Universitas Indonesia

# Tugas Akhir Praktikum
# Mata Kuliah Manajemen Data

Fakultas Ilmu Komputer

Program Studi Magister Teknologi Informasi

Jakarta

2025

# 2025SB – 4

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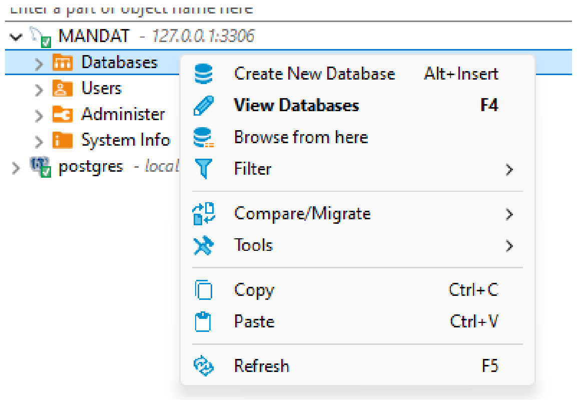
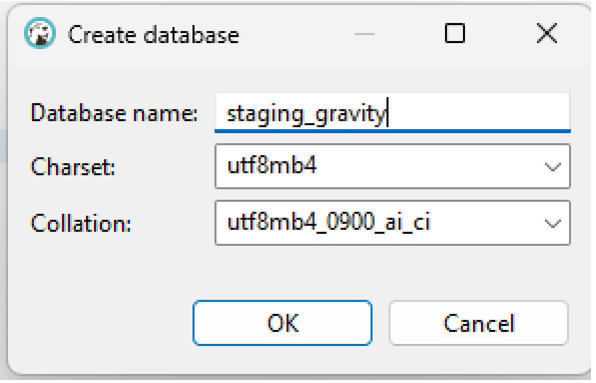
# 1

# Nomor 1

Membuat database staging_gravity menggunakan DBMS MySQL pada Aplikasi Dbeaver.



membuat database baru di MySQL. Klik “Create New Database”



Database name: staging_gravity

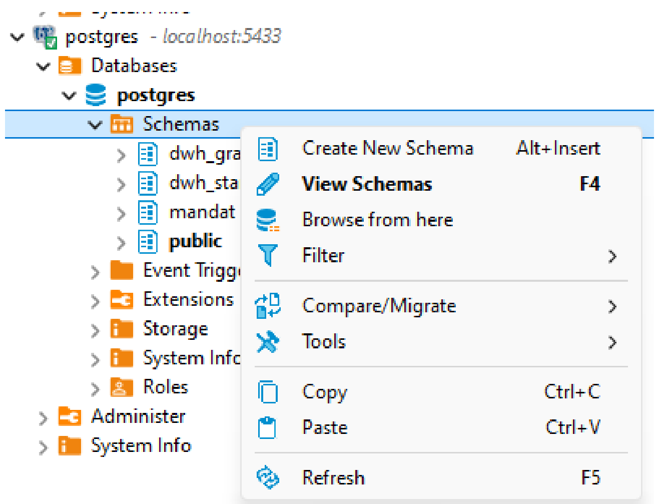
Charset: utf8mb4

Collation: utf8mb4_0900_ai_ci

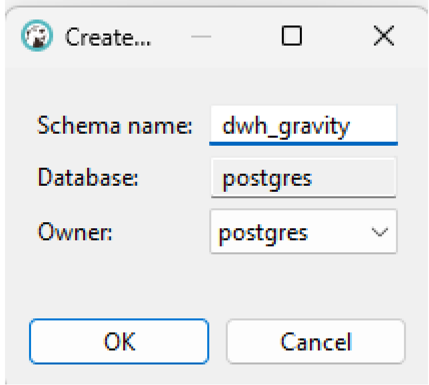
Setelah itu, menuliskan nama database, yaitu : “staging_gravity”. lalu Klik OK.

# Nomor 1

Membuat data warehouse menggunakan DBMS PostgreSQL pada Aplikasi DBeaver



membuat Schema baru di PostgreSQL. Klik “Create New Schema”



Schema name: dwh_gravity

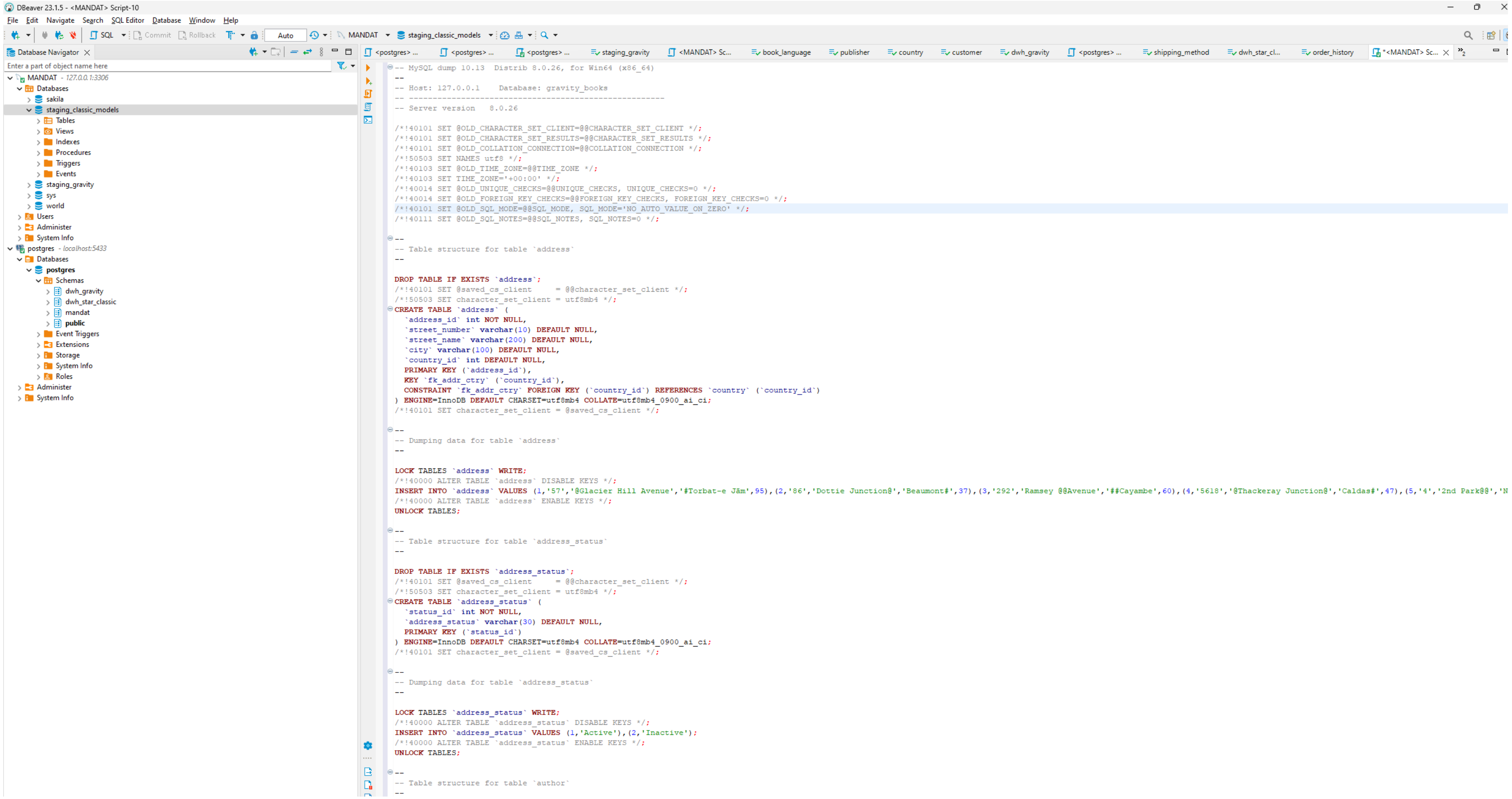
Database: postgres

Owner: postgres

Setelah itu, menuliskan nama schema, yaitu : “dwh_gravity”. lalu Klik OK.

# Nomor 1

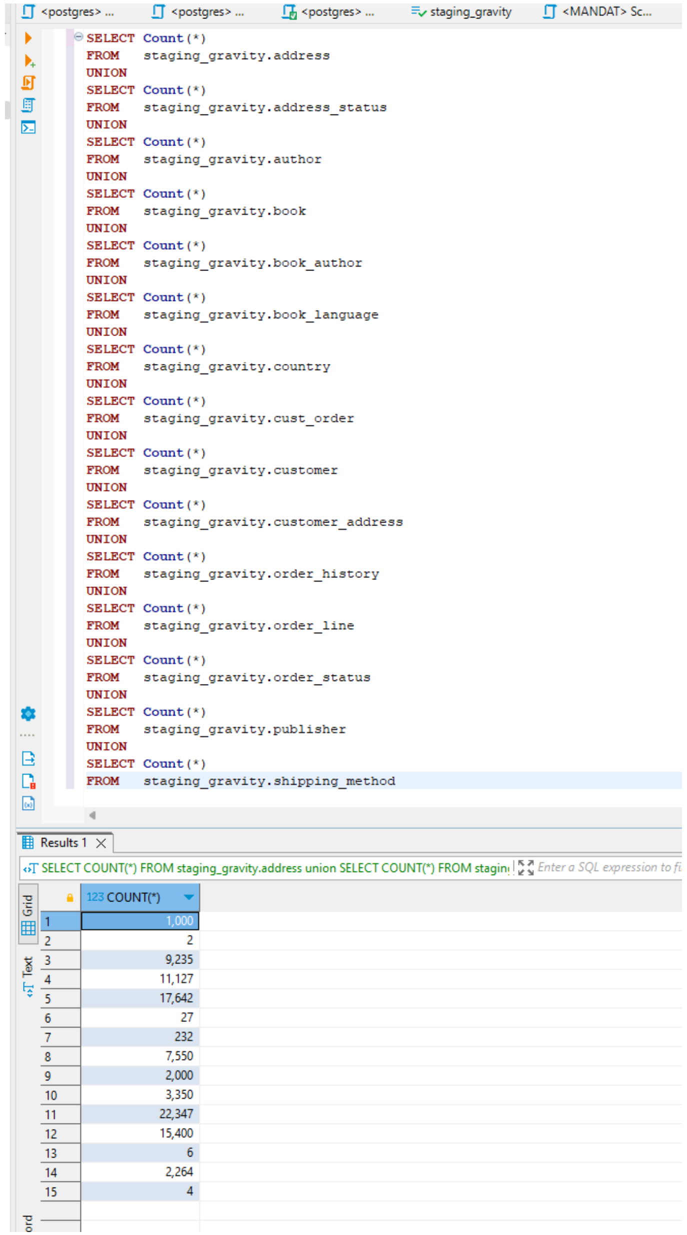
Load data staging_gravity.sql kedalam db staging_gravity di MySQL pada Aplikasi Dbeaver.



```
-- MySQL dump 10.13  Distrib 8.0.26, for Win64 (x86_64)
--
-- Host: 127.0.0.1    Database: gravity_books
-- ------------------------------------------------------
-- Server version	8.0.26

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!50503 SET NAMES utf8 */;
/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;
/*!40103 SET TIME_ZONE='+00:00' */;
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0 */;
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;
/*!40111 SET @OLD_SQL_NOTES=@@SQL_NOTES, SQL_NOTES=0 */;

--
-- Table structure for table `address`
--

DROP TABLE IF EXISTS `address`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!50503 SET character_set_client = utf8mb4 */;
CREATE TABLE `address` (
  `address_id` int NOT NULL,
  `street_number` varchar(10) DEFAULT NULL,
  `street_name` varchar(200) DEFAULT NULL,
  `city` varchar(100) DEFAULT NULL,
  `country_id` int DEFAULT NULL,
  PRIMARY KEY (`address_id`),
  KEY `fk_addr_ctry` (`country_id`),
  CONSTRAINT `fk_addr_ctry` FOREIGN KEY (`country_id`) REFERENCES `country` (`country_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `address`
--

LOCK TABLES `address` WRITE;
/*!40000 ALTER TABLE `address` DISABLE KEYS */;
INSERT INTO `address` VALUES (1,'57','@Glacier Hill Avenue','#Torbat-e Jām',95),(2,'86','Dottie Junction@','Beaumont#',37),(3,'292','Ramsey @@Avenue','##Cayambe',60),(4,'5618','@Thackeray Junction@','Caldas#',47),(5,'4','2nd Park@@','N
/*!40000 ALTER TABLE `address` ENABLE KEYS */;
UNLOCK TABLES;

--
-- Table structure for table `address_status`
--

DROP TABLE IF EXISTS `address_status`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!50503 SET character_set_client = utf8mb4 */;
CREATE TABLE `address_status` (
  `status_id` int NOT NULL,
  `address_status` varchar(30) DEFAULT NULL,
  PRIMARY KEY (`status_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `address_status`
--

LOCK TABLES `address_status` WRITE;
/*!40000 ALTER TABLE `address_status` DISABLE KEYS */;
INSERT INTO `address_status` VALUES (1,'Active'),(2,'Inactive');
/*!40000 ALTER TABLE `address_status` ENABLE KEYS */;
UNLOCK TABLES;

--
-- Table structure for table `author`
--
```

# Nomor 1

Isi Data dari db Staging_gravity di MySql



```
SELECT Count(*)
FROM   staging_gravity.address
UNION
SELECT Count(*)
FROM   staging_gravity.address_status
UNION
SELECT Count(*)
FROM   staging_gravity.author
UNION
SELECT Count(*)
FROM   staging_gravity.book
UNION
SELECT Count(*)
FROM   staging_gravity.book_author
UNION
SELECT Count(*)
FROM   staging_gravity.book_language
UNION
SELECT Count(*)
FROM   staging_gravity.country
UNION
SELECT Count(*)
FROM   staging_gravity.cust_order
UNION
SELECT Count(*)
FROM   staging_gravity.customer
UNION
SELECT Count(*)
FROM   staging_gravity.customer_address
UNION
SELECT Count(*)
FROM   staging_gravity.order_history
UNION
SELECT Count(*)
FROM   staging_gravity.order_line
UNION
SELECT Count(*)
FROM   staging_gravity.order_status
UNION
SELECT Count(*)
FROM   staging_gravity.publisher
UNION
SELECT Count(*)
FROM   staging_gravity.shipping_method
```

```
SELECT COUNT(*) FROM staging_gravity.address union SELECT COUNT(*) FROM stagin
```

Enter a SQL expression to fi

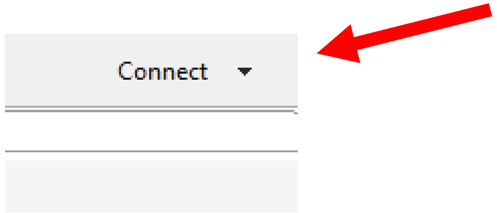
|  | 123 COUNT(*) |
|---|---|
| 1 | 1,000 |
| 2 | 2 |
| 3 | 9,235 |
| 4 | 11,127 |
| 5 | 17,642 |
| 6 | 27 |
| 7 | 232 |
| 8 | 7,550 |
| 9 | 2,000 |
| 10 | 3,350 |
| 11 | 22,347 |
| 12 | 15,400 |
| 13 | 6 |
| 14 | 2,264 |
| 15 | 4 |

# Nomor 1

Membuat repository dan koneksi database di Pentaho Data Integration.

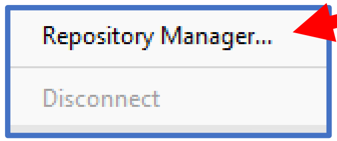
Langkah:

- Membuka aplikasi Pentaho Data Integration.
- Klik tanda panah pada “Connect” sebelah pojok kanan atas.

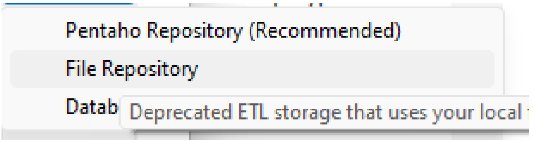


# Nomor 1

- Pilih “Repository Manager”
- Klik “Add”
- Klik “Add“

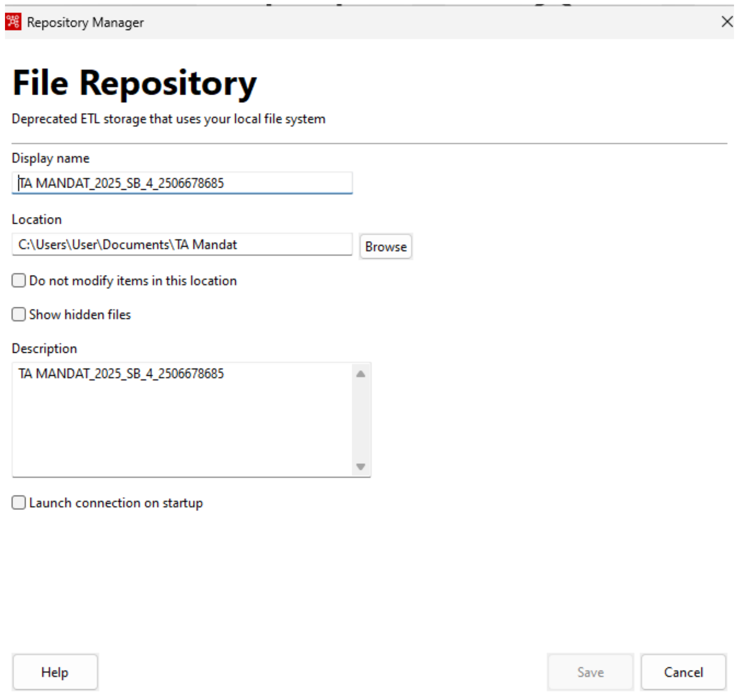


- Pilih “File Repository”



Pentaho Repository (Recommended)
File Repository
Datab
Deprecated ETL storage that uses your local

- Lalu klik
- Mengisi kolom berikut – lalu klik


Repository Manager

**File Repository**

Deprecated ETL storage that uses your local file system

Display name: TA MANDAT_2025_SB_4_2506678685

Location: C:\Users\User\Documents\TA Mandat

□ Do not modify items in this location

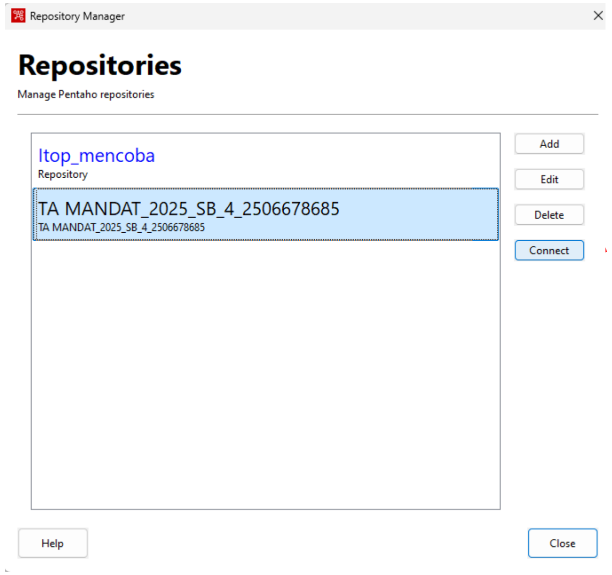
□ Show hidden files

Description: TA MANDAT_2025_SB_4_2506678685

□ Launch connection on startup

# Nomor 1

- Klik “Connect”



Repository Manager

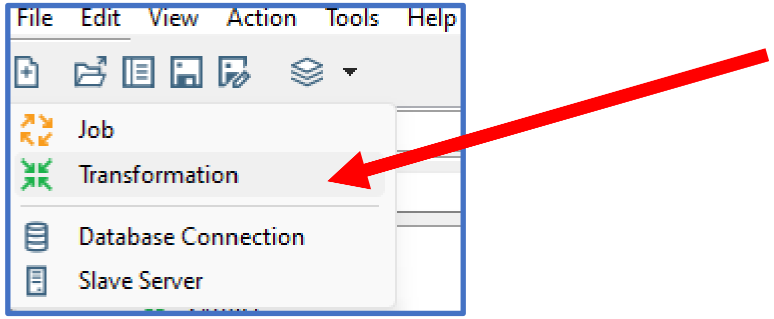
## Repositories

Manage Pentaho repositories

Itop_mencoba
Repository

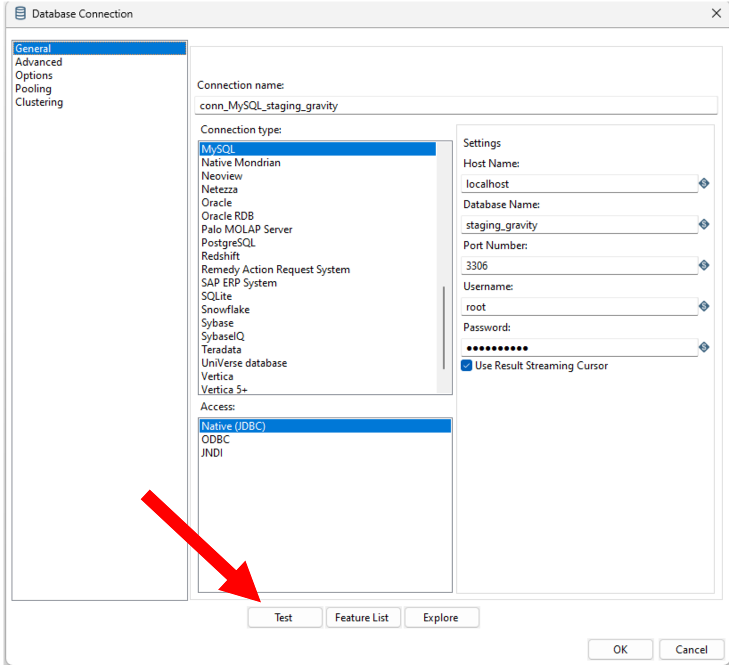
TA MANDAT_2025_SB_4_2506678685
TA MANDAT_2025_SB_4_2506678685

- Lalu membuat  Transformasi baru.



# Nomor 1

- Klik tab “View”
- Klik kanan “Database connections”
- lalu pilih “New” – mengisi kolom seperti berikut:


Database Connection

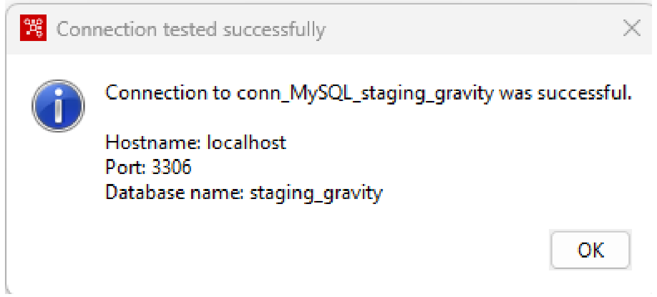
Connection name:
conn_MySQL_staging_gravity

Connection type: MySQL

Access: Native (JDBC)

Settings
Host Name: localhost
Database Name: staging_gravity
Port Number: 3306
Username: root
Password: ••••••••••
☑ Use Result Streaming Cursor

Klik “Test” – memastikan koneksi berhasil.

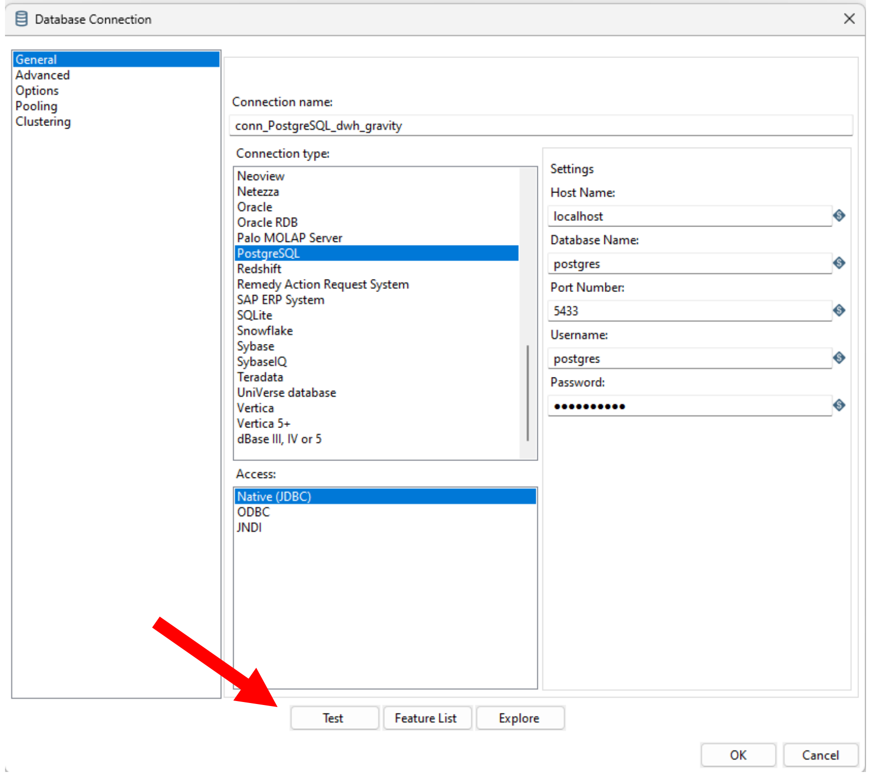

Connection tested successfully

Connection to conn_MySQL_staging_gravity was successful.

Hostname: localhost
Port: 3306
Database name: staging_gravity

# Nomor 1

- Melakukan langkah yang sama untuk membuat koneksi ke Database PostgreSQL.



Connection name: conn_PostgreSQL_dwh_gravity

Connection type: PostgreSQL

Access: Native (JDBC)

Settings

Host Name: localhost

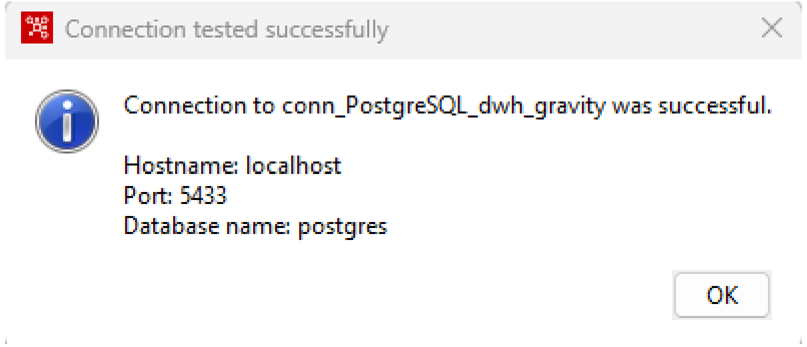
Database Name: postgres

Port Number: 5433

Username: postgres

Password: ••••••••••

Klik “Test” – memastikan koneksi berhasil.



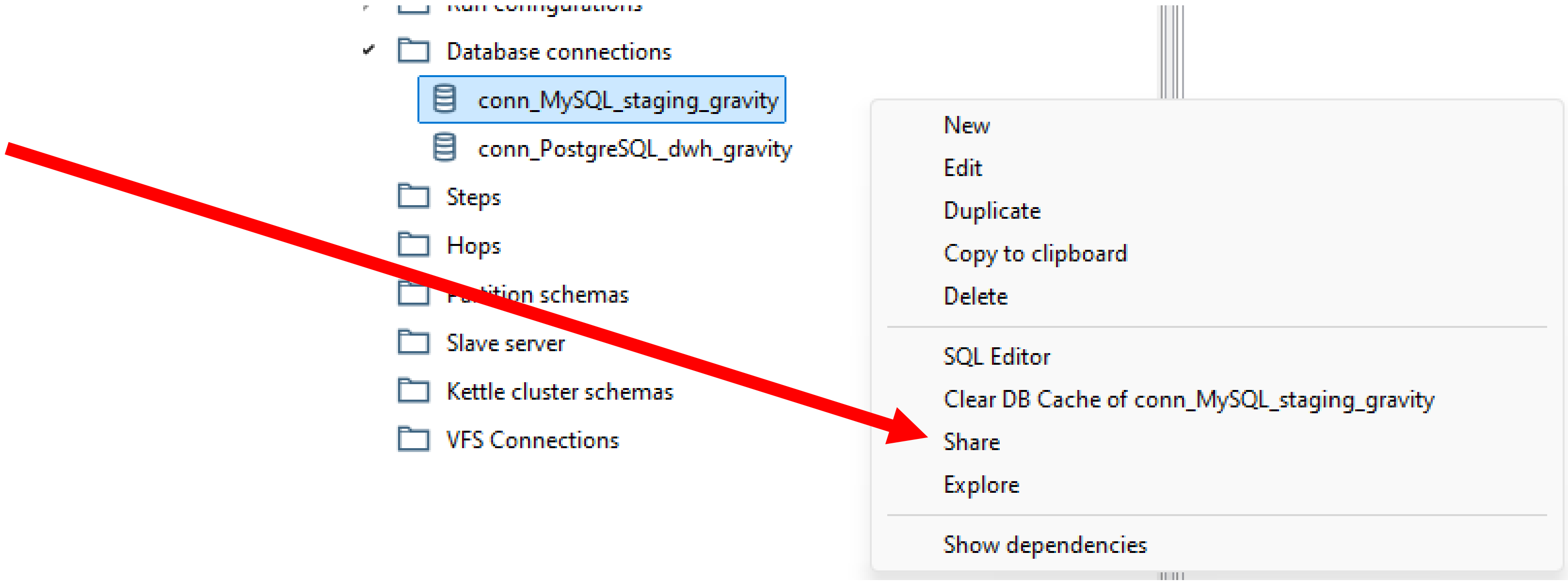
Connection tested successfully

Connection to conn_PostgreSQL_dwh_gravity was successful.

Hostname: localhost
Port: 5433
Database name: postgres

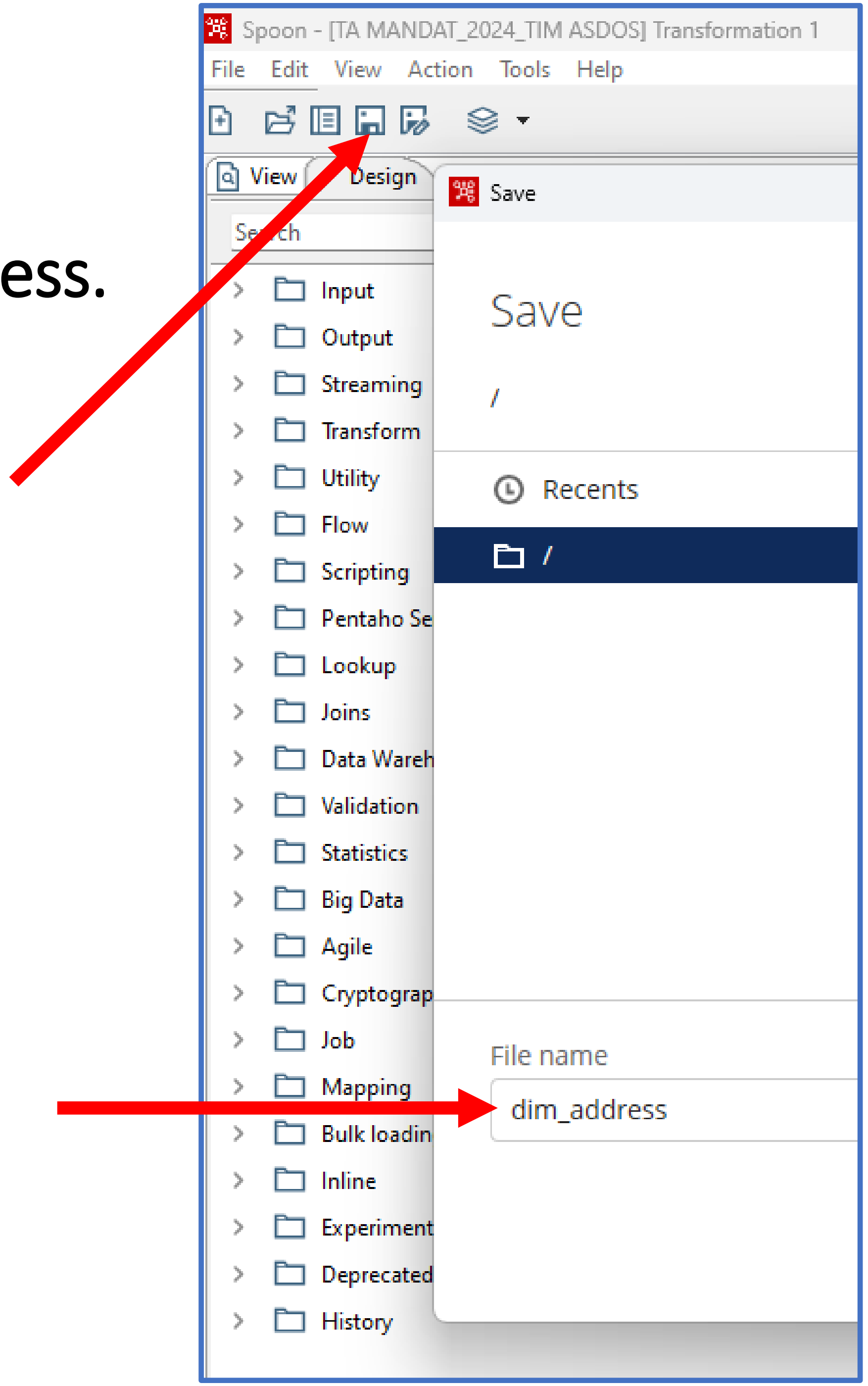
# Nomor 1

Klik kanan nama koneksi – pilih “**share**”. Hal ini bertujuan agar koneksi bisa dipakai ulang oleh *Transformations* lain yang menggunakan koneksi database yang sama.



# Nomor 1

Menyimpan *Transformation* dengan nama **dim_address.**



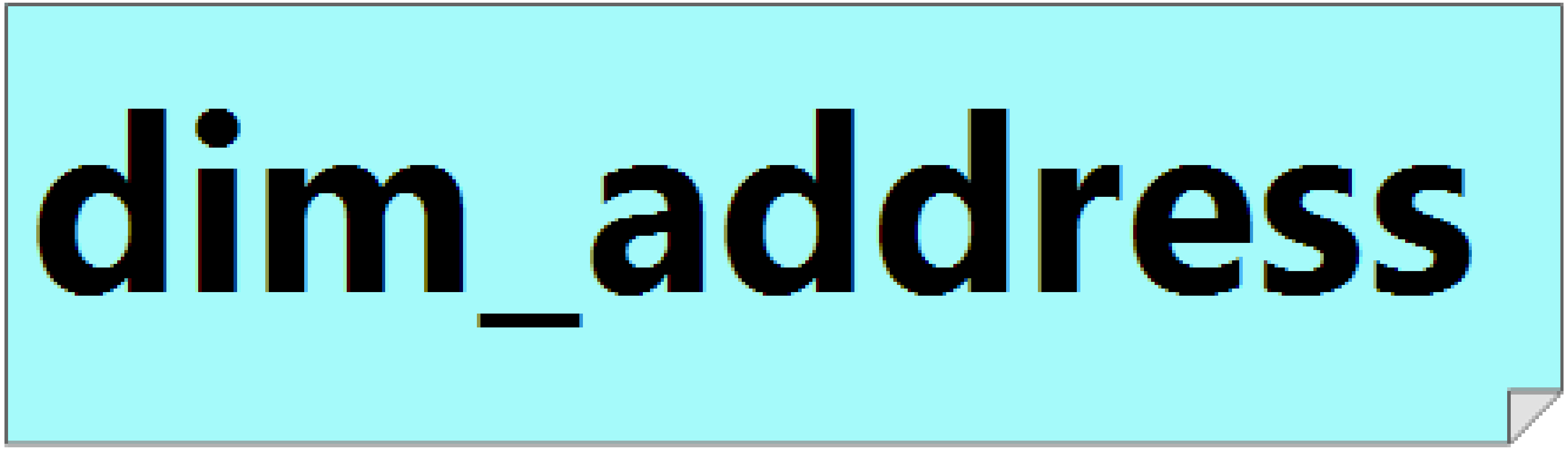
dim_address

# 2

# Nomor 2

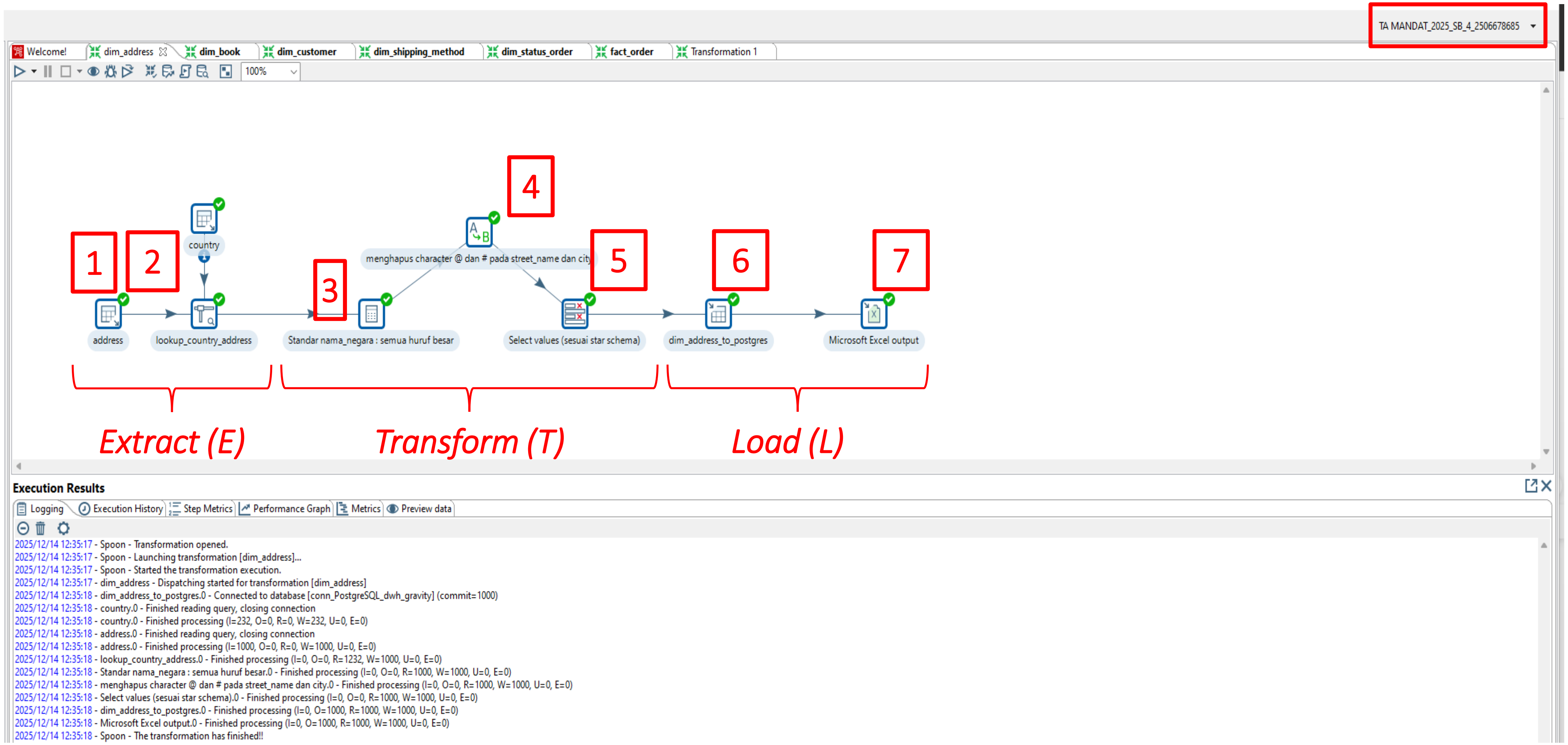
- Berisi ***screenshot*** ETL Tabel Dimensi.
- Lakukan dan ***screenshot* langkah demi langkah** sesuai yang **dicontohkan** pada sesi praktikum.
- Tampilan ***screenshot*** ETL **harus** menunjukkan dengan jelas (minimal) :
  1. Semua step pada ETL berhasil **(centang hijau)** ✓
  2. Nama Repository (di pojok kanan atas) sudah sesuai.
  3. Tab "Logging" pada Execution Results menunjukkan **waktu (date & time).**
  4. Tab "Step Metrics" pada Execution Results menampilkan jumlah rows **(kolom output) di step terakhir.**
- Tampilan ***screenshot*** dwh_gravity **harus** menunjukkan dengan jelas (minimal) :
  1. Contoh data.
  2. Tampilan yang menunjukkan jumlah **rows.**
  3. Tampilan yang menunjukkan **waktu** load data ke dwh_gravity.
  4. Semua field / kolom **harus** terlihat.

# Nomor 2 (a)



dim_address

# Nomor 2 (a) *screenshot* ETL dim_address.



```
2025/12/14 12:35:17 - Spoon - Transformation opened.
2025/12/14 12:35:17 - Spoon - Launching transformation [dim_address]...
2025/12/14 12:35:17 - Spoon - Started the transformation execution.
2025/12/14 12:35:17 - dim_address - Dispatching started for transformation [dim_address]
2025/12/14 12:35:18 - dim_address_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 12:35:18 - country.0 - Finished reading query, closing connection
2025/12/14 12:35:18 - country.0 - Finished processing (I=232, O=0, R=0, W=232, U=0, E=0)
2025/12/14 12:35:18 - address.0 - Finished reading query, closing connection
2025/12/14 12:35:18 - address.0 - Finished processing (I=1000, O=0, R=0, W=1000, U=0, E=0)
2025/12/14 12:35:18 - lookup_country_address.0 - Finished processing (I=0, O=0, R=1232, W=1000, U=0, E=0)
2025/12/14 12:35:18 - Standar nama_negara : semua huruf besar.0 - Finished processing (I=0, O=0, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - menghapus character @ dan # pada street_name dan city.0 - Finished processing (I=0, O=0, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - Select values (sesuai star schema).0 - Finished processing (I=0, O=0, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - dim_address_to_postgres.0 - Finished processing (I=0, O=1000, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - Microsoft Excel output.0 - Finished processing (I=0, O=1000, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - Spoon - The transformation has finished!!
```

# Nomor 2 (a) *screenshot* ETL dim_address.

Tab “Input Table”

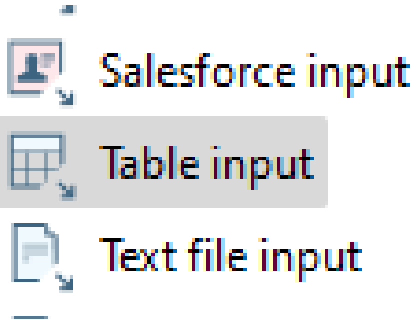
1

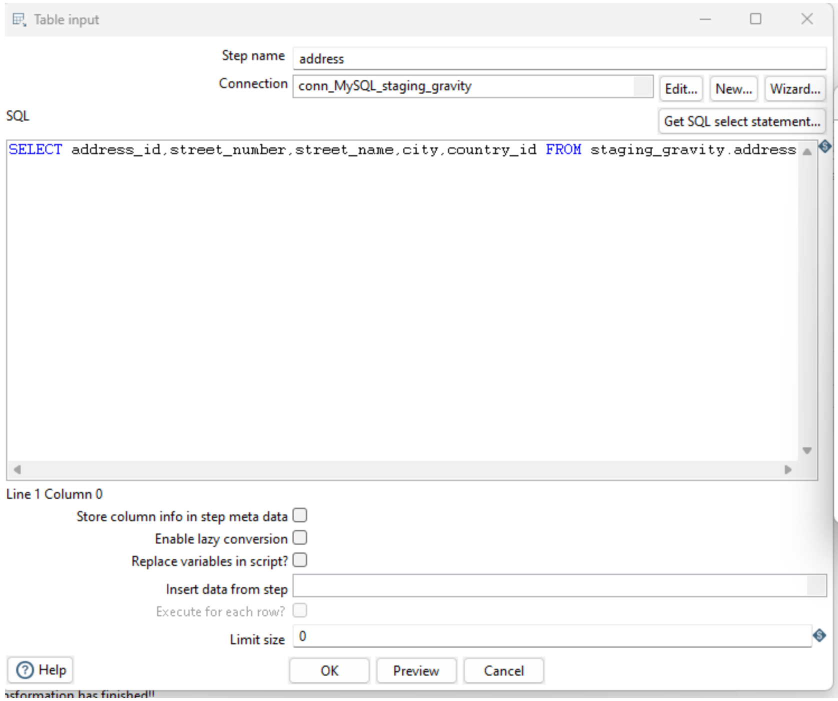
Step: Create table input untuk table address

Nama: tabel address

Penjelasan : Pada tahap desain, pilih **section Input**, lalu pilih **Table Input** dan tarik ke kanvas **dim_address**. Setelah itu, ubah nama step **Table Input** menjadi **address** dengan cara klik kanan → **Edit Step** → ganti **Step Name** menjadi *address*.

Selanjutnya, pada bagian **Connection**, pilih **conn_MySQL_staging_gravity** untuk menentukan bahwa sumber data diambil dari database MySQL. Kemudian klik **Get SQL Select Statement**, dan pada koneksi **conn_MySQL_staging_gravity** pilih tabel yang sesuai sebagai input data.





Step name: address

Connection: conn_MySQL_staging_gravity

SQL

```
SELECT address_id,street_number,street_name,city,country_id FROM staging_gravity.address
```

Line 1 Column 0

Store column info in step meta data □

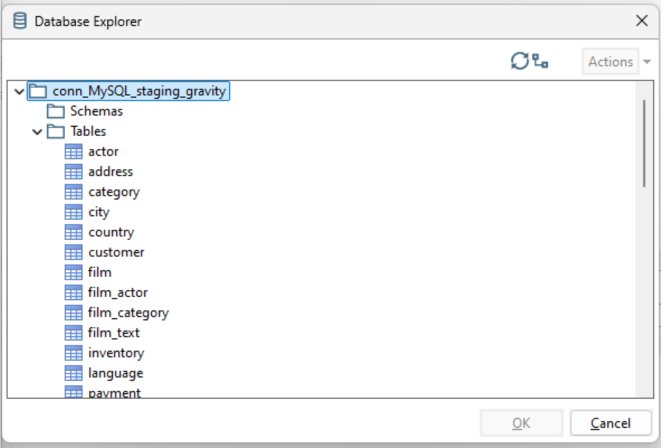
Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size 0



# Nomor 2 (a) *screenshot* ETL dim_address.

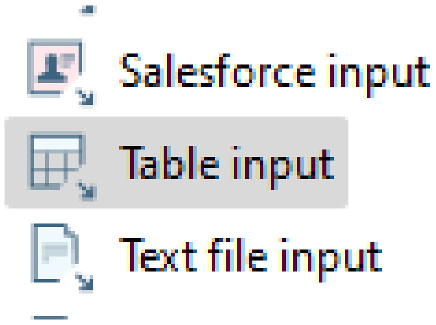
Tab "Input Table"

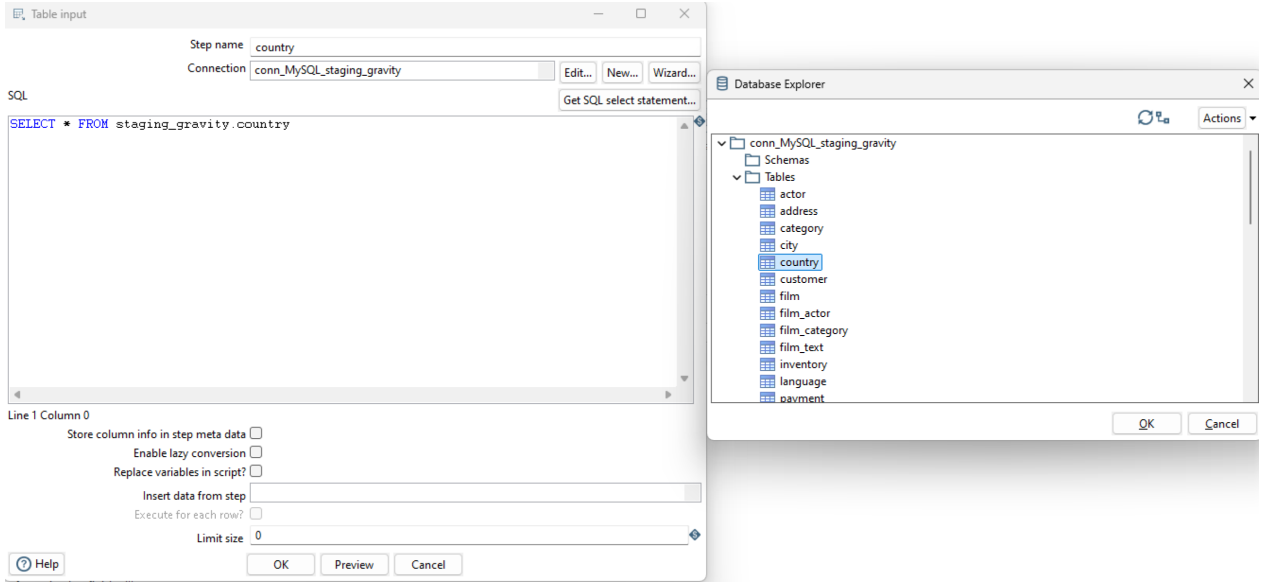
1

Step: Create table input untuk table country

Nama: table country

Penjelasan : Pada tahap desain, pilih **section Input**, lalu pilih **Table Input** dan tarik ke kanvas **dim_address**. Selanjutnya, ubah nama step **Table Input** menjadi **input** dengan cara klik kanan → **Edit Step**, kemudian ganti **Step Name** menjadi **Country**. Setelah itu, pada bagian **Connection**, pilih **conn_MySQL_staging_gravity** untuk menentukan bahwa sumber data berasal dari database MySQL.





