DATA WAREHOUSE

UTS

STUDI KASUS: TOKO BAROKAH

Disusun Oleh:

AQILA NUR AZZA (2341760022)

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KELAS 2A-SIB

PROGRAM STUDI D-IV SISTEM INFORMASI BISNIS

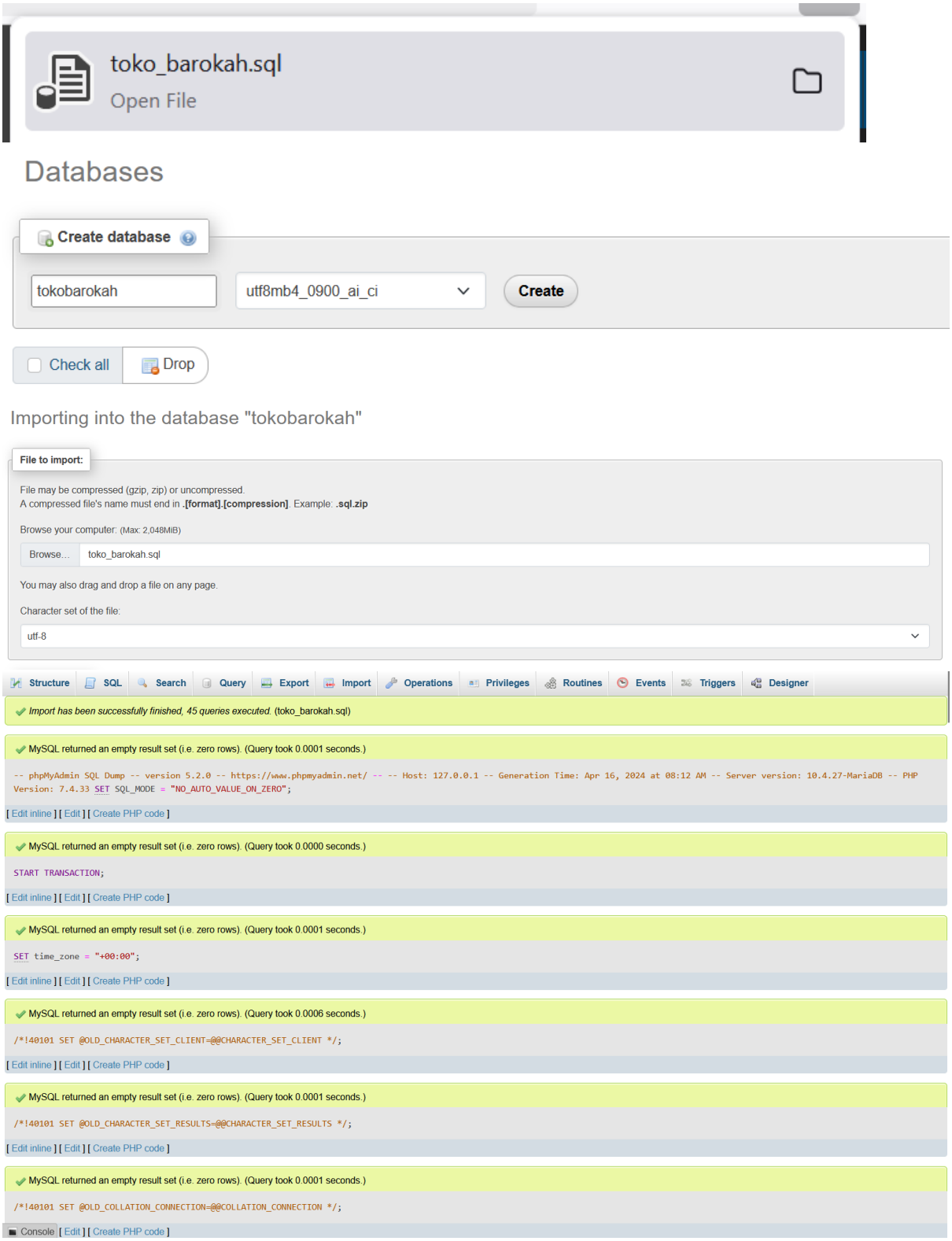
JURUSAN TEKNOLOGI INFORMASI

POLITEKNIK NEGERI MALANG

Jl. Soekarno Hatta No. 9, Jattimulyo, Kec. Lowokwaru, Kota Malang, Jawa Timur

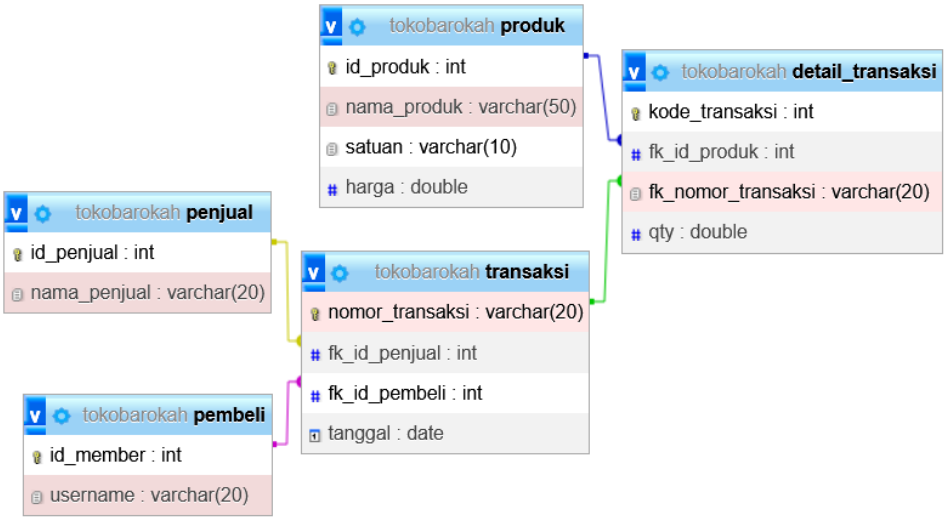
65141

1. **Unduh file sql berikut bernama toko_barokah.sql yang berisi beberapa contoh baris data penjualan di sebuah toko barokah:** https://bit.ly/dbbi



Dan import juga untuk update tanggal transaksi

2. Analisis struktur database kemudian gambarkan desain database toko barokah.



- Analisis Desain Database Toko Barokah

Berikut ini tabel-tabel yang terdapat dalam database toko_barokah:

Tabel	Keterangan
produk	Data barang/produk
penjual	Data penjual (yang melayani transaksi)
pembeli	Data pembeli (customer)
transaksi	Header transaksi (waktu transaksi, siapa penjual dan pembeli)
detail_transaksi	Detail barang/produk yang dibeli

3. **Tentukan KPI yang akan dianalisis berdasarkan database toko barokah**

   - Studi Kasus :

   a. Mencari TOP 5 produk yang paling banyak dibeli
   b. Total omset penjual perbulan
   c. Total penjualan per produk
   d. Total paling sering beli
   e. Jumlah transaksai per pembeli

4. **Berdasarkan KPI yang ditentukan, gambarkan skema datawarehouse dengan ketentuan:**

   a. Terdiri dari minimal 2 tabel dimensi

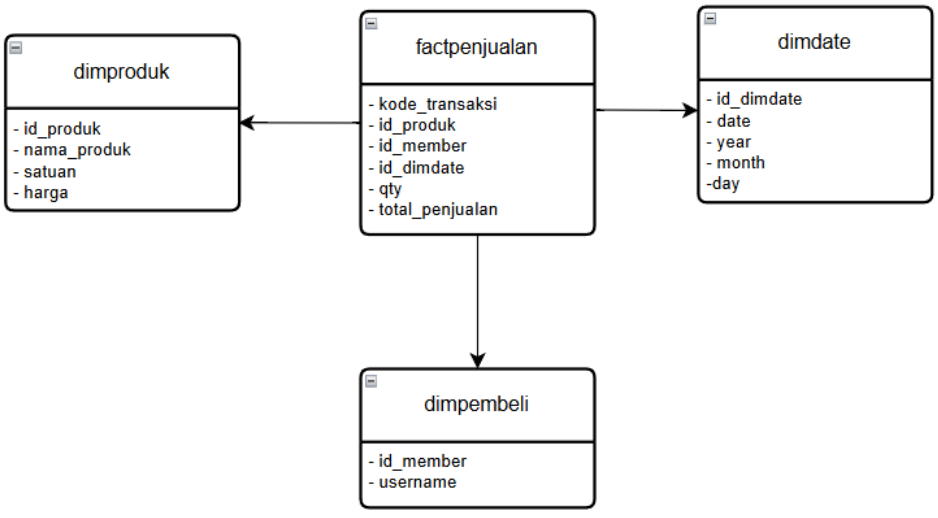
   - Tabel Dimensi

     1. dimproduk
     2. dimpembeli
     3. dimdate

   b. Terdiri dari 1 tabel fakta

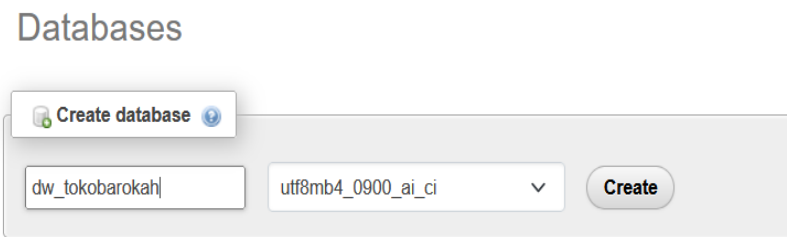
   - Tabel Fakta: factpenjualan

     Mencatat kuantitas dan total pembelian setiap item produk dalam transaksi.



5. **Buatlah database OLAP menggunakan MySQL dan PENTAHO untuk membantu menganalisis KPI took barokah.**

   a. **Menggunakan MySQL**



- dimproduk

```
-- Tabel dimproduk
CREATE TABLE dimproduk (
    id_produk INT PRIMARY KEY,
    nama_produk VARCHAR(100),
    satuan VARCHAR(50),
    harga DECIMAL(15,2)
);
```

- dimpembeli

```
-- Tabel dimpembeli
CREATE TABLE dimpembeli (
    id_pembeli INT PRIMARY KEY,
    username VARCHAR(100)
);
```

- dimdate

```
CREATE TABLE dimDate (
  id_dimDate INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
  date DATE,
  year INT,
  month INT,
  day INT
);
```

- factpenjualan

```sql
-- Tabel factpenjualan
CREATE TABLE factpenjualan (
    kode_transaksi INT PRIMARY KEY,
    id_produk INT,
    id_member INT,
    id_dimDate INT,
    qty INT,
    total_penjualan DECIMAL(15,2),
    FOREIGN KEY (id_produk) REFERENCES dimproduk(id_produk),
    FOREIGN KEY (id_member) REFERENCES dimpembeli(id_pembeli),
    FOREIGN KEY (id_dimDate) REFERENCES dimdate(id_dimDate)
);
```

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0301 seconds.)

```sql
-- Tabel dimproduk CREATE TABLE dimproduk ( id_produk INT PRIMARY KEY, nama_produk VARCHAR(100), satuan VARCHAR(50), harga DECIMAL(15,2) );
```

[Edit inline] [Edit] [Create PHP code]

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0065 seconds.)

```sql
-- Tabel dimpembeli CREATE TABLE dimpembeli ( id_pembeli INT PRIMARY KEY, username VARCHAR(100) );
```

[Edit inline] [Edit] [Create PHP code]

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0155 seconds.)

```sql
CREATE TABLE dimDate ( id_dimDate INT NOT NULL AUTO_INCREMENT PRIMARY KEY, date DATE, year INT, month INT, day INT );
```

[Edit inline] [Edit] [Create PHP code]

