

**LAPORAN JOBSHEET 3 DATA WAREHOUSE  
DATABASE ANALYTICAL (A&B)**



**Disusun Oleh:  
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SIB 2B**

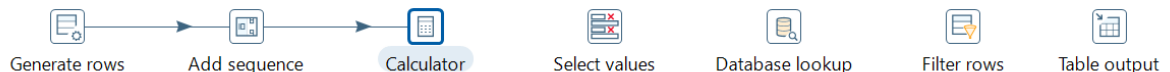
**SISTEM INFORMASI BISNIS  
JURUSAN TEKNOLOGI INFORMASI  
POLITEKNIK NEGERI MALANG  
2025**

## A. Dimensi Waktu

1. Buatlah sebuah database yang digunakan sebagai OLAP dengan nama dw\_LegendVehicle.
2. Buatlah table untuk menyimpan data master waktu atau yang disebut dengan tabel dimensi. Beri nama table tersebut dengan nama dimDate.

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> dimdate	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_0900_ai_ci	16.0 KiB	-
1 table	Sum	0	InnoDB	utf8mb4_0900_ai_ci	16.0 KiB	0 B

1. Buka PDI Spoon. Buat Transformation baru -> File - New - Transformation.
2. Drag and Drop beberapa objek yaitu:
  - Generate Rows: digunakan untuk membuat baris data baru.
  - Add Sequence: digunakan untuk membuat sequence, dalam hal ini membuat data di setiap harinya.
  - Calculator: digunakan untuk menjumlahkan hari dan mengambil data tahun, bulan dan hari.
  - Select Values: digunakan untuk memilih field yang digunakan.
  - Database Lookup: digunakan untuk melihat dan memastikan bahwa data yang akan dimasukkan kedalam tabel dimDate tidak kembar atau sama dengan data yang ada pada tabel dimDate itu sendiri.
  - Filter Rows: digunakan untuk mengambil data yang belum ada pada table dimDate setelah dicek sebelumnya.
  - Table Output: digunakan untuk menyimpan data pada tabel tujuan (dimDate).



3. Konfigurasi pada Generate Rows adalah merubah limit menjadi 1825 dimana memiliki arti bahwa data yang akan dibuat sebanyak 1825 data. 1825 merupakan jumlah hari dalam 5 tahun ( 365 hari x 5 tahun ).
4. Membuat fields baru bernama CurrentDate dengan type data Date dan format dd-MM-yyyy serta value awal 01-01-2003.

Generate rows

Step name: Generate rows

Limit: 1825

Never stop generating rows: ☐

Interval in ms (delay): 5000

Current row time field name: now

Previous row time field name: FiveSecondsAgo

Fields :

#	Name	Type	Format	Length	Precision	Currency	Decimal	Group	Value	Set
1	CurrentDate	Date	dd-MM-yyyy						01-01-2003	N

Help OK Preview Cancel

5. Hubungkan output dari Generate Rows menuju Add Sequence.
6. Konfigurasi pada Add Sequences adalah merubah Name of value menjadi incrementDay dengan start value bernilai 0 dan increment by bernilai 1

Add sequence

Step name: Add sequence

Name of value: incrementDay

Use a database to generate the sequence

Use DB to get sequence? ☐

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

Schema name:  Schemas...

Sequence name: SEQ\_ Sequences...

Use a transformation counter to generate the sequence

Use counter to calculate sequence? ☒

Counter name (optional):

Start at value: 0

Increment by: 1

Maximum value: 999999999

Help OK Cancel

7. Hubungkan output dari add sequences menuju calculator.
8. Konfigurasi pada calculator dengan membuat fields baru sebagai berikut:
  - streamDate merupakan kalkulasi dari CurrentDate + incrementDay
  - streamYear merupakan Year dari streamDate
  - streamMonth merupakan Month dari streamDate
  - streamDay merupakan Day of month dari streamDate

Calculator

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
1	streamDate	Date A + B...	Current...	increm...		None			N
2	streamYear	Year of dat...	stream...			None			N
3	streamMonth	Month of ...	stream...			None			N
4	streamDay	Day of mo...	stream...			None			N

9. Hubungkan output dari calculator menuju Select values
10. Konfigurasi pada select values adalah dengan menekan tombol Get fields to select pada tab Select & Alter. Secara otomatis semua fields dari data input akan muncul.
11. Dikarenakan tidak semua fields digunakan, maka pada tab Remove diisikan fields CurrentDate dan incrementDay dikarenakan kedua fields tersebut tidak digunakan.