Step name: country

Connection: conn_MySQL_staging_gravity

SQL

```
SELECT * FROM staging_gravity.country
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size: 0

```
conn_MySQL_staging_gravity
  Schemas
  Tables
    actor
    address
    category
    city
    country
    customer
    film
    film_actor
    film_category
    film_text
    inventory
    language
    payment
```

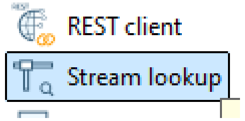
# Nomor 2 (a) *screenshot* ETL dim_address.

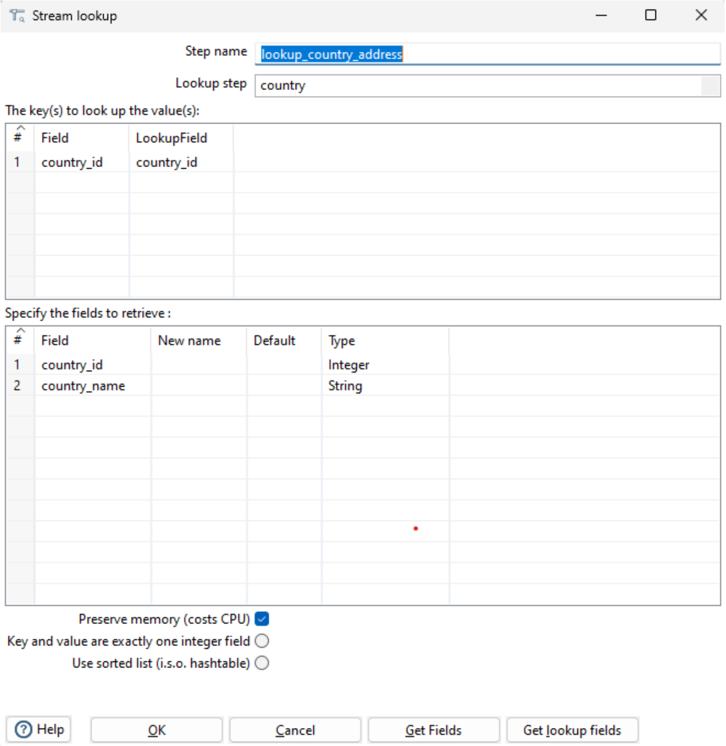
Tab “Stream Lookup”

2

Step: Create table input untuk table country

Penjelasan: Pada tahap desain, pilih **section Lookup**, kemudian pilih **Stream Lookup** dan tarik ke kanvas **dim_address**. Selanjutnya, pada konfigurasi **Lookup Values**, atur **field** menjadi *country_id* dan **lookup field** menjadi *country_id*. Pada bagian **Specify fields to retrieve**, tambahkan field *country_id* dengan tipe **Integer** serta *country_name* dengan tipe **String**.




Stream lookup

Step name: lookup_country_address

Lookup step: country

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | country_id | country_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | country_id | | | Integer |
| 2 | country_name | | | String |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

# Nomor 2 (a) *screenshot* ETL dim_address.

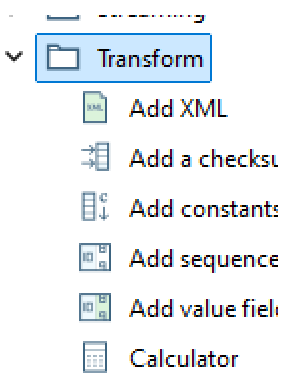
Tab “Calculator”

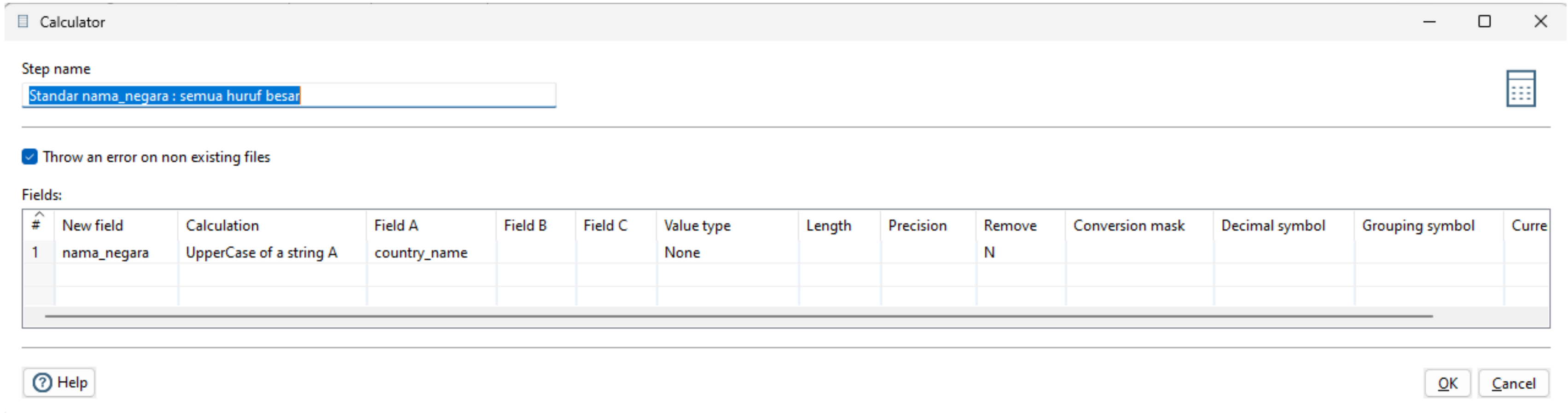
3

Step: Create calculator untuk join merubah semua character pada value country name menjadi uppercase.

Nama: Standar nama_negara : semua huruf besar

Penjelasan : **Tujuan penggunaan Calculator** adalah untuk mengubah nilai **nama_negara** menjadi huruf kapital. Pada tahap desain, pilih **section Transform**, lalu pilih **Calculator** dan tarik ke kanvas **dim_address**. Selanjutnya, pada konfigurasi **New Field**, masukkan **nama_negara**. Pada bagian **Calculation**, pilih **UpperCase of a string A**, atur **Field A** menjadi *country_name*, **Value Type** menjadi *None*, dan set **Remove** ke **N**.





Step name: Standar nama_negara : semua huruf besar

☑ Throw an error on non existing files

Fields:

| # | New field | Calculation | Field A | Field B | Field C | Value type | Length | Precision | Remove | Conversion mask | Decimal symbol | Grouping symbol | Curre |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | nama_negara | UpperCase of a string A | country_name | | | None | | | N | | | | |

# Nomor 2 (a) *screenshot* ETL dim_address.

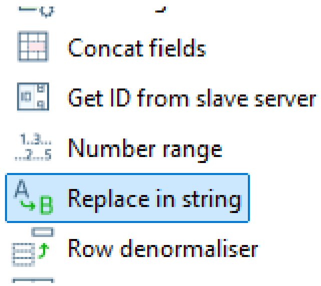
Tab "Replacing In String"

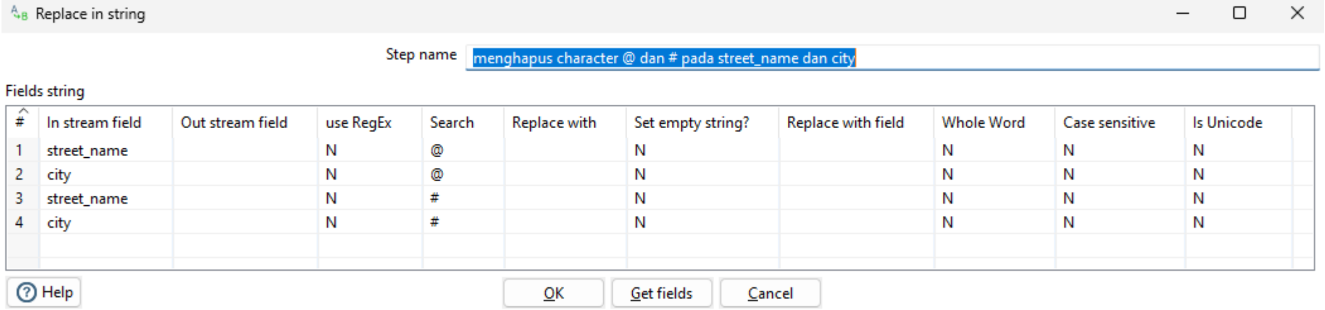
4

Step: Create Replace in string untuk menghapus character @ dan # pada column street name dan city

Nama: menghapus character @ dan # pada street_name dan city

Penjelasan : Pada tahap desain, pilih **section Transform**, kemudian pilih **Replace in String** dan tarik ke kanvas **dim_address**. Selanjutnya, lakukan pengaturan pada konfigurasi **Replace in String** sesuai dengan konfigurasi yang ditunjukkan pada gambar di bawah ini.





Step name: menghapus character @ dan # pada street_name dan city

Fields string

| # | In stream field | Out stream field | use RegEx | Search | Replace with | Set empty string? | Replace with field | Whole Word | Case sensitive | Is Unicode |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | street_name |  | N | @ |  | N |  | N | N | N |
| 2 | city |  | N | @ |  | N |  | N | N | N |
| 3 | street_name |  | N | # |  | N |  | N | N | N |
| 4 | city |  | N | # |  | N |  | N | N | N |

# Nomor 2 (a) *screenshot* ETL dim_address.

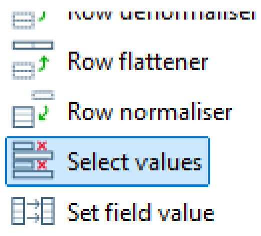
Tab “Select Values”

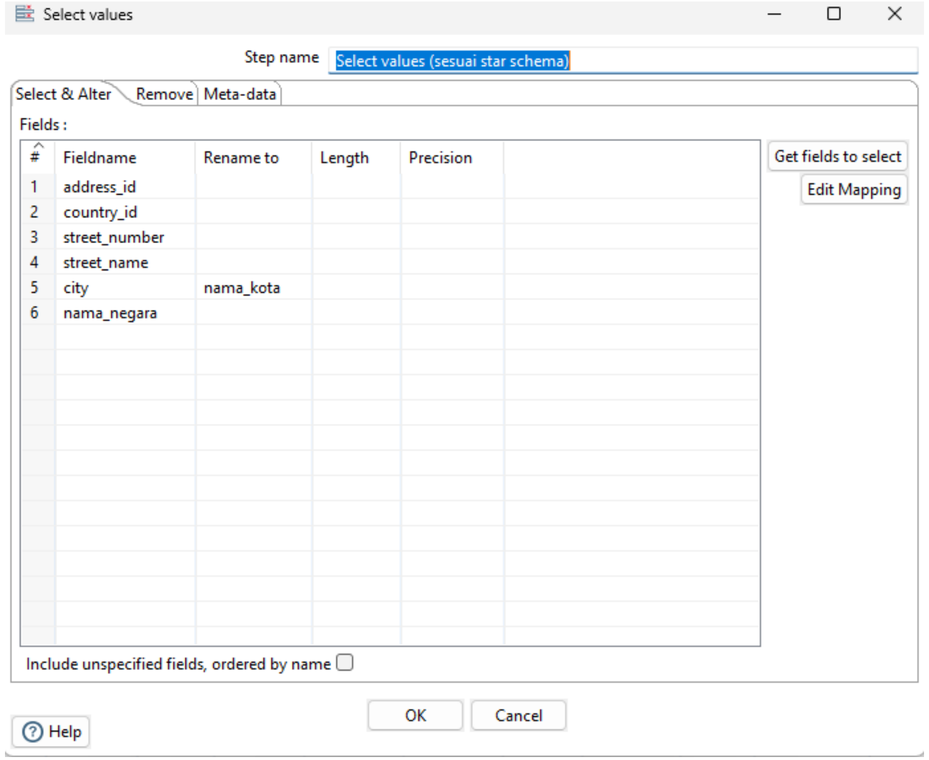
5

Step: Create Select Values untuk menyesuaikan table result yang akan di ingest ke dwh target.

Nama: Select values (sesuai star schema)

Penjelasan : Pada tahap desain, pilih **section Transform**, kemudian pilih **Select Values** dan tarik ke kanvas **dim_address**. Selanjutnya, atur konfigurasi **Select Values** sesuai dengan pengaturan yang ditampilkan pada gambar di bawah ini.





Step name: Select values (sesuai star schema)

Fields :

| # | Fieldname | Rename to | Length | Precision |
|---|---|---|---|---|
| 1 | address_id | | | |
| 2 | country_id | | | |
| 3 | street_number | | | |
| 4 | street_name | | | |
| 5 | city | nama_kota | | |
| 6 | nama_negara | | | |

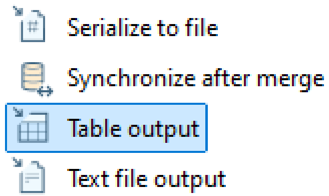
Include unspecified fields, ordered by name □

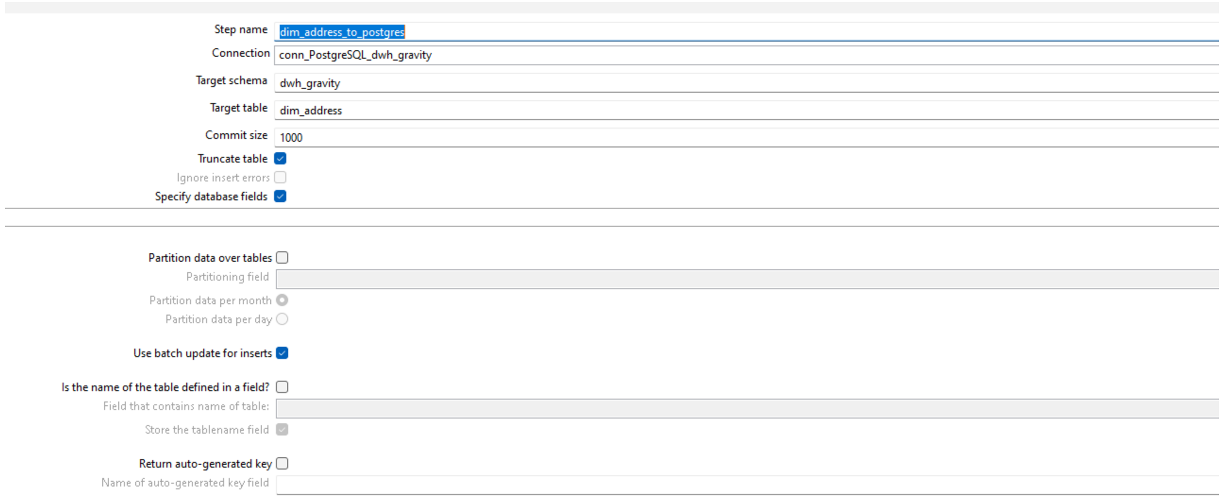
# Nomor 2 (a) *screenshot* ETL dim_address.

Tab "Tabel Output"

6

Step: Create Table Output untuk melakukan proses write data result ke target dwh.
Nama: dim_address_to_postgres





Step name: dim_address_to_postgres
Connection: conn_PostgreSQL_dwh_gravity
Target schema: dwh_gravity
Target table: dim_address
Commit size: 1000
Truncate table ☑
Ignore insert errors □
Specify database fields ☑

Partition data over tables □
Partitioning field
Partition data per month ●
Partition data per day ○

Use batch update for inserts ☑

Is the name of the table defined in a field? □
Field that contains name of table:
Store the tablename field ☑

Return auto-generated key □
Name of auto-generated key field

# Nomor 2 (a) *screenshot* ETL dim_address.

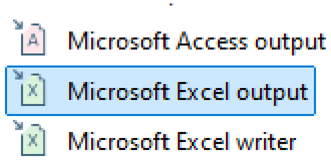
Tab ““Microsoft excel output”

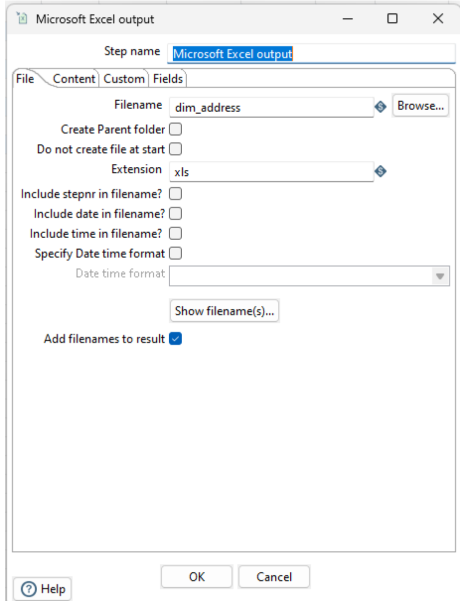
7

Step: Create Microsoft Excel Ouput untuk generate result data menjadi file excel

Nama: Microsoft Excel output

Penjelasan: Pada tahap desain, pilih **section Output**, kemudian pilih **Microsoft Excel Output** dan tarik ke kanvas **dim_address**. Selanjutnya, sesuaikan konfigurasi **Microsoft Excel Output** sesuai dengan pengaturan yang ditunjukkan pada gambar di bawah ini.





Step name: Microsoft Excel output

Filename: dim_address

Create Parent folder □

Do not create file at start □

Extension: xls

Include stepnr in filename? □

Include date in filename? □

Include time in filename? □

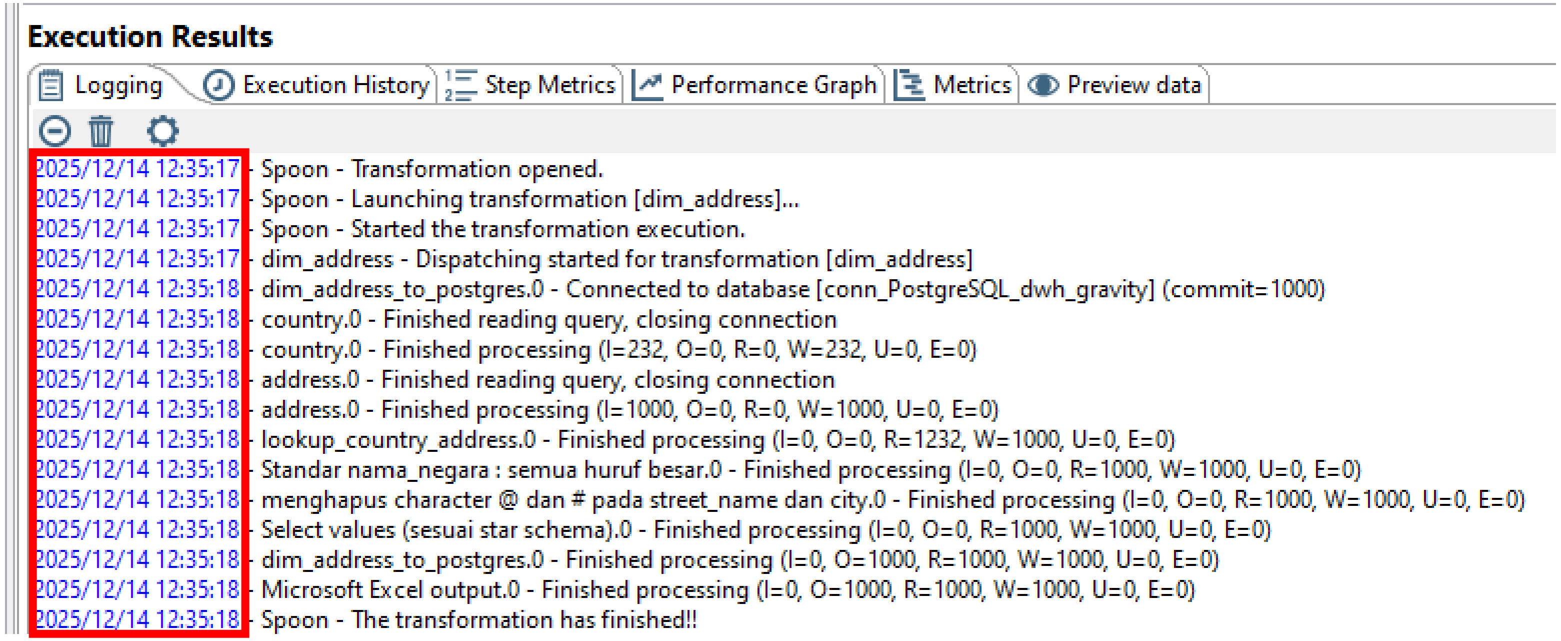
Specify Date time format □

Date time format:

Add filenames to result ☑

# Nomor 2 (a) *screenshot* ETL dim_address.

Tab “Logging”

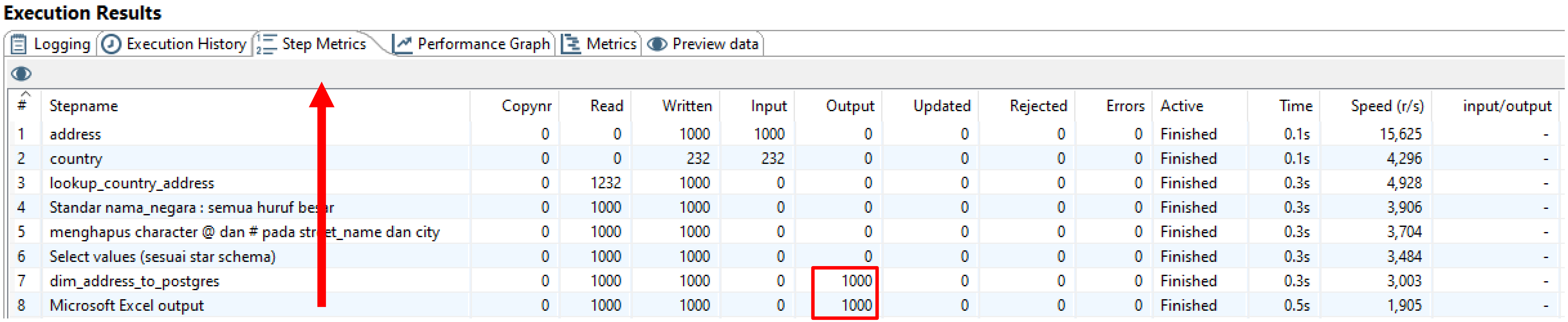


```
2025/12/14 12:35:17 - Spoon - Transformation opened.
2025/12/14 12:35:17 - Spoon - Launching transformation [dim_address]...
2025/12/14 12:35:17 - Spoon - Started the transformation execution.
2025/12/14 12:35:17 - dim_address - Dispatching started for transformation [dim_address]
2025/12/14 12:35:18 - dim_address_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 12:35:18 - country.0 - Finished reading query, closing connection
2025/12/14 12:35:18 - country.0 - Finished processing (I=232, O=0, R=0, W=232, U=0, E=0)
2025/12/14 12:35:18 - address.0 - Finished reading query, closing connection
2025/12/14 12:35:18 - address.0 - Finished processing (I=1000, O=0, R=0, W=1000, U=0, E=0)
2025/12/14 12:35:18 - lookup_country_address.0 - Finished processing (I=0, O=0, R=1232, W=1000, U=0, E=0)
2025/12/14 12:35:18 - Standar nama_negara : semua huruf besar.0 - Finished processing (I=0, O=0, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - menghapus character @ dan # pada street_name dan city.0 - Finished processing (I=0, O=0, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - Select values (sesuai star schema).0 - Finished processing (I=0, O=0, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - dim_address_to_postgres.0 - Finished processing (I=0, O=1000, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - Microsoft Excel output.0 - Finished processing (I=0, O=1000, R=1000, W=1000, U=0, E=0)
2025/12/14 12:35:18 - Spoon - The transformation has finished!!
```

Tab “Logging”

# Nomor 2 (a) *screenshot* ETL dim_address.

Tab “Step Metrics”

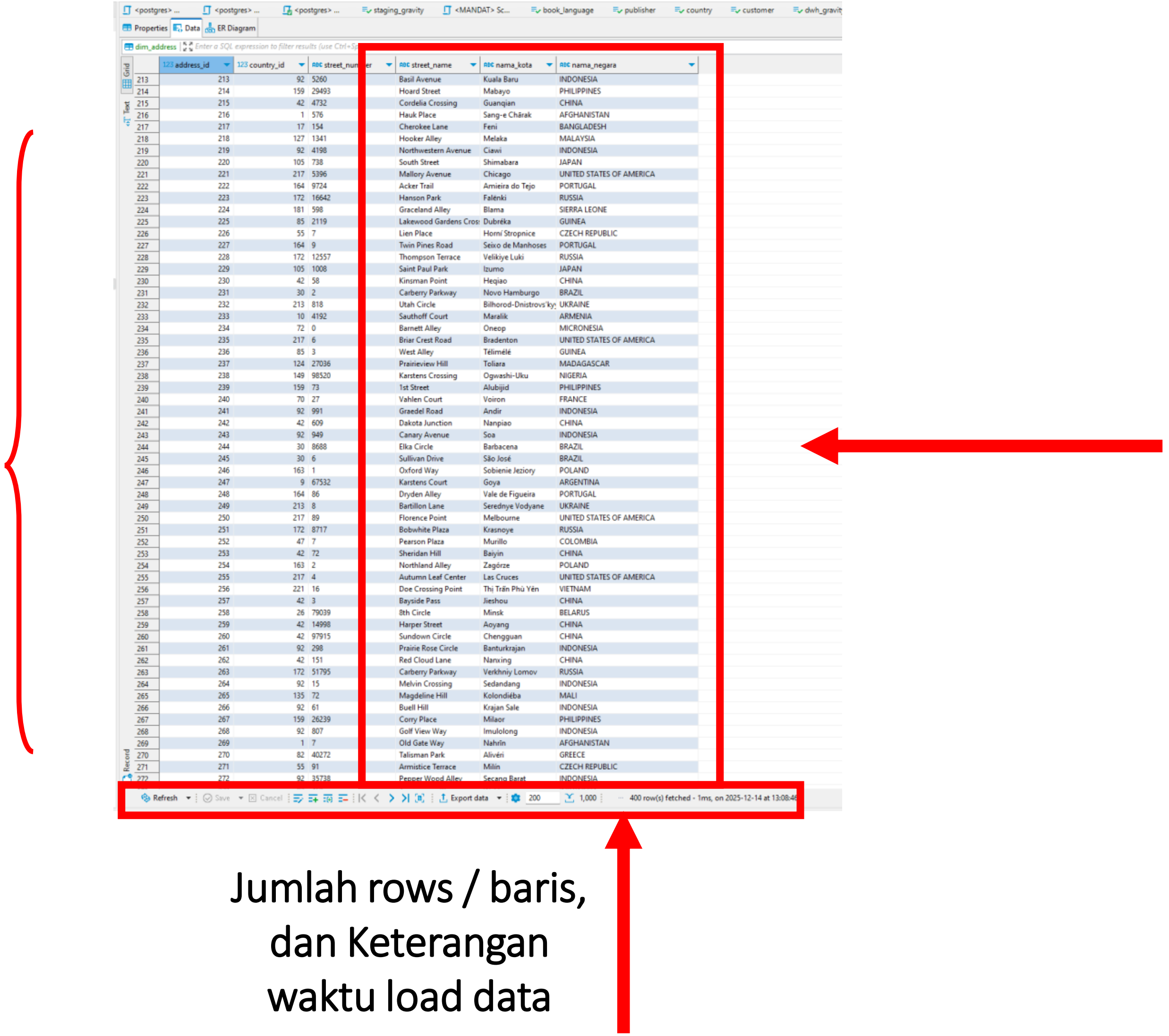


| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | address | 0 | 0 | 1000 | 1000 | 0 | 0 | 0 | 0 | Finished | 0.1s | 15,625 | - |
| 2 | country | 0 | 0 | 232 | 232 | 0 | 0 | 0 | 0 | Finished | 0.1s | 4,296 | - |
| 3 | lookup_country_address | 0 | 1232 | 1000 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 4,928 | - |
| 4 | Standar nama_negara : semua huruf besar | 0 | 1000 | 1000 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 3,906 | - |
| 5 | menghapus character @ dan # pada street_name dan city | 0 | 1000 | 1000 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 3,704 | - |
| 6 | Select values (sesuai star schema) | 0 | 1000 | 1000 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 3,484 | - |
| 7 | dim_address_to_postgres | 0 | 1000 | 1000 | 0 | 1000 | 0 | 0 | 0 | Finished | 0.3s | 3,003 | - |
| 8 | Microsoft Excel output | 0 | 1000 | 1000 | 0 | 1000 | 0 | 0 | 0 | Finished | 0.5s | 1,905 | - |

Tab “Step Metrics”

# Nomor 2 (a) *screenshot* ETL dim_address.

"dwh_gravity"



| | address_id | country_id | street_number | street_name | nama_kota | nama_negara |
|---|---|---|---|---|---|---|
| 213 | 213 | 92 | 5260 | Basil Avenue | Kuala Baru | INDONESIA |
| 214 | 214 | 159 | 29493 | Hoard Street | Mabayo | PHILIPPINES |
| 215 | 215 | 42 | 4732 | Cordelia Crossing | Guanqian | CHINA |
| 216 | 216 | 1 | 576 | Hauk Place | Sang-e Chārak | AFGHANISTAN |
| 217 | 217 | 17 | 154 | Cherokee Lane | Feni | BANGLADESH |
| 218 | 218 | 127 | 1341 | Hooker Alley | Melaka | MALAYSIA |
| 219 | 219 | 92 | 4198 | Northwestern Avenue | Ciawi | INDONESIA |
| 220 | 220 | 105 | 738 | South Street | Shimabara | JAPAN |
| 221 | 221 | 217 | 5396 | Mallory Avenue | Chicago | UNITED STATES OF AMERICA |
| 222 | 222 | 164 | 9724 | Acker Trail | Amieira do Tejo | PORTUGAL |
| 223 | 223 | 172 | 16642 | Hanson Park | Falёnki | RUSSIA |
| 224 | 224 | 181 | 598 | Graceland Alley | Blama | SIERRA LEONE |
| 225 | 225 | 85 | 2119 | Lakewood Gardens Cros | Dubréka | GUINEA |
| 226 | 226 | 55 | 7 | Lien Place | Horní Stropnice | CZECH REPUBLIC |
| 227 | 227 | 164 | 9 | Twin Pines Road | Seixo de Manhoses | PORTUGAL |
| 228 | 228 | 172 | 12557 | Thompson Terrace | Velikiye Luki | RUSSIA |
| 229 | 229 | 105 | 1008 | Saint Paul Park | Izumo | JAPAN |
| 230 | 230 | 42 | 58 | Kinsman Point | Heqiao | CHINA |
| 231 | 231 | 30 | 2 | Carberry Parkway | Novo Hamburgo | BRAZIL |
| 232 | 232 | 213 | 818 | Utah Circle | Bilhorod-Dnistrovs'ky | UKRAINE |
| 233 | 233 | 10 | 4192 | Sauthoff Court | Maralik | ARMENIA |
| 234 | 234 | 72 | 0 | Barnett Alley | Oneop | MICRONESIA |
| 235 | 235 | 217 | 6 | Briar Crest Road | Bradenton | UNITED STATES OF AMERICA |
| 236 | 236 | 85 | 3 | West Alley | Télimélé | GUINEA |
| 237 | 237 | 124 | 27036 | Prairieview Hill | Toliara | MADAGASCAR |
| 238 | 238 | 149 | 98520 | Karstens Crossing | Ogwashi-Uku | NIGERIA |
| 239 | 239 | 159 | 73 | 1st Street | Alubijid | PHILIPPINES |
| 240 | 240 | 70 | 27 | Vahlen Court | Voiron | FRANCE |
| 241 | 241 | 92 | 991 | Graedel Road | Andir | INDONESIA |
| 242 | 242 | 42 | 609 | Dakota Junction | Nanpiao | CHINA |
| 243 | 243 | 92 | 949 | Canary Avenue | Soa | INDONESIA |
| 244 | 244 | 30 | 8688 | Elka Circle | Barbacena | BRAZIL |
| 245 | 245 | 30 | 6 | Sullivan Drive | São José | BRAZIL |
| 246 | 246 | 163 | 1 | Oxford Way | Sobienie Jeziory | POLAND |
| 247 | 247 | 9 | 67532 | Karstens Court | Goya | ARGENTINA |
| 248 | 248 | 164 | 86 | Dryden Alley | Vale de Figueira | PORTUGAL |
| 249 | 249 | 213 | 8 | Bartillon Lane | Serednye Vodyane | UKRAINE |
| 250 | 250 | 217 | 89 | Florence Point | Melbourne | UNITED STATES OF AMERICA |
| 251 | 251 | 172 | 8717 | Bobwhite Plaza | Krasnoye | RUSSIA |
| 252 | 252 | 47 | 7 | Pearson Plaza | Murillo | COLOMBIA |
| 253 | 253 | 42 | 72 | Sheridan Hill | Baiyin | CHINA |
| 254 | 254 | 163 | 2 | Northland Alley | Zagórze | POLAND |
| 255 | 255 | 217 | 4 | Autumn Leaf Center | Las Cruces | UNITED STATES OF AMERICA |
| 256 | 256 | 221 | 16 | Doe Crossing Point | Thị Trấn Phù Yên | VIETNAM |
| 257 | 257 | 42 | 3 | Bayside Pass | Jieshou | CHINA |
| 258 | 258 | 26 | 79039 | 8th Circle | Minsk | BELARUS |
| 259 | 259 | 42 | 14998 | Harper Street | Aoyang | CHINA |
| 260 | 260 | 42 | 97915 | Sundown Circle | Chengguan | CHINA |
| 261 | 261 | 92 | 298 | Prairie Rose Circle | Banturkrajan | INDONESIA |
| 262 | 262 | 42 | 151 | Red Cloud Lane | Nanxing | CHINA |
| 263 | 263 | 172 | 51795 | Carberry Parkway | Verkhniy Lomov | RUSSIA |
| 264 | 264 | 92 | 15 | Melvin Crossing | Sedandang | INDONESIA |
| 265 | 265 | 135 | 72 | Magdeline Hill | Kolondiéba | MALI |
| 266 | 266 | 92 | 61 | Buell Hill | Krajan Sale | INDONESIA |
| 267 | 267 | 159 | 26239 | Corry Place | Milaor | PHILIPPINES |
| 268 | 268 | 92 | 807 | Golf View Way | Imulolong | INDONESIA |
| 269 | 269 | 1 | 7 | Old Gate Way | Nahrīn | AFGHANISTAN |
| 270 | 270 | 82 | 40272 | Talisman Park | Alivéri | GREECE |
| 271 | 271 | 55 | 91 | Armistice Terrace | Milín | CZECH REPUBLIC |
| 272 | 272 | 92 | 35738 | Pepper Wood Alley | Secang Barat | INDONESIA |

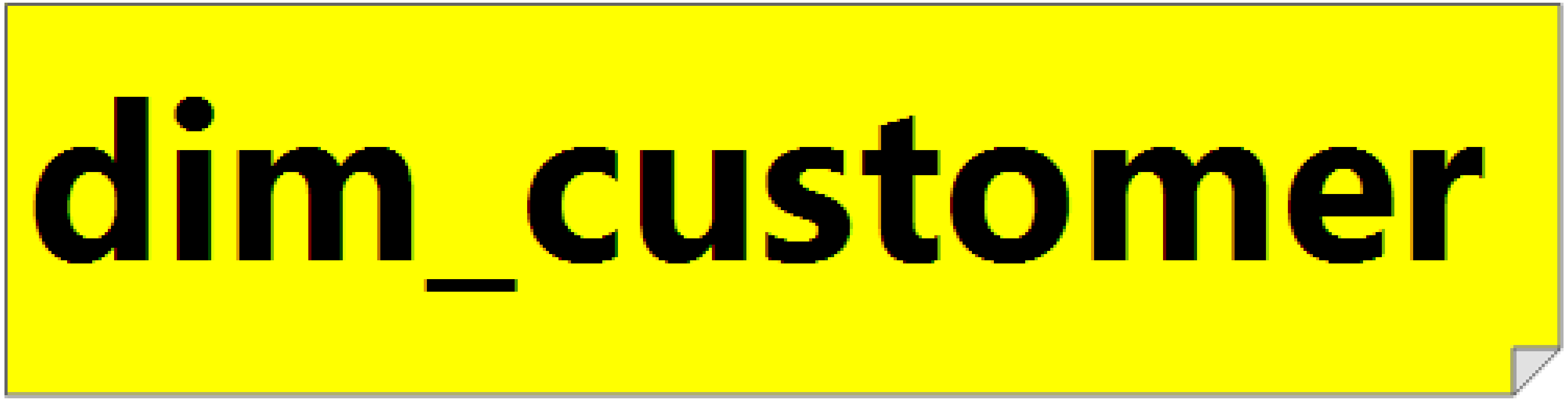
400 row(s) fetched - 1ms, on 2025-12-14 at 13:08:46

Contoh data

kolom hasil transformasi

Jumlah rows / baris,
dan Keterangan
waktu load data

# Nomor 2 (b)



dim_customer

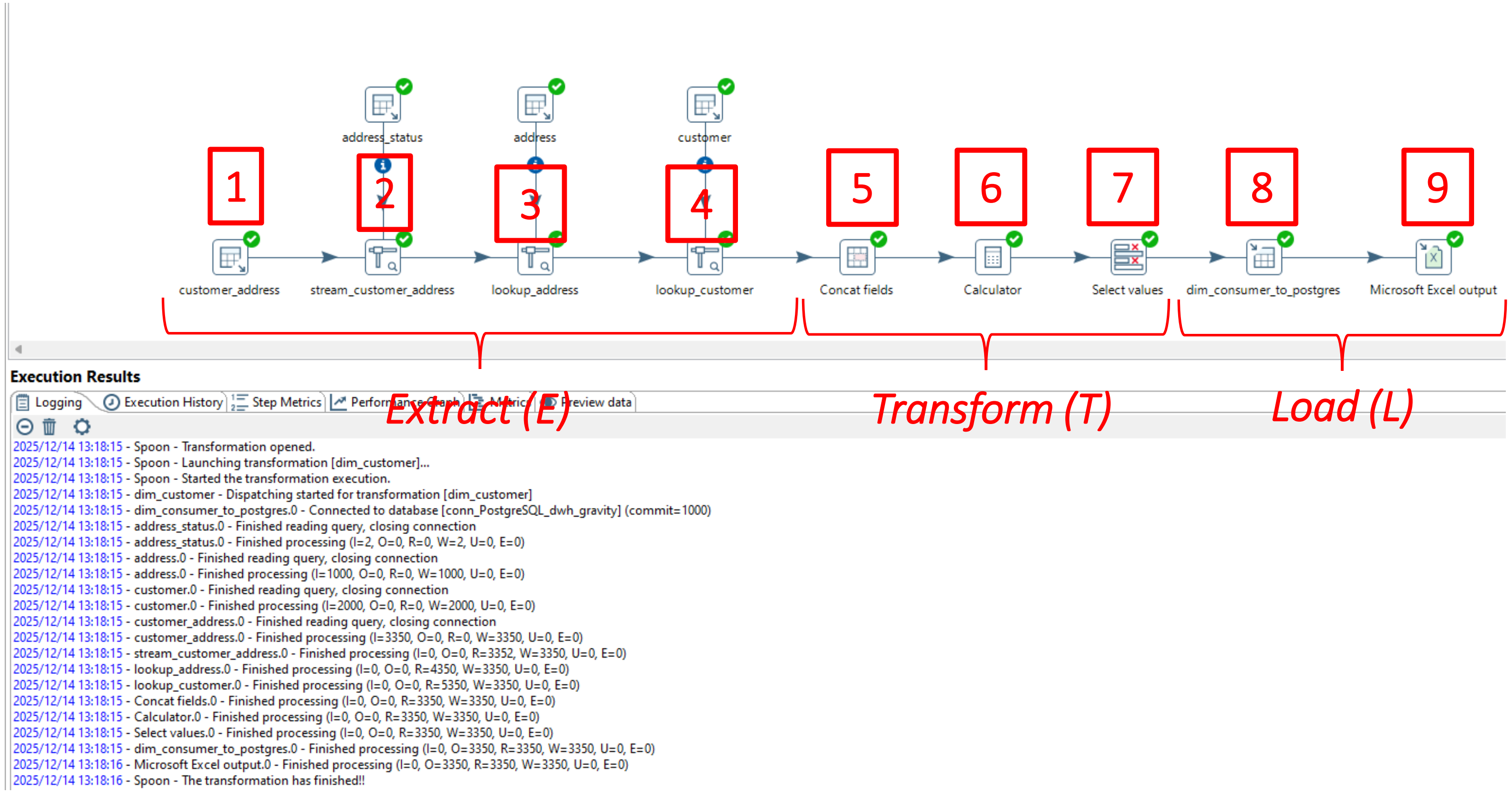
# Choosing

- Dalam memilih **tabel pertama** yang akan di-*extract* untuk membuat Tabel Dimensi/Tabel Fakta, diperlukan identifikasi jumlah baris dari tabel yang berelasi terlebih dahulu.
- **Jumlah rows yang terbanyak,** dipilih menjadi tabel **pertama** yang akan di extract pada saat ETL.
- **Logika:** fungsi *data warehouse* adalah menyimpan data histori, sehingga **semua (yang paling banyak)** data harus tersimpan.
- Tabel di bawah ini merupakan hasil identifikasi relasi dan jumlah baris pada **tabel customer** dan tabel lain yang berelasi.
- Tabel dimensi customer berasal dari relasi tabel customer dengan tabel lain yang melekat sebagai identitas customer.

* : Tabel cust_order tidak dipilih karena merupakan tabel transaksi yang nantinya akan digunakan untuk membuat Tabel Fakta.

| Nama Tabel | Jumlah Baris | Tabel Relasi | Jumlah Baris | Relationship |
|---|---|---|---|---|
| customer | 2000 | customer_address | 3350 | 1:N |
| customer_address | 3350 | address | 1000 | N:1 |
| Customer_address | 3550 | address_status | 2 | N:1 |

# Nomor 2 (b) *screenshot* ETL dim_customer



```
2025/12/14 13:18:15 - Spoon - Transformation opened.
2025/12/14 13:18:15 - Spoon - Launching transformation [dim_customer]...
2025/12/14 13:18:15 - Spoon - Started the transformation execution.
2025/12/14 13:18:15 - dim_customer - Dispatching started for transformation [dim_customer]
2025/12/14 13:18:15 - dim_consumer_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 13:18:15 - address_status.0 - Finished reading query, closing connection
2025/12/14 13:18:15 - address_status.0 - Finished processing (I=2, O=0, R=0, W=2, U=0, E=0)
2025/12/14 13:18:15 - address.0 - Finished reading query, closing connection
2025/12/14 13:18:15 - address.0 - Finished processing (I=1000, O=0, R=0, W=1000, U=0, E=0)
2025/12/14 13:18:15 - customer.0 - Finished reading query, closing connection
2025/12/14 13:18:15 - customer.0 - Finished processing (I=2000, O=0, R=0, W=2000, U=0, E=0)
2025/12/14 13:18:15 - customer_address.0 - Finished reading query, closing connection
2025/12/14 13:18:15 - customer_address.0 - Finished processing (I=3350, O=0, R=0, W=3350, U=0, E=0)
2025/12/14 13:18:15 - stream_customer_address.0 - Finished processing (I=0, O=0, R=3352, W=3350, U=0, E=0)
2025/12/14 13:18:15 - lookup_address.0 - Finished processing (I=0, O=0, R=4350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - lookup_customer.0 - Finished processing (I=0, O=0, R=5350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - Concat fields.0 - Finished processing (I=0, O=0, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - Calculator.0 - Finished processing (I=0, O=0, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - Select values.0 - Finished processing (I=0, O=0, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - dim_consumer_to_postgres.0 - Finished processing (I=0, O=3350, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:16 - Microsoft Excel output.0 - Finished processing (I=0, O=3350, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:16 - Spoon - The transformation has finished!!
```

# Nomor 2 (b) *screenshot* ETL dim_customer

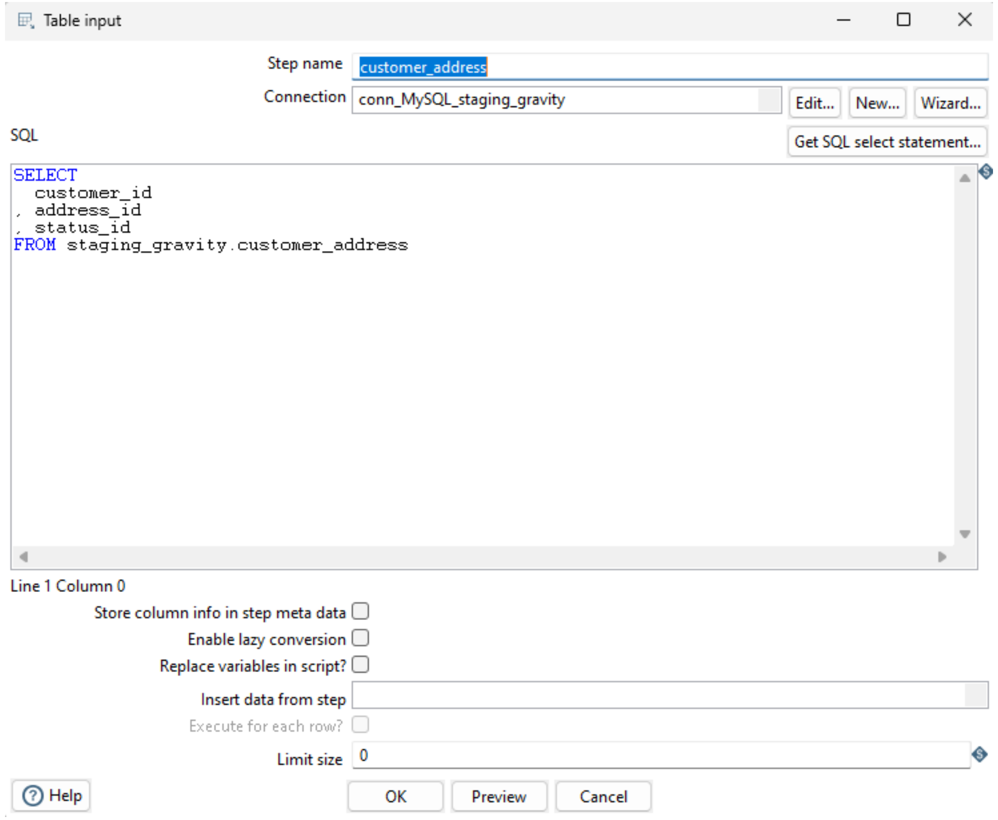
Tab "Tabel Input"

1

Step: Table Input

Nama: customer_address

Penjelasan: **Pada tahap ini dilakukan proses ekstraksi data dari tabel customer_address** yang **berada pada database staging_gravity**.



Step name: customer_address

Connection: conn_MySQL_staging_gravity

SQL

```
SELECT
  customer_id
, address_id
, status_id
FROM staging_gravity.customer_address
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size: 0

# Nomor 2 (b) *screenshot* ETL dim_customer

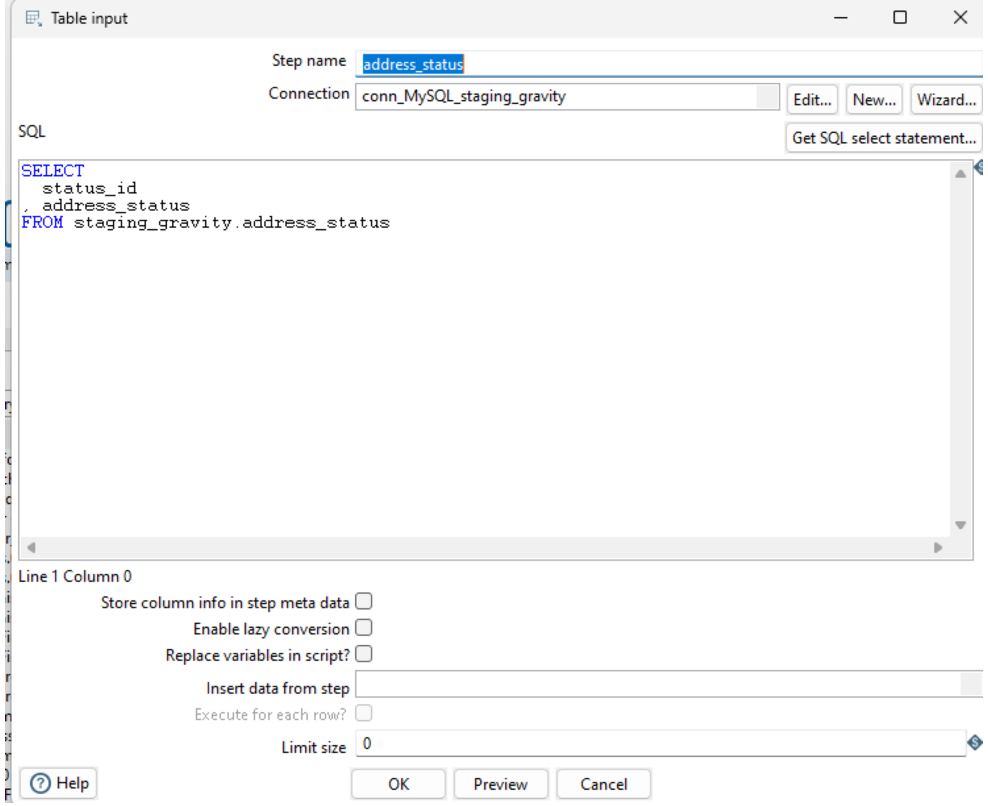
Tab "Tabel Input"

1

Step: Create table input untuk address_status

Nama: address_status

Penjelasan: **Pada tahap ini dilakukan proses ekstraksi data dari tabel address_status** yang berada **pada database staging_gravity**.



Step name: address_status

Connection: conn_MySQL_staging_gravity

```
SELECT
  status_id
, address_status
FROM staging_gravity.address_status
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size: 0

# Nomor 2 (b) *screenshot* ETL dim_customer

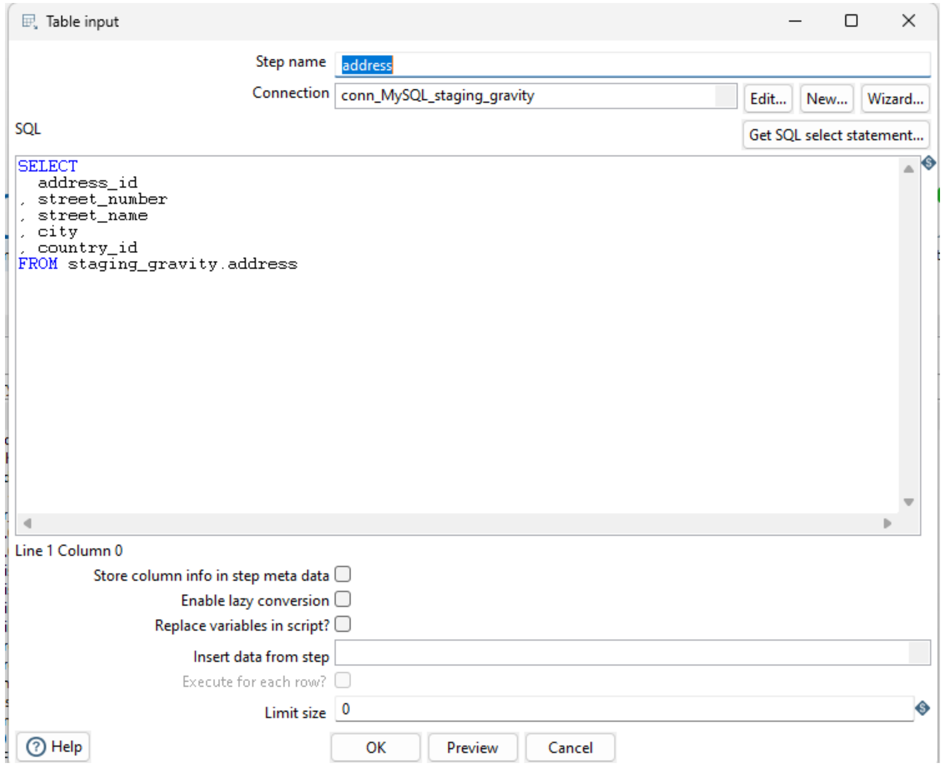
Tab "Tabel Input"

1

Step: Create table input untuk address

Nama: address

Penjelasan: Pada tahap ini dilakukan proses ekstraksi data dari tabel **address** yang berada pada database **staging_gravity**.



Step name: address

Connection: conn_MySQL_staging_gravity

```
SELECT
  address_id
, street_number
, street_name
, city
, country_id
FROM staging_gravity.address
```

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size 0

# Nomor 2 (b) *screenshot* ETL dim_customer

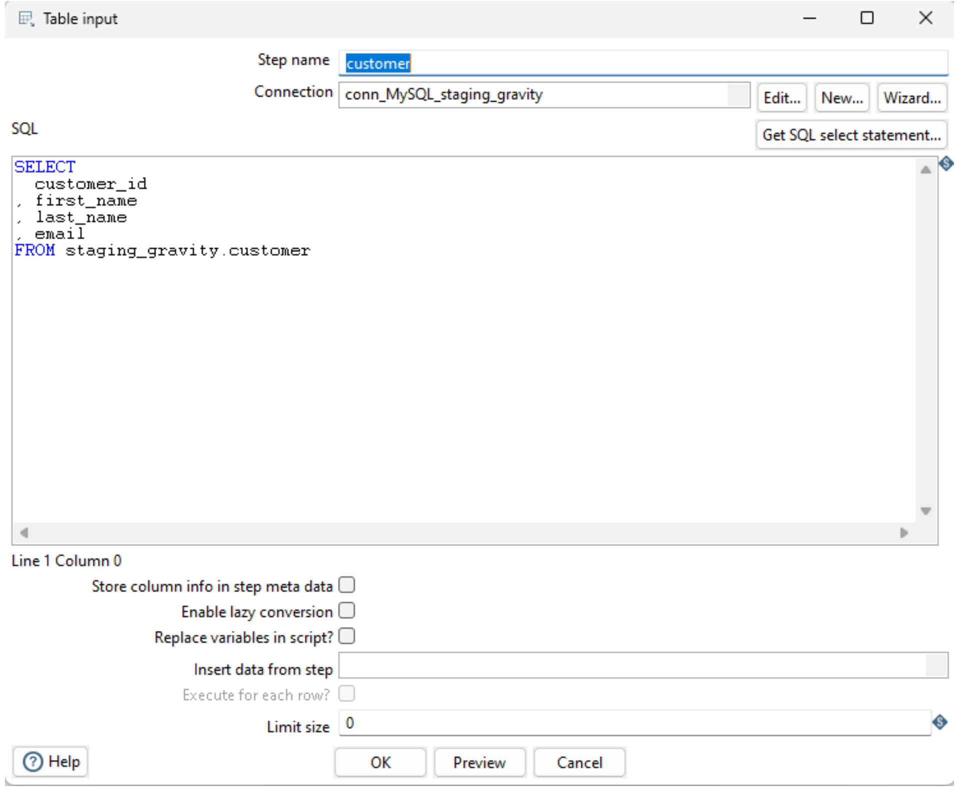
Tab "Tabel Input"

1

Step: Create table input untuk customer

Nama: customer

Penjelasan: **Pada tahap ini dilakukan proses ekstraksi data dari tabel customer yang berada pada database customer.**



Step name: customer

Connection: conn_MySQL_staging_gravity

SQL