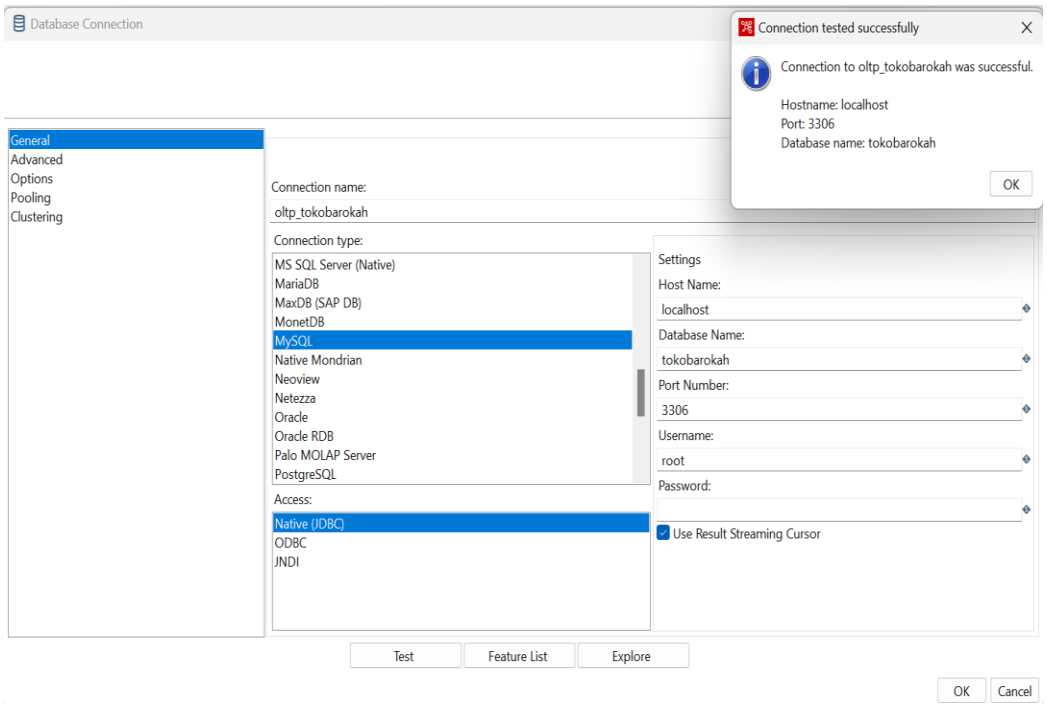
MySQL returned an empty result set (i.e. zero rows). (Query took 0.0174 seconds.)

```sql
-- Tabel factpenjualan CREATE TABLE factpenjualan ( kode_transaksi INT PRIMARY KEY, id_produk INT, id_member INT, id_dimDate INT, qty INT, total_penjualan DECIMAL(15,2), FOREIGN KEY (id_produk) REFERENCES dimproduk(id_produk), FOREIGN KEY (id_member) REFERENCES dimpembeli(id_member), FOREIGN KEY (id_dimDate) REFERENCES dimdate(id_dimDate) );
```

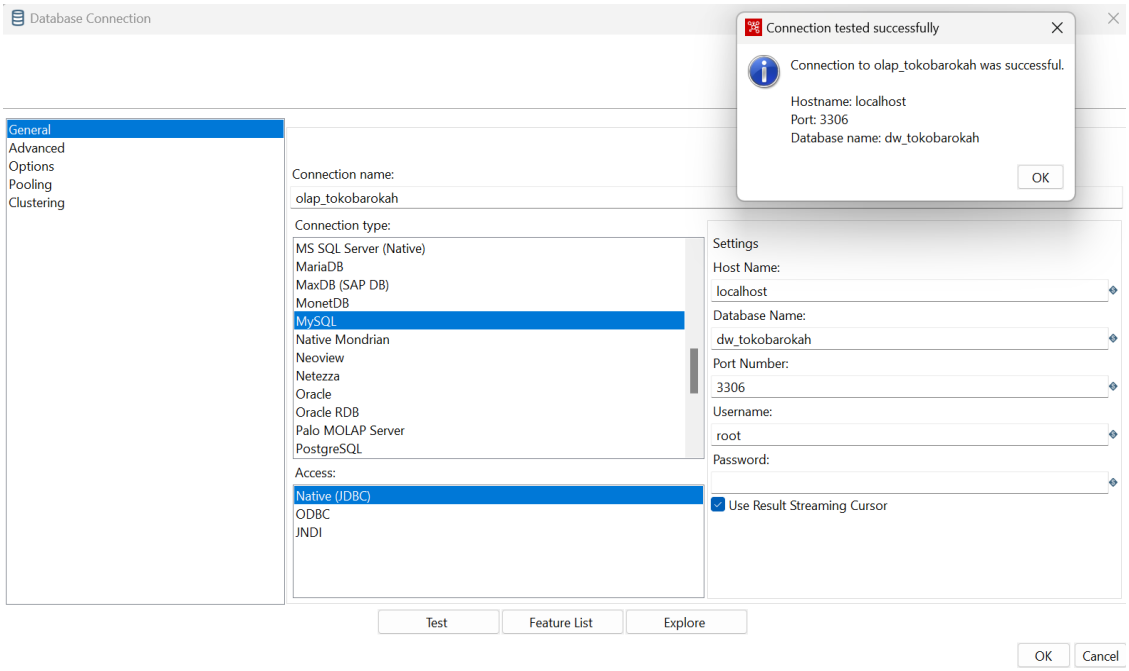
[Edit inline] [Edit] [Create PHP code]

b. Menggunakan PENTAHO

- connection oltp



- connection olap



- dimproduk

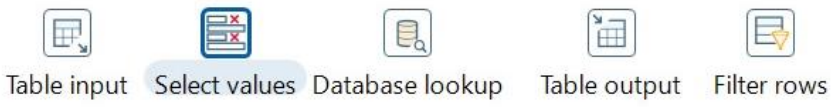
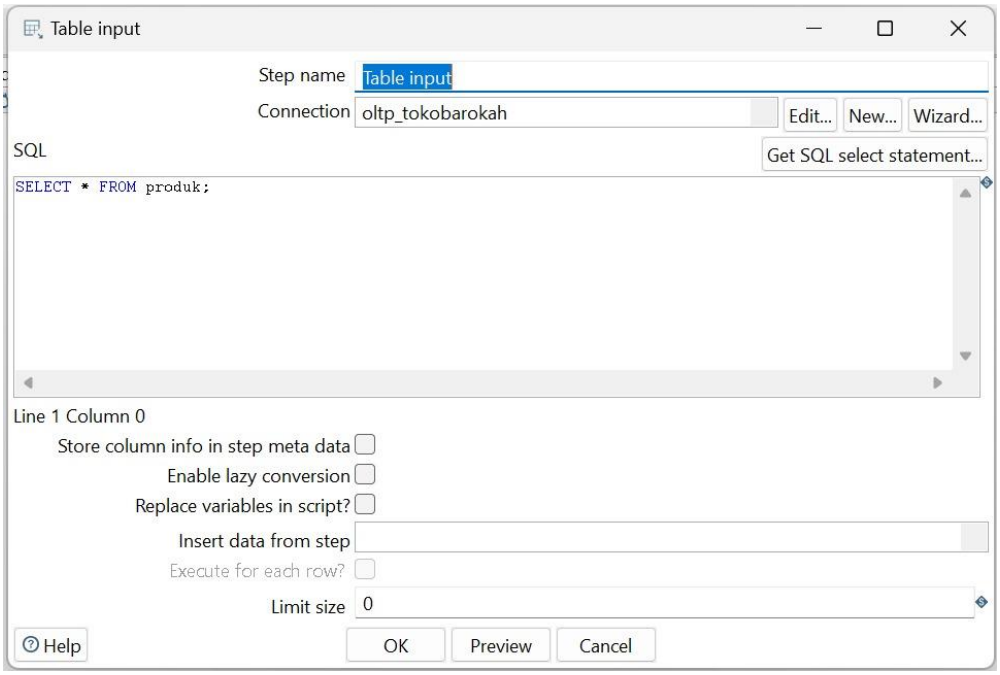
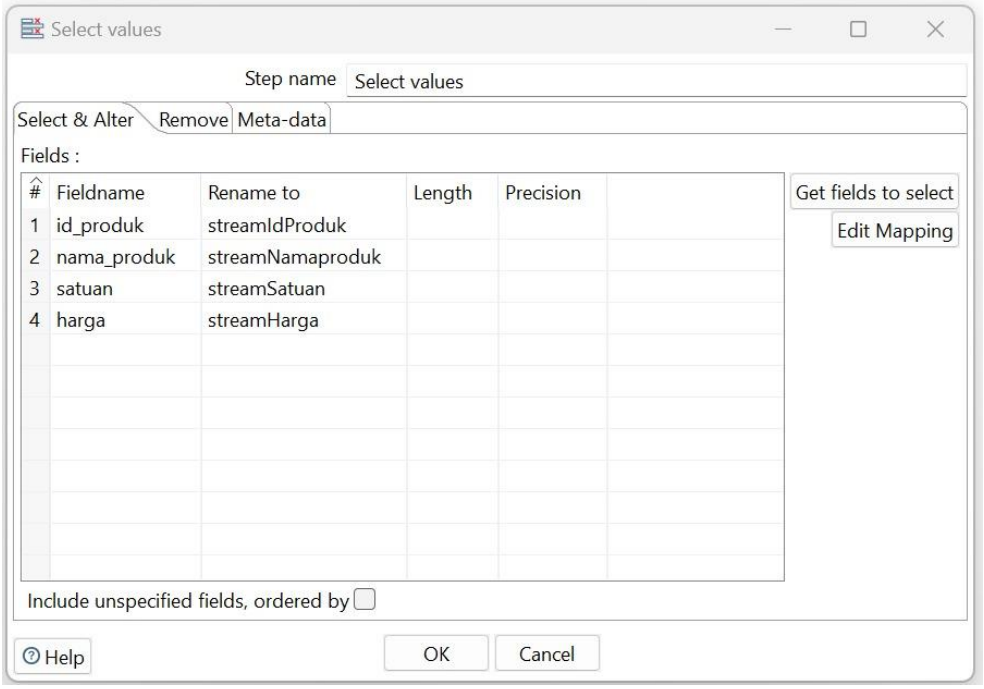


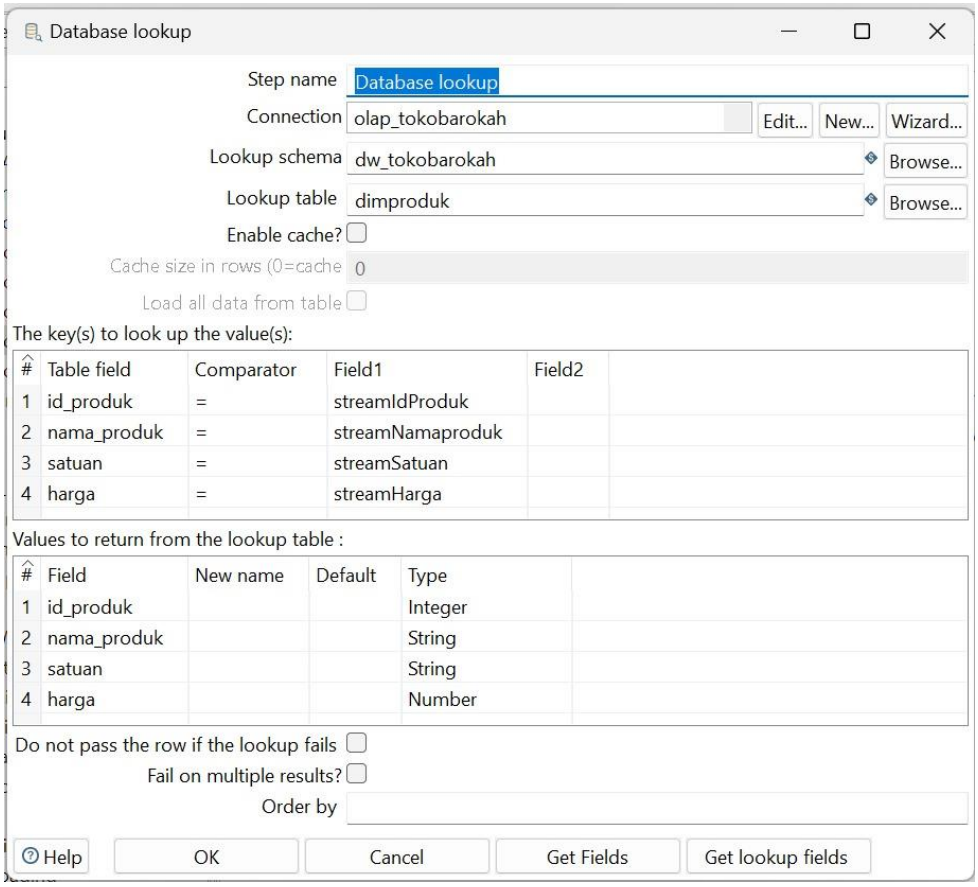
Table input:



Select values:



Database lookup:



Filter rows:

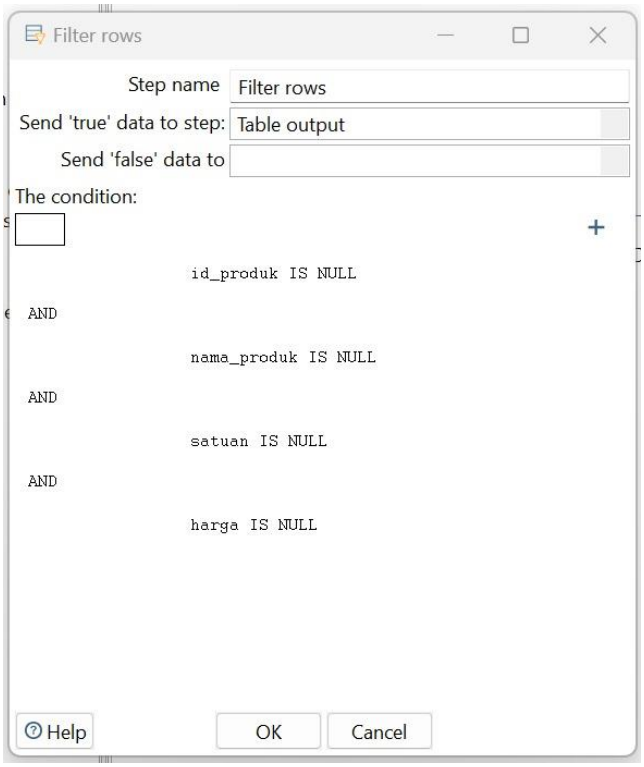
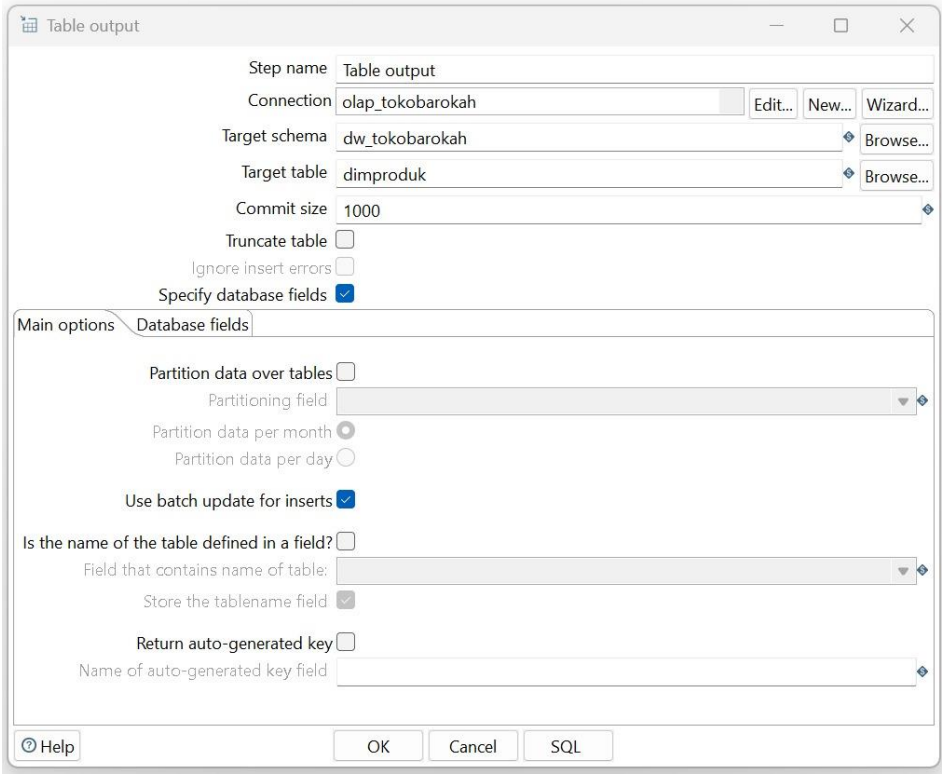


Table output:



Output:

Execution Results

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

```
2025/04/23 14:00:46 - Spoon - Transformation opened.
2025/04/23 14:00:46 - Spoon - Launching transformation [dimproduk]...
2025/04/23 14:00:46 - Spoon - Started the transformation execution.
2025/04/23 14:00:46 - dimproduk - Dispatching started for transformation [dimproduk]
2025/04/23 14:00:46 - Table output.0 - Connected to database [olap_tokobarokah] (commit=1000)
2025/04/23 14:00:46 - Table input.0 - Finished reading query, closing connection
2025/04/23 14:00:46 - Table input.0 - Finished processing (I=681, O=0, R=0, W=681, U=0, E=0)
2025/04/23 14:00:46 - Select values.0 - Finished processing (I=0, O=0, R=681, W=681, U=0, E=0)
2025/04/23 14:00:46 - Database lookup.0 - Finished processing (I=0, O=0, R=681, W=681, U=0, E=0)
2025/04/23 14:00:46 - Filter rows.0 - Finished processing (I=0, O=0, R=681, W=681, U=0, E=0)
2025/04/23 14:00:46 - Table output.0 - Finished processing (I=0, O=681, R=681, W=681, U=0, E=0)
2025/04/23 14:00:46 - Spoon - The transformation has finished!!
```

Execution Results

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

First rows | Last rows | Off

#	streamIdProduk	streamNamaproduk	streamSatuan	streamHarga	id_produk	nama_produk	satuan	harga
1	1	NUTRIJELL PLAIN 15 GR	BOX	2667.0	<null>	<null>	<null>	<null>
2	2	ABC KC HIJAU 200ML KHKS	DOS	2080.0	<null>	<null>	<null>	<null>
3	3	INDOCAFE COFFEMIX 30 X 20G	DOS	23773.0	<null>	<null>	<null>	<null>
4	4	ALKALINE LR-03 (ISI 2)	LSN	7936.0	<null>	<null>	<null>	<null>
5	5	POCARI SWEAT PET 500	DOS	5577.0	<null>	<null>	<null>	<null>
6	6	ROMA SARI GANDUM ROLL 149	DOS	3951.0	<null>	<null>	<null>	<null>
7	7	TARO NET POTATO 16	DOS	950.0	<null>	<null>	<null>	<null>
8	8	COCA-COLA 1,5 LT	PCS	11125.0	<null>	<null>	<null>	<null>
9	9	PASEO BATROM 6 ROLL	PCS	22263.0	<null>	<null>	<null>	<null>
1.	10	PIATOS SAPI PGG 85	PCS	1087.0	<null>	<null>	<null>	<null>
1.	11	FRUIT TEA KLG BLACK	PCS	2916.0	<null>	<null>	<null>	<null>

	id_produk	nama_produk	satuan	harga
Edit Copy Delete	1	NUTRIJELL PLAIN 15 GR	BOX	2667.00
Edit Copy Delete	2	ABC KC HIJAU 200ML KHKS	DOS	2080.00
Edit Copy Delete	3	INDOCAFE COFFEMIX 30 X 20G	DOS	23773.00
Edit Copy Delete	4	ALKALINE LR-03 (ISI 2)	LSN	7936.00
Edit Copy Delete	5	POCARI SWEAT PET 500	DOS	5577.00
Edit Copy Delete	6	ROMA SARI GANDUM ROLL 149	DOS	3951.00
Edit Copy Delete	7	TARO NET POTATO 16	DOS	950.00
Edit Copy Delete	8	COCA-COLA 1,5 LT	PCS	11125.00
Edit Copy Delete	9	PASEO BATROM 6 ROLL	PCS	22263.00
Edit Copy Delete	10	PIATOS SAPI PGG 85	PCS	1087.00
Edit Copy Delete	11	FRUIT TEA KLG BLACK	PCS	2916.00
Edit Copy Delete	12	PANTENE AD 6X10 ML	STR	2970.00
Edit Copy Delete	13	PANTENE HAIRFALL 70	PCS	9157.00
Edit Copy Delete	14	NS SUPERO CRACKER 90	DOS	1875.00
Edit Copy Delete	15	KEPALA JENGGOT TEH 40G	PCS	1375.00
Edit Copy Delete	16	SIDO MULIA KOPI KNG 250	KG	11875.00
Edit Copy Delete	17	HELLO PANDA ALL VARIANT 12 G	BOX	1310.00
Edit Copy Delete	18	ABC TERASI UDANG 20 X 4,2	PCS	3347.00
Edit Copy Delete	19	H&S CLEAN&BALANCE 180ML	PCS	17975.00
Edit Copy Delete	20	PANTENE BLACK 170 ML	PCS	19812.00

- dimpembeli

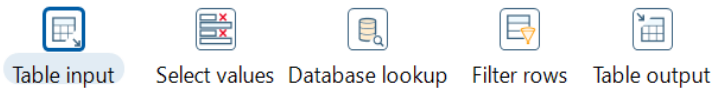
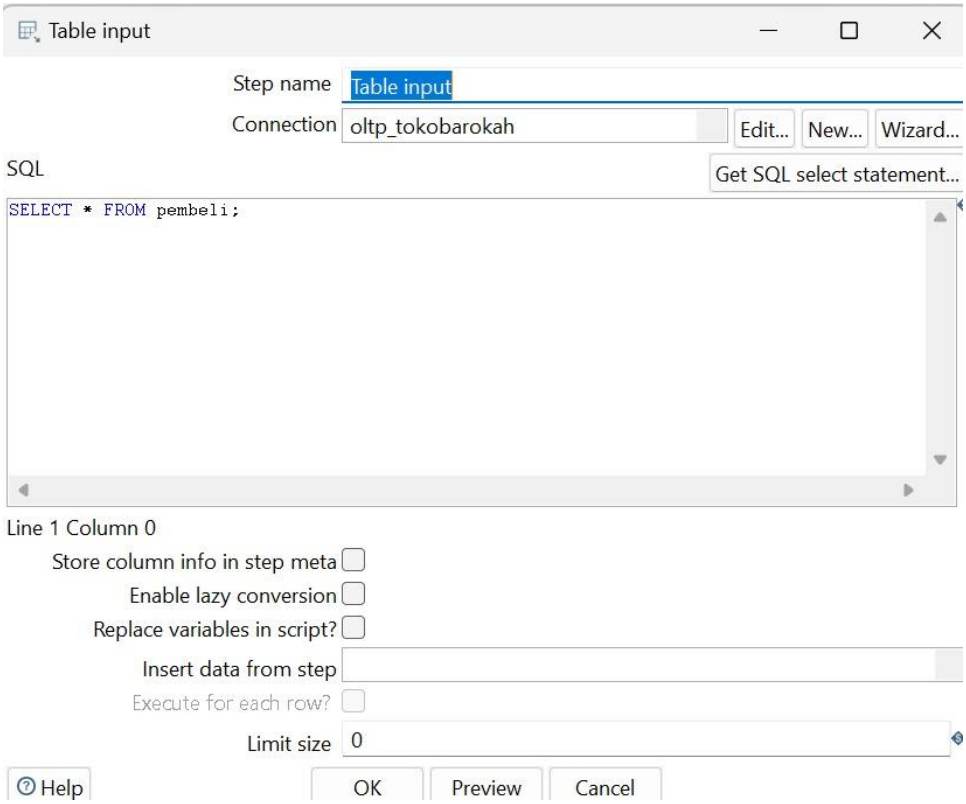
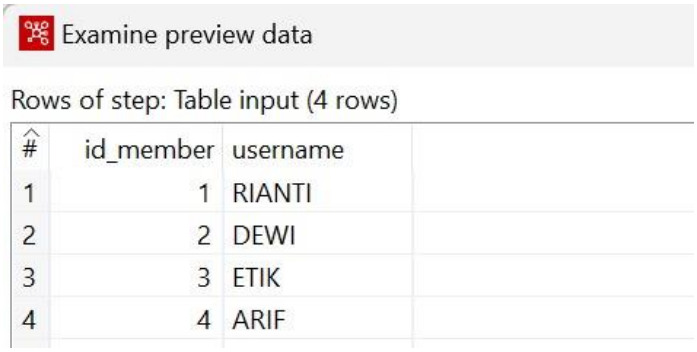


