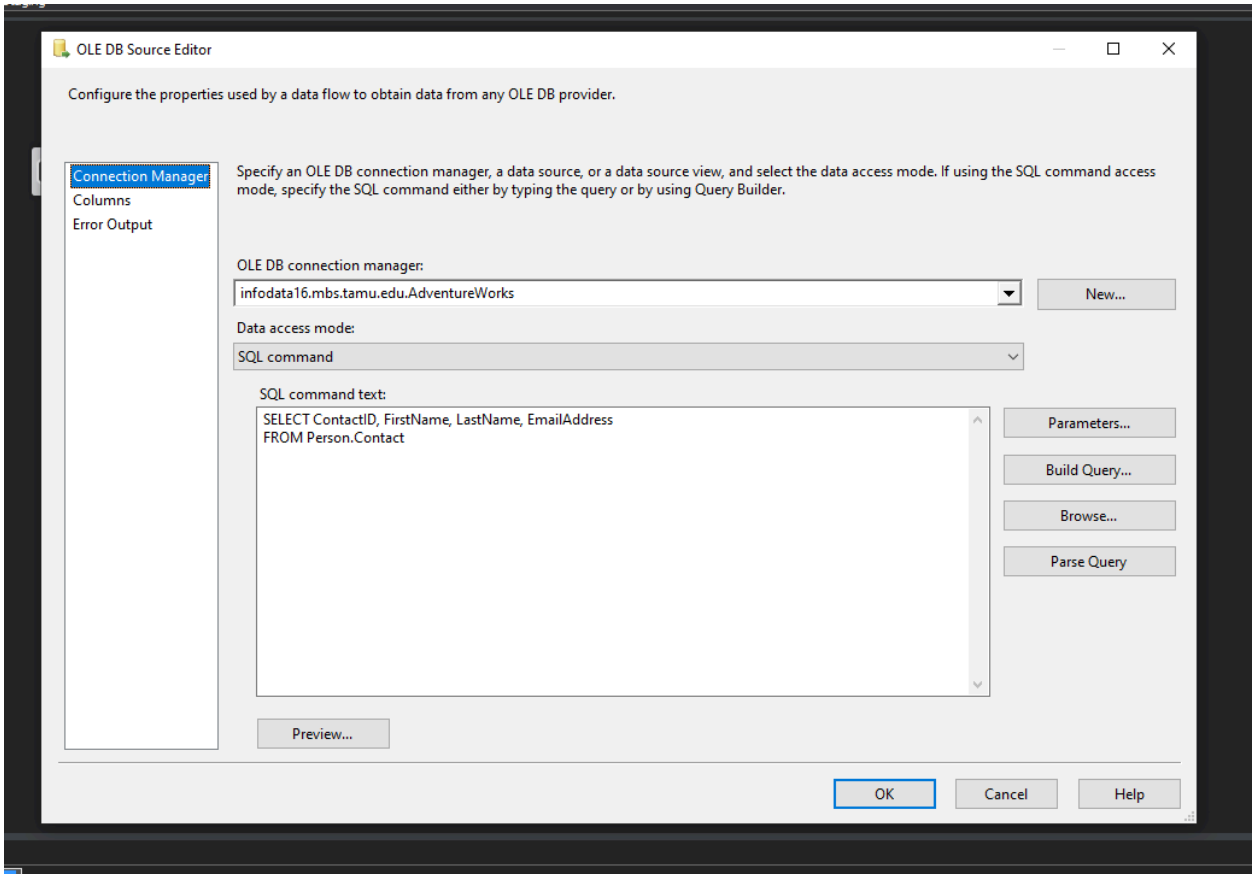


Creating Tables in staging:

cust_staging Table creation and Loading the data from AdventureWorks OLTP Source:

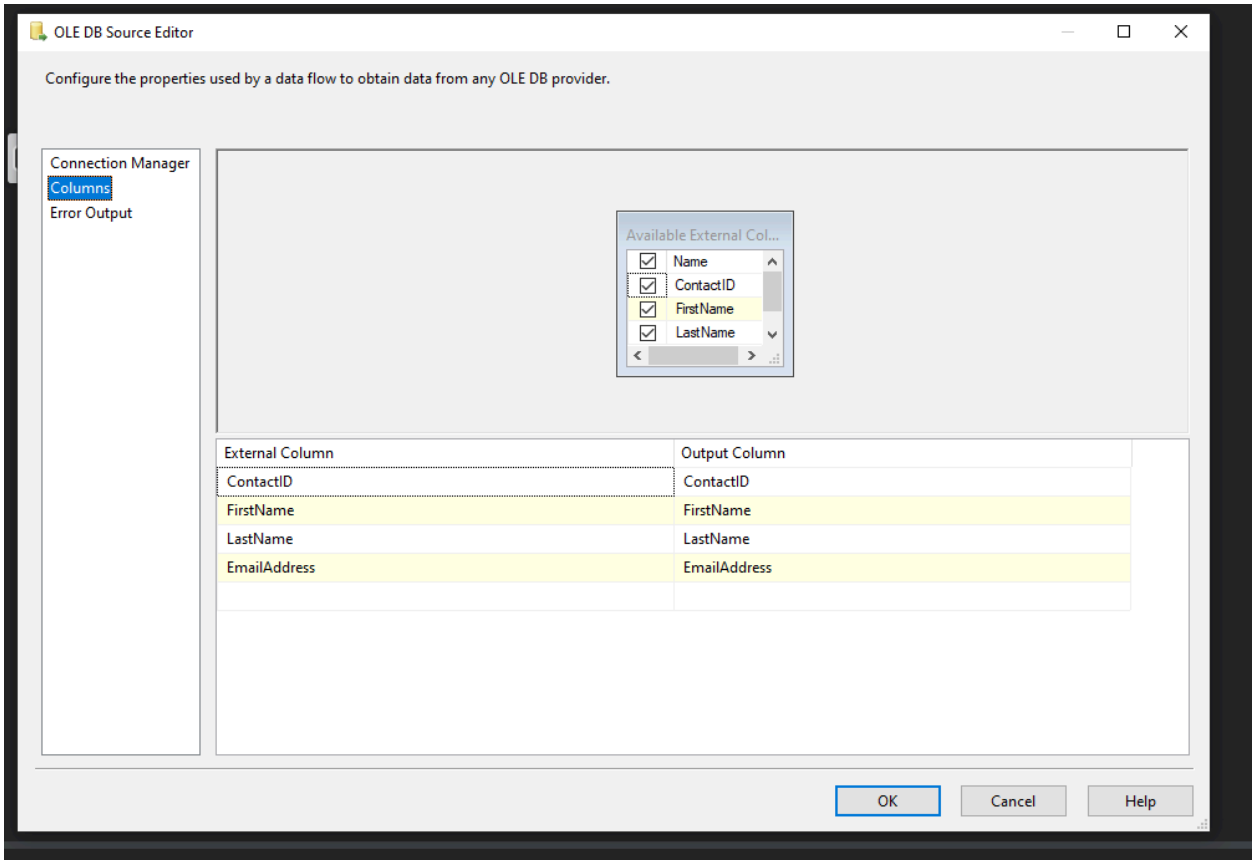
Configuring OLEDB Source:

In source, I made a connection to AdventureWorks OLTP database and wrote a query to fetch relevant columns from the Person.Contact Table of AdventureWorks.

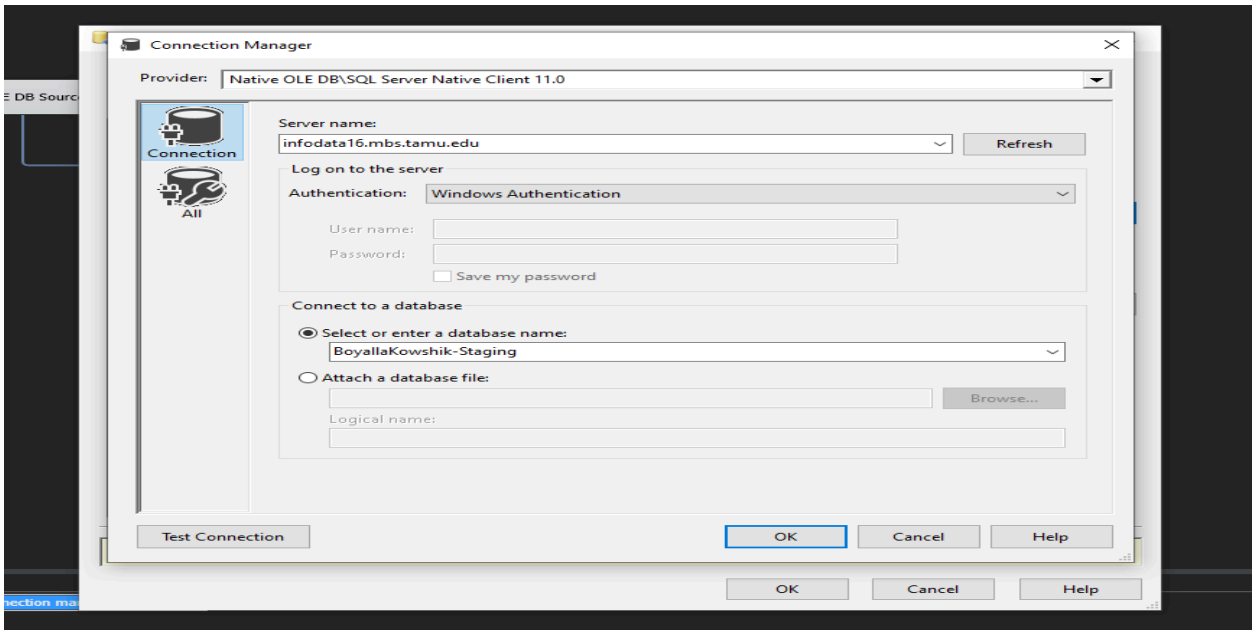


Query:

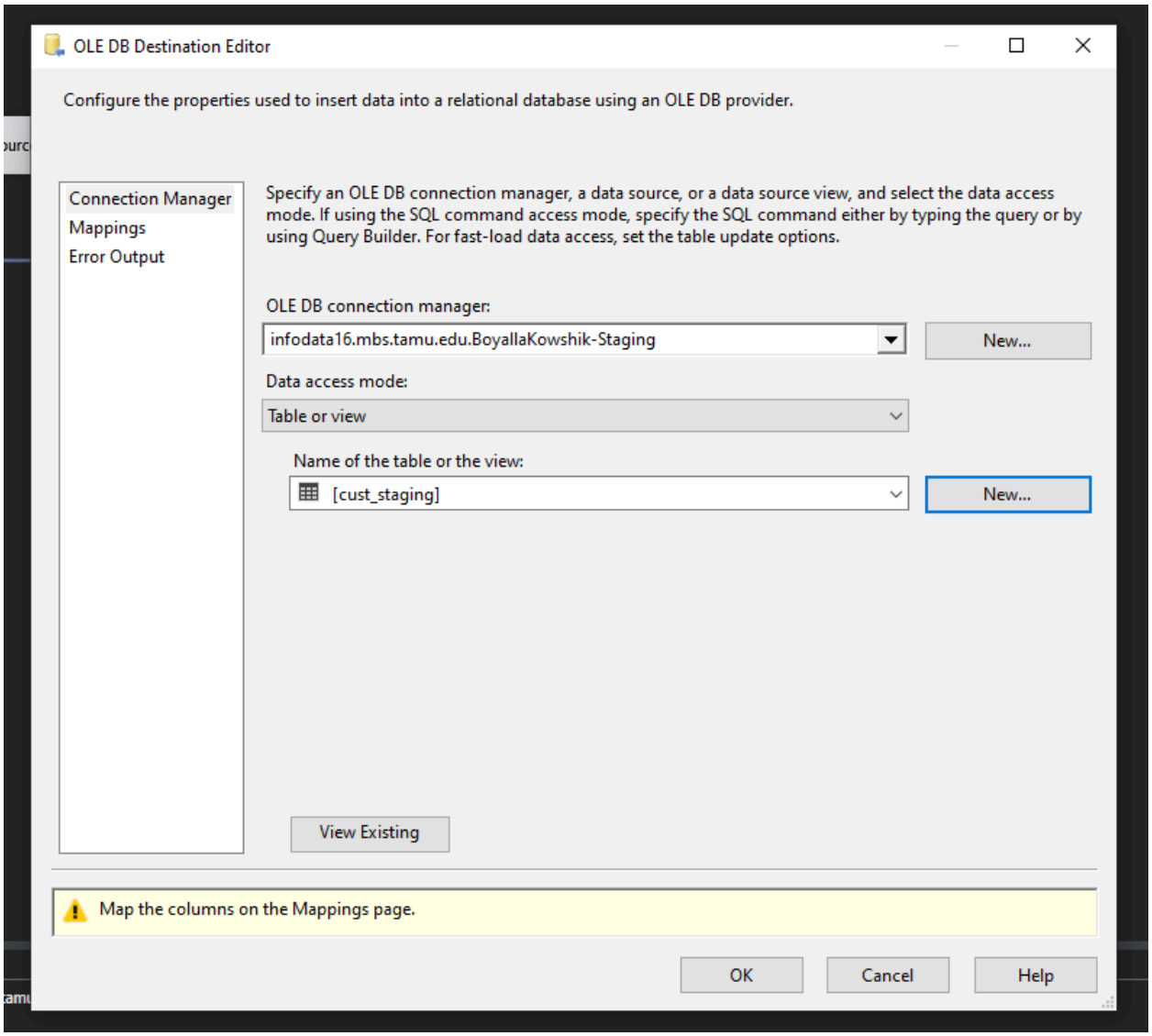
SELECT ContactID, FirstName, LastName, EmailAddress
FROM Person.Contact

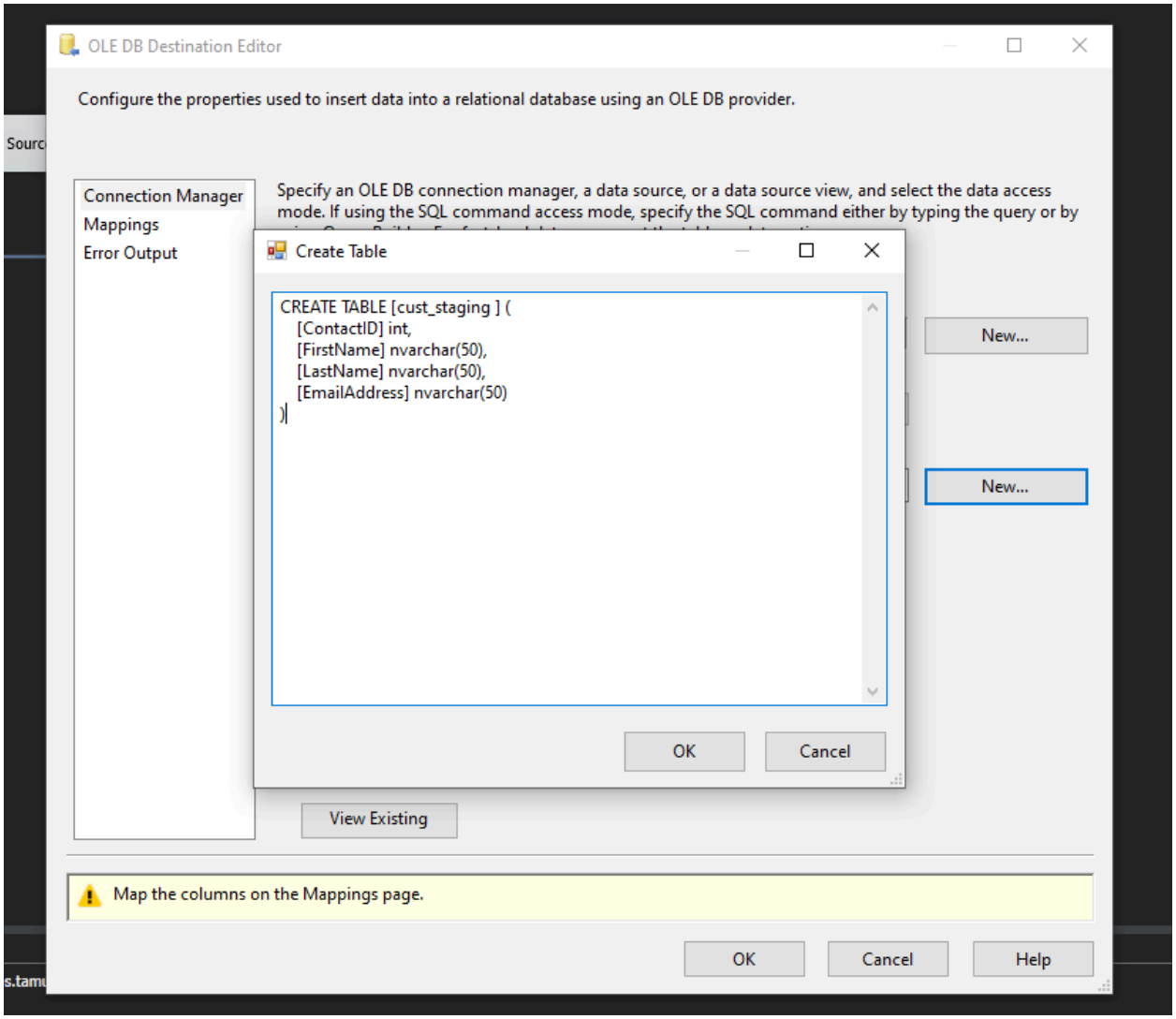


Configuring OLE DB Destination: Made a connection to KowshikBoyalla - staging DB in OLE DB destination



Creating a new table in staging:

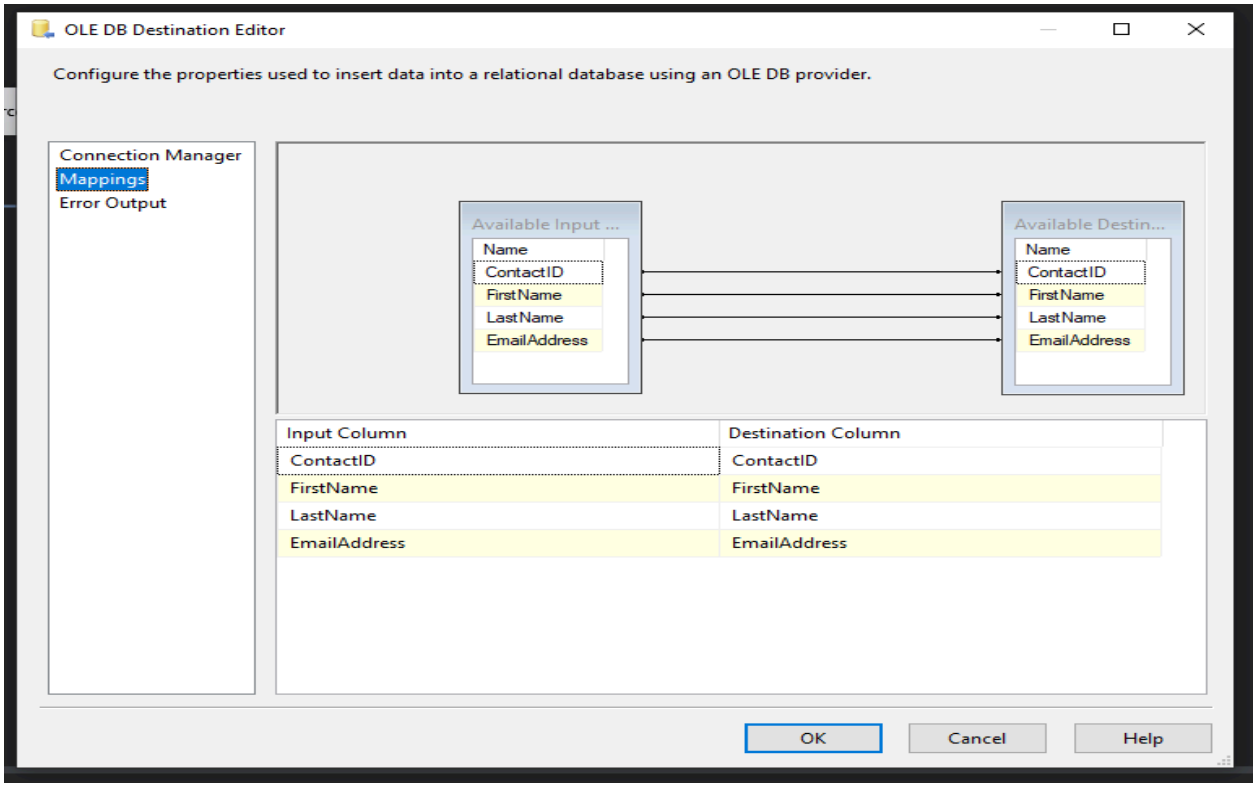




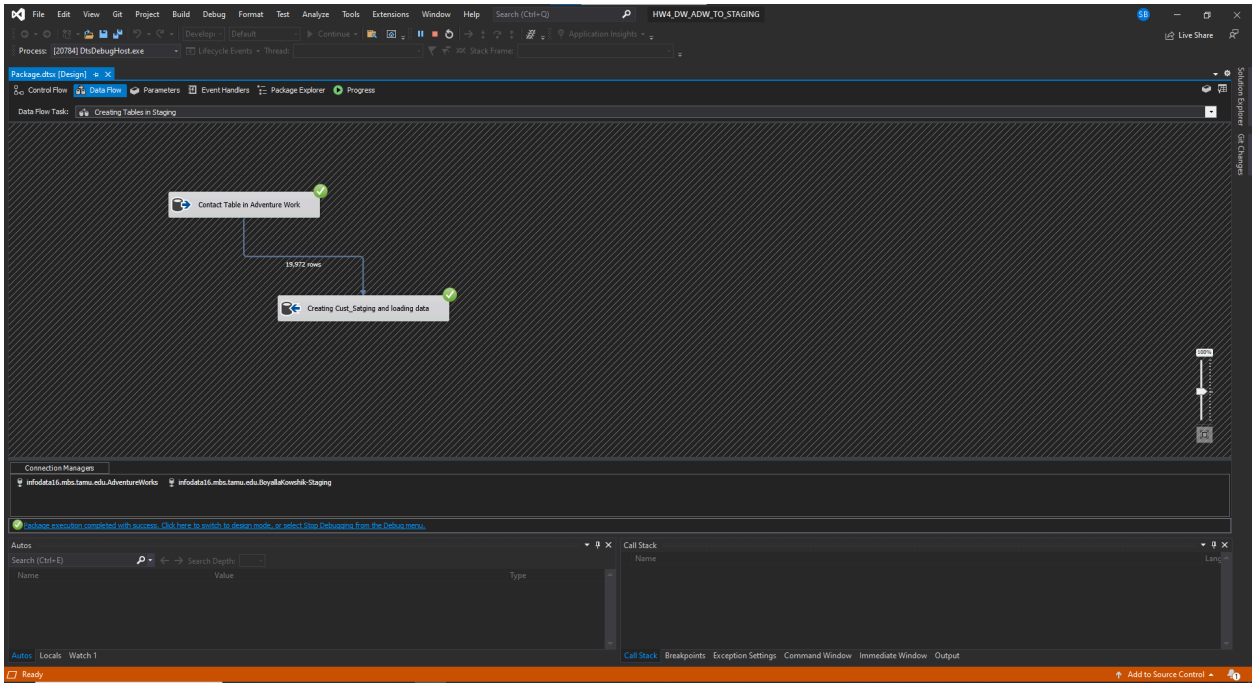
Query:

```
CREATE TABLE [cust_staging ] (
    [ContactID] int,
    [FirstName] nvarchar(50),
    [LastName] nvarchar(50),
    [EmailAddress] nvarchar(50)
)
```

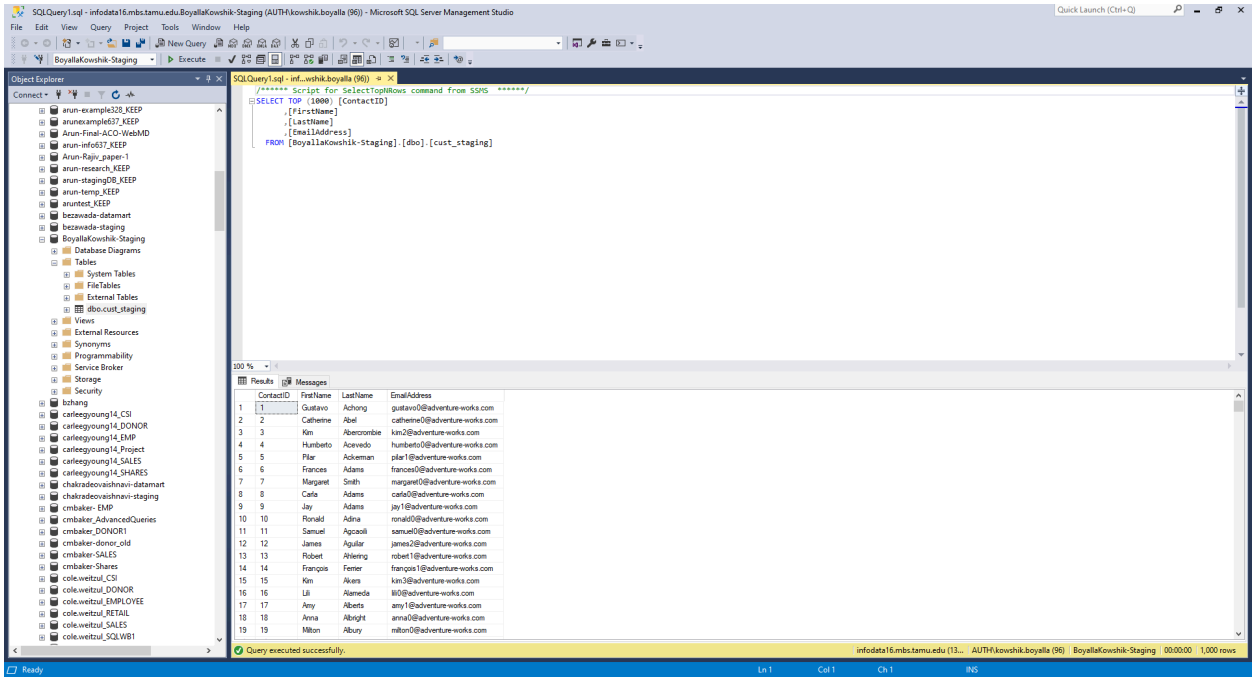
Mapping:



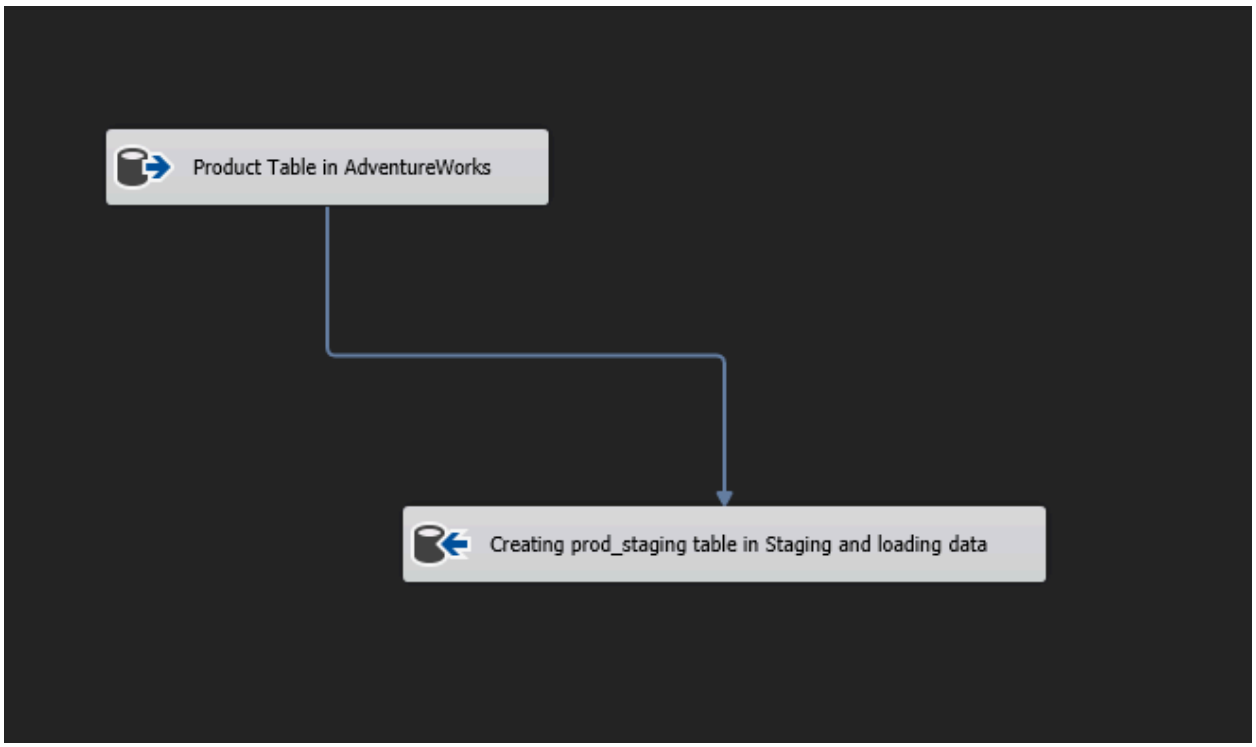
Created **cust_staging table** in staging DB and loaded data into table from **Person.Contact** table of AdventureWorks OLTP database.



Validating Table creation in SSMS:

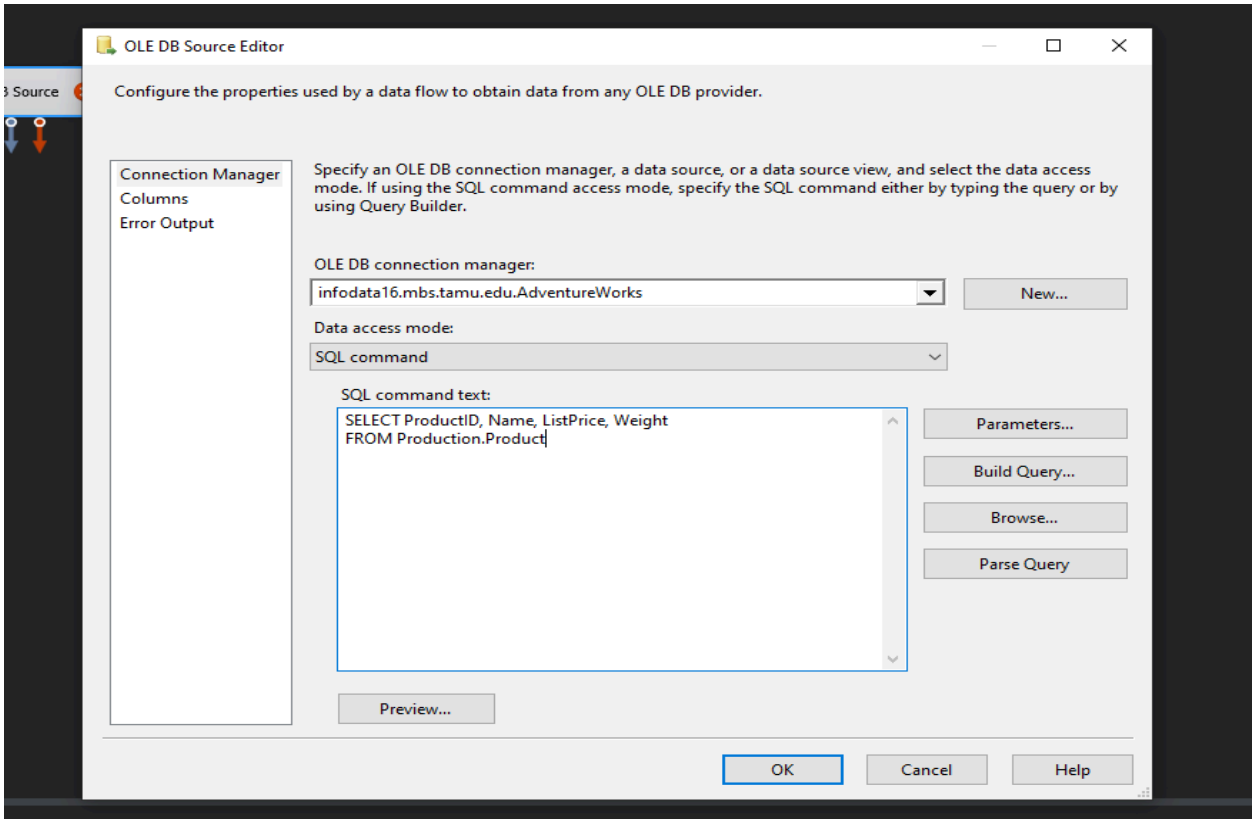


Creating prod_staging table in staging and Loading the data from AdventureWorks OLTP Source:



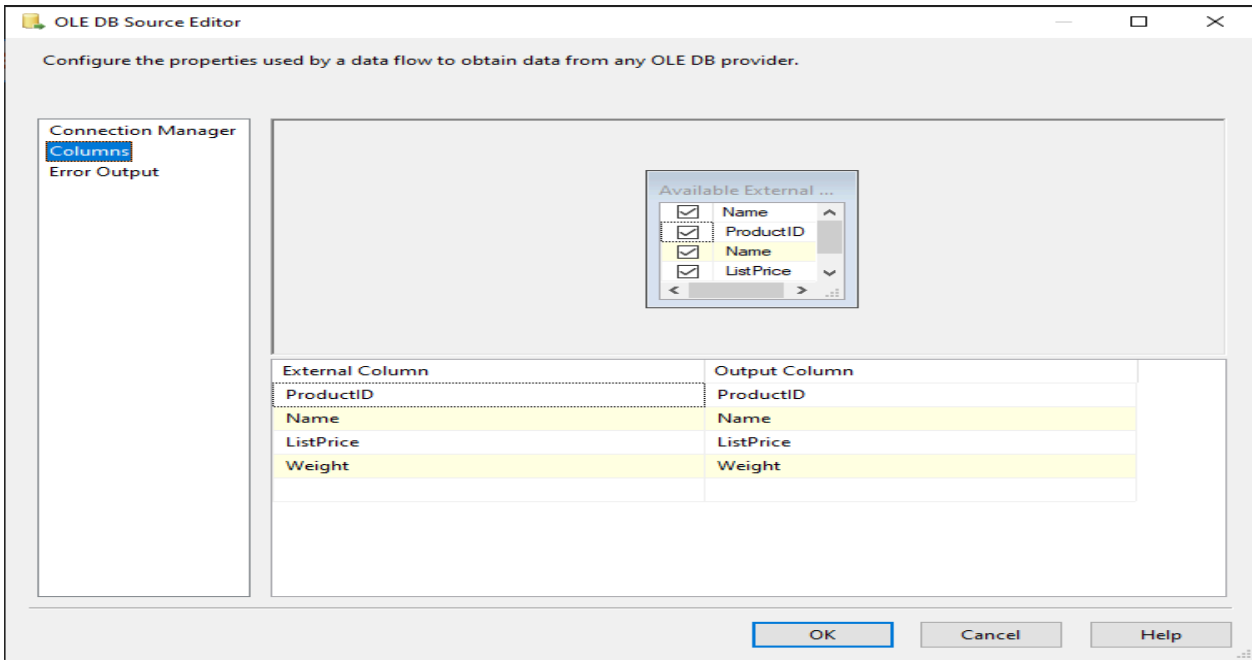
Created a new package and added a data flow task in SSIS. In that task, I added an OLE DB source and OLE DB destination.

Configuring source: Connected to AdventureWorks OLTP database and created a select query to select required columns.



