

LAPORAN AKHIR
UAS DATA WAREHOUSE
CAR SALES



Disusun Oleh:

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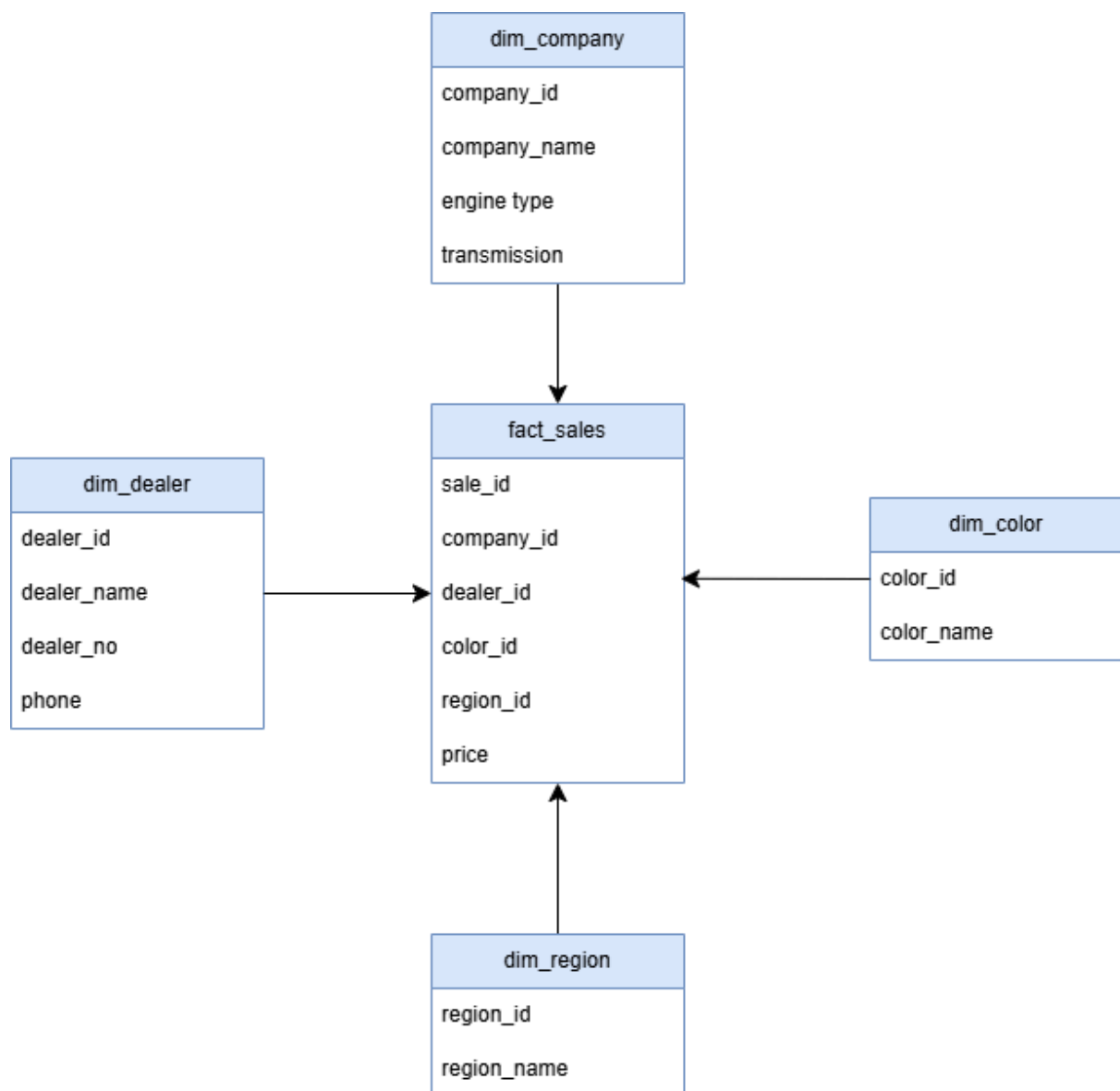
Jurusan Teknologi Informasi
D4 Sistem Informasi Bisnis
Politeknik Negeri Malang
2024

Link Dataset :

<https://www.kaggle.com/datasets/missionjee/car-sales-report>

Studi Kasus :

- Mengetahui berapa banyak mobil dari masing-masing merek (Company) yang terjual.
- Menghitung total pendapatan (Price) untuk tiap Dealer Name
- Mobil warna apa yang paling banyak terjual?
- Mengetahui wilayah dengan penjualan terbanyak.
- Mengetahui rata-rata harga jual mobil dari setiap perusahaan (company)

Star Schema

Langkah - langkah Proses ETL

1. *Create Database Dw_Car (OLAP)*

-- Tabel Dimensi: Region

```
CREATE TABLE dim_region (  
    region_id INT AUTO_INCREMENT PRIMARY KEY,  
    region_name VARCHAR(100)  
);
```

-- Tabel Dimensi: Dealer

```
CREATE TABLE dim_dealer (  
    dealer_id INT AUTO_INCREMENT PRIMARY KEY,  
    dealer_name VARCHAR(150),  
    dealer_no VARCHAR(20),  
    phone VARCHAR(20),  
);
```

-- Tabel Dimensi: Company (Merek Mobil)

```
CREATE TABLE dim_company (  
    company_id INT AUTO_INCREMENT PRIMARY KEY,  
    company_name VARCHAR(100),  
    model VARCHAR(100),  
    engine_type VARCHAR(100),  
    transmission VARCHAR(50)  
);
```

-- Tabel Dimensi: Warna Mobil

```
CREATE TABLE dim_color (  
    color_id INT AUTO_INCREMENT PRIMARY KEY,  
    color_name VARCHAR(50)  
);
```

-- Tabel Fakta: Penjualan Mobil

```
CREATE TABLE fact_sales (  
    sale_id INT AUTO_INCREMENT PRIMARY KEY,  
    company_id INT,  
    dealer_id INT,  
    color_id INT,  
    region_id INT,  
    price DECIMAL(12,2)
```

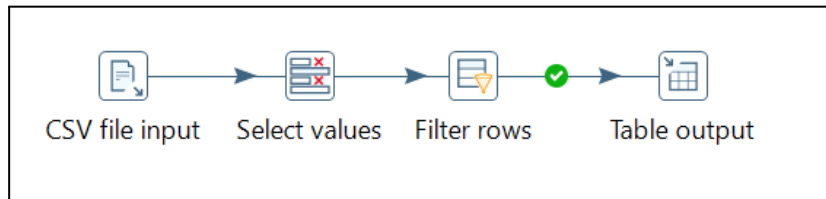
```
    FOREIGN KEY (company_id) REFERENCES dim_company(company_id),  
    FOREIGN KEY (dealer_id) REFERENCES dim_dealer(dealer_id),  
    FOREIGN KEY (color_id) REFERENCES dim_color(color_id),  
    FOREIGN KEY (region_id) REFERENCES dim_region(region_id)
```

```
);
```