Table input:

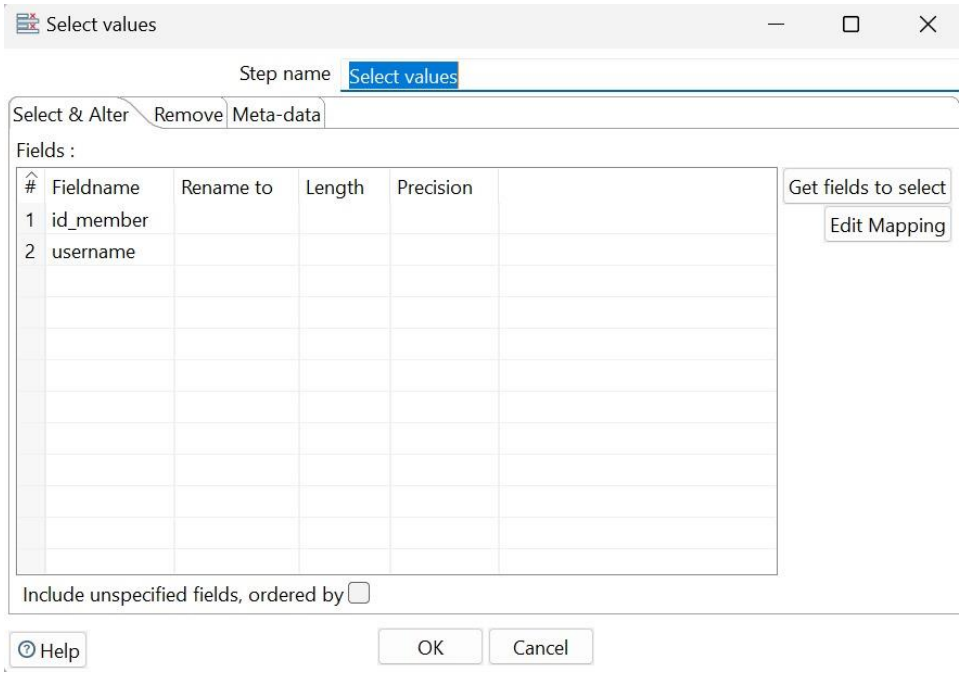


Cek data masuk:

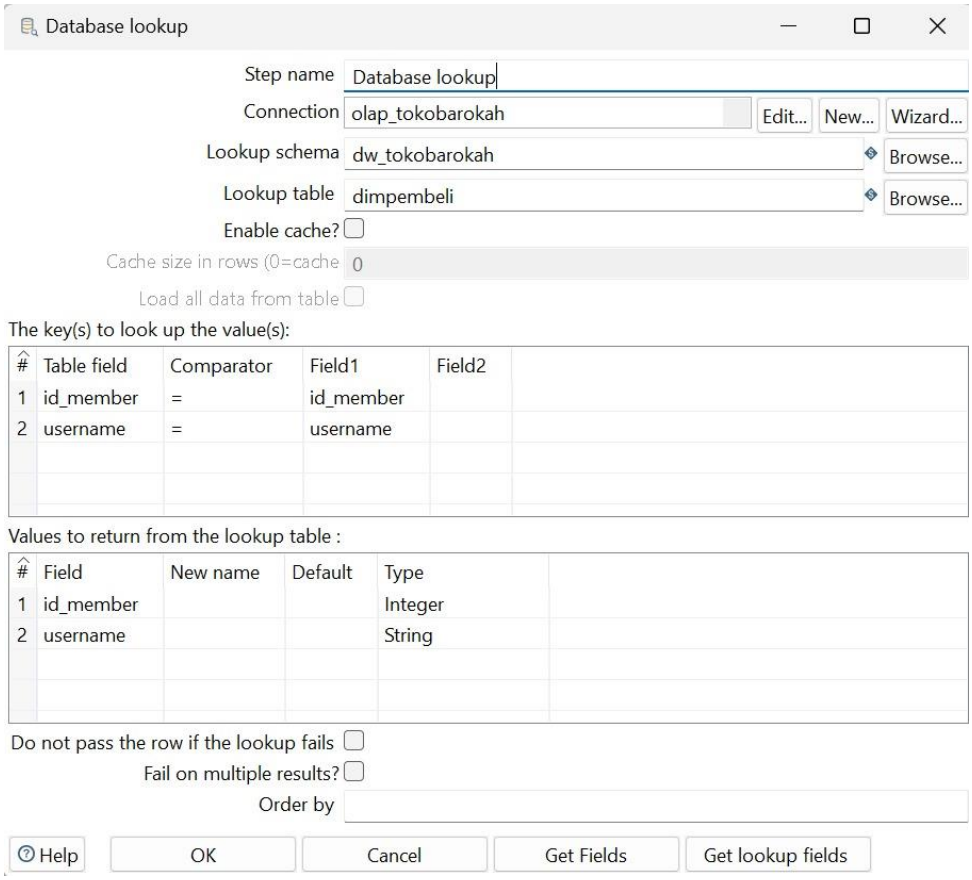


#	id_member	username
1	1	RIANTI
2	2	DEWI
3	3	ETIK
4	4	ARIF

Select values:



Database lookup:



Filter rows:

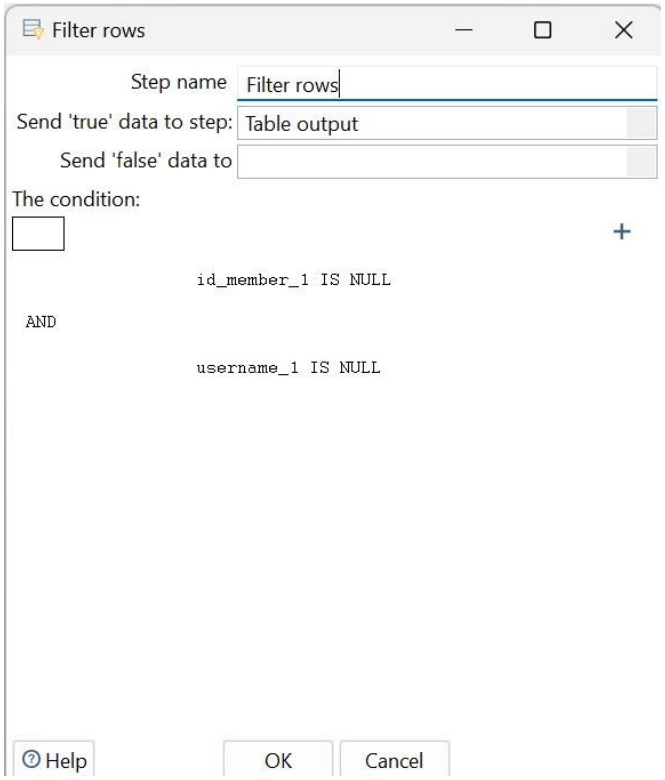
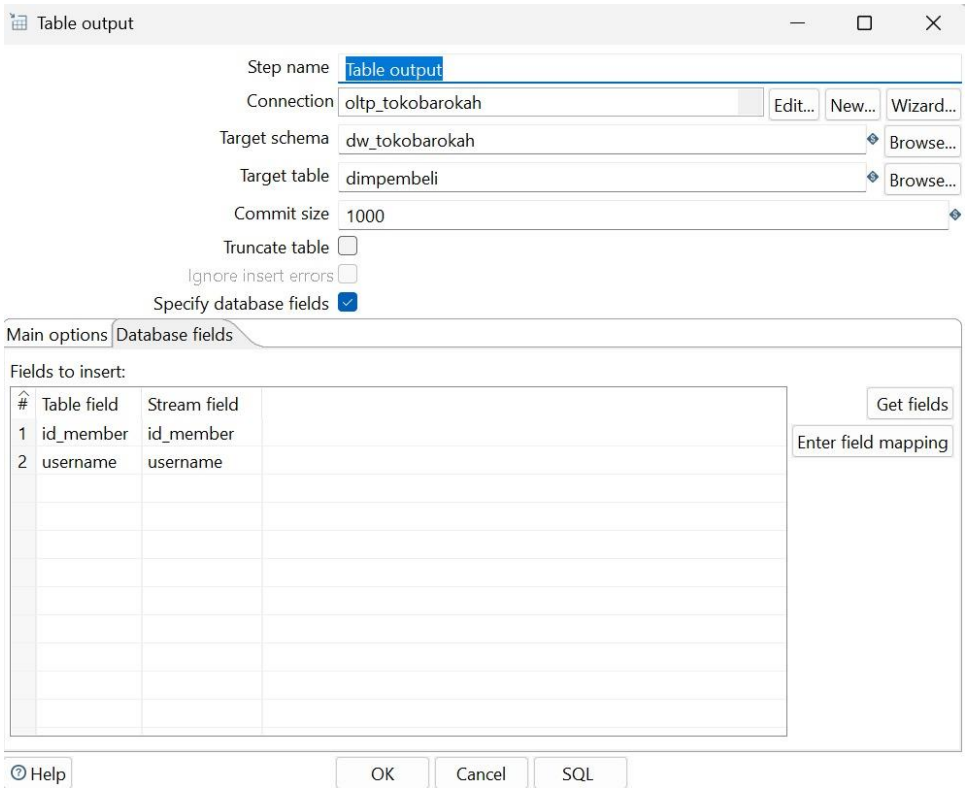


Table output:



Output:

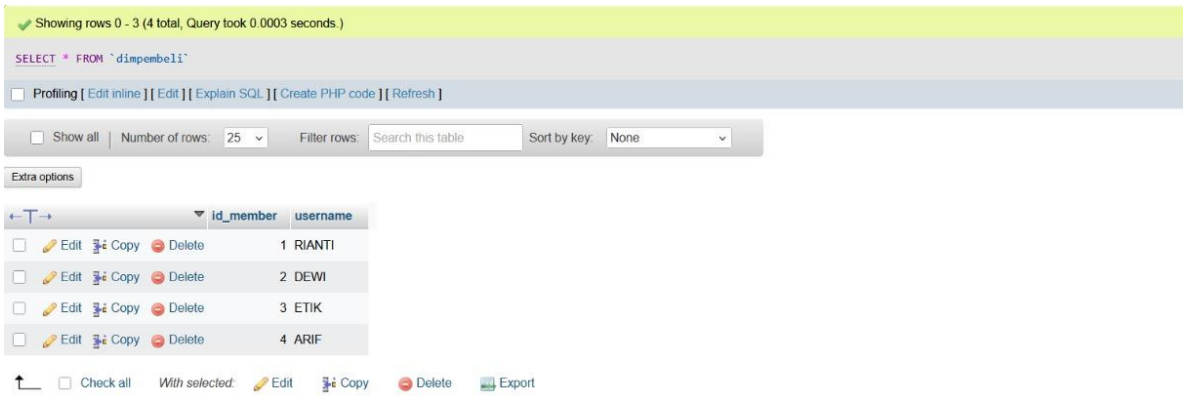

```
2025/04/23 13:41:12 - Spoon - Transformation opened.
2025/04/23 13:41:12 - Spoon - Launching transformation [dimpembeli]...
2025/04/23 13:41:12 - Spoon - Started the transformation execution.
2025/04/23 13:41:12 - dimpembeli - Dispatching started for transformation [dimpembeli]
2025/04/23 13:41:12 - Table output.0 - Connected to database [oltp_tokobarokah] (commit=1000)
2025/04/23 13:41:12 - Table input.0 - Finished reading query, closing connection
2025/04/23 13:41:12 - Table input.0 - Finished processing (I=4, O=0, R=0, W=4, U=0, E=0)
2025/04/23 13:41:12 - Select values.0 - Finished processing (I=0, O=0, R=4, W=4, U=0, E=0)
2025/04/23 13:41:12 - Database lookup.0 - Finished processing (I=0, O=0, R=4, W=4, U=0, E=0)
2025/04/23 13:41:12 - Filter rows.0 - Finished processing (I=0, O=0, R=4, W=4, U=0, E=0)
2025/04/23 13:41:12 - Table output.0 - Finished processing (I=0, O=4, R=4, W=4, U=0, E=0)
2025/04/23 13:41:12 - Spoon - The transformation has finished!!
```