Query:

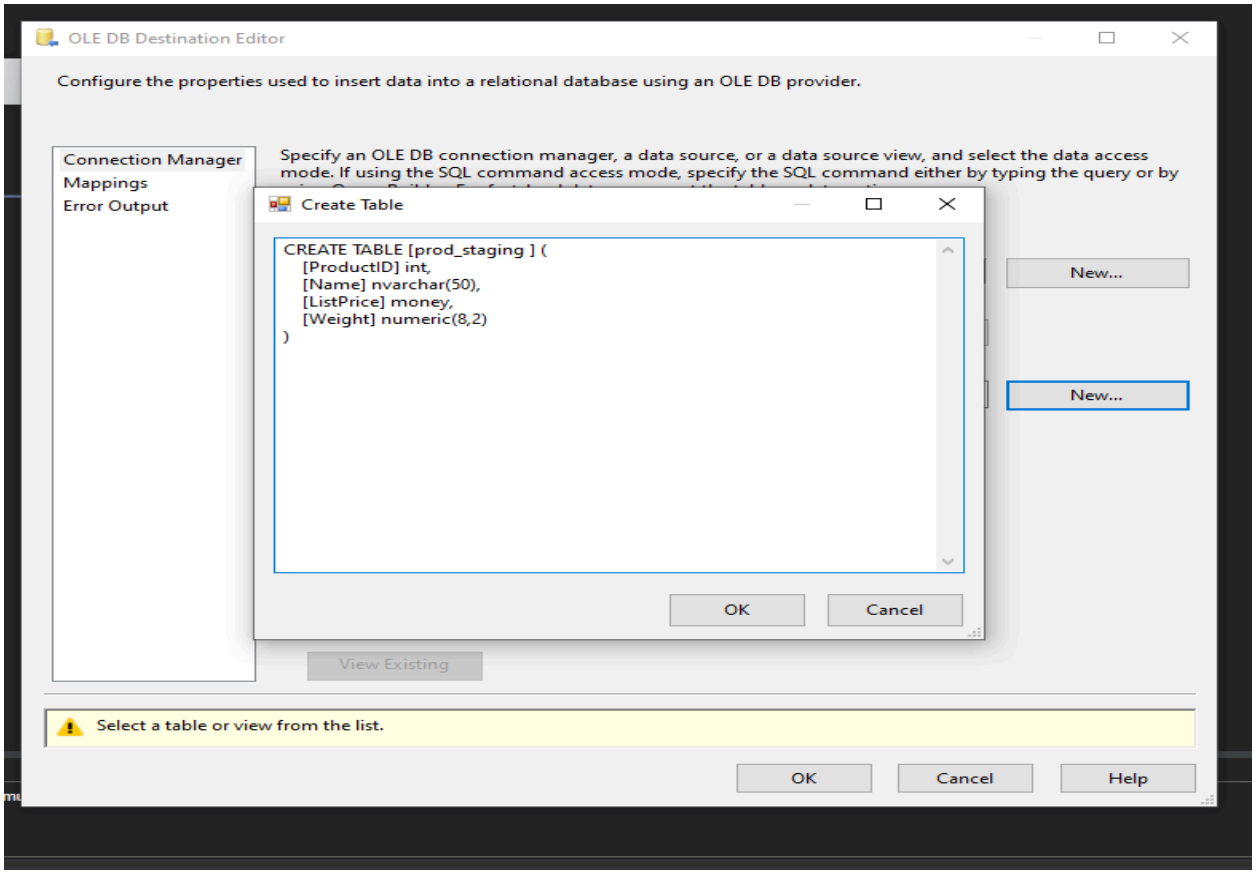
```
SELECT ProductID, Name, ListPrice, Weight
FROM Production.Product
```

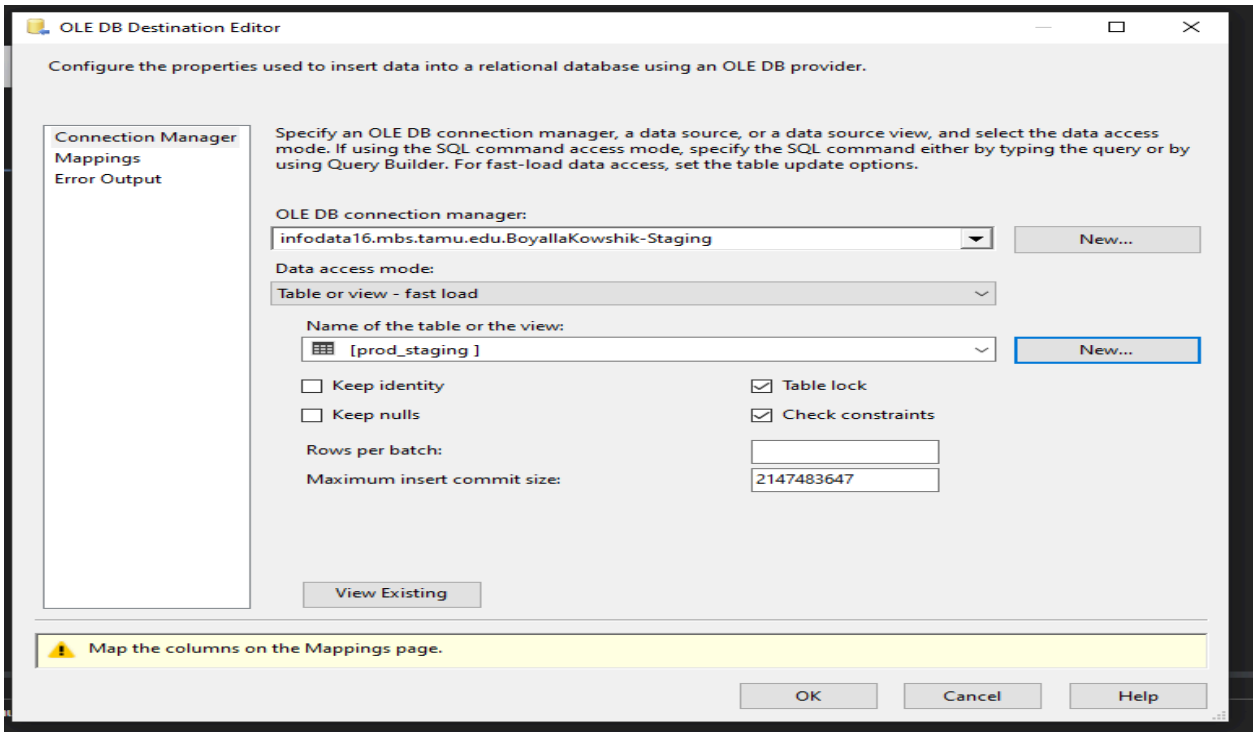


Configuring OLEDB Destination: Made a connection to KowshikBoyalla - staging DB and wrote a new SQL Command to create prod_staging table.

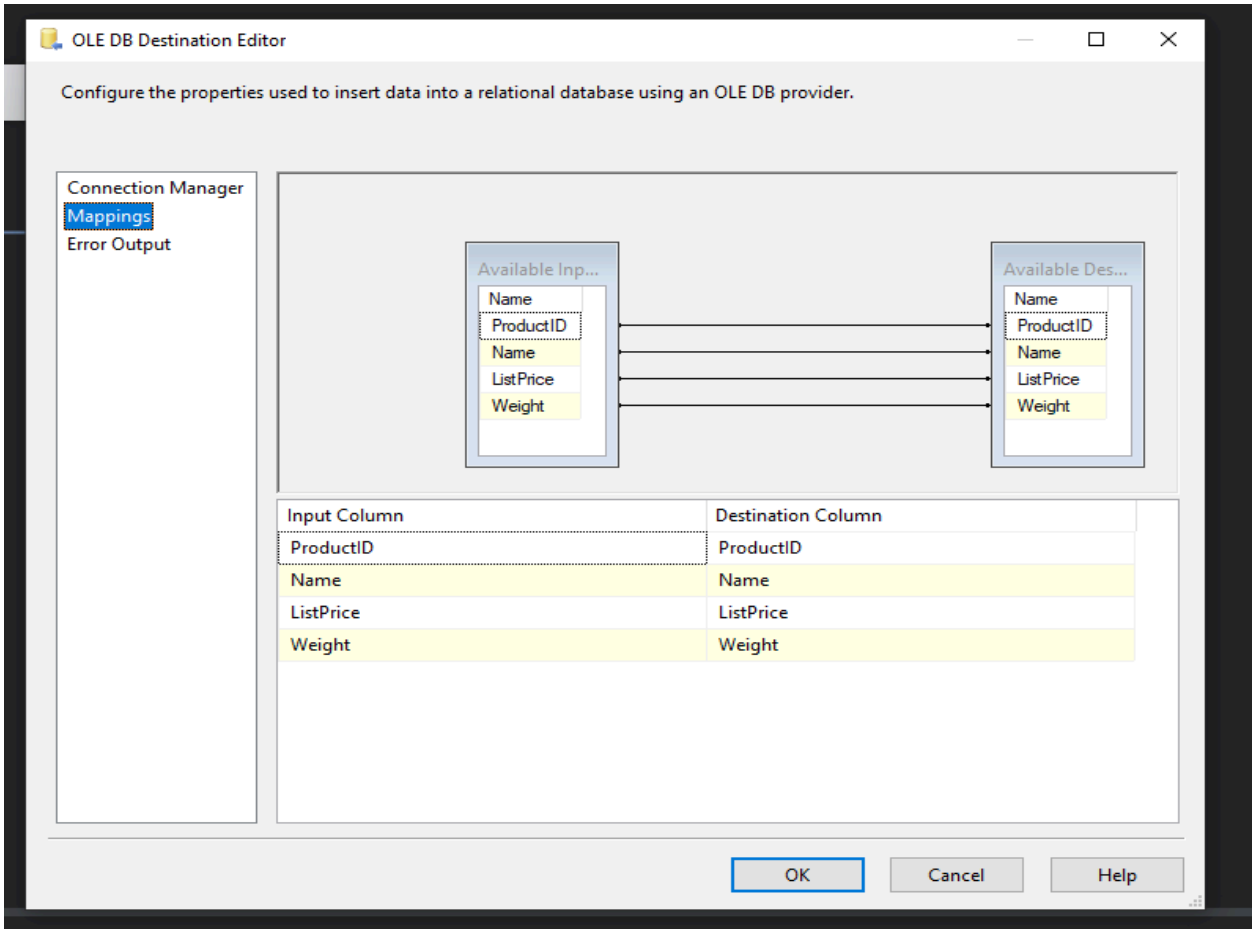
Query:

```
CREATE TABLE [prod_staging] (
    [ProductID] int,
    [Name] nvarchar(50),
    [ListPrice] money,
    [Weight] numeric(8,2)
)
```

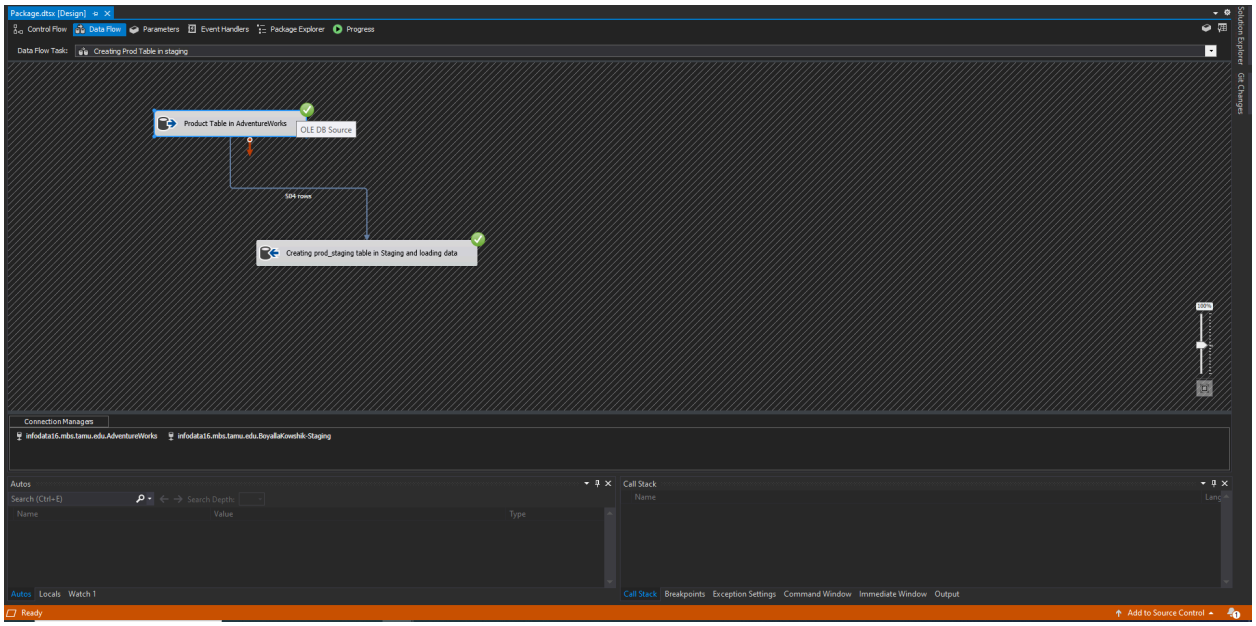

OLE DB Destination Editor
Configure the properties used to insert data into a relational database using an OLE DB provider.
Connection Manager
Mappings
Error Output
Specify an OLE DB connection manager, a data source, or a data source view, and select the data access mode. If using the SQL command access mode, specify the SQL command either by typing the query or by
Create Table
CREATE TABLE [prod_staging] (
[ProductID] int,
[Name] nvarchar(50),
[ListPrice] money,
[Weight] numeric(8,2)
)
OK
Cancel
New...
New...
View Existing
Select a table or view from the list.
OK
Cancel
Help


OLE DB Destination Editor
Configure the properties used to insert data into a relational database using an OLE DB provider.
Connection Manager
Mappings
Error Output
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. For fast-load data access, set the table update options.
OLE DB connection manager:
infodata16.mbs.tamu.edu.BoyallaKowshik-Staging
New...
Data access mode:
Table or view - fast load
Name of the table or the view:
[prod_staging]
New...
Keep identity
Keep nulls
Table lock
Check constraints
Rows per batch:
Maximum insert commit size:
2147483647
View Existing
Map the columns on the Mappings page.
OK
Cancel
Help

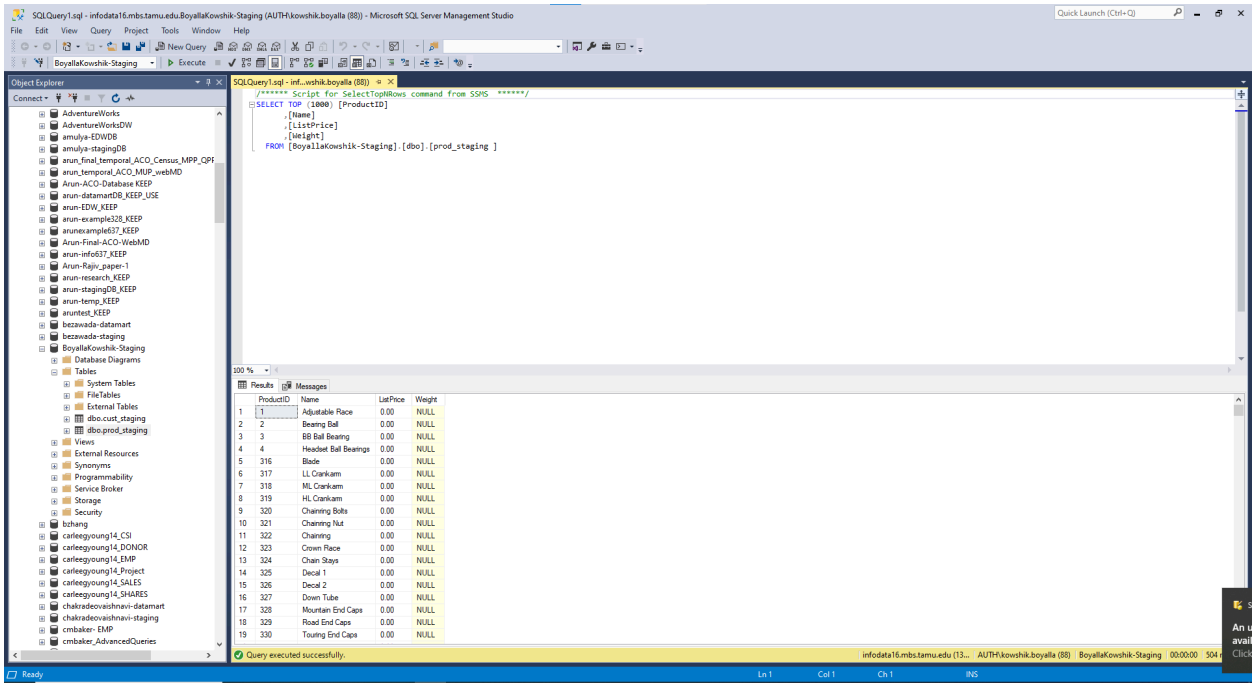
Mapping:



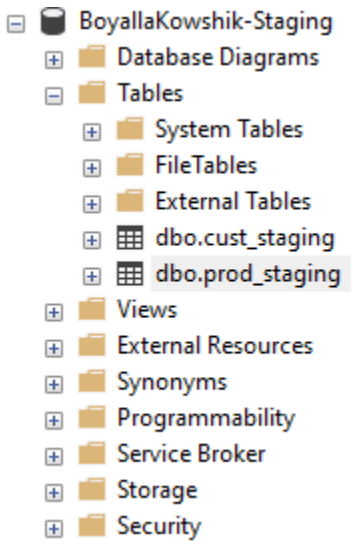
Created table and loaded data into prod_staging table in staging db:



Validating Table in SSMS:

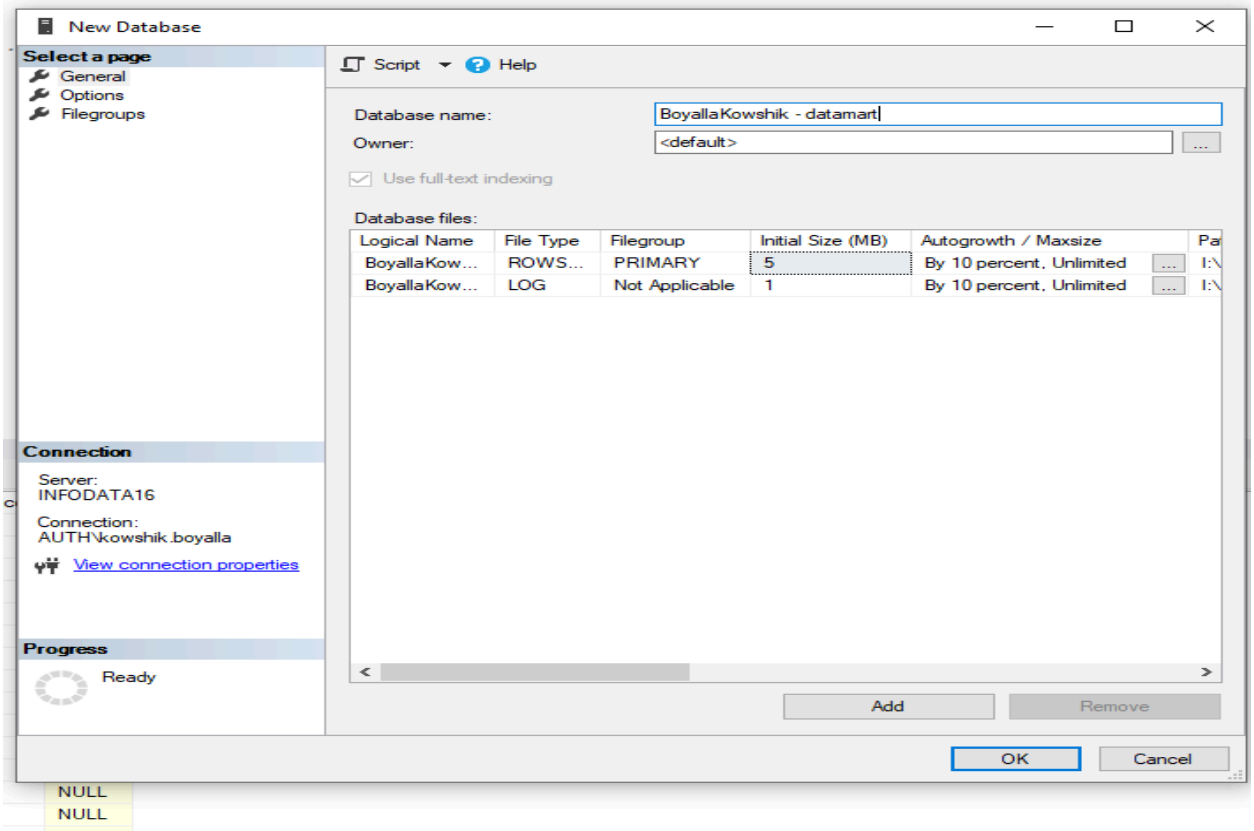


Staging:



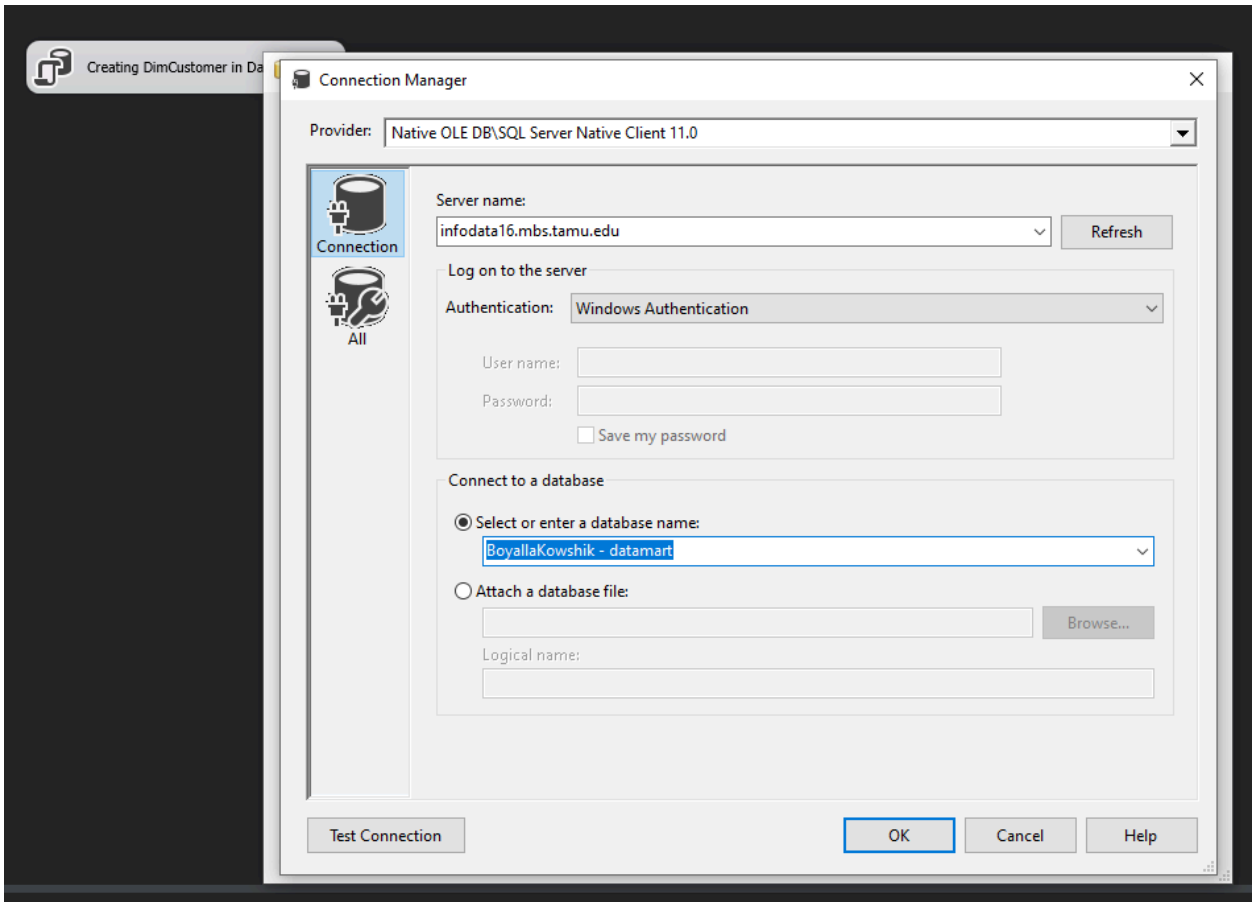
3. Loading data from staging to dimension tables of data mart:

Creating Data Mart:



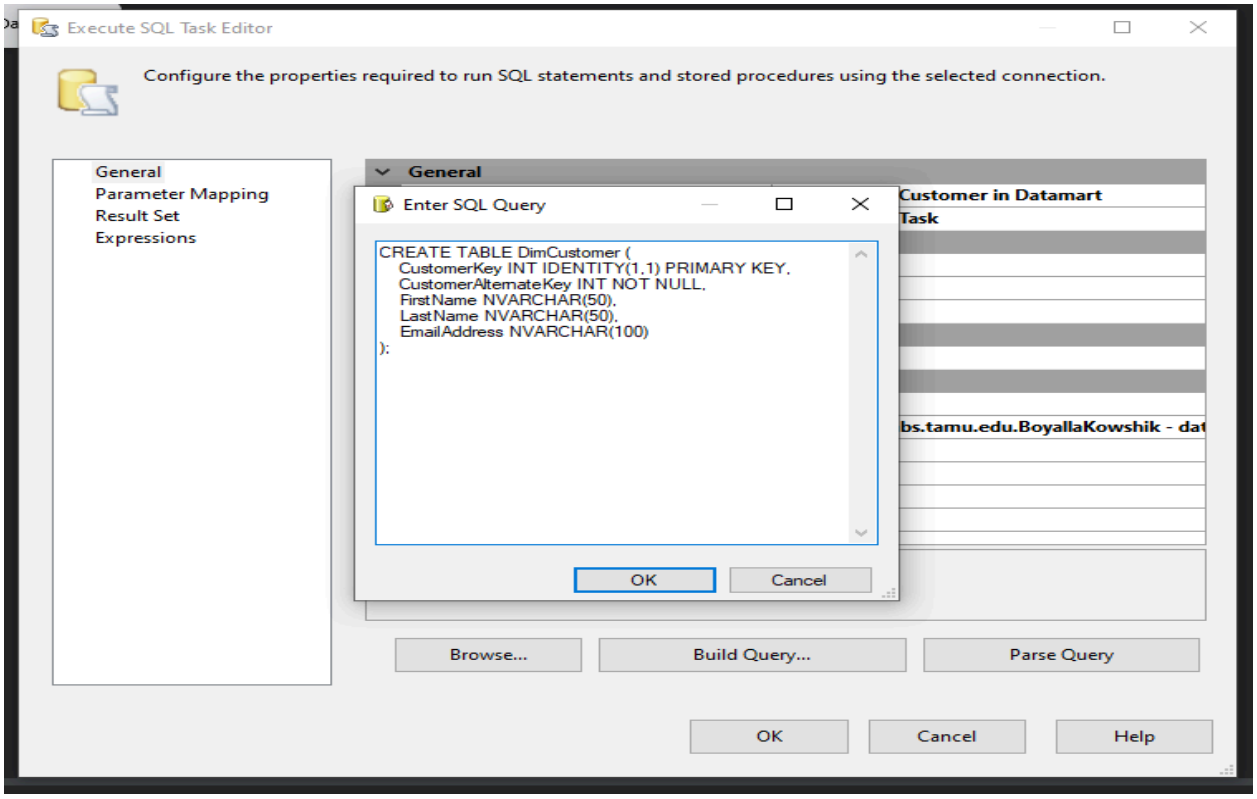
Opened SSIS and created a new package. In that package added 2 new Execute SQL tasks to create **DimCustomer** and **DimProduct** dimension tables in data mart.

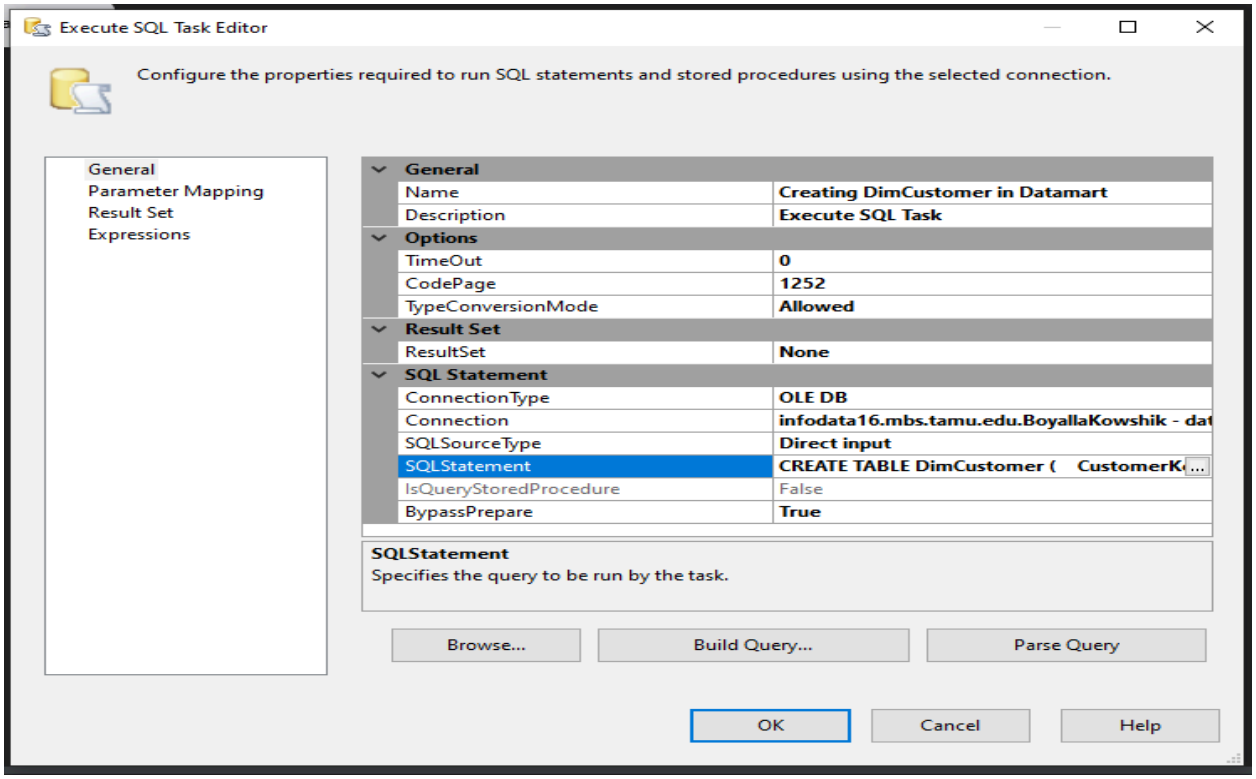
Making a connection to data mart



Create table command: DimCustomer

```
CREATE TABLE DimCustomer (
    CustomerKey INT IDENTITY(1,1) PRIMARY KEY,
    CustomerAlternateKey INT NOT NULL,
    FirstName NVARCHAR(50),
    LastName NVARCHAR(50),
    EmailAddress NVARCHAR(100)
);
```

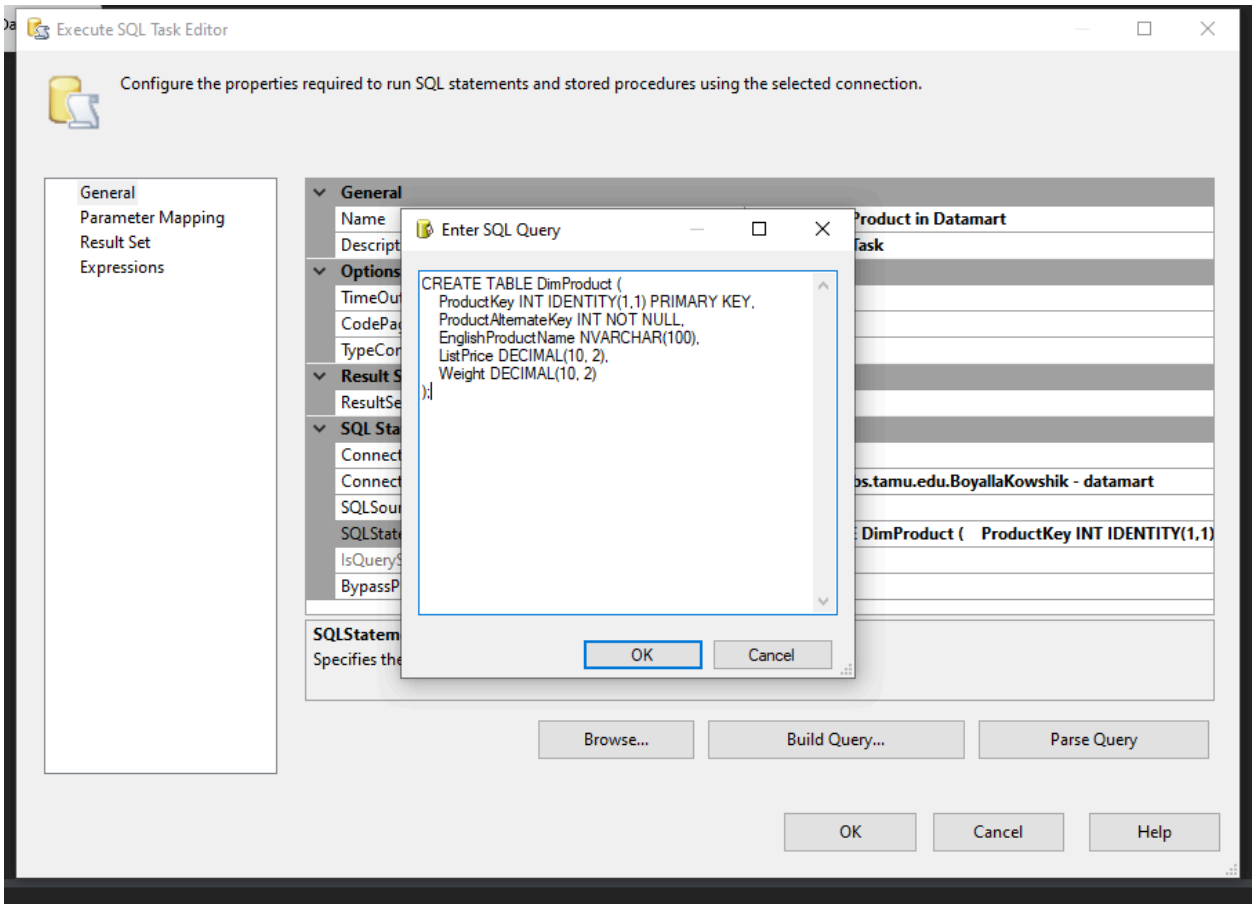

Execute SQL Task Editor
Configure the properties required to run SQL statements and stored procedures using the selected connection.
General
Parameter Mapping
Result Set
Expressions
General
Enter SQL Query
CREATE TABLE DimCustomer (
CustomerKey INT IDENTITY(1,1) PRIMARY KEY,
CustomerAlternateKey INT NOT NULL,
FirstName NVARCHAR(50),
LastName NVARCHAR(50),
EmailAddress NVARCHAR(100)
);
OK
Cancel
Customer in Datamart
Task
bs.tamu.edu.BoyallaKowshik - dat
Browse...
Build Query...
Parse Query
OK
Cancel
Help

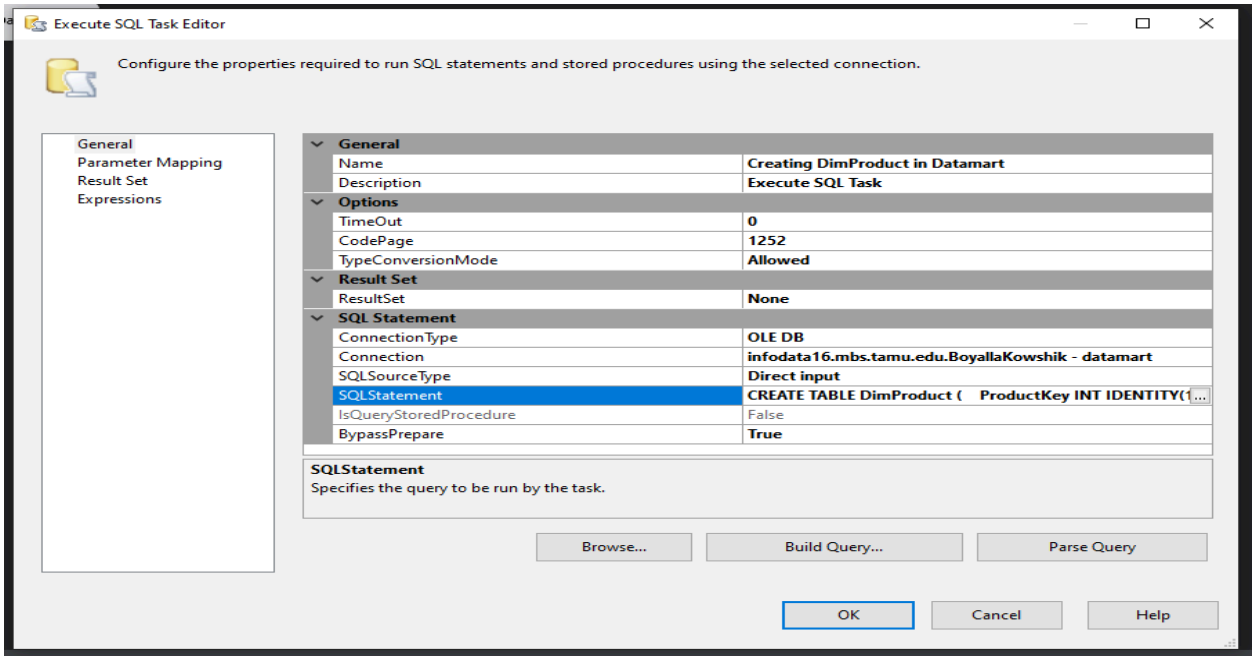

Execute SQL Task Editor
Configure the properties required to run SQL statements and stored procedures using the selected connection.
General
Parameter Mapping
Result Set
Expressions
General
Name
Creating DimCustomer in Datamart
Description
Execute SQL Task
Options
TimeOut
0
CodePage
1252
TypeConversionMode
Allowed
Result Set
ResultSet
None
SQL Statement
ConnectionType
OLE DB
Connection
infodata16.mbs.tamu.edu.BoyallaKowshik - dat
SQLSourceType
Direct input
SQLStatement
CREATE TABLE DimCustomer (CustomerK
IsQueryStoredProcedure
False
BypassPrepare
True
SQLStatement
Specifies the query to be run by the task.
Browse...
Build Query...
Parse Query
OK
Cancel
Help