```
SELECT
  customer_id
, first_name
, last_name
, email
FROM staging_gravity.customer
```

Store column info in step meta data ☐

Enable lazy conversion ☐

Replace variables in script? ☐

Insert data from step

Execute for each row? ☐

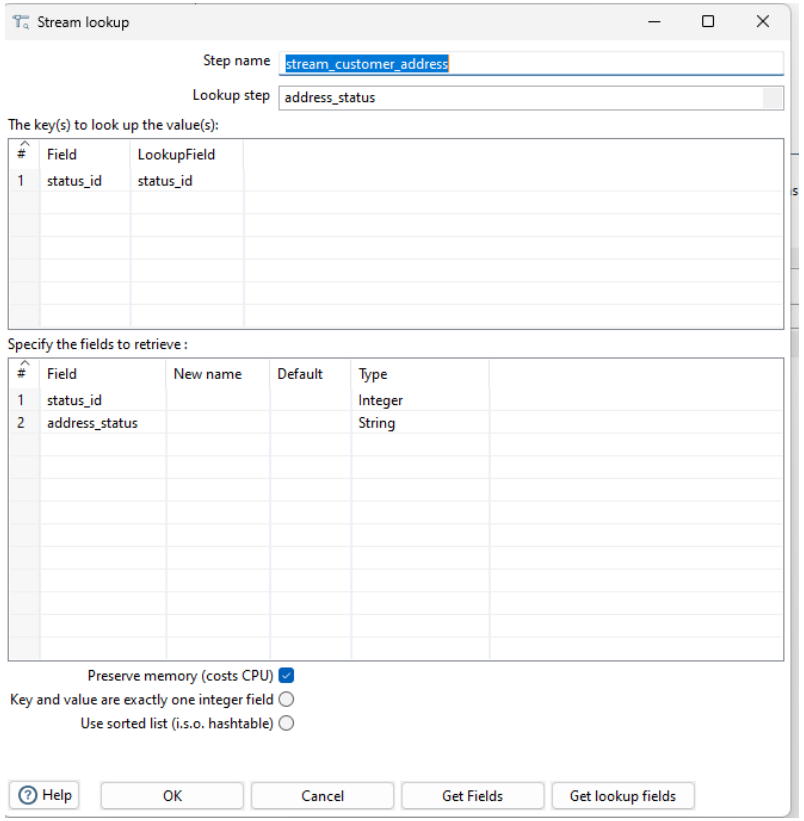
Limit size: 0

# Nomor 2 (b) *screenshot* ETL dim_customer

Tab "Stream lookup"

2

Step: Create stream lookup untuk join kedua table yang sudah di create sebelumnya
Penjelasan: Untuk menggabungkan table address status dengan customer address melalui status_id



Stream lookup

Step name: stream_customer_address

Lookup step: address_status

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | status_id | status_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | status_id | | | Integer |
| 2 | address_status | | | String |

Preserve memory (costs CPU) ☑
Key and value are exactly one integer field ○
Use sorted list (i.s.o. hashtable) ○

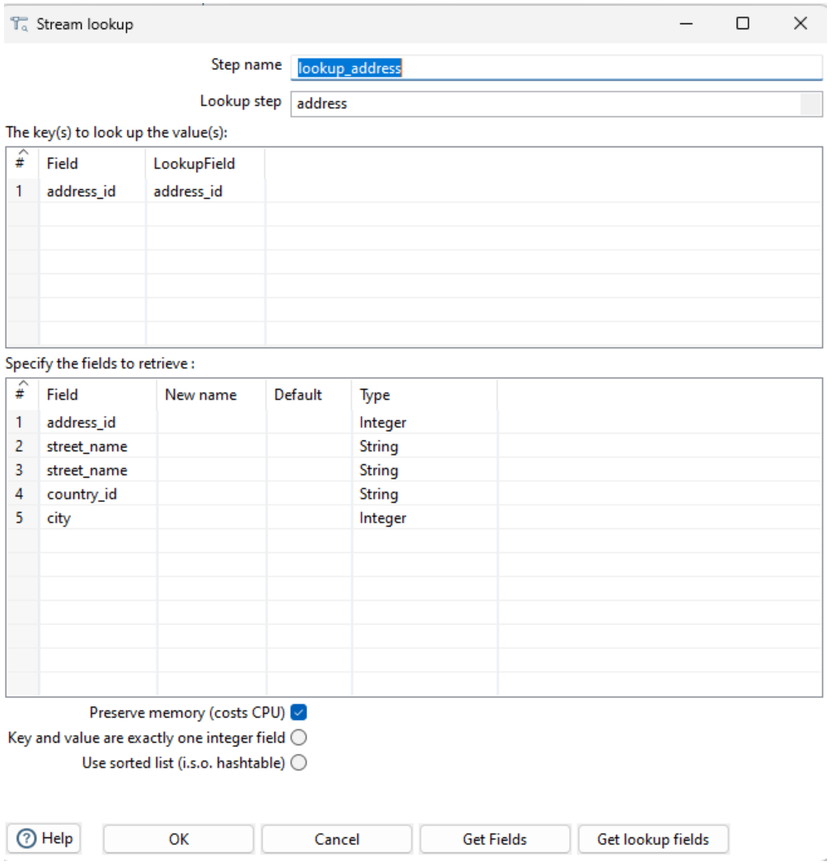
# Nomor 2 (b) *screenshot* ETL dim_customer

Tab “Stream Lookup”

3

Step: Create stream lookup untuk join kedua table yang sudah di create sebelumnya

Penjelasan: Step ini melakukan lookup data dari tabel address dengan relasi key nya : address_id.



Step name: lookup_address

Lookup step: address

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | address_id | address_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | address_id | | | Integer |
| 2 | street_name | | | String |
| 3 | street_name | | | String |
| 4 | country_id | | | String |
| 5 | city | | | Integer |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

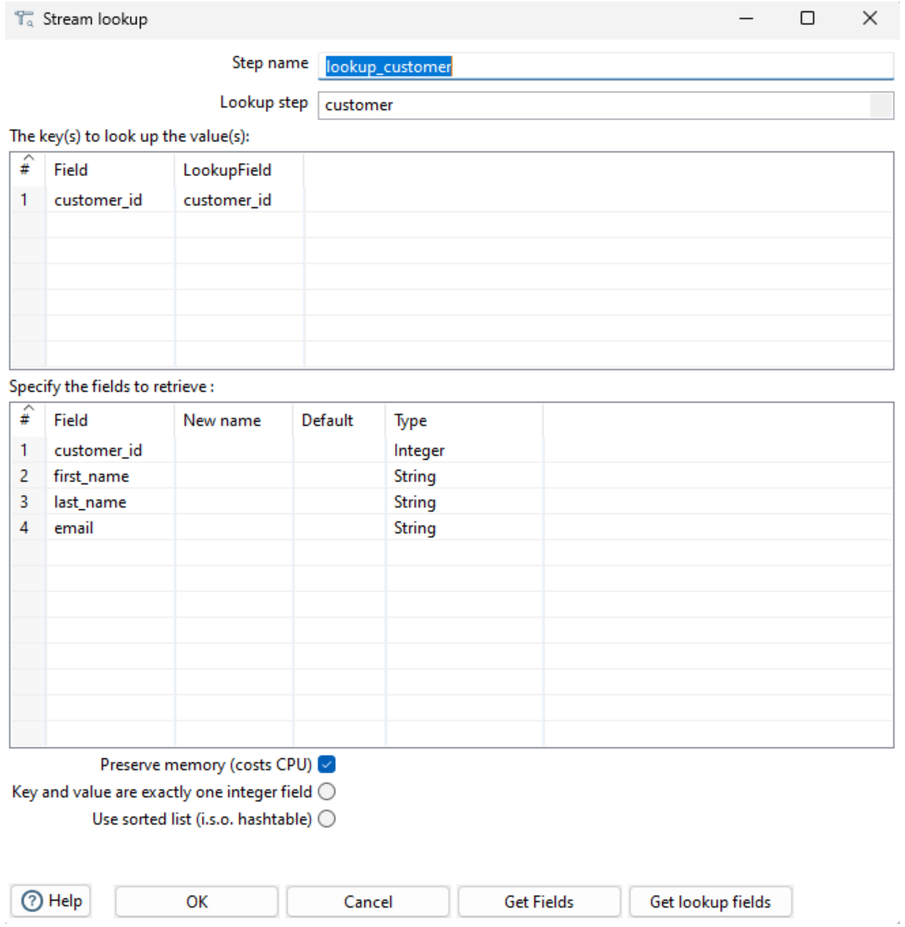
Use sorted list (i.s.o. hashtable) ○

# Nomor 2 (b) *screenshot* ETL dim_customer

Tab "Stream Lookup"

4

Step: Create stream lookup untuk join kedua table yang sudah di create sebelumnya
Penjelasan: Step ini melakukan lookup data dari tabel customer dengan relasi key nya : customer_id.



Step name: lookup_customer

Lookup step: customer

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | customer_id | customer_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | customer_id | | | Integer |
| 2 | first_name | | | String |
| 3 | last_name | | | String |
| 4 | email | | | String |

Preserve memory (costs CPU) ☑
Key and value are exactly one integer field ○
Use sorted list (i.s.o. hashtable) ○

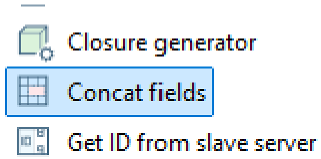
# Nomor 2 (b) *screenshot* ETL dim_customer

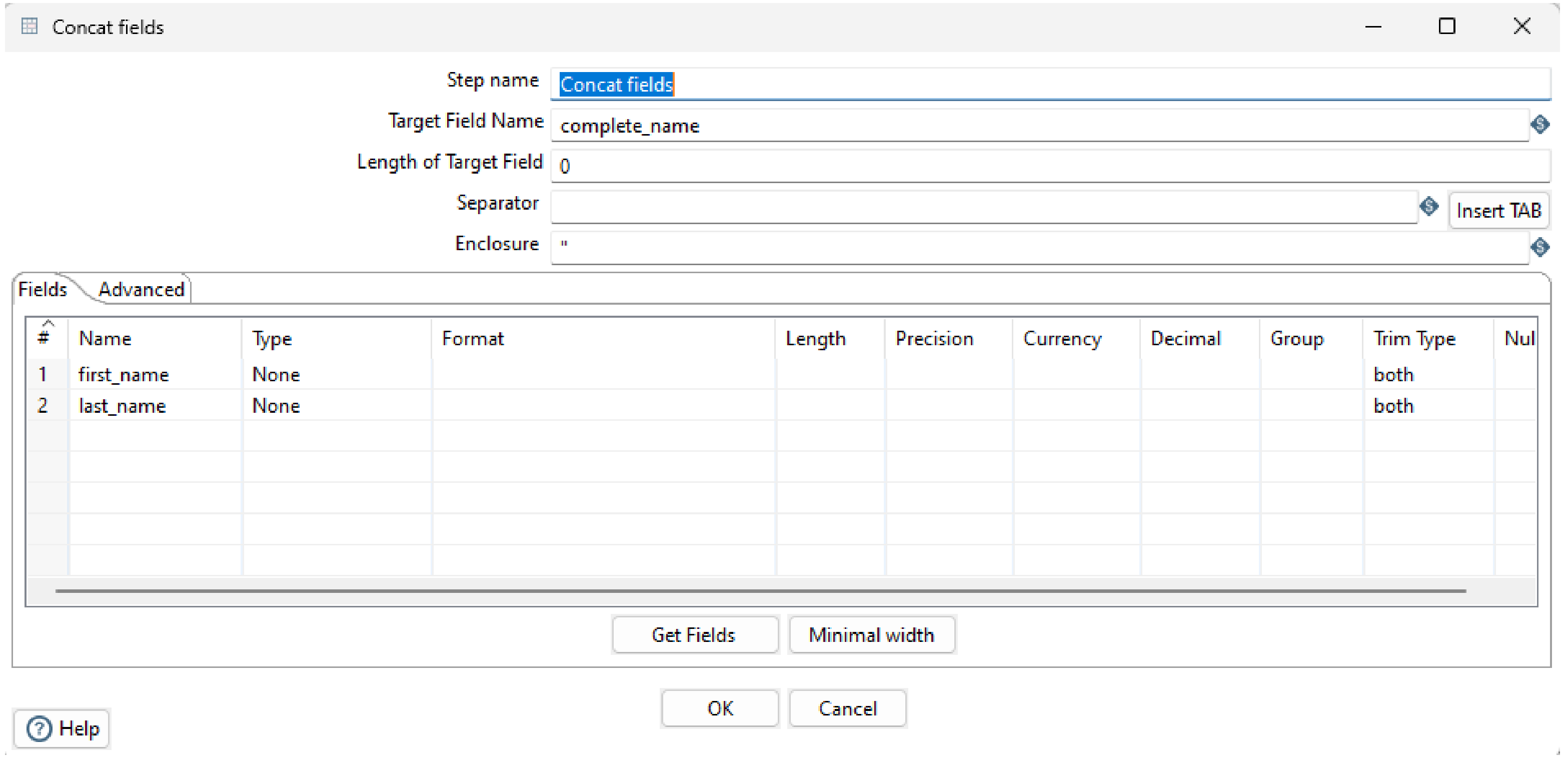
Tab "Concat Fields"

5

Step: Concat field

Penjelasan : untuk menggabungkan first_name dan last_name menjadi complete_name





Step name: Concat fields

Target Field Name: complete_name

Length of Target Field: 0

Separator:

Enclosure: "

| # | Name | Type | Format | Length | Precision | Currency | Decimal | Group | Trim Type | Nul |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | first_name | None | | | | | | | both | |
| 2 | last_name | None | | | | | | | both | |

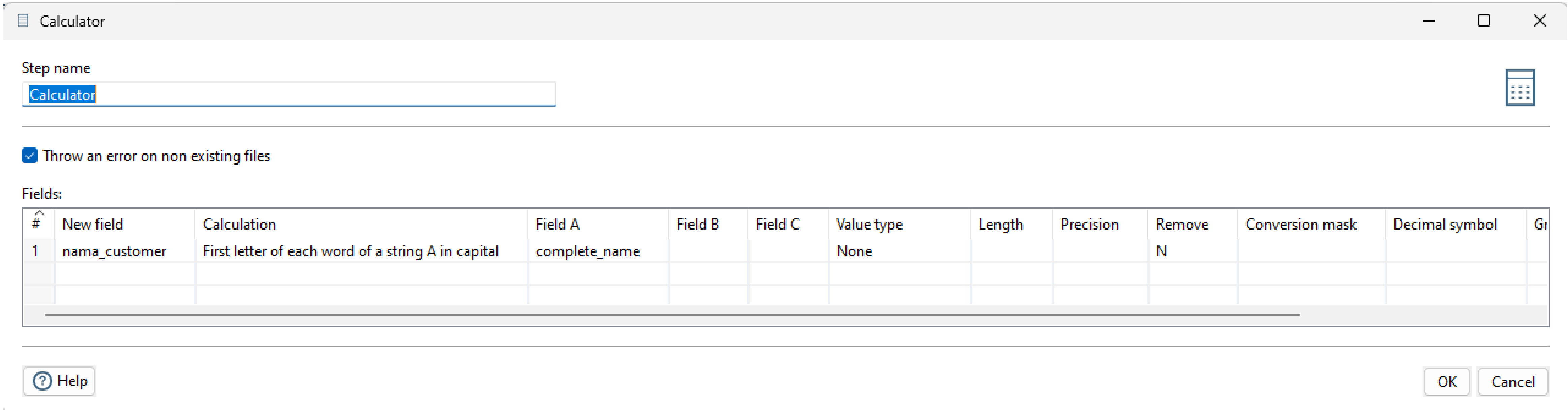
# Nomor 2 (b) *screenshot* ETL dim_customer

Tab “Calculator”

6

Step: Calculator

Penjelasan : Mengubah setiap character pertama dari complete_name menjadi uppercase



Step name: Calculator

☑ Throw an error on non existing files

Fields:

| # | New field | Calculation | Field A | Field B | Field C | Value type | Length | Precision | Remove | Conversion mask | Decimal symbol | Gr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | nama_customer | First letter of each word of a string A in capital | complete_name | | | None | | | N | | | |

# Nomor 2 (b) *screenshot* ETL dim_customer

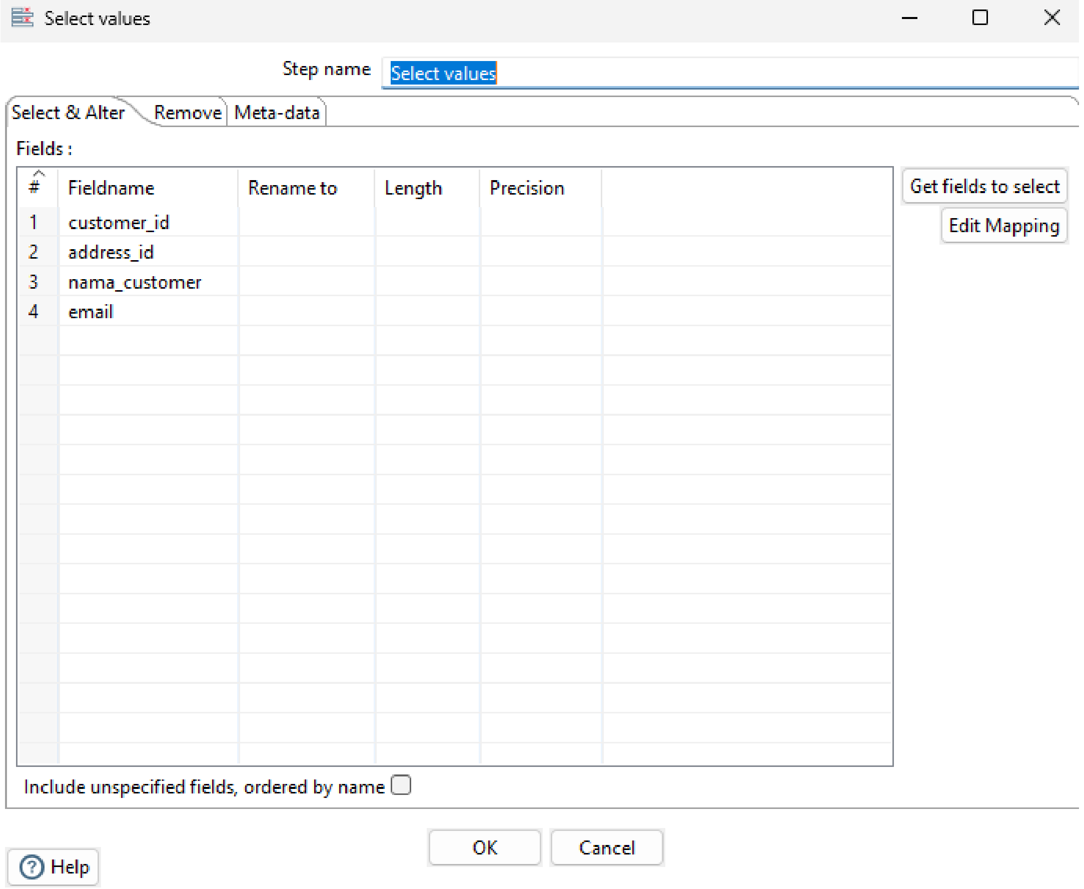
Tab "Preview data"

7

Step: Select Values

Nama: Select values

Penjelasan : Langkah ini bertujuan untuk menentukan dan memetakan kolom-kolom yang akan digunakan sebagai **dim_customer** berdasarkan hasil transformasi pada tahap sebelumnya.



Step name: Select values

Fields :

| # | Fieldname | Rename to | Length | Precision |
|---|---|---|---|---|
| 1 | customer_id | | | |
| 2 | address_id | | | |
| 3 | nama_customer | | | |
| 4 | email | | | |

Include unspecified fields, ordered by name □

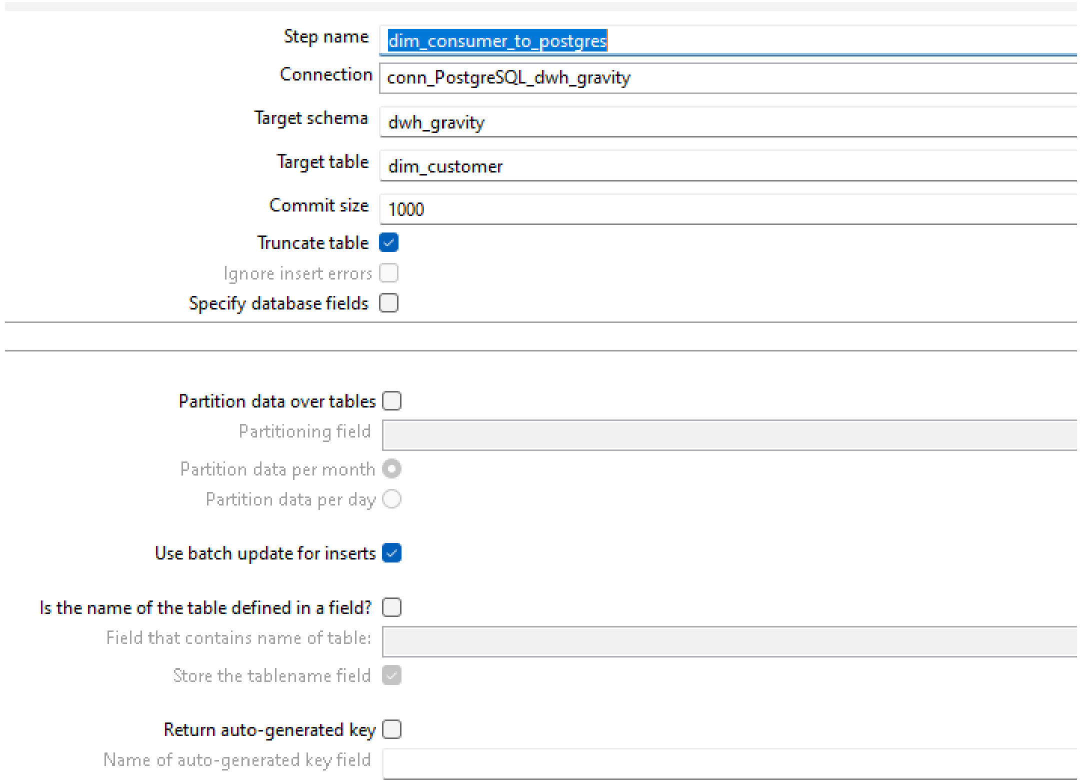
# Nomor 2 (b) *screenshot* ETL dim_customer

Tab "Table Output"

8

Step: Table Output

Nama: dim_consumer_to_postgres



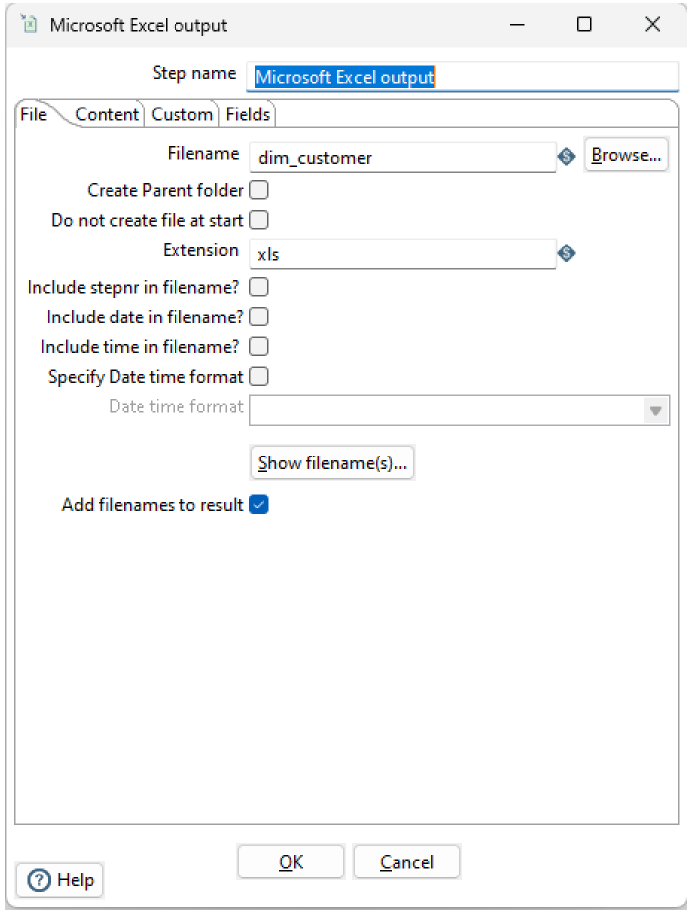
| | |
|---|---|
| Step name | dim_consumer_to_postgres |
| Connection | conn_PostgreSQL_dwh_gravity |
| Target schema | dwh_gravity |
| Target table | dim_customer |
| Commit size | 1000 |
| Truncate table | ☑ |
| Ignore insert errors | □ |
| Specify database fields | □ |
| Partition data over tables | □ |
| Partitioning field | |
| Partition data per month | ● |
| Partition data per day | ○ |
| Use batch update for inserts | ☑ |
| Is the name of the table defined in a field? | □ |
| Field that contains name of table: | |
| Store the tablename field | ☑ |
| Return auto-generated key | □ |
| Name of auto-generated key field | |

# Nomor 2 (b) *screenshot* ETL dim_customer

<u>Tab "Microsoft Excel output"</u>

9

Step: Miscrosoft Excel Output
Nama: Microsoft Excel output
Penjelasan : Microsoft Excel output



Microsoft Excel output

Step name: Microsoft Excel output

Filename: dim_customer

Create Parent folder □

Do not create file at start □

Extension: xls

Include stepnr in filename? □

Include date in filename? □

Include time in filename? □

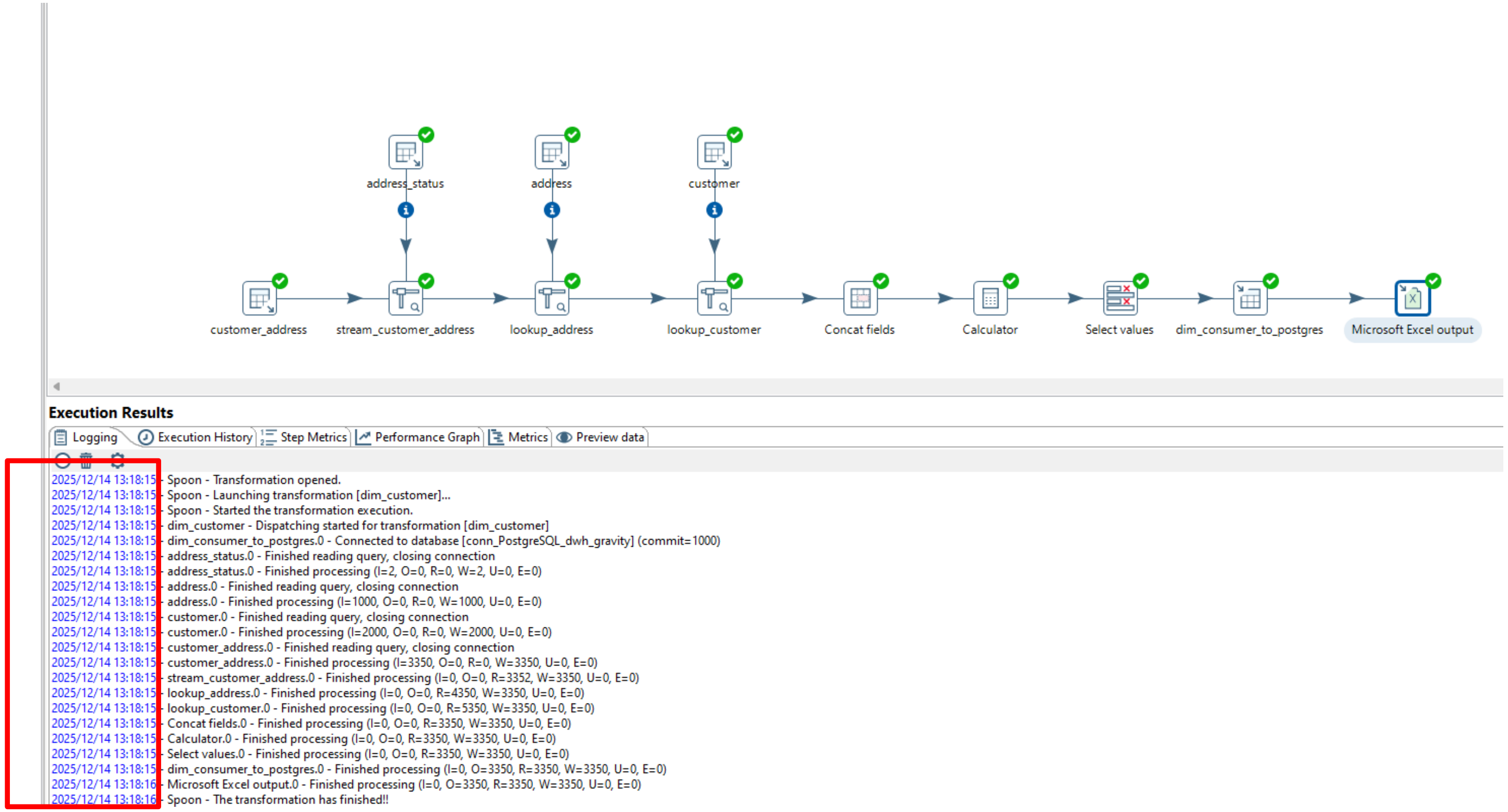
Specify Date time format □

Date time format

Add filenames to result ☑

# Nomor 2 (b) *screenshot* ETL dim_customer

Tab “Logging”

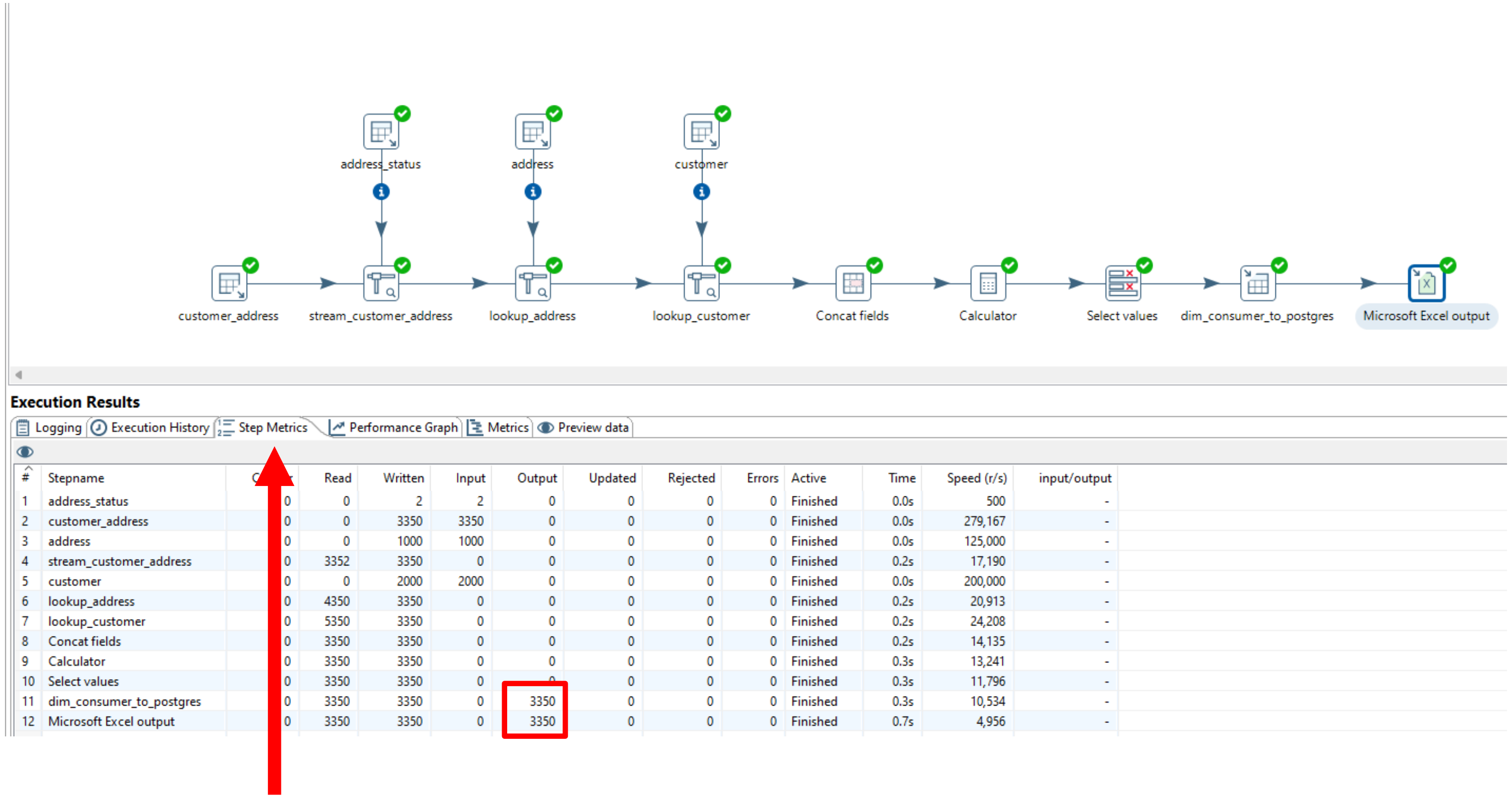


```
2025/12/14 13:18:15 - Spoon - Transformation opened.
2025/12/14 13:18:15 - Spoon - Launching transformation [dim_customer]...
2025/12/14 13:18:15 - Spoon - Started the transformation execution.
2025/12/14 13:18:15 - dim_customer - Dispatching started for transformation [dim_customer]
2025/12/14 13:18:15 - dim_consumer_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 13:18:15 - address_status.0 - Finished reading query, closing connection
2025/12/14 13:18:15 - address_status.0 - Finished processing (I=2, O=0, R=0, W=2, U=0, E=0)
2025/12/14 13:18:15 - address.0 - Finished reading query, closing connection
2025/12/14 13:18:15 - address.0 - Finished processing (I=1000, O=0, R=0, W=1000, U=0, E=0)
2025/12/14 13:18:15 - customer.0 - Finished reading query, closing connection
2025/12/14 13:18:15 - customer.0 - Finished processing (I=2000, O=0, R=0, W=2000, U=0, E=0)
2025/12/14 13:18:15 - customer_address.0 - Finished reading query, closing connection
2025/12/14 13:18:15 - customer_address.0 - Finished processing (I=3350, O=0, R=0, W=3350, U=0, E=0)
2025/12/14 13:18:15 - stream_customer_address.0 - Finished processing (I=0, O=0, R=3352, W=3350, U=0, E=0)
2025/12/14 13:18:15 - lookup_address.0 - Finished processing (I=0, O=0, R=4350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - lookup_customer.0 - Finished processing (I=0, O=0, R=5350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - Concat fields.0 - Finished processing (I=0, O=0, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - Calculator.0 - Finished processing (I=0, O=0, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - Select values.0 - Finished processing (I=0, O=0, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:15 - dim_consumer_to_postgres.0 - Finished processing (I=0, O=3350, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:16 - Microsoft Excel output.0 - Finished processing (I=0, O=3350, R=3350, W=3350, U=0, E=0)
2025/12/14 13:18:16 - Spoon - The transformation has finished!!
```

Tab “Logging”

# Nomor 2 (b) *screenshot* ETL dim_customer

Tab “Step Metrics”



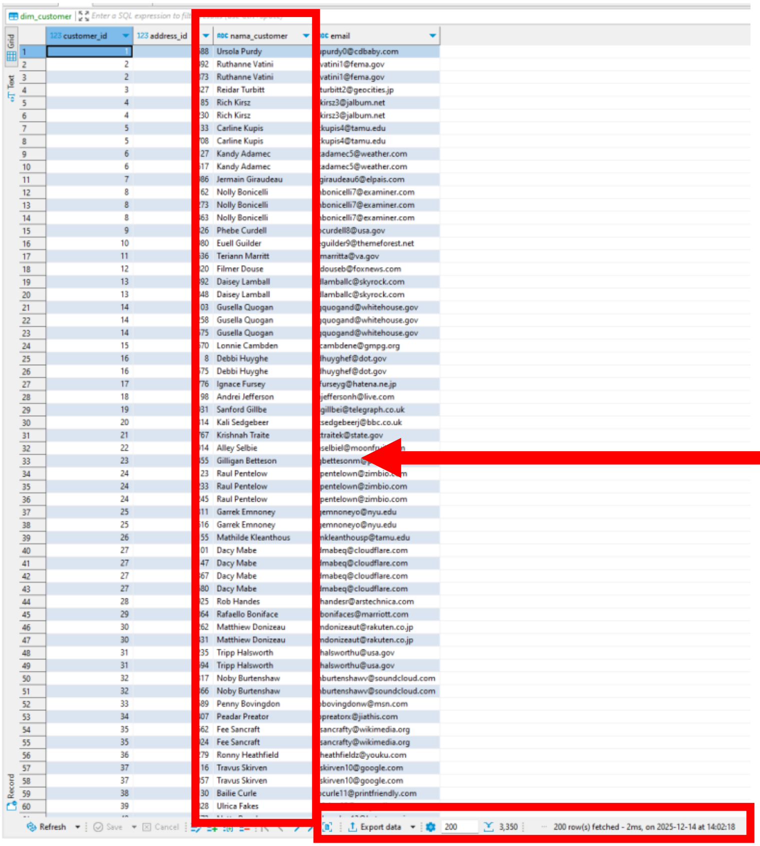
Execution Results

| # | Stepname | C[illegible]r | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | address_status | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | Finished | 0.0s | 500 | - |
| 2 | customer_address | 0 | 0 | 3350 | 3350 | 0 | 0 | 0 | 0 | Finished | 0.0s | 279,167 | - |
| 3 | address | 0 | 0 | 1000 | 1000 | 0 | 0 | 0 | 0 | Finished | 0.0s | 125,000 | - |
| 4 | stream_customer_address | 0 | 3352 | 3350 | 0 | 0 | 0 | 0 | 0 | Finished | 0.2s | 17,190 | - |
| 5 | customer | 0 | 0 | 2000 | 2000 | 0 | 0 | 0 | 0 | Finished | 0.0s | 200,000 | - |
| 6 | lookup_address | 0 | 4350 | 3350 | 0 | 0 | 0 | 0 | 0 | Finished | 0.2s | 20,913 | - |
| 7 | lookup_customer | 0 | 5350 | 3350 | 0 | 0 | 0 | 0 | 0 | Finished | 0.2s | 24,208 | - |
| 8 | Concat fields | 0 | 3350 | 3350 | 0 | 0 | 0 | 0 | 0 | Finished | 0.2s | 14,135 | - |
| 9 | Calculator | 0 | 3350 | 3350 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 13,241 | - |
| 10 | Select values | 0 | 3350 | 3350 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 11,796 | - |
| 11 | dim_consumer_to_postgres | 0 | 3350 | 3350 | 0 | 3350 | 0 | 0 | 0 | Finished | 0.3s | 10,534 | - |
| 12 | Microsoft Excel output | 0 | 3350 | 3350 | 0 | 3350 | 0 | 0 | 0 | Finished | 0.7s | 4,956 | - |

Tab “Step Metrics”

# Nomor 2 (b) *screenshot* ETL dim_customer

"dwh_gravity"



dim_customer | Enter a SQL expression to filter results (use Ctrl+Space)

| | customer_id | address_id | nama_customer | email |
|---|---|---|---|---|
| 1 | 1 | 88 | Ursola Purdy | upurdy0@cdbaby.com |
| 2 | 2 | 92 | Ruthanne Vatini | vatini1@fema.gov |
| 3 | 2 | 73 | Ruthanne Vatini | vatini1@fema.gov |
| 4 | 3 | 27 | Reidar Turbitt | turbitt2@geocities.jp |
| 5 | 4 | 85 | Rich Kirsz | kirsz3@jalbum.net |
| 6 | 4 | 30 | Rich Kirsz | kirsz3@jalbum.net |
| 7 | 5 | 33 | Carline Kupis | kupis4@tamu.edu |
| 8 | 5 | 08 | Carline Kupis | kupis4@tamu.edu |
| 9 | 6 | 27 | Kandy Adamec | adamec5@weather.com |
| 10 | 6 | 17 | Kandy Adamec | adamec5@weather.com |
| 11 | 7 | 86 | Jermain Giraudeau | giraudeau6@elpais.com |
| 12 | 8 | 62 | Nolly Bonicelli | bonicelli7@examiner.com |
| 13 | 8 | 73 | Nolly Bonicelli | bonicelli7@examiner.com |
| 14 | 8 | 63 | Nolly Bonicelli | bonicelli7@examiner.com |
| 15 | 9 | 26 | Phebe Curdell | curdell8@usa.gov |
| 16 | 10 | 80 | Euell Guilder | guilder9@themeforest.net |
| 17 | 11 | 36 | Teriann Marritt | marritta@va.gov |
| 18 | 12 | 20 | Filmer Douse | douseb@foxnews.com |
| 19 | 13 | 92 | Daisey Lamball | lamballc@skyrock.com |
| 20 | 13 | 48 | Daisey Lamball | lamballc@skyrock.com |
| 21 | 14 | 03 | Gusella Quogan | quogand@whitehouse.gov |
| 22 | 14 | 58 | Gusella Quogan | quogand@whitehouse.gov |
| 23 | 14 | 75 | Gusella Quogan | quogand@whitehouse.gov |
| 24 | 15 | 70 | Lonnie Cambden | cambdene@gmpg.org |
| 25 | 16 | 8 | Debbi Huyghe | huyghef@dot.gov |
| 26 | 16 | 75 | Debbi Huyghe | huyghef@dot.gov |
| 27 | 17 | 76 | Ignace Fursey | furseyg@hatena.ne.jp |
| 28 | 18 | 98 | Andrei Jefferson | jeffersonh@live.com |
| 29 | 19 | 31 | Sanford Gillbe | gillbei@telegraph.co.uk |
| 30 | 20 | 14 | Kali Sedgebeer | sedgebeerj@bbc.co.uk |
| 31 | 21 | 67 | Krishnah Traite | traitek@state.gov |
| 32 | 22 | 14 | Alley Selbie | selbiel@moonfr |
| 33 | 23 | 55 | Gilligan Betteson | bettesonm@ |
| 34 | 24 | 23 | Raul Pentelow | pentelown@zimbio.c m |
| 35 | 24 | 33 | Raul Pentelow | pentelown@zimbio.com |
| 36 | 24 | 45 | Raul Pentelow | pentelown@zimbio.com |
| 37 | 25 | 11 | Garrek Emnoney | emnoneyo@nyu.edu |
| 38 | 25 | 16 | Garrek Emnoney | emnoneyo@nyu.edu |
| 39 | 26 | 55 | Mathilde Kleanthous | mkleanthousp@tamu.edu |
| 40 | 27 | 01 | Dacy Mabe | dmabeq@cloudflare.com |
| 41 | 27 | 47 | Dacy Mabe | dmabeq@cloudflare.com |
| 42 | 27 | 67 | Dacy Mabe | dmabeq@cloudflare.com |
| 43 | 27 | 80 | Dacy Mabe | dmabeq@cloudflare.com |
| 44 | 28 | 25 | Rob Handes | handesr@arstechnica.com |
| 45 | 29 | 64 | Rafaello Boniface | bonifaces@marriott.com |
| 46 | 30 | 62 | Matthiew Donizeau | ndonizeaut@rakuten.co.jp |
| 47 | 30 | 31 | Matthiew Donizeau | ndonizeaut@rakuten.co.jp |
| 48 | 31 | 35 | Tripp Halsworth | halsworthu@usa.gov |
| 49 | 31 | 94 | Tripp Halsworth | halsworthu@usa.gov |
| 50 | 32 | 17 | Noby Burtenshaw | burtenshawv@soundcloud.com |
| 51 | 32 | 66 | Noby Burtenshaw | burtenshawv@soundcloud.com |
| 52 | 33 | 89 | Penny Bovingdon | bovingdonw@msn.com |
| 53 | 34 | 07 | Peadar Preator | preatorx@jiathis.com |
| 54 | 35 | 62 | Fee Sancraft | sancrafty@wikimedia.org |
| 55 | 35 | 24 | Fee Sancraft | sancrafty@wikimedia.org |
| 56 | 36 | 79 | Ronny Heathfield | heathfieldz@youku.com |
| 57 | 37 | 16 | Travus Skirven | skirven10@google.com |
| 58 | 37 | 57 | Travus Skirven | skirven10@google.com |
| 59 | 38 | 30 | Bailie Curle | curle11@printfriendly.com |
| 60 | 39 | 28 | Ulrica Fakes | |

Refresh | Save | Cancel | Export data | 200 | 3,350 | 200 row(s) fetched - 2ms, on 2025-12-14 at 14:02:18

kolom hasil transformasi

Jumlah rows / baris,
dan Keterangan
waktu load data

# Nomor 2 (c)

dim_book

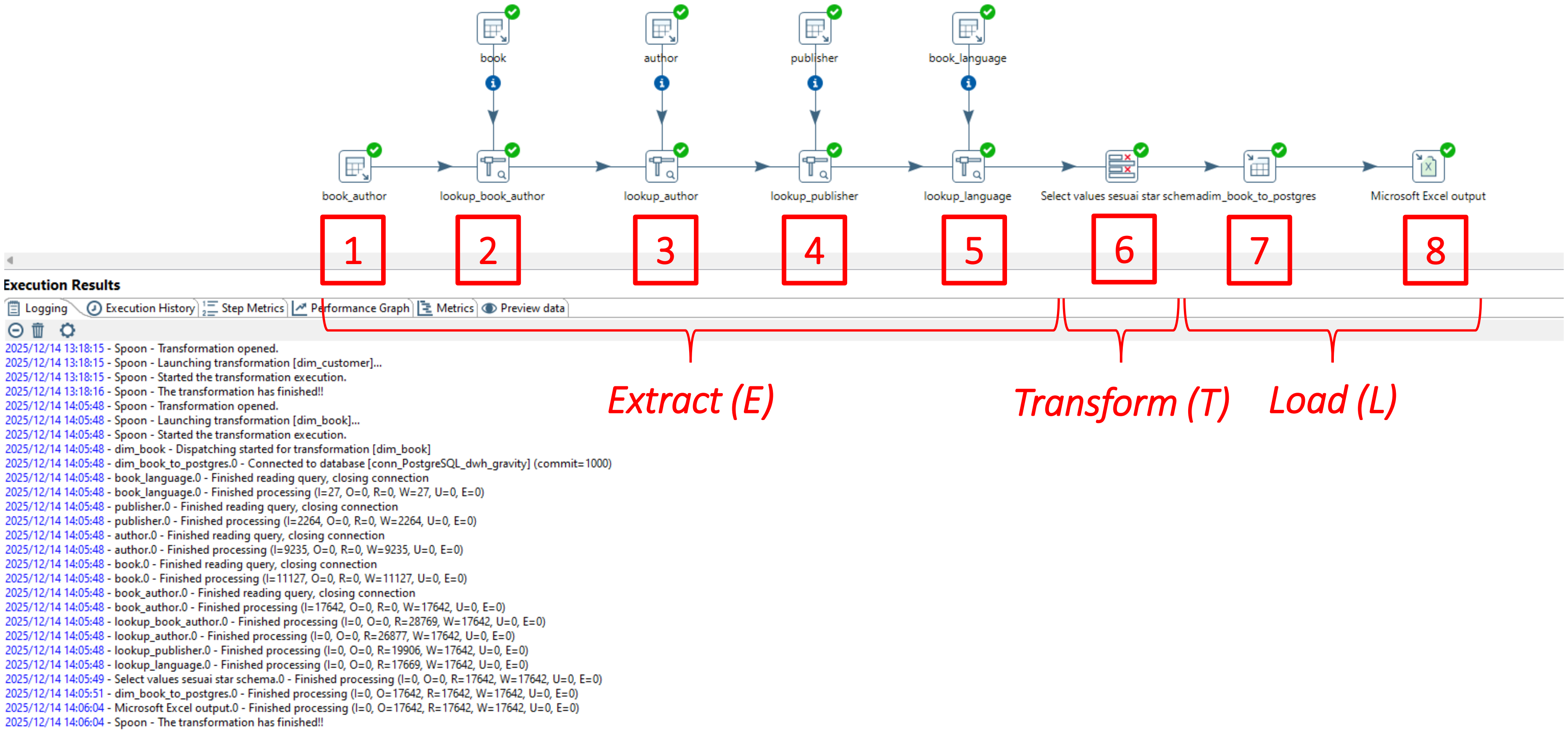
# Choosing

- Dalam memilih tabel pertama yang akan di-*extract* untuk membuat Tabel Dimensi/Tabel Fakta, diperlukan identifikasi jumlah baris dari tabel yang berelasi terlebih dahulu.
- **Jumlah rows yang terbanyak,** dipilih menjadi tabel **pertama** yang akan di extract pada saat ETL.
- **Logika:** fungsi *data warehouse* adalah menyimpan data histori, sehingga **semua (yang paling banyak)** data harus tersimpan.
- Tabel di bawah ini merupakan hasil identifikasi relasi dan jumlah baris pada **tabel book** dan tabel lain yang berelasi.
- Tabel dimensi book berasal dari relasi tabel book dengan tabel lain yang melekat sebagai identitas book

* : Tabel order_line tidak dipilih karena merupakan tabel transaksi yang nantinya akan digunakan untuk membuat Tabel Fakta.

| Nama Tabel | Jumlah Baris | Tabel Relasi | Jumlah Baris | Relationship |
|---|---|---|---|---|
| book | 11127 | book_author | 17642 | 1:N |
| book_author | 17642 | author | 9235 | N:1 |
| book | 11127 | book_language | 27 | N:1 |
| book | 11127 | publisher | 2264 | N:1 |

# Nomor 2 (c) *screenshot* ETL dim_book.



```
2025/12/14 13:18:15 - Spoon - Transformation opened.
2025/12/14 13:18:15 - Spoon - Launching transformation [dim_customer]...
2025/12/14 13:18:15 - Spoon - Started the transformation execution.
2025/12/14 13:18:16 - Spoon - The transformation has finished!!
2025/12/14 14:05:48 - Spoon - Transformation opened.
2025/12/14 14:05:48 - Spoon - Launching transformation [dim_book]...
2025/12/14 14:05:48 - Spoon - Started the transformation execution.
2025/12/14 14:05:48 - dim_book - Dispatching started for transformation [dim_book]
2025/12/14 14:05:48 - dim_book_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 14:05:48 - book_language.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - book_language.0 - Finished processing (I=27, O=0, R=0, W=27, U=0, E=0)
2025/12/14 14:05:48 - publisher.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - publisher.0 - Finished processing (I=2264, O=0, R=0, W=2264, U=0, E=0)
2025/12/14 14:05:48 - author.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - author.0 - Finished processing (I=9235, O=0, R=0, W=9235, U=0, E=0)
2025/12/14 14:05:48 - book.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - book.0 - Finished processing (I=11127, O=0, R=0, W=11127, U=0, E=0)
2025/12/14 14:05:48 - book_author.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - book_author.0 - Finished processing (I=17642, O=0, R=0, W=17642, U=0, E=0)
2025/12/14 14:05:48 - lookup_book_author.0 - Finished processing (I=0, O=0, R=28769, W=17642, U=0, E=0)
2025/12/14 14:05:48 - lookup_author.0 - Finished processing (I=0, O=0, R=26877, W=17642, U=0, E=0)
2025/12/14 14:05:48 - lookup_publisher.0 - Finished processing (I=0, O=0, R=19906, W=17642, U=0, E=0)
2025/12/14 14:05:48 - lookup_language.0 - Finished processing (I=0, O=0, R=17669, W=17642, U=0, E=0)
2025/12/14 14:05:49 - Select values sesuai star schema.0 - Finished processing (I=0, O=0, R=17642, W=17642, U=0, E=0)
2025/12/14 14:05:51 - dim_book_to_postgres.0 - Finished processing (I=0, O=17642, R=17642, W=17642, U=0, E=0)
2025/12/14 14:06:04 - Microsoft Excel output.0 - Finished processing (I=0, O=17642, R=17642, W=17642, U=0, E=0)
2025/12/14 14:06:04 - Spoon - The transformation has finished!!
```

# Nomor 2 (c) *screenshot* ETL dim_book

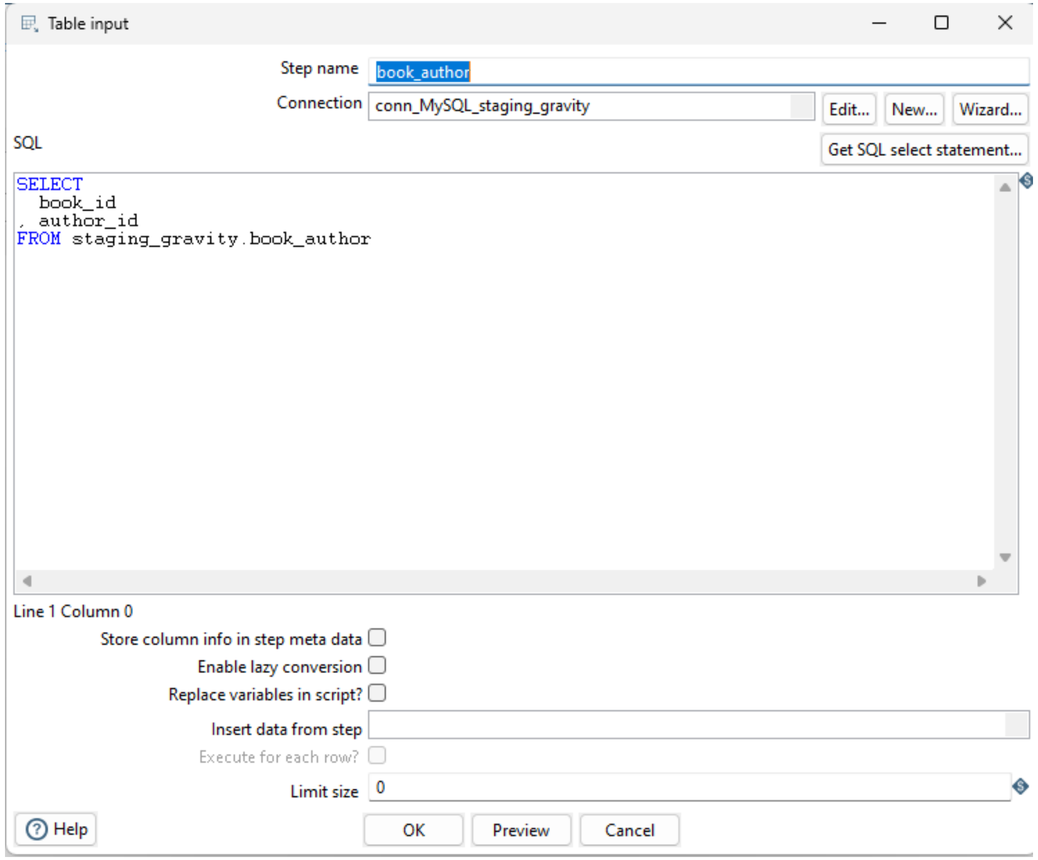
Tab "Tabel Input"

1

Step: Table Input

Nama: book_author

Penjelasan: Ini merupakan proses untuk melakukan **load data** ke tabel **book_author** yang berasal dari database **staging_gravity**.



Step name: book_author

Connection: conn_MySQL_staging_gravity

```
SELECT
  book_id
, author_id
FROM staging_gravity.book_author
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step:

Execute for each row? □

Limit size: 0

# Nomor 2 (c) *screenshot* ETL dim_book

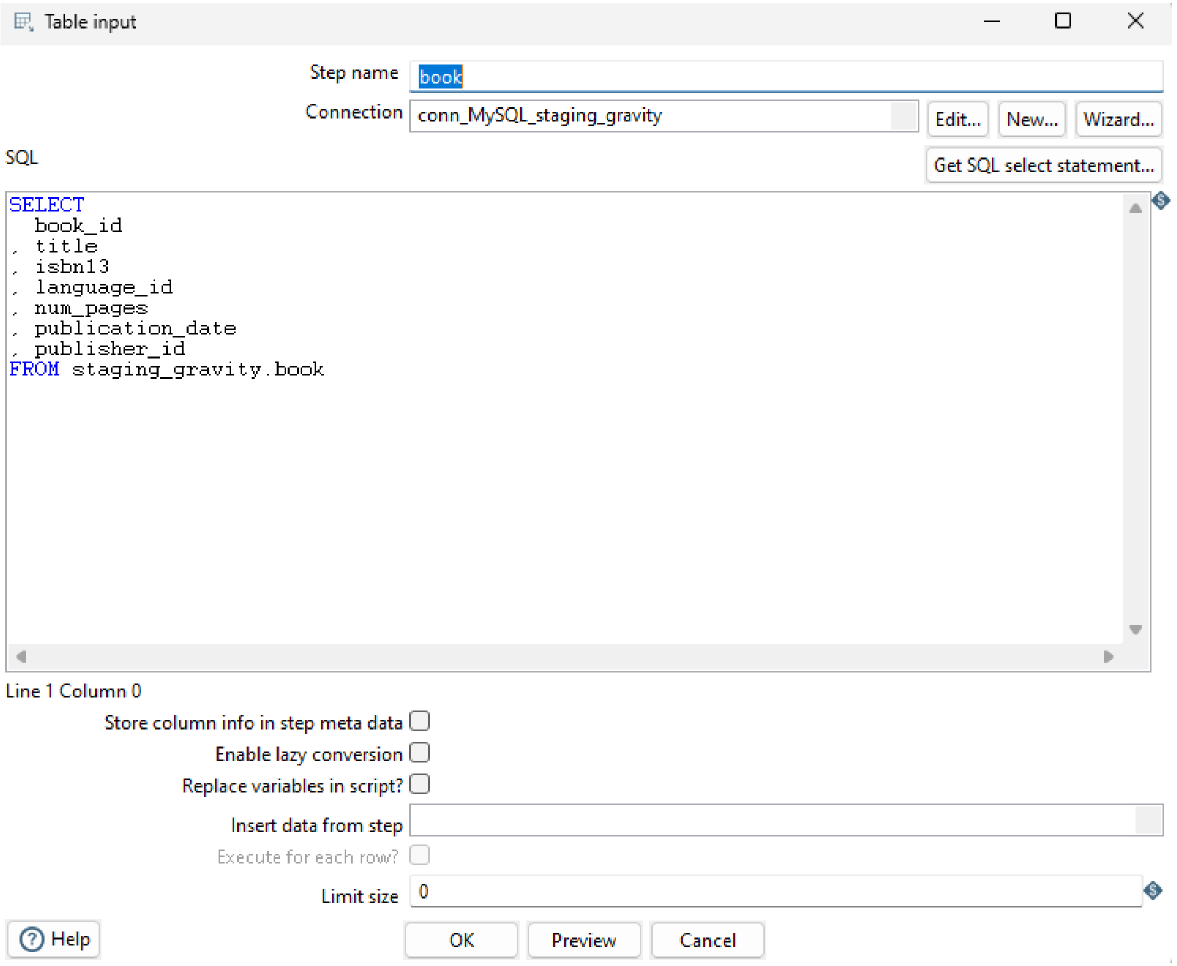
Tab “Tabel Input”

1

Step: Table Input

Nama: book

Penjelasan: Ini merupakan proses untuk melakukan **load data** ke tabel **book** yang berasal dari database **staging_gravity**.



Step name: book

Connection: conn_MySQL_staging_gravity

```
SELECT
  book_id
, title
, isbn13
, language_id
, num_pages
, publication_date
, publisher_id
FROM staging_gravity.book
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step:

Execute for each row? □

Limit size: 0

# Nomor 2 (c) *screenshot* ETL dim_book

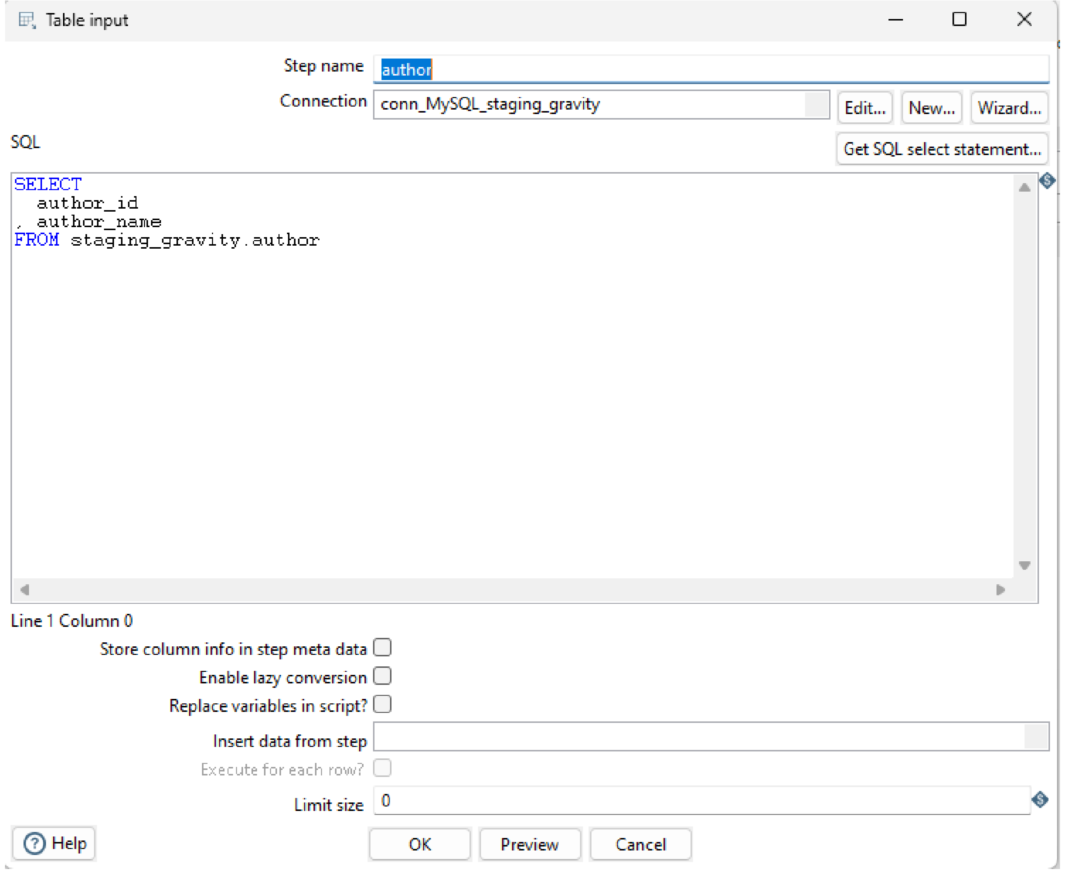
Tab "Tabel Input"

1

Step: Table Input

Nama: book_author

Penjelasan: **Ini merupakan proses untuk melakukan load data ke tabel author yang berasal dari database staging_gravity**.



Step name: author

Connection: conn_MySQL_staging_gravity

```
SELECT
  author_id
, author_name
FROM staging_gravity.author
```

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size: 0

# Nomor 2 (c) *screenshot* ETL dim_book

Tab "Tabel Input"

1

Step: Table Input

Nama: book_author

Penjelasan: Ini merupakan proses untuk melakukan **load data** ke tabel **Publisher** yang berasal dari database **staging_gravity**.

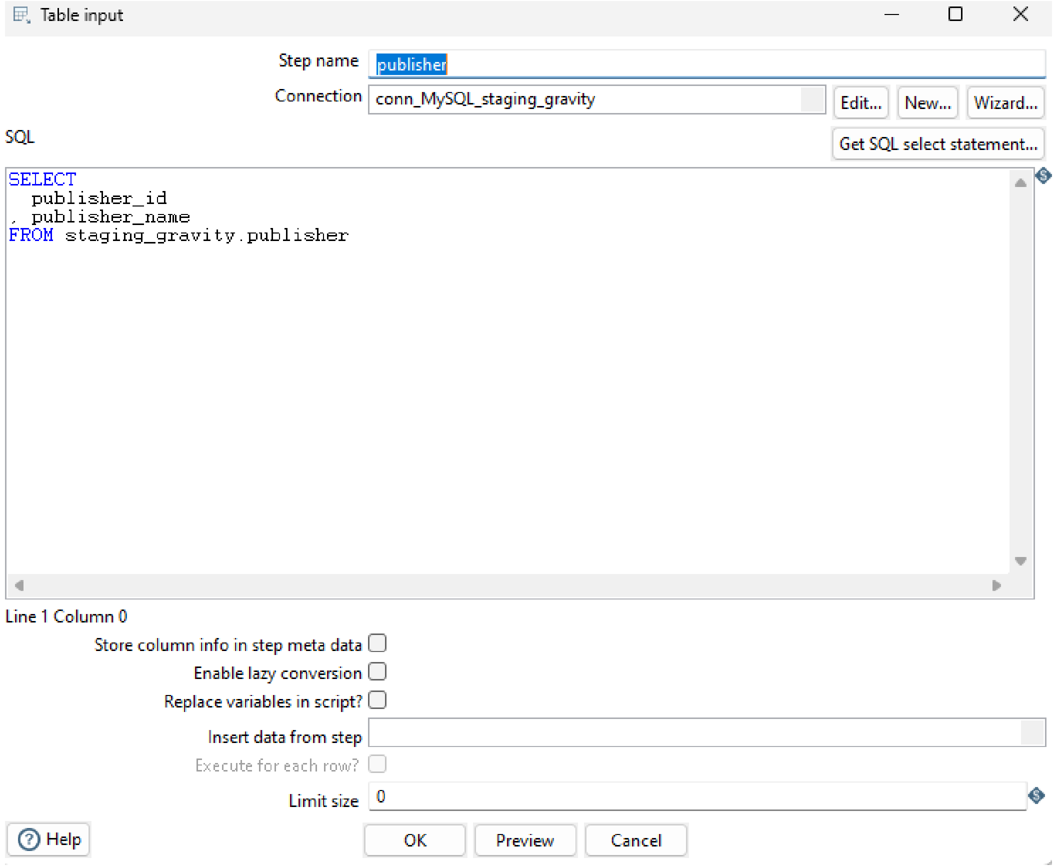


Table input

Step name: publisher

Connection: conn_MySQL_staging_gravity

SQL

```
SELECT
  publisher_id
, publisher_name
FROM staging_gravity.publisher
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size 0

# Nomor 2 (c) *screenshot* ETL dim_book

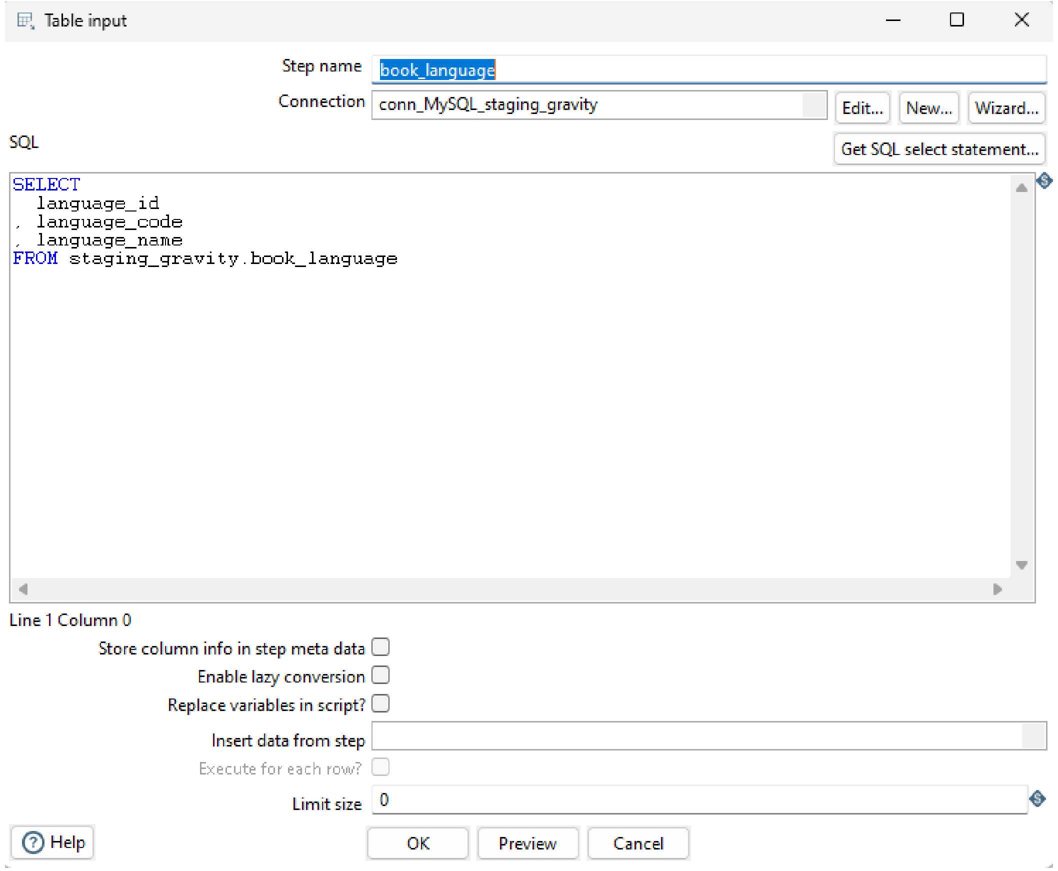
Tab "Tabel Input"

1

Step: Table Input

Nama: book_author

Penjelasan: Ini merupakan proses untuk melakukan **load data** ke tabel **book_language** yang berasal dari database **staging_gravity**.



Step name: book_language

Connection: conn_MySQL_staging_gravity

```
SELECT
  language_id
, language_code
, language_name
FROM staging_gravity.book_language
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size: 0

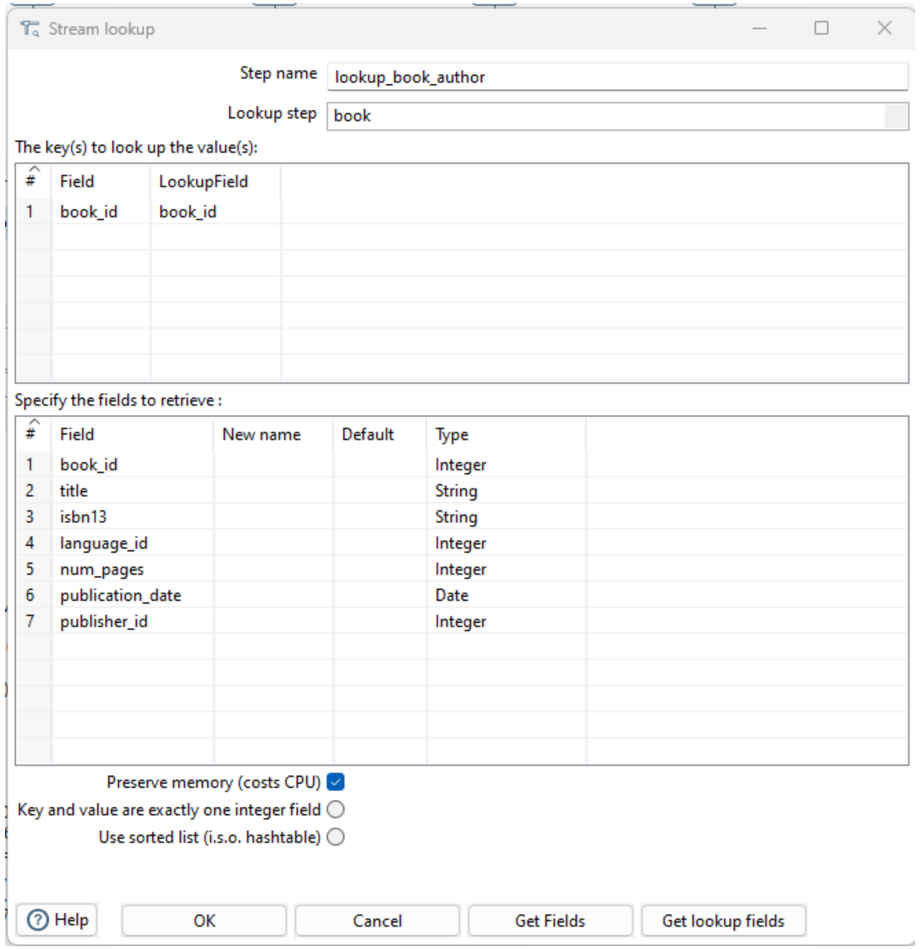
# Nomor 2 (c) *screenshot* ETL dim_book

Tab “Stream Lookup”

2

Step: lookup_book_author

Penjelasan: Step ini melakukan lookup data dari tabel book dengan relasi key nya : book_id.



Step name: lookup_book_author

Lookup step: book

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | book_id | book_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | book_id | | | Integer |
| 2 | title | | | String |
| 3 | isbn13 | | | String |
| 4 | language_id | | | Integer |
| 5 | num_pages | | | Integer |
| 6 | publication_date | | | Date |
| 7 | publisher_id | | | Integer |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

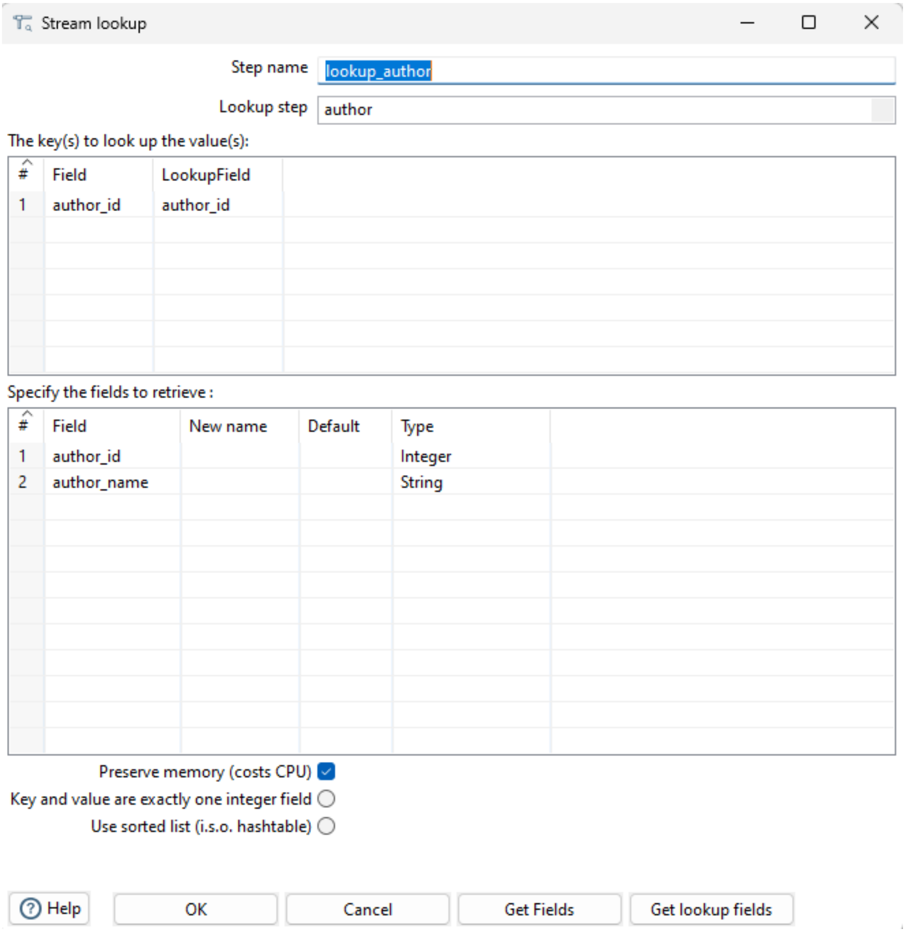
# Nomor 2 (c) *screenshot* ETL dim_book

Tab "Stream Lookup"

3

Step: lookup_author

Penjelasan: Step ini melakukan lookup data dari tabel author dengan relasi key nya : author_id.



Stream lookup

Step name: lookup_author

Lookup step: author

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | author_id | author_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | author_id | | | Integer |
| 2 | author_name | | | String |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

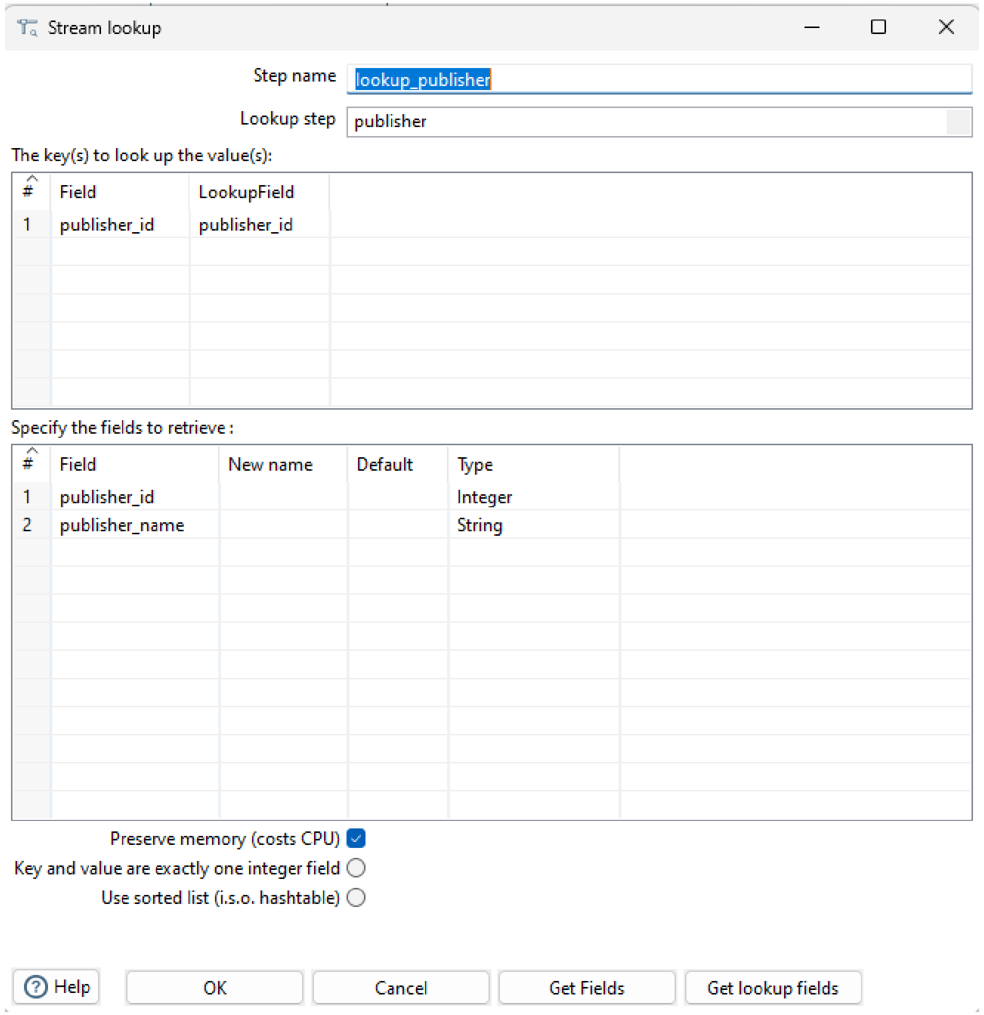
# Nomor 2 (c) *screenshot* ETL dim_book

**Tab "Stream Lookup"**

4

Step: lookup_publisher

Penjelasan: **Step ini melakukan lookup data dari tabel publisher dengan relasi key nya : publisher_id**



Stream lookup

Step name: lookup_publisher

Lookup step: publisher

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | publisher_id | publisher_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | publisher_id | | | Integer |
| 2 | publisher_name | | | String |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

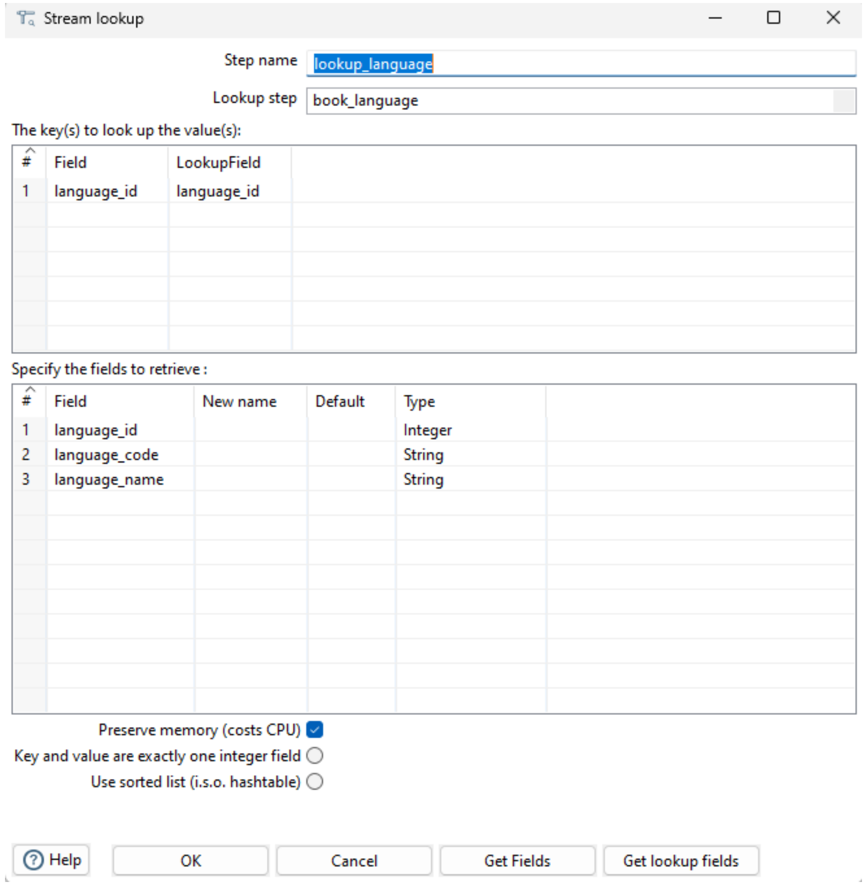
# Nomor 2 (c) *screenshot* ETL dim_book

**Tab "Stream Lookup"**

5

Step: lookup_language

Penjelasan : Step ini melakukan lookup data dari tabel book_language dengan relasi key nya : language_id.



Step name: lookup_language

Lookup step: book_language

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | language_id | language_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | language_id | | | Integer |
| 2 | language_code | | | String |
| 3 | language_name | | | String |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

# Nomor 2 (c) *screenshot* ETL dim_book

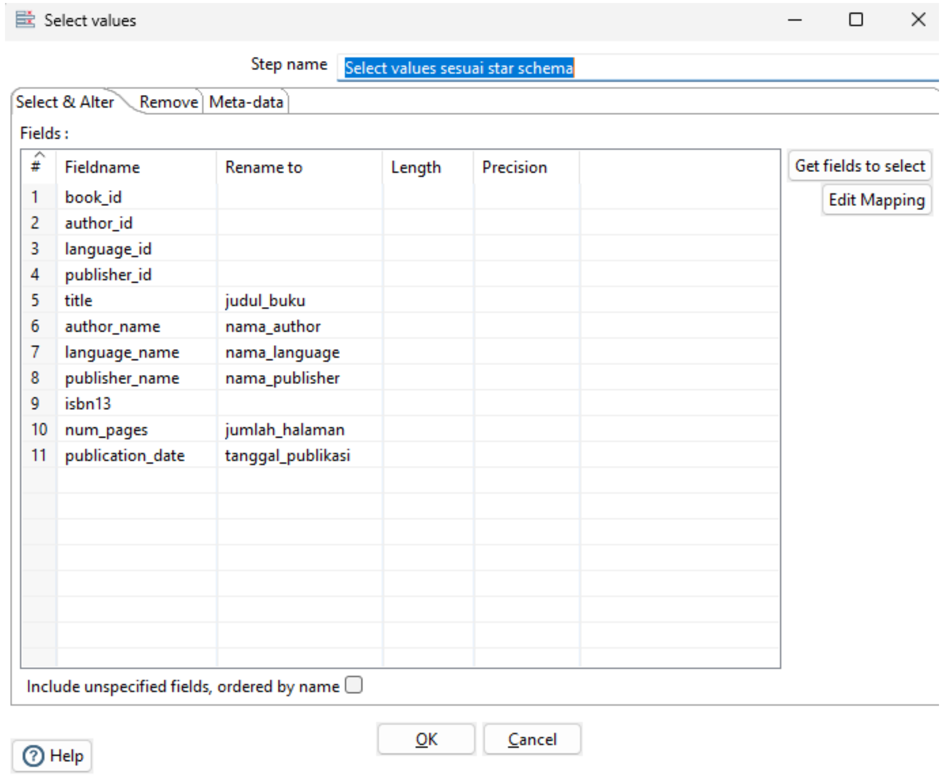
Tab "Select Values"

6

Step: Select Values

Nama: Select values sesuai star schema

Penjelasan : Select values sesuai star schema



Step name: Select values sesuai star schema

Fields :

| # | Fieldname | Rename to | Length | Precision |
|---|---|---|---|---|
| 1 | book_id | | | |
| 2 | author_id | | | |
| 3 | language_id | | | |
| 4 | publisher_id | | | |
| 5 | title | judul_buku | | |
| 6 | author_name | nama_author | | |
| 7 | language_name | nama_language | | |
| 8 | publisher_name | nama_publisher | | |
| 9 | isbn13 | | | |
| 10 | num_pages | jumlah_halaman | | |
| 11 | publication_date | tanggal_publikasi | | |

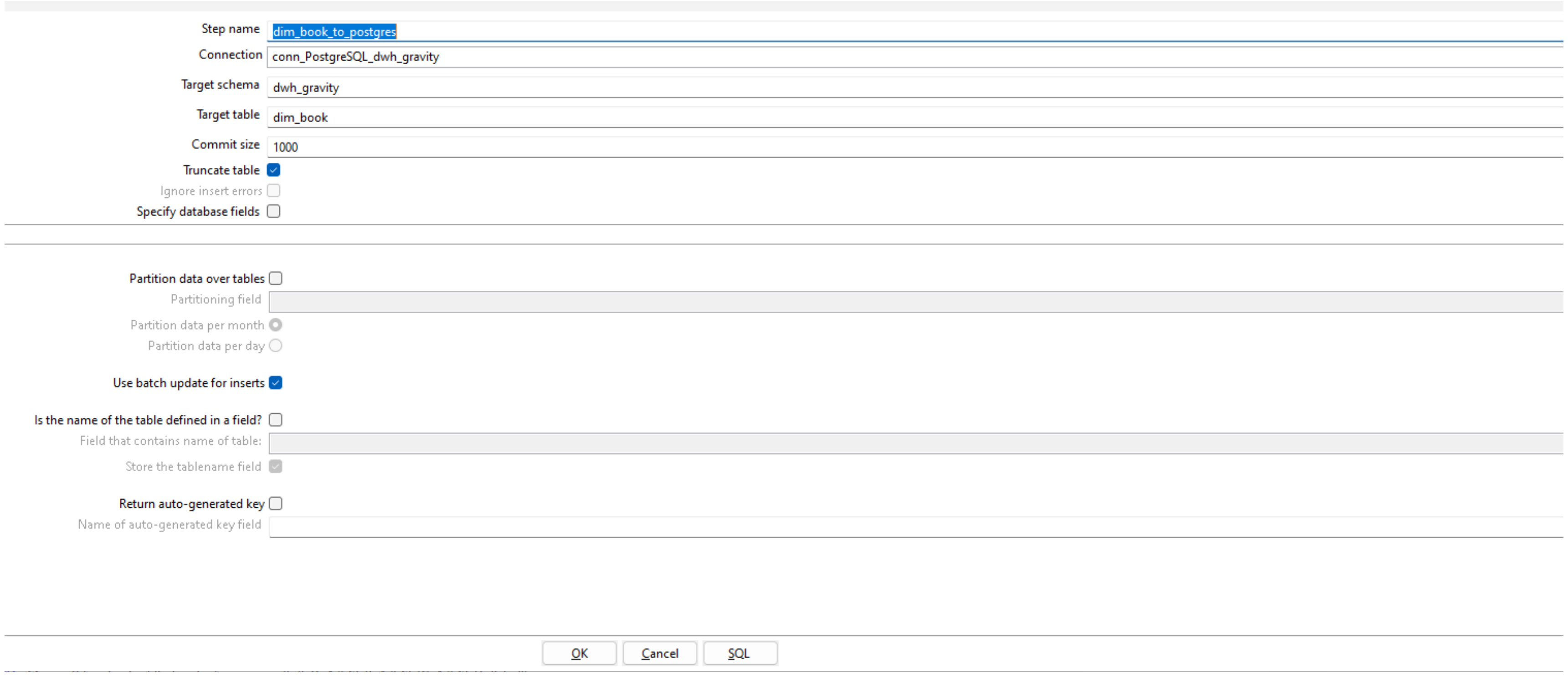
Include unspecified fields, ordered by name ☐

# Nomor 2 (c) *screenshot* ETL dim_book

Tab “Table Output”

7

Step: Table Output
Nama: dim_book_to_postgres



Step name: dim_book_to_postgres

Connection: conn_PostgreSQL_dwh_gravity

Target schema: dwh_gravity

Target table: dim_book

Commit size: 1000

Truncate table ☑

Ignore insert errors ☐

Specify database fields ☐

Partition data over tables ☐

Partitioning field:

Partition data per month ●

Partition data per day ○

Use batch update for inserts ☑

Is the name of the table defined in a field? ☐

Field that contains name of table:

Store the tablename field ☑

Return auto-generated key ☐

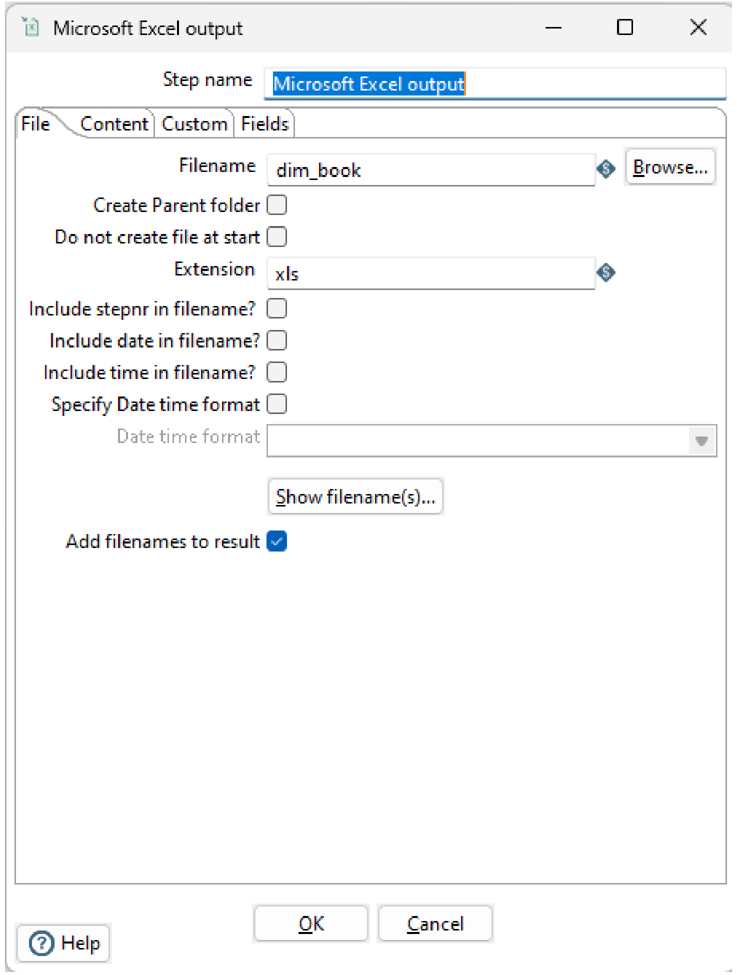
Name of auto-generated key field:

# Nomor 2 (c) *screenshot* ETL dim_book

Tab "Miscrosoft Excel Output"

8

Step: Miscrosoft Excel Output
Nama: Microsoft Excel output
Penjelasan : Microsoft Excel output



Step name: Microsoft Excel output

Filename: dim_book

Create Parent folder □

Do not create file at start □

Extension: xls

Include stepnr in filename? □

Include date in filename? □

Include time in filename? □

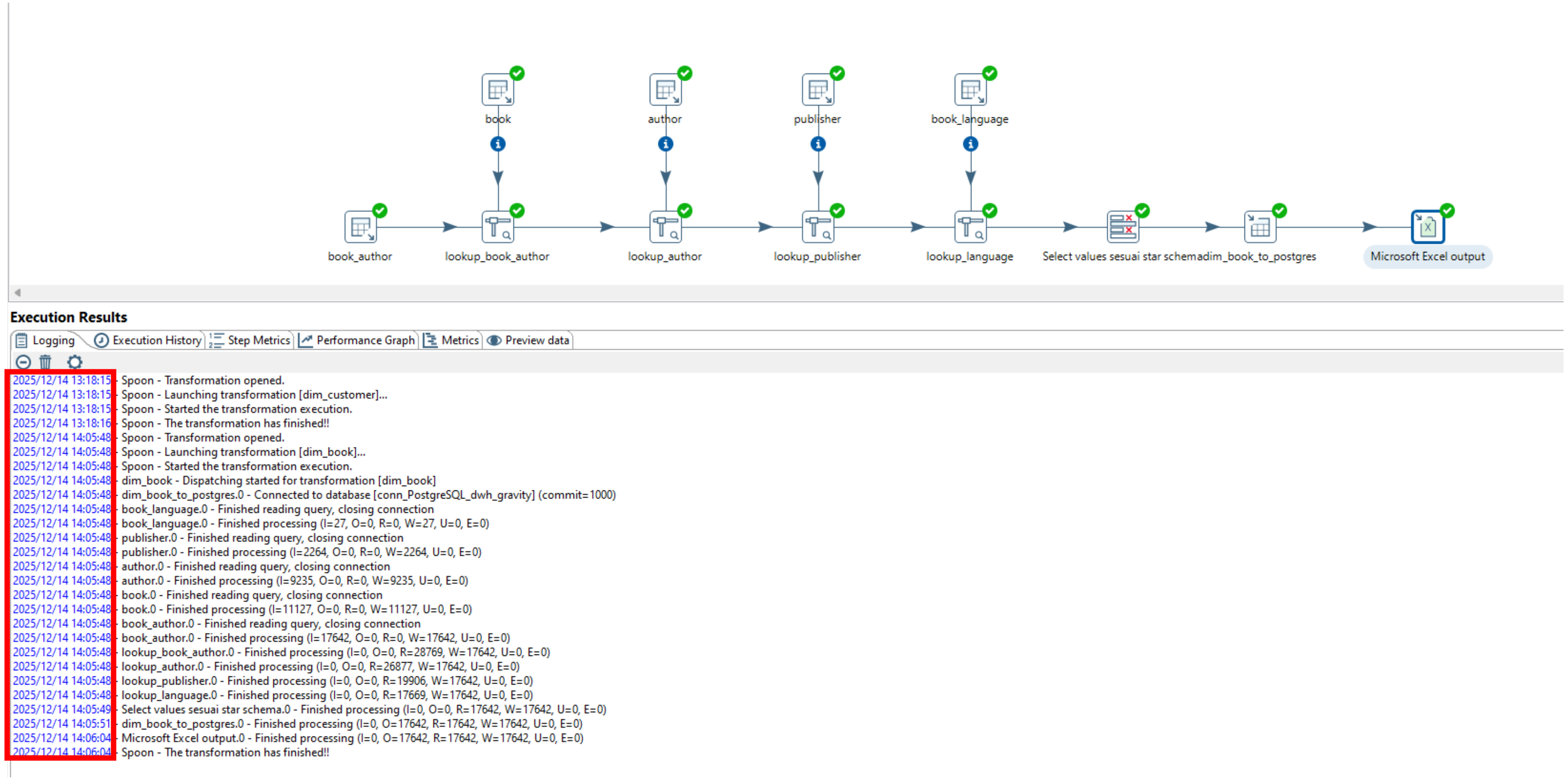
Specify Date time format □

Date time format:

Add filenames to result ☑

# Nomor 2 (c) *screenshot* ETL dim_book

Tab “Logging”

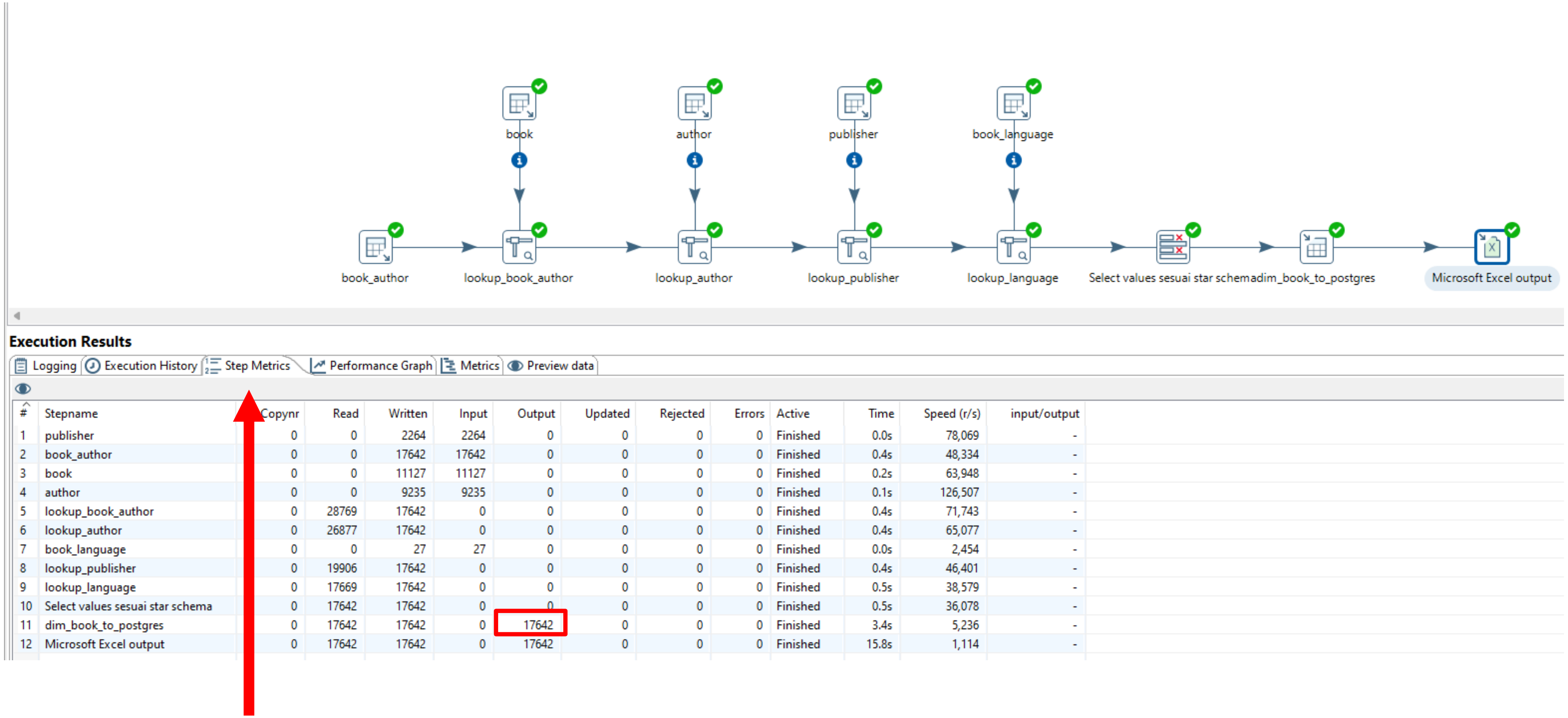