Execution Results

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

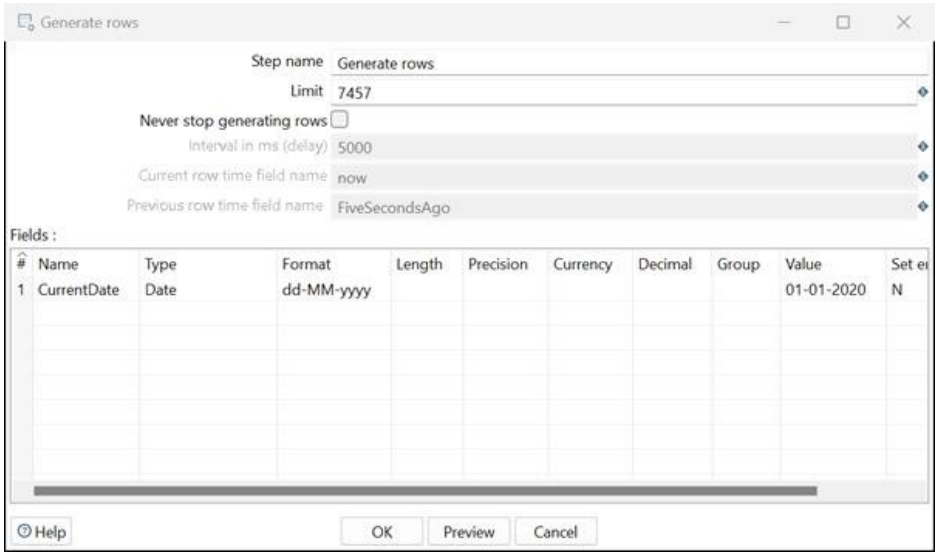
First rows ◯ Last rows ◯ Off

#	id_member	username	id_member_1	username_1
1	1	RIANTI	<null>	<null>
2	2	DEWI	<null>	<null>
3	3	ETIK	<null>	<null>
4	4	ARIF	<null>	<null>

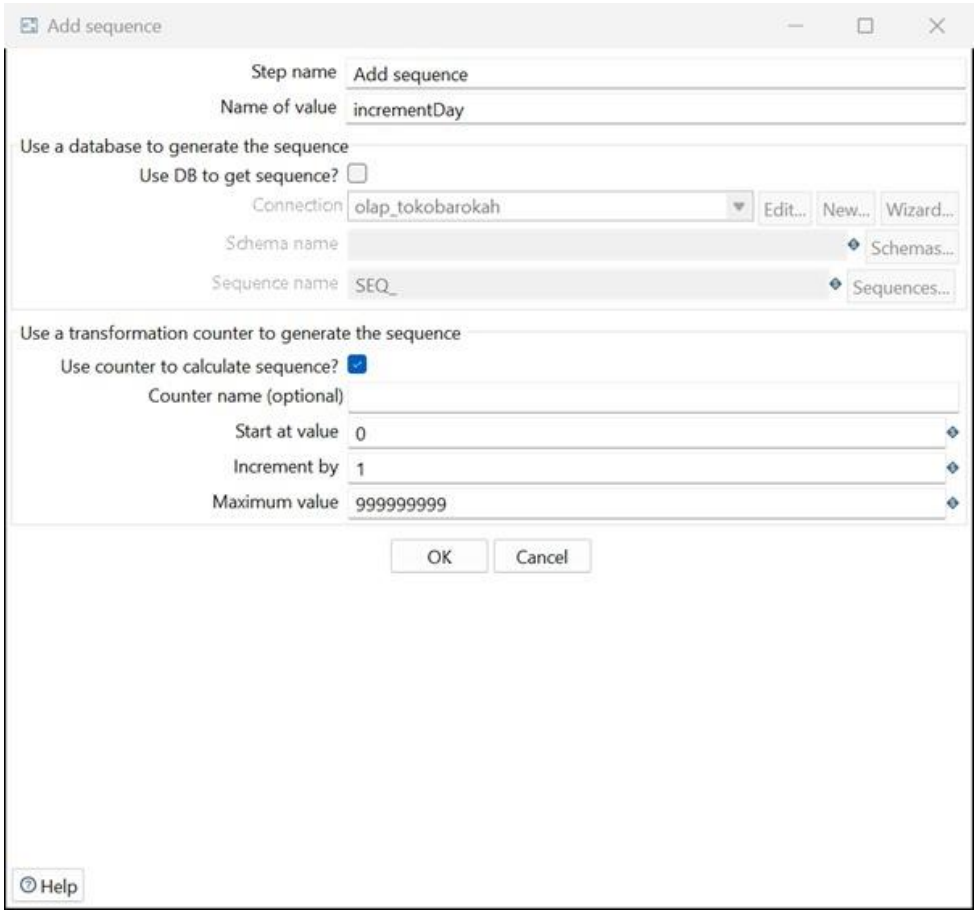


- dimdate

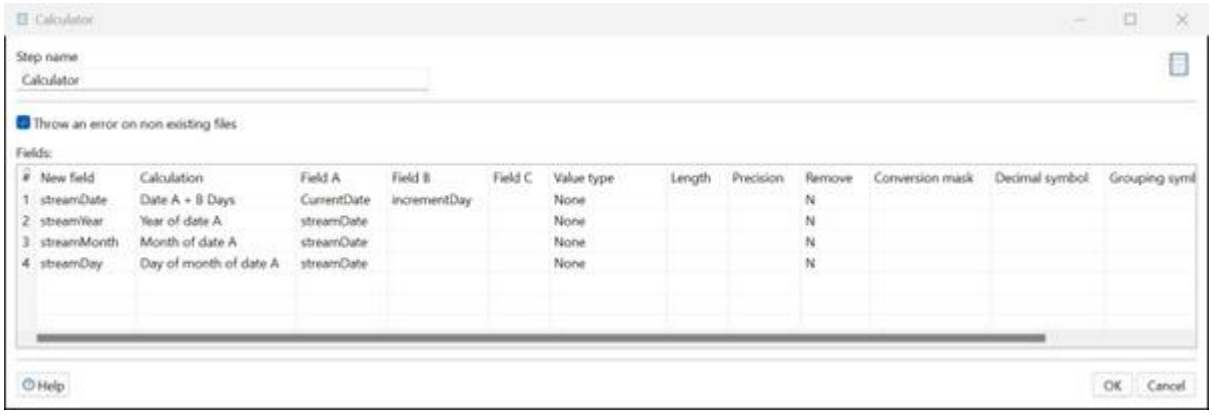
  Generate rows:



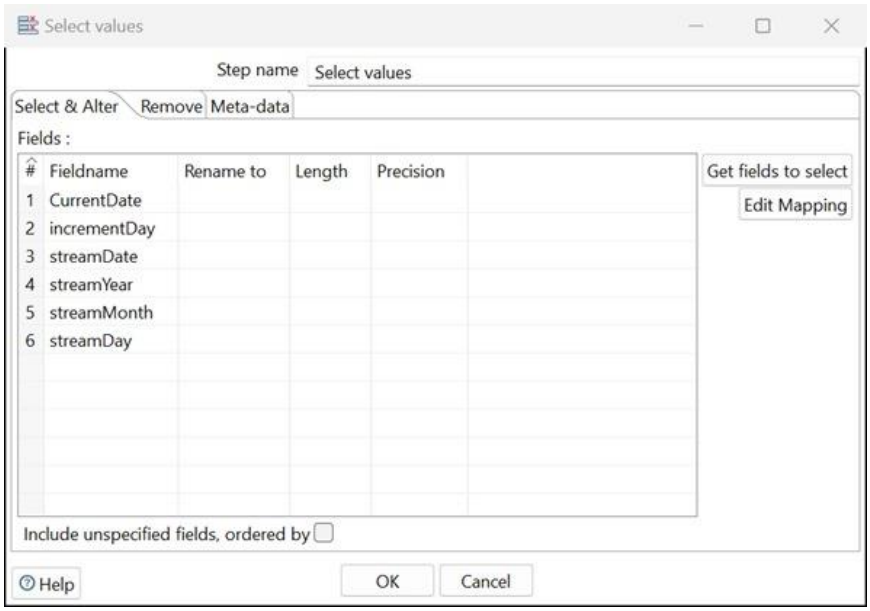
  Add sequence:

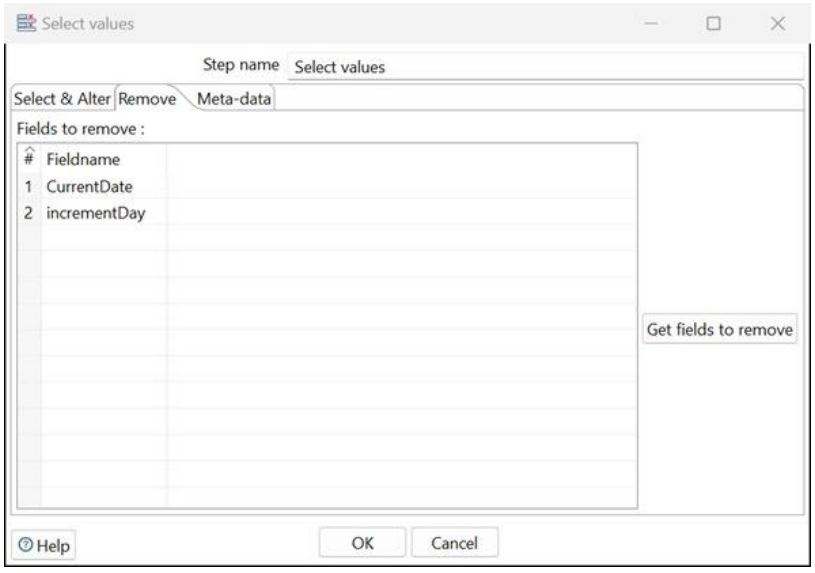


Calculator:

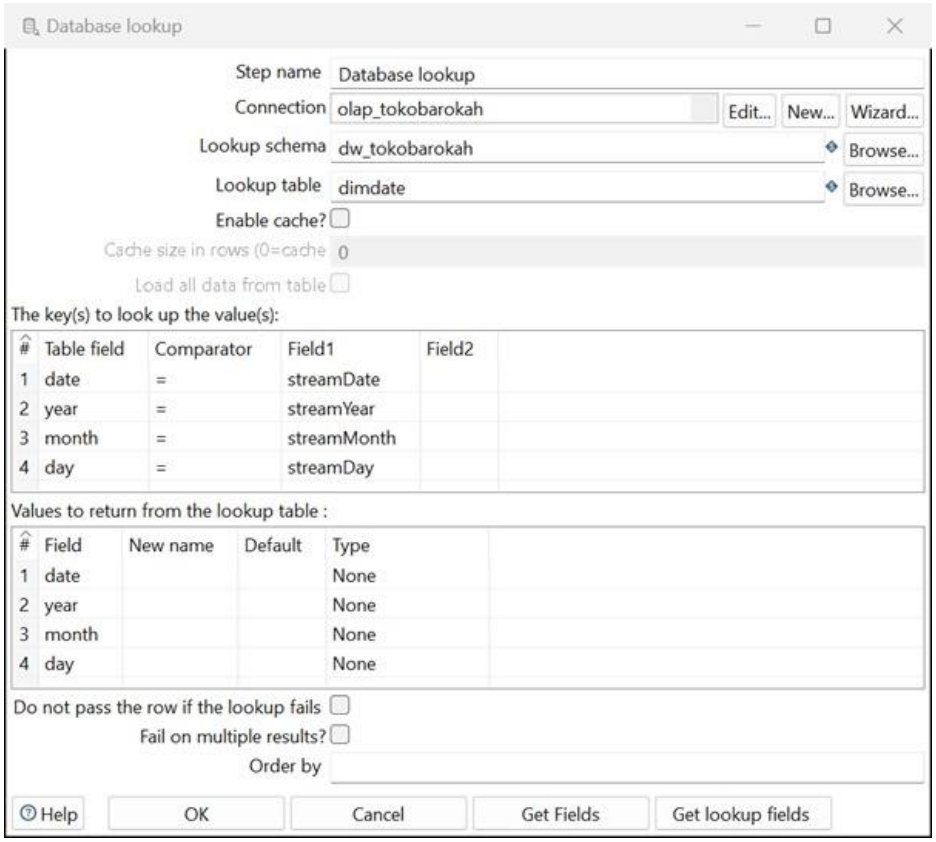


Select values:





Database lookup:



Filter rows:

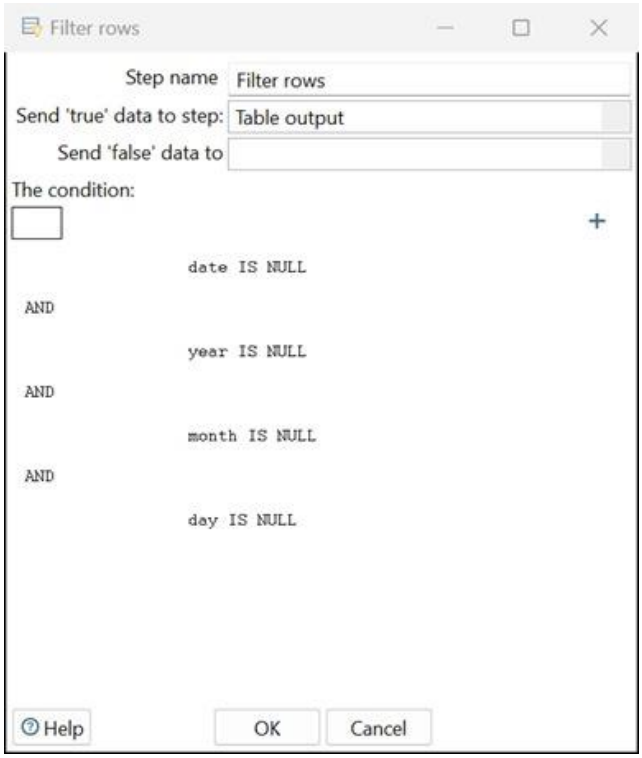
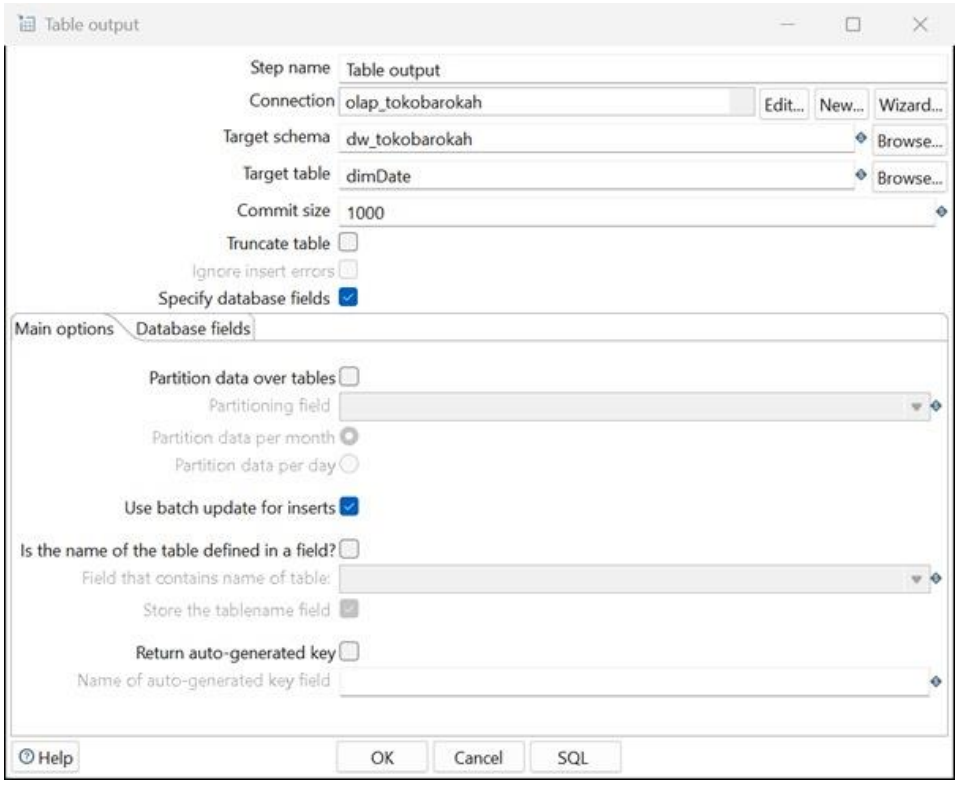


Table output:



Output:


```
2025/04/23 15:45:34 - Spoon - Transformation opened.
2025/04/23 15:45:34 - Spoon - Launching transformation [dimdate]...
2025/04/23 15:45:34 - Spoon - Started the transformation execution.
2025/04/23 15:45:34 - dimdate - Dispatching started for transformation [dimdate]
2025/04/23 15:45:34 - Table output.0 - Connected to database [olap_tokobarokah] (commit=1000)
2025/04/23 15:45:34 - Generate rows.0 - Finished processing (I=0, O=0, R=0, W=7457, U=0, E=0)
2025/04/23 15:45:34 - Add sequence.0 - Finished processing (I=0, O=0, R=7457, W=7457, U=0, E=0)
2025/04/23 15:45:34 - Calculator.0 - Finished processing (I=0, O=0, R=7457, W=7457, U=0, E=0)
2025/04/23 15:45:34 - Select values.0 - Finished processing (I=0, O=0, R=7457, W=7457, U=0, E=0)
2025/04/23 15:45:40 - Database lookup.0 - Finished processing (I=0, O=0, R=7457, W=7457, U=0, E=0)
2025/04/23 15:45:40 - Filter rows.0 - Finished processing (I=0, O=0, R=7457, W=7457, U=0, E=0)
2025/04/23 15:45:40 - Table output.0 - Finished processing (I=0, O=7457, R=7457, W=7457, U=0, E=0)
2025/04/23 15:45:40 - Spoon - The transformation has finished!!
```

Execution Results

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

First rows | Last rows | Off

#	streamDate	streamYear	streamMonth	streamDay	date	year	month	day
1	2020/01/01 00:00:00.000	2020	1	1	<null>	<null>	<null>	<null>
2	2020/01/02 00:00:00.000	2020	1	2	<null>	<null>	<null>	<null>
3	2020/01/03 00:00:00.000	2020	1	3	<null>	<null>	<null>	<null>
4	2020/01/04 00:00:00.000	2020	1	4	<null>	<null>	<null>	<null>
5	2020/01/05 00:00:00.000	2020	1	5	<null>	<null>	<null>	<null>
6	2020/01/06 00:00:00.000	2020	1	6	<null>	<null>	<null>	<null>
7	2020/01/07 00:00:00.000	2020	1	7	<null>	<null>	<null>	<null>
8	2020/01/08 00:00:00.000	2020	1	8	<null>	<null>	<null>	<null>
9	2020/01/09 00:00:00.000	2020	1	9	<null>	<null>	<null>	<null>
1.	2020/01/10 00:00:00.000	2020	1	10	<null>	<null>	<null>	<null>
1.	2020/01/11 00:00:00.000	2020	1	11	<null>	<null>	<null>	<null>
1.	2020/01/12 00:00:00.000	2020	1	12	<null>	<null>	<null>	<null>
1.	2020/01/13 00:00:00.000	2020	1	13	<null>	<null>	<null>	<null>
1.	2020/01/14 00:00:00.000	2020	1	14	<null>	<null>	<null>	<null>
1.	2020/01/15 00:00:00.000	2020	1	15	<null>	<null>	<null>	<null>

Showing rows 0 - 24 (7457 total, Query took 0.0001 seconds.)

```
SELECT * FROM `dimdate`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

1 > >> | Number of rows: 25 Filter rows: Search this table Sort by key: No

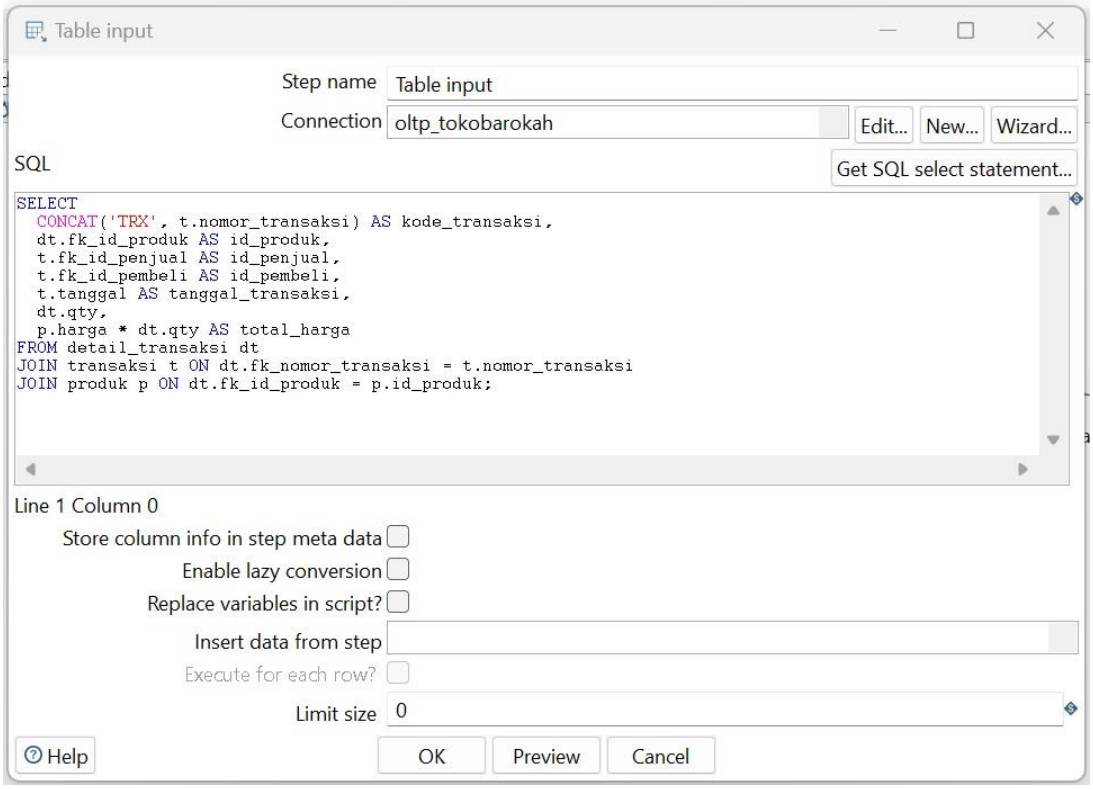
Extra options

←T→		id_dimDate	date	year	month	day
☐	Edit Copy Delete	1	2020-01-01	2020	1	1
☐	Edit Copy Delete	2	2020-01-02	2020	1	2
☐	Edit Copy Delete	3	2020-01-03	2020	1	3
☐	Edit Copy Delete	4	2020-01-04	2020	1	4
☐	Edit Copy Delete	5	2020-01-05	2020	1	5
☐	Edit Copy Delete	6	2020-01-06	2020	1	6
☐	Edit Copy Delete	7	2020-01-07	2020	1	7
☐	Edit Copy Delete	8	2020-01-08	2020	1	8
☐	Edit Copy Delete	9	2020-01-09	2020	1	9
☐	Edit Copy Delete	10	2020-01-10	2020	1	10
☐	Edit Copy Delete	11	2020-01-11	2020	1	11
☐	Edit Copy Delete	12	2020-01-12	2020	1	12
☐	Edit Copy Delete	13	2020-01-13	2020	1	13
☐	Edit Copy Delete	14	2020-01-14	2020	1	14
☐	Edit Copy Delete	15	2020-01-15	2020	1	15

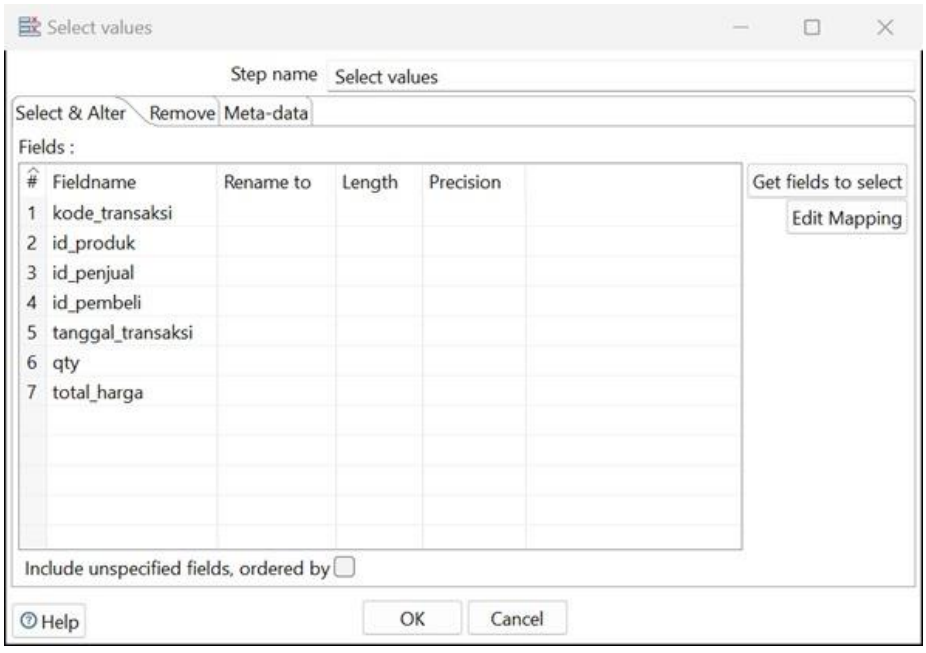
Console

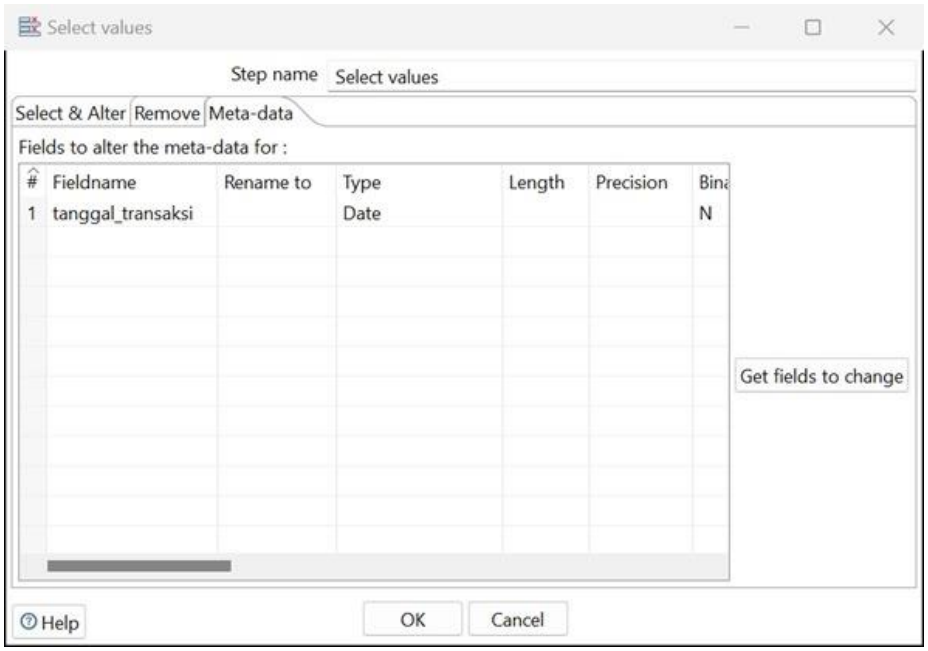
- factpenjualan

  Table Input:

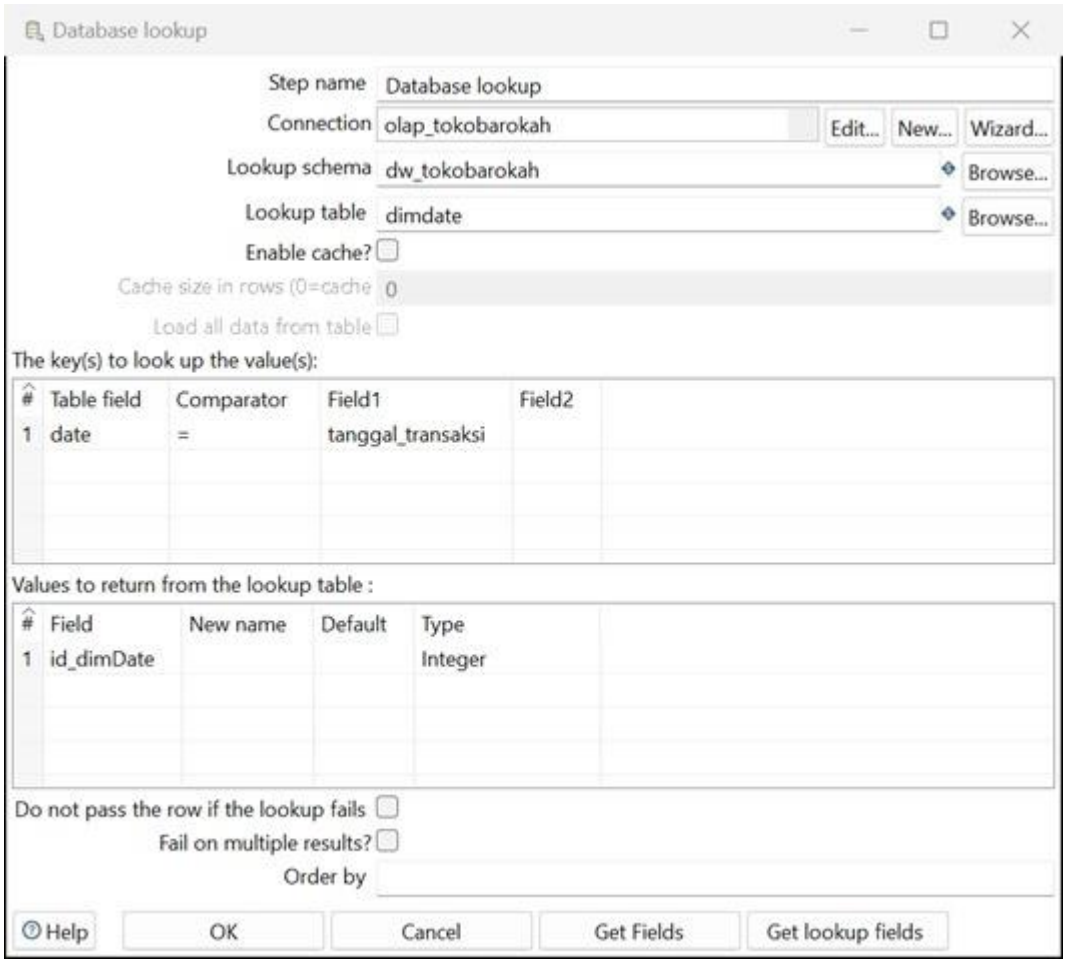


  Select values:

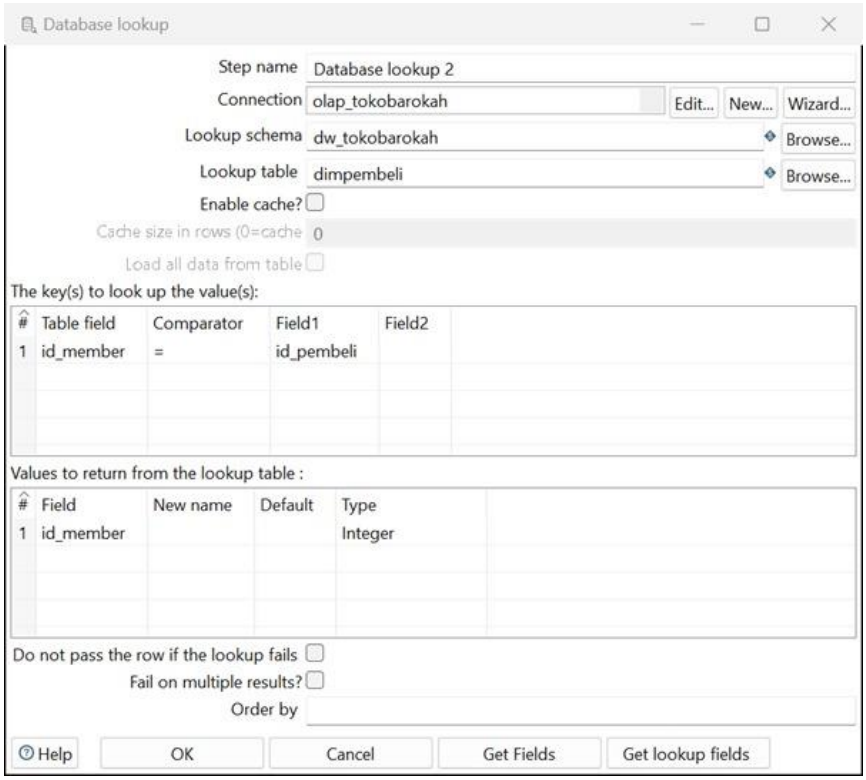




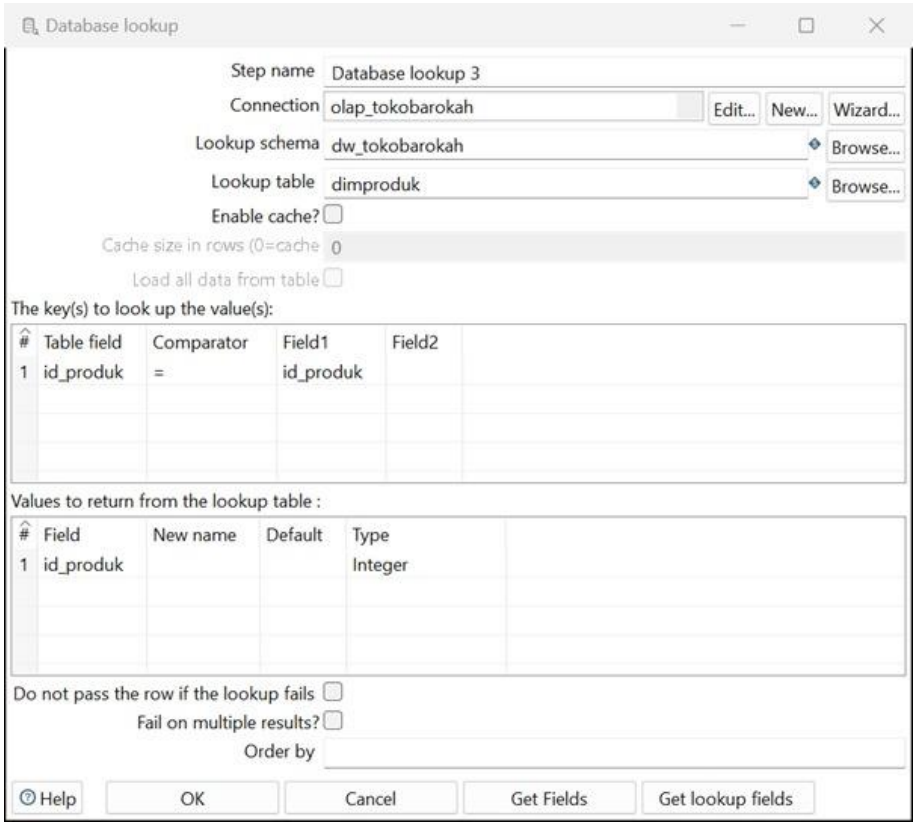
Database lookup:



Database lookup 2:



Database lookup 3:



Add sequence:

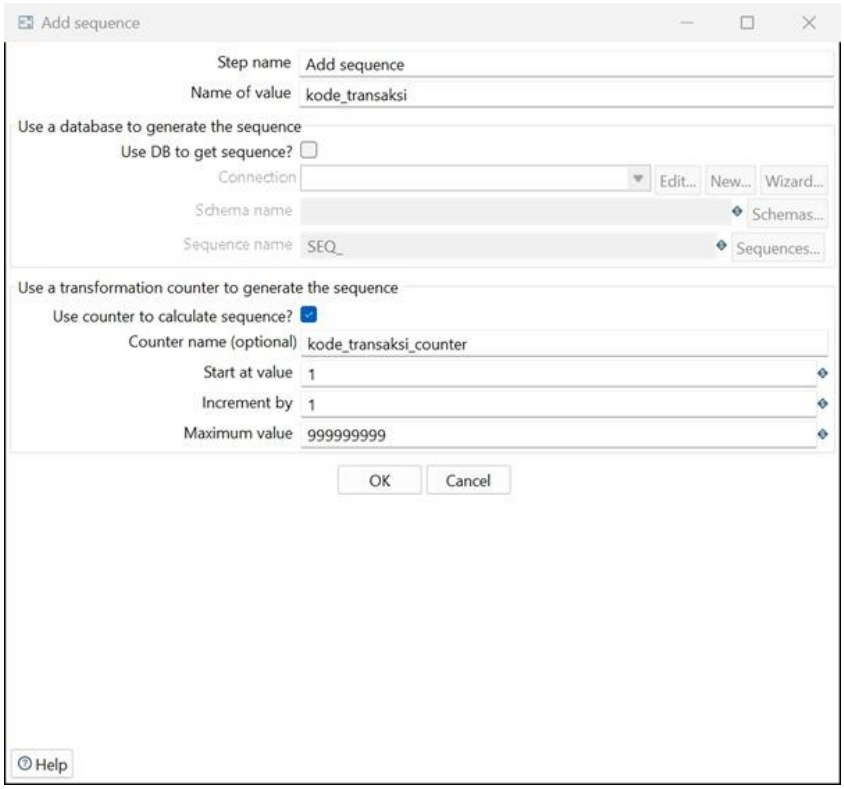
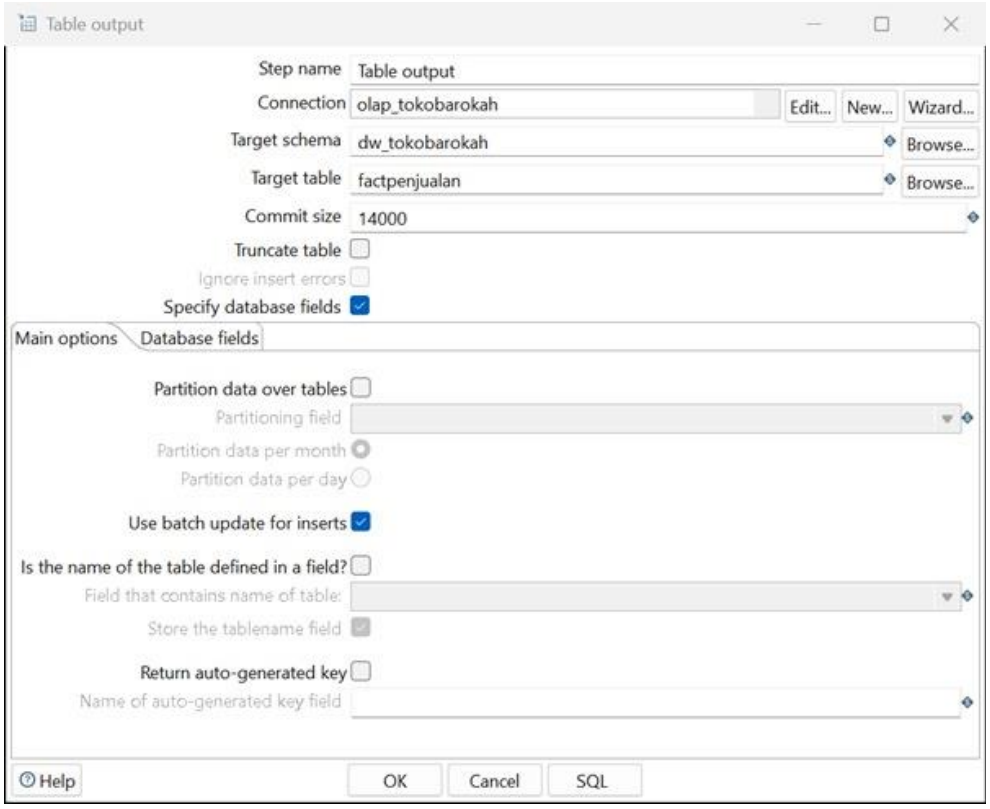


Table output:



Output:


```
2025/04/23 16:34:50 - Spoon - Transformation opened.
2025/04/23 16:34:50 - Spoon - Launching transformation [factpenjualan]...
2025/04/23 16:34:50 - Spoon - Started the transformation execution.
2025/04/23 16:34:50 - factpenjualan - Dispatching started for transformation [factpenjualan]
2025/04/23 16:34:50 - Table output.0 - Connected to database [olap_tokobarokah] (commit=14000)
2025/04/23 16:34:50 - Table input.0 - Finished reading query, closing connection
2025/04/23 16:34:50 - Table input.0 - Finished processing (I=13069, O=0, R=0, W=13069, U=0, E=0)
2025/04/23 16:34:50 - Select values.0 - Finished processing (I=0, O=0, R=13069, W=13069, U=0, E=0)
2025/04/23 16:34:52 - Database lookup.0 - Finished processing (I=13069, O=0, R=13069, W=13069, U=0, E=0)
2025/04/23 16:34:52 - Database lookup 2.0 - Finished processing (I=13069, O=0, R=13069, W=13069, U=0, E=0)
2025/04/23 16:34:52 - Database lookup 3.0 - Finished processing (I=13069, O=0, R=13069, W=13069, U=0, E=0)
2025/04/23 16:34:52 - Add sequence.0 - Finished processing (I=0, O=0, R=13069, W=13069, U=0, E=0)
2025/04/23 16:34:53 - Table output.0 - Finished processing (I=0, O=13069, R=13069, W=13069, U=0, E=0)
2025/04/23 16:34:53 - Spoon - The transformation has finished!!
```

Execution Results

Execution History | Logging | Step Metrics | Performance Graph | Metrics | Preview data

First rows | Last rows | Off

#	kode_transaksi	id_produk	id_penjual	id_pembeli	tanggal_transaksi	qty	total_harga	id_dimDate	id_member	id_produk_1	kode_transaksi_1
1.	TRXJC-100871048	1	1	1	2020-03-12	2.0	5334.0	72	1	1	13
1.	TRXJC-090850536	1	1	2	2020-04-01	1.0	2667.0	92	2	1	14
1.	TRXJC-171130469	1	1	1	2020-04-01	2.0	5334.0	92	1	1	15
1.	TRXJC-100480415	1	1	2	2020-02-19	1.0	2667.0	50	2	1	16
1.	TRXJC-090270646	1	1	1	2020-03-17	1.0	2667.0	77	1	1	17
1.	TRXJC-171131737	1	1	1	2020-04-07	1.0	2667.0	98	1	1	18
1.	TRXJC-091150024	2	1	2	2020-02-18	3.0	6240.0	49	2	2	19
2.	TRXJC-091071506	2	1	1	2020-01-17	2.0	4160.0	17	1	2	20
2.	TRXJC-091170021	2	1	1	2020-01-09	1.0	2080.0	9	1	2	21
2.	TRXJC-091170035	2	1	1	2020-01-02	1.0	2080.0	2	1	2	22
2.	TRXJC-091170382	2	1	1	2020-02-18	1.0	2080.0	49	1	2	23
2.	TRXJC-080570104	2	1	1	2020-02-11	2.0	4160.0	42	1	2	24
2.	TRXJC-080550074	2	1	2	2020-01-07	2.0	4160.0	7	2	2	25
2.	TRXJC-080550080	2	1	2	2020-01-17	2.0	4160.0	17	2	2	26
2.	TRXJC-091170203	2	1	1	2020-01-08	3.0	6240.0	8	1	2	27

Showing rows 0 - 24 (13069 total, Query took 0.0004 seconds.)

```
SELECT * FROM `factpenjualan`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

1 > >> | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Extra options

←T→	kode_transaksi	id_produk	id_member	id_dimDate	qty	total_penjualan
Edit Copy Delete	1	1	1	49	1	2667.00
Edit Copy Delete	2	1	1	2	1	2667.00
Edit Copy Delete	3	1	2	65	1	2667.00
Edit Copy Delete	4	1	2	8	1	2667.00
Edit Copy Delete	5	1	2	44	5	13335.00
Edit Copy Delete	6	1	1	2	2	5334.00
Edit Copy Delete	7	1	1	18	1	2667.00
Edit Copy Delete	8	1	1	29	1	2667.00
Edit Copy Delete	9	1	1	42	1	2667.00

➢ Hasil Studi Kasus KPI

a. Mencari produk yang paling banyak dibeli (TOP 5)

```
SELECT
  p.nama_produk,
  SUM(f.qty) AS total_terjual
FROM factpenjualan f
JOIN dimproduk p ON f.id_produk = p.id_produk
GROUP BY p.id_produk, p.nama_produk
ORDER BY total_terjual DESC
LIMIT 5;
```

nama_produk	total_terjual ▼ 1
SEDAP MIE GORENG	3553
SEDAP MIE SOTO	1589
SIDO MULIA KOPI KNG 250	591
AQUA 330 ML	505
SEDAP MIE AYAM BAWANG	503

b. Total omset penjual

```
SELECT
  DATE_FORMAT(d.date, '%Y-%m') AS bulan,
  SUM(f.total_penjualan) AS total_omset
FROM factpenjualan f
JOIN dimdate d ON f.id_dimDate = d.id_dimDate
GROUP BY bulan
ORDER BY bulan;
```

bulan ▲ 1	total_omset
2020-01	23164341.00
2020-02	39582800.00
2020-03	33904642.00
2020-04	8208003.00
2020-08	8389.00

c. Total penjualan per produk

```
SELECT
  dp.nama_produk,
  SUM(f.total_penjualan) AS total_penjualan
FROM factpenjualan f
JOIN dimproduk dp ON f.id_produk = dp.id_produk
GROUP BY dp.nama_produk
ORDER BY total_penjualan DESC;
```

nama_produk	total_penjualan ▼ 1
SIDO MULIA KOPI KNG 250	7018125.00
SEDAP MIE GORENG	4235176.00
CLUB GELAS BESAR 48 X 250 ML	3660246.00
INDOCAFE COFFEMIX 30 X 20G	3328220.00
DJISAMSOE SUP PREM REF 12	2145324.00
MAX CREAMER 500 GR DUS	1993860.00
POCARI SWEAT PET 500	1818102.00
SOKLIN SOFTERGENT PINK 800	1812500.00
INDOCAFE COFFEMIX 5X20GR SAC	1647366.00
SEDAP MIE SOTO	1623958.00
SOKLIN PRO/ POWER 900	1343750.00
KACANG SHANGHAI DK 450	1188250.00
KACANG KUPAS 500 GR	1170416.00
SOKLIN HIGINIS 900	1140625.00
ABC SPC G MELON 585	1063692.00
ENERGEN CHOCO BAG 10	1057268.00
NESCAFE 3/1 CREME 25X16GR	999361.00
GOOD DAY CAPPU GRANUL 25	965708.00
ABC KCP MNS REF 520	903925.00
BUMBU PECEL KELUD BESAR	862750.00
KACANG OVEN UWENAK 200	828843.00
PANTENE ANTI D 170ML	784520.00
AQUA 1500 ML	742816.00

d. Pelanggan yang paling sering beli

```
SELECT dp.username,
       SUM(f.qty) AS total_qty
FROM factpenjualan f
JOIN dimpembeli dp ON f.id_member = dp.id_member
GROUP BY dp.username
ORDER BY total_qty DESC
LIMIT 1;
```

username	total_qty
RIANTI	16011

e. Jumlah transaksai per pembeli

```
SELECT
  dp.username,
  COUNT(f.kode_transaksi) AS jumlah_transaksi
FROM factpenjualan f
JOIN dimpembeli dp ON f.id_member = dp.id_member
GROUP BY dp.username
ORDER BY jumlah_transaksi DESC;
```

username	jumlah_transaksi ▾ 1
RIANTI	8912
DEWI	3395
ETIK	760
ARIF	2

- **Link youtube penjelasan :**
  https://youtu.be/zqt_WhoRaeo?feature=shared