Select values

Step name Select values

Select & Alter Remove Meta-data

Fields :

#	Fieldname	Rename to	Length	Precision
1	CurrentDate			
2	incrementDay			
3	streamDate			
4	streamYear			
5	streamMonth			
6	streamDay			

Get fields to select

Edit Mapping

Include unspecified fields, ☐

Help OK Cancel

Select values

Step name Select values

Select & Alter Remove Meta-data

Fields to remove :

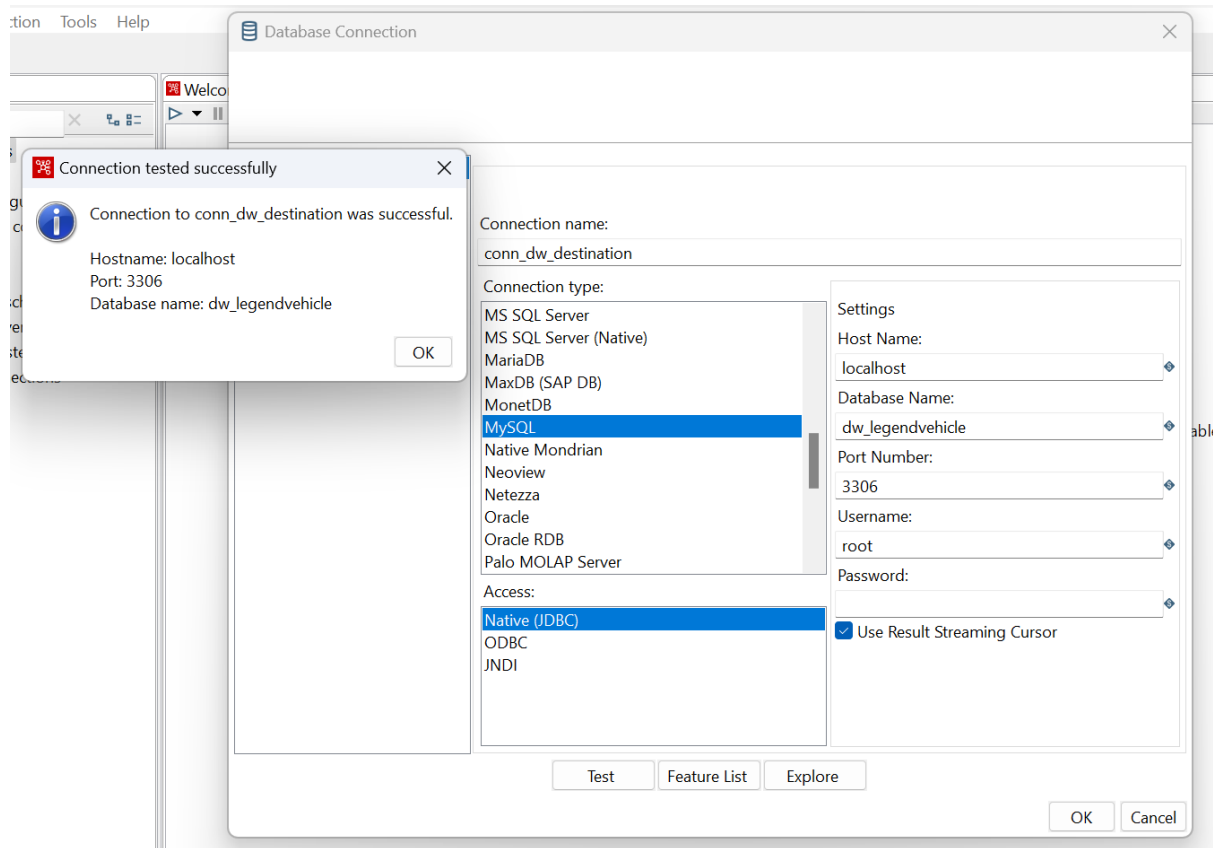
#	Fieldname
1	CurrentDate
2	incrementDay

Get fields to remove

Help OK Cancel

12. Hubungkan output select values menuju database lookup.

13. Sebelum melakukan konfigurasi pada database lookup, buatlah koneksi terlebih dahulu pada database melalui File - New - Database Connection. Gunakan Connection type MySQL dengan host name , database name, port number, username dan password sesuai konfigurasi MySQL pada device masing-masing. beri nama connection name tersebut dengan nama conn\_dw\_destination.



14. Konfigurasi pada database lookup adalah dengan memberikan connection dengan koneksi yang sudah dibuat pada step sebelumnya. dengan schema nama database yang digunakan dan tabel dimdate yang telah dibuat pada langkah pertama.
15. Field yang akan dicek untuk melihat kesamaan isi datanya agar tidak kembar adalah:
- field date pada table dimdate dengan field streamDate
  - field year pada table dimdate dengan field streamYear
  - field month pada table dimdate dengan field streamMonth
  - field day pada table dimdate dengan field streamDay
16. Field yang akan di retrieve adalah field yang ada pada table dimDate yaitu date, year, month, dan day.

Database lookup

Step name: Database lookup

Connection: conn\_dw\_destination [Edit...] [New...] [Wizard...]

Lookup schema: dw\_legendvehicle [Browse...]

Lookup table: dimdate [Browse...]

