

# Gravity Bookstore

## Project contents:

Model and Develop 'gravity\_books\_dwh' Data Warehouse:

Create table Meta Control Fact Sales Load

ETL by using SSIS Integration

Create SSAS cube

Create a dashboard using Tableau

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# Model and Develop 'gravity\_books\_dwh' Data Warehouse:

Created Fact and Dimensions tables using DDL statements.

Fact Sales

Dim Book

Dim Customer

Dim Order

Dim Date

```
CREATE TABLE Dim_Book (  
    Pk_Book_id_Sk INT IDENTITY(1,1) PRIMARY KEY  
    Book_id_BK INT,  
    title VARCHAR(40),  
    isbn13 VARCHAR(13),  
    language_id_bk INT,  
    num_pages INT,  
    publication_date DATE,  
    publisher_id_bk INT,  
    publisher_name VARCHAR(1000),  
    author_id_bk INT,  
    author_name VARCHAR(400),  
    language_code VARCHAR(8),  
    language_name VARCHAR(50),  
    start_date DATE,  
    end_date DATE,  
    is_currnt BIT,);
```

```
CREATE TABLE Dim_Order (  
    Pk_order_id_Sk INT IDENTITY(1,1) PRIMARY KEY,  
    order_id_BK INT,  
    dest_address_id_bk INT,  
    shipping_method_id_bk INT,  
    method_name VARCHAR(100),  
    history_id_bk INT,  
    status_id_bk INT,  
    status_date DATETIME,  
    status_value VARCHAR(20),  
    address_id_bk INT,  
    street_number VARCHAR(10),  
    street_name VARCHAR(200),  
    city VARCHAR(100),  
    country_id INT,  
    country_name VARCHAR(200),  
    line_id_bk INT,  
    start_date DATE,  
    end_date DATE,
```

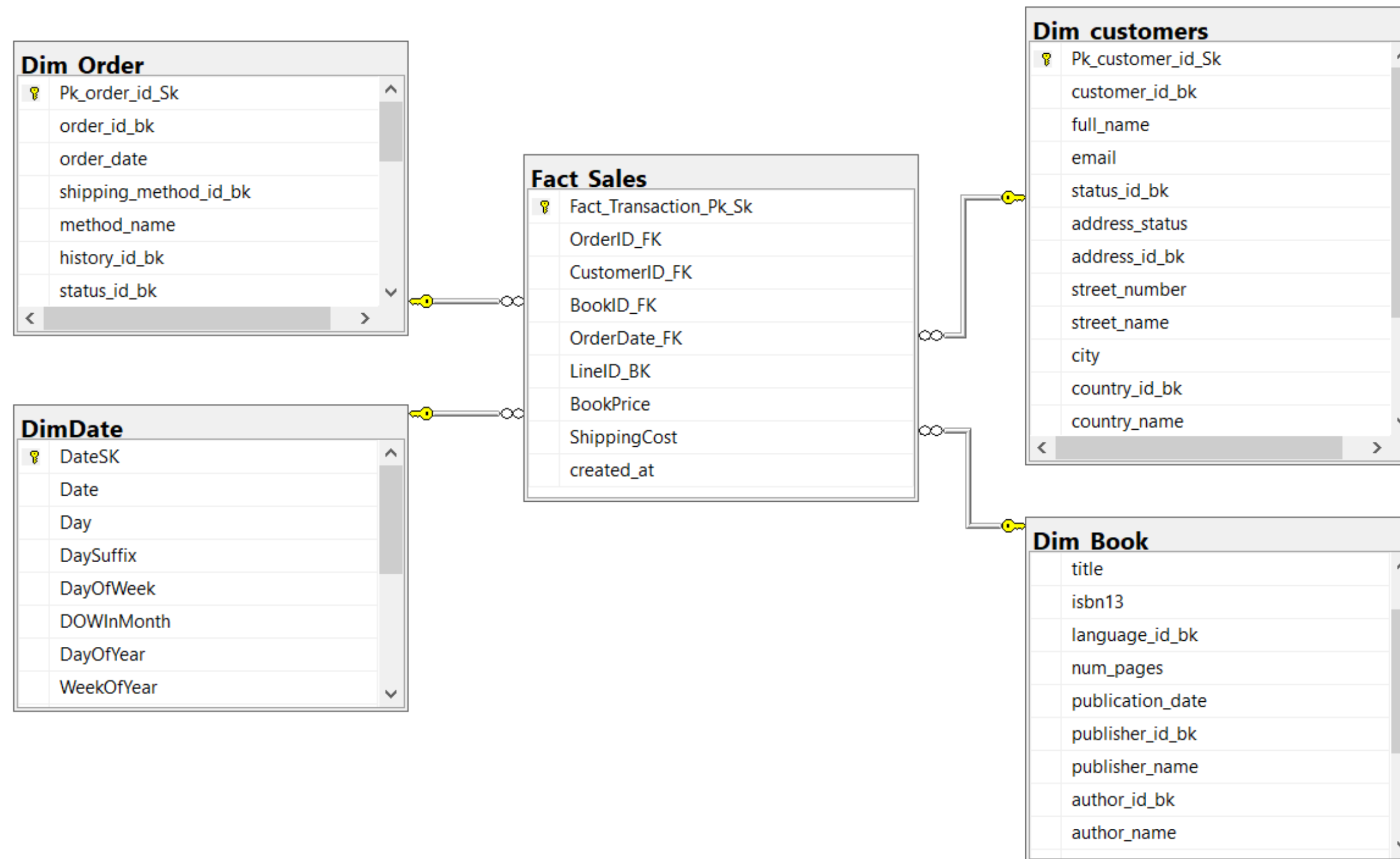
```
CREATE TABLE FactSales (  
    Fact_Transaction_Pk_Sk INT IDENTITY(1,1) PRIMARY KEY,  
    CustomerID_FK INT NOT NULL,  
    BookID_FK INT NOT NULL,  
    OrderDate_FK INT NOT NULL,  
    OrderID_FK INT NOT NULL,  
    created_at DATETIME DEFAULT GETDATE(),  
    BookPrice DECIMAL(5,2),  
    ShippingCost DECIMAL(6,2),  
    LineID_BK INT NOT NULL,
```

```
CONSTRAINT FK_FactSales_DimOrder FOREIGN KEY (OrderID_FK) REFERENCES Dim_Order(Pk_order_id_Sk),  
CONSTRAINT FK_FactSales_DimBook FOREIGN KEY (BookID_FK) REFERENCES Dim_Book(Pk_Book_id_Sk),  
CONSTRAINT FK_FactSales_DimCustomers FOREIGN KEY (CustomerID_FK) REFERENCES Dim_Customers(Pk_customer_id_Sk)
```

```
CREATE TABLE Dim_Customers (  
    Pk_customer_id_Sk INT IDENTITY(1,1) PRIMARY KEY,  
    customer_id_BK INT,  
    first_name VARCHAR(200),  
    last_name VARCHAR(200),  
    email VARCHAR(350),  
    status_id_bk INT,  
    address_status VARCHAR(30),  
    street_number VARCHAR(10),  
    city VARCHAR(100),  
    country_id_bk INT,  
    country_name VARCHAR(200),  
    address_id_bk INT,  
    street_name VARCHAR(200),  
    start_date DATE,  
    end_date DATE,  
    is_currnt BIT.);
```

## Chosen Approach:

Opted for a Star Schema design, creating efficient relationships for books, customers, orders, and dates. Simplifying analytics and boosting query performance!



# Create table Meta Control Fact Sales Load

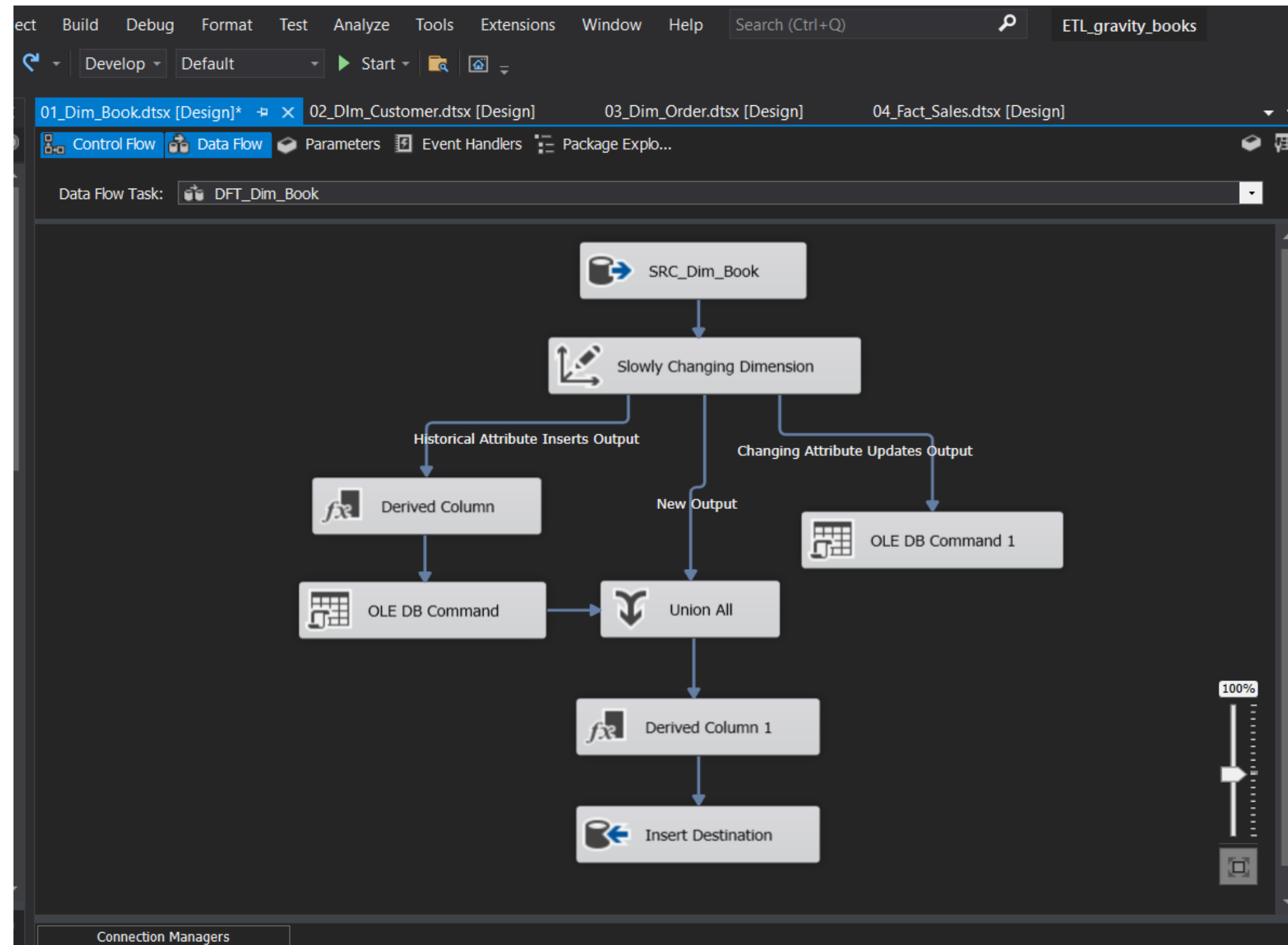
This table is to be used to verify that only new data is added to Fact Sales table

DESKTOP-PV92OV8.g...l_Fact_Sales_Load			
	Column Name	Data Type	Allow Nulls
PK	id	int	<input type="checkbox"/>
	SalesOrderLine	nvarchar(100)	<input checked="" type="checkbox"/>
	Last_load_date	datetime	<input checked="" type="checkbox"/>
	Last_Load_OrderLineID_BK	int	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

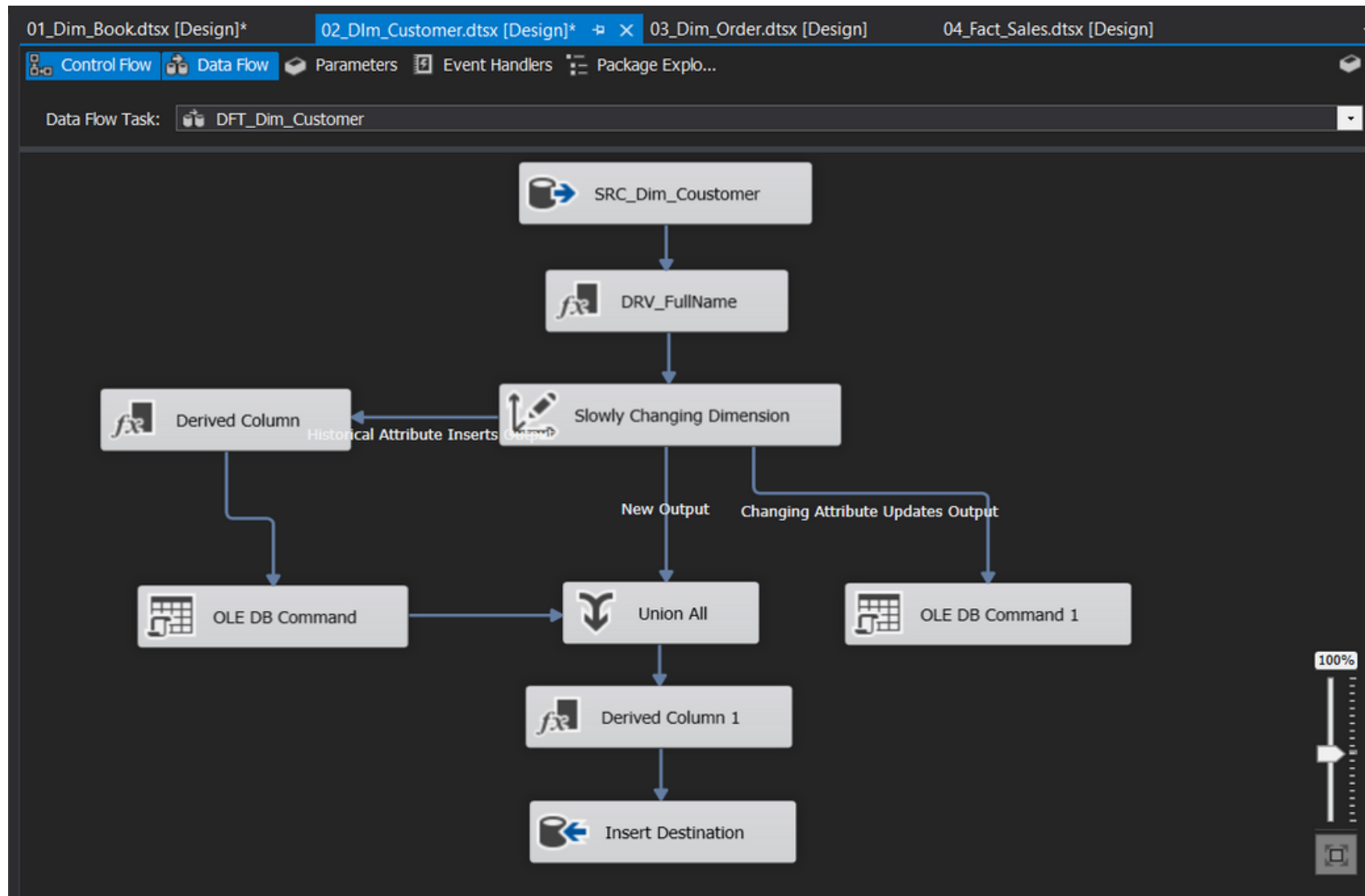
## ETL by using SSIS Integration:

- Crafted a seamless SSIS project, ensuring a smooth transfer of data from 'gravity\_books' to our new 'gravity\_books\_dwh.'

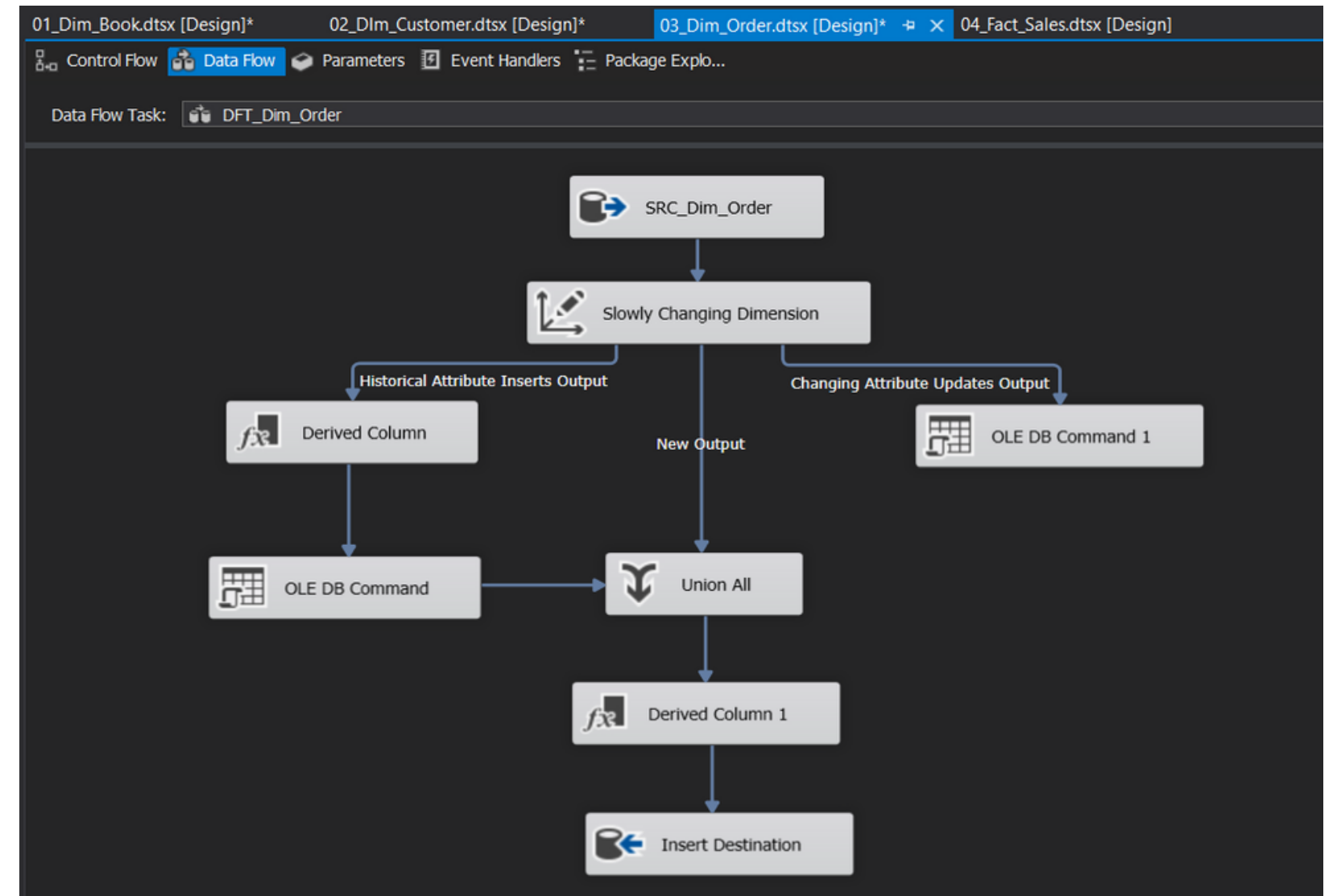
### Dim Book



# Dim Customer

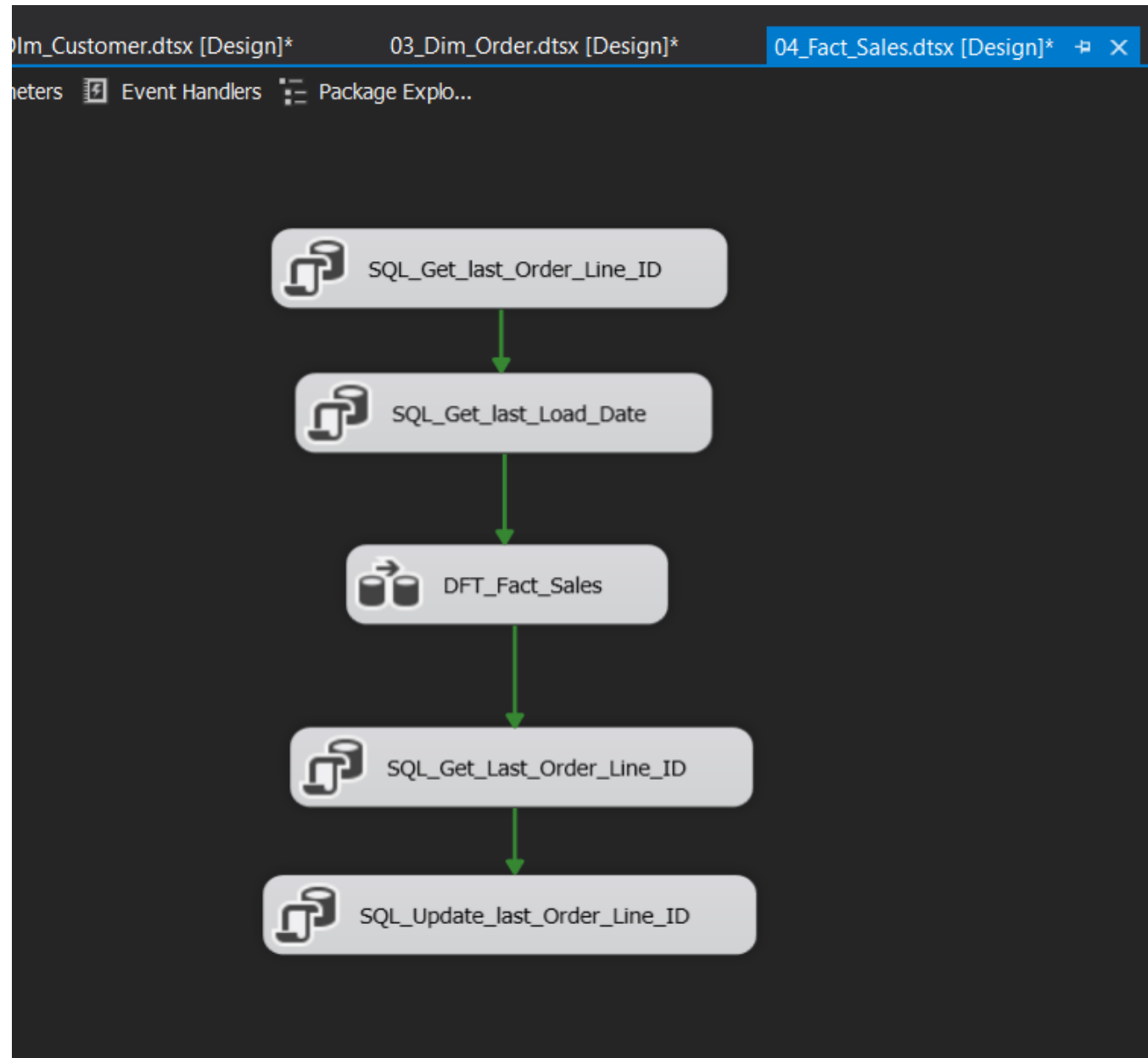


# Dim Order

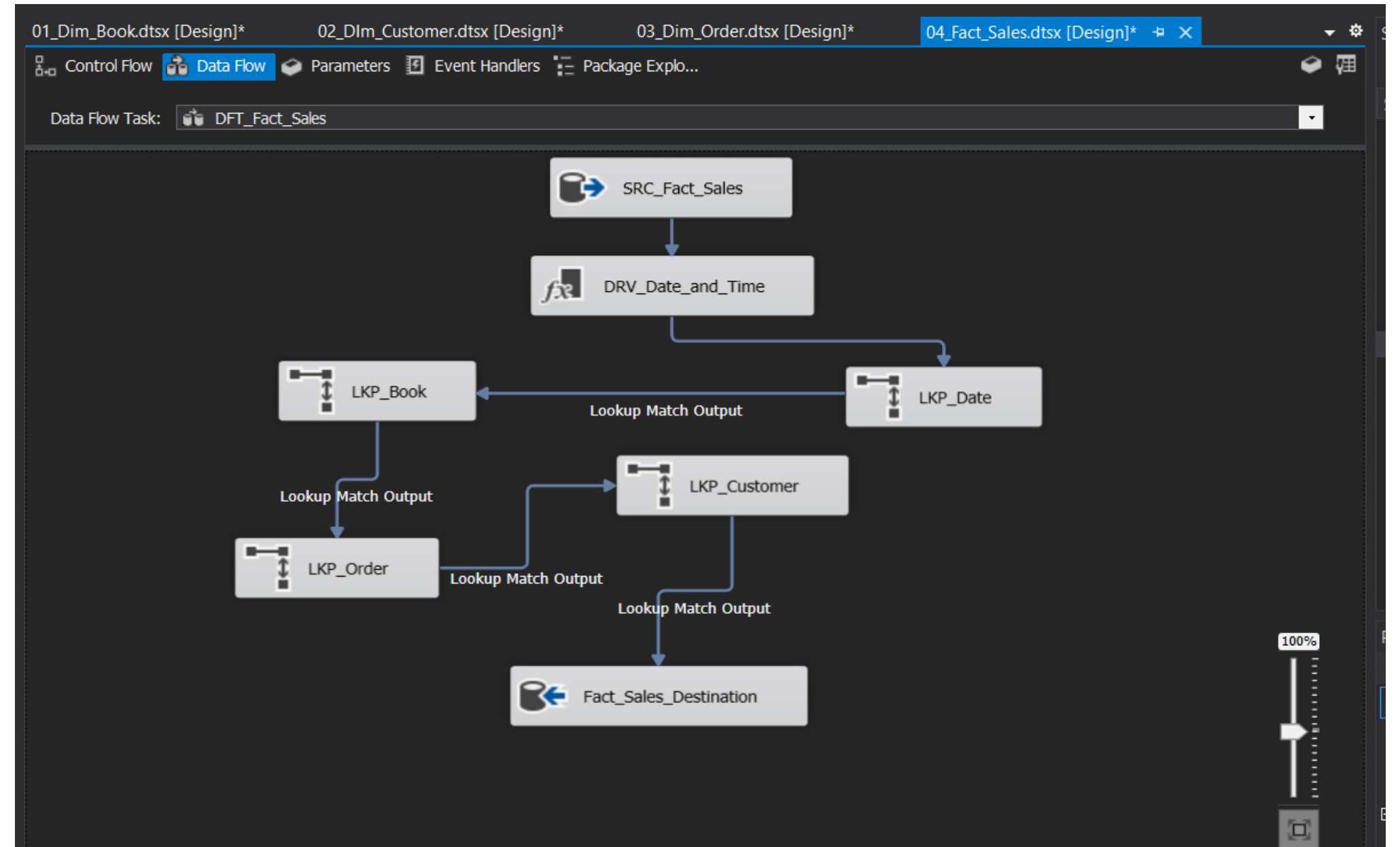


# Fact Sales

## Fact Sales ControlFlow



## Fact Sales DataFlow





# Create SSAS cube

The screenshot shows the SQL Server Data Tools (SSDT) interface for creating a cube. The main workspace displays the 'Gravity Books DWH Cube' design. The left pane shows the 'Metadata' tree with the following structure:

- Gravity Books DWH Cube
  - Measures
    - Fact Sales
    - Book Price
    - Fact Sales Count
    - Line ID BK
    - Shipping Cost
  - KPIs
  - Dim Book
  - Dim Customers
  - Dim Date
  - Dim Order

The right pane shows the 'Solution Explorer' with the project structure:

- Solution 'MultidimensionalProject\_SSAS\_Gravity\_books\_DWH'
  - MultidimensionalProject\_SSAS\_Gravity\_books\_DWH
    - Data Sources
      - Gravity Books DWH.ds
    - Data Source Views
      - Gravity Books DWH.dsv
    - Cubes
      - Gravity Books DWH Cube.cube
    - Dimensions
      - Dim Date.dim
      - Dim Customers.dim
      - Dim Order.dim
      - Dim Book.dim
    - Mining Structures
    - Roles
    - Assemblies
    - Miscellaneous

The bottom right pane shows the 'Properties' window for the 'Gravity Books DWH Cube'.

Property	Value
Language	Default
ProcessingMode	Regular
ProcessingPriority	0
Source	Gravity Books DWH (Data sou
Visible	True

The bottom left pane shows the 'Error List' with 0 Errors, 0 Warnings, and 0 Messages.

At the bottom of the window, there is a status bar with the text 'Loading BIDSHelper (2.4.1.0)...' and a button to 'Add to Source Control'.



# Create a dashboard using Tableau