```
2025/12/14 13:18:15 - Spoon - Transformation opened.
2025/12/14 13:18:15 - Spoon - Launching transformation [dim_customer]...
2025/12/14 13:18:15 - Spoon - Started the transformation execution.
2025/12/14 13:18:16 - Spoon - The transformation has finished!!
2025/12/14 14:05:48 - Spoon - Transformation opened.
2025/12/14 14:05:48 - Spoon - Launching transformation [dim_book]...
2025/12/14 14:05:48 - Spoon - Started the transformation execution.
2025/12/14 14:05:48 - dim_book - Dispatching started for transformation [dim_book]
2025/12/14 14:05:48 - dim_book_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 14:05:48 - book_language.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - book_language.0 - Finished processing (I=27, O=0, R=0, W=27, U=0, E=0)
2025/12/14 14:05:48 - publisher.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - publisher.0 - Finished processing (I=2264, O=0, R=0, W=2264, U=0, E=0)
2025/12/14 14:05:48 - author.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - author.0 - Finished processing (I=9235, O=0, R=0, W=9235, U=0, E=0)
2025/12/14 14:05:48 - book.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - book.0 - Finished processing (I=11127, O=0, R=0, W=11127, U=0, E=0)
2025/12/14 14:05:48 - book_author.0 - Finished reading query, closing connection
2025/12/14 14:05:48 - book_author.0 - Finished processing (I=17642, O=0, R=0, W=17642, U=0, E=0)
2025/12/14 14:05:48 - lookup_book_author.0 - Finished processing (I=0, O=0, R=28769, W=17642, U=0, E=0)
2025/12/14 14:05:48 - lookup_author.0 - Finished processing (I=0, O=0, R=26877, W=17642, U=0, E=0)
2025/12/14 14:05:48 - lookup_publisher.0 - Finished processing (I=0, O=0, R=19906, W=17642, U=0, E=0)
2025/12/14 14:05:48 - lookup_language.0 - Finished processing (I=0, O=0, R=17669, W=17642, U=0, E=0)
2025/12/14 14:05:49 - Select values sesuai star schema.0 - Finished processing (I=0, O=0, R=17642, W=17642, U=0, E=0)
2025/12/14 14:05:51 - dim_book_to_postgres.0 - Finished processing (I=0, O=17642, R=17642, W=17642, U=0, E=0)
2025/12/14 14:06:04 - Microsoft Excel output.0 - Finished processing (I=0, O=17642, R=17642, W=17642, U=0, E=0)
2025/12/14 14:06:04 - Spoon - The transformation has finished!!
```

Tab “Logging”

# Nomor 2 (c) *screenshot* ETL dim_book

Tab "Step Metrics"



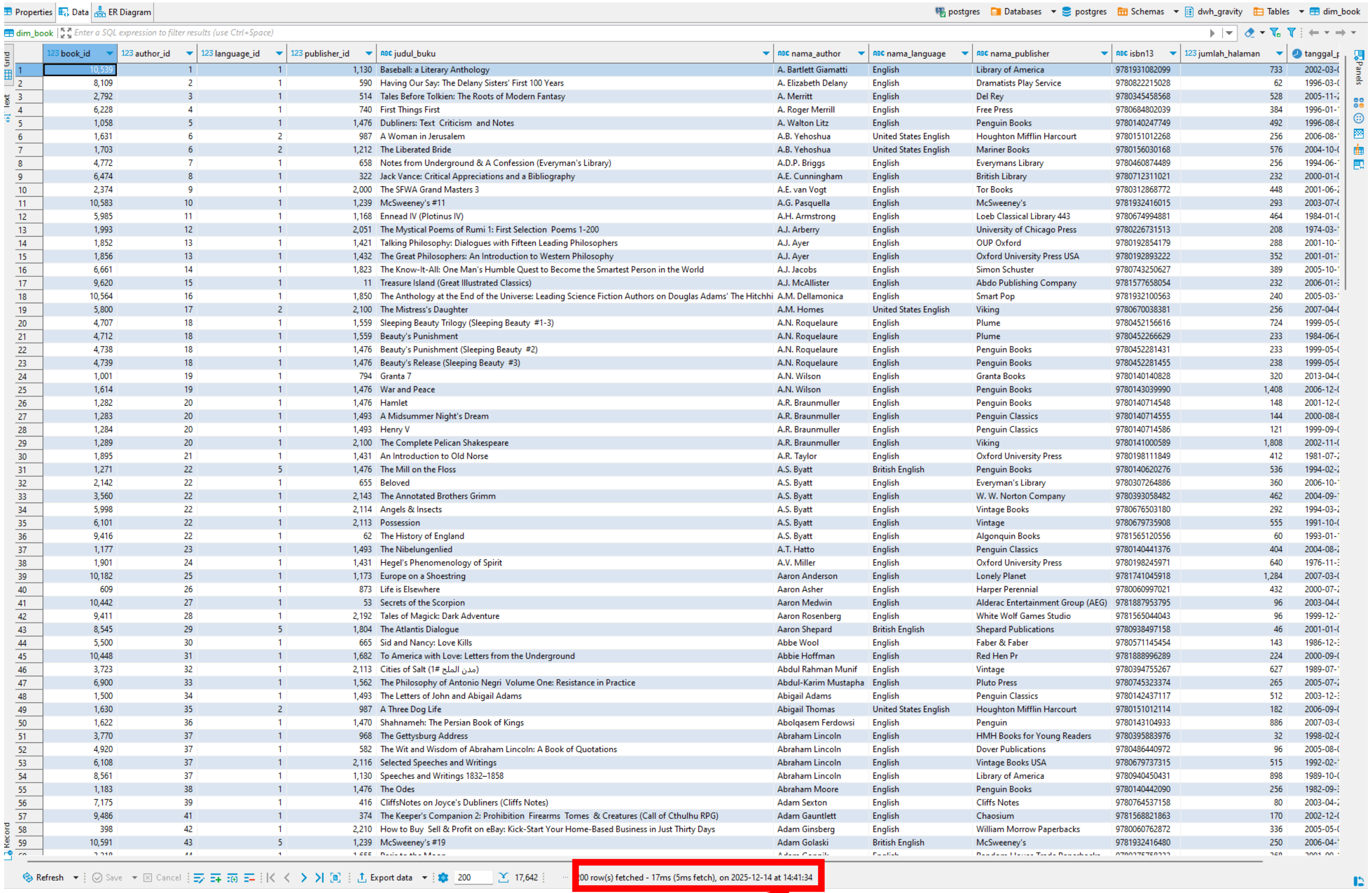
**Execution Results**

| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | publisher | 0 | 0 | 2264 | 2264 | 0 | 0 | 0 | 0 | Finished | 0.0s | 78,069 | - |
| 2 | book_author | 0 | 0 | 17642 | 17642 | 0 | 0 | 0 | 0 | Finished | 0.4s | 48,334 | - |
| 3 | book | 0 | 0 | 11127 | 11127 | 0 | 0 | 0 | 0 | Finished | 0.2s | 63,948 | - |
| 4 | author | 0 | 0 | 9235 | 9235 | 0 | 0 | 0 | 0 | Finished | 0.1s | 126,507 | - |
| 5 | lookup_book_author | 0 | 28769 | 17642 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 71,743 | - |
| 6 | lookup_author | 0 | 26877 | 17642 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 65,077 | - |
| 7 | book_language | 0 | 0 | 27 | 27 | 0 | 0 | 0 | 0 | Finished | 0.0s | 2,454 | - |
| 8 | lookup_publisher | 0 | 19906 | 17642 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 46,401 | - |
| 9 | lookup_language | 0 | 17669 | 17642 | 0 | 0 | 0 | 0 | 0 | Finished | 0.5s | 38,579 | - |
| 10 | Select values sesuai star schema | 0 | 17642 | 17642 | 0 | 0 | 0 | 0 | 0 | Finished | 0.5s | 36,078 | - |
| 11 | dim_book_to_postgres | 0 | 17642 | 17642 | 0 | 17642 | 0 | 0 | 0 | Finished | 3.4s | 5,236 | - |
| 12 | Microsoft Excel output | 0 | 17642 | 17642 | 0 | 17642 | 0 | 0 | 0 | Finished | 15.8s | 1,114 | - |

Tab "Step Metrics"

# Nomor 2 (c) *screenshot* ETL dim_book

“dwh_gravity”



| | book_id | author_id | language_id | publisher_id | judul_buku | nama_author | nama_language | nama_publisher | isbn13 | jumlah_halaman | tanggal_p |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10,539 | 1 | 1 | 1,130 | Baseball: a Literary Anthology | A. Bartlett Giamatti | English | Library of America | 9781931082099 | 733 | 2002-03- |
| 2 | 8,109 | 2 | 1 | 590 | Having Our Say: The Delany Sisters' First 100 Years | A. Elizabeth Delany | English | Dramatists Play Service | 9780822215028 | 62 | 1996-03- |
| 3 | 2,792 | 3 | 1 | 514 | Tales Before Tolkien: The Roots of Modern Fantasy | A. Merritt | English | Del Rey | 9780345458568 | 528 | 2005-11- |
| 4 | 6,228 | 4 | 1 | 740 | First Things First | A. Roger Merrill | English | Free Press | 9780684802039 | 384 | 1996-01- |
| 5 | 1,058 | 5 | 1 | 1,476 | Dubliners: Text Criticism and Notes | A. Walton Litz | English | Penguin Books | 9780140247749 | 492 | 1996-08- |
| 6 | 1,631 | 6 | 2 | 987 | A Woman in Jerusalem | A.B. Yehoshua | United States English | Houghton Mifflin Harcourt | 9780151012268 | 256 | 2006-08- |
| 7 | 1,703 | 6 | 2 | 1,212 | The Liberated Bride | A.B. Yehoshua | United States English | Mariner Books | 9780156030168 | 576 | 2004-10- |
| 8 | 4,772 | 7 | 1 | 658 | Notes from Underground & A Confession (Everyman's Library) | A.D.P. Briggs | English | Everymans Library | 9780460874489 | 256 | 1994-06- |
| 9 | 6,474 | 8 | 1 | 322 | Jack Vance: Critical Appreciations and a Bibliography | A.E. Cunningham | English | British Library | 9780712311021 | 232 | 2000-01- |
| 10 | 2,374 | 9 | 1 | 2,000 | The SFWA Grand Masters 3 | A.E. van Vogt | English | Tor Books | 9780312868772 | 448 | 2001-06- |
| 11 | 10,583 | 10 | 1 | 1,239 | McSweeney's #11 | A.G. Pasquella | English | McSweeney's | 9781932416015 | 293 | 2003-07- |
| 12 | 5,985 | 11 | 1 | 1,168 | Ennead IV (Plotinus IV) | A.H. Armstrong | English | Loeb Classical Library 443 | 9780674994881 | 464 | 1984-01- |
| 13 | 1,993 | 12 | 1 | 2,051 | The Mystical Poems of Rumi 1: First Selection Poems 1-200 | A.J. Arberry | English | University of Chicago Press | 9780226731513 | 208 | 1974-03- |
| 14 | 1,852 | 13 | 1 | 1,421 | Talking Philosophy: Dialogues with Fifteen Leading Philosophers | A.J. Ayer | English | OUP Oxford | 9780192854179 | 288 | 2001-10- |
| 15 | 1,856 | 13 | 1 | 1,432 | The Great Philosophers: An Introduction to Western Philosophy | A.J. Ayer | English | Oxford University Press USA | 9780192893222 | 352 | 2001-01- |
| 16 | 6,661 | 14 | 1 | 1,823 | The Know-It-All: One Man's Humble Quest to Become the Smartest Person in the World | A.J. Jacobs | English | Simon Schuster | 9780743250627 | 389 | 2005-10- |
| 17 | 9,620 | 15 | 1 | 11 | Treasure Island (Great Illustrated Classics) | A.J. McAllister | English | Abdo Publishing Company | 9781577658054 | 232 | 2006-01- |
| 18 | 10,564 | 16 | 1 | 1,850 | The Anthology at the End of the Universe: Leading Science Fiction Authors on Douglas Adams' The Hitchhi | A.M. Dellamonica | English | Smart Pop | 9781932100563 | 240 | 2005-03- |
| 19 | 5,800 | 17 | 2 | 2,100 | The Mistress's Daughter | A.M. Homes | United States English | Viking | 9780670038381 | 256 | 2007-04- |
| 20 | 4,707 | 18 | 1 | 1,559 | Sleeping Beauty Trilogy (Sleeping Beauty #1-3) | A.N. Roquelaure | English | Plume | 9780452156616 | 724 | 1999-05- |
| 21 | 4,712 | 18 | 1 | 1,559 | Beauty's Punishment | A.N. Roquelaure | English | Plume | 9780452266629 | 233 | 1984-06- |
| 22 | 4,738 | 18 | 1 | 1,476 | Beauty's Punishment (Sleeping Beauty #2) | A.N. Roquelaure | English | Penguin Books | 9780452281431 | 233 | 1999-05- |
| 23 | 4,739 | 18 | 1 | 1,476 | Beauty's Release (Sleeping Beauty #3) | A.N. Roquelaure | English | Penguin Books | 9780452281455 | 238 | 1999-05- |
| 24 | 1,001 | 19 | 1 | 794 | Granta 7 | A.N. Wilson | English | Granta Books | 9780140140828 | 320 | 2013-04- |
| 25 | 1,614 | 19 | 1 | 1,476 | War and Peace | A.N. Wilson | English | Penguin Books | 9780143039990 | 1,408 | 2006-12- |
| 26 | 1,282 | 20 | 1 | 1,476 | Hamlet | A.R. Braunmuller | English | Penguin Books | 9780140714548 | 148 | 2001-12- |
| 27 | 1,283 | 20 | 1 | 1,493 | A Midsummer Night's Dream | A.R. Braunmuller | English | Penguin Classics | 9780140714555 | 144 | 2000-08- |
| 28 | 1,284 | 20 | 1 | 1,493 | Henry V | A.R. Braunmuller | English | Penguin Classics | 9780140714586 | 121 | 1999-09- |
| 29 | 1,289 | 20 | 1 | 2,100 | The Complete Pelican Shakespeare | A.R. Braunmuller | English | Viking | 9780141000589 | 1,808 | 2002-11- |
| 30 | 1,895 | 21 | 1 | 1,431 | An Introduction to Old Norse | A.R. Taylor | English | Oxford University Press | 9780198111849 | 412 | 1981-07- |
| 31 | 1,271 | 22 | 5 | 1,476 | The Mill on the Floss | A.S. Byatt | British English | Penguin Books | 9780140620276 | 536 | 1994-02- |
| 32 | 2,142 | 22 | 1 | 655 | Beloved | A.S. Byatt | English | Everyman's Library | 9780307264886 | 360 | 2006-10- |
| 33 | 3,560 | 22 | 1 | 2,143 | The Annotated Brothers Grimm | A.S. Byatt | English | W. W. Norton Company | 9780393058482 | 462 | 2004-09- |
| 34 | 5,998 | 22 | 1 | 2,114 | Angels & Insects | A.S. Byatt | English | Vintage Books | 9780676503180 | 292 | 1994-03- |
| 35 | 6,101 | 22 | 1 | 2,113 | Possession | A.S. Byatt | English | Vintage | 9780679735908 | 555 | 1991-10- |
| 36 | 9,416 | 22 | 1 | 62 | The History of England | A.S. Byatt | English | Algonquin Books | 9781565120556 | 60 | 1993-01- |
| 37 | 1,177 | 23 | 1 | 1,493 | The Nibelungenlied | A.T. Hatto | English | Penguin Classics | 9780140441376 | 404 | 2004-08- |
| 38 | 1,901 | 24 | 1 | 1,431 | Hegel's Phenomenology of Spirit | A.V. Miller | English | Oxford University Press | 9780198245971 | 640 | 1976-11- |
| 39 | 10,182 | 25 | 1 | 1,173 | Europe on a Shoestring | Aaron Anderson | English | Lonely Planet | 9781741045918 | 1,284 | 2007-03- |
| 40 | 609 | 26 | 1 | 873 | Life is Elsewhere | Aaron Asher | English | Harper Perennial | 9780060997021 | 432 | 2000-07- |
| 41 | 10,442 | 27 | 1 | 53 | Secrets of the Scorpion | Aaron Medwin | English | Alderac Entertainment Group (AEG) | 9781887953795 | 96 | 2003-04- |
| 42 | 9,411 | 28 | 1 | 2,192 | Tales of Magick: Dark Adventure | Aaron Rosenberg | English | White Wolf Games Studio | 9781565044043 | 96 | 1999-12- |
| 43 | 8,545 | 29 | 5 | 1,804 | The Atlantis Dialogue | Aaron Shepard | British English | Shepard Publications | 9780938497158 | 46 | 2001-01- |
| 44 | 5,500 | 30 | 1 | 665 | Sid and Nancy: Love Kills | Abbe Wool | English | Faber & Faber | 9780571145454 | 143 | 1986-12- |
| 45 | 10,448 | 31 | 1 | 1,682 | To America with Love: Letters from the Underground | Abbie Hoffman | English | Red Hen Pr | 9781888996289 | 224 | 2000-09- |
| 46 | 3,723 | 32 | 1 | 2,113 | Cities of Salt (1# مدن الملح) | Abdul Rahman Munif | English | Vintage | 9780394755267 | 627 | 1989-07- |
| 47 | 6,900 | 33 | 1 | 1,562 | The Philosophy of Antonio Negri Volume One: Resistance in Practice | Abdul-Karim Mustapha | English | Pluto Press | 9780745323374 | 265 | 2005-07- |
| 48 | 1,500 | 34 | 1 | 1,493 | The Letters of John and Abigail Adams | Abigail Adams | English | Penguin Classics | 9780142437117 | 512 | 2003-12- |
| 49 | 1,630 | 35 | 2 | 987 | A Three Dog Life | Abigail Thomas | United States English | Houghton Mifflin Harcourt | 9780151012114 | 182 | 2006-09- |
| 50 | 1,622 | 36 | 1 | 1,470 | Shahnameh: The Persian Book of Kings | Abolqasem Ferdowsi | English | Penguin | 9780143104933 | 886 | 2007-03- |
| 51 | 3,770 | 37 | 1 | 968 | The Gettysburg Address | Abraham Lincoln | English | HMH Books for Young Readers | 9780395883976 | 32 | 1998-02- |
| 52 | 4,920 | 37 | 1 | 582 | The Wit and Wisdom of Abraham Lincoln: A Book of Quotations | Abraham Lincoln | English | Dover Publications | 9780486440972 | 96 | 2005-08- |
| 53 | 6,108 | 37 | 1 | 2,116 | Selected Speeches and Writings | Abraham Lincoln | English | Vintage Books USA | 9780679737315 | 515 | 1992-02- |
| 54 | 8,561 | 37 | 1 | 1,130 | Speeches and Writings 1832–1858 | Abraham Lincoln | English | Library of America | 9780940450431 | 898 | 1989-10- |
| 55 | 1,183 | 38 | 1 | 1,476 | The Odes | Abraham Moore | English | Penguin Books | 9780140442090 | 256 | 1982-09- |
| 56 | 7,175 | 39 | 1 | 416 | CliffsNotes on Joyce's Dubliners (Cliffs Notes) | Adam Sexton | English | Cliffs Notes | 9780764537158 | 80 | 2003-04- |
| 57 | 9,486 | 41 | 1 | 374 | The Keeper's Companion 2: Prohibition Firearms Tomes & Creatures (Call of Cthulhu RPG) | Adam Gauntlett | English | Chaosium | 9781568821863 | 170 | 2002-12- |
| 58 | 398 | 42 | 1 | 2,210 | How to Buy Sell & Profit on eBay: Kick-Start Your Home-Based Business in Just Thirty Days | Adam Ginsberg | English | William Morrow Paperbacks | 9780060762872 | 336 | 2005-05- |
| 59 | 10,591 | 43 | 5 | 1,239 | McSweeney's #19 | Adam Golaski | British English | McSweeney's | 9781932416480 | 250 | 2006-04- |

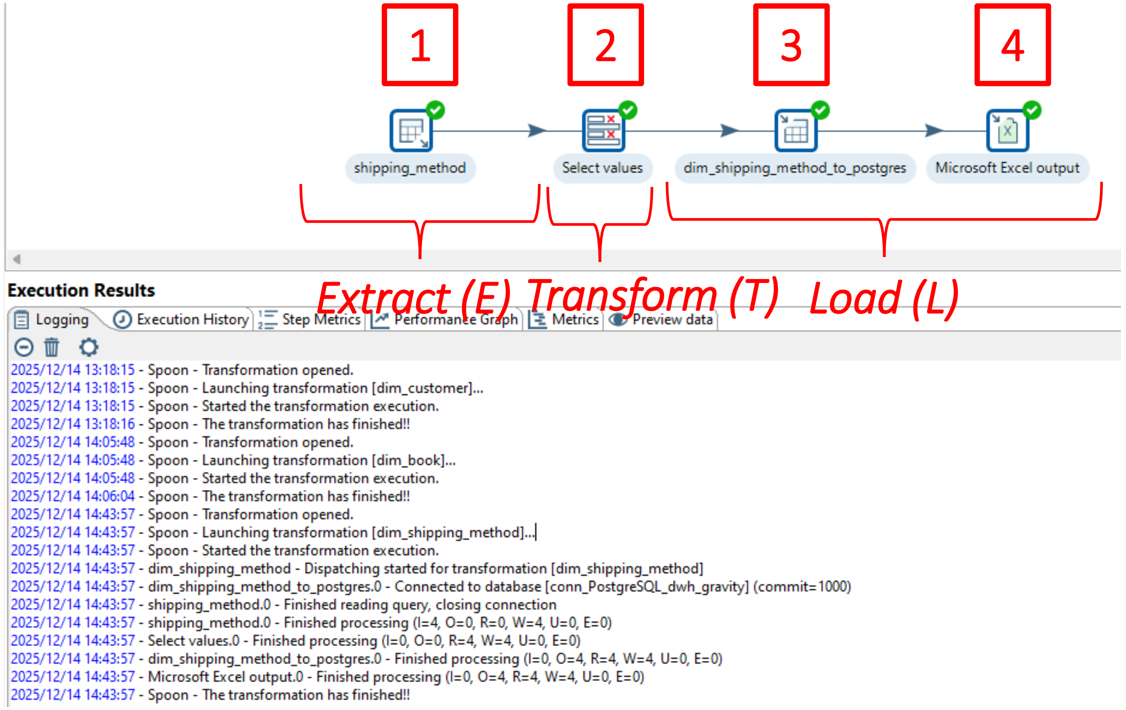
00 row(s) fetched - 17ms (5ms fetch), on 2025-12-14 at 14:41:34

Jumlah rows / baris, dan Keterangan waktu load data

# Nomor 2 (d)

**dim_shipping_method**

# Nomor 2 (d) *screenshot* ETL dim_shipping_method.



```
2025/12/14 13:18:15 - Spoon - Transformation opened.
2025/12/14 13:18:15 - Spoon - Launching transformation [dim_customer]...
2025/12/14 13:18:15 - Spoon - Started the transformation execution.
2025/12/14 13:18:16 - Spoon - The transformation has finished!!
2025/12/14 14:05:48 - Spoon - Transformation opened.
2025/12/14 14:05:48 - Spoon - Launching transformation [dim_book]...
2025/12/14 14:05:48 - Spoon - Started the transformation execution.
2025/12/14 14:06:04 - Spoon - The transformation has finished!!
2025/12/14 14:43:57 - Spoon - Transformation opened.
2025/12/14 14:43:57 - Spoon - Launching transformation [dim_shipping_method]...
2025/12/14 14:43:57 - Spoon - Started the transformation execution.
2025/12/14 14:43:57 - dim_shipping_method - Dispatching started for transformation [dim_shipping_method]
2025/12/14 14:43:57 - dim_shipping_method_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 14:43:57 - shipping_method.0 - Finished reading query, closing connection
2025/12/14 14:43:57 - shipping_method.0 - Finished processing (I=4, O=0, R=0, W=4, U=0, E=0)
2025/12/14 14:43:57 - Select values.0 - Finished processing (I=0, O=0, R=4, W=4, U=0, E=0)
2025/12/14 14:43:57 - dim_shipping_method_to_postgres.0 - Finished processing (I=0, O=4, R=4, W=4, U=0, E=0)
2025/12/14 14:43:57 - Microsoft Excel output.0 - Finished processing (I=0, O=4, R=4, W=4, U=0, E=0)
2025/12/14 14:43:57 - Spoon - The transformation has finished!!
```

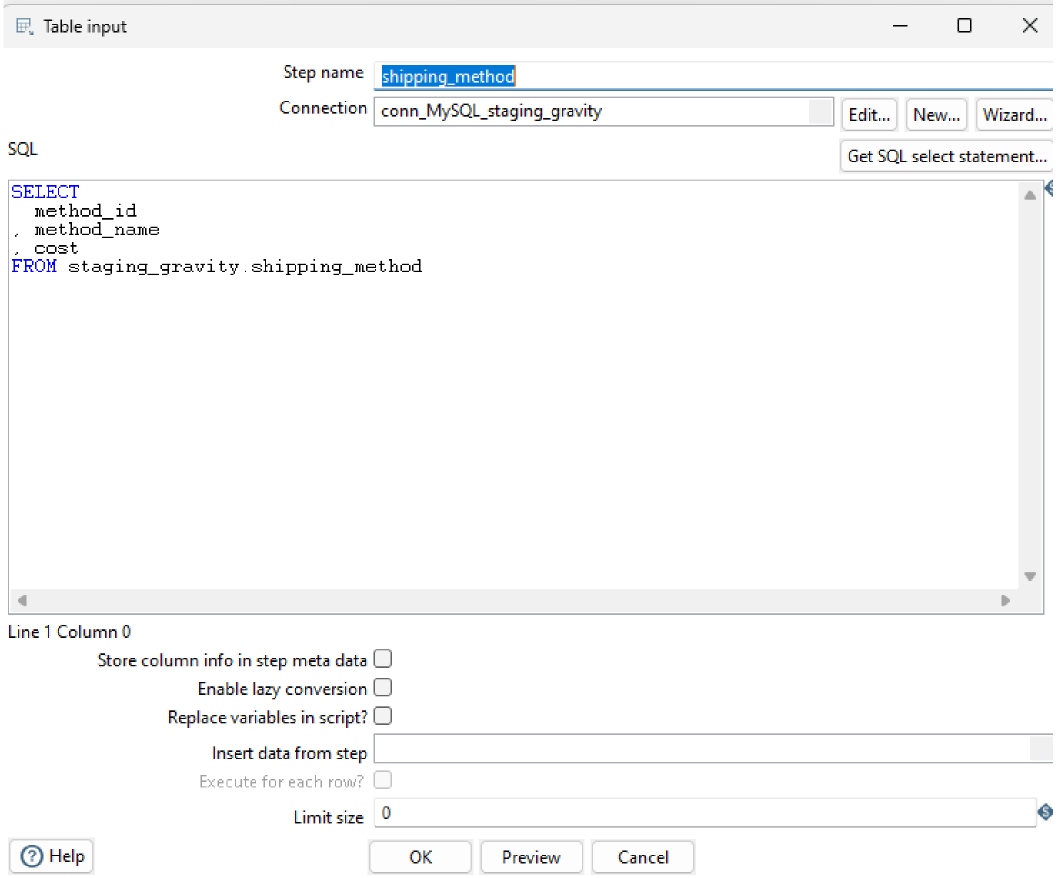
# Nomor 2 (d) *screenshot* ETL dim_shipping_method. Tab “Table Input”

1

Step: Table Input

Nama: shipping_method

Penjelasan: Ini adalah proses untuk load table shipping_method dari staging_gravity



Step name: shipping_method

Connection: conn_MySQL_staging_gravity

SQL

```
SELECT
  method_id
, method_name
, cost
FROM staging_gravity.shipping_method
```

Line 1 Column 0

Store column info in step meta data ☐

Enable lazy conversion ☐

Replace variables in script? ☐

Insert data from step

Execute for each row? ☐

Limit size: 0

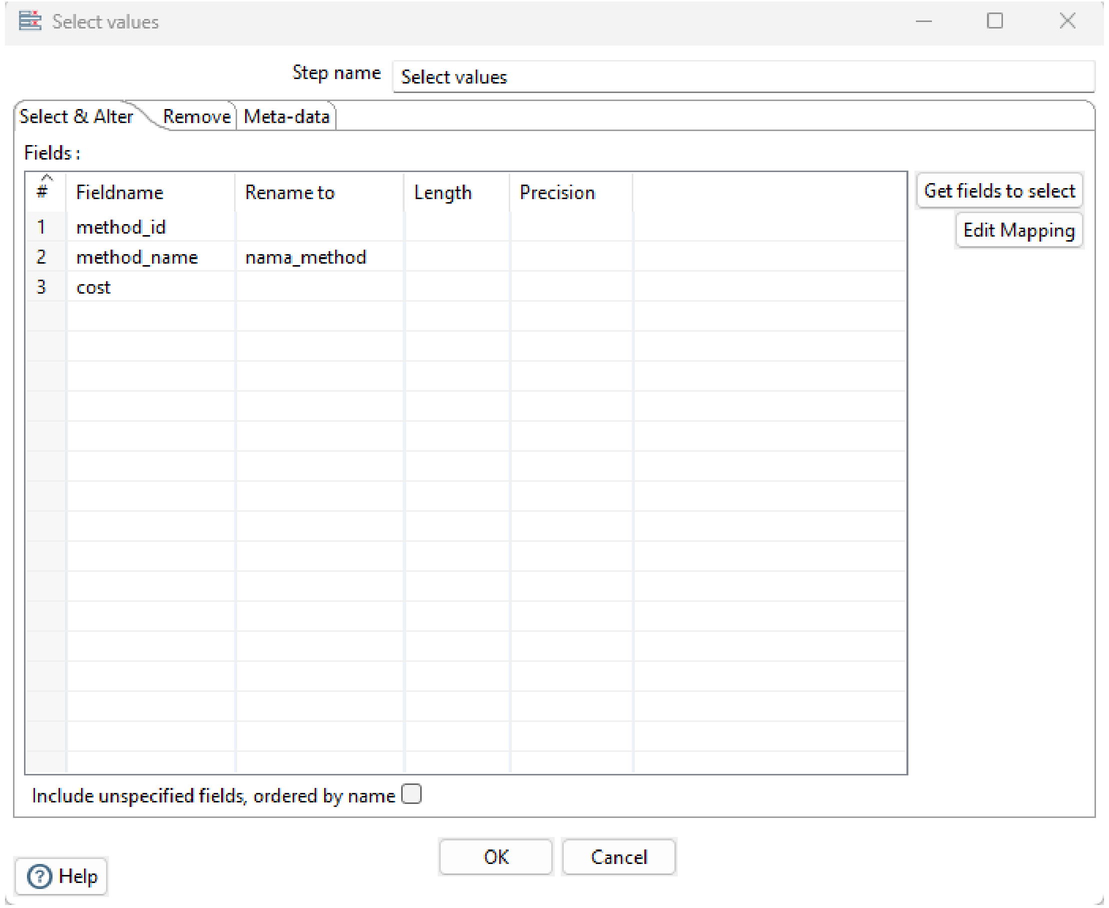
# Nomor 2 (d) *screenshot* ETL dim_shipping_method. Tab "Select Values"

2

Step: Select Values

Nama:  Select values (match star schema)

Penjelasan: Langkah ini digunakan untuk menentukan dan memetakan kolom-kolom yang akan dijadikan **dim_shipping_method** berdasarkan hasil transformasi pada tahap sebelumnya.



Step name: Select values

Fields :

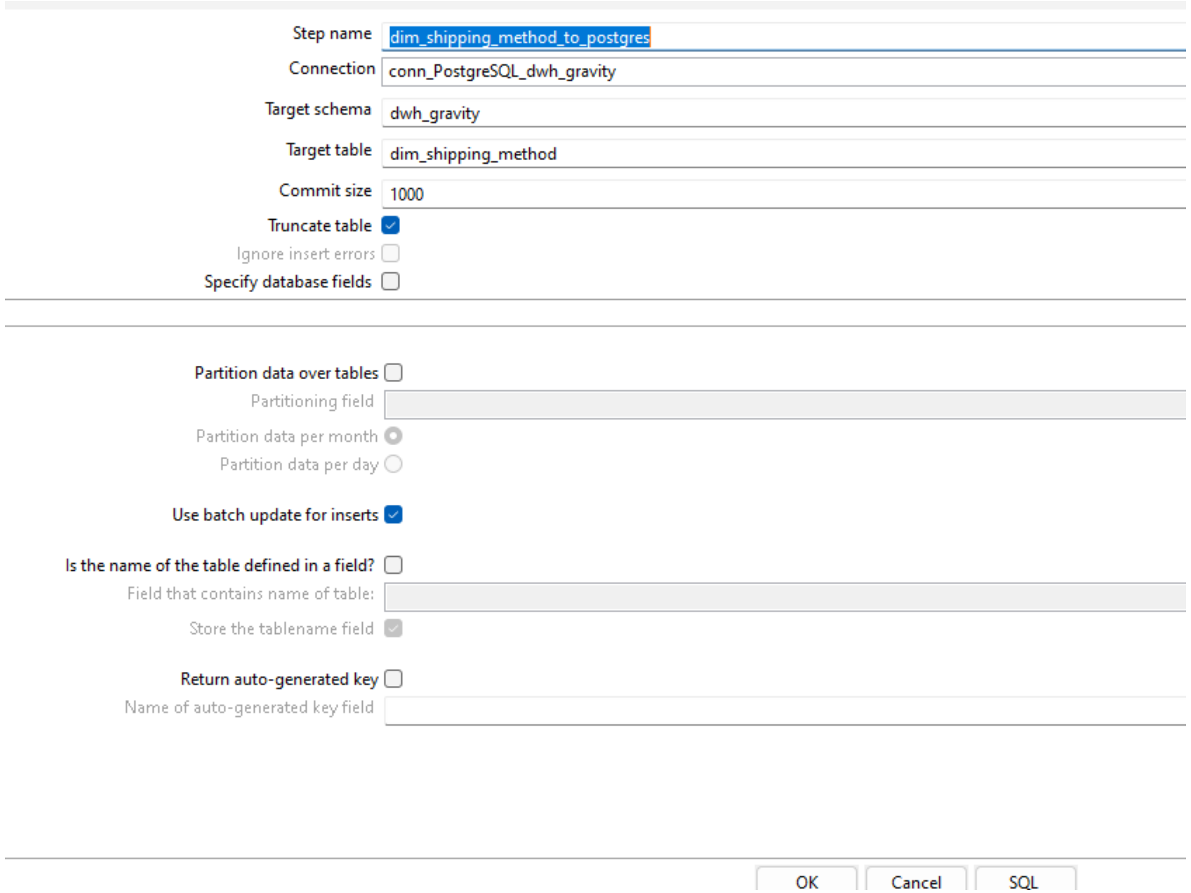
| # | Fieldname | Rename to | Length | Precision |
|---|---|---|---|---|
| 1 | method_id | | | |
| 2 | method_name | nama_method | | |
| 3 | cost | | | |

Include unspecified fields, ordered by name ☐

# Nomor 2 (d) *screenshot* ETL dim_shipping_method. Tab “Table Output”

3

Step: Table Output
Nama: dim_shipping_method_to_postgres



Step name: dim_shipping_method_to_postgres
Connection: conn_PostgreSQL_dwh_gravity
Target schema: dwh_gravity
Target table: dim_shipping_method
Commit size: 1000
Truncate table ☑
Ignore insert errors □
Specify database fields □

Partition data over tables □
Partitioning field:
Partition data per month ●
Partition data per day ○

Use batch update for inserts ☑

Is the name of the table defined in a field? □
Field that contains name of table:
Store the tablename field ☑

Return auto-generated key □
Name of auto-generated key field:

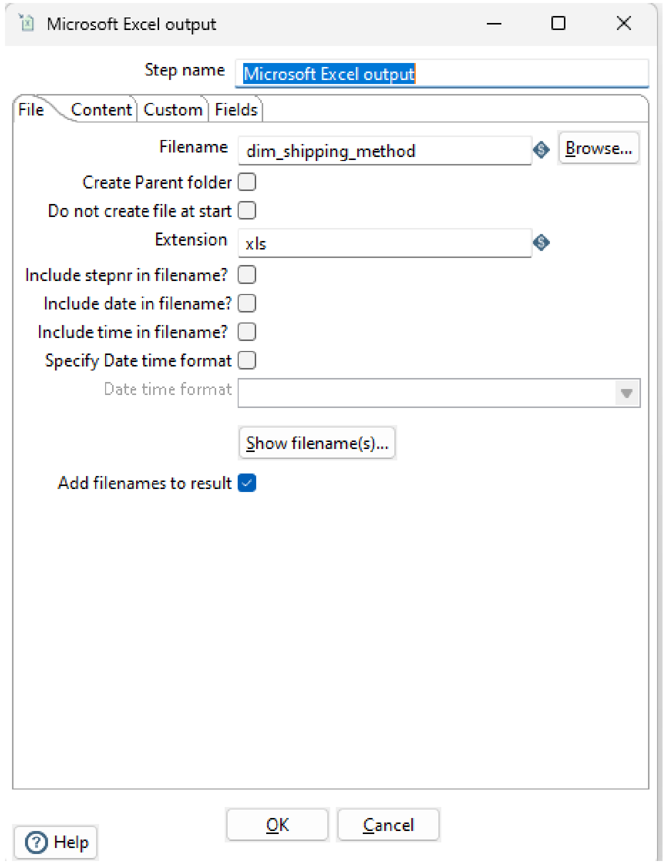
# Nomor 2 (d) *screenshot* ETL dim_shipping_method. <u>Tab “Microsoft Excel Output”</u>

4

Step: Miscrosoft Excel Output

Nama: Microsoft Excel output

Penjelasan : Microsoft Excel output



Step name: Microsoft Excel output

Filename: dim_shipping_method

Create Parent folder ☐

Do not create file at start ☐

Extension: xls

Include stepnr in filename? ☐

Include date in filename? ☐

Include time in filename? ☐

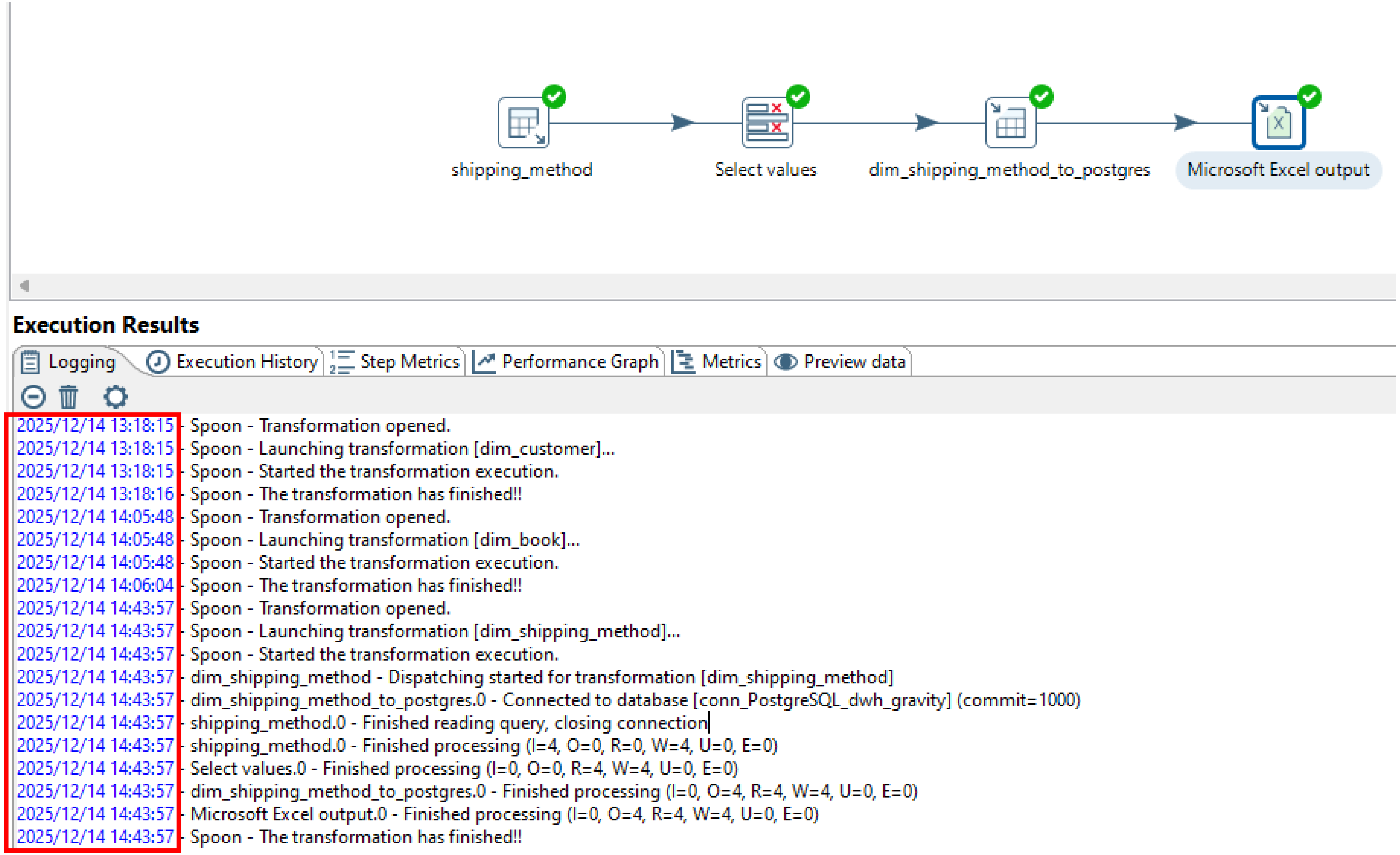
Specify Date time format ☐

Date time format:

Add filenames to result ☑

# Nomor 2 (d) *screenshot* ETL dim_shipping_method.

Tab “Logging”

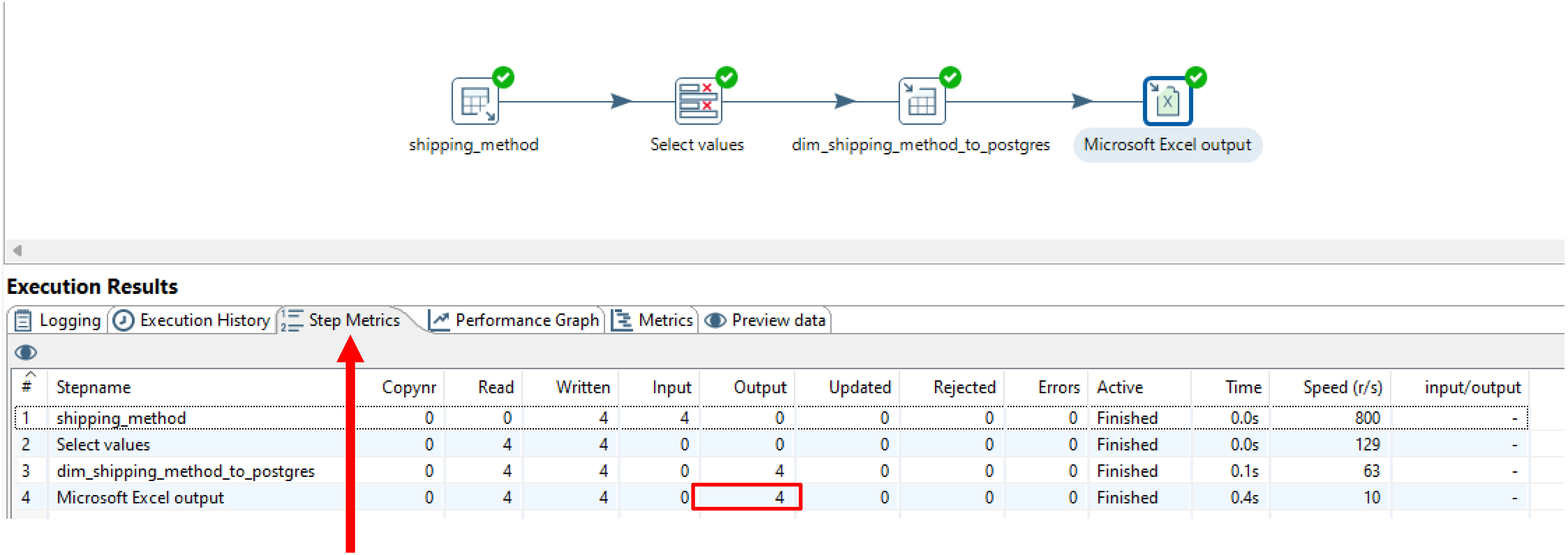


```
2025/12/14 13:18:15 - Spoon - Transformation opened.
2025/12/14 13:18:15 - Spoon - Launching transformation [dim_customer]...
2025/12/14 13:18:15 - Spoon - Started the transformation execution.
2025/12/14 13:18:16 - Spoon - The transformation has finished!!
2025/12/14 14:05:48 - Spoon - Transformation opened.
2025/12/14 14:05:48 - Spoon - Launching transformation [dim_book]...
2025/12/14 14:05:48 - Spoon - Started the transformation execution.
2025/12/14 14:06:04 - Spoon - The transformation has finished!!
2025/12/14 14:43:57 - Spoon - Transformation opened.
2025/12/14 14:43:57 - Spoon - Launching transformation [dim_shipping_method]...
2025/12/14 14:43:57 - Spoon - Started the transformation execution.
2025/12/14 14:43:57 - dim_shipping_method - Dispatching started for transformation [dim_shipping_method]
2025/12/14 14:43:57 - dim_shipping_method_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 14:43:57 - shipping_method.0 - Finished reading query, closing connection
2025/12/14 14:43:57 - shipping_method.0 - Finished processing (I=4, O=0, R=0, W=4, U=0, E=0)
2025/12/14 14:43:57 - Select values.0 - Finished processing (I=0, O=0, R=4, W=4, U=0, E=0)
2025/12/14 14:43:57 - dim_shipping_method_to_postgres.0 - Finished processing (I=0, O=4, R=4, W=4, U=0, E=0)
2025/12/14 14:43:57 - Microsoft Excel output.0 - Finished processing (I=0, O=4, R=4, W=4, U=0, E=0)
2025/12/14 14:43:57 - Spoon - The transformation has finished!!
```

Tab “Logging”

# Nomor 2 (d) *screenshot* ETL dim_shipping_method.

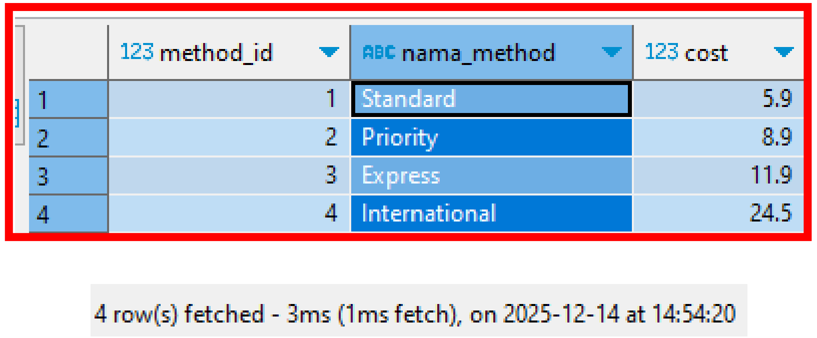
Tab "Step Metrics"



| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | shipping_method | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | Finished | 0.0s | 800 | - |
| 2 | Select values | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 129 | - |
| 3 | dim_shipping_method_to_postgres | 0 | 4 | 4 | 0 | 4 | 0 | 0 | 0 | Finished | 0.1s | 63 | - |
| 4 | Microsoft Excel output | 0 | 4 | 4 | 0 | 4 | 0 | 0 | 0 | Finished | 0.4s | 10 | - |

Tab "Step Metrics"

# Nomor 2 (d) *screenshot* ETL dim_shipping_method. “dwh_gravity”

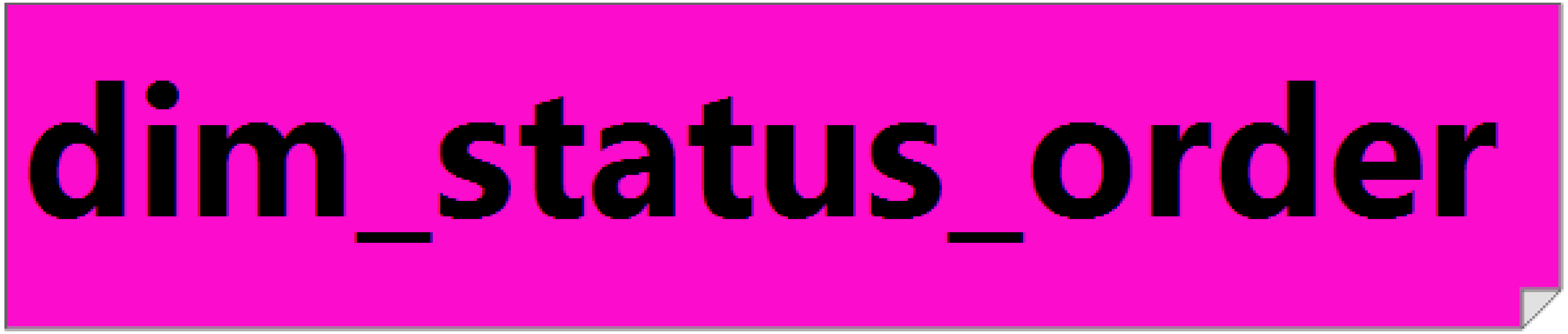


|   | 123 method_id | ABC nama_method | 123 cost |
|---|---|---|---|
| 1 | 1 | Standard | 5.9 |
| 2 | 2 | Priority | 8.9 |
| 3 | 3 | Express | 11.9 |
| 4 | 4 | International | 24.5 |

4 row(s) fetched - 3ms (1ms fetch), on 2025-12-14 at 14:54:20

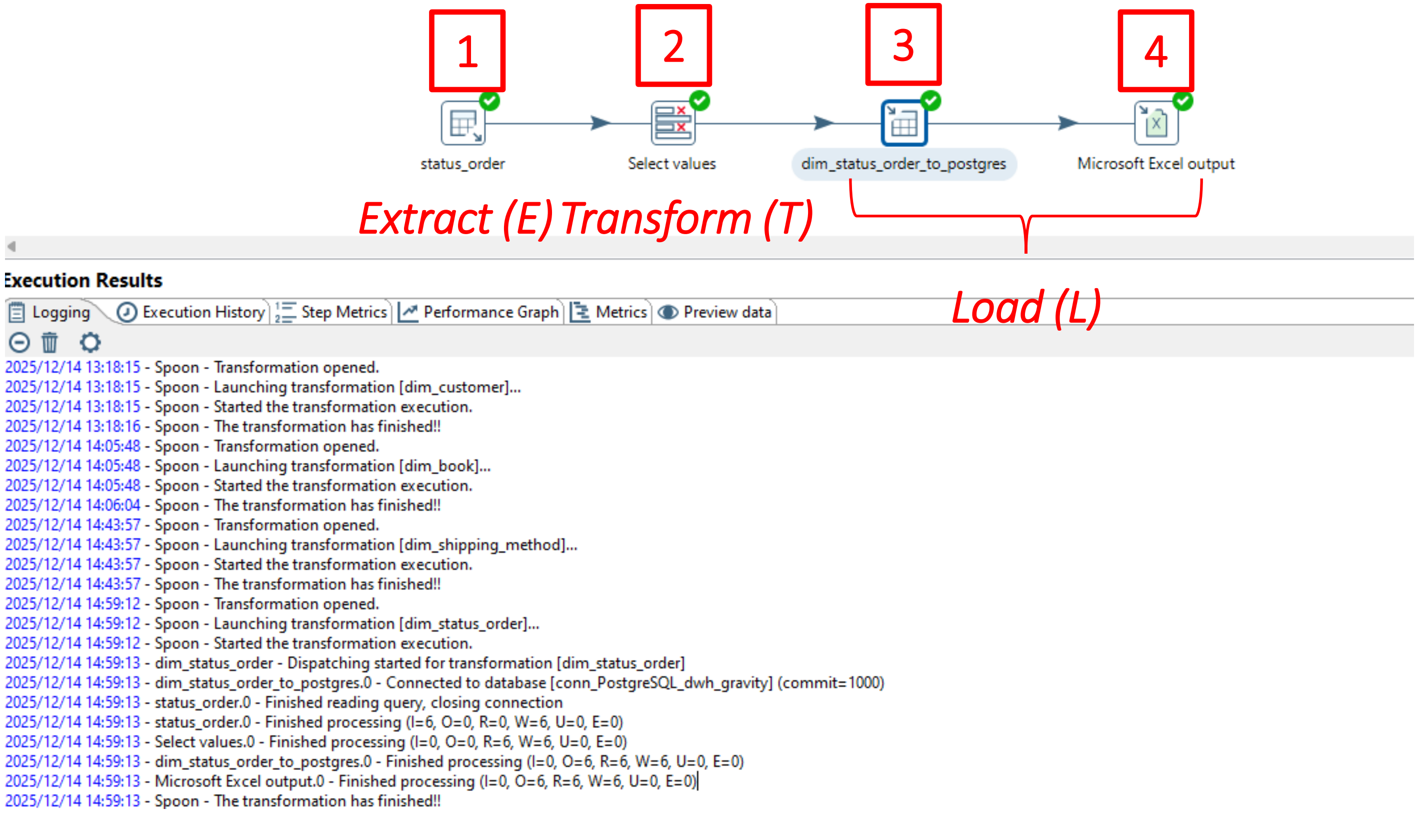
Jumlah rows / baris,
dan Keterangan
waktu load data

# Nomor 2 (e)



dim_status_order

# Nomor 2 (e) *screenshot* ETL dim_status_order.



```
2025/12/14 13:18:15 - Spoon - Transformation opened.
2025/12/14 13:18:15 - Spoon - Launching transformation [dim_customer]...
2025/12/14 13:18:15 - Spoon - Started the transformation execution.
2025/12/14 13:18:16 - Spoon - The transformation has finished!!
2025/12/14 14:05:48 - Spoon - Transformation opened.
2025/12/14 14:05:48 - Spoon - Launching transformation [dim_book]...
2025/12/14 14:05:48 - Spoon - Started the transformation execution.
2025/12/14 14:06:04 - Spoon - The transformation has finished!!
2025/12/14 14:43:57 - Spoon - Transformation opened.
2025/12/14 14:43:57 - Spoon - Launching transformation [dim_shipping_method]...
2025/12/14 14:43:57 - Spoon - Started the transformation execution.
2025/12/14 14:43:57 - Spoon - The transformation has finished!!
2025/12/14 14:59:12 - Spoon - Transformation opened.
2025/12/14 14:59:12 - Spoon - Launching transformation [dim_status_order]...
2025/12/14 14:59:12 - Spoon - Started the transformation execution.
2025/12/14 14:59:13 - dim_status_order - Dispatching started for transformation [dim_status_order]
2025/12/14 14:59:13 - dim_status_order_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 14:59:13 - status_order.0 - Finished reading query, closing connection
2025/12/14 14:59:13 - status_order.0 - Finished processing (I=6, O=0, R=0, W=6, U=0, E=0)
2025/12/14 14:59:13 - Select values.0 - Finished processing (I=0, O=0, R=6, W=6, U=0, E=0)
2025/12/14 14:59:13 - dim_status_order_to_postgres.0 - Finished processing (I=0, O=6, R=6, W=6, U=0, E=0)
2025/12/14 14:59:13 - Microsoft Excel output.0 - Finished processing (I=0, O=6, R=6, W=6, U=0, E=0)
2025/12/14 14:59:13 - Spoon - The transformation has finished!!
```

# Nomor 2 (e) *screenshot* ETL dim_status_order

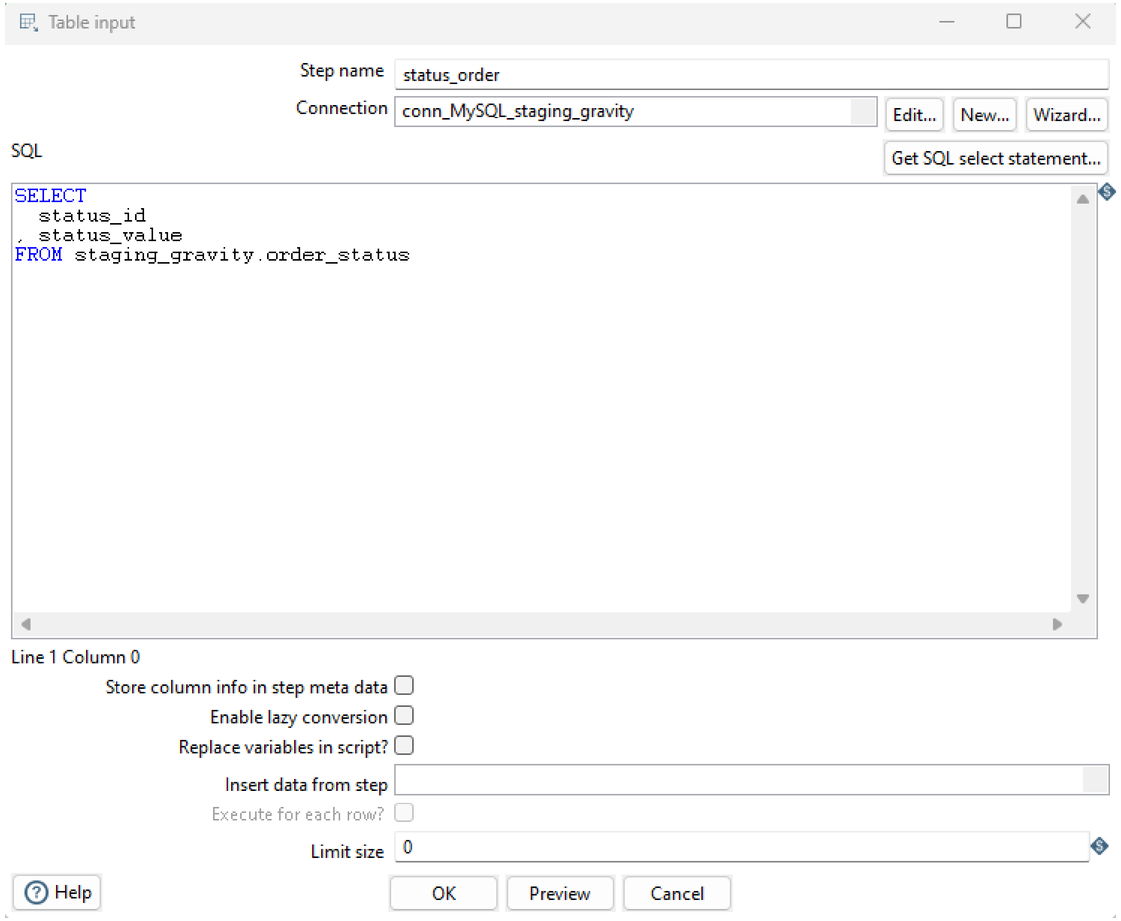
Tab "Table Input"

1

Step: Table Input

Nama: status_order

Penjelasan:  Ini adalah proses untuk load table status_order dari staging_gravity



Step name: status_order

Connection: conn_MySQL_staging_gravity

```
SELECT
  status_id
, status_value
FROM staging_gravity.order_status
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size 0

# Nomor 2 (e) *screenshot* ETL dim_status_order

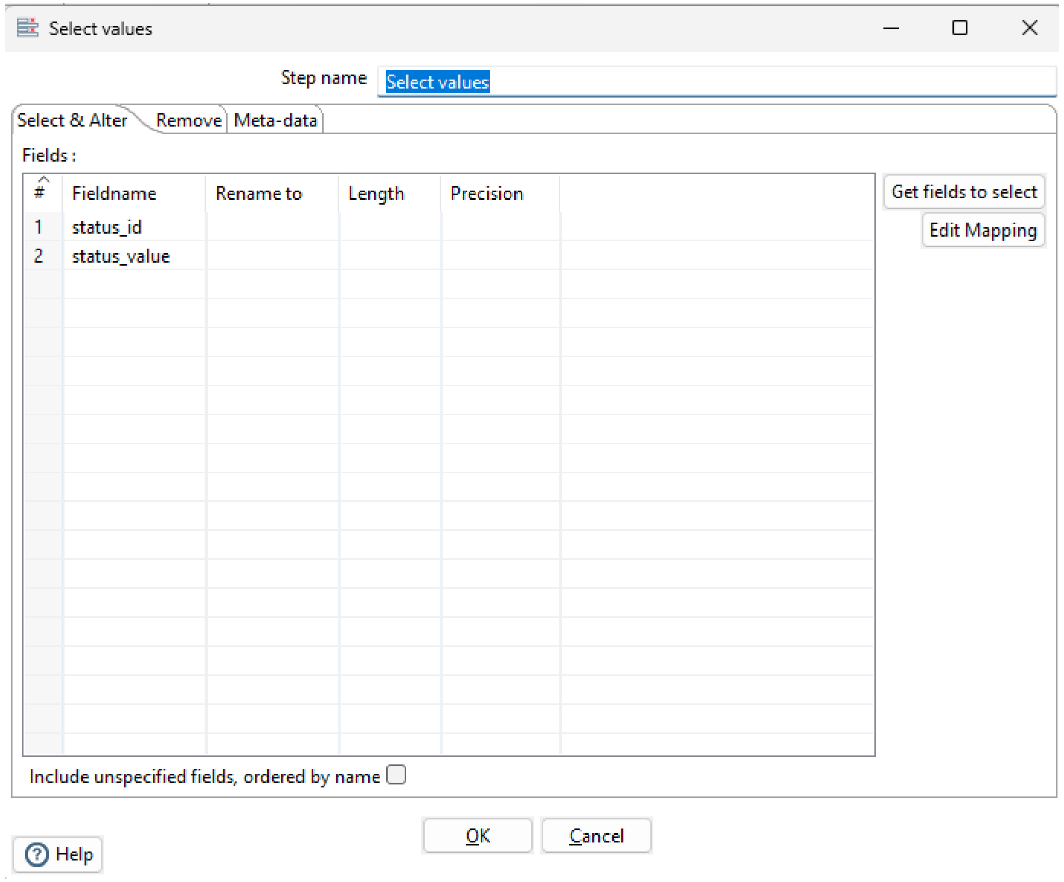
Tab “Select Values”

2

Step: Select Values

Nama: Select values

Penjelasan : Langkah ini bertujuan untuk menentukan dan memetakan kolom-kolom yang akan digunakan sebagai **dim_status_order** berdasarkan hasil transformasi pada tahap sebelumnya.



Select values

Step name: Select values

| # | Fieldname | Rename to | Length | Precision |
|---|---|---|---|---|
| 1 | status_id | | | |
| 2 | status_value | | | |

Include unspecified fields, ordered by name □

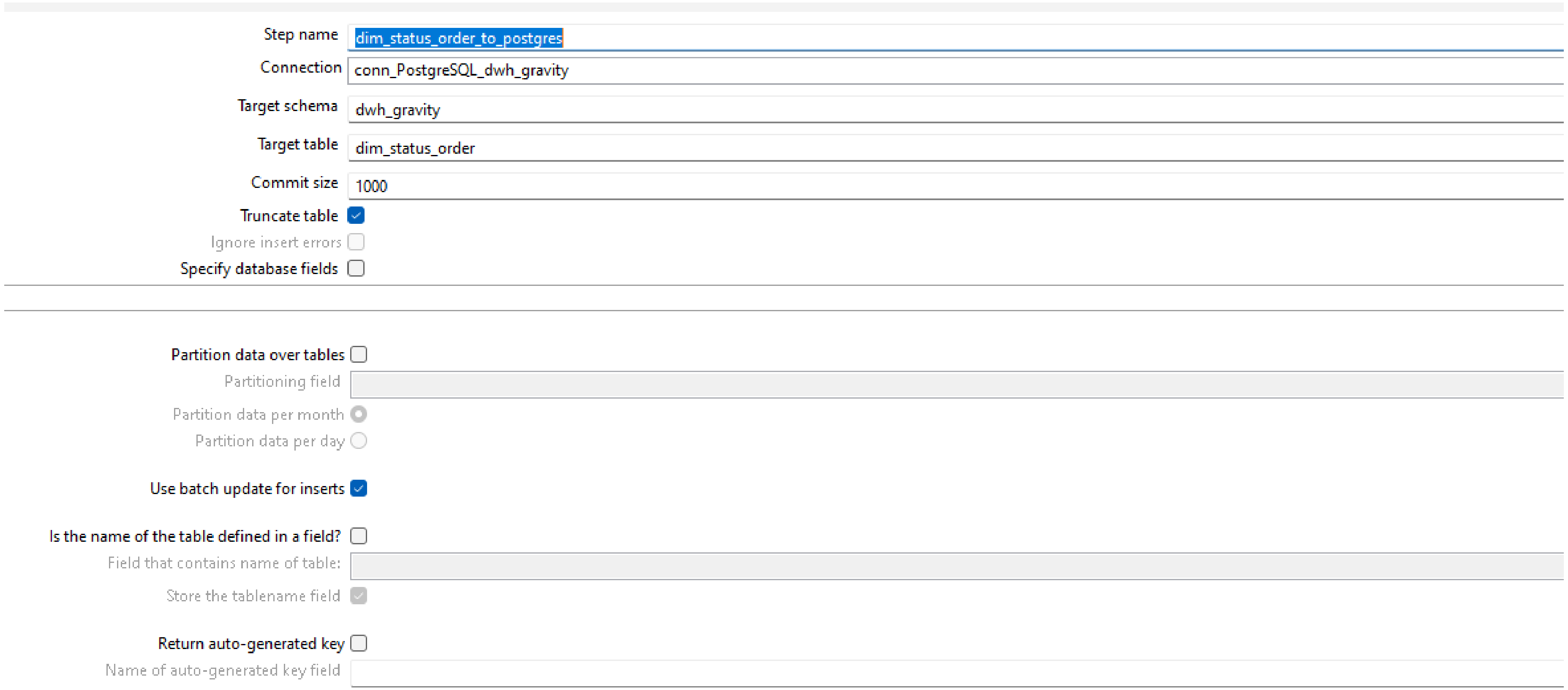
# Nomor 2 (e) *screenshot* ETL dim_status_order

Tab "Table Output"

3

Step: Table Output

Nama: dim_status_order_to_postgres



Step name: dim_status_order_to_postgres

Connection: conn_PostgreSQL_dwh_gravity

Target schema: dwh_gravity

Target table: dim_status_order

Commit size: 1000

Truncate table ☑

Ignore insert errors □

Specify database fields □

Partition data over tables □

Partitioning field:

Partition data per month ●

Partition data per day ○

Use batch update for inserts ☑

Is the name of the table defined in a field? □

Field that contains name of table:

Store the tablename field ☑

Return auto-generated key □

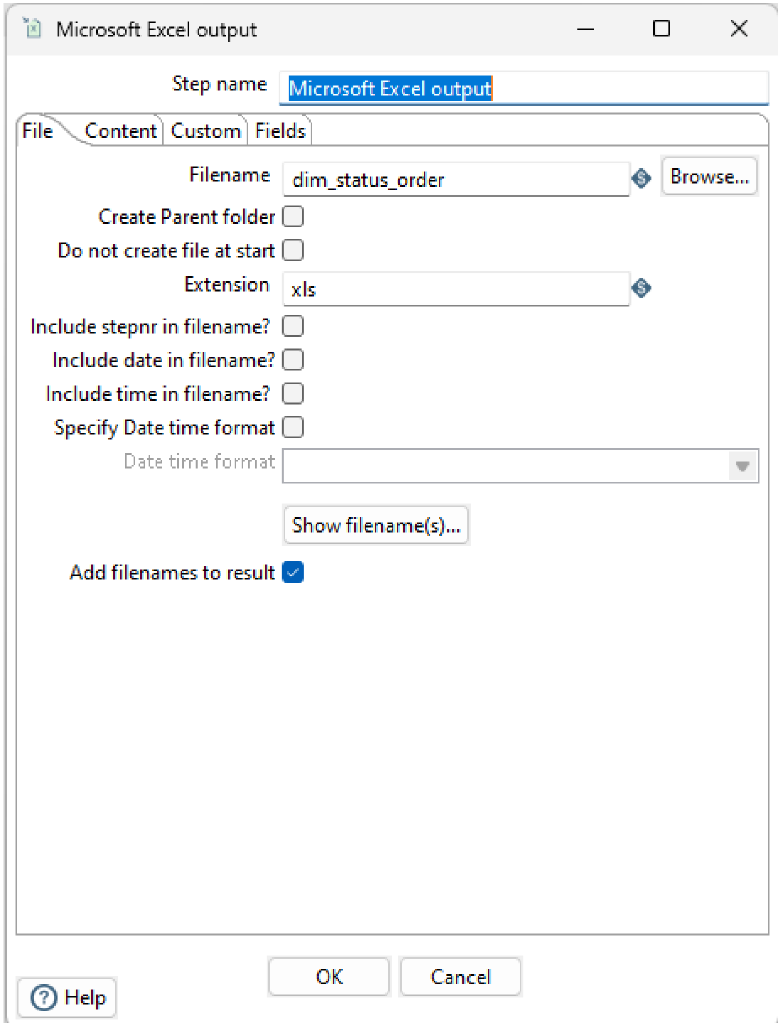
Name of auto-generated key field:

# Nomor 2 (e) *screenshot* ETL dim_status_order

Tab “Preview data”

4

Step: Microsoft Excel Output
Nama: Microsoft Excel output
Penjelasan : Menulis hasil transformation menjadi output file xls



Microsoft Excel output

Step name: Microsoft Excel output

Filename: dim_status_order

Create Parent folder □

Do not create file at start □

Extension: xls

Include stepnr in filename? □

Include date in filename? □

Include time in filename? □

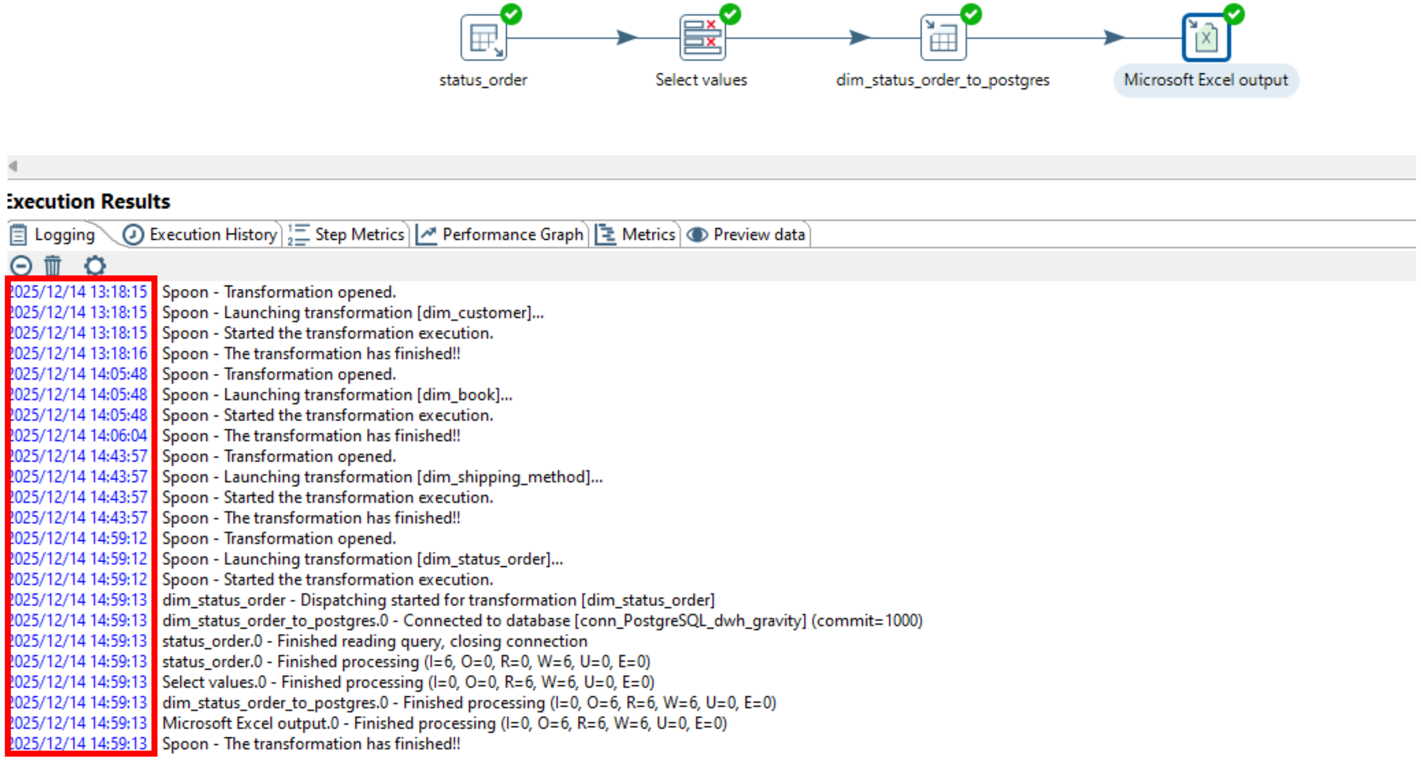
Specify Date time format □

Date time format:

Add filenames to result ☑

# Nomor 2 (e) *screenshot* ETL dim_status_order

Tab “Logging”

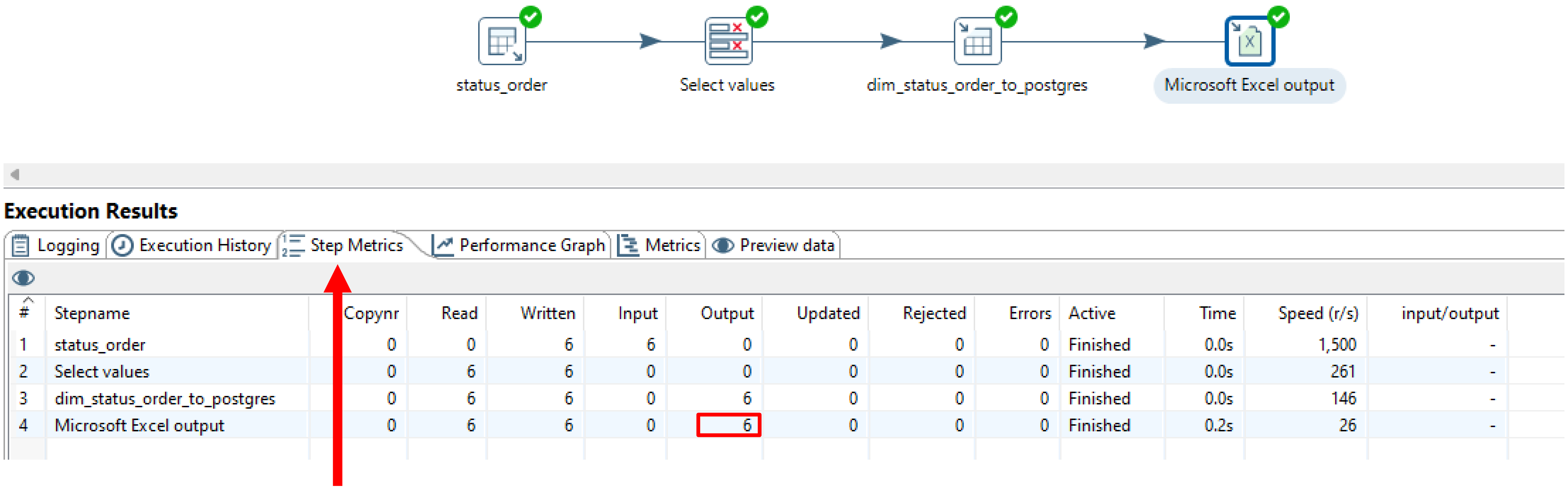


```
2025/12/14 13:18:15  Spoon - Transformation opened.
2025/12/14 13:18:15  Spoon - Launching transformation [dim_customer]...
2025/12/14 13:18:15  Spoon - Started the transformation execution.
2025/12/14 13:18:16  Spoon - The transformation has finished!!
2025/12/14 14:05:48  Spoon - Transformation opened.
2025/12/14 14:05:48  Spoon - Launching transformation [dim_book]...
2025/12/14 14:05:48  Spoon - Started the transformation execution.
2025/12/14 14:06:04  Spoon - The transformation has finished!!
2025/12/14 14:43:57  Spoon - Transformation opened.
2025/12/14 14:43:57  Spoon - Launching transformation [dim_shipping_method]...
2025/12/14 14:43:57  Spoon - Started the transformation execution.
2025/12/14 14:43:57  Spoon - The transformation has finished!!
2025/12/14 14:59:12  Spoon - Transformation opened.
2025/12/14 14:59:12  Spoon - Launching transformation [dim_status_order]...
2025/12/14 14:59:12  Spoon - Started the transformation execution.
2025/12/14 14:59:13  dim_status_order - Dispatching started for transformation [dim_status_order]
2025/12/14 14:59:13  dim_status_order_to_postgres.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 14:59:13  status_order.0 - Finished reading query, closing connection
2025/12/14 14:59:13  status_order.0 - Finished processing (I=6, O=0, R=0, W=6, U=0, E=0)
2025/12/14 14:59:13  Select values.0 - Finished processing (I=0, O=0, R=6, W=6, U=0, E=0)
2025/12/14 14:59:13  dim_status_order_to_postgres.0 - Finished processing (I=0, O=6, R=6, W=6, U=0, E=0)
2025/12/14 14:59:13  Microsoft Excel output.0 - Finished processing (I=0, O=6, R=6, W=6, U=0, E=0)
2025/12/14 14:59:13  Spoon - The transformation has finished!!
```

Tab “Logging”

# Nomor 2 (e) *screenshot* ETL dim_status_order

Tab "Step Metrics"



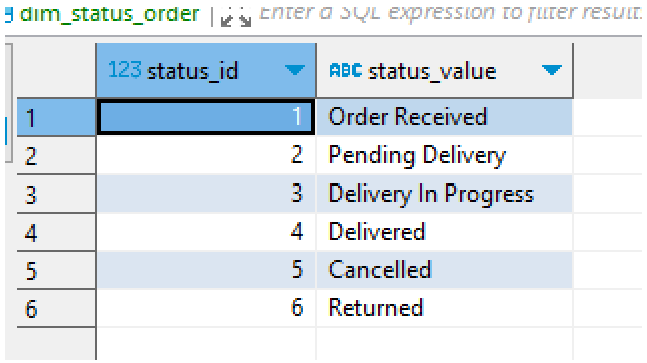
**Execution Results**

| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | status_order | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | Finished | 0.0s | 1,500 | - |
| 2 | Select values | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 261 | - |
| 3 | dim_status_order_to_postgres | 0 | 6 | 6 | 0 | 6 | 0 | 0 | 0 | Finished | 0.0s | 146 | - |
| 4 | Microsoft Excel output | 0 | 6 | 6 | 0 | 6 | 0 | 0 | 0 | Finished | 0.2s | 26 | - |

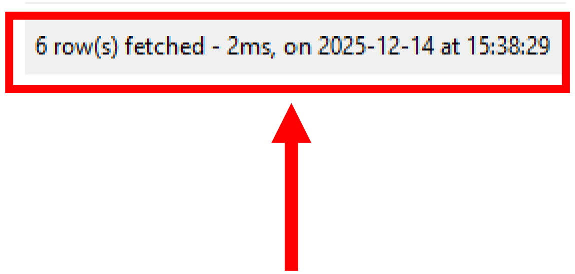
Tab "Step Metrics"

# Nomor 2 (e) *screenshot* ETL dim_status_order

“dwh_gravity”



| | 123 status_id | ABC status_value |
|---|---|---|
| 1 | 1 | Order Received |
| 2 | 2 | Pending Delivery |
| 3 | 3 | Delivery In Progress |
| 4 | 4 | Delivered |
| 5 | 5 | Cancelled |
| 6 | 6 | Returned |



6 row(s) fetched - 2ms, on 2025-12-14 at 15:38:29

Jumlah rows / baris,
dan Keterangan
waktu load data

# 3

# Nomor 2

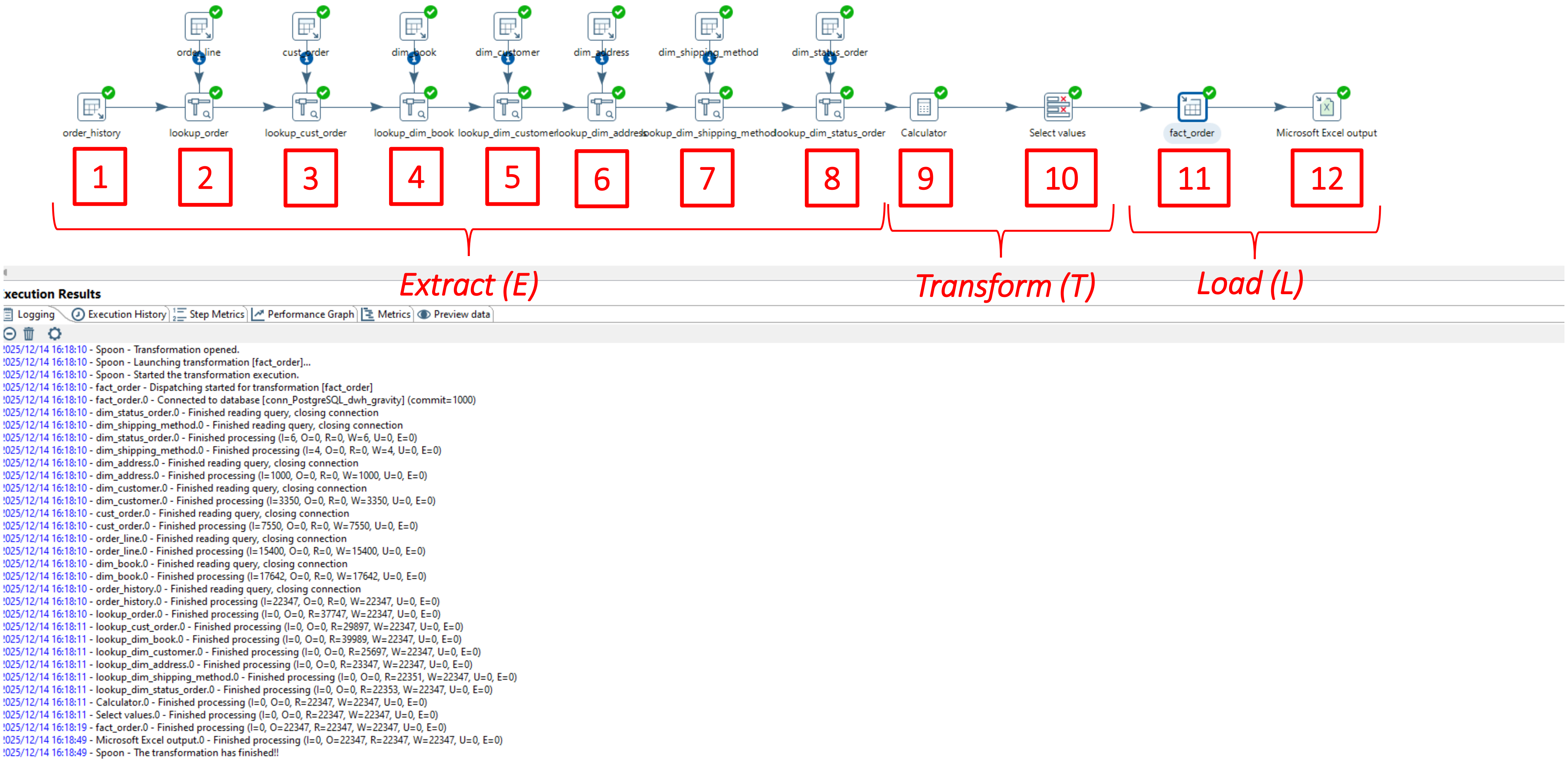
- Berisi ***screenshot*** ETL Tabel Fakta**.**
- Lakukan dan ***screenshot* langkah demi langkah** sesuai yang **dicontohkan** pada sesi praktikum.
- Tampilan ***screenshot*** ETL **harus** menunjukkan dengan jelas (minimal) :
  1. Semua step pada ETL berhasil **(centang hijau)** ✓
  2. Nama Repository (di pojok kanan atas) sudah sesuai.
  3. Tab "Logging" pada Execution Results menunjukkan **waktu (date & time).**
  4. Tab "Step Metrics" pada Execution Results menampilkan jumlah rows **(kolom output) di step terakhir.**
- Tampilan ***screenshot*** dwh_gravity **harus** menunjukkan dengan jelas (minimal) :
  1. Contoh data.
  2. Tampilan yang menunjukkan jumlah **rows.**
  3. Tampilan yang menunjukkan **waktu** load data ke dwh_gravity.
  4. Semua field / kolom **harus** terlihat.

# Choosing

- Dalam memilih tabel pertama yang akan di-*extract* untuk membuat Tabel Dimensi/Tabel Fakta, diperlukan identifikasi jumlah baris dari tabel yang berelasi terlebih dahulu.
- **Jumlah rows yang terbanyak,** dipilih menjadi tabel **pertama** yang akan di extract pada saat ETL.
- **Logika:** fungsi *data warehouse* adalah menyimpan data histori, sehingga **semua (yang paling banyak)** data harus tersimpan.
- Tabel di bawah ini merupakan hasil identifikasi relasi dan jumlah baris pada **tabel mengenai order** dan tabel lain yang berelasi.

| Nama Tabel | Jumlah Baris | Tabel Relasi | Jumlah Baris | Relationship |
|---|---|---|---|---|
| order_history | 22347 | cust_order | 7550 | N:1 |
| cust_order | 7550 | order_line | 15400 | N:1 |
| cust_order | 7550 | dim_address | 1000 | N:1 |
| cust_order | 7550 | dim_customer | 3350 | N:1 |
| order_line | 15400 | dim_book | 17642 | 1:N |
| cust_order | 7550 | dim_shipping_method | 4 | N:1 |
| order_history | 22347 | dim_status_order | 6 | N:1 |

# Nomor 3 *screenshot* ETL fact_order.



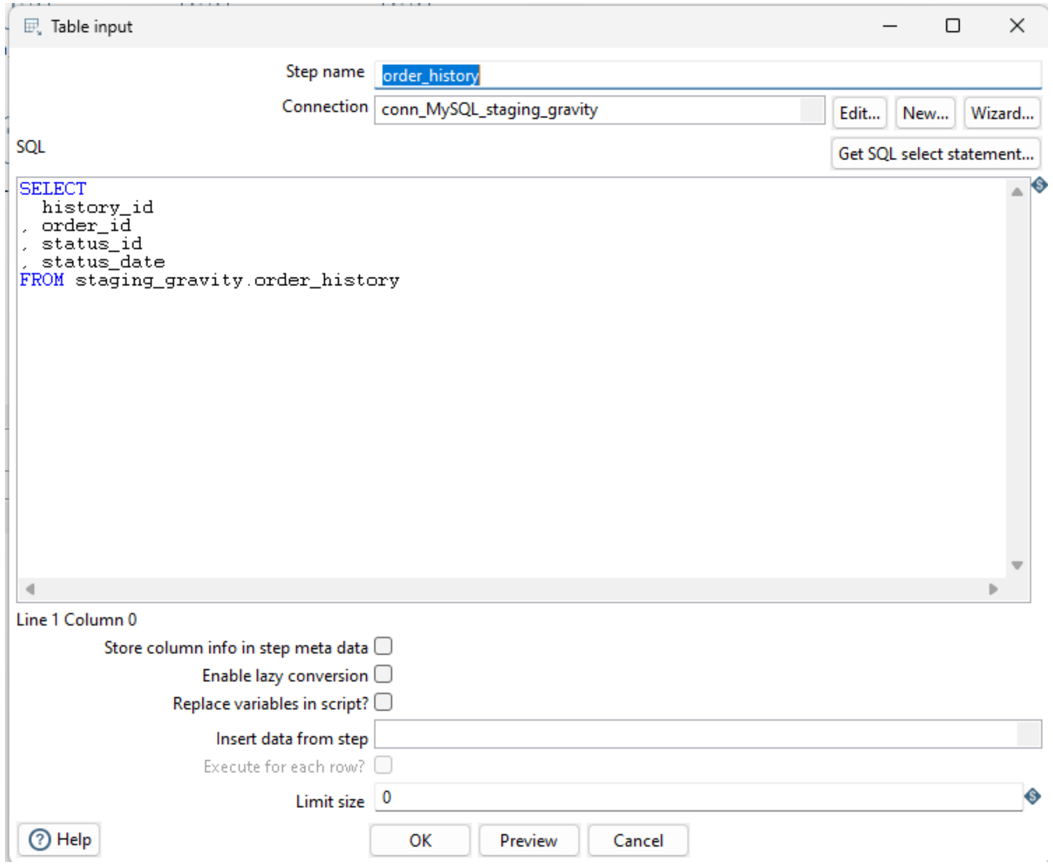
```
2025/12/14 16:18:10 - Spoon - Transformation opened.
2025/12/14 16:18:10 - Spoon - Launching transformation [fact_order]...
2025/12/14 16:18:10 - Spoon - Started the transformation execution.
2025/12/14 16:18:10 - fact_order - Dispatching started for transformation [fact_order]
2025/12/14 16:18:10 - fact_order.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 16:18:10 - dim_status_order.0 - Finished reading query, closing connection
2025/12/14 16:18:10 - dim_shipping_method.0 - Finished reading query, closing connection
2025/12/14 16:18:10 - dim_status_order.0 - Finished processing (I=6, O=0, R=0, W=6, U=0, E=0)
2025/12/14 16:18:10 - dim_shipping_method.0 - Finished processing (I=4, O=0, R=0, W=4, U=0, E=0)
2025/12/14 16:18:10 - dim_address.0 - Finished reading query, closing connection
2025/12/14 16:18:10 - dim_address.0 - Finished processing (I=1000, O=0, R=0, W=1000, U=0, E=0)
2025/12/14 16:18:10 - dim_customer.0 - Finished reading query, closing connection
2025/12/14 16:18:10 - dim_customer.0 - Finished processing (I=3350, O=0, R=0, W=3350, U=0, E=0)
2025/12/14 16:18:10 - cust_order.0 - Finished reading query, closing connection
2025/12/14 16:18:10 - cust_order.0 - Finished processing (I=7550, O=0, R=0, W=7550, U=0, E=0)
2025/12/14 16:18:10 - order_line.0 - Finished reading query, closing connection
2025/12/14 16:18:10 - order_line.0 - Finished processing (I=15400, O=0, R=0, W=15400, U=0, E=0)
2025/12/14 16:18:10 - dim_book.0 - Finished reading query, closing connection
2025/12/14 16:18:10 - dim_book.0 - Finished processing (I=17642, O=0, R=0, W=17642, U=0, E=0)
2025/12/14 16:18:10 - order_history.0 - Finished reading query, closing connection
2025/12/14 16:18:10 - order_history.0 - Finished processing (I=22347, O=0, R=0, W=22347, U=0, E=0)
2025/12/14 16:18:10 - lookup_order.0 - Finished processing (I=0, O=0, R=37747, W=22347, U=0, E=0)
2025/12/14 16:18:11 - lookup_cust_order.0 - Finished processing (I=0, O=0, R=29897, W=22347, U=0, E=0)
2025/12/14 16:18:11 - lookup_dim_book.0 - Finished processing (I=0, O=0, R=39989, W=22347, U=0, E=0)
2025/12/14 16:18:11 - lookup_dim_customer.0 - Finished processing (I=0, O=0, R=25697, W=22347, U=0, E=0)
2025/12/14 16:18:11 - lookup_dim_address.0 - Finished processing (I=0, O=0, R=23347, W=22347, U=0, E=0)
2025/12/14 16:18:11 - lookup_dim_shipping_method.0 - Finished processing (I=0, O=0, R=22351, W=22347, U=0, E=0)
2025/12/14 16:18:11 - lookup_dim_status_order.0 - Finished processing (I=0, O=0, R=22353, W=22347, U=0, E=0)
2025/12/14 16:18:11 - Calculator.0 - Finished processing (I=0, O=0, R=22347, W=22347, U=0, E=0)
2025/12/14 16:18:11 - Select values.0 - Finished processing (I=0, O=0, R=22347, W=22347, U=0, E=0)
2025/12/14 16:18:19 - fact_order.0 - Finished processing (I=0, O=22347, R=22347, W=22347, U=0, E=0)
2025/12/14 16:18:49 - Microsoft Excel output.0 - Finished processing (I=0, O=22347, R=22347, W=22347, U=0, E=0)
2025/12/14 16:18:49 - Spoon - The transformation has finished!!
```

# Nomor 3 *screenshot* ETL **fact_order.**

<u>Tab “Input Table”</u>

1

Step: Table_input
Nama: order_history
Penjelasan: Ini adalah proses untuk load table order_history dari staging_gravity



Step name: order_history

Connection: conn_MySQL_staging_gravity

SQL

```
SELECT
   history_id
,  order_id
,  status_id
,  status_date
FROM staging_gravity.order_history
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size 0

# Nomor 3 *screenshot* ETL fact_order.

Tab "Input Table"

1

Step: Table_input

Nama: order_line

Penjelasan: Ini adalah proses untuk load table order_line dari staging_gravity

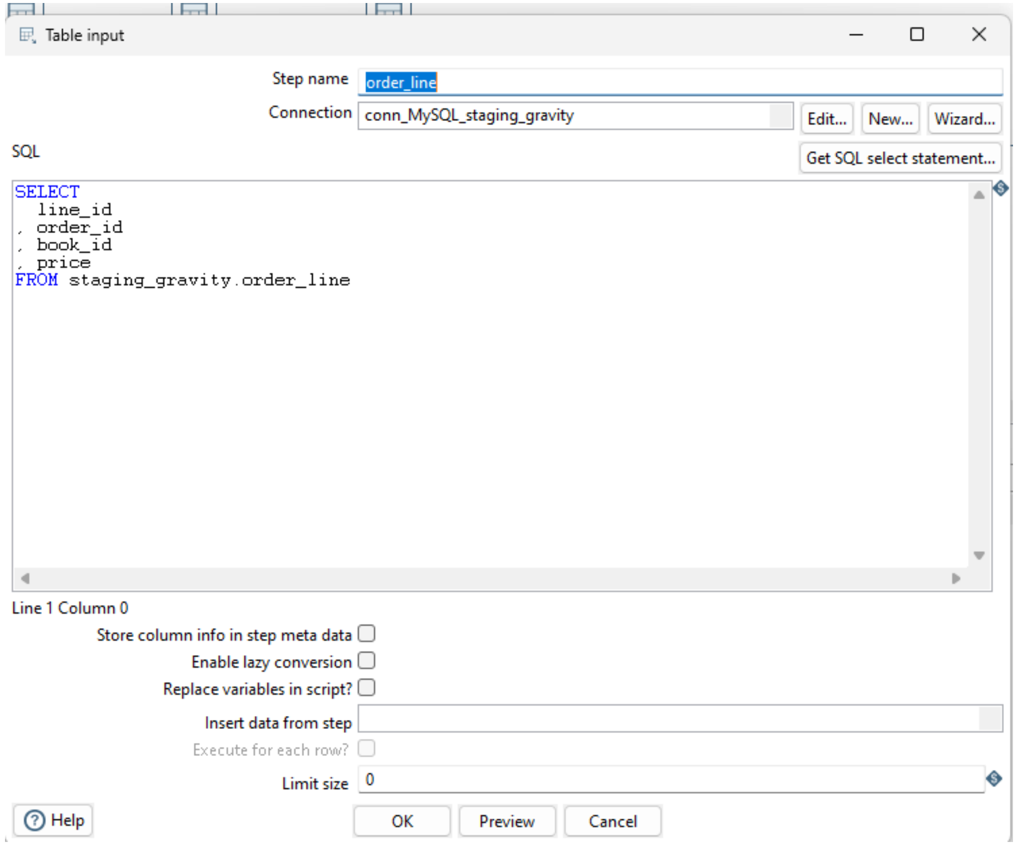


Table input

Step name: order_line

Connection: conn_MySQL_staging_gravity

SQL

```
SELECT
  line_id
, order_id
, book_id
, price
FROM staging_gravity.order_line
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size: 0

# Nomor 3 *screenshot* ETL fact_order.

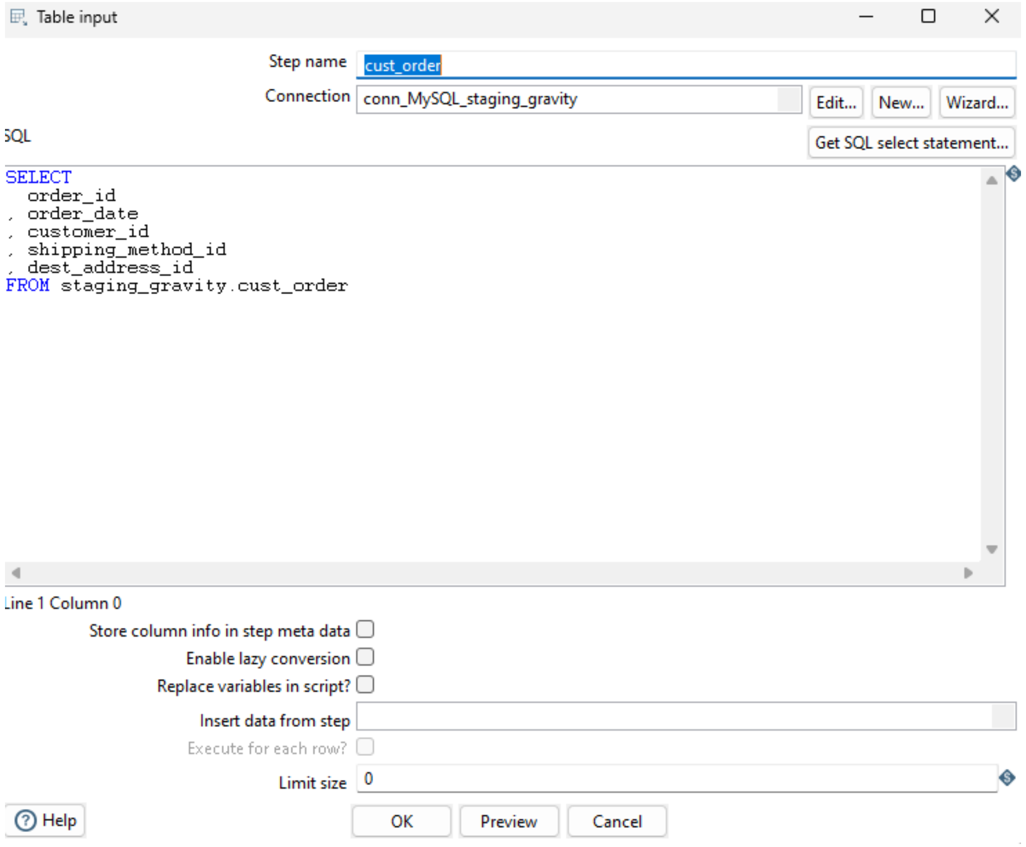
Tab "Input Table"

1

Step: Table_input

Nama: cust_order

Penjelasan: Ini adalah proses untuk load table cust_order dari staging_gravity



Step name: cust_order

Connection: conn_MySQL_staging_gravity

```
SELECT
   order_id
,  order_date
,  customer_id
,  shipping_method_id
,  dest_address_id
FROM staging_gravity.cust_order
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step:

Execute for each row? □

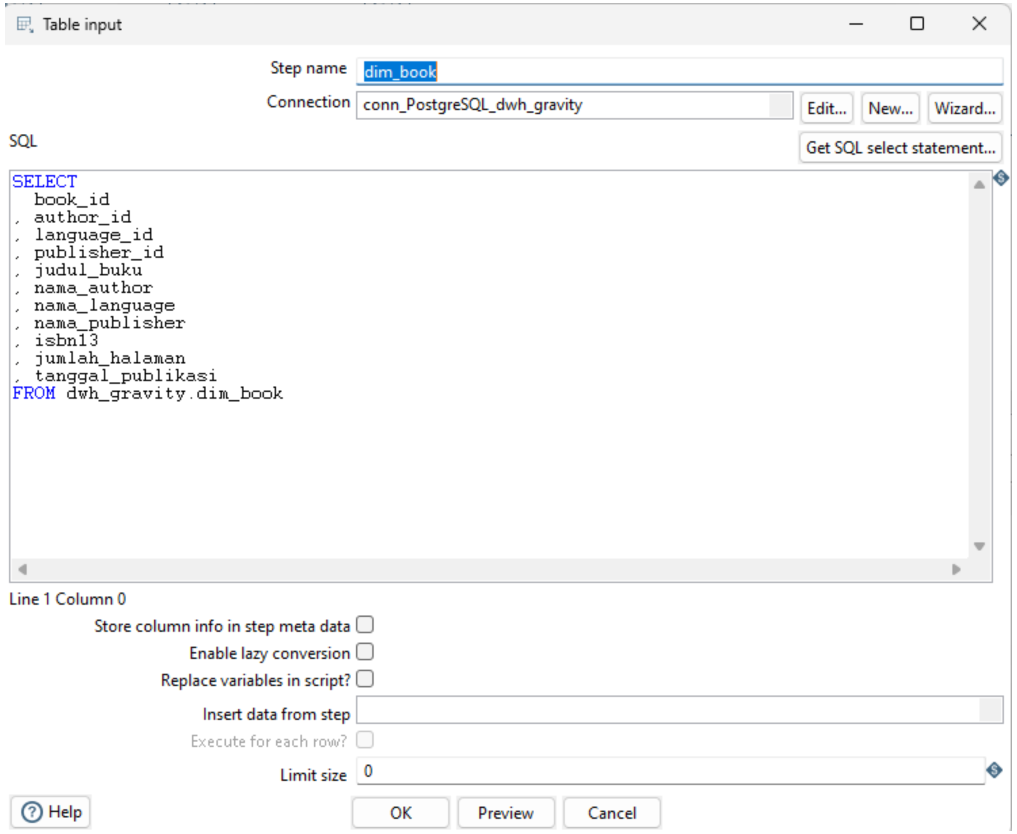
Limit size: 0

# Nomor 3 *screenshot* ETL fact_order.

Tab “Input Table”

1

Step: Table_input
Nama: dim_book
Penjelasan: Ini adalah proses untuk load table dim_book dari dwh_gravity



Step name: dim_book

Connection: conn_PostgreSQL_dwh_gravity

```
SELECT
  book_id
, author_id
, language_id
, publisher_id
, judul_buku
, nama_author
, nama_language
, nama_publisher
, isbn13
, jumlah_halaman
, tanggal_publikasi
FROM dwh_gravity.dim_book
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step:

Execute for each row? □

Limit size: 0

# Nomor 3 *screenshot* ETL **fact_order.**

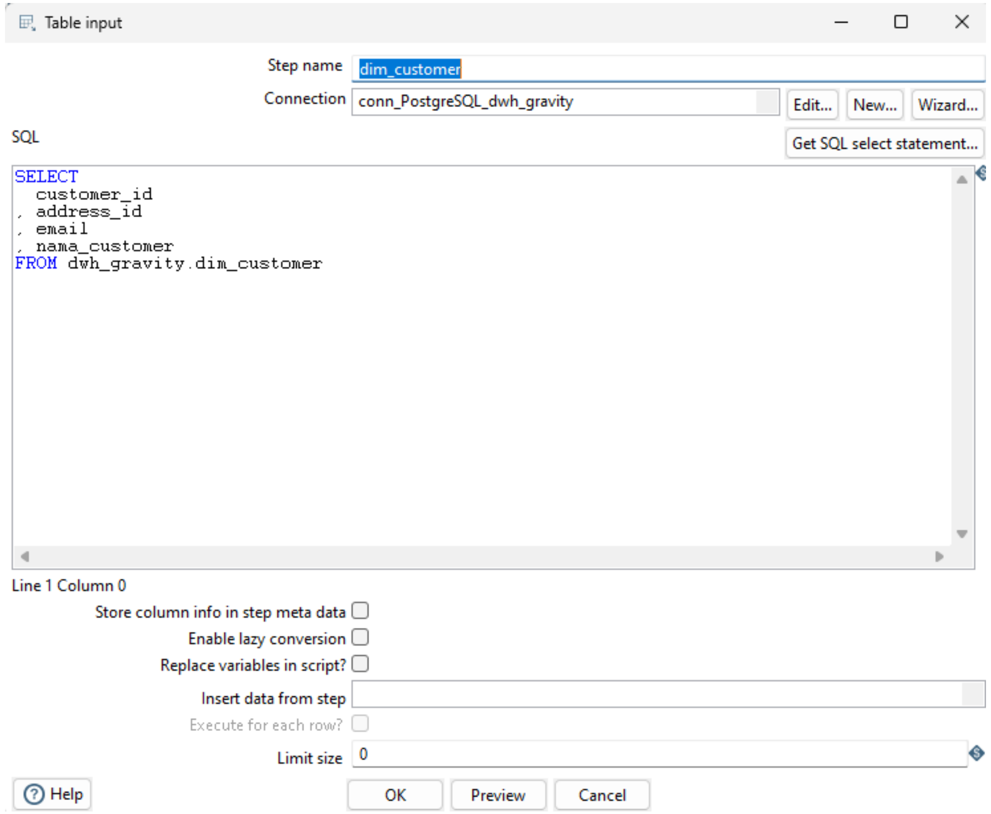
<u>Tab "Input Table"</u>

1

Step: Table_input

Nama: dim_customer

Penjelasan: Ini adalah proses untuk load table dim_customer dari dwh_gravity



Step name: dim_customer

Connection: conn_PostgreSQL_dwh_gravity

```
SELECT
  customer_id
, address_id
, email
, nama_customer
FROM dwh_gravity.dim_customer
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size: 0

# Nomor 3 *screenshot* ETL fact_order.

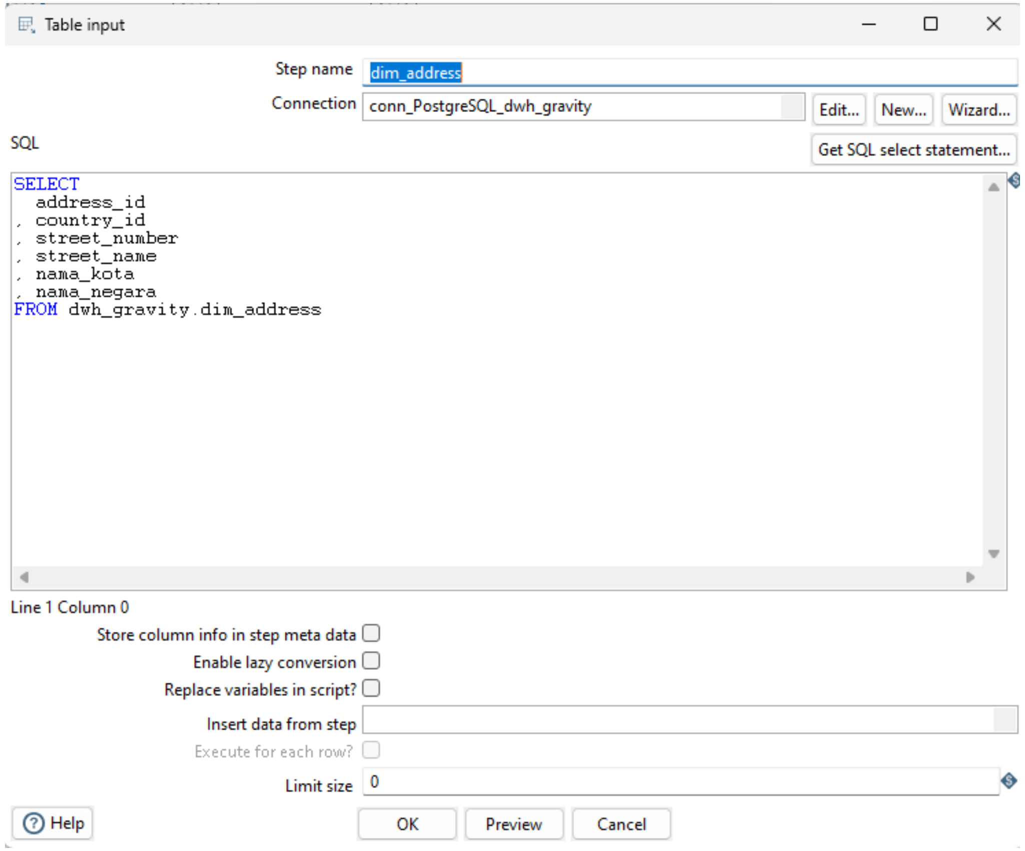
Tab "Input Table"

1

Step: Table_input

Nama: dim_address

Penjelasan: Ini adalah proses untuk load table dim_address dari dwh_gravity



Step name: dim_address

Connection: conn_PostgreSQL_dwh_gravity

```
SELECT
  address_id
, country_id
, street_number
, street_name
, nama_kota
, nama_negara
FROM dwh_gravity.dim_address
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size: 0

# Nomor 3 *screenshot* ETL fact_order.

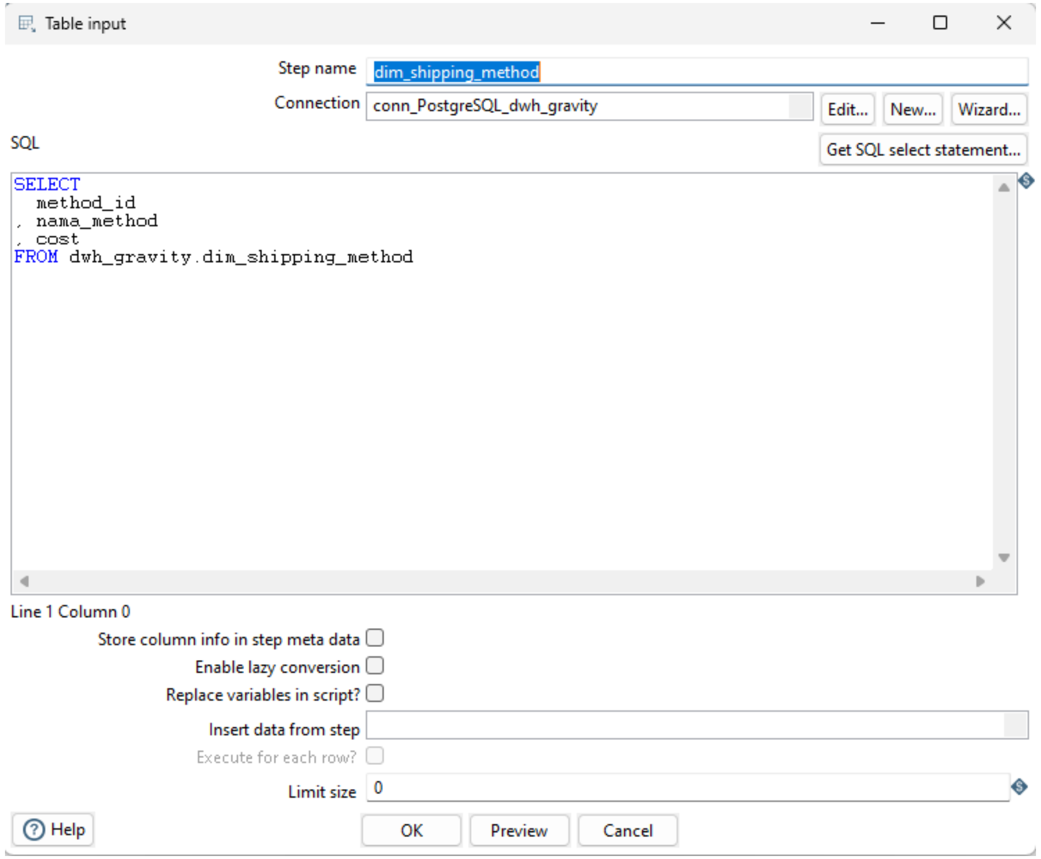
Tab “Input Table”

1

Step: Table_input

Nama: dim_shipping_method

Penjelasan: Ini adalah proses untuk load table dim_shipping_method dari dwh_gravity



Step name: dim_shipping_method

Connection: conn_PostgreSQL_dwh_gravity

SQL

```
SELECT
  method_id
, nama_method
, cost
FROM dwh_gravity.dim_shipping_method
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step

Execute for each row? □

Limit size: 0

# Nomor 3 *screenshot* ETL fact_order.

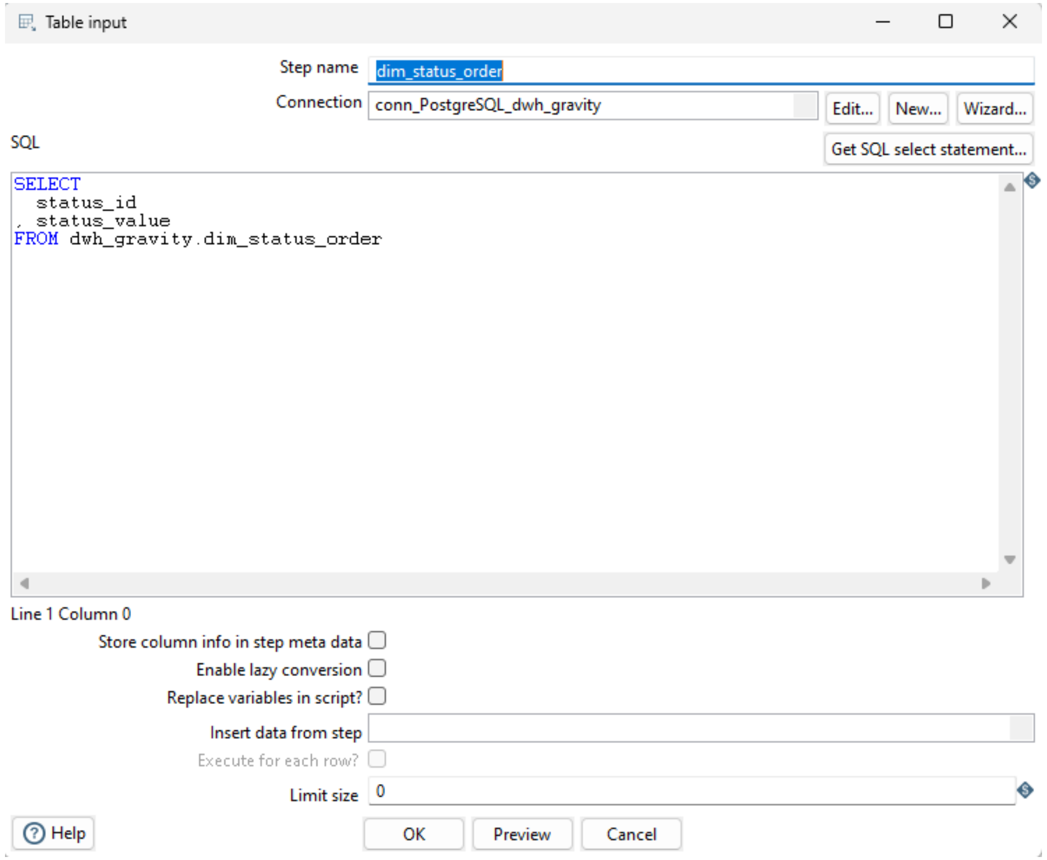
Tab “Input Table”

1

Step: Table_input

Nama: dim_status_order

Penjelasan: Ini adalah proses untuk load table dim_status_order dari dwh_gravity



Step name: dim_status_order

Connection: conn_PostgreSQL_dwh_gravity

```
SELECT
  status_id
, status_value
FROM dwh_gravity.dim_status_order
```

Line 1 Column 0

Store column info in step meta data □

Enable lazy conversion □

Replace variables in script? □

Insert data from step:

Execute for each row? □

Limit size: 0

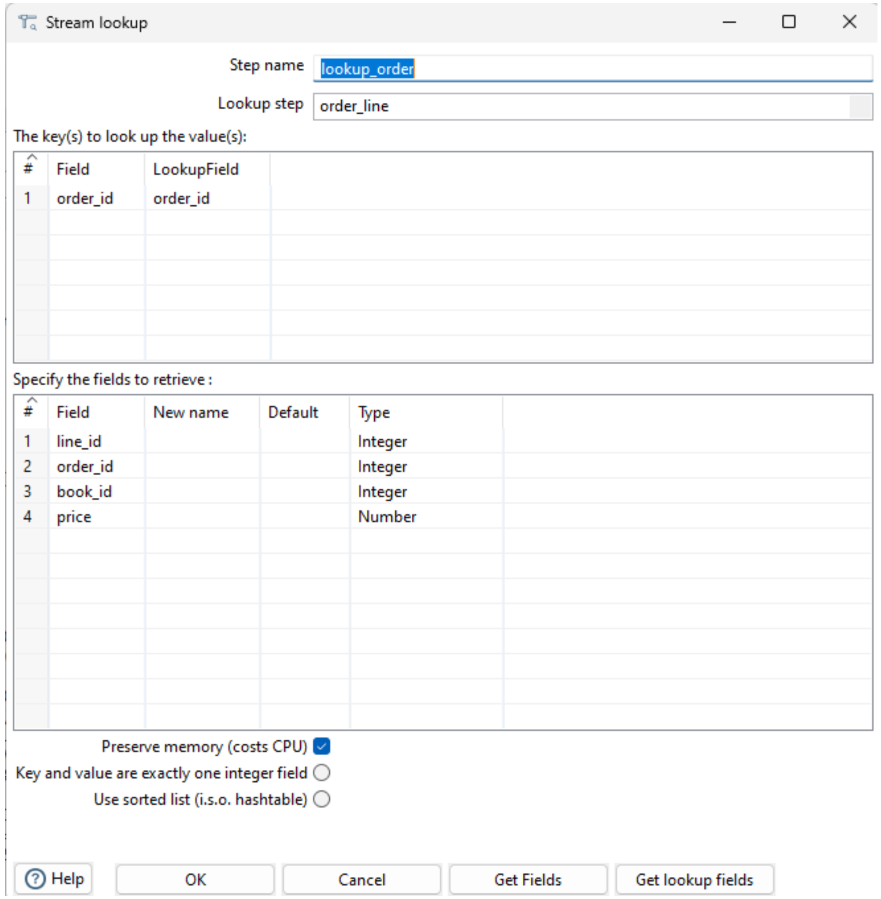
# Nomor 3 *screenshot* ETL fact_order.

Tab "Stream Lookup"

2

Step: lookup_order

Penjelasan: Step ini digunakan untuk melakukan proses **lookup data** dari tabel **order_line** dengan menggunakan **order_id** sebagai key relasinya.



Stream lookup

Step name: lookup_order

Lookup step: order_line

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | order_id | order_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | line_id | | | Integer |
| 2 | order_id | | | Integer |
| 3 | book_id | | | Integer |
| 4 | price | | | Number |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

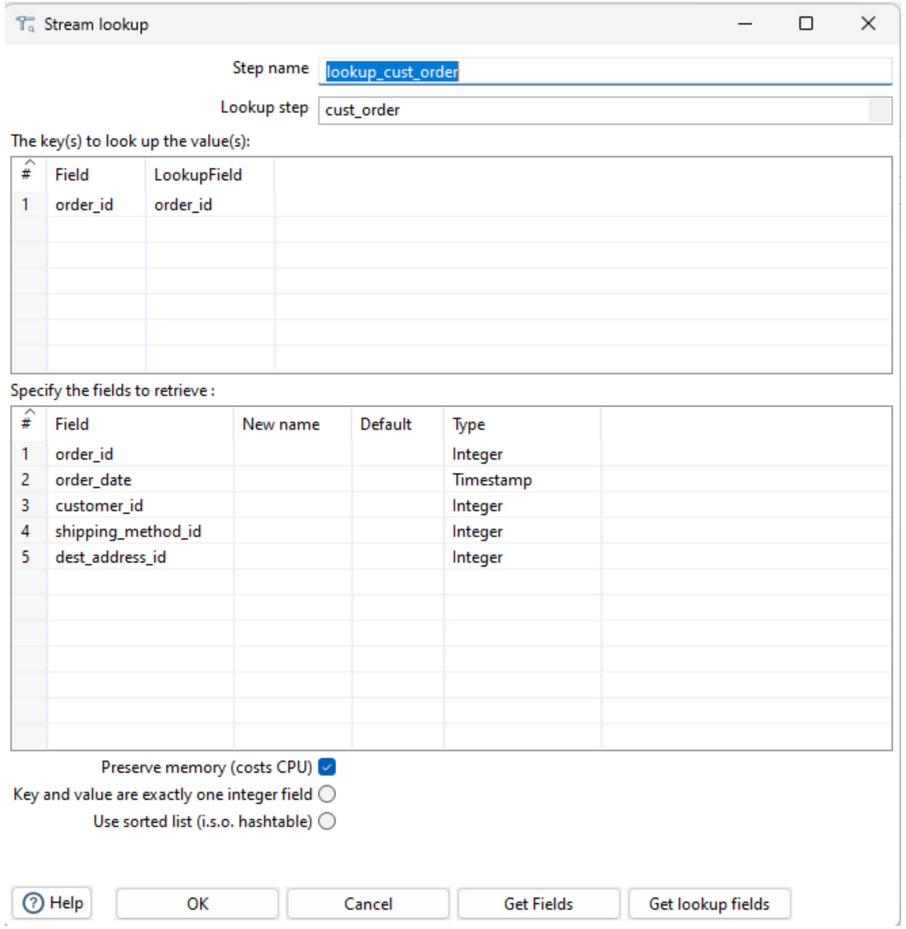
# Nomor 3 *screenshot* ETL fact_order.

Tab "Stream Lookup"

3

Step: lookup_cust_order

Penjelasan: Step ini berfungsi untuk melakukan **lookup data** dari tabel **cust_order** dengan menggunakan **order_id** sebagai key relasinya.



Stream lookup

Step name: lookup_cust_order

Lookup step: cust_order

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | order_id | order_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | order_id | | | Integer |
| 2 | order_date | | | Timestamp |
| 3 | customer_id | | | Integer |
| 4 | shipping_method_id | | | Integer |
| 5 | dest_address_id | | | Integer |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

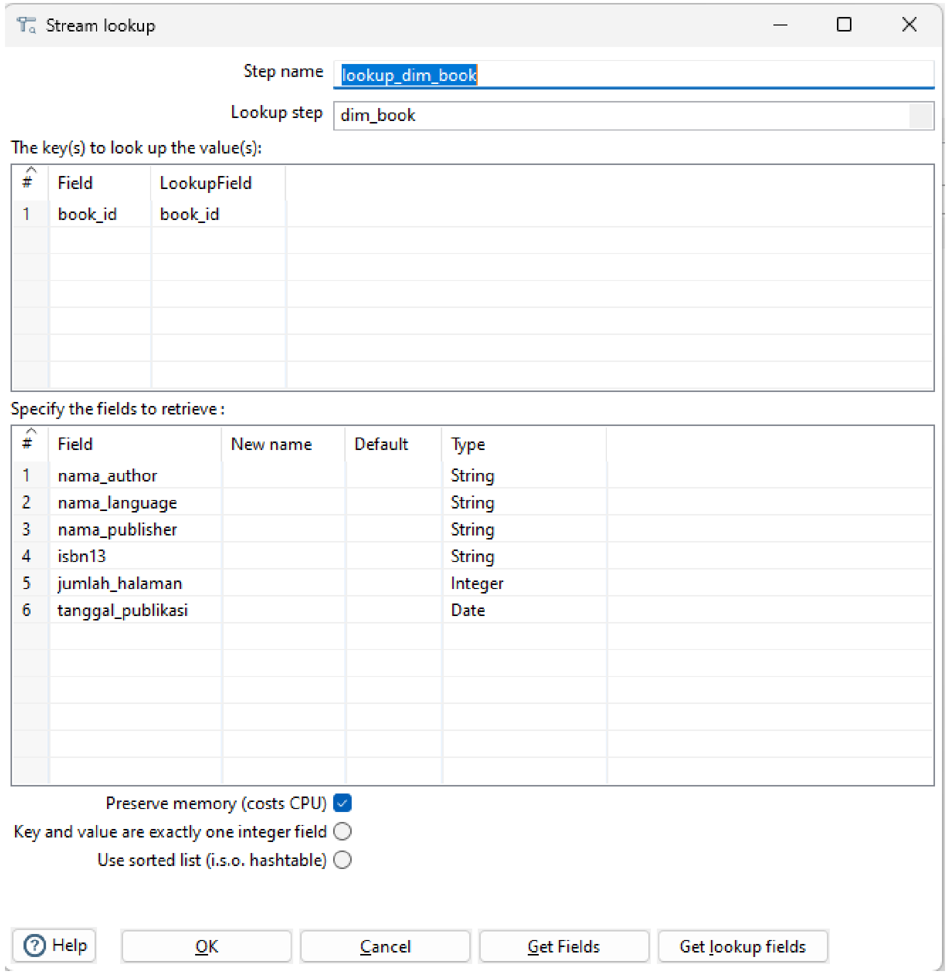
# Nomor 3 *screenshot* ETL fact_order.

Tab "Stream Lookup"

4

Step: lookup_dim_book

Penjelasan: **Step ini digunakan untuk melakukan lookup data** dari tabel **dim_book** dengan menggunakan **book_id** sebagai key relasinya.



Step name: lookup_dim_book

Lookup step: dim_book

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | book_id | book_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | nama_author | | | String |
| 2 | nama_language | | | String |
| 3 | nama_publisher | | | String |
| 4 | isbn13 | | | String |
| 5 | jumlah_halaman | | | Integer |
| 6 | tanggal_publikasi | | | Date |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

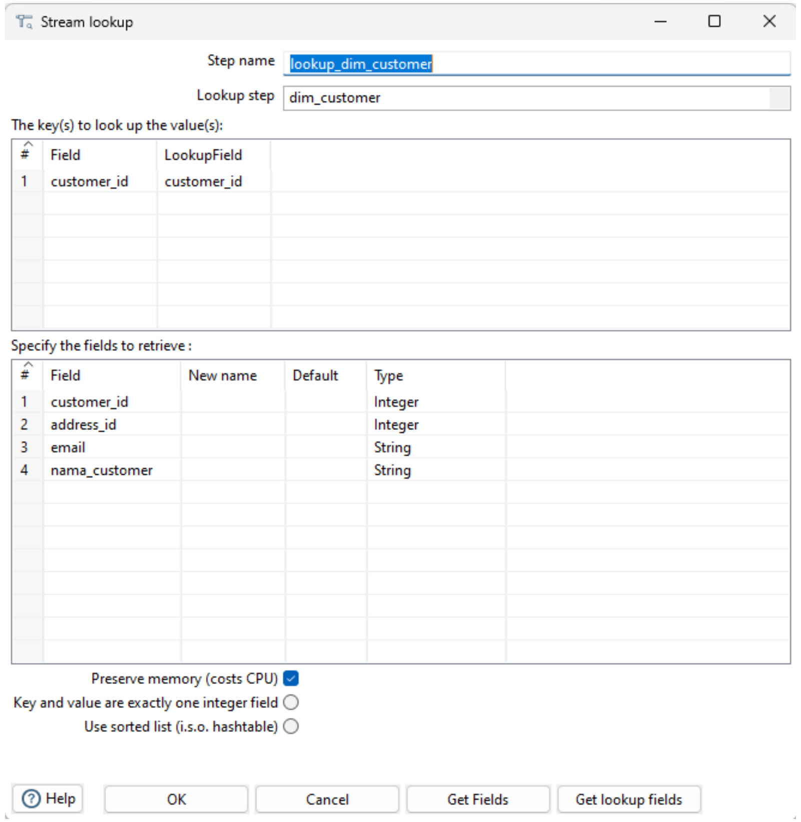
# Nomor 3 *screenshot* ETL fact_order.

Tab "Stream Lookup"

5

Step: lookup_dim_customer

Penjelasan : Step ini berfungsi untuk melakukan **lookup data** dari tabel **dim_customer** dengan menggunakan **customer_id** sebagai key relasinya.



Stream lookup

Step name: lookup_dim_customer

Lookup step: dim_customer

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | customer_id | customer_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | customer_id | | | Integer |
| 2 | address_id | | | Integer |
| 3 | email | | | String |
| 4 | nama_customer | | | String |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

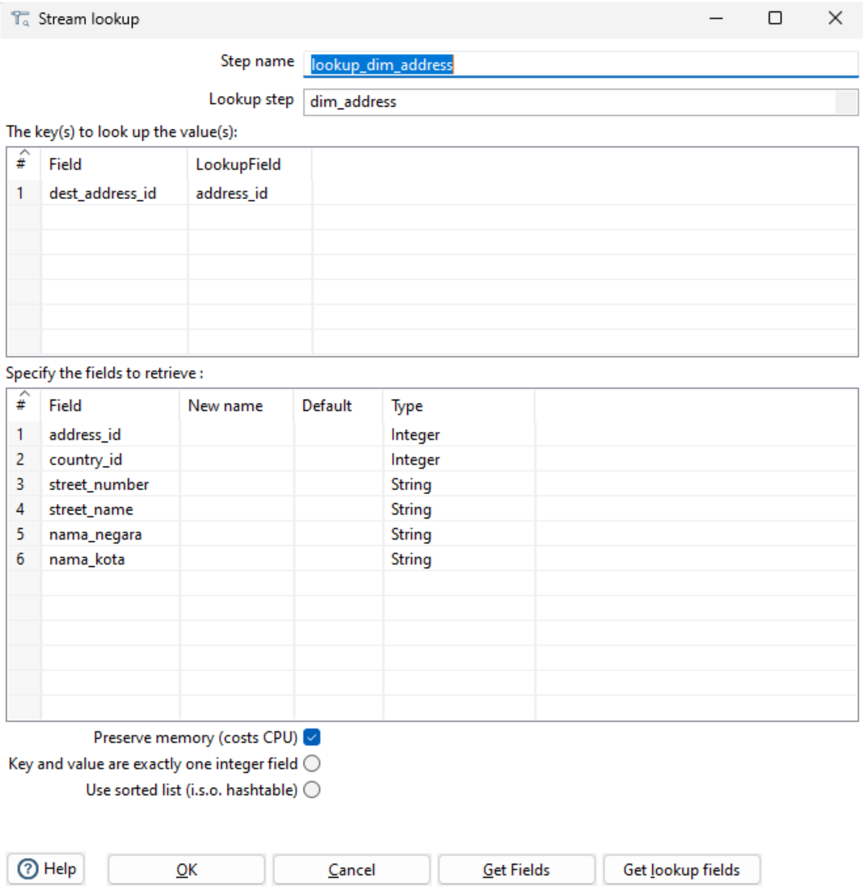
# Nomor 3 *screenshot* ETL fact_order.

Tab "Stream Lookup"

6

Step: lookup_dim_address

Penjelasan : Step ini digunakan untuk melakukan **lookup data** dari tabel **dim_address** dengan menggunakan **address_id** sebagai key relasinya.



Stream lookup

Step name: lookup_dim_address

Lookup step: dim_address

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | dest_address_id | address_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | address_id | | | Integer |
| 2 | country_id | | | Integer |
| 3 | street_number | | | String |
| 4 | street_name | | | String |
| 5 | nama_negara | | | String |
| 6 | nama_kota | | | String |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

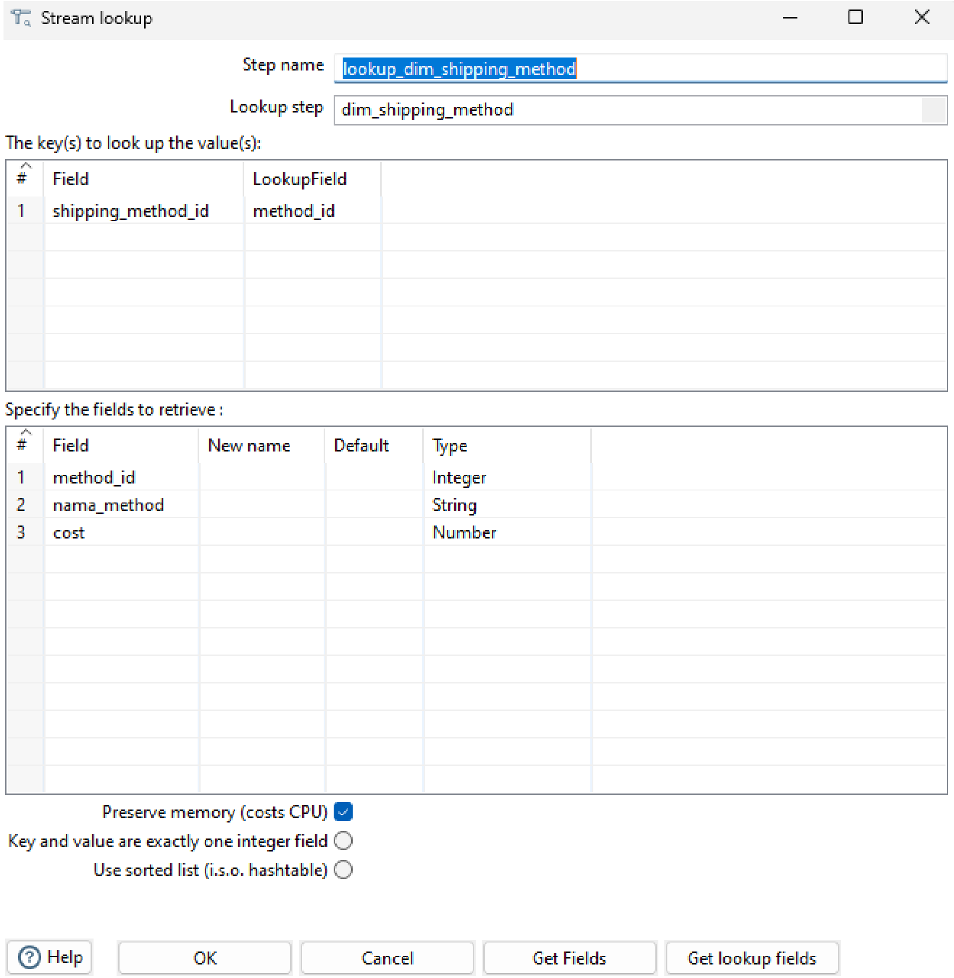
# Nomor 3 *screenshot* ETL **fact_order.**

<u>Tab "Stream Lookup"</u>

7

Step: lookup_dim_shipping_method

Penjelasan : Step ini digunakan untuk melakukan **lookup data** dari tabel **dim_shipping_method** dengan menggunakan **method_id** sebagai key relasinya.



Step name: lookup_dim_shipping_method

Lookup step: dim_shipping_method

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | shipping_method_id | method_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | method_id | | | Integer |
| 2 | nama_method | | | String |
| 3 | cost | | | Number |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

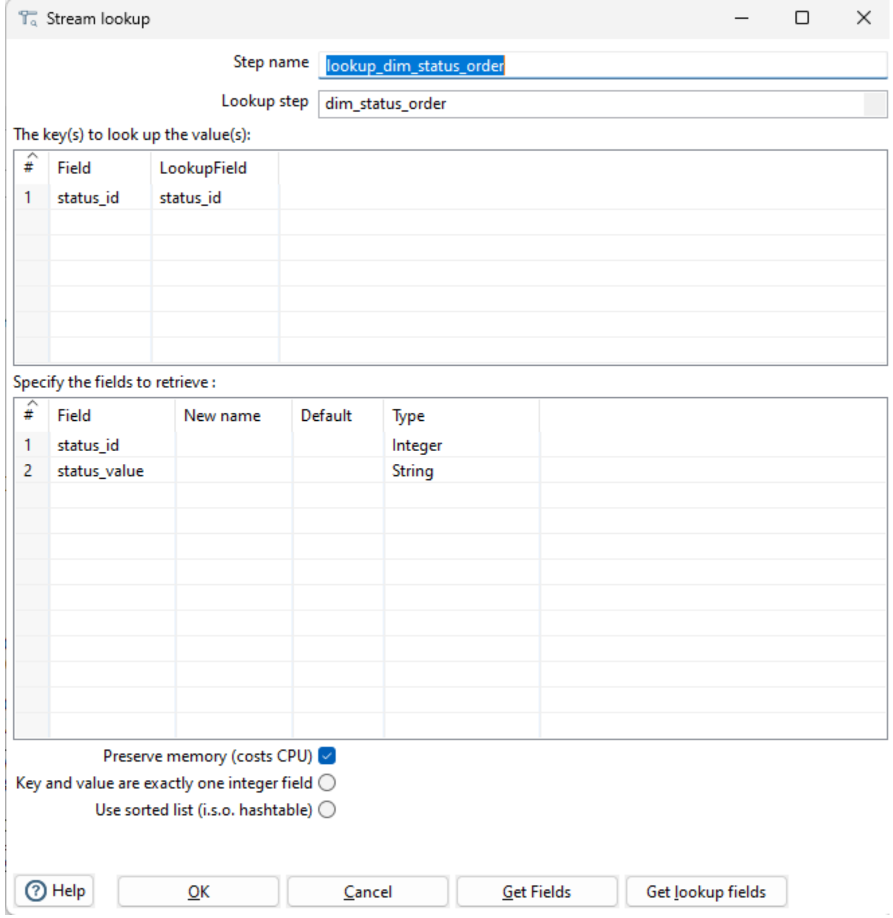
# Nomor 3 *screenshot* ETL fact_order.

Tab "Stream Lookup"

8

Step: lookup_dim_status_order

Penjelasan : Step ini digunakan untuk melakukan **lookup data** dari tabel **dim_status_order** dengan menggunakan **status_id** sebagai key relasinya.



Stream lookup

Step name: lookup_dim_status_order

Lookup step: dim_status_order

The key(s) to look up the value(s):

| # | Field | LookupField |
|---|---|---|
| 1 | status_id | status_id |

Specify the fields to retrieve :

| # | Field | New name | Default | Type |
|---|---|---|---|---|
| 1 | status_id | | | Integer |
| 2 | status_value | | | String |

Preserve memory (costs CPU) ☑

Key and value are exactly one integer field ○

Use sorted list (i.s.o. hashtable) ○

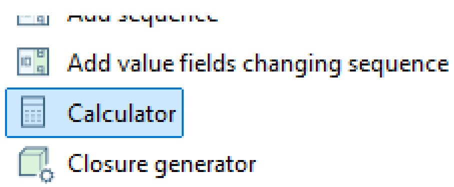
# Nomor 3 *screenshot* ETL fact_order.

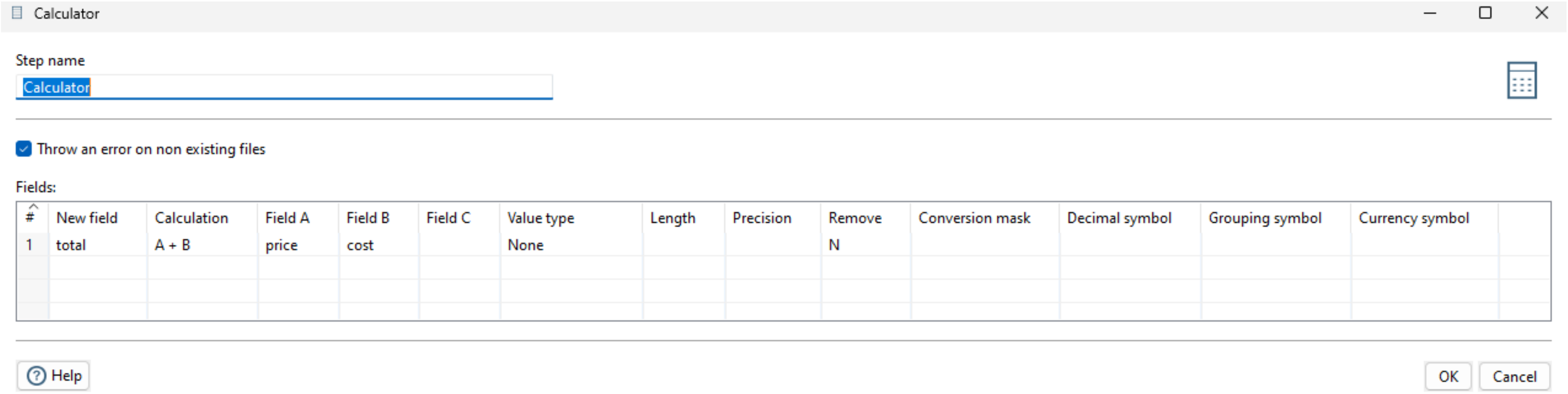
Tab “Calculator”

9

Step: Calculator

Penjelasan : Melakukan penjumlahan terhadap price dan cost menghasilkan total





Step name
Calculator

☑ Throw an error on non existing files

Fields:

| # | New field | Calculation | Field A | Field B | Field C | Value type | Length | Precision | Remove | Conversion mask | Decimal symbol | Grouping symbol | Currency symbol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | total | A + B | price | cost |  | None |  |  | N |  |  |  |  |

# Nomor 3 *screenshot* ETL **fact_order.**

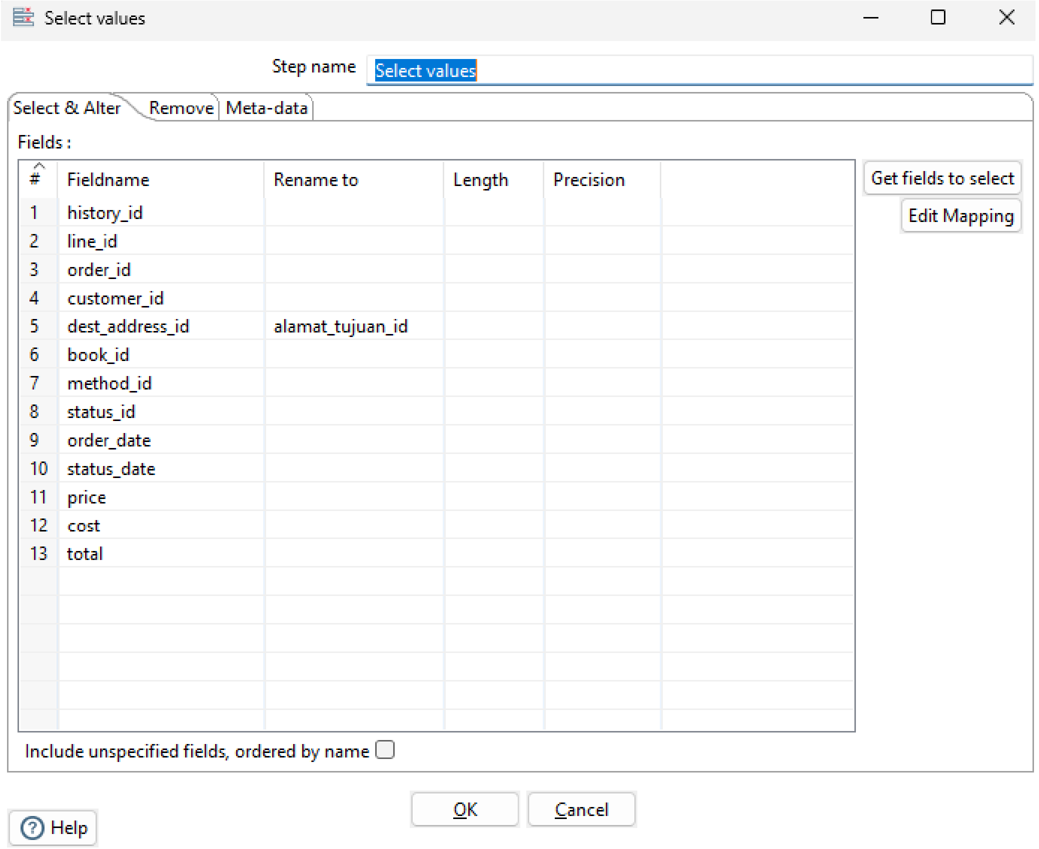
Tab “Select Values”

10

Step: Select Values

Nama: Select Values

Penjelasan : **Langkah ini bertujuan untuk menentukan dan memetakan kolom-kolom yang akan digunakan sebagai fact_order berdasarkan hasil transformasi pada tahap sebelumnya.**



Step name: Select values

Fields :

| # | Fieldname | Rename to | Length | Precision |
|---|---|---|---|---|
| 1 | history_id | | | |
| 2 | line_id | | | |
| 3 | order_id | | | |
| 4 | customer_id | | | |
| 5 | dest_address_id | alamat_tujuan_id | | |
| 6 | book_id | | | |
| 7 | method_id | | | |
| 8 | status_id | | | |
| 9 | order_date | | | |
| 10 | status_date | | | |
| 11 | price | | | |
| 12 | cost | | | |
| 13 | total | | | |

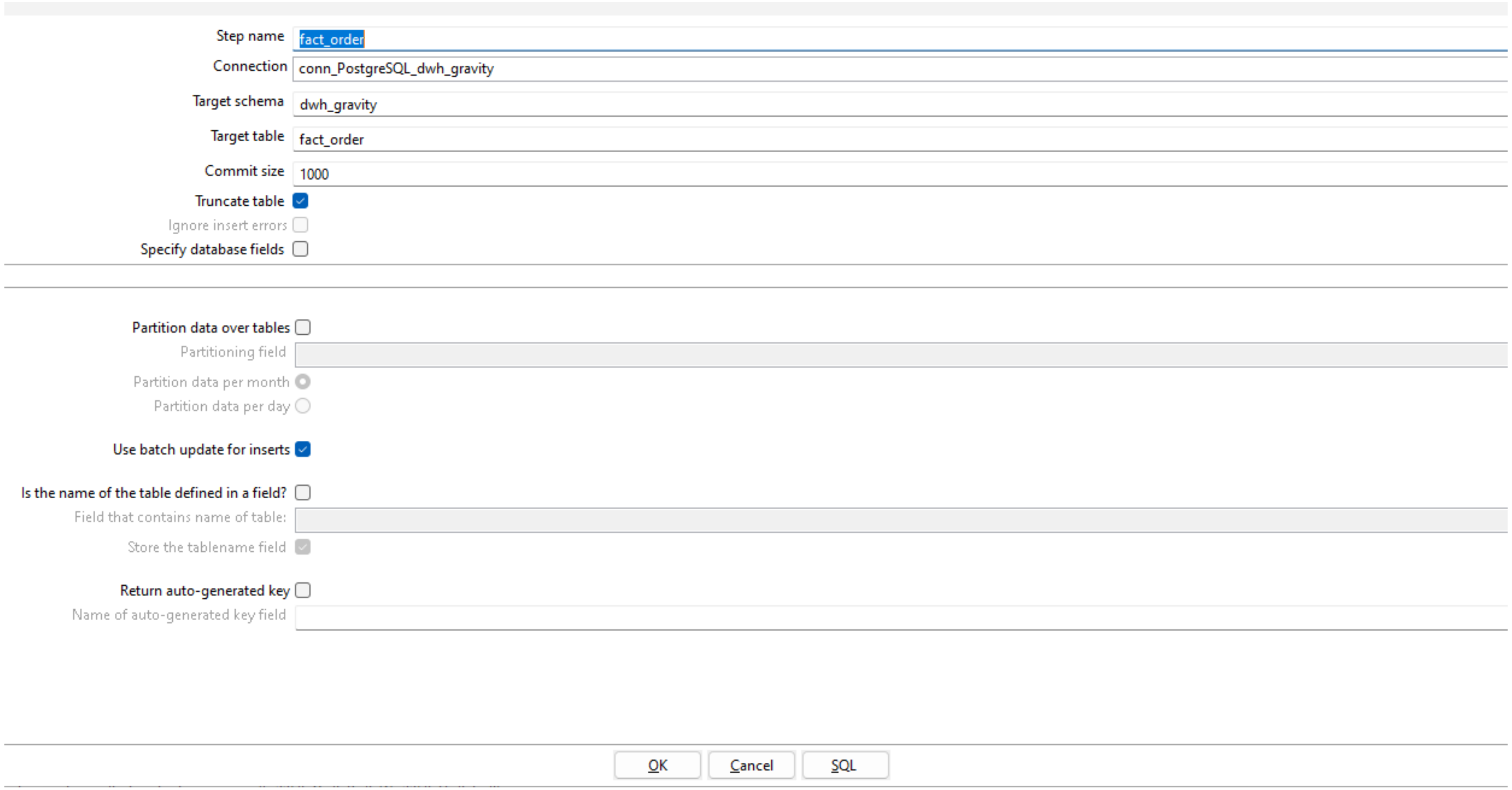
Include unspecified fields, ordered by name □

# Nomor 3 *screenshot* ETL fact_order.

Table Output

11

Step: Table Output
Nama: fact_order



|  |  |
|---|---|
| Step name | fact_order |
| Connection | conn_PostgreSQL_dwh_gravity |
| Target schema | dwh_gravity |
| Target table | fact_order |
| Commit size | 1000 |
| Truncate table | ☑ |
| Ignore insert errors | □ |
| Specify database fields | □ |
| Partition data over tables | □ |
| Partitioning field |  |
| Partition data per month | ● |
| Partition data per day | ○ |
| Use batch update for inserts | ☑ |
| Is the name of the table defined in a field? | □ |
| Field that contains name of table: |  |
| Store the tablename field | ☑ |
| Return auto-generated key | □ |
| Name of auto-generated key field |  |

# Nomor 3 *screenshot* ETL fact_order.

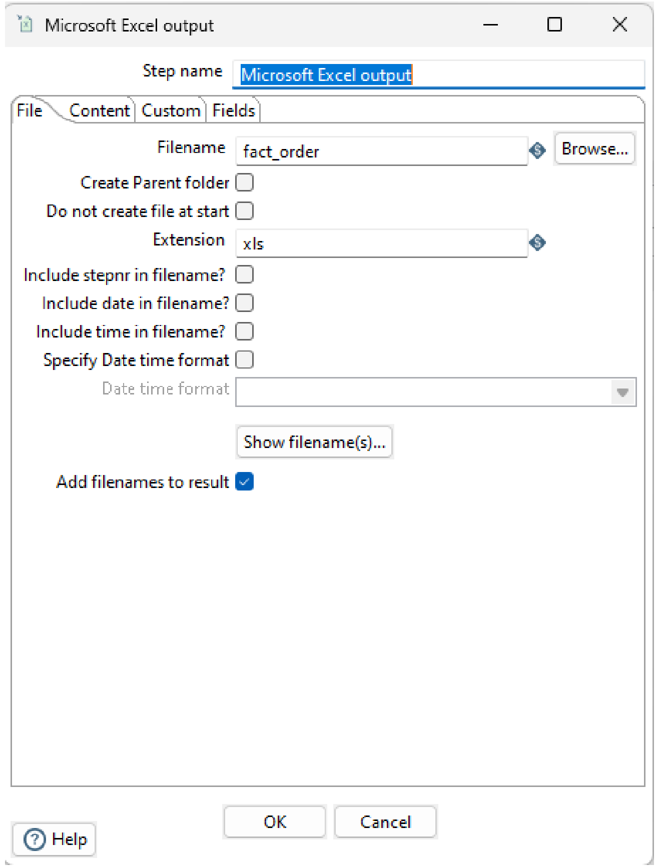
Tab “Preview data”

12

Step: Miscrosoft Excel Output

Nama: Miscrosoft Excel Output

Penjelasan : **Langkah ini digunakan untuk menuliskan hasil transformasi ke dalam file output berformat XLS.**



Microsoft Excel output

Step name: Microsoft Excel output

Filename: fact_order

Create Parent folder □

Do not create file at start □

Extension: xls

Include stepnr in filename? □

Include date in filename? □

Include time in filename? □

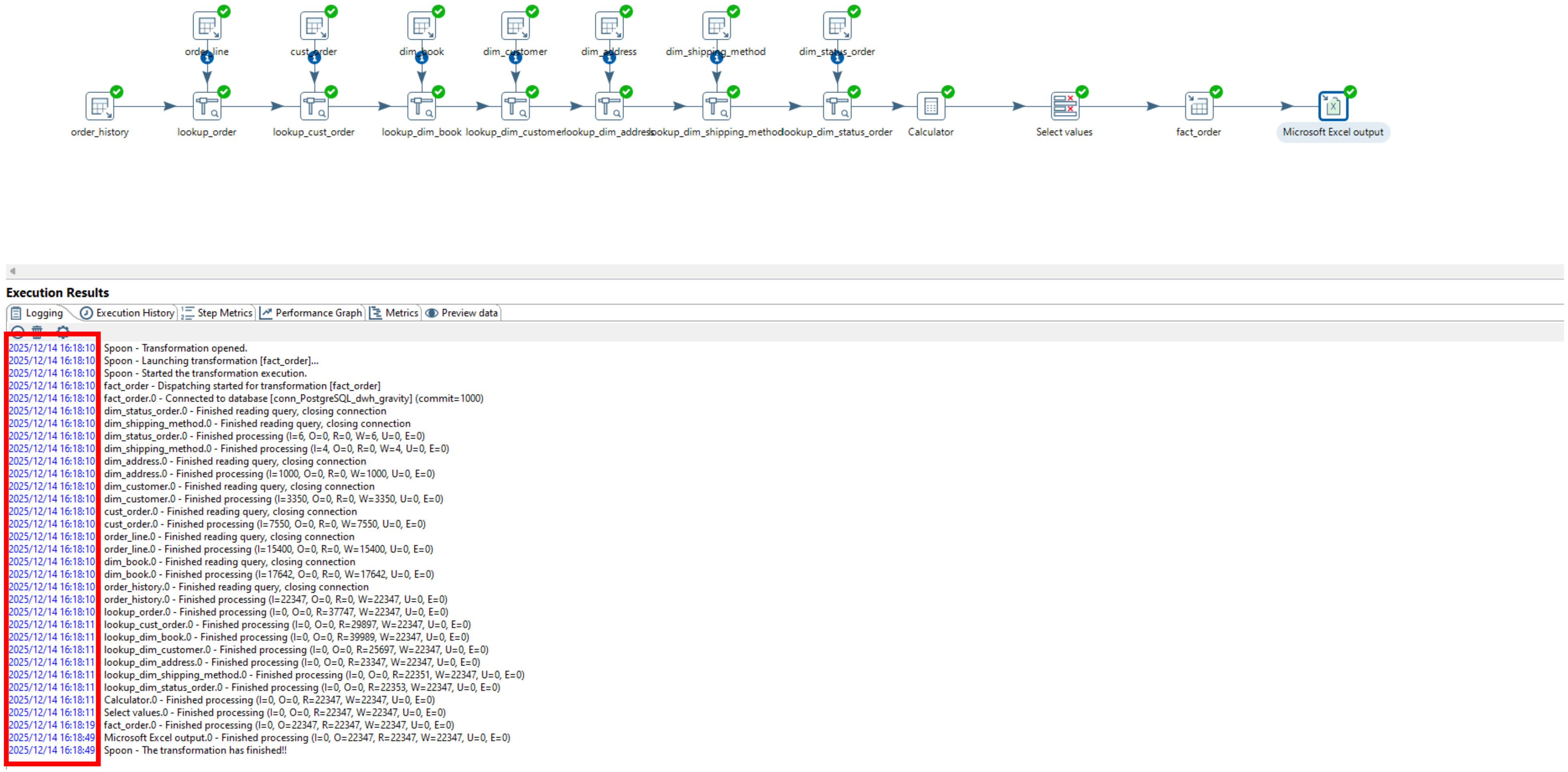
Specify Date time format □

Date time format

Add filenames to result ☑

# Nomor 3 *screenshot* ETL fact_order.

Tab “Logging”

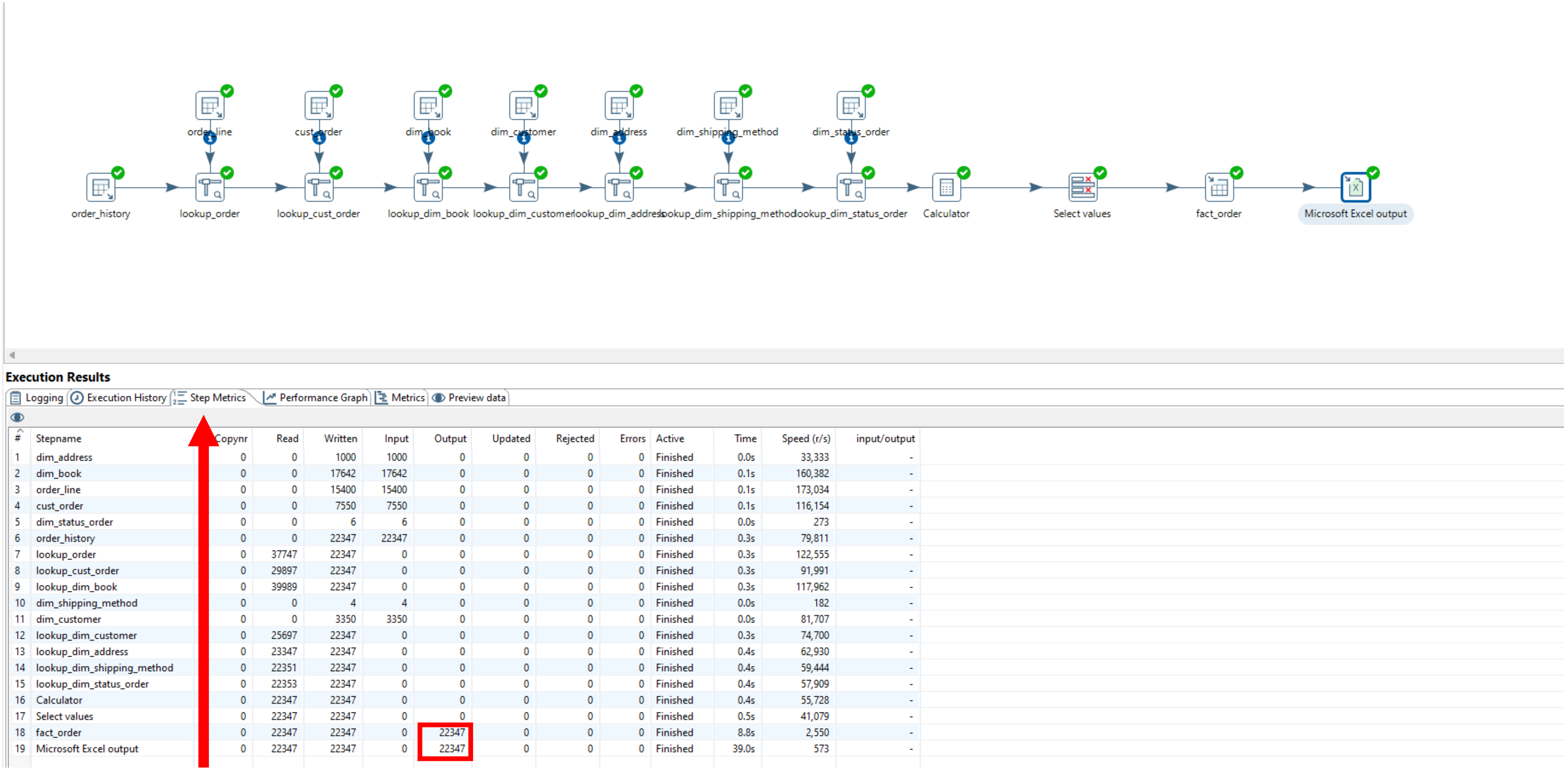


```
2025/12/14 16:18:10 Spoon - Transformation opened.
2025/12/14 16:18:10 Spoon - Launching transformation [fact_order]...
2025/12/14 16:18:10 Spoon - Started the transformation execution.
2025/12/14 16:18:10 fact_order - Dispatching started for transformation [fact_order]
2025/12/14 16:18:10 fact_order.0 - Connected to database [conn_PostgreSQL_dwh_gravity] (commit=1000)
2025/12/14 16:18:10 dim_status_order.0 - Finished reading query, closing connection
2025/12/14 16:18:10 dim_shipping_method.0 - Finished reading query, closing connection
2025/12/14 16:18:10 dim_status_order.0 - Finished processing (I=6, O=0, R=0, W=6, U=0, E=0)
2025/12/14 16:18:10 dim_shipping_method.0 - Finished processing (I=4, O=0, R=0, W=4, U=0, E=0)
2025/12/14 16:18:10 dim_address.0 - Finished reading query, closing connection
2025/12/14 16:18:10 dim_address.0 - Finished processing (I=1000, O=0, R=0, W=1000, U=0, E=0)
2025/12/14 16:18:10 dim_customer.0 - Finished reading query, closing connection
2025/12/14 16:18:10 dim_customer.0 - Finished processing (I=3350, O=0, R=0, W=3350, U=0, E=0)
2025/12/14 16:18:10 cust_order.0 - Finished reading query, closing connection
2025/12/14 16:18:10 cust_order.0 - Finished processing (I=7550, O=0, R=0, W=7550, U=0, E=0)
2025/12/14 16:18:10 order_line.0 - Finished reading query, closing connection
2025/12/14 16:18:10 order_line.0 - Finished processing (I=15400, O=0, R=0, W=15400, U=0, E=0)
2025/12/14 16:18:10 dim_book.0 - Finished reading query, closing connection
2025/12/14 16:18:10 dim_book.0 - Finished processing (I=17642, O=0, R=0, W=17642, U=0, E=0)
2025/12/14 16:18:10 order_history.0 - Finished reading query, closing connection
2025/12/14 16:18:10 order_history.0 - Finished processing (I=22347, O=0, R=0, W=22347, U=0, E=0)
2025/12/14 16:18:10 lookup_order.0 - Finished processing (I=0, O=0, R=37747, W=22347, U=0, E=0)
2025/12/14 16:18:11 lookup_cust_order.0 - Finished processing (I=0, O=0, R=29897, W=22347, U=0, E=0)
2025/12/14 16:18:11 lookup_dim_book.0 - Finished processing (I=0, O=0, R=39989, W=22347, U=0, E=0)
2025/12/14 16:18:11 lookup_dim_customer.0 - Finished processing (I=0, O=0, R=25697, W=22347, U=0, E=0)
2025/12/14 16:18:11 lookup_dim_address.0 - Finished processing (I=0, O=0, R=23347, W=22347, U=0, E=0)
2025/12/14 16:18:11 lookup_dim_shipping_method.0 - Finished processing (I=0, O=0, R=22351, W=22347, U=0, E=0)
2025/12/14 16:18:11 lookup_dim_status_order.0 - Finished processing (I=0, O=0, R=22353, W=22347, U=0, E=0)
2025/12/14 16:18:11 Calculator.0 - Finished processing (I=0, O=0, R=22347, W=22347, U=0, E=0)
2025/12/14 16:18:11 Select values.0 - Finished processing (I=0, O=0, R=22347, W=22347, U=0, E=0)
2025/12/14 16:18:19 fact_order.0 - Finished processing (I=0, O=22347, R=22347, W=22347, U=0, E=0)
2025/12/14 16:18:49 Microsoft Excel output.0 - Finished processing (I=0, O=22347, R=22347, W=22347, U=0, E=0)
2025/12/14 16:18:49 Spoon - The transformation has finished!!
```

Tab “Logging”

# Nomor 3 *screenshot* ETL fact_order.

Tab “Step Metrics”



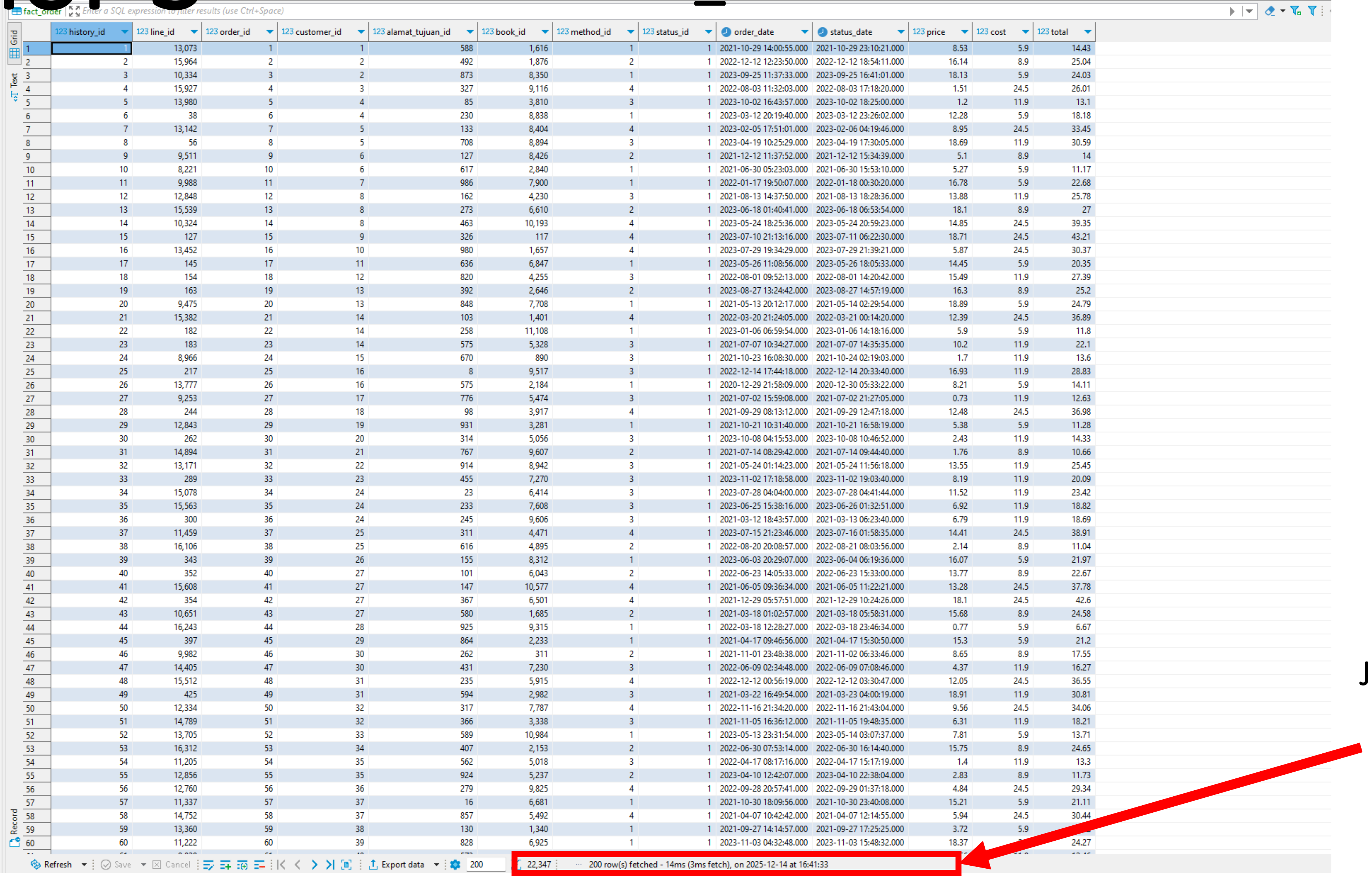
| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | dim_address | 0 | 0 | 1000 | 1000 | 0 | 0 | 0 | 0 | Finished | 0.0s | 33,333 | - |
| 2 | dim_book | 0 | 0 | 17642 | 17642 | 0 | 0 | 0 | 0 | Finished | 0.1s | 160,382 | - |
| 3 | order_line | 0 | 0 | 15400 | 15400 | 0 | 0 | 0 | 0 | Finished | 0.1s | 173,034 | - |
| 4 | cust_order | 0 | 0 | 7550 | 7550 | 0 | 0 | 0 | 0 | Finished | 0.1s | 116,154 | - |
| 5 | dim_status_order | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | Finished | 0.0s | 273 | - |
| 6 | order_history | 0 | 0 | 22347 | 22347 | 0 | 0 | 0 | 0 | Finished | 0.3s | 79,811 | - |
| 7 | lookup_order | 0 | 37747 | 22347 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 122,555 | - |
| 8 | lookup_cust_order | 0 | 29897 | 22347 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 91,991 | - |
| 9 | lookup_dim_book | 0 | 39989 | 22347 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 117,962 | - |
| 10 | dim_shipping_method | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | Finished | 0.0s | 182 | - |
| 11 | dim_customer | 0 | 0 | 3350 | 3350 | 0 | 0 | 0 | 0 | Finished | 0.0s | 81,707 | - |
| 12 | lookup_dim_customer | 0 | 25697 | 22347 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 74,700 | - |
| 13 | lookup_dim_address | 0 | 23347 | 22347 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 62,930 | - |
| 14 | lookup_dim_shipping_method | 0 | 22351 | 22347 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 59,444 | - |
| 15 | lookup_dim_status_order | 0 | 22353 | 22347 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 57,909 | - |
| 16 | Calculator | 0 | 22347 | 22347 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 55,728 | - |
| 17 | Select values | 0 | 22347 | 22347 | 0 | 0 | 0 | 0 | 0 | Finished | 0.5s | 41,079 | - |
| 18 | fact_order | 0 | 22347 | 22347 | 0 | 22347 | 0 | 0 | 0 | Finished | 8.8s | 2,550 | - |
| 19 | Microsoft Excel output | 0 | 22347 | 22347 | 0 | 22347 | 0 | 0 | 0 | Finished | 39.0s | 573 | - |

Tab “Step Metrics”

# Nomor 3 *screenshot* ETL fact_order.

“dwh_gravity”

contoh data



| | history_id | line_id | order_id | customer_id | alamat_tujuan_id | book_id | method_id | status_id | order_date | status_date | price | cost | total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 13,073 | 1 | 1 | 588 | 1,616 | 1 | 1 | 2021-10-29 14:00:55.000 | 2021-10-29 23:10:21.000 | 8.53 | 5.9 | 14.43 |
| 2 | 2 | 15,964 | 2 | 2 | 492 | 1,876 | 2 | 1 | 2022-12-12 12:23:50.000 | 2022-12-12 18:54:11.000 | 16.14 | 8.9 | 25.04 |
| 3 | 3 | 10,334 | 3 | 2 | 873 | 8,350 | 1 | 1 | 2023-09-25 11:37:33.000 | 2023-09-25 16:41:01.000 | 18.13 | 5.9 | 24.03 |
| 4 | 4 | 15,927 | 4 | 3 | 327 | 9,116 | 4 | 1 | 2022-08-03 11:32:03.000 | 2022-08-03 17:18:20.000 | 1.51 | 24.5 | 26.01 |
| 5 | 5 | 13,980 | 5 | 4 | 85 | 3,810 | 3 | 1 | 2023-10-02 16:43:57.000 | 2023-10-02 18:25:00.000 | 1.2 | 11.9 | 13.1 |
| 6 | 6 | 38 | 6 | 4 | 230 | 8,838 | 1 | 1 | 2023-03-12 20:19:40.000 | 2023-03-12 23:26:02.000 | 12.28 | 5.9 | 18.18 |
| 7 | 7 | 13,142 | 7 | 5 | 133 | 8,404 | 4 | 1 | 2023-02-05 17:51:01.000 | 2023-02-06 04:19:46.000 | 8.95 | 24.5 | 33.45 |
| 8 | 8 | 56 | 8 | 5 | 708 | 8,894 | 3 | 1 | 2023-04-19 10:25:29.000 | 2023-04-19 17:30:05.000 | 18.69 | 11.9 | 30.59 |
| 9 | 9 | 9,511 | 9 | 6 | 127 | 8,426 | 2 | 1 | 2021-12-12 11:37:52.000 | 2021-12-12 15:34:39.000 | 5.1 | 8.9 | 14 |
| 10 | 10 | 8,221 | 10 | 6 | 617 | 2,840 | 1 | 1 | 2021-06-30 05:23:03.000 | 2021-06-30 15:53:10.000 | 5.27 | 5.9 | 11.17 |
| 11 | 11 | 9,988 | 11 | 7 | 986 | 7,900 | 1 | 1 | 2022-01-17 19:50:07.000 | 2022-01-18 00:30:20.000 | 16.78 | 5.9 | 22.68 |
| 12 | 12 | 12,848 | 12 | 8 | 162 | 4,230 | 3 | 1 | 2021-08-13 14:37:50.000 | 2021-08-13 18:28:36.000 | 13.88 | 11.9 | 25.78 |
| 13 | 13 | 15,539 | 13 | 8 | 273 | 6,610 | 2 | 1 | 2023-06-18 01:40:41.000 | 2023-06-18 06:53:54.000 | 18.1 | 8.9 | 27 |
| 14 | 14 | 10,324 | 14 | 8 | 463 | 10,193 | 4 | 1 | 2023-05-24 18:25:36.000 | 2023-05-24 20:59:23.000 | 14.85 | 24.5 | 39.35 |
| 15 | 15 | 127 | 15 | 9 | 326 | 117 | 4 | 1 | 2023-07-10 21:13:16.000 | 2023-07-11 06:22:30.000 | 18.71 | 24.5 | 43.21 |
| 16 | 16 | 13,452 | 16 | 10 | 980 | 1,657 | 4 | 1 | 2023-07-29 19:34:29.000 | 2023-07-29 21:39:21.000 | 5.87 | 24.5 | 30.37 |
| 17 | 17 | 145 | 17 | 11 | 636 | 6,847 | 1 | 1 | 2023-05-26 11:08:56.000 | 2023-05-26 18:05:33.000 | 14.45 | 5.9 | 20.35 |
| 18 | 18 | 154 | 18 | 12 | 820 | 4,255 | 3 | 1 | 2022-08-01 09:52:13.000 | 2022-08-01 14:20:42.000 | 15.49 | 11.9 | 27.39 |
| 19 | 19 | 163 | 19 | 13 | 392 | 2,646 | 2 | 1 | 2023-08-27 13:24:42.000 | 2023-08-27 14:57:19.000 | 16.3 | 8.9 | 25.2 |
| 20 | 20 | 9,475 | 20 | 13 | 848 | 7,708 | 1 | 1 | 2021-05-13 20:12:17.000 | 2021-05-14 02:29:54.000 | 18.89 | 5.9 | 24.79 |
| 21 | 21 | 15,382 | 21 | 14 | 103 | 1,401 | 4 | 1 | 2022-03-20 21:24:05.000 | 2022-03-21 00:14:20.000 | 12.39 | 24.5 | 36.89 |
| 22 | 22 | 182 | 22 | 14 | 258 | 11,108 | 1 | 1 | 2023-01-06 06:59:54.000 | 2023-01-06 14:18:16.000 | 5.9 | 5.9 | 11.8 |
| 23 | 23 | 183 | 23 | 14 | 575 | 5,328 | 3 | 1 | 2021-07-07 10:34:27.000 | 2021-07-07 14:35:35.000 | 10.2 | 11.9 | 22.1 |
| 24 | 24 | 8,966 | 24 | 15 | 670 | 890 | 3 | 1 | 2021-10-23 16:08:30.000 | 2021-10-24 02:19:03.000 | 1.7 | 11.9 | 13.6 |
| 25 | 25 | 217 | 25 | 16 | 8 | 9,517 | 3 | 1 | 2022-12-14 17:44:18.000 | 2022-12-14 20:33:40.000 | 16.93 | 11.9 | 28.83 |
| 26 | 26 | 13,777 | 26 | 16 | 575 | 2,184 | 1 | 1 | 2020-12-29 21:58:09.000 | 2020-12-30 05:33:22.000 | 8.21 | 5.9 | 14.11 |
| 27 | 27 | 9,253 | 27 | 17 | 776 | 5,474 | 3 | 1 | 2021-07-02 15:59:08.000 | 2021-07-02 21:27:05.000 | 0.73 | 11.9 | 12.63 |
| 28 | 28 | 244 | 28 | 18 | 98 | 3,917 | 4 | 1 | 2021-09-29 08:13:12.000 | 2021-09-29 12:47:18.000 | 12.48 | 24.5 | 36.98 |
| 29 | 29 | 12,843 | 29 | 19 | 931 | 3,281 | 1 | 1 | 2021-10-21 10:31:40.000 | 2021-10-21 16:58:19.000 | 5.38 | 5.9 | 11.28 |
| 30 | 30 | 262 | 30 | 20 | 314 | 5,056 | 3 | 1 | 2023-10-08 04:15:53.000 | 2023-10-08 10:46:52.000 | 2.43 | 11.9 | 14.33 |
| 31 | 31 | 14,894 | 31 | 21 | 767 | 9,607 | 2 | 1 | 2021-07-14 08:29:42.000 | 2021-07-14 09:44:40.000 | 1.76 | 8.9 | 10.66 |
| 32 | 32 | 13,171 | 32 | 22 | 914 | 8,942 | 3 | 1 | 2021-05-24 01:14:23.000 | 2021-05-24 11:56:18.000 | 13.55 | 11.9 | 25.45 |
| 33 | 33 | 289 | 33 | 23 | 455 | 7,270 | 3 | 1 | 2023-11-02 17:18:58.000 | 2023-11-02 19:03:40.000 | 8.19 | 11.9 | 20.09 |
| 34 | 34 | 15,078 | 34 | 24 | 23 | 6,414 | 3 | 1 | 2023-07-28 04:04:00.000 | 2023-07-28 04:41:44.000 | 11.52 | 11.9 | 23.42 |
| 35 | 35 | 15,563 | 35 | 24 | 233 | 7,608 | 3 | 1 | 2023-06-25 15:38:16.000 | 2023-06-26 01:32:51.000 | 6.92 | 11.9 | 18.82 |
| 36 | 36 | 300 | 36 | 24 | 245 | 9,606 | 3 | 1 | 2021-03-12 18:43:57.000 | 2021-03-13 06:23:40.000 | 6.79 | 11.9 | 18.69 |
| 37 | 37 | 11,459 | 37 | 25 | 311 | 4,471 | 4 | 1 | 2023-07-15 21:23:46.000 | 2023-07-16 01:58:35.000 | 14.41 | 24.5 | 38.91 |
| 38 | 38 | 16,106 | 38 | 25 | 616 | 4,895 | 2 | 1 | 2022-08-20 20:08:57.000 | 2022-08-21 08:03:56.000 | 2.14 | 8.9 | 11.04 |
| 39 | 39 | 343 | 39 | 26 | 155 | 8,312 | 1 | 1 | 2023-06-03 20:29:07.000 | 2023-06-04 06:19:36.000 | 16.07 | 5.9 | 21.97 |
| 40 | 40 | 352 | 40 | 27 | 101 | 6,043 | 2 | 1 | 2022-06-23 14:05:33.000 | 2022-06-23 15:33:00.000 | 13.77 | 8.9 | 22.67 |
| 41 | 41 | 15,608 | 41 | 27 | 147 | 10,577 | 4 | 1 | 2021-06-05 09:36:34.000 | 2021-06-05 11:22:21.000 | 13.28 | 24.5 | 37.78 |
| 42 | 42 | 354 | 42 | 27 | 367 | 6,501 | 4 | 1 | 2021-12-29 05:57:51.000 | 2021-12-29 10:24:26.000 | 18.1 | 24.5 | 42.6 |
| 43 | 43 | 10,651 | 43 | 27 | 580 | 1,685 | 2 | 1 | 2021-03-18 01:02:57.000 | 2021-03-18 05:58:31.000 | 15.68 | 8.9 | 24.58 |
| 44 | 44 | 16,243 | 44 | 28 | 925 | 9,315 | 1 | 1 | 2022-03-18 12:28:27.000 | 2022-03-18 23:46:34.000 | 0.77 | 5.9 | 6.67 |
| 45 | 45 | 397 | 45 | 29 | 864 | 2,233 | 1 | 1 | 2021-04-17 09:46:56.000 | 2021-04-17 15:30:50.000 | 15.3 | 5.9 | 21.2 |
| 46 | 46 | 9,982 | 46 | 30 | 262 | 311 | 2 | 1 | 2021-11-01 23:48:38.000 | 2021-11-02 06:33:46.000 | 8.65 | 8.9 | 17.55 |
| 47 | 47 | 14,405 | 47 | 30 | 431 | 7,230 | 3 | 1 | 2022-06-09 02:34:48.000 | 2022-06-09 07:08:46.000 | 4.37 | 11.9 | 16.27 |
| 48 | 48 | 15,512 | 48 | 31 | 235 | 5,915 | 4 | 1 | 2022-12-12 00:56:19.000 | 2022-12-12 03:30:47.000 | 12.05 | 24.5 | 36.55 |
| 49 | 49 | 425 | 49 | 31 | 594 | 2,982 | 3 | 1 | 2021-03-22 16:49:54.000 | 2021-03-23 04:00:19.000 | 18.91 | 11.9 | 30.81 |
| 50 | 50 | 12,334 | 50 | 32 | 317 | 7,787 | 4 | 1 | 2022-11-16 21:34:20.000 | 2022-11-16 21:43:04.000 | 9.56 | 24.5 | 34.06 |
| 51 | 51 | 14,789 | 51 | 32 | 366 | 3,338 | 3 | 1 | 2021-11-05 16:36:12.000 | 2021-11-05 19:48:35.000 | 6.31 | 11.9 | 18.21 |
| 52 | 52 | 13,705 | 52 | 33 | 589 | 10,984 | 1 | 1 | 2023-05-13 23:31:54.000 | 2023-05-14 03:07:37.000 | 7.81 | 5.9 | 13.71 |
| 53 | 53 | 16,312 | 53 | 34 | 407 | 2,153 | 2 | 1 | 2022-06-30 07:53:14.000 | 2022-06-30 16:14:40.000 | 15.75 | 8.9 | 24.65 |
| 54 | 54 | 11,205 | 54 | 35 | 562 | 5,018 | 3 | 1 | 2022-04-17 08:17:16.000 | 2022-04-17 15:17:19.000 | 1.4 | 11.9 | 13.3 |
| 55 | 55 | 12,856 | 55 | 35 | 924 | 5,237 | 2 | 1 | 2023-04-10 12:42:07.000 | 2023-04-10 22:38:04.000 | 2.83 | 8.9 | 11.73 |
| 56 | 56 | 12,760 | 56 | 36 | 279 | 9,825 | 4 | 1 | 2022-09-28 20:57:41.000 | 2022-09-29 01:37:18.000 | 4.84 | 24.5 | 29.34 |
| 57 | 57 | 11,337 | 57 | 37 | 16 | 6,681 | 1 | 1 | 2021-10-30 18:09:56.000 | 2021-10-30 23:40:08.000 | 15.21 | 5.9 | 21.11 |
| 58 | 58 | 14,752 | 58 | 37 | 857 | 5,492 | 4 | 1 | 2021-04-07 10:42:42.000 | 2021-04-07 12:14:55.000 | 5.94 | 24.5 | 30.44 |
| 59 | 59 | 13,360 | 59 | 38 | 130 | 1,340 | 1 | 1 | 2021-09-27 14:14:57.000 | 2021-09-27 17:25:25.000 | 3.72 | 5.9 | [illegible] |
| 60 | 60 | 11,222 | 60 | 39 | 828 | 6,925 | 1 | 1 | 2023-11-03 04:32:48.000 | 2023-11-03 15:48:32.000 | 18.37 | [illegible] | 24.27 |

22,347 ··· 200 row(s) fetched - 14ms (3ms fetch), on 2025-12-14 at 16:41:33

Jumlah rows / baris, dan Keterangan waktu load data

# 4

# Nomor 4(a)

- Berisi *screenshot* :

  1. script query
  2. contoh data beserta tampilan yang menunjukkan jumlah rows dan waktu (date & time) running query.
  3. perhatikan **status order** nya.

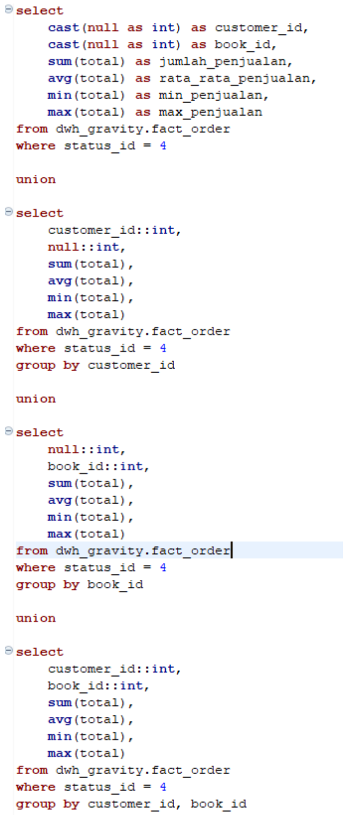
- Berisi **Penjelasan Data** (contoh ada di slide berikutnya)

Catatan:

- Jika penjelasan data kurang dari 5 poin, maka nilai akan dikurangi.
- Penjelasan data akan dicek oleh Asdos, dan akan diberikan nilai jika datanya sesuai, jika tidak sesuai, maka poin nilai akan dikurangi.
- Pastikan jumlah rows hasil running query = 7.726 rows.

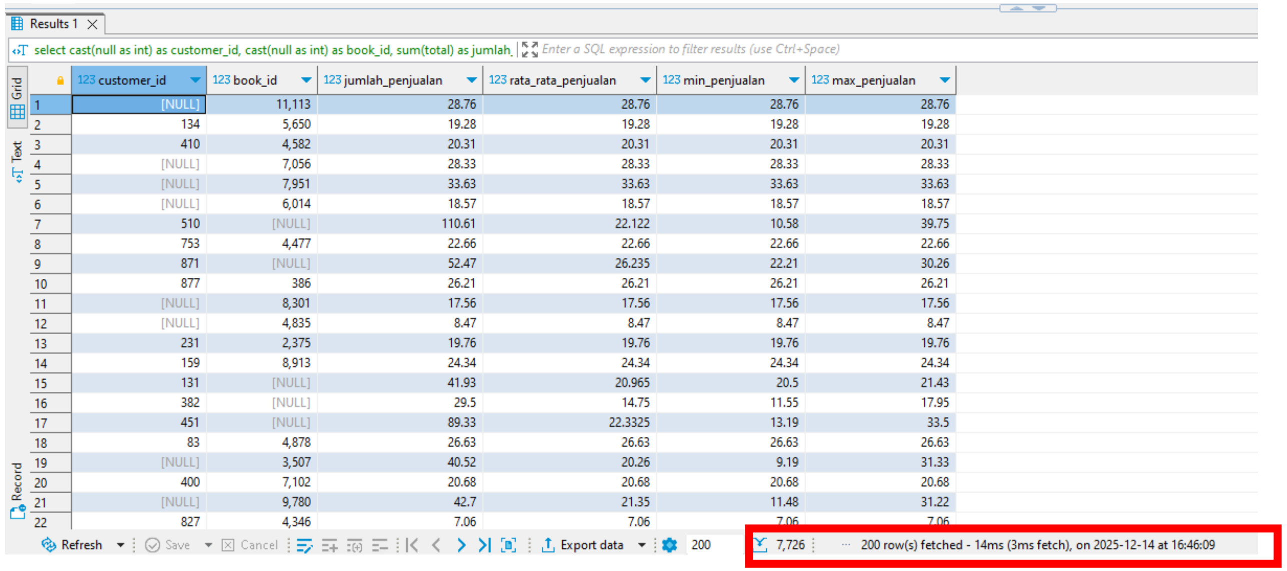
# Nomor 4(a) *screenshot*

Script Query



```
select
    cast(null as int) as customer_id,
    cast(null as int) as book_id,
    sum(total) as jumlah_penjualan,
    avg(total) as rata_rata_penjualan,
    min(total) as min_penjualan,
    max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id = 4

union

select
    customer_id::int,
    null::int,
    sum(total),
    avg(total),
    min(total),
    max(total)
from dwh_gravity.fact_order
where status_id = 4
group by customer_id

union

select
    null::int,
    book_id::int,
    sum(total),
    avg(total),
    min(total),
    max(total)
from dwh_gravity.fact_order
where status_id = 4
group by book_id

union

select
    customer_id::int,
    book_id::int,
    sum(total),
    avg(total),
    min(total),
    max(total)
from dwh_gravity.fact_order
where status_id = 4
group by customer_id, book_id
```

Contoh data



select cast(null as int) as customer_id, cast(null as int) as book_id, sum(total) as jumlah_

Enter a SQL expression to filter results (use Ctrl+Space)

| | customer_id | book_id | jumlah_penjualan | rata_rata_penjualan | min_penjualan | max_penjualan |
|---|---|---|---|---|---|---|
| 1 | [NULL] | 11,113 | 28.76 | 28.76 | 28.76 | 28.76 |
| 2 | 134 | 5,650 | 19.28 | 19.28 | 19.28 | 19.28 |
| 3 | 410 | 4,582 | 20.31 | 20.31 | 20.31 | 20.31 |
| 4 | [NULL] | 7,056 | 28.33 | 28.33 | 28.33 | 28.33 |
| 5 | [NULL] | 7,951 | 33.63 | 33.63 | 33.63 | 33.63 |
| 6 | [NULL] | 6,014 | 18.57 | 18.57 | 18.57 | 18.57 |
| 7 | 510 | [NULL] | 110.61 | 22.122 | 10.58 | 39.75 |
| 8 | 753 | 4,477 | 22.66 | 22.66 | 22.66 | 22.66 |
| 9 | 871 | [NULL] | 52.47 | 26.235 | 22.21 | 30.26 |
| 10 | 877 | 386 | 26.21 | 26.21 | 26.21 | 26.21 |
| 11 | [NULL] | 8,301 | 17.56 | 17.56 | 17.56 | 17.56 |
| 12 | [NULL] | 4,835 | 8.47 | 8.47 | 8.47 | 8.47 |
| 13 | 231 | 2,375 | 19.76 | 19.76 | 19.76 | 19.76 |
| 14 | 159 | 8,913 | 24.34 | 24.34 | 24.34 | 24.34 |
| 15 | 131 | [NULL] | 41.93 | 20.965 | 20.5 | 21.43 |
| 16 | 382 | [NULL] | 29.5 | 14.75 | 11.55 | 17.95 |
| 17 | 451 | [NULL] | 89.33 | 22.3325 | 13.19 | 33.5 |
| 18 | 83 | 4,878 | 26.63 | 26.63 | 26.63 | 26.63 |
| 19 | [NULL] | 3,507 | 40.52 | 20.26 | 9.19 | 31.33 |
| 20 | 400 | 7,102 | 20.68 | 20.68 | 20.68 | 20.68 |
| 21 | [NULL] | 9,780 | 42.7 | 21.35 | 11.48 | 31.22 |
| 22 | 827 | 4,346 | 7.06 | 7.06 | 7.06 | 7.06 |

200 row(s) fetched - 14ms (3ms fetch), on 2025-12-14 at 16:46:09

menampilkan jumlah **rows** dan **waktu (date & time)** running query.

# Nomor 4(a) *Script Query*

```
/* nomor 6 (a) Union-group by. jumlah rows = 7726 */
select
            cast(null as int) as customer_id,
            cast(null as int) as book_id,
            sum(total) as jumlah_penjualan,
            avg(total) as rata_rata_penjualan,
            min(total) as min_penjualan,
            max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id = 4

union
select
            cast(null as int) as customer_id,
            cast(null as int) as book_id,
            sum(total) as jumlah_penjualan,
            avg(total) as rata_rata_penjualan,
            min(total) as min_penjualan,
            max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id = 4
group by customer_id

union
select
            null::int,
            book_id::int,
            sum(total),
            avg(total),
            min(total),
            max(total)
from dwh_gravity.fact_order
where status_id = 4
group by book_id
union
select
            customer_id::int,
            book_id::int,
            sum(total),
            avg(total),
            min(total),
            max(total)
from dwh_gravity.fact_order
where status_id = 4
group by customer_id, book_id
```

# Nomor 4(a) 5 poin Penjelasan Data

1. Dari Pivot Table tersebut dapat dilihat bahwa jumlah penjualan, rata-rata penjualan, maksimum penjualan, dan minimum penjualan dari seluruh buku dan seluruh customer masing-masing sebesar 79596 dollar, 23 dollar, 44 dollar, 6 dollar.
2. Dari Pivot Table tersebut dapat dilihat bahwa jumlah pembelian buku dari customer dengan **customer_id**=1 dari semua buku yang dibelinya sebesar 101 dollar.
3. Dari Pivot Table tersebut dapat dilihat bahwa rata-rata penjualan buku dengan **book_id=2** dari seluruh customer sebesar 19 dollar
4. Dari Pivot Table tersebut dapat dilihat bahwa maksimum pembelian buku dari customer dengan **customer_id=1** dari semua buku yang dibelinya sebesar 34 dollar.
5. Dari Pivot Table tersebut dapat dilihat bahwa minimum penjualan buku dengan book_id=2 dan customer_id=1295 sebesar 19 dollar.

# Nomor 4(b)

- Berisi *screenshot* :

  1.script query

  2.contoh data beserta tampilan yang menunjukkan jumlah rows dan waktu (date & time) running query.

  3.perhatikan status order nya.

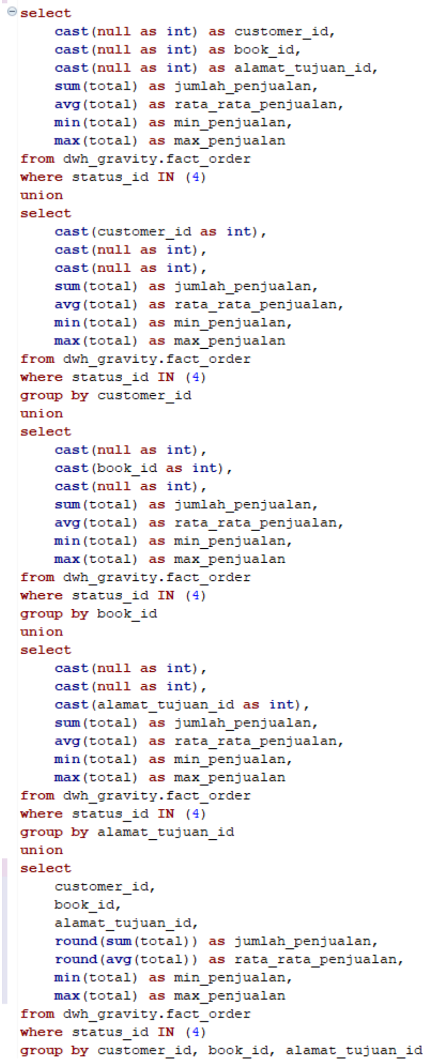
- Berisi **Penjelasan Data** (contoh ada di slide berikutnya)

Catatan:

- Jika penjelasan data kurang dari 5 poin, maka nilai akan dikurangi.
- Penjelasan data akan dicek oleh Asdos, dan akan diberikan poin nilai jika datanya sesuai, jika tidak sesuai, maka poin nilai akan dikurangi.
- Pastikan jumlah rows hasil running query = 8.545 rows.
- Untuk mencari **nama_negara**, bisa dilihat secara **manual** di tabel dim_address dengan melakukan filter by **address_id.**
- Untuk mencari **judul_buku,** bisa dilihat secara **manual** di tabel dim_book dengan melakukan filter by **book_id.**
- Untuk mencari **nama_customer,** bisa dilihat secara **manual** di tabel dim_customer dengan melakukan filter by **customer_id.**

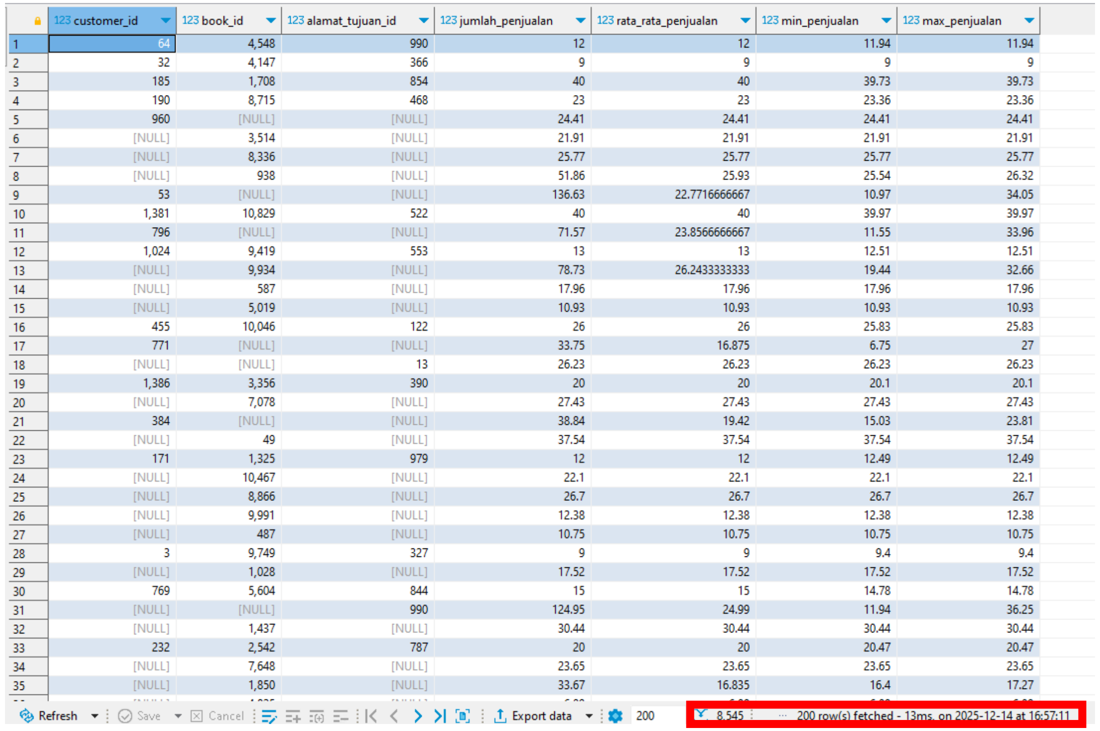
# Nomor 4(b) *screenshot*

Script Query



```
select
    cast(null as int) as customer_id,
    cast(null as int) as book_id,
    cast(null as int) as alamat_tujuan_id,
    sum(total) as jumlah_penjualan,
    avg(total) as rata_rata_penjualan,
    min(total) as min_penjualan,
    max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
union
select
    cast(customer_id as int),
    cast(null as int),
    cast(null as int),
    sum(total) as jumlah_penjualan,
    avg(total) as rata_rata_penjualan,
    min(total) as min_penjualan,
    max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by customer_id
union
select
    cast(null as int),
    cast(book_id as int),
    cast(null as int),
    sum(total) as jumlah_penjualan,
    avg(total) as rata_rata_penjualan,
    min(total) as min_penjualan,
    max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by book_id
union
select
    cast(null as int),
    cast(null as int),
    cast(alamat_tujuan_id as int),
    sum(total) as jumlah_penjualan,
    avg(total) as rata_rata_penjualan,
    min(total) as min_penjualan,
    max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by alamat_tujuan_id
union
select
    customer_id,
    book_id,
    alamat_tujuan_id,
    round(sum(total)) as jumlah_penjualan,
    round(avg(total)) as rata_rata_penjualan,
    min(total) as min_penjualan,
    max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by customer_id, book_id, alamat_tujuan_id
```

Contoh data



| | 123 customer_id | 123 book_id | 123 alamat_tujuan_id | 123 jumlah_penjualan | 123 rata_rata_penjualan | 123 min_penjualan | 123 max_penjualan |
|---|---|---|---|---|---|---|---|
| 1 | 64 | 4,548 | 990 | 12 | 12 | 11.94 | 11.94 |
| 2 | 32 | 4,147 | 366 | 9 | 9 | 9 | 9 |
| 3 | 185 | 1,708 | 854 | 40 | 40 | 39.73 | 39.73 |
| 4 | 190 | 8,715 | 468 | 23 | 23 | 23.36 | 23.36 |
| 5 | 960 | [NULL] | [NULL] | 24.41 | 24.41 | 24.41 | 24.41 |
| 6 | [NULL] | 3,514 | [NULL] | 21.91 | 21.91 | 21.91 | 21.91 |
| 7 | [NULL] | 8,336 | [NULL] | 25.77 | 25.77 | 25.77 | 25.77 |
| 8 | [NULL] | 938 | [NULL] | 51.86 | 25.93 | 25.54 | 26.32 |
| 9 | 53 | [NULL] | [NULL] | 136.63 | 22.7716666667 | 10.97 | 34.05 |
| 10 | 1,381 | 10,829 | 522 | 40 | 40 | 39.97 | 39.97 |
| 11 | 796 | [NULL] | [NULL] | 71.57 | 23.8566666667 | 11.55 | 33.96 |
| 12 | 1,024 | 9,419 | 553 | 13 | 13 | 12.51 | 12.51 |
| 13 | [NULL] | 9,934 | [NULL] | 78.73 | 26.2433333333 | 19.44 | 32.66 |
| 14 | [NULL] | 587 | [NULL] | 17.96 | 17.96 | 17.96 | 17.96 |
| 15 | [NULL] | 5,019 | [NULL] | 10.93 | 10.93 | 10.93 | 10.93 |
| 16 | 455 | 10,046 | 122 | 26 | 26 | 25.83 | 25.83 |
| 17 | 771 | [NULL] | [NULL] | 33.75 | 16.875 | 6.75 | 27 |
| 18 | [NULL] | [NULL] | 13 | 26.23 | 26.23 | 26.23 | 26.23 |
| 19 | 1,386 | 3,356 | 390 | 20 | 20 | 20.1 | 20.1 |
| 20 | [NULL] | 7,078 | [NULL] | 27.43 | 27.43 | 27.43 | 27.43 |
| 21 | 384 | [NULL] | [NULL] | 38.84 | 19.42 | 15.03 | 23.81 |
| 22 | [NULL] | 49 | [NULL] | 37.54 | 37.54 | 37.54 | 37.54 |
| 23 | 171 | 1,325 | 979 | 12 | 12 | 12.49 | 12.49 |
| 24 | [NULL] | 10,467 | [NULL] | 22.1 | 22.1 | 22.1 | 22.1 |
| 25 | [NULL] | 8,866 | [NULL] | 26.7 | 26.7 | 26.7 | 26.7 |
| 26 | [NULL] | 9,991 | [NULL] | 12.38 | 12.38 | 12.38 | 12.38 |
| 27 | [NULL] | 487 | [NULL] | 10.75 | 10.75 | 10.75 | 10.75 |
| 28 | 3 | 9,749 | 327 | 9 | 9 | 9.4 | 9.4 |
| 29 | [NULL] | 1,028 | [NULL] | 17.52 | 17.52 | 17.52 | 17.52 |
| 30 | 769 | 5,604 | 844 | 15 | 15 | 14.78 | 14.78 |
| 31 | [NULL] | [NULL] | 990 | 124.95 | 24.99 | 11.94 | 36.25 |
| 32 | [NULL] | 1,437 | [NULL] | 30.44 | 30.44 | 30.44 | 30.44 |
| 33 | 232 | 2,542 | 787 | 20 | 20 | 20.47 | 20.47 |
| 34 | [NULL] | 7,648 | [NULL] | 23.65 | 23.65 | 23.65 | 23.65 |
| 35 | [NULL] | 1,850 | [NULL] | 33.67 | 16.835 | 16.4 | 17.27 |

8.545 … 200 row(s) fetched - 13ms, on 2025-12-14 at 16:57:11

menampilkan jumlah **rows** dan **waktu (date & time)** running query.

# Nomor 4(b) *Script Query*

```sql
/* nomor 6(b) union-group by jumlah rows = 8545 */
select
        cast(null as int) as customer_id,
        cast(null as int) as book_id,
        cast(null as int) as alamat_tujuan_id,
        sum(total) as jumlah_penjualan,
        avg(total) as rata_rata_penjualan,
        min(total) as min_penjualan,
        max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
union
select
        cast(customer_id as int),
        cast(null as int),
        cast(null as int),
        sum(total) as jumlah_penjualan,
        avg(total) as rata_rata_penjualan,
        min(total) as min_penjualan,
        max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by customer_id
union
select
        cast(null as int),
        cast(book_id as int),
        cast(null as int),
        sum(total) as jumlah_penjualan,
        avg(total) as rata_rata_penjualan,
        min(total) as min_penjualan,
        max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by book_id
union
select
        cast(null as int),
        cast(null as int),
        cast(alamat_tujuan_id as int),
        sum(total) as jumlah_penjualan,
        avg(total) as rata_rata_penjualan,
        min(total) as min_penjualan,
        max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by alamat_tujuan_id
union
select
        customer_id,
        book_id,
        alamat_tujuan_id,
        round(sum(total)) as jumlah_penjualan,
        round(avg(total)) as rata_rata_penjualan,
        min(total) as min_penjualan,
        max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by customer_id, book_id, alamat_tujuan_id
```

# Nomor 4(b) 5 poin Penjelasan Data

1. Dari Pivot Table tersebut dapat dilihat bahwa customer yang berada pada TOP 3 dengan jumlah pembelian buku tertinggi adalah sebagai berikut:
   a. customer_id= 79 dengan jumlah pembelian sebesar 450 dollar;
   b. customer_id= 65 dengan jumlah pembelian sebesar 436 dollar;
   c. customer_id= 27 dengan jumlah pembelian sebesar 383 dollar.

2. Dari Pivot Table tersebut dapat dilihat bahwa buku yang berada pada TOP 3 dengan jumlah penjualan yang tertinggi adalah sebagai berikut:
   a. book_id= 9162 dengan jumlah penjualan sebesar 111 dollar;
   b. book_id= 2027 dengan jumlah penjualan sebesar 108 dollar;
   c. book_id= 4181 dengan jumlah penjualan sebesar 104 dollar.

3. Dari Pivot Table tersebut dapat dilihat bahwa Negara yang berada pada TOP 3 yang menjadi negara tujuan pengiriman buku dengan jumlah penjualan tertinggi adalah sebagai berikut:
   a. Negara CHINA dengan jumlah penjualan sebesar 386 dollar;
   b. Negara BRAZIL dengan jumlah penjualan sebesar 349 dollar;
   c. Negara CHINA dengan jumlah penjualan sebesar 347 dollar.

4. Dari Pivot Table tersebut dapat dilihat bahwa Judul Buku yang berada pada TOP 3 yang bukunya banyak dibeli dengan jumlah penjualan tertinggi adalah sebagai berikut:
   a. Judul buku = “Hikaru no Go  Vol. 7: The Young Lions Tournament (Hikaru no Go  #7)” dengan jumlah penjualan sebesar 111 dollar;
   b. Judul buku = “Vita Nuova” dengan jumlah penjualan sebesar 108 dollar;
   c. Judul buku = “How Angel Peterson Got His Name” dengan jumlah penjualan sebesar 104 dollar.

5. Dari Pivot Table tersebut dapat dilihat bahwa Nama Customer yang berada pada TOP 3 yang paling banyak membeli buku dengan jumlah penjualan tertinggi adalah sebagai berikut:
   a. Nama customer = Lyn Abethell dengan jumlah penjualan sebesar 450 dollar;
   b. Nama customer = Noelle Duke dengan jumlah penjualan sebesar 436 dollar;
   c. Nama customer = Dacy Mabe dengan jumlah penjualan sebesar 383 dollar.

# Nomor 4(c)

- Berisi *screenshot* :

  1. script query
  2. contoh data beserta tampilan yang menunjukkan jumlah rows dan waktu (date & time) running query.
  3. perhatikan status order nya.

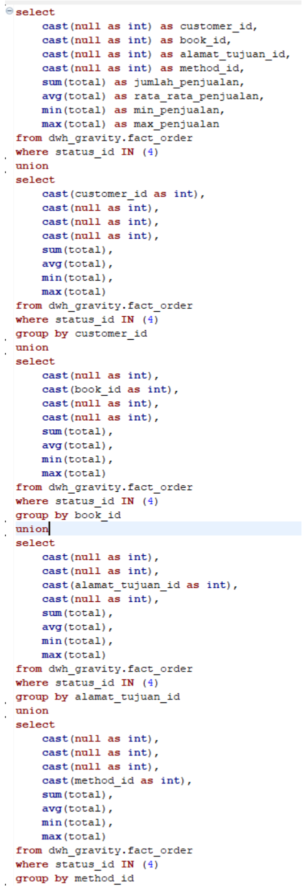
- Berisi **Penjelasan Data** (contoh ada di slide berikutnya)

Catatan:

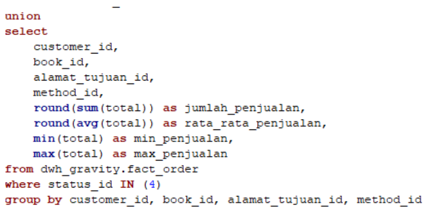
- Jika penjelasan data kurang dari **5 poin**, maka nilai akan dikurangi.
- Penjelasan data akan dicek oleh Asdos, dan akan diberikan poin nilai jika datanya sesuai, jika tidak sesuai, maka poin nilai akan dikurangi.
- Pastikan jumlah rows hasil running query = 8.549 rows.
- Untuk mencari **judul_buku,** bisa dilihat secara **manual** di tabel dim_book dengan melakukan filter by **book_id.**
- Untuk mencari **nama_customer,** bisa dilihat secara **manual** di tabel dim_customer dengan melakukan filter by **customer_id.**
- Untuk mencari **nama_negara**, bisa dilihat secara **manual** di tabel dim_address dengan melakukan filter by **address_id.**

# Nomor 4(c) *screenshot*

Script Query

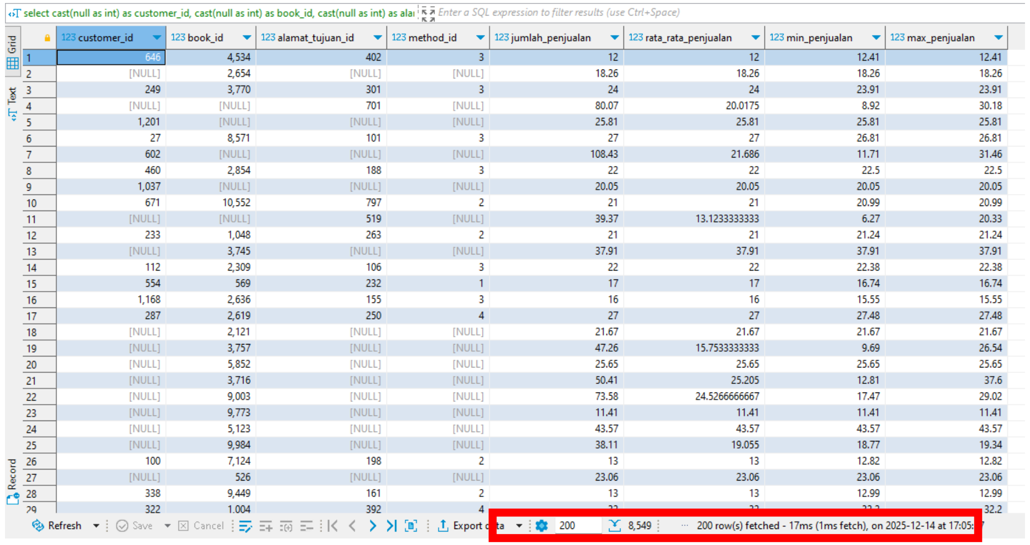


```
select
    cast(null as int) as customer_id,
    cast(null as int) as book_id,
    cast(null as int) as alamat_tujuan_id,
    cast(null as int) as method_id,
    sum(total) as jumlah_penjualan,
    avg(total) as rata_rata_penjualan,
    min(total) as min_penjualan,
    max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
union
select
    cast(customer_id as int),
    cast(null as int),
    cast(null as int),
    cast(null as int),
    sum(total),
    avg(total),
    min(total),
    max(total)
from dwh_gravity.fact_order
where status_id IN (4)
group by customer_id
union
select
    cast(null as int),
    cast(book_id as int),
    cast(null as int),
    cast(null as int),
    sum(total),
    avg(total),
    min(total),
    max(total)
from dwh_gravity.fact_order
where status_id IN (4)
group by book_id
union
select
    cast(null as int),
    cast(null as int),
    cast(alamat_tujuan_id as int),
    cast(null as int),
    sum(total),
    avg(total),
    min(total),
    max(total)
from dwh_gravity.fact_order
where status_id IN (4)
group by alamat_tujuan_id
union
select
    cast(null as int),
    cast(null as int),
    cast(null as int),
    cast(method_id as int),
    sum(total),
    avg(total),
    min(total),
    max(total)
from dwh_gravity.fact_order
where status_id IN (4)
group by method_id
```



```
union
select
    customer_id,
    book_id,
    alamat_tujuan_id,
    method_id,
    round(sum(total)) as jumlah_penjualan,
    round(avg(total)) as rata_rata_penjualan,
    min(total) as min_penjualan,
    max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by customer_id, book_id, alamat_tujuan_id, method_id
```

Contoh data



select cast(null as int) as customer_id, cast(null as int) as book_id, cast(null as int) as ala

| | customer_id | book_id | alamat_tujuan_id | method_id | jumlah_penjualan | rata_rata_penjualan | min_penjualan | max_penjualan |
|---|---|---|---|---|---|---|---|---|
| 1 | 646 | 4,534 | 402 | 3 | 12 | 12 | 12.41 | 12.41 |
| 2 | [NULL] | 2,654 | [NULL] | [NULL] | 18.26 | 18.26 | 18.26 | 18.26 |
| 3 | 249 | 3,770 | 301 | 3 | 24 | 24 | 23.91 | 23.91 |
| 4 | [NULL] | [NULL] | 701 | [NULL] | 80.07 | 20.0175 | 8.92 | 30.18 |
| 5 | 1,201 | [NULL] | [NULL] | [NULL] | 25.81 | 25.81 | 25.81 | 25.81 |
| 6 | 27 | 8,571 | 101 | 3 | 27 | 27 | 26.81 | 26.81 |
| 7 | 602 | [NULL] | [NULL] | [NULL] | 108.43 | 21.686 | 11.71 | 31.46 |
| 8 | 460 | 2,854 | 188 | 3 | 22 | 22 | 22.5 | 22.5 |
| 9 | 1,037 | [NULL] | [NULL] | [NULL] | 20.05 | 20.05 | 20.05 | 20.05 |
| 10 | 671 | 10,552 | 797 | 2 | 21 | 21 | 20.99 | 20.99 |
| 11 | [NULL] | [NULL] | 519 | [NULL] | 39.37 | 13.1233333333 | 6.27 | 20.33 |
| 12 | 233 | 1,048 | 263 | 2 | 21 | 21 | 21.24 | 21.24 |
| 13 | [NULL] | 3,745 | [NULL] | [NULL] | 37.91 | 37.91 | 37.91 | 37.91 |
| 14 | 112 | 2,309 | 106 | 3 | 22 | 22 | 22.38 | 22.38 |
| 15 | 554 | 569 | 232 | 1 | 17 | 17 | 16.74 | 16.74 |
| 16 | 1,168 | 2,636 | 155 | 3 | 16 | 16 | 15.55 | 15.55 |
| 17 | 287 | 2,619 | 250 | 4 | 27 | 27 | 27.48 | 27.48 |
| 18 | [NULL] | 2,121 | [NULL] | [NULL] | 21.67 | 21.67 | 21.67 | 21.67 |
| 19 | [NULL] | 3,757 | [NULL] | [NULL] | 47.26 | 15.7533333333 | 9.69 | 26.54 |
| 20 | [NULL] | 5,852 | [NULL] | [NULL] | 25.65 | 25.65 | 25.65 | 25.65 |
| 21 | [NULL] | 3,716 | [NULL] | [NULL] | 50.41 | 25.205 | 12.81 | 37.6 |
| 22 | [NULL] | 9,003 | [NULL] | [NULL] | 73.58 | 24.5266666667 | 17.47 | 29.02 |
| 23 | [NULL] | 9,773 | [NULL] | [NULL] | 11.41 | 11.41 | 11.41 | 11.41 |
| 24 | [NULL] | 5,123 | [NULL] | [NULL] | 43.57 | 43.57 | 43.57 | 43.57 |
| 25 | [NULL] | 9,984 | [NULL] | [NULL] | 38.11 | 19.055 | 18.77 | 19.34 |
| 26 | 100 | 7,124 | 198 | 2 | 13 | 13 | 12.82 | 12.82 |
| 27 | [NULL] | 526 | [NULL] | [NULL] | 23.06 | 23.06 | 23.06 | 23.06 |
| 28 | 338 | 9,449 | 161 | 2 | 13 | 13 | 12.99 | 12.99 |
| 29 | 322 | 1,004 | 392 | 4 | [illegible] | [illegible] | [illegible] | 32.2 |

200 row(s) fetched - 17ms (1ms fetch), on 2025-12-14 at 17:05:

menampilkan jumlah **rows** dan **waktu (date & time)** running query.

# Nomor 4(c) *Script Query*

```
/* nomor 6(c) union-group by jumlah rows = 8549 */
select
        cast(null as int) as customer_id,
        cast(null as int) as book_id,
        cast(null as int) as alamat_tujuan_id,
        cast(null as int) as method_id,
        sum(total) as jumlah_penjualan,
        avg(total) as rata_rata_penjualan,
        min(total) as min_penjualan,
        max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
union
select
        cast(customer_id as int),
        cast(null as int),
        cast(null as int),
        cast(null as int),
        sum(total),
        avg(total),
        min(total),
        max(total)
from dwh_gravity.fact_order
where status_id IN (4)
group by customer_id
union
select
        cast(null as int),
        cast(book_id as int),
        cast(null as int),
        cast(null as int),
        sum(total),
        avg(total),
        min(total),
        max(total)
from dwh_gravity.fact_order
where status_id IN (4)
group by book_id
union
select
        cast(null as int),
    cast(null as int),
        cast(alamat_tujuan_id as int),
        cast(null as int),
        sum(total),
        avg(total),
        min(total),
        max(total)
from dwh_gravity.fact_order
where status_id IN (4)
group by alamat_tujuan_id
union
select
        cast(null as int),
        cast(null as int),
        cast(null as int),
        cast(method_id as int),
        sum(total),
        avg(total),
        min(total),
        max(total)
from dwh_gravity.fact_order
where status_id IN (4)
group by method_id
union
select
        customer_id,
        book_id,
        alamat_tujuan_id,
        method_id,
        round(sum(total)) as jumlah_penjualan,
        round(avg(total)) as rata_rata_penjualan,
        min(total) as min_penjualan,
        max(total) as max_penjualan
from dwh_gravity.fact_order
where status_id IN (4)
group by customer_id, book_id, alamat_tujuan_id, method_id
```

# Nomor 4(c)

>> isilah titik-titik berikut ini dengan data yang sesuai.

## 5 poin Penjelasan Data

1. Dari Pivot Table tersebut dapat dilihat bahwa jumlah penjualan dari masing-masing tipe / metode pengiriman adalah sebagai berikut:
   a. Jasa pengiriman yang menggunakan tipe/metode Standard menghasilkan penjualan sebesar 13759 dollar;
   b. Jasa pengiriman yang menggunakan tipe/metode Priority menghasilkan penjualan sebesar 15862 dollar;
   c. Jasa pengiriman yang menggunakan tipe/metode Express menghasilkan penjualan sebesar 20463 dollar;
   d. Jasa pengiriman yang menggunakan tipe/metode International menghasilkan penjualan sebesar 29512 dollar.

2. Dari Pivot Table tersebut dapat dilihat bahwa salah satu contoh data yang menggunakan jasa pengiriman dengan tipe/metode Standard dengan jumlah penjualan sebesar 26 dollar, adalah sebagai berikut:
   a. Judul buku= “Political Philosophy: A Beginners' Guide for Students and Politicians”
   b. Nama customer= Rustin Cadden
   c. Negara tujuan pengiriman= PHILIPPINES

3. Dari Pivot Table tersebut dapat dilihat bahwa salah satu contoh data yang menggunakan jasa pengiriman dengan tipe/metode Priority dengan jumlah penjualan sebesar 29 dollar, adalah sebagai berikut:
   a. Judul buku= “Tucket's Travels: Francis Tucket's Adventures In The West 1847-1849 (The Tucket Adventures #1-5)”
   b. Nama customer= Arden Giabucci
   c. Negara tujuan pengiriman= PERU

4. Dari Pivot Table tersebut dapat dilihat bahwa salah satu contoh data yang menggunakan jasa pengiriman dengan tipe/metode Express dengan jumlah penjualan sebesar 32 dollar, adalah sebagai berikut:
   a. Judul buku= “What Came Before He Shot Her (Inspector Lynley #14)”
   b. Nama customer= Ansell Johnson
   c. Negara tujuan pengiriman= INDONESIA

5. Dari Pivot Table tersebut dapat dilihat bahwa salah satu contoh data yang menggunakan jasa pengiriman dengan tipe/metode International dengan jumlah penjualan sebesar 44 dollar, adalah sebagai berikut:
   a. Judul buku= “Charlotte's Web”
   b. Nama customer= Randal Grise
   c. Negara tujuan pengiriman= CHINA

# 5

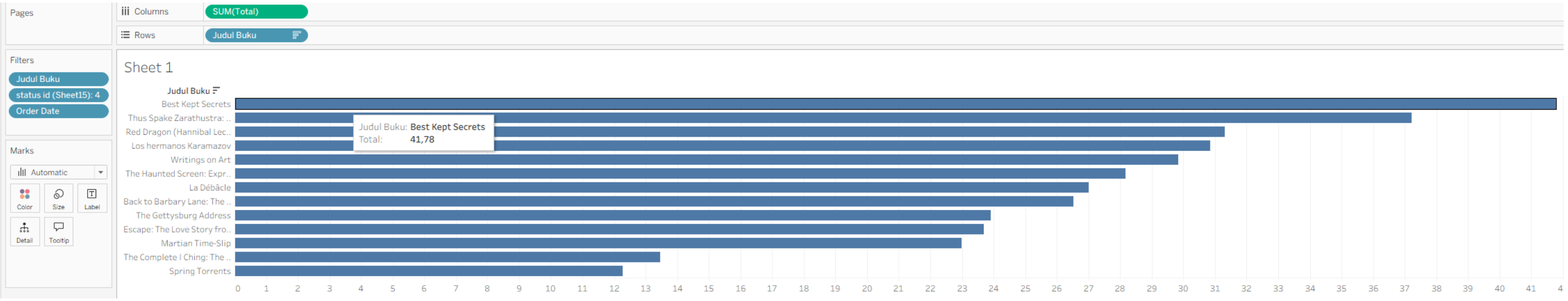
# Nomor 5

- Berisi *screenshot* yang terlihat dengan jelas:
  1. visualisasi data
  2. filter data sesuai dengan yang dimaksud dalam soal
  3. perhatikan status order nya.
  4. Tahun yang dimaksud adalah order date.
- Berisi **Penjelasan Data** (contoh ada di slide berikutnya)

Catatan:

- Jika penjelasan visualisasi data kurang dari **2 poin**, maka nilai akan dikurangi.
- Penjelasan data akan dicek oleh Asdos, dan akan diberikan poin nilai jika datanya sesuai, jika tidak sesuai, maka poin nilai akan dikurangi.

# Nomor 5(a) *screenshot*



Columns: SUM(Total)

Rows: Judul Buku

Filters: Judul Buku, status id (Sheet15): 4, Order Date

Marks: Automatic

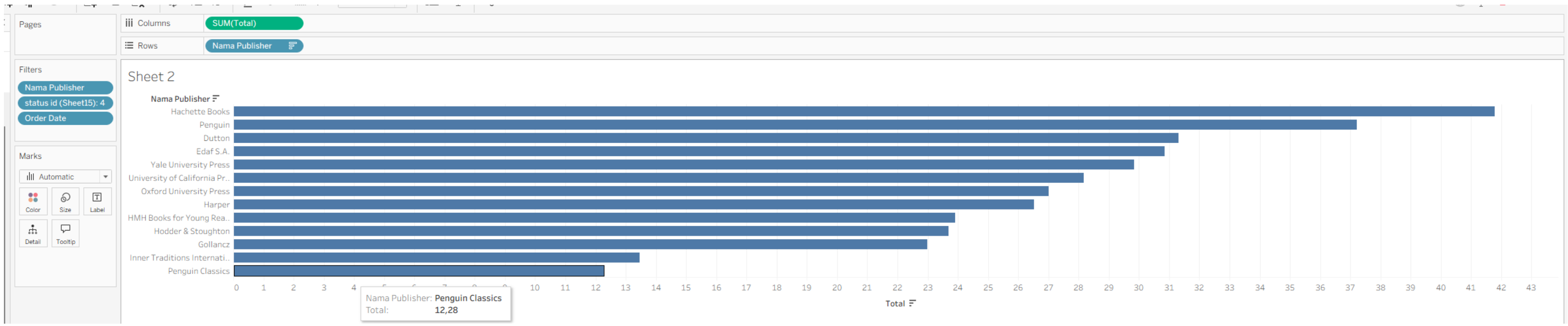
Sheet 1

Judul Buku: Best Kept Secrets
Total: 41,78

# Nomor 5(a) 2 poin Penjelasan Data

1. Dari Visualisasi Data tersebut dapat dilihat bahwa **judul buku** yang dipesan di tahun 2020 dengan **jumlah penjualan tertinggi** sebesar 41.78 dollar adalah “Best Kept Secrets”.
2. Dari Visualisasi Data tersebut dapat dilihat bahwa **judul buku** yang dipesan di tahun 2020 dengan **jumlah penjualan terendah** sebesar 12.28 dollar adalah “Spring Torrents”.

# Nomor 5(b) *screenshot*



Columns: SUM(Total)

Rows: Nama Publisher

Filters: Nama Publisher, status id (Sheet15): 4, Order Date

Marks: Automatic

Nama Publisher: Penguin Classics
Total: 12,28

# Nomor 5(b) 2 poin Penjelasan Data

1. Dari Visualisasi Data tersebut dapat dilihat bahwa Nama Publisher dimana buku yang diterbitkan di tahun 2020 dengan jumlah penjualan terendah sebesar 12.28 dollar adalah “Penguin Classics”.
2. Dari Visualisasi Data tersebut dapat dilihat bahwa Nama Publisher dimana buku yang diterbitkan di tahun 2020 dengan jumlah penjualan tertinggi sebesar 41.78 dollar adalah “Hachette Books”.

end of file.