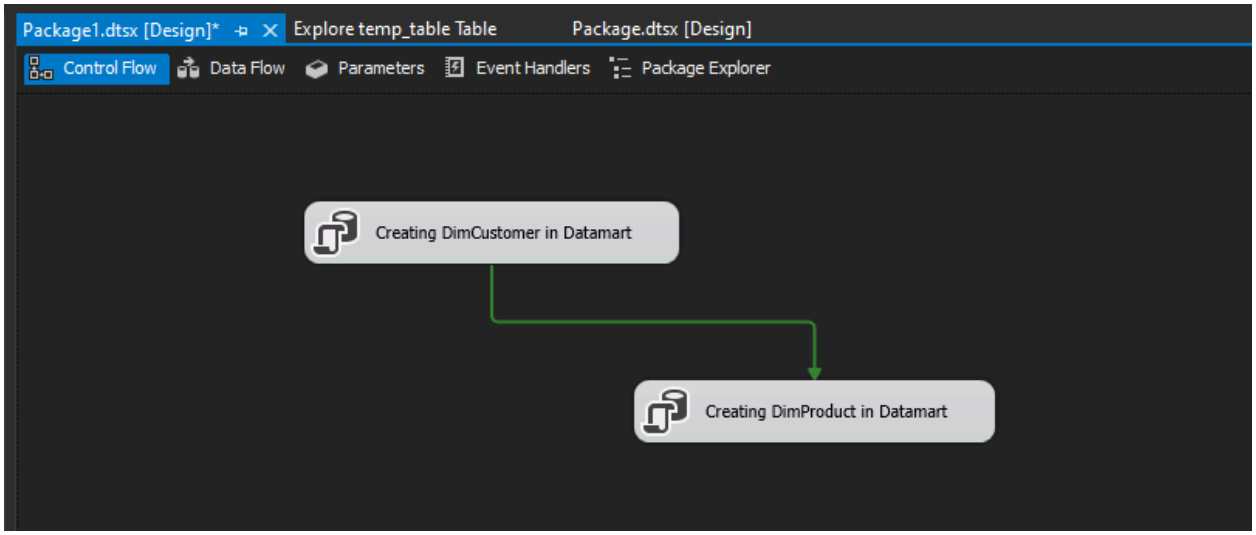
Using Execute SQL component to create DimProduct table in datamart:

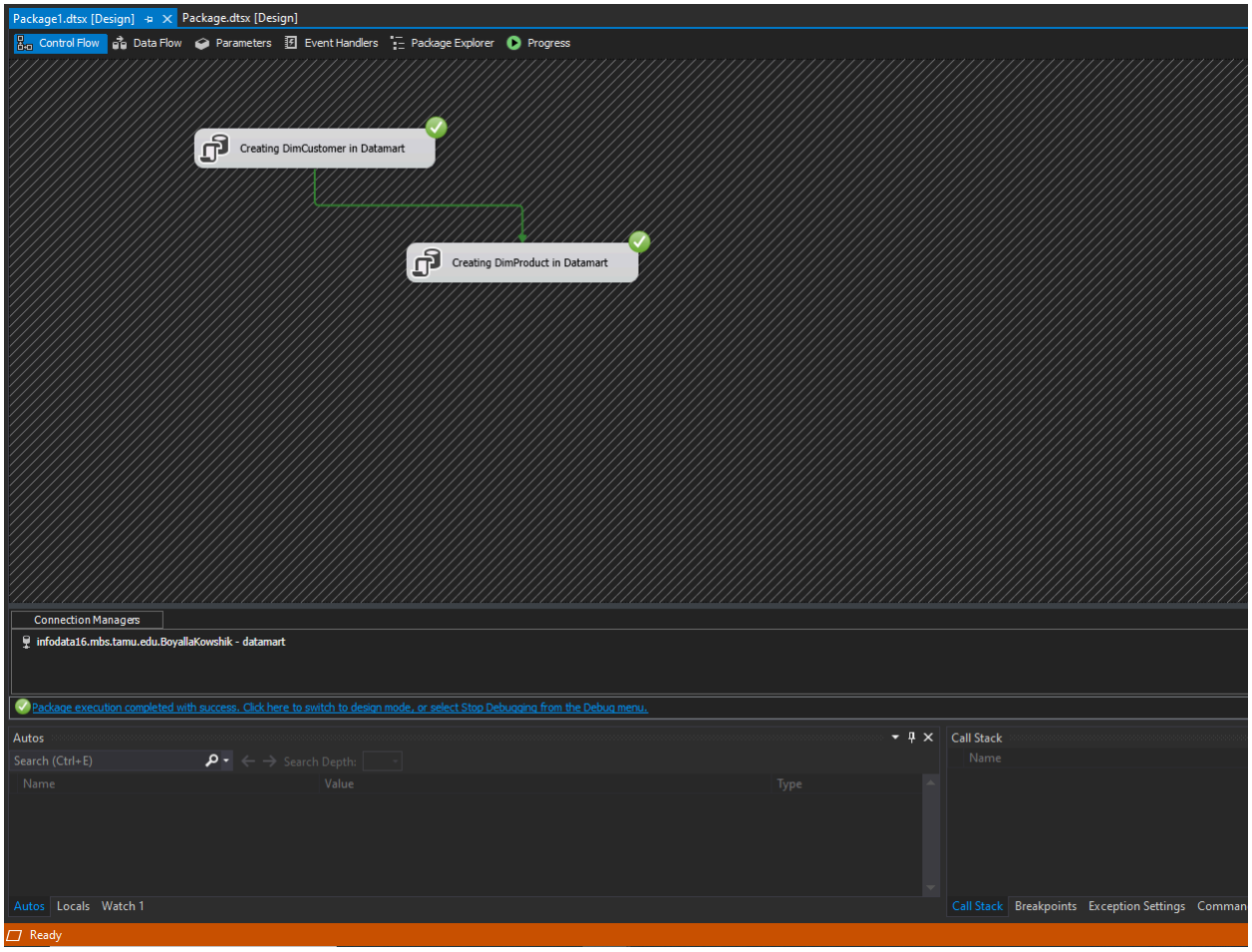
Create Command:

```
CREATE TABLE DimProduct (
    ProductKey INT IDENTITY(1,1) PRIMARY KEY,
    ProductAlternateKey INT NOT NULL,
    EnglishProductName NVARCHAR(100),
    ListPrice DECIMAL(10, 2),
    Weight DECIMAL(10, 2)
);
```

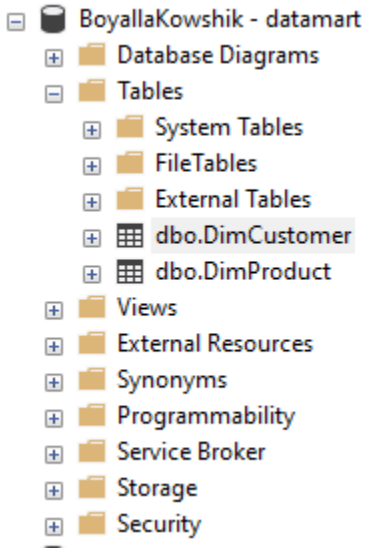


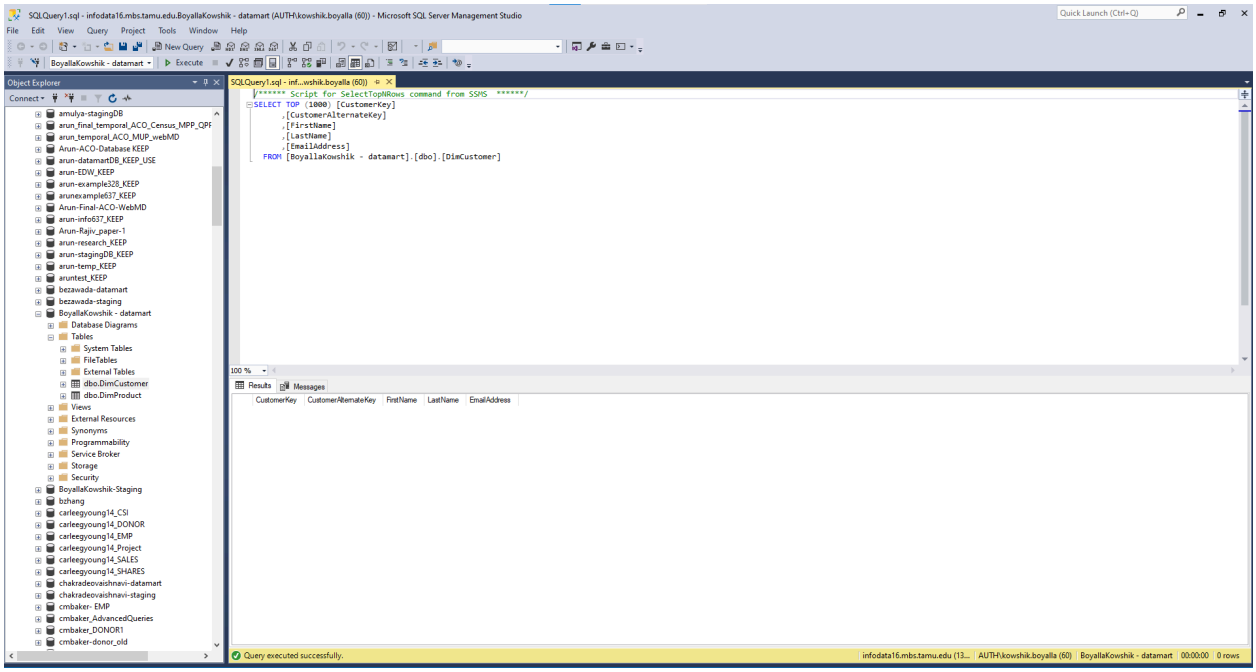

Execute SQL Task Editor
Configure the properties required to run SQL statements and stored procedures using the selected connection.
General
Parameter Mapping
Result Set
Expressions
General
Name
Creating DimProduct in Datamart
Description
Execute SQL Task
Options
TimeOut
0
CodePage
1252
TypeConversionMode
Allowed
Result Set
ResultSet
None
SQL Statement
ConnectionType
OLE DB
Connection
infodata16.mbs.tamu.edu.BoyallaKowshik - datamart
SQLSourceType
Direct input
SQLStatement
CREATE TABLE DimProduct (ProductKey INT IDENTITY(1
IsQueryStoredProcedure
False
BypassPrepare
True
SQLStatement
Specifies the query to be run by the task.
Browse...
Build Query...
Parse Query
OK
Cancel
Help

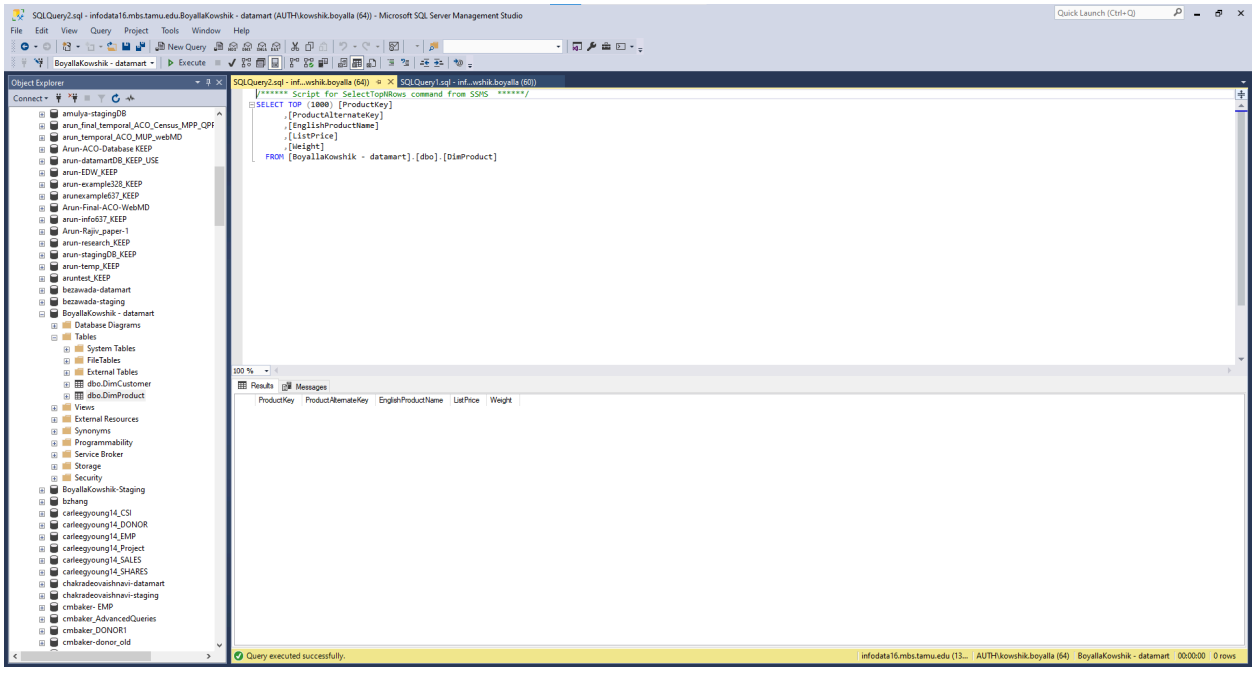

Package1.dtsx [Design]*
Explore temp_table Table
Package.dtsx [Design]
Control Flow
Data Flow
Parameters
Event Handlers
Package Explorer
Creating DimCustomer in Datamart
Creating DimProduct in Datamart



Validating in SSMS:

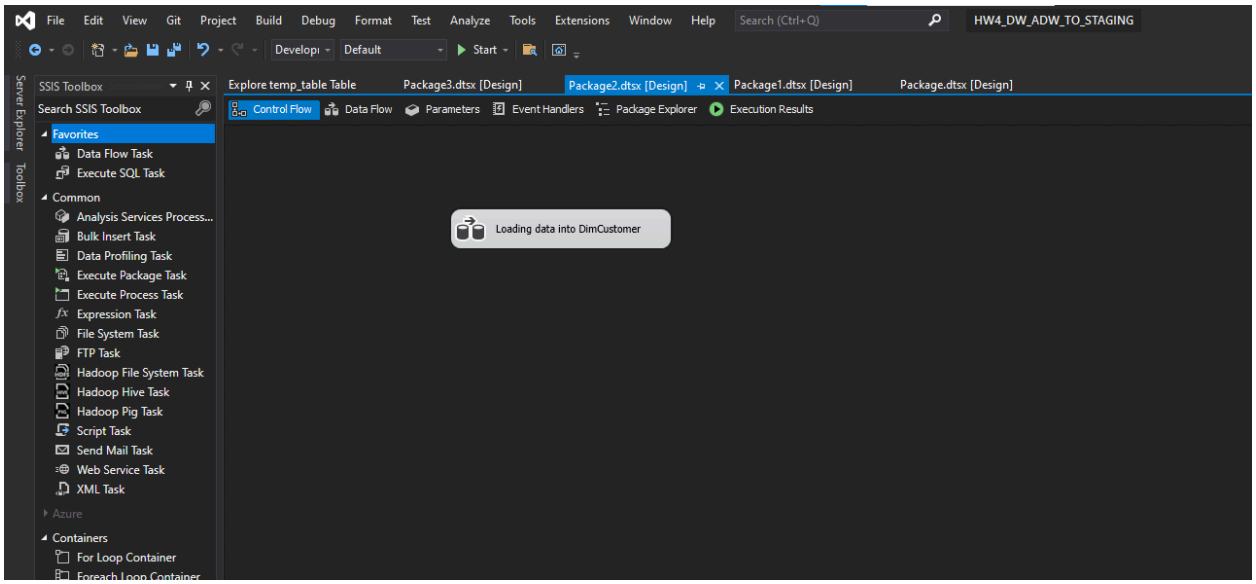


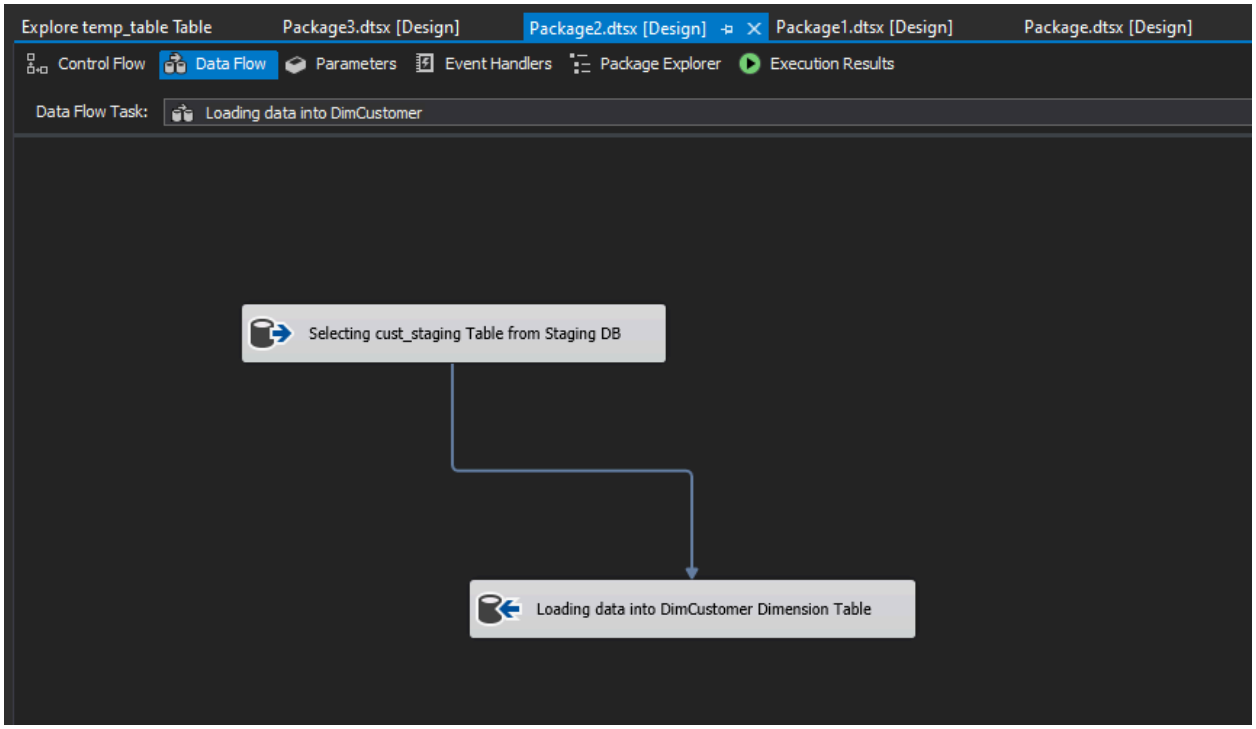

SQLQuery1.sql - infodata16.mbs.tamu.edu.BoyallaKowshik - datamart (AUTH\kowshik.boyalla (60)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query
Execute
BoyallaKowshik - datamart
Object Explorer
Connect
amulya-stagingDB
arun_final_temporal_ACO_Census_MPP_QPF
arun_temporal_ACO_MUP_webMD
Arun-ACO-Database KEEP
arun-datamartDB_KEEP_USE
arun-EDW_KEEP
arun-example328_KEEP
arunexample637_KEEP
Arun-Final-ACO-WebMD
arun-info637_KEEP
Arun-Rajiv_paper-1
arun-research_KEEP
arun-stagingDB_KEEP
arun-temp_KEEP
aruntest_KEEP
bezawada-datamart
bezawada-staging
BoyallaKowshik - datamart
Database Diagrams
Tables
System Tables
FileTables
External Tables
dbo.DimCustomer
dbo.DimProduct
Views
External Resources
Synonyms
Programmability
Service Broker
Storage
Security
BoyallaKowshik-Staging
bzhang
carleegyoung14_CSI
carleegyoung14_DONOR
carleegyoung14_EMP
carleegyoung14_Project
carleegyoung14_SALES
carleegyoung14_SHARES
chakradeovaishnavi-datamart
chakradeovaishnavi-staging
cmbaker- EMP
cmbaker_AdvancedQueries
cmbaker_DONOR1
cmbaker-donor_old
SQLQuery1.sql - inf...wshik.boyalla (60))
/****** Script for SelectTopNRows command from SSMS ******/
SELECT TOP (1000) [CustomerKey]
,[CustomerAlternateKey]
,[FirstName]
,[LastName]
,[EmailAddress]
FROM [BoyallaKowshik - datamart].[dbo].[DimCustomer]
100 %
Results
Messages
CustomerKey
CustomerAlternateKey
FirstName
LastName
EmailAddress
Query executed successfully.
infodata16.mbs.tamu.edu (13...
AUTH\kowshik.boyalla (60)
BoyallaKowshik - datamart
00:00:00
0 rows


SQLQuery2.sql - infodata16.mbs.tamu.edu.BoyallaKowshik - datamart (AUTH\kowshik.boyalla (64)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query
Execute
BoyallaKowshik - datamart
Object Explorer
Connect
amulya-stagingDB
arun_final_temporal_ACO_Census_MPP_QPF
arun_temporal_ACO_MUP_webMD
Arun-ACO-Database KEEP
arun-datamartDB_KEEP_USE
arun-EDW_KEEP
arun-example328_KEEP
arunexample637_KEEP
Arun-Final-ACO-WebMD
arun-info637_KEEP
Arun-Rajiv_paper-1
arun-research_KEEP
arun-stagingDB_KEEP
arun-temp_KEEP
aruntest_KEEP
bezawada-datamart
bezawada-staging
BoyallaKowshik - datamart
Database Diagrams
Tables
System Tables
FileTables
External Tables
dbo.DimCustomer
dbo.DimProduct
Views
External Resources
Synonyms
Programmability
Service Broker
Storage
Security
BoyallaKowshik-Staging
bzhang
carleegyoung14_CSI
carleegyoung14_DONOR
carleegyoung14_EMP
carleegyoung14_Project
carleegyoung14_SALES
carleegyoung14_SHARES
chakradeovaishnavi-datamart
chakradeovaishnavi-staging
cmbaker- EMP
cmbaker_AdvancedQueries
cmbaker_DONOR1
cmbaker-donor_old
SQLQuery2.sql - inf...wshik.boyalla (64))
SQLQuery1.sql - inf...wshik.boyalla (60))
/****** Script for SelectTopNRows command from SSMS ******/
SELECT TOP (1000) [ProductKey]
,[ProductAlternateKey]
,[EnglishProductName]
,[ListPrice]
,[Weight]
FROM [BoyallaKowshik - datamart].[dbo].[DimProduct]
100 %
Results
Messages
ProductKey
ProductAlternateKey
EnglishProductName
ListPrice
Weight
Query executed successfully.
infodata16.mbs.tamu.edu (13...
AUTH\kowshik.boyalla (64)
BoyallaKowshik - datamart
00:00:00
0 rows

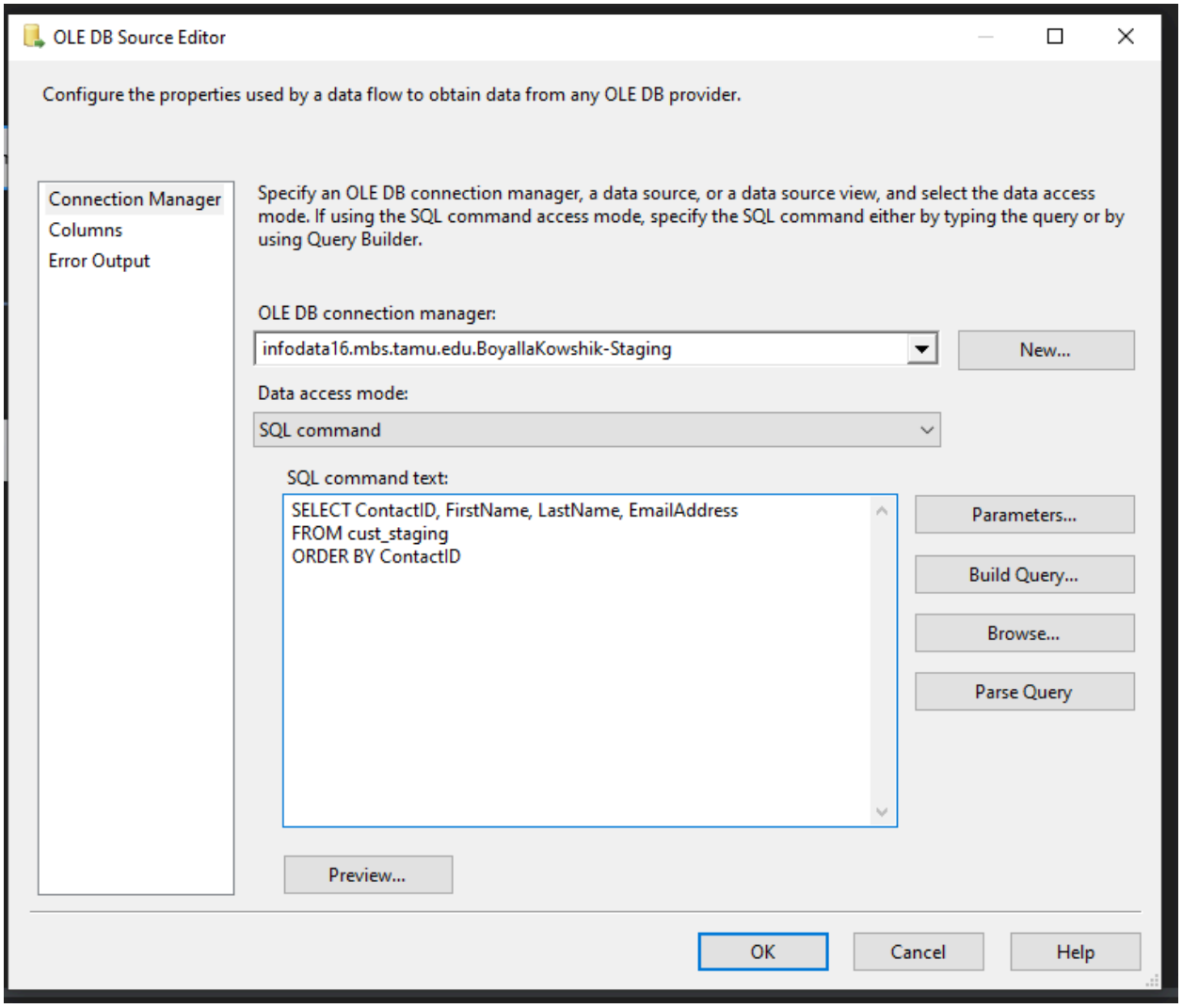
Loading data into Dimension Tables:

1. **Loading into DimCustomer:** Opened SSIS, added a new Data flow task. Inside the dataflow task added OLE DB Source and OLE DB Destination.





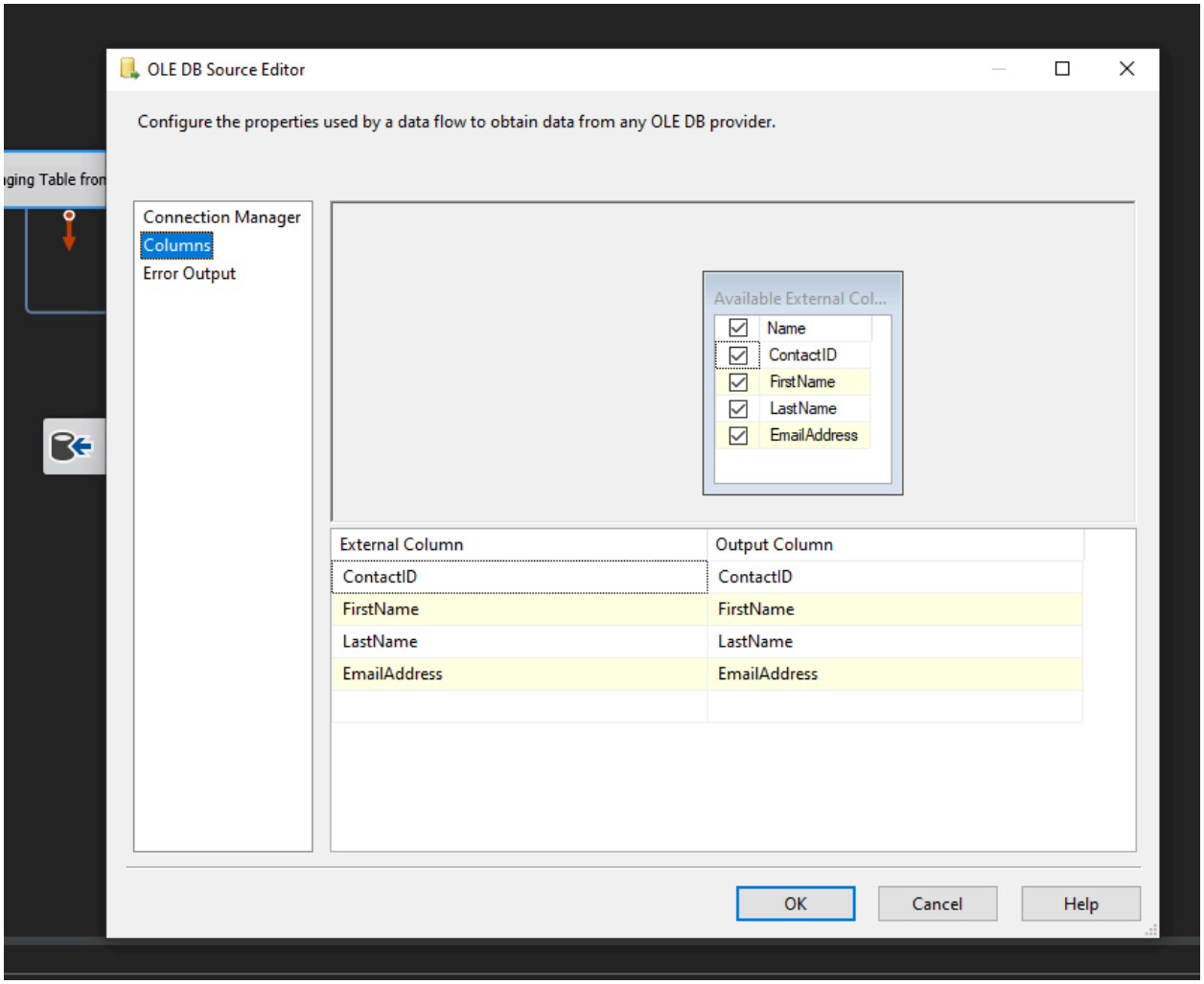
Configuring Source: Selected BoyallaKowshik-staging db in source and then wrote a SELECT query to select records of cust_staging table of stagingDB. I have used this query to fetch records **ordered by Contact ID** which improves the Organization of DimCustomer table after loading the data.



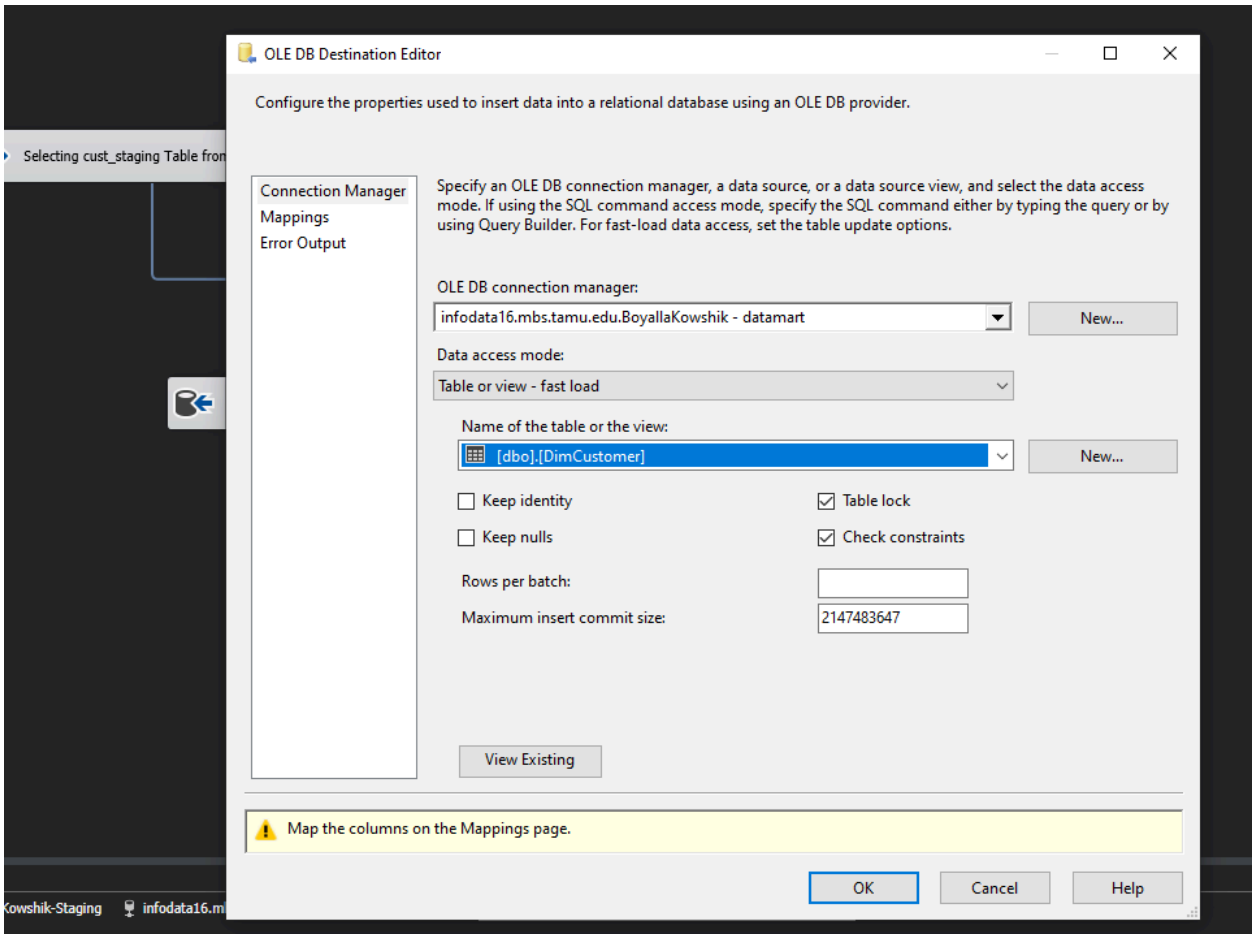
Query:

SELECT ContactID, FirstName, LastName, EmailAddress
FROM cust_staging
ORDER BY ContactID