Enable cache? ☐

Cache size in rows (0=cache): 0

Load all data from table ☐

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

#	Table field	Comparator	Field1	Field2
1	date	=	strea...	
2	year	=	strea...	
3	month	=	strea...	
4	day	=	strea...	

Values to return from the lookup table :

#	Field	New name	Default	Type
1	date			None
2	year			None
3	month			None
4	day			None

Do not pass the row if the lookup fails ☐

Fail on multiple results? ☐

Order by:

[Help] [OK] [Cancel] [Get Fields] [Get lookup fields]

17. Hubungkan output dari database lookup dengan filter rows

18. Konfigurasi pada filter rows adalah dengan melakukan konfigurasi output true data pada table output. Pada bagian ini data yang tidak memiliki kesamaan pada tahapan sebelumnya akan dicek dimana jika fields Stream tidak memiliki kesamaan dengan field dimDate, maka field dimDate tersebut akan bernilai null. Pada pernyataan kondisi tuliskan ( date is null and year is null and month is null and day is null)

Filter rows

Step name: Filter rows

Send 'true' data to step: Table output

Send 'false' data to step:

The condition:

[ ]

date IS NULL

AND

year IS NULL

AND

month IS NULL

AND

day IS NULL

[Help] [OK] [Cancel]

19. Hubungkan output dari filter rows menuju table output.
20. Konfigurasi pada table output adalah memberikan koneksi pada conn\_dw\_destination dengan schema dw\_legendvehicle dan table dimdate.
21. Aktifkan specify database fields.
22. Pada tab Database fields, mapping data input streamDate, streamYear, streamMonth dan streamDay dengan fields yang ada pada dimDate. Pada tahapan ini akan dilakukan insert data menuju tabel dimDate.

Table output

Step name: Table output

Connection: conn\_dw\_destination [Edit... New... Wizard...]

Target schema: dw\_legendvehicle [Browse...]

Target table: dimdate [Browse...]

Commit size: 1000

Truncate table: ☐

Ignore insert errors: ☐

Specify database fields: ☒

Main options: Database fields

Fields to insert:

#	Table field	Stream field
1	date	streamDate
2	year	streamYear
3	month	streamMonth
4	day	streamDay

[Get fields] [Enter field mapping]

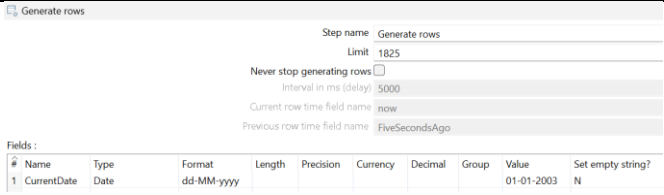
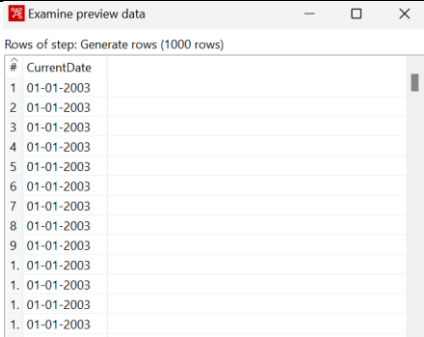
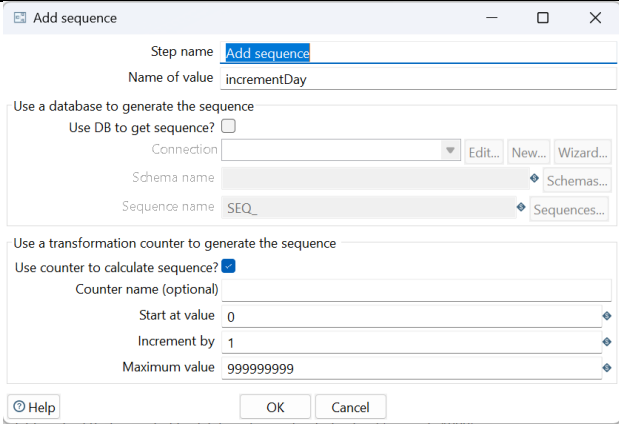
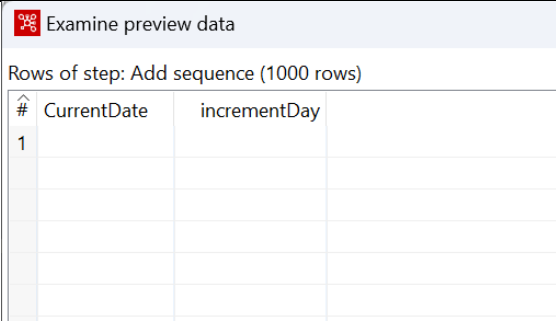
[Help] [OK] [Cancel] [SQL]

23. cek isi table dimdate pada database. Jika sukses maka pada table dimdate akan terisi 1825 data.

	id_dimDate	date	year	month	day
<input type="checkbox"/> Edit Copy Delete	1	2003-01-01	2003	1	1
<input type="checkbox"/> Edit Copy Delete	2	2003-01-02	2003	1	2
<input type="checkbox"/> Edit Copy Delete	3	2003-01-03	2003	1	3
<input type="checkbox"/> Edit Copy Delete	4	2003-01-04	2003	1	4
<input type="checkbox"/> Edit Copy Delete	5	2003-01-05	2003	1	5
<input type="checkbox"/> Edit Copy Delete	6	2003-01-06	2003	1	6
<input type="checkbox"/> Edit Copy Delete	7	2003-01-07	2003	1	7
<input type="checkbox"/> Edit Copy Delete	8	2003-01-08	2003	1	8
<input type="checkbox"/> Edit Copy Delete	9	2003-01-09	2003	1	9
<input type="checkbox"/> Edit Copy Delete	10	2003-01-10	2003	1	10
<input type="checkbox"/> Edit Copy Delete	11	2003-01-11	2003	1	11
<input type="checkbox"/> Edit Copy Delete	12	2003-01-12	2003	1	12
<input type="checkbox"/> Edit Copy Delete	13	2003-01-13	2003	1	13
<input type="checkbox"/> Edit Copy Delete	14	2003-01-14	2003	1	14
<input checked="" type="checkbox"/> Console Edit Copy Delete	15	2003-01-15	2003	1	15

## TUGAS 1

1. Buka preview tab pada execution result area di setiap proses object. amati input dan output data yang ada. bandingkan di setiap prosesnya. jelaskan perbedaan disetiap prosesnya.