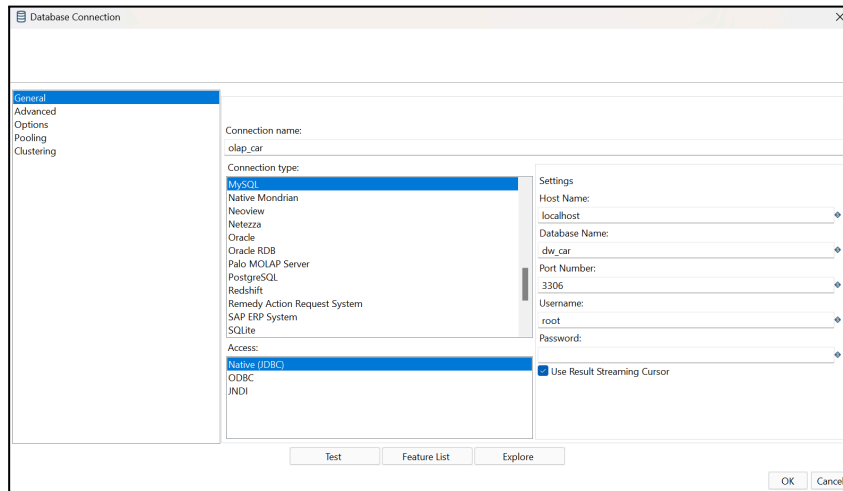
2. *Create Dimensi Table*

a. Table Dimensi Company

Elemen yang dibutuhkan:



Tambahkan Connection ke Database Dw_Car:



Masukkan file dataset ke table input:

CSV file input

Step name: CSV file input

Filename: D:\Data Warehouse\uas\dataCar.csv

Delimiter: ,

Enclosure: "

NIO buffer size: 50000

Lazy conversion? ☒

Header row present? ☒

Add filename to result ☐

The row number field name (optional):

Running in parallel? ☐

New line possible in fields? ☐

Format: mixed

File encoding:

#	Name	Type	Format	Length	Precision	Currency	Decimal	Group	Trim type
1	Car_id	String		12		\$	.	,	none
2	Date	Date	MM/dd/yyyy			\$	.	,	none
3	Customer Name	String		10		\$	.	,	none
4	Gender	String		6		\$	.	,	none
5	Annual Income	Integer	#	15	0	\$	.	,	none
6	Dealer_Name	String		47		\$	.	,	none
7	Company	String		10		\$	.	,	none
8	Model	String		14		\$	.	,	none
9	Engine	String		27		\$	.	,	none
1.	Transmission	String		6		\$	.	,	none
1.	Color	String		10		\$	.	,	none
1.	Price (\$)	Integer	#	15	0	\$	.	,	none
1.	Dealer_No	String		10		\$	.	,	none
1.	Body Style	String		9		\$	.	,	none
1.	Phone	Integer	#	15	0	\$	.	,	none
1.	Dealer_Region	String		10		\$	.	,	none

Help OK Get Fields Preview Cancel

Setting kolom yang akan digunakan pada elemen select value yaitu company, model, engine dan transmission untuk dim_company:

Select values

Step name: Select values

Select & Alter Remove Meta-data

Fields:

#	Fieldname	Rename to	Length	Precision
1	Company			
2	Model			
3	Engine			
4	Transmission			

Get fields to select

Edit Mapping

Include unspecified fields, ordered by ☐

Help OK Cancel

Atur filter rows untuk membersihkan data dan atur kolom yang telah dipilih sebagai *is not null* untuk memastikan data tidak ada yang kosong:

Filter rows

Step name: Filter rows

Send 'true' data to step: Table output

Send 'false' data to: Table output

The condition:

Company IS NOT NULL
AND
Model IS NOT NULL
AND
Engine IS NOT NULL
AND
Transmission IS NOT NULL

Help OK Cancel

Atur Table output untuk menyimpan hasil pada database Dw_Car pada table dim_company dan sinkronisasi table yang digunakan:

The screenshot shows the 'Table output' dialog box with the 'Main options' tab selected. The 'Database fields' sub-tab is active, showing a table of fields to insert. The table has three columns: 'Table field', 'Stream field', and an unlabeled column. The first four rows are populated with data.

#	Table field	Stream field	
1	company_...	Company	
2	model	Model	
3	engine_type	Engine	
4	transmissi...	Transmission	

Buttons at the bottom: Help, OK, Cancel, SQL.

Jalankan transformasi dan pastikan tidak ada error pada hasil eksekusi

Execution Results	
Logging	Execution History
2025/06/15 16:02:51 - Spoon - Transformation opened. 2025/06/15 16:02:51 - Spoon - Launching transformation [dimcompany]... 2025/06/15 16:02:51 - Spoon - Started the transformation execution. 2025/06/15 16:02:51 - dimcompany - Dispatching started for transformation [dimcompany] 2025/06/15 16:02:51 - Table output.0 - Connected to database [olap_car] (commit=1000) 2025/06/15 16:02:51 - CSV file input.0 - Header row skipped in file 'D:\Data Warehouse\uas\dataCar.csv' 2025/06/15 16:02:51 - CSV file input.0 - Finished processing (I=23907, O=0, R=0, W=23906, U=0, E=0) 2025/06/15 16:02:52 - Select values.0 - Finished processing (I=0, O=0, R=23906, W=23906, U=0, E=0) 2025/06/15 16:02:53 - Filter rows.0 - Finished processing (I=0, O=0, R=23906, W=23906, U=0, E=0) 2025/06/15 16:02:54 - Table output.0 - Finished processing (I=0, O=0, R=23906, W=23906, U=0, E=0) 2025/06/15 16:02:54 - Spoon - The transformation has finished!!	

Lihat pada priview data untuk memastikan data sudah berhasil

Execution Results

LoggingExecution HistoryStep MetricsPerformance GraphMetricsPreview data

First rowsLast rowsOff

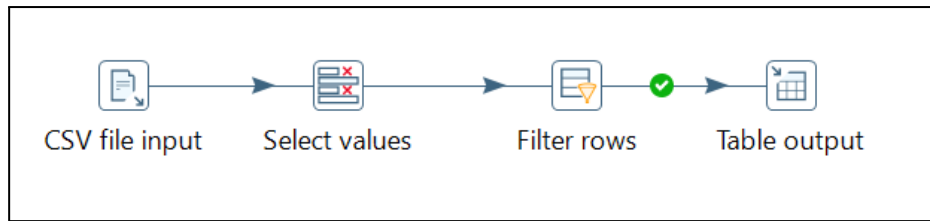
#	Company	Model	Engine	Transmission
1	Ford	Expedition	Double-Overhead Camshaft	Auto
2	Dodge	Durango	Double-Overhead Camshaft	Auto
3	Cadillac	Eldorado	Overhead Camshaft	Manual
4	Toyota	Celica	Overhead Camshaft	Manual
5	Acura	TL	Double-Overhead Camshaft	Auto
6	Mitsubishi	Diamante	Overhead Camshaft	Manual
7	Toyota	Corolla	Overhead Camshaft	Manual
8	Mitsubishi	Galant	Double-Overhead Camshaft	Auto
9	Chevrolet	Malibu	Overhead Camshaft	Manual
1	Ford	Escort	Double-Overhead Camshaft	Auto
1	Acura	RL	Overhead Camshaft	Manual
1	Nissan	Pathfinder	Double-Overhead Camshaft	Auto
1	Mercury	Grand Marquis	Double-Overhead Camshaft	Auto
1	BMW	323i	Double-Overhead Camshaft	Auto
1	Chrysler	Sebring Coupe	Overhead Camshaft	Manual
1	Subaru	Forester	Overhead Camshaft	Manual
1	Hyundai	Accent	Overhead Camshaft	Manual
1	Cadillac	Eldorado	Double-Overhead Camshaft	Auto
1	Toyota	Land Cruiser	Double-Overhead Camshaft	Auto
2	Honda	Accord	Double-Overhead Camshaft	Auto
2	Toyota	4Runner	Overhead Camshaft	Manual
2	Infiniti	I30	Double-Overhead Camshaft	Auto
2	Audi	A4	Overhead Camshaft	Manual
2	Porsche	Carrera Cabrio	Double-Overhead Camshaft	Auto
2	Volkswagen	Jetta	Double-Overhead Camshaft	Auto
2	Dodge	Viper	Double-Overhead Camshaft	Auto
2	Buick	Regal	Double-Overhead Camshaft	Auto
2	Chrysler	LHS	Overhead Camshaft	Manual

Cek pada database Dw_Car pada table dim_company

company_id	company_name	model	engine_type	transmission
1	Ford	Expedition	DoubleÃ Overhead Camshaft	Auto
2	Dodge	Durango	DoubleÃ Overhead Camshaft	Auto
3	Cadillac	Eldorado	Overhead Camshaft	Manual
4	Toyota	Celica	Overhead Camshaft	Manual
5	Acura	TL	DoubleÃ Overhead Camshaft	Auto
6	Mitsubishi	Diamante	Overhead Camshaft	Manual
7	Toyota	Corolla	Overhead Camshaft	Manual
8	Mitsubishi	Galant	DoubleÃ Overhead Camshaft	Auto
9	Chevrolet	Malibu	Overhead Camshaft	Manual
10	Ford	Escort	DoubleÃ Overhead Camshaft	Auto
11	Acura	RL	Overhead Camshaft	Manual
12	Nissan	Pathfinder	DoubleÃ Overhead Camshaft	Auto
13	Mercury	Grand Marquis	DoubleÃ Overhead Camshaft	Auto
14	BMW	323i	DoubleÃ Overhead Camshaft	Auto
15	Chrysler	Sebring Coupe	Overhead Camshaft	Manual
16	Subaru	Forester	Overhead Camshaft	Manual
17	Hyundai	Accent	Overhead Camshaft	Manual

b. Table Dimensi Dealer

Elemen yang dibutuhkan :



Tambah connection ke database Dw_Car:

Database Connection

General
Advanced
Options
Pooling
Clustering

Connection name: olap_car

Connection type:

- MySQL
- Native Mondrian
- Neoview
- Netezza
- Oracle
- Oracle RDB
- Palo MOLAP Server
- PostgreSQL
- Redshift
- Remedy Action Request System
- SAP ERP System
- SQLite

Access:

- Native (JDBC)
- ODBC
- JNDI

Settings

Host Name: localhost

Database Name: dw_car

Port Number: 3306

Username: root

Password:

☒ Use Result Streaming Cursor

Test Feature List Explore

OK Cancel

Masukkan dataset ke table input:

CSV file input

Step name: **CSV file input**

Filename: D:\Data Warehouse\uas\dataCar.csv Browse...

Delimiter: , Insert TAB

Enclosure: "

NIO buffer size: 50000

Lazy conversion? ☒

Header row present? ☒

Add filename to result ☐

The row number field name (optional):

Running in parallel? ☐

New line possible in fields? ☐

Format: mixed

File encoding:

#	Name	Type	Format	Length	Precision	Currency	Decimal	Group	Trim type
1	Car_id	String		12		\$	.	,	none
2	Date	Date	MM/dd/yyyy			\$	.	,	none
3	Customer Name	String		10		\$	.	,	none
4	Gender	String		6		\$	.	,	none
5	Annual Income	Integer	#	15	0	\$	.	,	none
6	Dealer_Name	String		47		\$	.	,	none
7	Company	String		10		\$	.	,	none
8	Model	String		14		\$	.	,	none
9	Engine	String		27		\$	.	,	none
1.	Transmission	String		6		\$	.	,	none
1.	Color	String		10		\$	.	,	none
1.	Price (\$)	Integer	#	15	0	\$	.	,	none
1.	Dealer_No	String		10		\$	.	,	none
1.	Body Style	String		9		\$	.	,	none
1.	Phone	Integer	#	15	0	\$	.	,	none
1.	Dealer_Region	String		10		\$	.	,	none

Help OK Get Fields Preview Cancel

Setting kolom yang akan digunakan pada elemen select value yaitu dealer_name, dealer_no dan phone untuk dim_dealer

Select values

Step name: **Select values**

Select & Alter Remove Meta-data

Fields:

#	Fieldname	Rename to	Length	Precision
1	Dealer_Name			
2	Dealer_No			
3	Phone			

Get fields to select Edit Mapping

Include unspecified fields, ordered by ☐

Help OK Cancel

Atur filter rows untuk membersihkan data dan atur colom yang telah dipilih sebagai *is not null* untuk memastikan data tidak ada yang kosong

Filter rows

Step name: Filter rows

Send 'true' data to step: Table output

Send 'false' data to:

The condition:

☐ +

Dealer_Name IS NOT NULL

AND

Dealer_No IS NOT NULL

AND

Phone IS NOT NULL

? Help OK Cancel

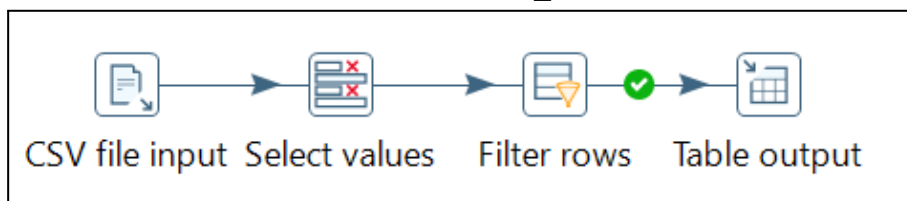
Atur Table output untuk menyimpan hasil pada database Dw_Car pada table dim_dealer dan sinkronisasi table yang digunakan

	dealer_id	dealer_name	dealer_no	phone
<input type="checkbox"/> Edit Copy Delete	1	Buddy Storbeck's Diesel Service Inc	06457-3834	8264678
<input type="checkbox"/> Edit Copy Delete	2	C & M Motors Inc	60504-7114	6848189
<input type="checkbox"/> Edit Copy Delete	3	Capitol KIA	38701-8047	7298798
<input type="checkbox"/> Edit Copy Delete	4	Chrysler of Tri-Cities	99301-3882	6257557
<input type="checkbox"/> Edit Copy Delete	5	Chrysler Plymouth	53546-9427	7081483
<input type="checkbox"/> Edit Copy Delete	6	Classic Chevy	85257-3102	7315216
<input type="checkbox"/> Edit Copy Delete	7	Clay Johnson Auto Sales	78758-7841	7727879
<input type="checkbox"/> Edit Copy Delete	8	U-Haul CO	78758-7841	6206512
<input type="checkbox"/> Edit Copy Delete	9	Rabun Used Car Sales	85257-3102	7194857
<input type="checkbox"/> Edit Copy Delete	10	Rabun Used Car Sales	85257-3102	7836892
<input type="checkbox"/> Edit Copy Delete	11	Race Car Help	78758-7841	7995489
<input type="checkbox"/> Edit Copy Delete	12	Race Car Help	78758-7841	7288103
<input type="checkbox"/> Edit Copy Delete	13	Saab-Belle Dodge	60504-7114	6842408
<input type="checkbox"/> Edit Copy Delete	14	Scrivener Performance Engineering	38701-8047	7558767
<input type="checkbox"/> Edit Copy Delete	15	Buddy Storbeck's Diesel Service Inc	06457-3834	7677191
<input type="checkbox"/> Edit Copy Delete	16	C & M Motors Inc	60504-7114	8431908
<input type="checkbox"/> Edit Copy Delete	17	Capitol KIA	38701-8047	7814646

c. Tabel Dimensi Region

Elemen yang dibutuhkan :

Tambahkan Connection ke Database Dw_Car



Tambah connection ke database Dw_Car:

Database Connection

General

Connection name: olap_car

Connection type: MySQL

Settings

Host Name: localhost

Database Name: dw_car

Port Number: 3306

Username: root

Password:

Use Result Streaming Cursor

Test Feature List Explore

OK Cancel

Masukkan file dataset ke tabel input

CSV file input

Step name: CSV file input

Filename: D:\Data Warehouse\uas\dataCar.csv Browse...

Delimiter: , Insert TAB

Enclosure: "

NIO buffer size: 50000

Lazy conversion? ☒

Header row present? ☒

Add filename to result ☐

The row number field name (optional):

Running in parallel? ☐

New line possible in fields? ☐

Format: mixed

File encoding:

#	Name	Type	Format	Length	Precision	Currency	Decimal	Group	Trim type
1	Car_id	String		12		\$	.	,	none
2	Date	Date	MM/dd/yyyy			\$	.	,	none
3	Customer Name	String		10		\$	.	,	none
4	Gender	String		6		\$	.	,	none
5	Annual Income	Integer	#	15	0	\$	.	,	none
6	Dealer_Name	String		47		\$	.	,	none
7	Company	String		10		\$	.	,	none
8	Model	String		14		\$	.	,	none
9	Engine	String		27		\$	.	,	none
1.	Transmission	String		6		\$	.	,	none
1.	Color	String		10		\$	.	,	none
1.	Price (\$)	Integer	#	15	0	\$	.	,	none
1.	Dealer_No	String		10		\$	.	,	none
1.	Body Style	String		9		\$	.	,	none
1.	Phone	Integer	#	15	0	\$	.	,	none
1.	Dealer_Region	String		10		\$	.	,	none

Help OK Get Fields Preview Cancel

Setting kolom yang akan digunakan pada elemen select value yaitu dealer_region untuk dim_region

Select values

Step name: Select values

Select & Alter Remove Meta-data

Fields:

#	Fieldname	Rename to	Length	Precision
1	Dealer_Region	region_name		

Get fields to select Edit Mapping

Include unspecified fields, ordered by ☐

Help OK Cancel

Atur filter rows untuk membersihkan data dan atur kolom yang telah dipilih sebagai *is not null* untuk memastikan data tidak ada yang kosong

Filter rows

Step name: Filter rows

Send 'true' data to step: Table output

Send 'false' data to:

The condition:

region_name	IS NOT NULL	-
		-

Help OK Cancel

Atur Table output untuk menyimpan hasil pada database Dw_Car pada table dim_dealer dan sinkronisasi table yang digunakan

The screenshot shows the 'Table output' dialog box with the following settings:

- Step name: Table output
- Connection: olap_car
- Target schema: dw_car
- Target table: dim_region
- Commit size: 1000
- Truncate table: ☐
- Ignore insert errors: ☐
- Specify database fields: ☒

The 'Database fields' tab is selected, showing a table with columns '#', 'Table field', and 'Stream field'. The first row contains the values '1', 'region_na...', and 'region_name'. Buttons for 'Get fields', 'Enter field mapping', 'OK', 'Cancel', and 'SQL' are visible at the bottom.

Jalankan transformasi dan pastikan tidak ada error pada hasil eksekusi

Execution Results

Logging

Execution History

Step Metrics

Performance Graph

Metrics

Preview data

🗑️ 🗑️ ⚙️

2025/06/15 16:23:03 - Spoon - Transformation opened.

2025/06/15 16:23:03 - Spoon - Launching transformation [dimdealer]...

2025/06/15 16:23:03 - Spoon - Started the transformation execution.

2025/06/15 16:23:05 - Spoon - The transformation has finished!!

2025/06/15 16:29:32 - Spoon - Transformation opened.

2025/06/15 16:29:32 - Spoon - Launching transformation [dimregion]...

2025/06/15 16:29:32 - Spoon - Started the transformation execution.

2025/06/15 16:29:32 - dimregion - Dispatching started for transformation [dimregion]

2025/06/15 16:29:32 - Table output.0 - Connected to database [olap_car] (commit=1000)

2025/06/15 16:29:32 - CSV file input.0 - Header row skipped in file 'D:\Data Warehouse\uas\dataCar.csv'

2025/06/15 16:29:32 - CSV file input.0 - Finished processing (I=23907, O=0, R=0, W=23906, U=0, E=0)

2025/06/15 16:29:33 - Select values.0 - Finished processing (I=0, O=0, R=23906, W=23906, U=0, E=0)

2025/06/15 16:29:34 - Filter rows.0 - Finished processing (I=0, O=0, R=23906, W=23906, U=0, E=0)


















































2025/06/15 16:29:34 - Table output.0 - Finished processing (I=0, O=23906, R=23906, W=23906, U=0, E=0)

2025/06/15 16:29:34 - Spoon - The transformation has finished!!

Lihat pada preview data untuk memastikan data sudah berhasil

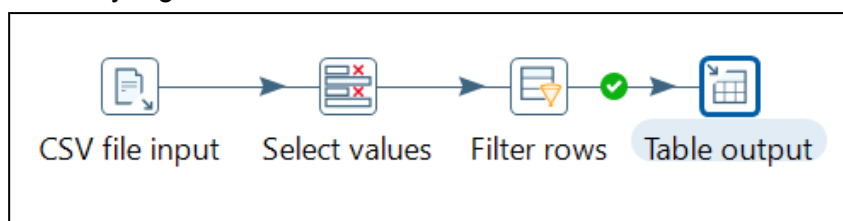
Execution Results		
<div>LoggingExecution HistoryStep MetricsPerformance GraphMetricsPreview data</div>		
<div>First rowsLast rowsOff</div>		
#	region_name	
1	Middletown	
2	Aurora	
3	Greenville	
4	Pasco	
5	Janesville	
6	Scottsdale	
7	Austin	
8	Austin	
9	Pasco	
1.	Scottsdale	
1.	Austin	
1.	Pasco	
1.	Aurora	
1.	Greenville	
1.	Middletown	
1.	Aurora	
1.	Greenville	
1.	Pasco	
1.	Janesville	
2.	Scottsdale	
2.	Austin	
2.	Austin	
2.	Middletown	
2.	Pasco	
2.	Janesville	
2.	Scottsdale	
2.	Austin	
2.	Janesville	

Cek pada database Dw_Car pada tabel dim_region

← T →				region_id	region_name
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	Middletown
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	Aurora
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	Greenville
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	Pasco
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	Janesville
<input type="checkbox"/>	 Edit	 Copy	 Delete	6	Scottsdale
<input type="checkbox"/>	 Edit	 Copy	 Delete	7	Austin
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	Austin
<input type="checkbox"/>	 Edit	 Copy	 Delete	9	Pasco
<input type="checkbox"/>	 Edit	 Copy	 Delete	10	Scottsdale
<input type="checkbox"/>	 Edit	 Copy	 Delete	11	Austin
<input type="checkbox"/>	 Edit	 Copy	 Delete	12	Pasco
<input type="checkbox"/>	 Edit	 Copy	 Delete	13	Aurora
<input type="checkbox"/>	 Edit	 Copy	 Delete	14	Greenville
<input type="checkbox"/>	 Edit	 Copy	 Delete	15	Middletown
<input type="checkbox"/>	 Edit	 Copy	 Delete	16	Aurora
<input type="checkbox"/>	 Edit	 Copy	 Delete	17	Greenville

d. Tabel Dimensi Color

Elemen yang dibutuhkan :



Tambah connection ke database Dw_Car

Database Connection dialog box. The 'General' tab is selected. The 'Connection name' is 'olap_dw'. The 'Connection type' is 'MySQL'. The 'Access' is 'Native JDBC'. The 'Settings' section shows: Host Name: localhost, Database Name: dw_car, Port Number: 3306, Username: root, Password: (empty). The 'Use Result Streaming Cursor' checkbox is checked. Buttons at the bottom: Test, Feature List, Explore, OK, Cancel.

Memasukkan dataset ke tabel input

CSV file input dialog box. The 'Step name' is 'CSV file input'. The 'Filename' is 'D:\Data Warehouse\uas\dataCar.csv'. The 'Delimiter' is ','. The 'Enclosure' is '"'. The 'NIO buffer size' is '50000'. The 'Lazy conversion?' checkbox is checked. The 'Header row present?' checkbox is checked. The 'Add filename to result' checkbox is unchecked. The 'The row number field name (optional)' is empty. The 'Running in parallel?' checkbox is unchecked. The 'New line possible in fields?' checkbox is unchecked. The 'Format' is 'mixed'. The 'File encoding' is empty. Below the settings is a table with 10 columns: #, Name, Type, Format, Length, Precision, Currency, Decimal, Group, Trim type. The table contains 20 rows of data.

#	Name	Type	Format	Length	Precision	Currency	Decimal	Group	Trim type
1	Car_id	String		12		\$	.	,	none
2	Date	Date	MM/dd/yyyy			\$	.	,	none
3	Customer Name	String		10		\$	.	,	none
4	Gender	String		6		\$	.	,	none
5	Annual Income	Integer	#	15	0	\$	.	,	none
6	Dealer_Name	String		47		\$	.	,	none
7	Company	String		10		\$	.	,	none
8	Model	String		14		\$	.	,	none
9	Engine	String		27		\$	.	,	none
1.	Transmission	String		6		\$	.	,	none
1.	Color	String		10		\$	.	,	none
1.	Price (\$)	Integer	#	15	0	\$	.	,	none
1.	Dealer_No	String		10		\$	.	,	none
1.	Body Style	String		9		\$	.	,	none
1.	Phone	Integer	#	15	0	\$	.	,	none
1.	Dealer_Region	String		10		\$	.	,	none

Buttons at the bottom: Help, OK, Get Fields, Preview, Cancel.

Setting kolom yang akan digunakan pada elemen select value yaitu color untuk dim_color




Atur Table output untuk menyimpan hasil pada database Dw_Car pada table dim_color dan sinkronisasi tabel yang digunakan

[illegible]

Jalankan transformasi dan pastikan tidak ada error pada hasil eksekusi

Execution Results

[Logging](#) [Execution History](#) [Step Metrics](#) [Performance Graph](#) [Metrics](#) [Preview data](#)



2025/06/15 16:23:03 - Spoon - Transformation opened.

2025/06/15 16:23:03 - Spoon - Launching transformation [dimdealer]...

2025/06/15 16:23:03 - Spoon - Started the transformation execution.

2025/06/15 16:23:05 - Spoon - The transformation has finished!!

2025/06/15 16:29:32 - Spoon - Transformation opened.

2025/06/15 16:29:32 - Spoon - Launching transformation [dimregion]...

2025/06/15 16:29:32 - Spoon - Started the transformation execution.

2025/06/15 16:29:34 - Spoon - The transformation has finished!!

2025/06/15 16:41:46 - Spoon - Transformation opened.

2025/06/15 16:41:46 - Spoon - Launching transformation [dimcolor]...

2025/06/15 16:41:46 - Spoon - Started the transformation execution.

2025/06/15 16:41:46 - dimcolor - Dispatching started for transformation [dimcolor]

2025/06/15 16:41:46 - Table output.0 - Connected to database [olap_dw] (commit=1000)

2025/06/15 16:41:46 - CSV file input.0 - Header row skipped in file 'D:\Data Warehouse\uas\dataCar.csv'

2025/06/15 16:41:46 - CSV file input.0 - Finished processing (I=23907, O=0, R=0, W=23906, U=0, E=0)

2025/06/15 16:41:47 - Select values.0 - Finished processing (I=0, O=0, R=23906, W=23906, U=0, E=0)


































2025/06/15 16:41:48 - Filter rows.0 - Finished processing (I=0, O=0, R=23906, W=23906, U=0, E=0)

2025/06/15 16:41:49 - Table output.0 - Finished processing (I=0, O=23906, R=23906, W=23906, U=0, E=0)

Lihat pada preview data untuk memastikan data sudah berhasil

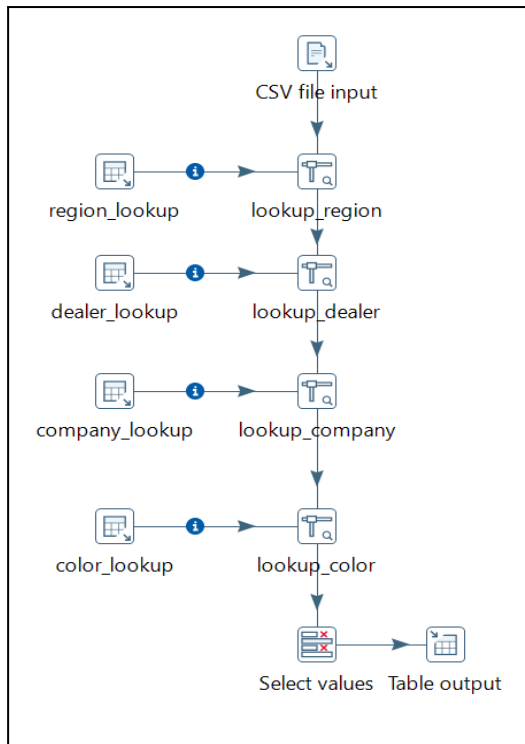
Execution Results	
Logging Execution History Step Metrics Performance Graph Metrics Preview data	
<input checked="" type="radio"/> First rows <input type="radio"/> Last rows <input type="radio"/> Off	
#	Color
1	Black
2	Black
3	Red
4	Pale White
5	Red
6	Pale White
7	Pale White
8	Pale White
9	Pale White

Cek pada database Dw_Car pada tabel dim_region

<div><div>←T→</div><div></div></div>				color_id	color_name
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	Black
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	Black
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	Red
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	Pale White
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	Red
<input type="checkbox"/>	 Edit	 Copy	 Delete	6	Pale White
<input type="checkbox"/>	 Edit	 Copy	 Delete	7	Pale White
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	Pale White
<input type="checkbox"/>	 Edit	 Copy	 Delete	9	Pale White
<input type="checkbox"/>	 Edit	 Copy	 Delete	10	Pale White
<input type="checkbox"/>	 Edit	 Copy	 Delete	11	Pale White

3. Create Fact Table

Elemen yang dibutuhkan :



Tambahkan Koneksi untuk menuju ke database Dw_Car

Database Connection

General
Advanced
Options
Pooling
Clustering

Connection name:
olap_car

Connection type:
MySQL
Native Mondrian
Neoview
Netezza
Oracle
Oracle RDB
Palo MOLAP Server
PostgreSQL
Redshift
Remedy Action Request System
SAP ERP System
SQLite

Access:
Native (ODBC)
ODBC
JNDI

Settings
Host Name:
localhost
Database Name:
dw_car
Port Number:
3306
Username:
root
Password:

☒ Use Result Streaming Cursor

Test Feature List Explore

OK Cancel

Membaca data mentah penjualan mobil dari file csv

CSV file input

Step name

CSV file input

Filename

D:\Data Warehouse\uas\dataCar.csv

Browse...

Delimiter

,

Insert TAB

Enclosure

"

NIO buffer size

50000

Lazy conversion?

☒

Header row present?

☒

Add filename to result

☐

The row number field name (optional)

Running in parallel?

☐

New line possible in fields?

☐

Format

mixed

File encoding

Help

OK

Get Fields

Preview

Cancel

Mencari ID wilayah dari dim_region

Table input

Step name: region_lookup

Connection: olap_car Edit... New... Wizard...

SQL Get SQL select statement...

```
SELECT
  region_id,
  region_name
FROM dim_region;
```

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

Help OK Preview Cancel

Stream lookup

Step name: lookup_region

Lookup step: region_lookup

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

#	Field	LookupField
1	Dealer_Region	region_name

Specify the fields to retrieve :

#	Field	New name	Default	Type
1	region_id			None

Preserve memory (costs CPU) ☒

Key and value are exactly one integer field ☐

Use sorted list (i.s.o. hashtable) ☐

Help OK Cancel Get Fields Get lookup fields

Mencari ID dealer dari dim_dealer

Table input

Step name: dealer_lookup

Connection: olap_car Edit... New... Wizard...

SQL Get SQL select statement...

```
SELECT
dealer_id,
dealer_name
FROM dim_dealer;
```

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:

Help OK Preview Cancel

Stream lookup

Step name: lookup_dealer

Lookup step: dealer_lookup

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

#	Field	LookupField
1	Dealer_Name	dealer_name

Specify the fields to retrieve :

#	Field	New name	Default	Type
1	dealer_id			None

☒ Preserve memory (costs CPU)

Key and value are exactly one integer field ☐

Use sorted list (i.s.o. hashtable) ☐

Help OK Cancel Get Fields Get lookup fields

Mencari ID perusahaan dari tabel dim_company

Table input

Step name company_lookup

Connection olap_car Edit... New... Wizard...

SQL Get SQL select statement...

```
SELECT company_id, company_name FROM dim_company;
```

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

Help OK Preview Cancel

Stream lookup

Step name lookup_company

Lookup step company_lookup

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

#	Field	LookupField
1	Company	company_name

Specify the fields to retrieve :

#	Field	New name	Default	Type
1	company_id			None

Preserve memory (costs CPU) ☒

Key and value are exactly one integer field ☐

Use sorted list (i.s.o. hashtable) ☐

Help OK Cancel Get Fields Get lookup fields

Mencari ID warna dari dim_color

Table input

Step name

Connection Edit... New... Wizard...

SQL Get SQL select statement...

```
SELECT
  color_id,
  color_name
FROM dim_color;
```

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

Help OK Preview Cancel

Stream lookup

Step name

Lookup step

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

#	Field	LookupField
1	Color	color_name

Specify the fields to retrieve :

#	Field	New name	Default	Type
1	color_id			None

Preserve memory (costs CPU) ☒

Key and value are exactly one integer field ☐

Use sorted list (i.s.o. hashtable) ☐

Help OK Cancel Get Fields Get lookup fields

Memilih hasil akhir untuk disimpan ke tabel fact, kolom yang diambil disesuaikan dengan tabel fakta

Jalankan transformasi dan pastikan tidak ada error pada hasil eksekusi

Execution Results

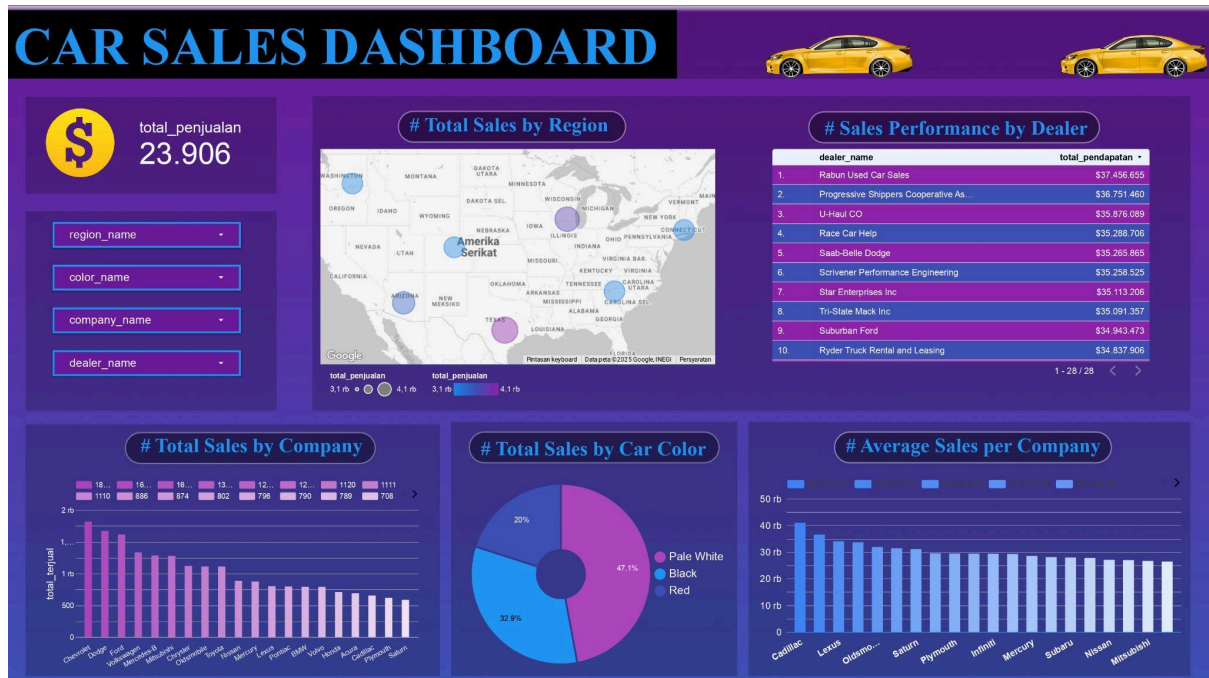
Logging Execution History Step Metrics Performance Graph Metrics Preview data

2025/06/15 16:42:36 - Spoon - Transformation opened.
 2025/06/15 16:42:36 - Spoon - Launching transformation [dimcolor]...
 2025/06/15 16:42:36 - Spoon - Started the transformation execution.
 2025/06/15 16:42:39 - Spoon - The transformation has finished!!
 2025/06/15 17:32:18 - Spoon - Transformation opened.
 2025/06/15 17:32:18 - Spoon - Launching transformation [factsales]...
 2025/06/15 17:32:18 - Spoon - Started the transformation execution.
 2025/06/15 17:32:18 - factsales - Dispatching started for transformation [factsales]
 2025/06/15 17:32:18 - Table output.0 - Connected to database [olap_car] (commit=1000)
 2025/06/15 17:32:18 - CSV file input.0 - Header row skipped in file 'D:\Data Warehouse\uas\dataCar.csv'
 2025/06/15 17:32:18 - dealer_lookup.0 - Finished reading query, closing connection
 2025/06/15 17:32:18 - dealer_lookup.0 - Finished processing (I=23906, O=0, R=0, W=23906, U=0, E=0)
 2025/06/15 17:32:18 - company_lookup.0 - Finished reading query, closing connection
 2025/06/15 17:32:19 - region_lookup.0 - Finished reading query, closing connection
 2025/06/15 17:32:19 - company_lookup.0 - Finished processing (I=47812, O=0, R=0, W=47812, U=0, E=0)
 2025/06/15 17:32:19 - region_lookup.0 - Finished processing (I=47812, O=0, R=0, W=47812, U=0, E=0)
 2025/06/15 17:32:19 - color_lookup.0 - linenr 50000
 2025/06/15 17:32:19 - color_lookup.0 - Finished reading query, closing connection
 2025/06/15 17:32:19 - color_lookup.0 - Finished processing (I=71718, O=0, R=0, W=71718, U=0, E=0)
 2025/06/15 17:32:19 - lookup_region.0 - linenr 50000
 2025/06/15 17:32:19 - lookup_company.0 - linenr 50000
 2025/06/15 17:32:19 - CSV file input.0 - Finished processing (I=23907, O=0, R=0, W=23906, U=0, E=0)
 2025/06/15 17:32:19 - lookup_region.0 - Finished processing (I=0, O=0, R=71718, W=23906, U=0, E=0)
 2025/06/15 17:32:19 - lookup_dealer.0 - Finished processing (I=0, O=0, R=47812, W=23906, U=0, E=0)
 2025/06/15 17:32:19 - lookup_company.0 - Finished processing (I=0, O=0, R=71718, W=23906, U=0, E=0)
 2025/06/15 17:32:19 - lookup_color.0 - Finished processing (I=0, O=0, R=95624, W=23906, U=0, E=0)
 2025/06/15 17:32:20 - Select values.0 - Finished processing (I=0, O=0, R=23906, W=23906, U=0, E=0)
 2025/06/15 17:32:21 - Table output.0 - Finished processing (I=0, O=23906, R=23906, W=23906, U=0, E=0)
 2025/06/15 17:32:21 - Spoon - The transformation has finished!!

Cek pada database Dw_Car pada tabel dim_region

	sale_id	company_id	dealer_id	color_id	region_id	price
<input type="checkbox"/> Edit Copy Delete	1	47807	23901	71717	47812	26000.00
<input type="checkbox"/> Edit Copy Delete	2	47803	23902	71717	47806	19000.00
<input type="checkbox"/> Edit Copy Delete	3	47759	23813	71716	47807	31500.00
<input type="checkbox"/> Edit Copy Delete	4	47795	23904	71718	47808	14000.00
<input type="checkbox"/> Edit Copy Delete	5	47793	23905	71716	47799	24500.00
<input type="checkbox"/> Edit Copy Delete	6	47801	23816	71718	47810	12000.00
<input type="checkbox"/> Edit Copy Delete	7	47795	23817	71718	47811	14000.00
<input type="checkbox"/> Edit Copy Delete	8	47801	23900	71718	47811	42000.00
<input type="checkbox"/> Edit Copy Delete	9	47811	23899	71718	47808	82000.00
<input type="checkbox"/> Edit Copy Delete	10	47807	23899	71718	47810	15000.00
<input type="checkbox"/> Edit Copy Delete	11	47793	23872	71718	47811	31000.00
<input type="checkbox"/> Edit Copy Delete	12	47685	23872	71718	47808	46000.00
<input type="checkbox"/> Edit Copy Delete	13	47802	23891	71717	47806	9000.00
<input type="checkbox"/> Edit Copy Delete	14	47810	23881	71718	47807	15000.00
<input type="checkbox"/> Edit Copy Delete	15	47766	23901	71718	47812	26000.00
<input type="checkbox"/> Edit Copy Delete	16	47780	23902	71718	47806	17000.00
<input type="checkbox"/> Edit Copy Delete	17	47652	23813	71717	47807	18000.00

4. Implementasi Studi Kasus :



1. Mengetahui berapa banyak mobil dari masing-masing merek (Company) yang terjual

SELECT

c.company_name,

COUNT(s.sale_id) AS total_terjual

FROM fact_sales s

JOIN dim_company c ON s.company_id = c.company_id

GROUP BY c.company_name

ORDER BY total_terjual DESC;

Elemen yang dibutuhkan :



Table input Microsoft Excel output

Tambahkan Koneksi untuk menuju ke database Dw_Car

Database Connection

General

Advanced

Options

Pooling

Clustering

Connection name: olap_car

Connection type: MySQL

Settings

Host Name: localhost

Database Name: dw_car

Port Number: 3306

Username: root

Password:

Use Result Streaming Cursor

Access: Native (JDBC)

ODBC

JNDI

Test Feature List Explore

OK Cancel

Inputkan query ke tabel input

Table input

Step name Table input

Connection conn_db

Edit... New... Wizard...

SQL

Get SQL select statement...

```
SELECT
  c.company_name,
  COUNT(s.sale_id) AS total_terjual
FROM fact_sales s
JOIN dim_company c ON s.company_id = c.company_id
GROUP BY c.company_name
ORDER BY total_terjual DESC;
```

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

Help OK Preview Cancel

Save data pada excel

Microsoft Excel output

Step name Microsoft Excel output

File Content Custom Fields

Filename D:\Data Warehouse\uas\summary_sales Browse...

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

Show filename(s)...

Add filenames to result ☒

Cek hasil di excel

1	company	total_terjual		
2	Chevrolet	1819		
3	Dodge	1671		
4	Ford	1614		
5	Volkswage	1333		
6	Mercedes-	1285		
7	Mitsubishi	1277		
8	Chrysler	1120		
9	Oldsmobile	1111		
10	Toyota	1110		
11	Nissan	886		
12	Mercury	874		
13	Lexus	802		
14	Pontiac	796		
15	BMW	790		

2. Menghitung total pendapatan (Price) untuk tiap Dealer Name

SELECT

d.dealer_name,


```

SUM(s.price) AS total_pendapatan
FROM fact_sales s
JOIN dim_dealer d ON s.dealer_id = d.dealer_id
GROUP BY d.dealer_name
ORDER BY total_pendapatan DESC;

```

Elemen yang dibutuhkan :



Table input Microsoft Excel output

Tambahkan Koneksi untuk menuju ke database Dw_Car

Inputkan query ke tabel input

Table input

Step name

Connection

SQL

```
SELECT
  d.dealer_name,
  SUM(s.price) AS total_pendapatan
FROM fact_sales s
JOIN dim_dealer d ON s.dealer_id = d.dealer_id
GROUP BY d.dealer_name
ORDER BY total_pendapatan DESC;
```

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

Save data pada excel

Microsoft Excel output

Step name

File Content Custom Fields

Filename

Create Parent folder ☐

Do not create file at start ☐

Extension

Include stepnr in filename? ☐

Include date in filename? ☐

Include time in filename? ☐

Specify Date time format ☐

Date time format

Add filenames to result ☒

Cek hasil di excel

	A	B
1	dealer_name	total_pendapatan
2	Rabun Used Car Sales	37,456,655.00
3	Progressive Shippers Coop	36,751,460.00
4	U-Haul CO	35,876,089.00
5	Race Car Help	35,288,706.00
6	Saab-Belle Dodge	35,265,865.00
7	Scrivener Performance Eng	35,258,525.00
8	Star Enterprises Inc	35,113,206.00
9	Tri-State Mack Inc	35,091,357.00
10	Suburban Ford	34,943,473.00
11	Ryder Truck Rental and Le	34,837,906.00
12	Iceberg Rentals	17,883,895.00
13	Classic Chevy	17,819,055.00
14	Gartner Buick Hyundai Saa	17,739,506.00
15	Capitol KIA	17,703,134.00
16	Enterprise Rent A Car	17,695,363.00
17	Pars Auto Sales	17,648,228.00
18	Nebo Chevrolet	17,609,357.00
19	Chrysler of Tri-Cities	17,605,055.00
20	C & M Motors Inc	17,569,847.00
21	New Castle Ford Lincoln M	17,528,426.00
22	Hatfield Volkswagen	17,519,985.00
23	Motor Vehicle Break-Off	17,500,040.00

3. Mobil warna apa yang paling banyak terjual

SELECT

clr.color_name,

COUNT(s.sale_id) AS jumlah_terjual

FROM fact_sales s

JOIN dim_color clr ON s.color_id = clr.color_id

GROUP BY clr.color_name

ORDER BY jumlah_terjual DESC

LIMIT 1;

Elemen yang dibutuhkan :



Table input Microsoft Excel output

Tambahkan Koneksi untuk menuju ke database Dw_Car

Database Connection

General

Advanced

Options

Pooling

Clustering

Connection name: olap_car

Connection type: MySQL

Settings

Host Name: localhost

Database Name: dw_car

Port Number: 3306

Username: root

Password:

Use Result Streaming Cursor

Access: Native (JDBC)

ODBC

JNDI

Test Feature List Explore

OK Cancel

Inputkan query ke tabel input

Table input

Step name Table input

Connection conn_db

Edit... New... Wizard...

SQL

Get SQL select statement...

```
SELECT
  clr.color_name,
  COUNT(s.sale_id) AS jumlah_terjual
FROM fact_sales s
JOIN dim_color clr ON s.color_id = clr.color_id
GROUP BY clr.color_name
ORDER BY jumlah_terjual DESC;
```

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

Help OK Preview Cancel

Save data pada excel

Microsoft Excel output

Step name: Microsoft Excel output

File Content Custom Fields

Filename: D:\Data Warehouse\uas\summery_sak Browse...

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:

Show filename(s)...

Add filenames to result ☒

Cek hasil di excel

color_nam	jumlah_terjual
Pale White	11,256.00
Black	7,857.00
Red	4,793.00

4. Mengetahui wilayah dengan penjualan terbanyak

SELECT

r.region_name,

COUNT(s.sale_id) AS total_penjualan

FROM fact_sales s

JOIN dim_region r ON s.region_id = r.region_id

GROUP BY r.region_name

ORDER BY total_penjualan DESC;

Elemen yang dibutuhkan :



Table input Microsoft Excel output

Tambahkan Koneksi untuk menuju ke database Dw_Car

Database Connection

General

Advanced

Options

Pooling

Clustering

Connection name: olap_car

Connection type: MySQL

Settings

Host Name: localhost

Database Name: dw_car

Port Number: 3306

Username: root

Password:

☒ Use Result Streaming Cursor

Test Feature List Explore OK Cancel

Inputkan query ke tabel input

Table input

Step name Table input

Connection conn_db Edit... New... Wizard...

SQL

Get SQL select statement...

```
SELECT
  r.region_name,
  COUNT(s.sale_id) AS total_penjualan
FROM fact_sales s
JOIN dim_region r ON s.region_id = r.region_id
GROUP BY r.region_name
ORDER BY total_penjualan DESC;
```

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

Help OK Preview Cancel

Save data pada excel

Microsoft Excel output

Step name: Microsoft Excel output

File Content Custom Fields

Filename: D:/Data Warehouse/uas/summery_salk Browse...

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:

Show filename(s)...

Add filenames to result ☒

Cek hasil di excel

region_name	total_penjualan
Austin	4,135.00
Janesville	3,821.00
Scottsdale	3,433.00
Pasco	3,131.00
Aurora	3,130.00
Greenville	3,128.00
Middletown	3,128.00

5. Mengetahui rata-rata harga jual mobil dari setiap perusahaan (company)

```

SELECT
    c.company_name,
    ROUND(AVG(s.price), 2) AS rata_rata_harga
FROM fact_sales s
JOIN dim_company c ON s.company_id = c.company_id
GROUP BY c.company_name
ORDER BY rata_rata_harga DESC;

```

Elemen yang dibutuhkan :



Table input Microsoft Excel output

Tambahkan Koneksi untuk menuju ke database Dw_Car

Database Connection

General

Advanced

Options

Pooling

Clustering

Connection name: olap_car

Connection type: MySQL

Settings

Host Name: localhost

Database Name: dw_car

Port Number: 3306

Username: root

Password:

Use Result Streaming Cursor ☒

Access: Native (JDBC)

ODBC

JNDI

Test Feature List Explore

OK Cancel

Inputkan query ke tabel input

Table input

Step name Table input

Connection conn_db

Edit... New... Wizard...

SQL

Get SQL select statement...

```
SELECT
  c.company_name,
  ROUND(AVG(s.price), 2) AS rata_rata_harga
FROM fact_sales s
JOIN dim_company c ON s.company_id = c.company_id
GROUP BY c.company_name
ORDER BY rata_rata_harga DESC;
```

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

Help OK Preview Cancel

Save data pada excel

Microsoft Excel output

Step name: Microsoft Excel output

File Content Custom Fields

Filename: D:\Data Warehouse\uas\avg_sales_by_ Browse...

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:

Show filename(s)...

Add filenames to result ☒

Cek hasil di excel

company	rata_rata_harga
Cadillac	40,972.09
Saab	36,516.34
Lexus	34,024.57
Buick	33,634.36
Oldsmobile	31,894.25
Lincoln	31,407.04
Saturn	31,092.61
Toyota	29,513.12
Plymouth	29,404.98
Pontiac	29.358.30

Implementasi pada Google Looker Studio:

CAR SALES DASHBOARD



total_penjualan
23.906

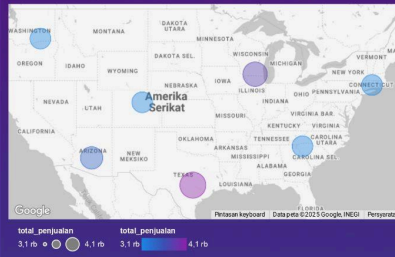
region_name

color_name

company_name

dealer_name

Total Sales by Region



Sales Performance by Dealer

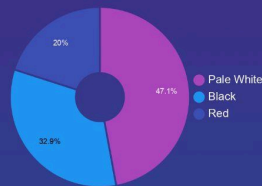
dealer_name	total_pendapatan
1. Rabun Used Car Sales	\$37.456.655
2. Progressive Shippers Cooperative As...	\$36.751.460
3. U-Haul CO	\$35.876.089
4. Race Car Help	\$35.288.706
5. Saab-Belle Dodge	\$35.265.865
6. Scrivener Performance Engineering	\$35.258.525
7. Star Enterprises Inc	\$35.113.206
8. Tri-State Mack Inc	\$35.091.357
9. Suburban Ford	\$34.943.473
10. Ryder Truck Rental and Leasing	\$34.837.906

1 - 28 / 28

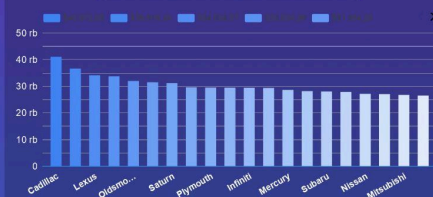
Total Sales by Company



Total Sales by Car Color



Average Sales per Company



<https://lookerstudio.google.com/u/0/reporting/895e0a2b-5198-4680-a748-9fc69b6a0dc3/page/5g9NF/edit>