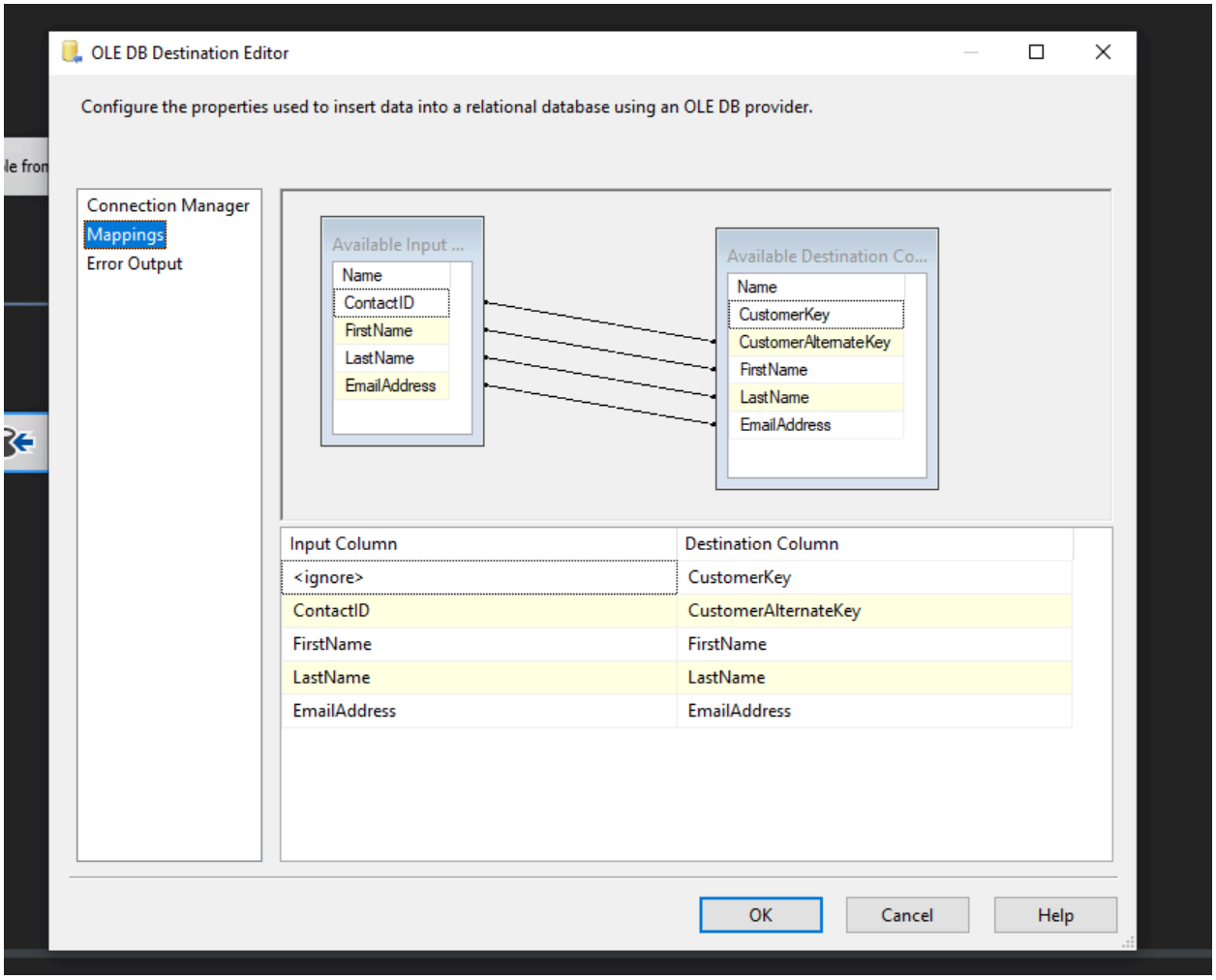
Columns Selected:



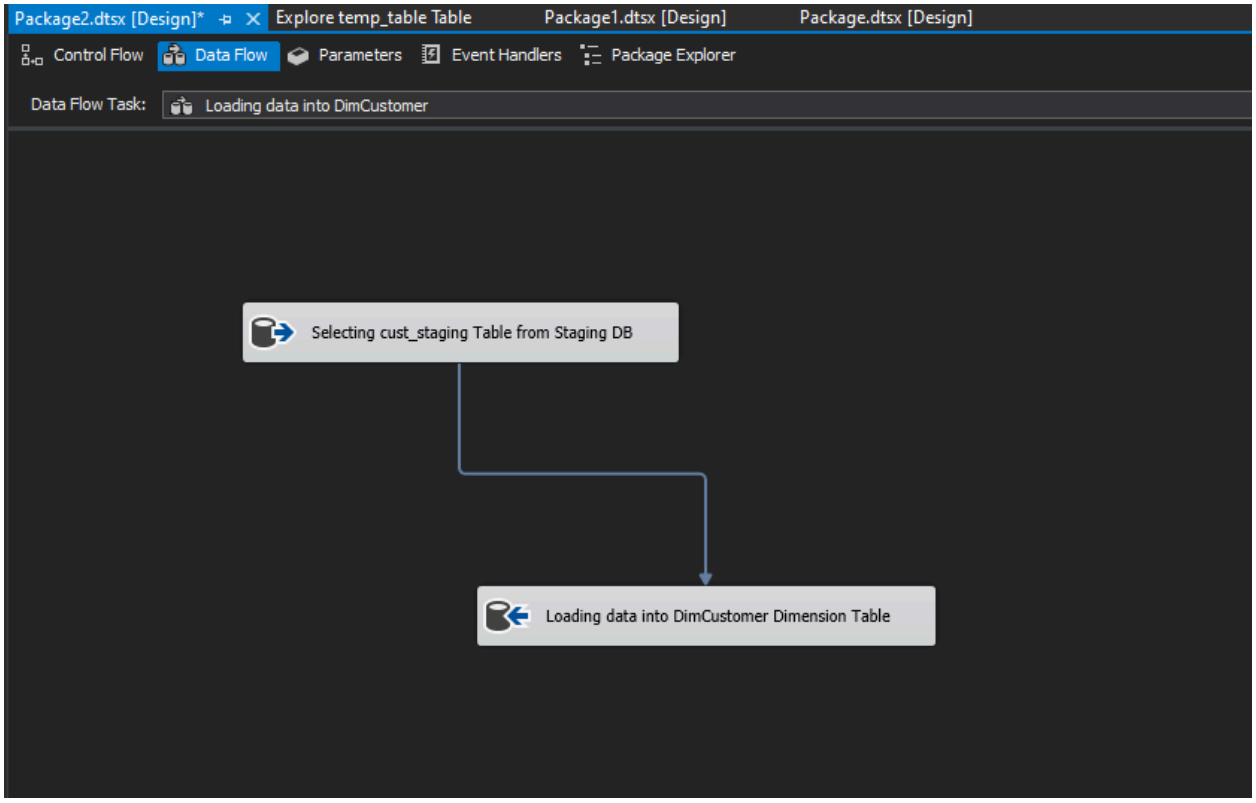
Configuring OLE DB Destination: Made a connection to KowshikBoyalla - datamart and selected DimCustomer Dimension Table.



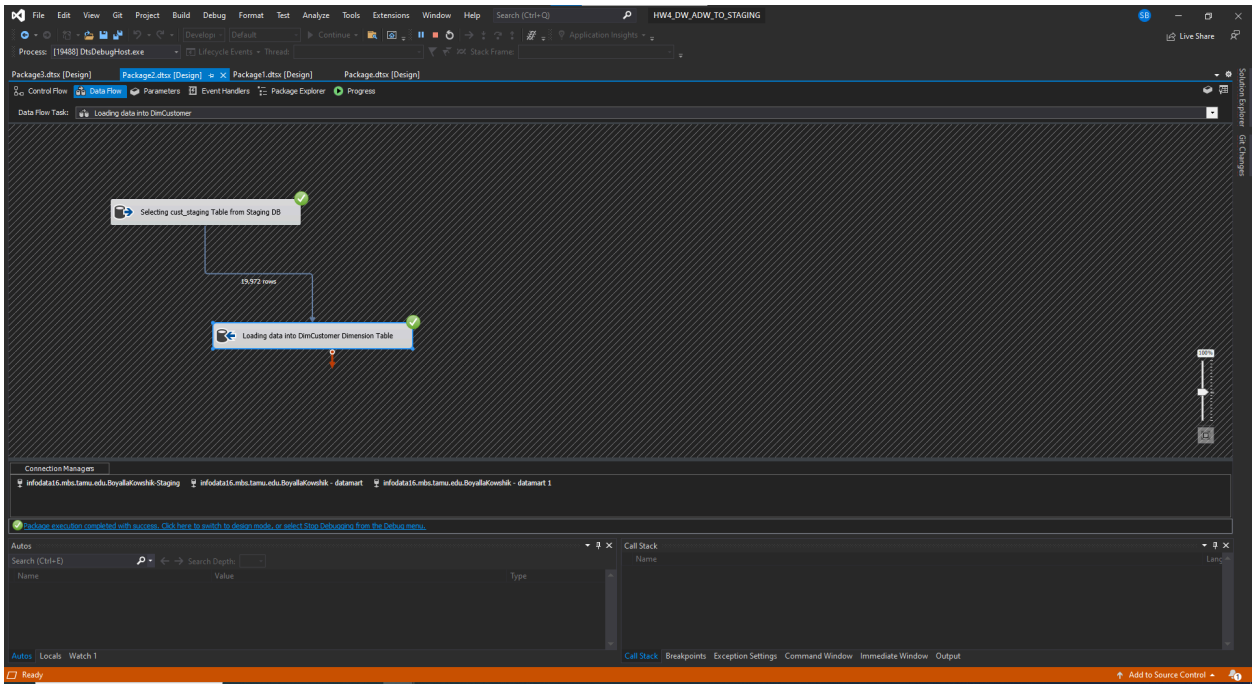
Mapping:



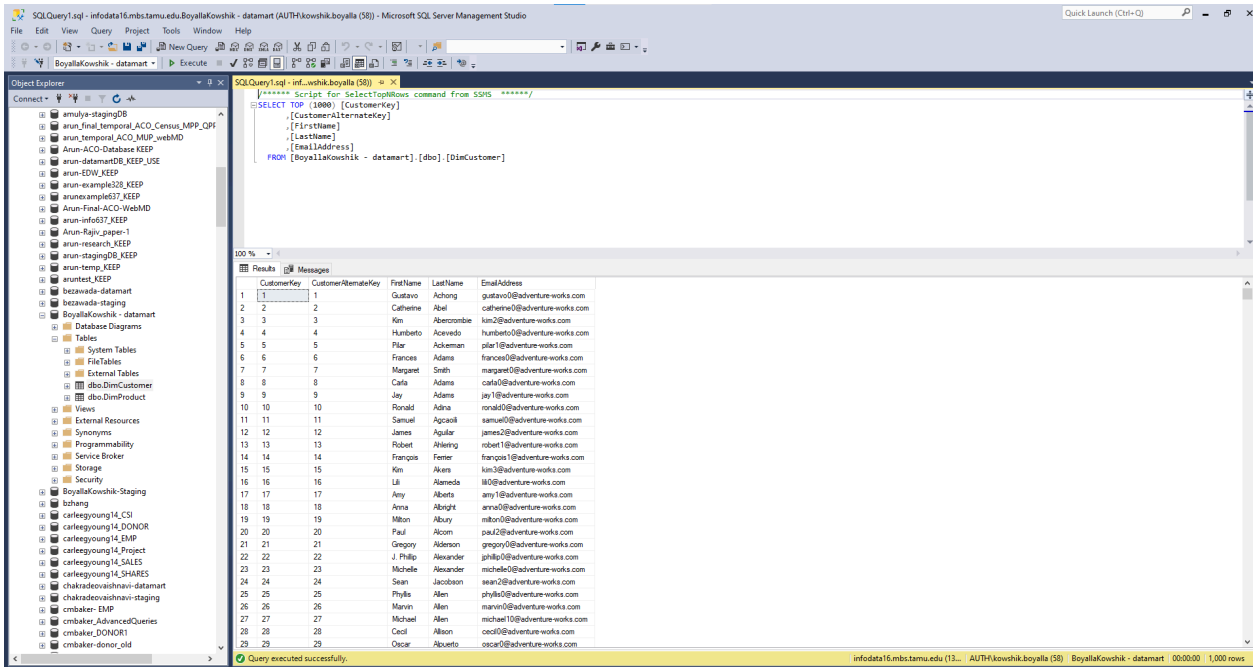
Haven’t selected anything for CustomerKey as it is a surrogate key (Auto Increment).



Loaded data into dimension table successfully:

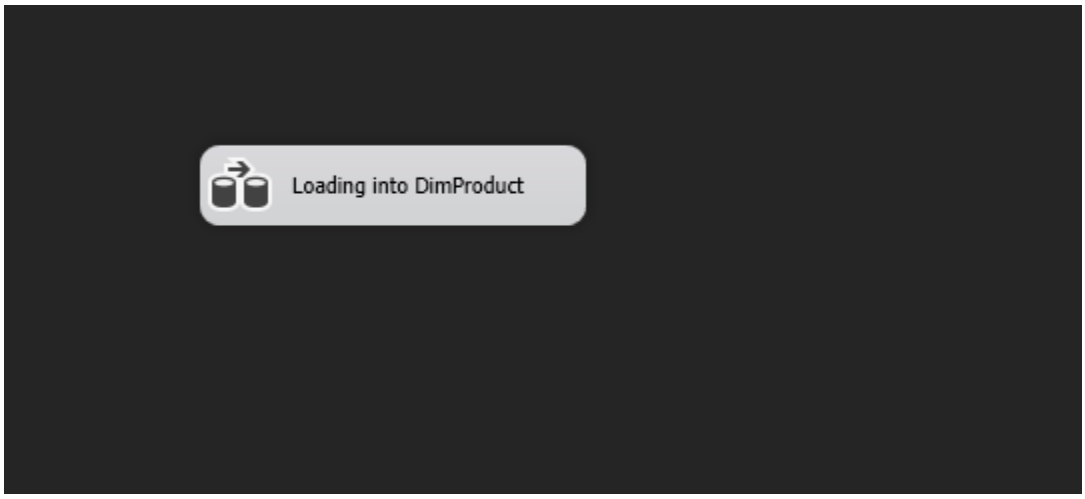


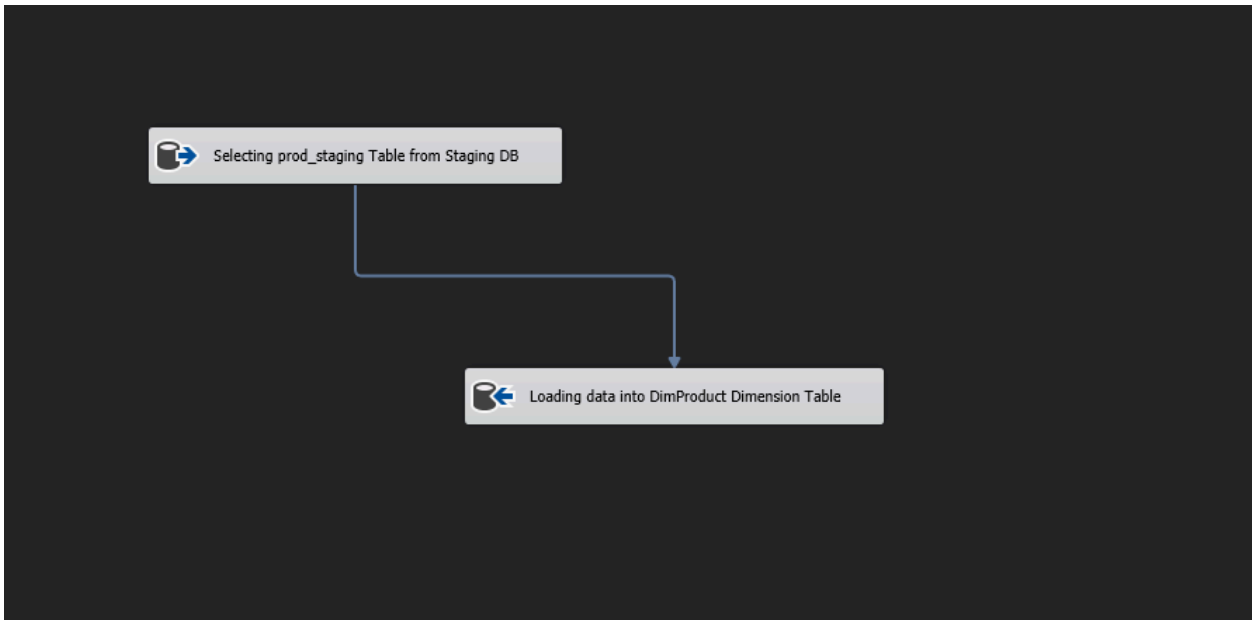
Validating DimCustomer in SSMS:



2. Loading into DimProduct Dimension table

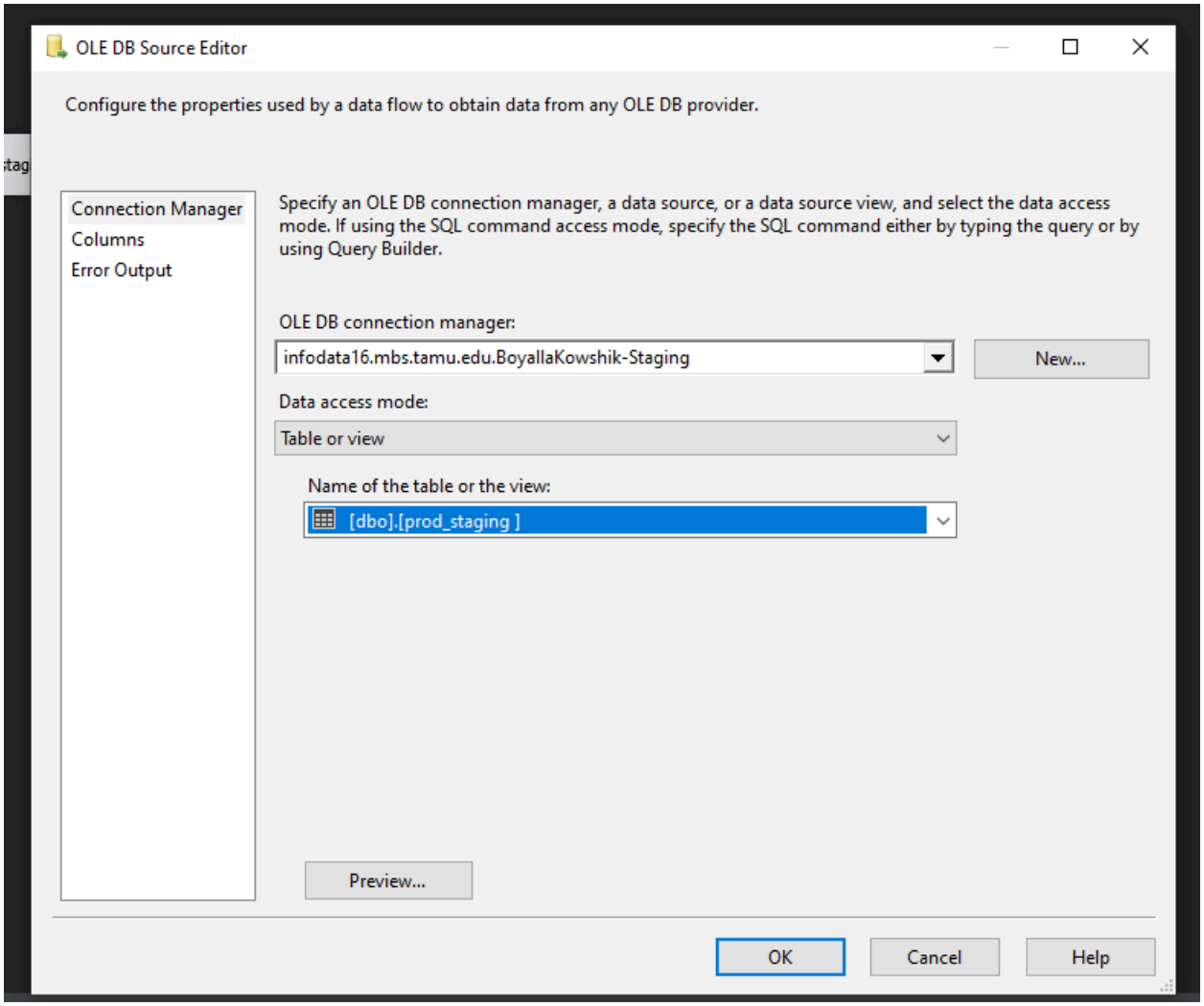
Opened SSIS and created a new Data Flow task. Selected OLE DB Source and OLEDB Destination.