Proses Objek	SS data input	SS data output	Keterangan
Generate rows			Data input menetapkan 01-01-2003 tanpa perubahan, dan data output menghasilkan 1000 baris dengan nilai yang sama
Add Sequences			Add Sequence menambahkan kolom incrementDay yang dimulai dari 0 dan bertambah 1 setiap baris, namu nilai CurrentDay masih 01-01-2003.



Calculator

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
1	streamDate	Date A + B Days	CurrentDate	incrementDay		None			N
2	streamYear	Year of date A	streamDate			None			N
3	streamMonth	Month of date A	streamDate			None			N
4	streamDay	Day of month of date A	streamDate			None			N

Examine preview data

Rows of step: Calculator (1000 rows)

#	CurrentDate	incrementDay	streamDate	streamYear	streamMonth	streamDay
1	01-01-2003	0	2003/01/01 00:00:00.000	2003	1	1
2	01-01-2003	1	2003/01/02 00:00:00.000	2003	1	2
3	01-01-2003	2	2003/01/03 00:00:00.000	2003	1	3
4	01-01-2003	3	2003/01/04 00:00:00.000	2003	1	4
5	01-01-2003	4	2003/01/05 00:00:00.000	2003	1	5
6	01-01-2003	5	2003/01/06 00:00:00.000	2003	1	6
7	01-01-2003	6	2003/01/07 00:00:00.000	2003	1	7
8	01-01-2003	7	2003/01/08 00:00:00.000	2003	1	8
9	01-01-2003	8	2003/01/09 00:00:00.000	2003	1	9
10	01-01-2003	9	2003/01/10 00:00:00.000	2003	1	10

Proses Calculator membuat kolom streamDate dengan menambahkan nilai incrementDay ke CurrentDate, sehingga menghasilkan tanggal yang bertambah setiap baris. Dan juga mengekstrak streamDate menjadi streamYear, streamMonth, streamDay.

Select values

Step name

Select values

Select & Alter

Remove

Meta-data

Fields :

#	Fieldname	Rename to	Length	Precision
1	CurrentDate			
2	incrementDay			
3	streamDate			
4	streamYear			
5	streamMonth			
6	streamDay			

Step name

Select values

Select & Alter

Remove

Meta-data

Fields to remove :

#	Fieldname
1	CurrentDate
2	incrementDay

Examine preview data

Rows of step: Select values (1000 rows)

#	streamDate	streamYear	streamMonth	streamDay
1	2003/01/01 00:00:00.000	2003	1	1
2	2003/01/02 00:00:00.000	2003	1	2
3	2003/01/03 00:00:00.000	2003	1	3
4	2003/01/04 00:00:00.000	2003	1	4
5	2003/01/05 00:00:00.000	2003	1	5
6	2003/01/06 00:00:00.000	2003	1	6
7	2003/01/07 00:00:00.000	2003	1	7
8	2003/01/08 00:00:00.000	2003	1	8
9	2003/01/09 00:00:00.000	2003	1	9
10	2003/01/10 00:00:00.000	2003	1	10

Kolom CurrentDate dan incrementDay dihapus, yang menyisakan streamDate, steamYear, streamMonth, dan streamDay.

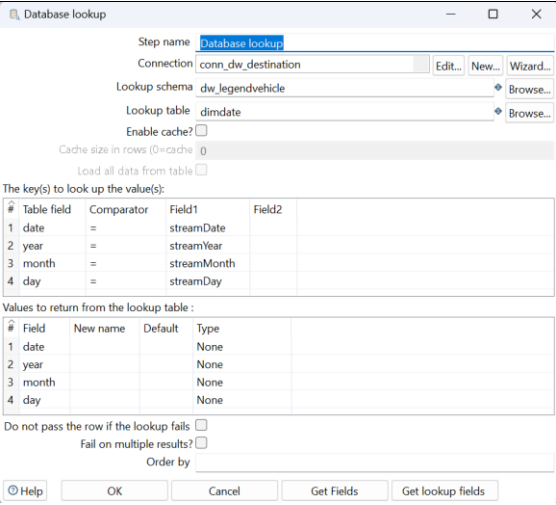
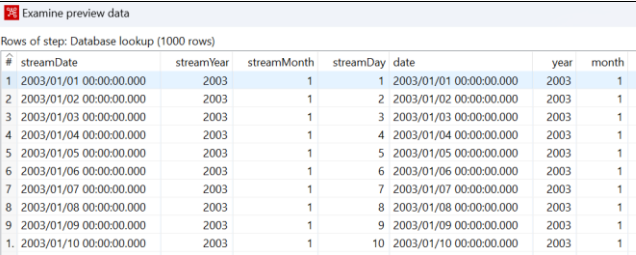
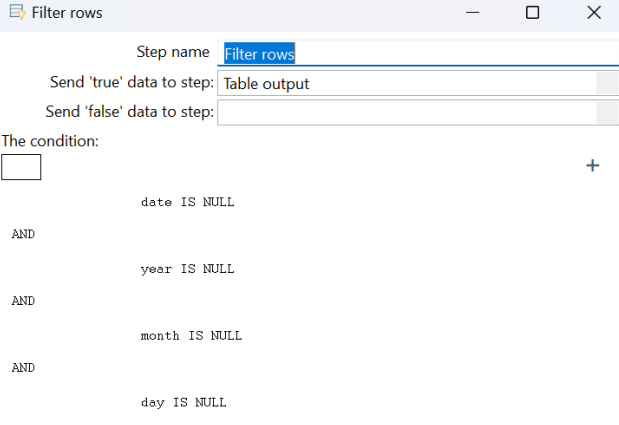
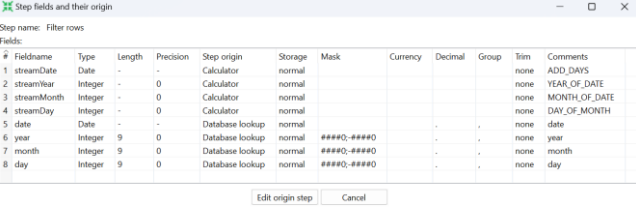
<p>Database lookup</p>			<p>Mencocokkan data dari tabel referensi dimdate berdasarkan kolom year, month, dan day dengan nilai streamYear, streamMonth, dan streamDay.</p>
<p>Filter rows</p>			<p>Menyaring data berdasarkan kondisi date IS NULL, year IS NULL, month IS NULL, dan day IS NULL. Jika semua nilai NULL, data akan dikirim ke langkah Table Output.</p>

Table  
Output

Table output

Step name

table output

Connection

conn\_dw\_destination

Edit...

New...

Wizard...

Target schema

dw\_legendvehicle

Browse...

Target table

dimdate

Browse...

Commit size

1000

Truncate table

☐

Ignore insert errors

☐

Specify database fields

☒

Main options

Database fields

Fields to insert:

#	Table field	Stream field
1	date	streamDate
2	year	streamYear
3	month	streamMonth
4	day	streamDay

Get fields

Enter field mapping

Step fields and their origin

Step name: table output

Fields:

#	Fieldname	Type	Length	Precision	Step origin	Storage	Mask	Currency	Decimal	Group	Trim	Comments
1	streamDate	Date	-	-	Calculator	normal					none	ADD_DAYS
2	streamYear	Integer	-	0	Calculator	normal					none	YEAR_OF_DATE
3	streamMonth	Integer	-	0	Calculator	normal					none	MONTH_OF_DATE
4	streamDay	Integer	-	0	Calculator	normal					none	DAY_OF_MONTH
5	date	Date	-	-	Database lookup	normal					none	date
6	year	Integer	9	0	Database lookup	normal	####-####				none	year
7	month	Integer	9	0	Database lookup	normal	####-####				none	month
8	day	Integer	9	0	Database lookup	normal	####-####				none	day

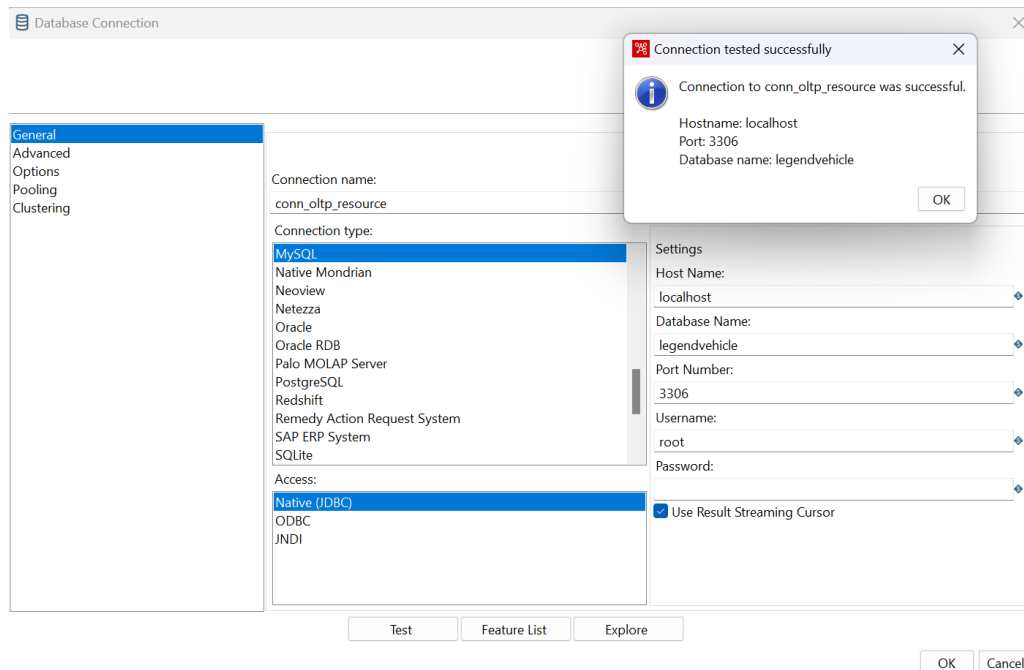
Edit origin step

Cancel

Table Output menyimpan data hasil transformasi ke dalam tabel dimdate pada skema dw\_legendvehicle.

## B. Dimensi Pegawai

1. Buatlah tabel dimPegawai pada dw\_legendVehicle.
2. Pada PDI Spoon buatlah koneksi baru dengan nama conn\_oltp\_resources yang menghubungkan dengan database oltp. sesuaikan hostname, database name, port number, username dan password dengan keadaan pada device masing-masing.



3. Drag and drop beberapa objek sebagai berikut:
  - Table input: digunakan mengambil data dari database OLTP.
  - Select values: memilih field yang digunakan untuk proses Transform dan Load.
  - Database lookup: digunakan untuk melihat data pada tabel dimEmployees untuk memastikan data tidak kembar
  - Filter rows: digunakan untuk memilih data stream yang masih belum ada pada tabel dimEmployees.
  - Table output: Memasukkan data ke dalam tabel dimEmployees



Table input



Select values



Database lookup



Filter rows



Table output

4. Konfigurasi pada table input dengan menghubungkan Connection pada koneksi conn\_oltp\_resources. Untuk mengambil data sumber menggunakan query dibawah ini.

Table input

Step name Table input

Connection conn\_oltp\_resource Edit... New... Wizard...

SQL

Get SQL select statement...

```
SELECT *  
FROM employees e  
LEFT JOIN employees r  
ON e.reportsTo = r.employeeNumber;
```

Line 1 Column 0

Store column info in step meta data ☐

Enable lazy conversion ☐

5. Hubungkan output table input pada select values.
6. Konfigurasi pada Select values yaitu mengambil data dari field employeenumber, lastname, firstname, jobtitle, lastname\_1 dan firstname\_1 sebagai data stream yang digunakan pada proses ETL pada tab select & alter.
7. Hilangkan field lain yang tidak digunakan pada tab remove.

Select values

Step name Select values

Select & Alter Remove Meta-data

Fields :

#	Fieldname	Rename to	Length	Precision
1	employeeNumber	StreamEmployeeenumber		
2	lastName	StreamLastname		
3	firstName	StreamFirstname		
4	extension			
5	email			
6	officeCode			
7	reportsTo			
8	jobTitle	StreamJobtitle		
9	employeeNumber_1			
1.	lastName_1	StreamLastnameBoss		
1.	firstName_1	StreamFirstnmaeBoss		
1.	extension_1			
1.	email_1			
1.	officeCode_1			
1.	reportsTo_1			
1.	jobTitle_1			

Get fields to select

Edit Mapping

Include unspecified fields, ordered by ☐

Help OK Cancel

Select values

Step name Select values

Select & Alter Remove Meta-data

Fields to remove :

#	Fieldname
1	extension
2	email
3	officeCode
4	reportsTo
5	employeeNumber_1
6	extension_1
7	email_1
8	officeCode_1
9	reportsTo_1
1.	jobTitle_1

Get fields to remove

Help OK Cancel

8. Hubungkan output select values pada database lookup
9. Konfigurasi pada database lookup adalah dengan menghubungkan koneksi pada conn\_dw\_destination dengan table lookup dimEmployees yang telah dibuat pada tahap pertama.

10. Field yang di lookup adalah field pada tabel dimEmployees dengan field stream input dari OLTP. sedangkan field yang di retrieve adalah field dari dimEmployees itu sendiri. Jika tidak ada data yang sama maka akan muncul null.

Step name: Database lookup

Connection: conn\_dw\_destination

Lookup schema: dw\_legendvehicle

Lookup table: dimemployees

Enable cache?: ☐

Cache size in rows (0=cache): 0

Load all data from table: ☐

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

#	Table field	Comparator	Field1	Field2
1	employeeNumber	=	StreamEmployeeNumber	
2	firstName	=	StreamFirstname	
3	lastName	=	StreamLastname	
4	jobTitle	=	StreamJobtitle	

Values to return from the lookup table:

#	Field	New name	Default	Type
1	employeeNumber			Integer
2	firstName			String
3	lastName	lastname		String
4	jobTitle	jobtitle		String

Do not pass the row if the lookup fails: ☐

Fail on multiple results?: ☐

Order by:

11. Hubungl

12. Pada fil

oyees untuk

dimasukkan pada proses selanjutnya. Hal itu menandakan bahwa data stream belum memiliki kesamaan pada data di dimemployees.

Step name: Filter rows

Send 'true' data to step: Table output

Send 'false' data to step:

The condition:

```

employeeNumber IS NOT NULL
AND
firstName IS NOT NULL
AND
lastName IS NOT NULL
AND
jobtitle IS NOT NULL
AND
boss_firstname IS NOT NULL
AND
boss_lastname IS NOT NULL
  
```

13. Hubungkan output dari filter rows dengan table output.
14. Pada table output, gunakan connection conn\_dw\_destination untuk memasukkan data pada tabel dimemployees.
15. Aktifkan specify database fields, dan mapping data stream input dari oltp terhadap field yang ada pada dimemployees.

Table output

Step name: Table output

Connection: conn\_dw\_destination

Target schema: dw\_legendvehicle

Target table: dimemployees

Commit size: 1000

Truncate table: ☐

Ignore insert errors: ☐

Specify database fields: ☒

Main options | Database fields

Fields to insert:

#	Table field	Stream field
1	employee...	StreamEmpl...
2	firstName	StreamFirstn...
3	lastName	StreamLastn...
4	jobTitle	StreamJobti...
5	boss_first...	StreamFirstn...
6	boss_last...	StreamLastn...

Get fields

Enter field mapping

Help OK Cancel SQL

16. jika proses keseluruhan berhasil maka tabel dimemployees akan terisi data pegawai dari database OLTP.

	id_dimEmployees	employeeNumber	firstName	lastName	jobTitle	boss_firstname	boss_lastname	updated	reportsTo
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	1	1002	Diane	Murphy	President	NULL	NULL	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2	1056	Mary	Patterson	VP Sales	Diane	Murphy	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	3	1076	Jeff	Firrelli	VP Marketing	Diane	Murphy	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	4	1088	William	Patterson	Sales Manager (APAC)	Mary	Patterson	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	5	1102	Gerard	Bondur	Sale Manager (EMEA)	Mary	Patterson	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	6	1143	Anthony	Bow	Sales Manager (NA)	Mary	Patterson	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	7	1165	Leslie	Jennings	Sales Rep	Anthony	Bow	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	8	1166	Leslie	Thompson	Sales Rep	Anthony	Bow	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	9	1188	Julie	Firrelli	Sales Rep	Anthony	Bow	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	10	1216	Steve	Patterson	Sales Rep	Anthony	Bow	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	11	1286	Foon Yue	Tseng	Sales Rep	Anthony	Bow	2025-03-11 10:01:17	NULL
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	12	1323	George	Vanauf	Sales Rep	Anthony	Bow	2025-03-11 10:01:17	NULL
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<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	15	1401	Pamela	Castillo	Sales Rep	Gerard	Bondur	2025-03-11 10:01:17	NULL



TUGAS 2

1. Buka preview tab pada execution result area di setiap proses object. amati input dan output data yang ada. bandingkan di setiap prosesnya. jelaskan perbedaan disetiap prosesnya.

Proses	SS data input	SS data output	Keterangan																																																																																																																																																																																																																																																										
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Table Input	<div><div>Table input</div><div><div>Step name: <b>table input</b></div><div>Connection: <b>conn_oltp_resource</b></div><div>SQL<pre>SELECT * FROM employees e LEFT JOIN employees r ON e.reportsto = r.employeeid;</pre></div><div>Line 1 Column 0</div><div><div>Store column info in step meta data</div><div>Enable lazy conversion</div><div>Replace variables in script?</div><div>Insert data from step</div><div>Execute for each row?</div><div>Limit size: 0</div></div><div><div>Help</div><div>OK</div><div>Preview</div><div>Cancel</div></div></div></div> <div><div>Examine preview data</div><div>Rows of step: Table input (23 rows)</div><table><tr><th>#</th><th>employeeNumber</th><th>lastName</th><th>extension</th><th>email</th><th>officeCode</th><th>reportsTo</th><th>jobTitle</th><th>employeeNumber_1</th><th>lastName_1</th><th>extension_1</th><th>email_1</th></tr><tr><td>1</td><td>1002</td><td>Murphy</td><td>Diane</td><td>dsmurphy@descomodels.com</td><td>1</td><td>&lt;null&gt;</td><td>President</td><td>&lt;null&gt;</td><td>Murphy</td><td>Diane</td><td>dsmurphy@descomodels.com</td></tr><tr><td>2</td><td>1056</td><td>Patterson</td><td>Mary</td><td>mpatterson@descomodels.com</td><td>1</td><td>1002</td><td>VP Sales</td><td>1002</td><td>Murphy</td><td>Diane</td><td>dsmurphy@descomodels.com</td></tr><tr><td>3</td><td>1076</td><td>Favelli</td><td>Jeff</td><td>jfavelli@descomodels.com</td><td>1</td><td>1002</td><td>VP 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Select Values	<div><div>Step name: <b>Select values</b></div><div><div>Select &amp; Alter</div><div>Remove</div><div>Meta-data</div></div><div><div>Fields :</div><table><tr><th>#</th><th>Fieldname</th><th>Rename 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Rep	Patterson	William	1.	1612	Marsh	Peter	Sales Rep	Patterson	William	2.	1619	King	Tom	Sales Rep	Patterson	William	Data input mengambil data dari tabel employees dalam koneksi conn_oltp_resource. 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8	jobTitle	StreamJobTitle																																																																																																																																																																																																																																																											
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1.	jobTitle_1																																																																																																																																																																																																																																																												
#	StreamEmployeeNumber	StreamLastName	StreamFirstName	StreamJobTitle	StreamLastnameBoss	StreamFirstnameBoss																																																																																																																																																																																																																																																							
1	1002	Murphy	Diane	President	<null>	<null>																																																																																																																																																																																																																																																							
2	1056	Patterson	Mary	VP Sales	Murphy	Diane																																																																																																																																																																																																																																																							
3	1076	Favelli	Jeff	VP Marketing	Diane	Diane																																																																																																																																																																																																																																																							
4	1088	Patterson	William	Sales Manager (APAC)	Patterson	Mary																																																																																																																																																																																																																																																							
5	1102	Bondur	Gerard	Sale Manager (EMEA)	Patterson	Mary																																																																																																																																																																																																																																																							
6	1143	Bow	Anthony	Sales Manager (NA)	Patterson	Mary																																																																																																																																																																																																																																																							
7	1165	Jennings	Leslie	Sales Rep	Bow	Anthony																																																																																																																																																																																																																																																							
8	1166	Thompson	Leslie	Sales Rep	Bow	Anthony																																																																																																																																																																																																																																																							
9	1189	Favelli	Julie	Sales Rep	Bow	Anthony																																																																																																																																																																																																																																																							
1.	1216	Patterson	Steve	Sales Rep	Bow	Anthony																																																																																																																																																																																																																																																							
1.	1286	Tseng	Foon Yue	Sales Rep	Bow	Anthony																																																																																																																																																																																																																																																							
1.	1323	Vanauf	George	Sales Rep	Bow	Anthony																																																																																																																																																																																																																																																							
1.	1337	Bondur	Lou	Sales Rep	Bondur	Gerard																																																																																																																																																																																																																																																							
1.	1370	Hernandez	Gerard	Sales Rep	Bondur	Gerard																																																																																																																																																																																																																																																							
1.	1401	Castillo	Pamela	Sales Rep	Bondur	Gerard																																																																																																																																																																																																																																																							
1.	1501	Bott	Larry	Sales Rep	Bondur	Gerard																																																																																																																																																																																																																																																							
1.	1504	Jones	Barry	Sales Rep	Bondur	Gerard																																																																																																																																																																																																																																																							
1.	1611	Fixter	Andy	Sales Rep	Patterson	William																																																																																																																																																																																																																																																							
1.	1612	Marsh	Peter	Sales Rep	Patterson	William																																																																																																																																																																																																																																																							
2.	1619	King	Tom	Sales Rep	Patterson	William																																																																																																																																																																																																																																																							
			Input memiliki lebih banyak kolom dan beberapa duplikat dengan akhiran _1. Pada proses ini beberapa kolom diubah namanya dan kolom yang tidak diperlukan dihapus.																																																																																																																																																																																																																																																										

