LAPORAN PRAKTIKUM DATA WAREHOUSE

JOBSHEET 3 : DATA BASE ANALYTICAL (STUDY CASE)

DISUSUN OLEH :

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KELAS 2A-SIB/04

PROGRAM STUDI D-IV SISTEM INFORMASI BISNIS

JURUSAN TEKNOLOGI INFORMASI

POLITEKNIK NEGERI MALANG

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Soal :

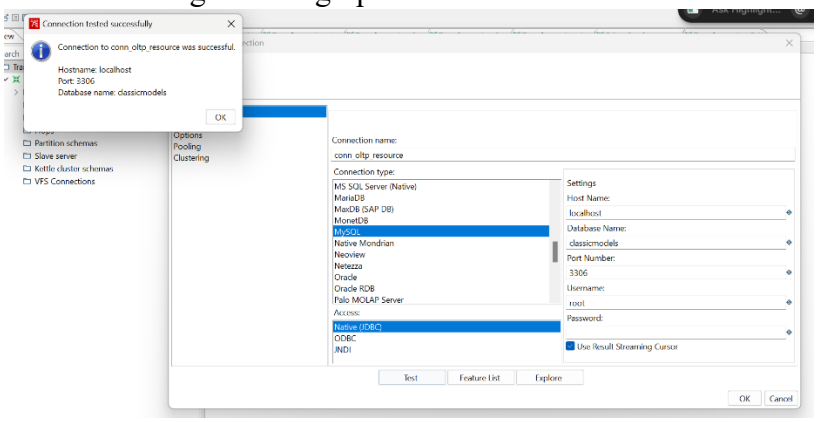
Pak Marto merupakan komisaris dari LegendVehicle. Pak Marto butuh laporan untuk analisa dari hasil penjualan dilihat dari sisi barang / product. Buatlah database OLAP tersebut untuk membantu pak marto menganalisa penjualan barang

Jawaban :

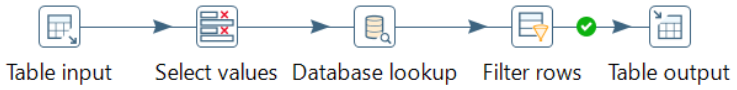
1. **Membuat tabel dimensi yang bernama dim_product**
    - Menambahkan tabel dimProduct pada database dw_legendVehicle

```
CREATE TABLE dimProduct (
    id_dimProduct INT AUTO_INCREMENT PRIMARY KEY,
    productCode VARCHAR(15),
    productName VARCHAR(100),
    productLine VARCHAR(50),
    productScale VARCHAR(20),
    productVendor VARCHAR(50)
);
```

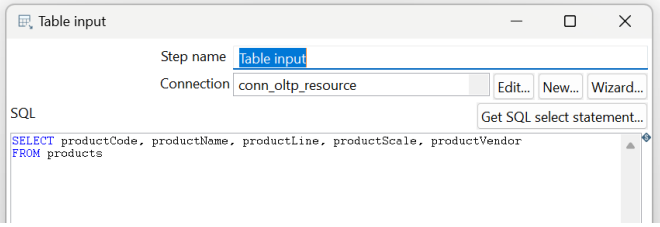
    - Menambahkan database connection untuk mengkoneksikan pada tabel classicmodels guna menginputkan data



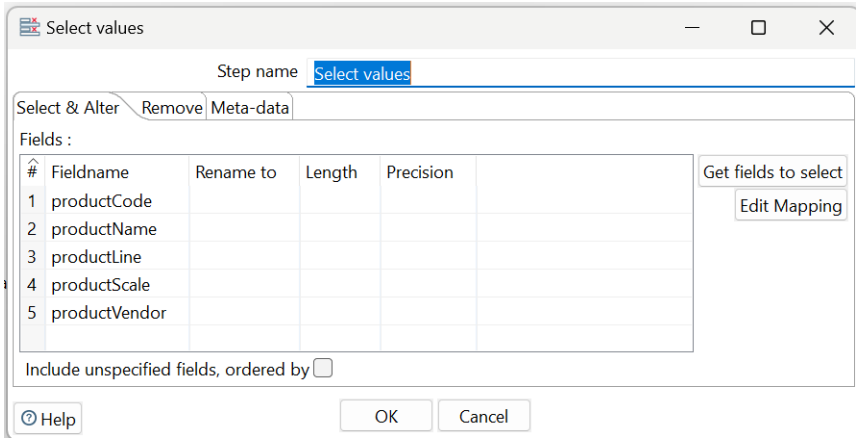
    - Menyiapkan elemen-elemen berikut



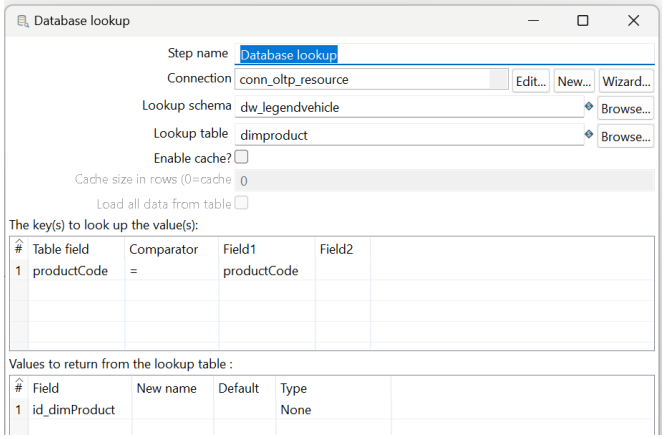
      Fungsi :
      - Tabel input : untuk menambil data dari kolom products dengan via SQL
      - Select Values : untuk mesorting kolom dan menentukan tipe data yang diperlukan
      - Database lookup : untuk mencocokkan data
      - Filter rows : untuk mensorting baris sesuai dengan kondisi yang diperlukan
      - Tabel output : untuk menyimpan hasil akhir
    - Konfigurasi pada elemen Tabel input (mengambil data) sesuai dengan kolom yang diinginkan



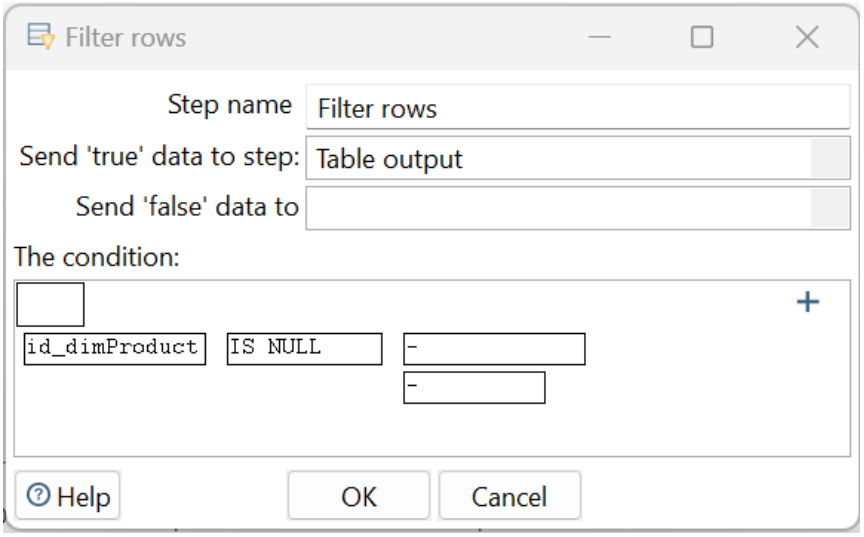
- Konfigurasi Select Values dengan menentukan kolom productCode, productName, productLine, productScale, productVendor yang akan diambil



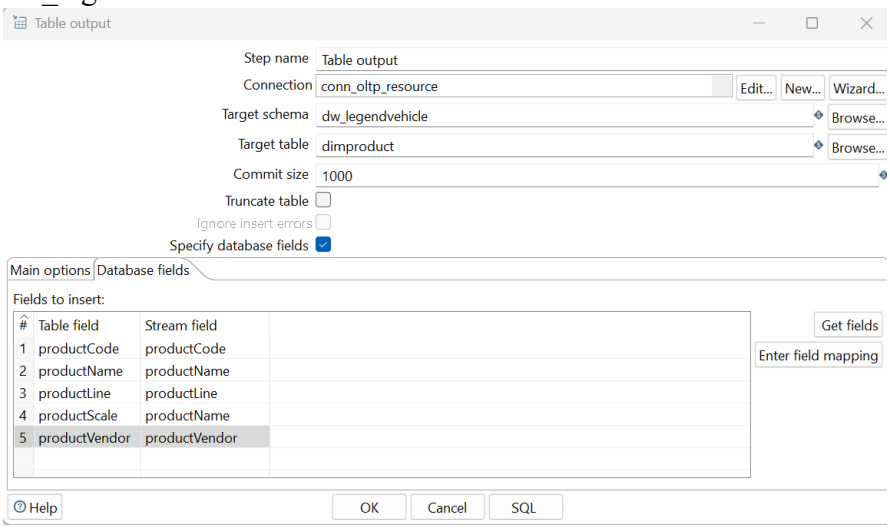
- Konfigurasi Database lookup dengan melakukan lookup pada database dw_legendvehicle pada table dimproduct, sehingga kita dapat mengambil id_dimProduct dan menyimpannya sebagai foreign key pada tabel fakta.



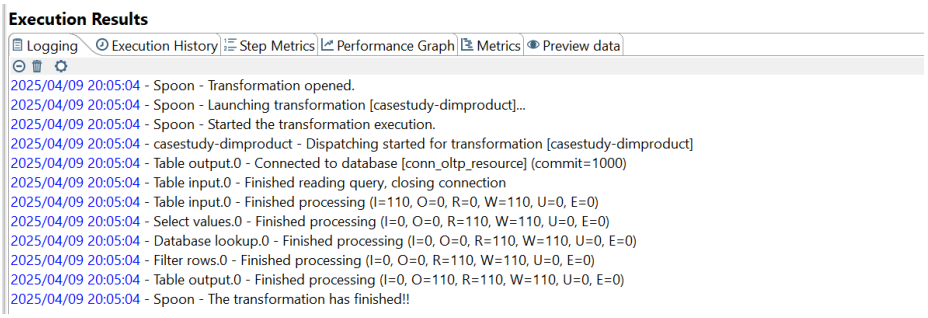
- Konfigurasi filter rows untuk mengambil data dengan syarat kolom id_dimProduct bernilai NULL, maka data akan dikirim ke langkah Table output.



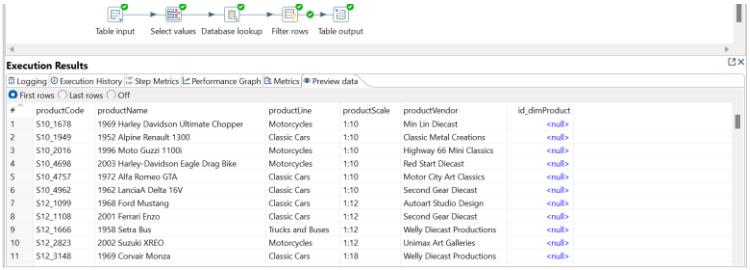
- Konfigurasi Tabel Output untuk menyimpan data hasil transformasi ke dalam tabel database ke dalam tabel dimproduct yang berada di skema dw_legendvehicle



- Eksekusi transformasi dan hasilnya semua 110 data baru yang sebelumnya tidak ditemukan di tabel dimproduct (id_dimProduct IS NULL) berhasil dimasukkan.



- Pada preview menunjukan semua data adalah data baru (akan masuk pada tabel output karna benilai true).



#	productCode	productName	productLine	productScale	productVendor	id_dimProduct
1	S10_1678	1969 Harley Davidson Ultimate Chopper	Motorcycles	1:10	Min Lin Diecast	<null>
2	S10_1949	1952 Alpine Renault 1300	Classic Cars	1:10	Classic Metal Creations	<null>
3	S10_2016	1996 Moto Guzzi 1100i	Motorcycles	1:10	Highway 66 Mini Classics	<null>
4	S10_4698	2003 Harley-Davidson Eagle Drag Bike	Motorcycles	1:10	Red Start Diecast	<null>
5	S10_4757	1972 Alfa Romeo GTA	Classic Cars	1:10	Motor City Art Classics	<null>
6	S10_4962	1962 LanciaA Delta 16V	Classic Cars	1:10	Second Gear Diecast	<null>
7	S12_1099	1968 Ford Mustang	Classic Cars	1:12	Autoart Studio Design	<null>
8	S12_1108	2001 Ferrari Enzo	Classic Cars	1:12	Second Gear Diecast	<null>
9	S12_1666	1958 Setra Bus	Trucks and Buses	1:12	Welly Diecast Productions	<null>
10	S12_2823	2002 Suzuki XREO	Motorcycles	1:12	Unimax Art Galleries	<null>
11	S12_3148	1969 Corvair Monza	Classic Cars	1:18	Welly Diecast Productions	<null>

- Hasil akhir pada tabel output akan otomatis tersimpan pada database dw_legendvehicle kolom dimproduct

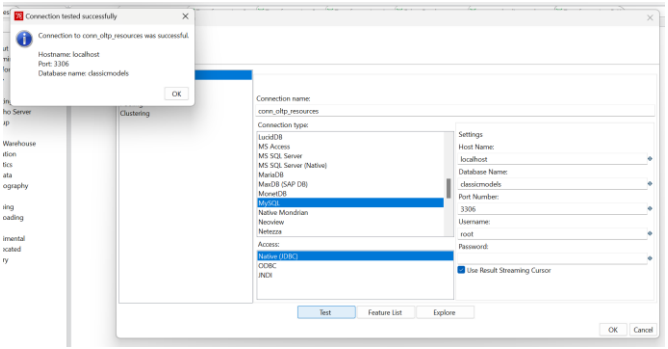
	id_dimProduct	productCode	productName	productLine	productScale	productVendor
Edit Copy Delete	40	S10_1678	1969 Harley Davidson Ultimate Chopper	Motorcycles	1969 Harley Davidson Ultimate Chopper	Min Lin Diecast
Edit Copy Delete	41	S10_1949	1952 Alpine Renault 1300	Classic Cars	1952 Alpine Renault 1300	Classic Metal Creations
Edit Copy Delete	42	S10_2016	1996 Moto Guzzi 1100i	Motorcycles	1996 Moto Guzzi 1100i	Highway 66 Mini Classics
Edit Copy Delete	43	S10_4698	2003 Harley-Davidson Eagle Drag Bike	Motorcycles	2003 Harley-Davidson Eagle Drag Bike	Red Start Diecast
Edit Copy Delete	44	S10_4757	1972 Alfa Romeo GTA	Classic Cars	1972 Alfa Romeo GTA	Motor City Art Classics
Edit Copy Delete	45	S10_4962	1962 LanciaA Delta 16V	Classic Cars	1962 LanciaA Delta 16V	Second Gear Diecast
Edit Copy Delete	46	S12_1099	1968 Ford Mustang	Classic Cars	1968 Ford Mustang	Autoart Studio Design
Edit Copy Delete	47	S12_1108	2001 Ferrari Enzo	Classic Cars	2001 Ferrari Enzo	Second Gear Diecast
Edit Copy Delete	48	S12_1666	1958 Setra Bus	Trucks and Buses	1958 Setra Bus	Welly Diecast Productions
Edit Copy Delete	49	S12_2823	2002 Suzuki XREO	Motorcycles	2002 Suzuki XREO	Unimax Art Galleries
Edit Copy Delete	50	S12_3148	1969 Corvair Monza	Classic Cars	1969 Corvair Monza	Welly Diecast Productions
Edit Copy Delete	51	S12_3380	1968 Dodge Charger	Classic Cars	1968 Dodge Charger	Welly Diecast Productions
Edit Copy Delete	52	S12_3891	1969 Ford Falcon	Classic Cars	1969 Ford Falcon	Second Gear Diecast
Edit Copy Delete	53	S12_3990	1970 Plymouth Hemi Cuda	Classic Cars	1970 Plymouth Hemi Cuda	Studio M Art Models
Edit Copy Delete	54	S12_4473	1957 Chevy Pickup	Trucks and Buses	1957 Chevy Pickup	Exoto Designs
Edit Copy Delete	55	S12_4675	1969 Dodge Charger	Classic Cars	1969 Dodge Charger	Welly Diecast Productions
Edit Copy Delete	56	S18_1097	1940 Ford Pickup Truck	Trucks and Buses	1940 Ford Pickup Truck	Studio M Art Models
Edit Copy Delete	57	S18_1129	1993 Mazda RX-7	Classic Cars	1993 Mazda RX-7	Highway 66 Mini Classics
Edit Copy Delete	58	S18_1342	1937 Lincoln Berline	Vintage Cars	1937 Lincoln Berline	Motor City Art Classics
Edit Copy Delete	59	S18_1367	1936 Mercedes-Benz 500K Special Roadster	Vintage Cars	1936 Mercedes-Benz 500K Special Roadster	Studio M Art Models
Edit Copy Delete	60	S18_1589	1965 Aston Martin DB5	Classic Cars	1965 Aston Martin DB5	Classic Metal Creations

2. Membuat tabel fakta yang bernama fact_sales

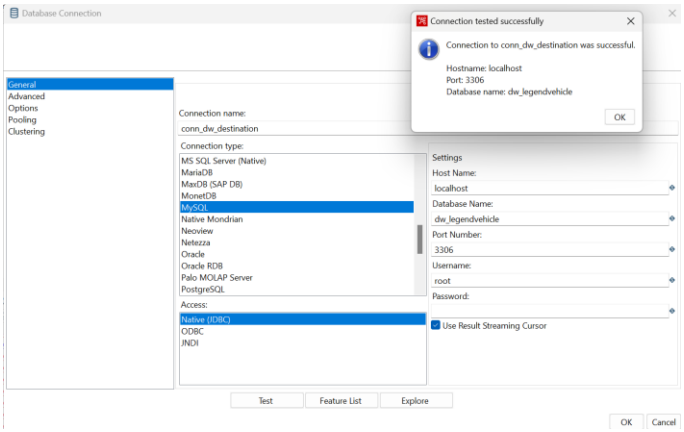
- Membuat tabel baru pada database dw_legendvehicle dengan nama factsales

```
CREATE TABLE factSales (
    id_factSales INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    id_dimProduct INT,
    id_dimDate INT,
    quantitySold INT,
    salesAmount DECIMAL(10,2),
    FOREIGN KEY (id_dimProduct) REFERENCES dimProduct(id_dimProduct),
    FOREIGN KEY (id_dimDate) REFERENCES dimDate(id_dimDate)
);
```

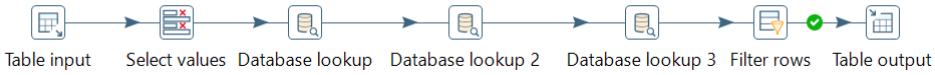
- Mengkoneksikan dengan database classicmodels sebagai input



- Mengkonsikn juga dengan database dw_legendvehicle sebagai output



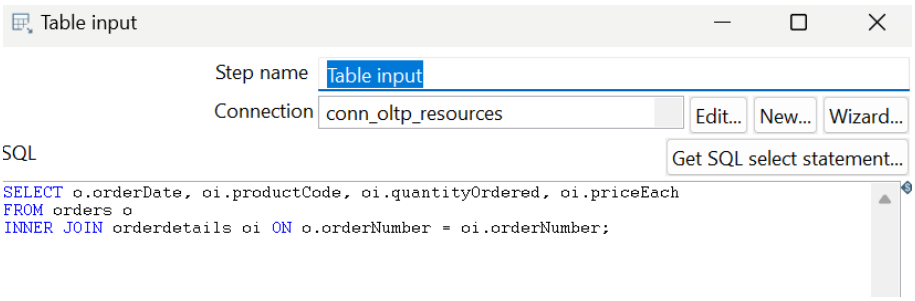
- Menyiapkan elemen-elemen berikut



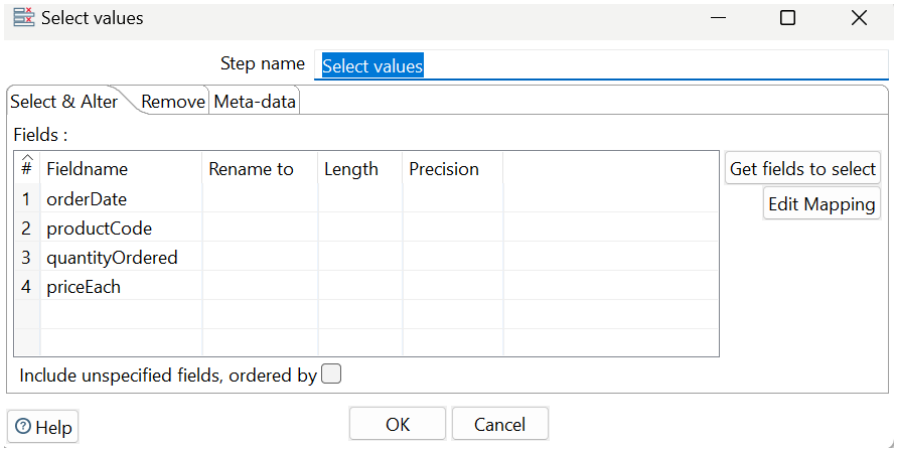
Fungsi :

- Tabel input : untuk menambil data dari database classicmodels dengan via SQL
- Select values : untuk mesorting kolom dan menentukan tipe data yang diperlukan
- Database lookup 1 : untuk mengambil id_dimProduct dari dimensi produk (dimproduct).
- Database lookup 2 : untuk mengambil id_dimDate dari dimensi tanggal (dimdate).
- Database lookup 3 : untuk memasukkan data ke tabel fakta (factsales)
- Filter rows : untuk mensorting baris sesuai dengan kondisi yang diperlukan
- Tabel output : untuk menyimpan hasil akhir

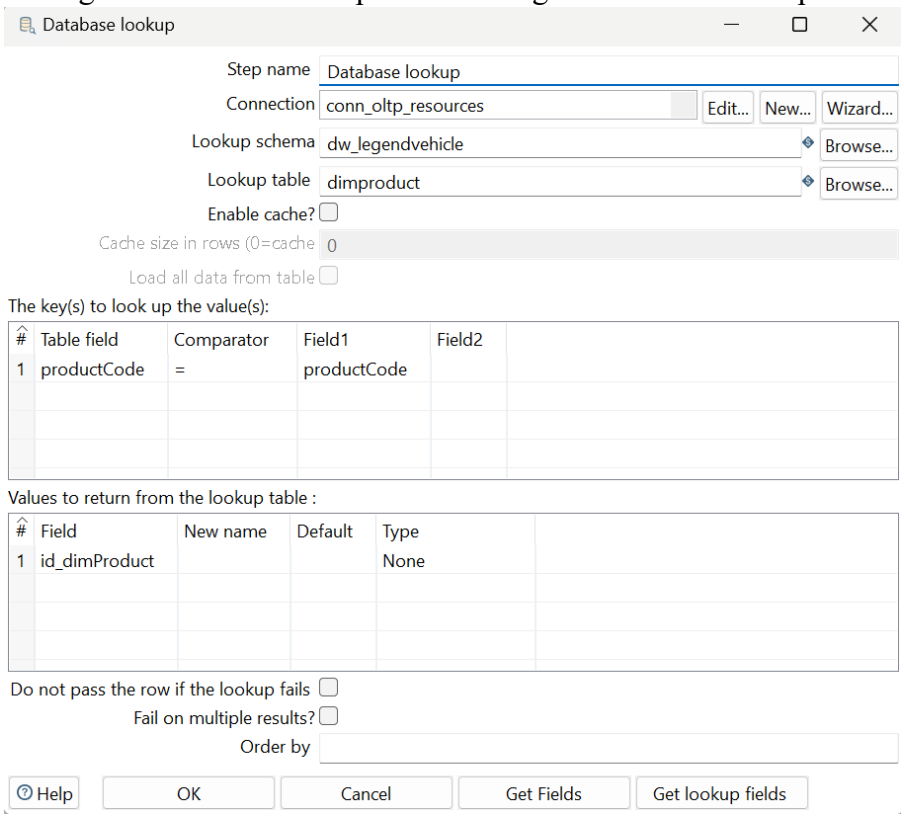
- Konfigurasi pada elemen Tabel input (mengambil data) sesuai dengan kolom yang diinginkan



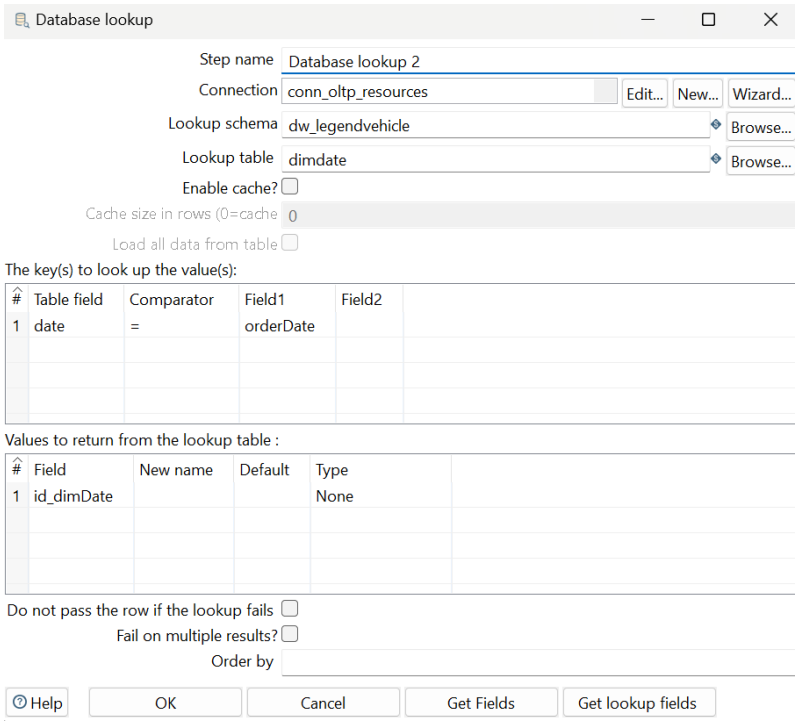
- Konfigurasi Select Values dengan menentukan kolom orderDate, productCode, quantityOrder, priceEach



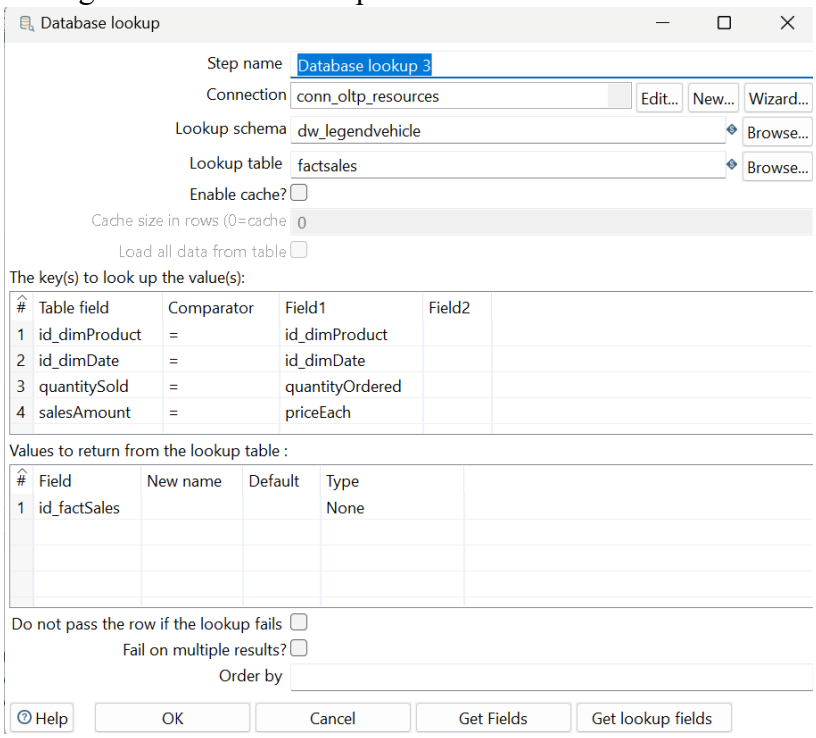
- Konfigurasi database lookup1 untuk mengambil data dari dimproduct



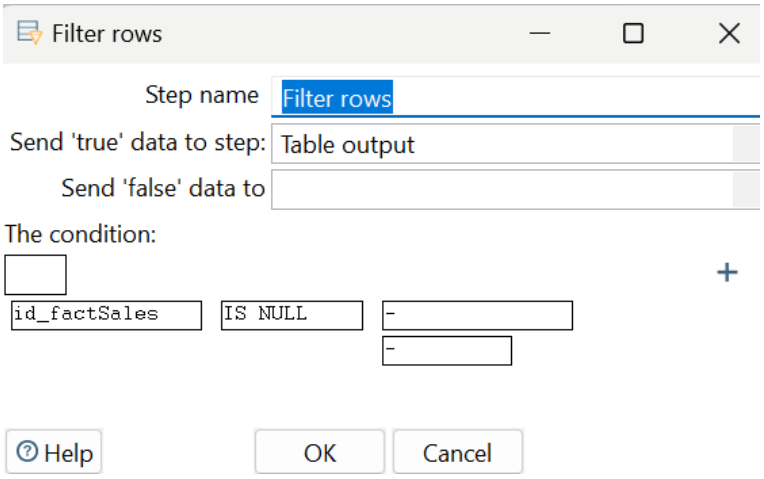
- Konfigurasi database lookup2 untuk mengambil data dari dimdate



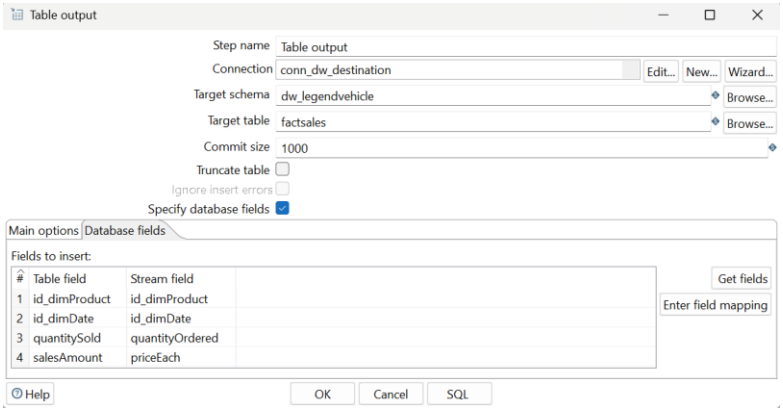
- Konfigurasi database lookup3 untuk memasukkan data ke factsales



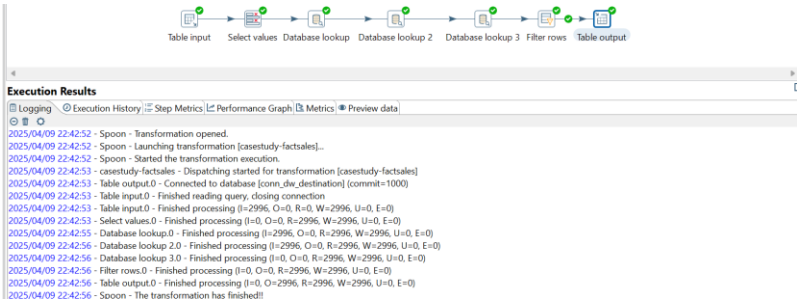
- Konfigurasi filter rows untuk mengambil data dengan syarat kolom id_factsales bernilai NULL, maka data akan dikirim ke langkah Table output.



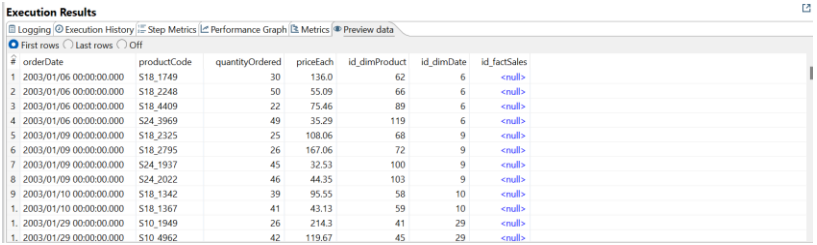
- Konfigurasi Tabel Output untuk menyimpan data hasil transformasi ke dalam tabel database ke dalam tabel factsales yang berada di skema dw_legendvehicle



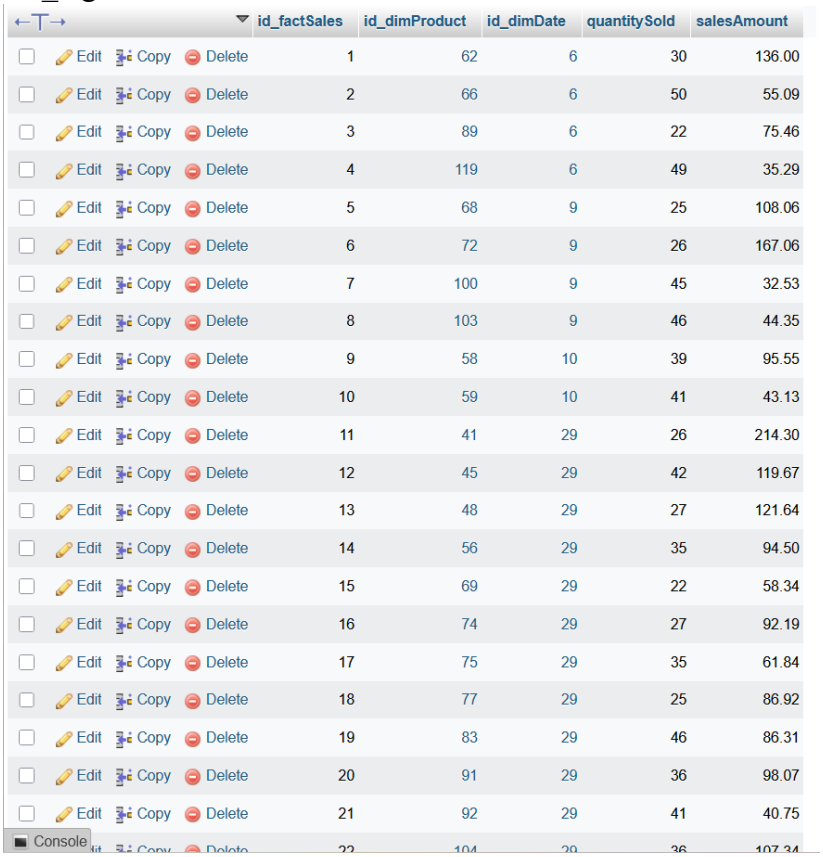
- Eksekusi transformasi dan hasilnya semua 2996 data baru yang sebelumnya tidak ditemukan di tabel factsales (id_factsales IS NULL) berhasil dimasukkan.



- Pada preview menunjukan semua data adalah data baru (akan masuk pada tabel output karna benilai true).



- Hasil akhir pada tabel output akan otomatis tersimpan pada database dw_legendvehicle kolom factsales

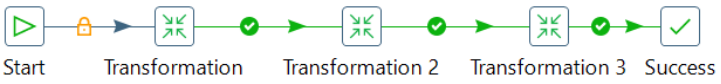


	id_factSales	id_dimProduct	id_dimDate	quantitySold	salesAmount
Edit Copy Delete	1	62	6	30	136.00
Edit Copy Delete	2	66	6	50	55.09
Edit Copy Delete	3	89	6	22	75.46
Edit Copy Delete	4	119	6	49	35.29
Edit Copy Delete	5	68	9	25	108.06
Edit Copy Delete	6	72	9	26	167.06
Edit Copy Delete	7	100	9	45	32.53
Edit Copy Delete	8	103	9	46	44.35
Edit Copy Delete	9	58	10	39	95.55
Edit Copy Delete	10	59	10	41	43.13
Edit Copy Delete	11	41	29	26	214.30
Edit Copy Delete	12	45	29	42	119.67
Edit Copy Delete	13	48	29	27	121.64
Edit Copy Delete	14	56	29	35	94.50
Edit Copy Delete	15	69	29	22	58.34
Edit Copy Delete	16	74	29	27	92.19
Edit Copy Delete	17	75	29	35	61.84
Edit Copy Delete	18	77	29	25	86.92
Edit Copy Delete	19	83	29	46	86.31
Edit Copy Delete	20	91	29	36	98.07
Edit Copy Delete	21	92	29	41	40.75

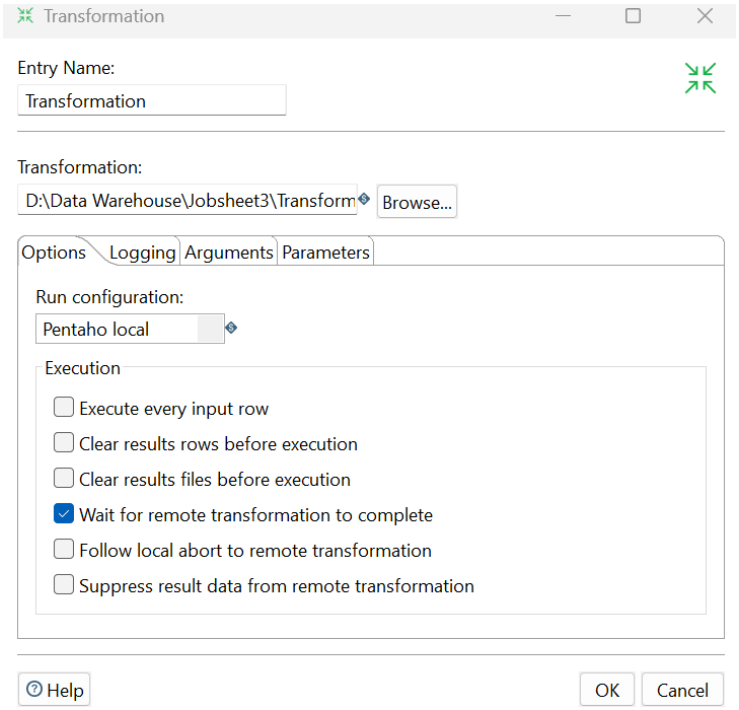
Console

3. Membuat job untuk menggabungkan dimdate, dimproduct dan factsales

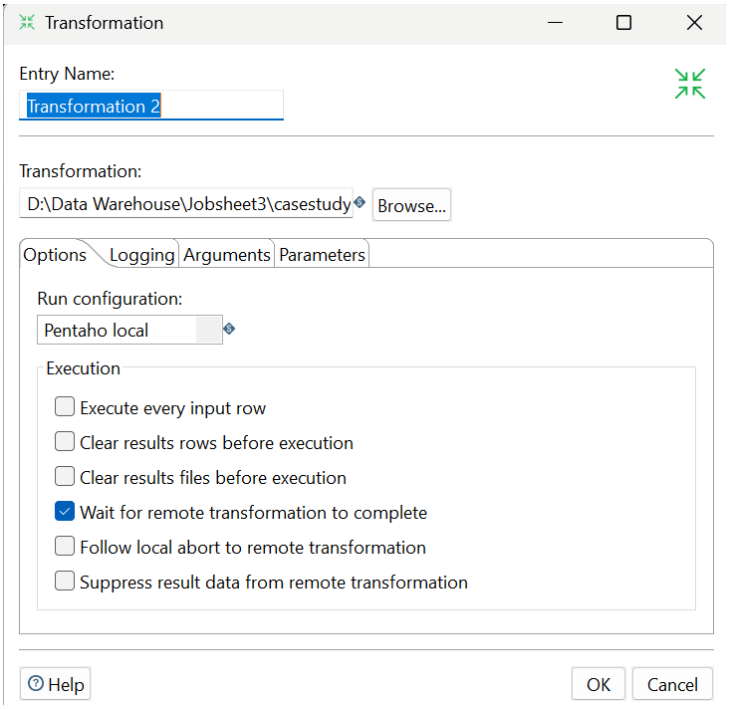
- Menyiapkan elemen-elemen berikut



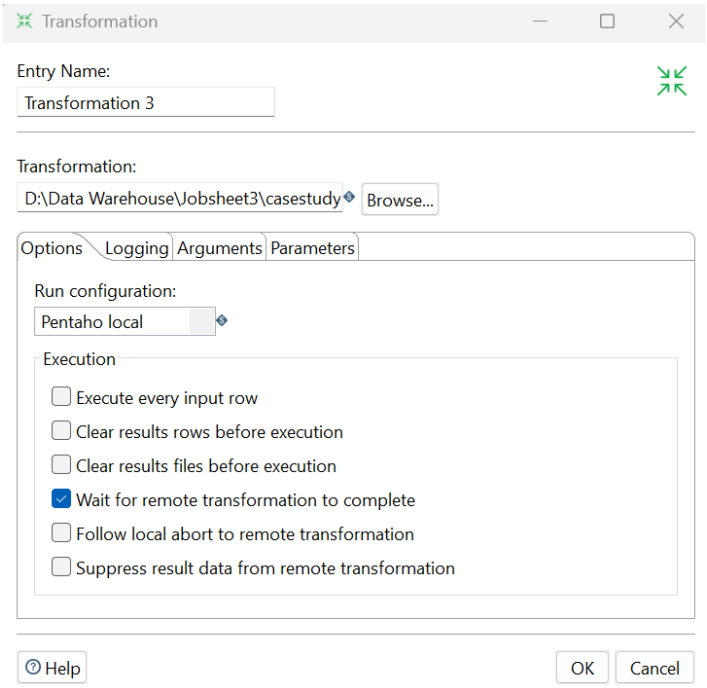
Start: Objek untuk melakukan konfigurasi cron job dari proses ETL yag telah dibuat
Transformation 1 : digunakan untuk menjalankan transformation pembuatan dimDate.



Transformation 2 : digunakan untuk menjalankan transformation pembuatan dimProduct.

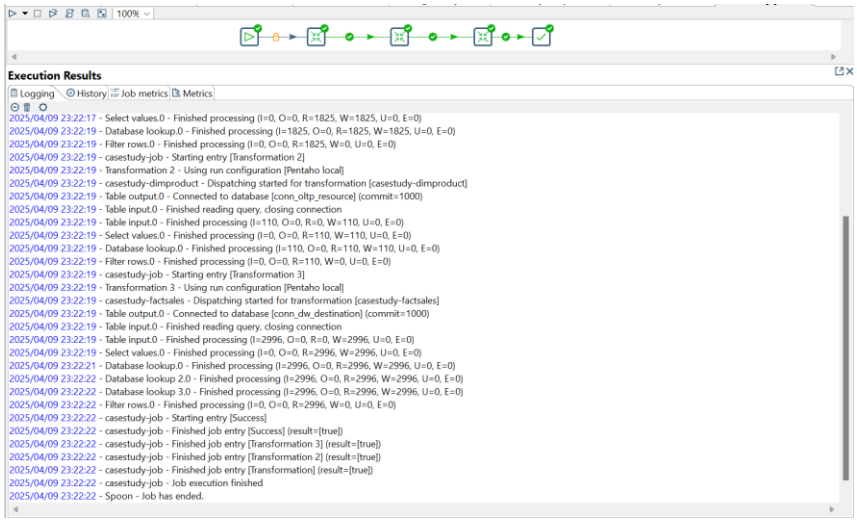


Transformation 3 : digunakan untuk menjalankan transformation pembuatan factSales.



Success: Objek untuk menandakan bahwa proses telah selesai

- Eksekusi Job



- Struktur tabel pada dw_legendvehicle setelah dieksekusi