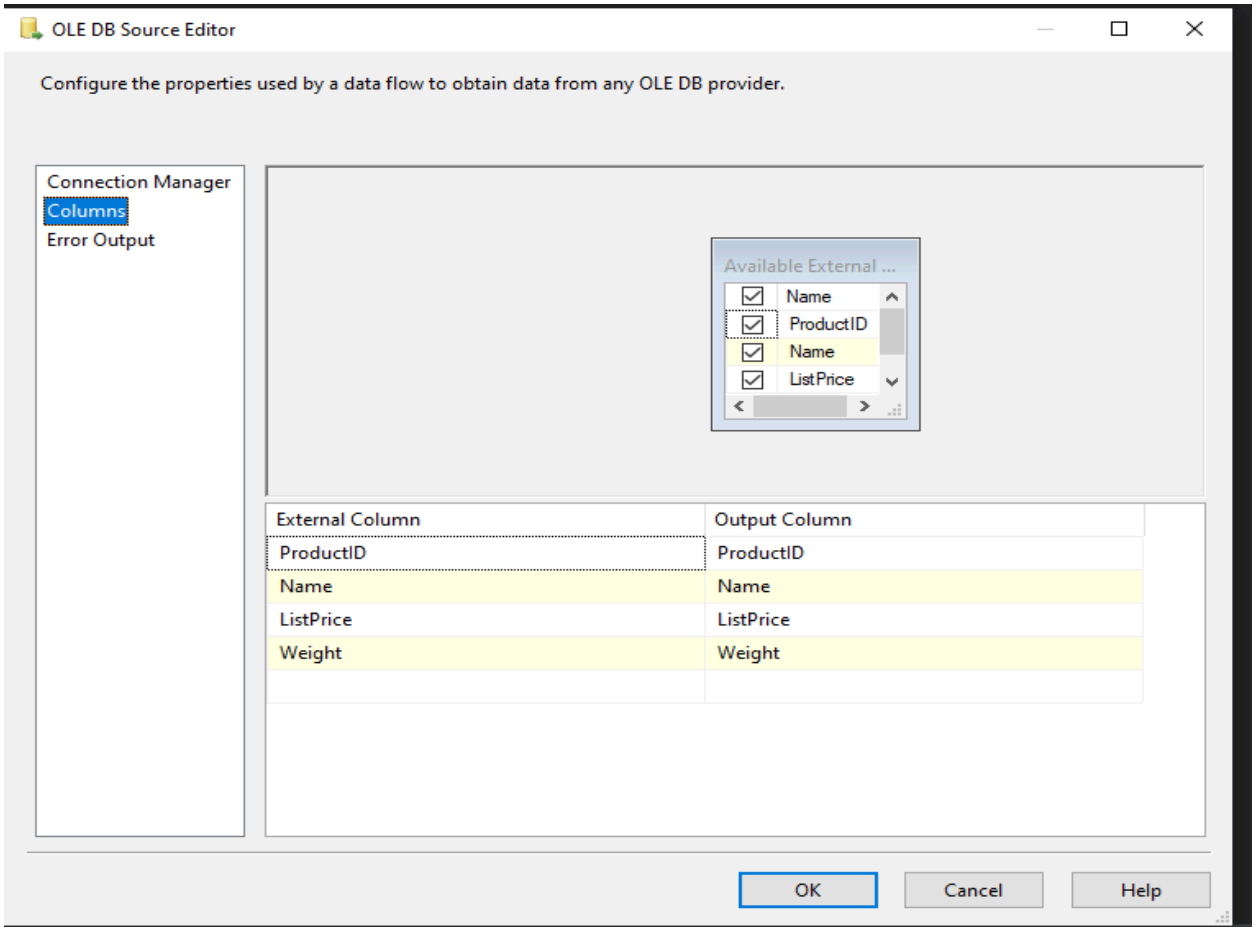


Configuring OLEDB Source:

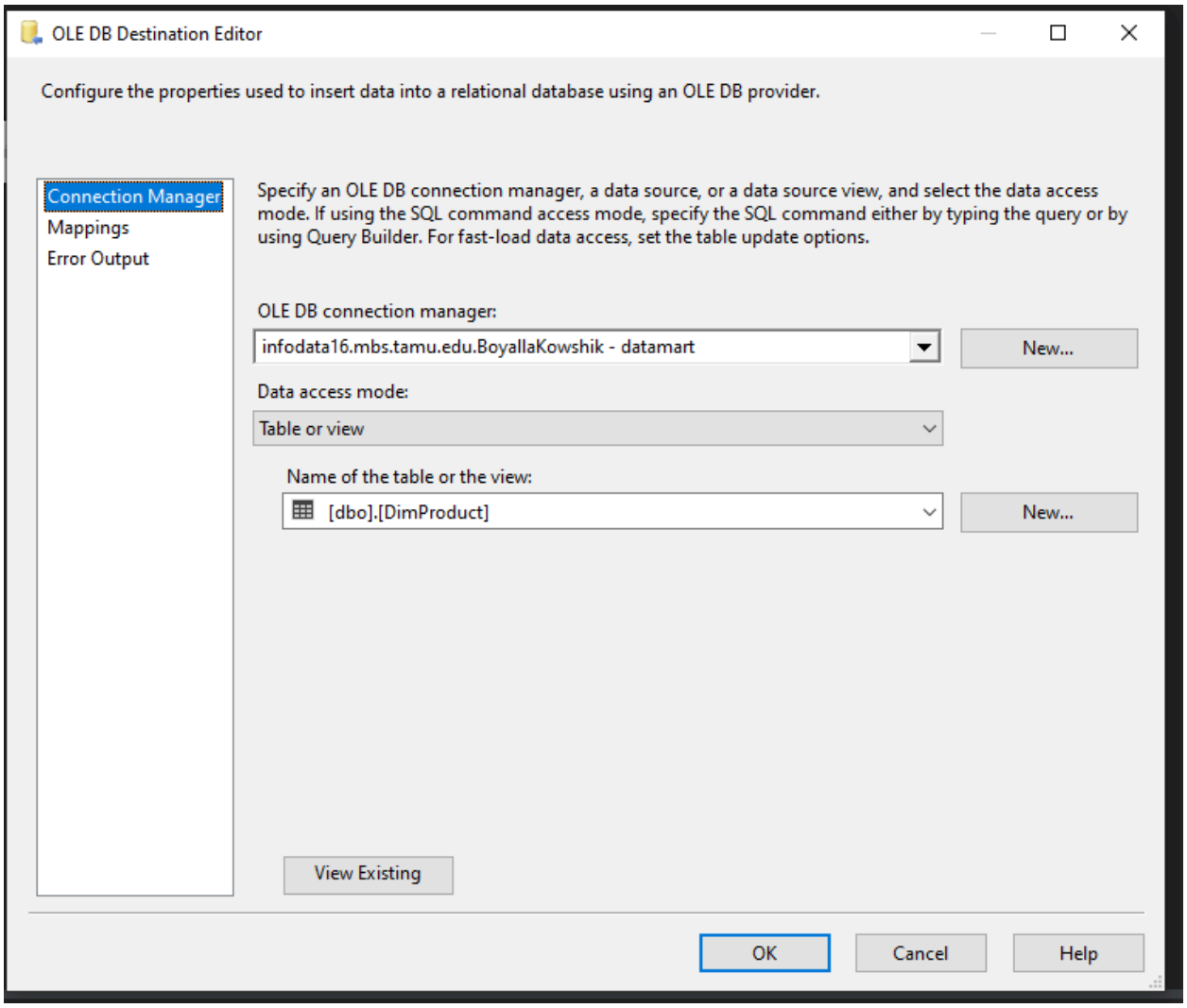
Made a connection to KowshikBoyalla - staging DB and selected prod_staging table.



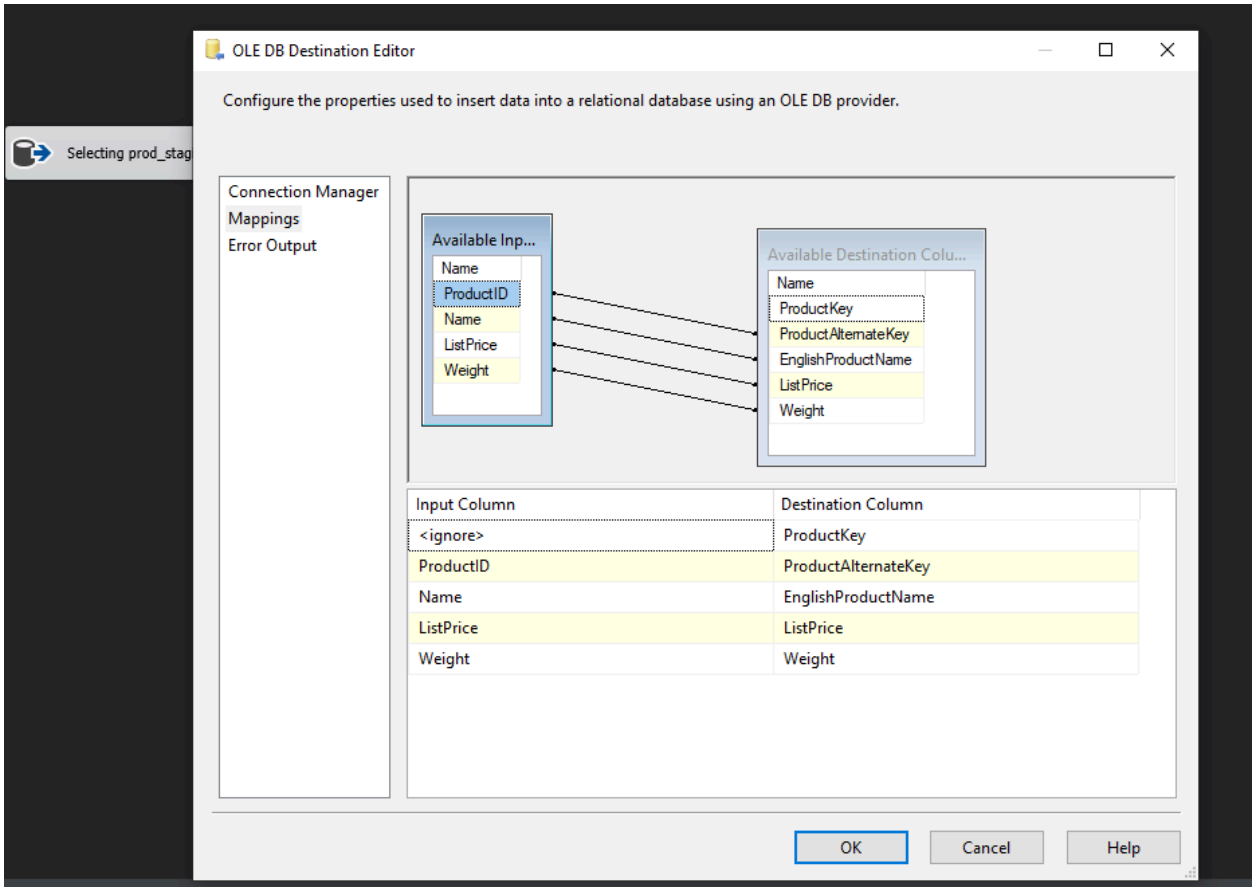
Columns:

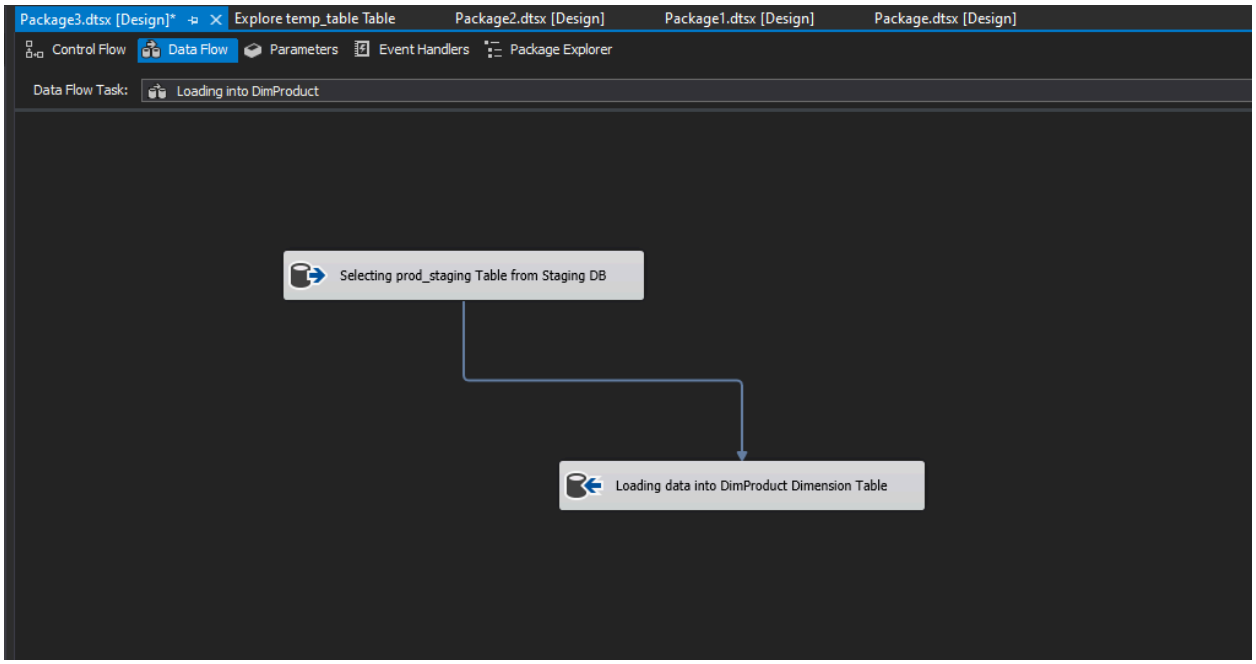

OLE DB Source Editor
Configure the properties used by a data flow to obtain data from any OLE DB provider.
Connection Manager
Columns
Error Output
Available External ...
Name
ProductID
Name
ListPrice
External Column
Output Column
ProductID
ProductID
Name
Name
ListPrice
ListPrice
Weight
Weight
OK
Cancel
Help

Configuring OLE DB Destination: Made a connection to KowshikBoyalla - datamart and selected **DimProduct** Dimension Table.

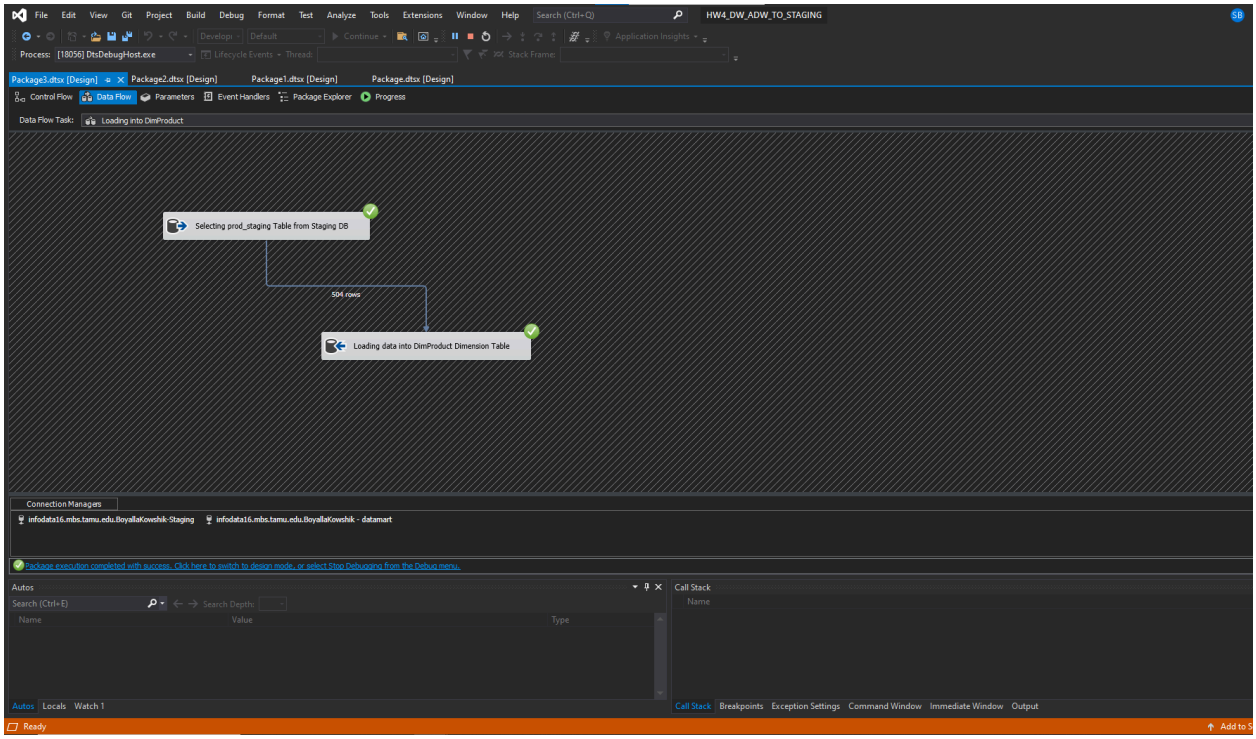


Mapping:


OLE DB Destination Editor
Configure the properties used to insert data into a relational database using an OLE DB provider.
Selecting prod_stag
Connection Manager
Mappings
Error Output
Available Inp...
Name
ProductID
Name
ListPrice
Weight
Available Destination Colu...
Name
ProductKey
ProductAlternateKey
EnglishProductName
ListPrice
Weight
Input Column
Destination Column
<ignore>
ProductKey
ProductID
ProductAlternateKey
Name
EnglishProductName
ListPrice
ListPrice
Weight
Weight
OK
Cancel
Help


Package3.dtsx [Design]*
Explore temp_table Table
Package2.dtsx [Design]
Package1.dtsx [Design]
Package.dtsx [Design]
Control Flow
Data Flow
Parameters
Event Handlers
Package Explorer
Data Flow Task:
Loading into DimProduct
Selecting prod_staging Table from Staging DB
Loading data into DimProduct Dimension Table

Successfully loaded data into DimProduct Dimension Table:



Validating DimProduct in SSMS: