Project
COVID-19 and Vaccination in the USA

Age and Gender. Doses USA

FK	Date
FK	Geography Key
	Age
	Booster Dose Vaccinated
	First Dose Vaccinated
	Fully Vaccinated
	Gender

Cases and Deaths USA

FK	Date
FK	Geography Key
	New Cases
	New Deaths

Mask Mandate USA

FK	Geography Key
	Mask Mandate End
	Mask Mandate Start

Calendar

PK	Date
	Calendar Year
	Month Name
	Month Number
	Weekday
	Weekday number
	Quarter

Geography

PK	GeographyKey
	City
	State Province Code
	State Province Name
	Country Region Code
	English Region Name

Total Vaccinations World

FK	Date
FK	Geography Key
	Total Vaccinations
	Vaccine Name

```sql
CREATE DATABASE [Covid 19]

CREATE TABLE [Age and Gender. Doses USA]
(
    [Date] date NOT NULL,
    [Geography Key] int NOT NULL,
    [Age] tinyint NULL,
    [Booster Dose Vaccinated] int NULL,
    [First Dose Vaccinated] int NULL,
    [Fully Vaccinated] int NULL,
    [Gender] varchar(50) NULL,
    CONSTRAINT CHK_Age100 CHECK (Age<=100)
);

CREATE TABLE [Cases and Deaths USA]
(
    [Date] date NOT NULL,
    [Geography Key] int NOT NULL,
    [New Cases] int NULL,
    [New Deaths] int NULL,
);

CREATE TABLE [Mask Mandate USA]
(
    [Geography Key] int NOT NULL,
    [Mask Mandate Start] date NULL,
    [Mask Mandate End] date NULL,
);
```

100 %

Messages
Commands completed successfully.

```sql
CREATE TABLE [Vaccines in All Countries]
(
    [Date] date NOT NULL,
    [Geography Key] int NOT NULL,
    [Total Vaccinations] int NULL,
    [Vaccine name] varchar(50) NOT NULL
);

SELECT [GeographyKey]
       ,[City]
       ,[StateProvinceCode] AS [State Province Code]
       ,[StateProvinceName] AS [State Province Name]
       ,[CountryRegionCode] AS [Country Region Code]
       ,[EnglishCountryRegionName] AS [English Region Name]
INTO [Covid 19].[dbo].[Geography]
FROM [AdventureWorksDW2019].[dbo].[DimGeography]

ALTER TABLE [Covid 19].[dbo].[Geography]
ADD CONSTRAINT PK_Geography_GeographyKey PRIMARY KEY CLUSTERED (GeographyKey)
```

100 %

Messages

(655 rows affected)

```sql
DECLARE @counter int = 1
DECLARE @AGdate date
DECLARE @AGkey int
DECLARE @AGage tinyint
DECLARE @AGboosterdose tinyint
DECLARE @AGfirstdose int
DECLARE @AGfullyvaccinated int
DECLARE @AGgender varchar (50)

WHILE @counter <= 100000
BEGIN

SET @AGdate = (SELECT DATEADD(DAY, ROUND((RAND()*14600),0), '2000-01-01'))
SET @AGkey = (SELECT FORMAT (RAND() *(100) + 5, '000'))
SET @AGage = (SELECT FORMAT (RAND() *(1000) + 5, '000'))
SET @AGboosterdose = (SELECT FORMAT (RAND() *(100000) + 1, '00000000'))
SET @AGfirstdose = (SELECT FORMAT (RAND() *(100000) + 1, '000000000'))
SET @AGfullyvaccinated = (SELECT FORMAT (RAND() *(100000) + 1, '00000000'))

SET @AGgender = (SELECT TOP 1 Gender
FROM (SELECT 'Female' Gender
UNION SELECT 'Male' Gender
UNION SELECT 'Unknown' Gender) Gender
ORDER BY NEWID())

INSERT INTO [Age and Gender. Doses USA]
VALUES (@AGdate, @AGkey, @AGage, @AGboosterdose, @AGfirstdose, @AGfullyvaccinated, @AGgender)
SET @counter += 1
END;
GO
```

100 %

🔲 Messages

```
Msg 547, Level 16, State 0, Line 78
The INSERT statement conflicted with the CHECK constraint "CHK_Age100". The conflict occurred in database "Covid 19", table "dbo.Age and Gender. Doses USA", column 'Age'.
The statement has been terminated.
Msg 244, Level 16, State 1, Line 67
The conversion of the nvarchar value '793' overflowed an INT1 column. Use a larger integer column.
```

100 %

⚠ Query completed with errors.   DESKTOP-HJOTQO1 (15.0 RTM) DESKTOP-HJOTQO1\Admin.

Msg 244, Level 16, State 1, Line 65
The conversion of the nvarchar value '803' overflowed an INT1 column. Use a larger integer column.

Msg 547, Level 16, State 0, Line 78
The INSERT statement conflicted with the CHECK constraint "CHK_Age100".
The conflict occurred in database "Covid 19", table "dbo.Age and Gender. Doses USA", column 'Age'.

Description	Correction
Msg 547, Level 16, State 0, Line 78 The INSERT statement conflicted with the CHECK constraint "CHK_Age100". The conflict occurred in database "Covid 19", table "dbo.Age and Gender. Doses USA", column 'Age'.	ALTER TABLE [dbo].[Age and Gender. Doses USA] DROP CONSTRAINT CHK_Age100 ALTER TABLE [dbo].[Age and Gender. Doses USA] ADD CONSTRAINT CHK_Age150 CHECK (Age<=150)
Msg 244, Level 16, State 1, Line 67 The conversion of the nvarchar value '793' overflowed an INT1 column. Use a larger integer column.	ALTER TABLE [dbo].[Age and Gender. Doses USA] ALTER COLUMN [Booster Dose Vaccinated] int

Incremental Refresh

```sql
DROP TABLE IF EXISTS [Age and Gender. Doses USA]

CREATE TABLE [Age and Gender. Doses USA]
(
    [Date] date NOT NULL,
    [Age] tinyint NULL,
    [Booster Dose Vaccinated] int NULL,
    [First Dose Vaccinated] int NULL,
    [Fully Vaccinated] int NULL,
    [Gender] varchar(50) NULL,
);
```

100 %

📄 Messages

Commands completed successfully.

```sql
SELECT COUNT (Age)
    FROM [Covid 19].[dbo].[Age and Gender. Doses USA]
```

100 %

▦ Results 📄 Messages

(No column name)
1	0

```sql
CREATE TABLE [Information for table Age and Gender]
(
    [Date] date NOT NULL,
    [Geography Key] int NOT NULL,
    [Age] tinyint NULL,
    [Booster Dose Vaccinated] int NULL,
    [First Dose Vaccinated] int NULL,
    [Fully Vaccinated] int NULL,
    [Gender] varchar(50) NULL,
);
```

100 %

📄 Messages

Commands completed successfully.

```sql
DECLARE @counter int = 1
DECLARE @AGdate date
DECLARE @AGkey int
DECLARE @AGage tinyint
DECLARE @AGboosterdose int
DECLARE @AGfirstdose int
DECLARE @AGfullyvaccinated int
DECLARE @AGgender varchar (50)

WHILE @counter <= 10000
BEGIN

    SET @AGdate = (SELECT DATEADD(DAY, ROUND((RAND()*14600),0), '2000-01-01'))
    SET @AGkey = (SELECT FORMAT (RAND() *(100) + 5, '000'))
    SET @AGage = (SELECT FORMAT (RAND() *(100) + 5, '000'))
    SET @AGboosterdose = (SELECT FORMAT (RAND() *(10000) + 1, '00000'))
    SET @AGfirstdose = (SELECT FORMAT (RAND() *(10000) + 1, '00000'))
    SET @AGfullyvaccinated = (SELECT FORMAT (RAND() *(10000) + 1, '00000'))

    SET @AGgender = (SELECT TOP 1 Gender
    FROM (SELECT 'Female' Gender
    UNION SELECT 'Male' Gender
    UNION SELECT 'Unknown' Gender) Gender
    ORDER BY NEWID())

    INSERT INTO [Information for table Age and Gender]
    VALUES (@AGdate, @AGkey, @AGage, @AGboosterdose, @AGfirstdose, @AGfullyvaccinated, @AGgender)
    SET @counter += 1
END;
GO
```
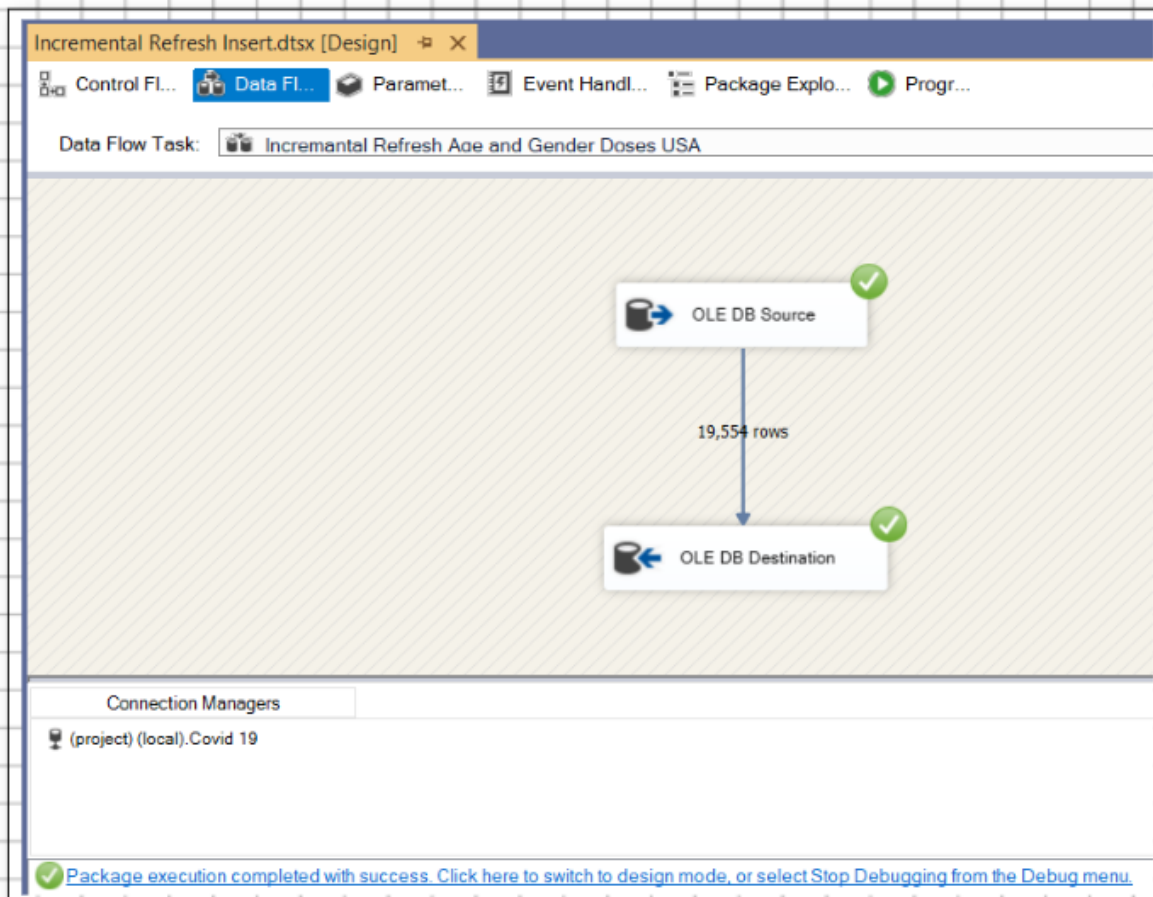
100 %

Messages

(1 row affected)

(1 row affected)

100 %

✓ Query executed successfully.   DESKTOP

Incremental Refresh Insert.dtsx [Design]

Control Fl... Data Fl... Paramet... Event Handl... Package Explo... Progr...

Data Flow Task: Incremantal Refresh Age and Gender Doses USA

OLE DB Source

19,554 rows

OLE DB Destination

Connection Managers

(project) (local).Covid 19

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

```sql
SELECT COUNT (Age)
  FROM [Covid 19].[dbo].[Age and Gender. Doses USA]
```

100 %

Results   Messages

	(No column name)
1	19554

```sql
DECLARE @counter int = 1
DECLARE @AGdate date
DECLARE @AGkey int
DECLARE @AGage tinyint
DECLARE @AGboosterdose int
DECLARE @AGfirstdose int
DECLARE @AGfullyvaccinated int
DECLARE @AGgender varchar (50)

WHILE @counter <= 100000
BEGIN

SET @AGdate = (SELECT DATEADD(DAY, ROUND((RAND()*14600),0), '2000-01-01'))
SET @AGkey = (SELECT FORMAT (RAND()*(100)+5,'000'))
SET @AGage = (SELECT FORMAT (RAND()*(100)+5,'000'))
SET @AGboosterdose = (SELECT FORMAT (RAND()*(10000)+1,'00000'))
SET @AGfirstdose = (SELECT FORMAT (RAND()*(10000)+1,'00000'))
SET @AGfullyvaccinated = (SELECT FORMAT (RAND()*(10000)+1,'00000'))

SET @AGgender = (SELECT TOP 1 Gender
FROM (SELECT 'Female' Gender
UNION SELECT 'Male' Gender
UNION SELECT 'Unknown' Gender) Gender
ORDER BY NEWID())

INSERT INTO [Information for table Age and Gender]
VALUES (@AGdate, @AGkey, @AGage, @AGboosterdose, @AGfirstdose, @AGfullyvaccinated, @AGgender)
SET @counter += 1
END;
GO
```
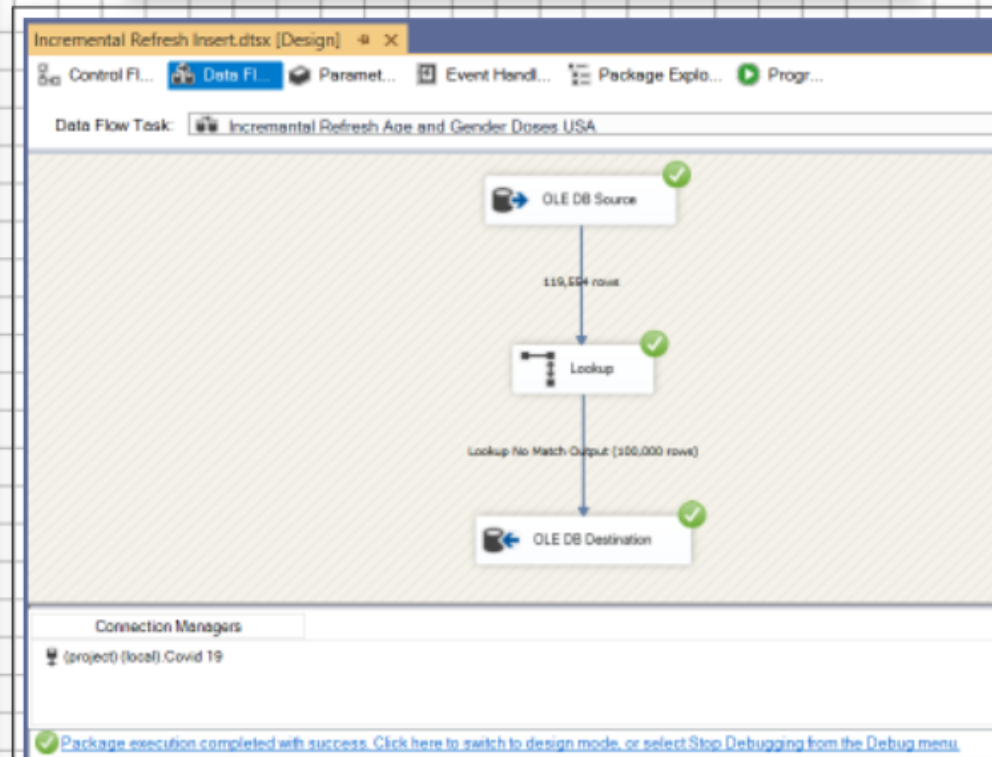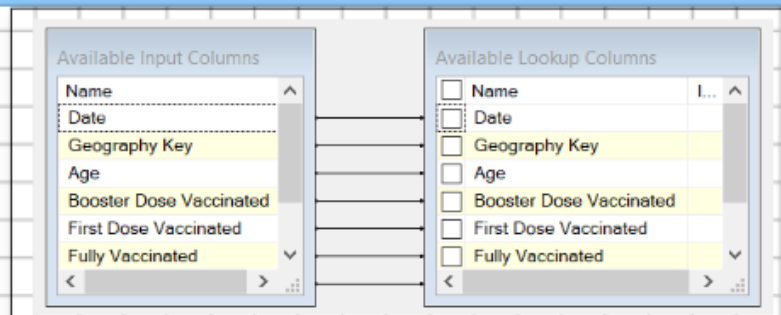
100 %

Messages

(1 row affected)

100 %

✓ Query executed successfully.   DESKTOP

Available Input Columns

| Name |
| Date |
| Geography Key |
| Age |
| Booster Dose Vaccinated |
| First Dose Vaccinated |
| Fully Vaccinated |

Available Lookup Columns

| ☐ Name |
| ☐ Date |
| ☐ Geography Key |
| ☐ Age |
| ☐ Booster Dose Vaccinated |
| ☐ First Dose Vaccinated |
| ☐ Fully Vaccinated |

Incremental Refresh Insert.dtsx [Design]

Control Fl...   Data Fl...   Paramet...   Event Handl...   Package Explo...   Progr...

Data Flow Task: Incremantal Refresh Age and Gender Doses USA

OLE DB Source ✓

119,554 rows

Lookup ✓

Lookup No Match Output (100,000 rows)

OLE DB Destination ✓

Connection Managers

(project) (local).Covid 19

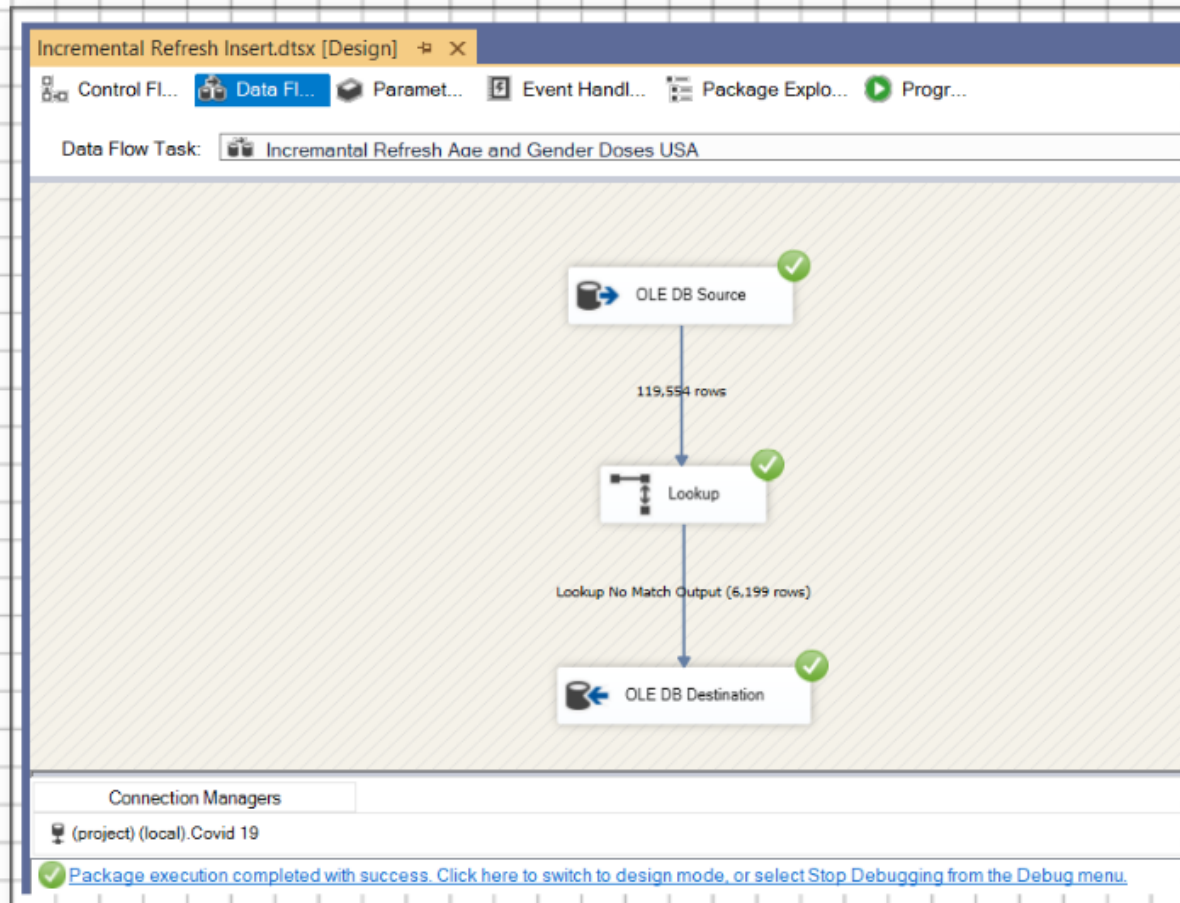✓ Package execution completed with success. Click here to switch to design mode, or select Stop Debugging from the Debug menu.

```
UPDATE [dbo].[Information for table Age and Gender]
   SET [Age] = 100
   WHERE [Age]>=100
```

100 %

Messages

(6199 rows affected)

Incremental Refresh Insert.dtsx [Design]

Control Fl... | Data Fl... | Paramet... | Event Handl... | Package Explo... | Progr...

Data Flow Task: Incremantal Refresh Age and Gender Doses USA

OLE DB Source

119,554 rows

Lookup

Lookup No Match Output (6,199 rows)

OLE DB Destination

Connection Managers

(project) (local).Covid 19

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

```sql
CREATE TABLE [Delete. Age and Gender. Doses USA]
(
    [Date] date NOT NULL,
    [Geography Key] int NOT NULL,
    [Age] tinyint NULL,
    [Booster Dose Vaccinated] int NULL,
    [First Dose Vaccinated] int NULL,
    [Fully Vaccinated] int NULL,
    [Gender] varchar(50) NULL,
);
```

100 %

Messages
    Commands completed successfully.

TRUNCATE Delete Age and Gender Doses USA ✓

SQLSourceType	Direct input
SQLStatement	IF OBJECT_ID('Delete. Age and Gender. Doses USA') IS NOT NULL
IsQueryStoredProcedure	BEGIN
BypassPrepare	TRUNCATE TABLE [dbo].[Delete. Age and Gender. Doses USA]
	END

Delete From Delete Age and Gender Doses USA ✓

SQLStatement	DELETE FROM [dbo].[Age and Gender. Dose
IsQueryStoredProcedure	
BypassPrepare	

```
DELETE
FROM [dbo].[Age and Gender. Doses USA]
WHERE EXISTS (
  SELECT *
  FROM [dbo].[Delete. Age and Gender. Doses USA]
  WHERE [Age and Gender. Doses USA].[Date] = [Delete. Age and Gender. Doses USA].[Date]
    AND [Age and Gender. Doses USA].[Geography Key] = [Delete. Age and Gender. Doses USA].[Geography Key]
    AND [Age and Gender. Doses USA].[Age] = [Delete. Age and Gender. Doses USA].[Age]
    AND [Age and Gender. Doses USA].[Booster Dose Vaccinated] = [Delete. Age and Gender. Doses USA].[Booster Dose Vaccinated]
    AND [Age and Gender. Doses USA].[First Dose Vaccinated] = [Delete. Age and Gender. Doses USA].[First Dose Vaccinated]
    AND [Age and Gender. Doses USA].[Gender] = [Delete. Age and Gender. Doses USA].[Gender])
```

Name
Specifies the name of the task.

Browse...   Bu

Testing Delete Function

```sql
SELECT COUNT (Age)
FROM [dbo].[Age and Gender. Doses USA]
WHERE [Age] <= 20
```

100 %

Results | Messages

(No column name)
1	18457

```sql
SELECT COUNT (Age)
FROM [dbo].[Information for table Age and Gender]
WHERE [Age] <= 20
```

100 %

Results | Messages

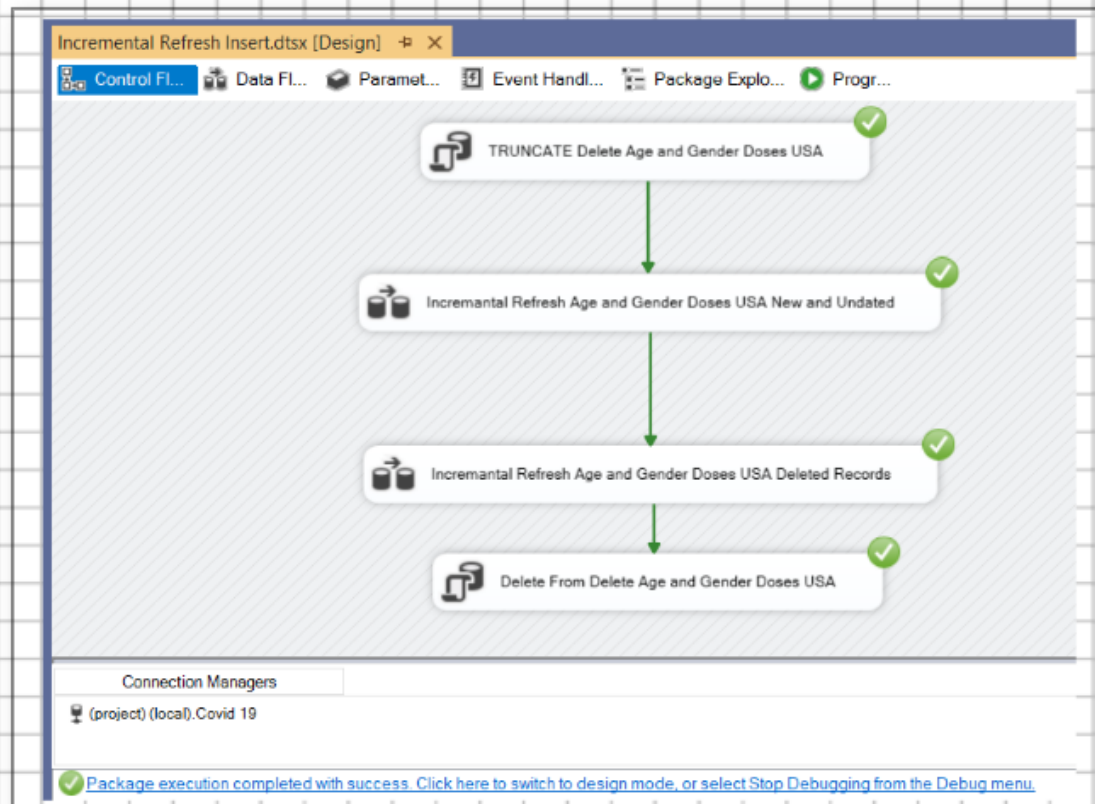| (No column name) |
|---|
| 1 | 18457 |

```sql
DELETE
FROM [dbo].[Information for table Age and Gender]
WHERE [Age] <= 20
```

100 %

Messages

(18457 rows affected)

Incremental Refresh Insert.dtsx [Design]

Control Fl... | Data Fl... | Paramet... | Event Handl... | Package Explo... | Progr...

TRUNCATE Delete Age and Gender Doses USA ✓

Incremantal Refresh Age and Gender Doses USA New and Undated ✓

Incremantal Refresh Age and Gender Doses USA Deleted Records ✓

Delete From Delete Age and Gender Doses USA ✓

Connection Managers

(project) (local).Covid 19

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

```sql
SELECT COUNT (Age)
FROM [dbo].[Age and Gender. Doses USA]
WHERE [Age] <= 20
```

100 %

Results | Messages

(No column name)
1	0

Thank you for your attention!