Data input mengambil data dari tabel employees dalam koneksi conn\_oltp\_resource. Melakukan LEFT JOIN pada tabel yang sama untuk menghubungkan table input mengambil data dari tabel employees.

Select & Alter Remove Meta-data

Fields to remove :

#	Fieldname
1	extension
2	email
3	officeCode
4	reportsTo
5	employeeNumber_1
6	extension_1
7	email_1
8	officeCode_1
9	reportsTo_1
1.	jobTitle 1

#	StreamEmployeeNumber	StreamLastname	StreamFirstname	StreamJobtitle	StreamLastnameBoss	StreamFirstnameBoss	employeeNumber	firstName	lastName	jobTitle	boss_1
1	1002	Murphy	Diane	President	crudi	crudi	crudi	crudi	crudi	crudi	crudi
2	1056	Patterson	Mary	VP Sales	Murphy	Diane	1056	Mary	Patterson	VP Sales	Diane
3	1076	Fordell	Jeff	VP Marketing	Murphy	Diane	1076	Jeff	Fordell	VP Marketing	Diane
4	1088	Patterson	William	Sales Manager (SM/A)	Patterson	Mary	1088	William	Patterson	Sales Manager (SM/A)	Mary
5	1102	Bondur	Gerard	Sales Manager (SM/A)	Patterson	Mary	1102	Gerard	Bondur	Sales Manager (SM/A)	Mary
6	1143	Bow	Anthony	Sales Manager (NA)	Patterson	Mary	1143	Anthony	Bow	Sales Manager (NA)	Mary
7	1165	Leavins	Louie	Sales Rep	Bow	Anthony	1165	Louie	Leavins	Sales Rep	Anthony
8	1166	Thompson	Louie	Sales Rep	Bow	Anthony	1166	Louie	Thompson	Sales Rep	Anthony
9	1188	Fordell	Julie	Sales Rep	Bow	Anthony	1188	Julie	Fordell	Sales Rep	Anthony
1	1216	Patterson	Steve	Sales Rep	Bow	Anthony	1216	Steve	Patterson	Sales Rep	Anthony
1	1286	Tang	Foon Yue	Sales Rep	Bow	Anthony	1286	Foon Yue	Tang	Sales Rep	Anthony
1	1323	Vandaf	George	Sales Rep	Bow	Anthony	1323	George	Vandaf	Sales Rep	Anthony
1	1337	Bondur	Lou	Sales Rep	Bondur	Gerard	1337	Lou	Bondur	Sales Rep	Gerard
1	1370	Hernandez	Gerard	Sales Rep	Bondur	Gerard	1370	Gerard	Hernandez	Sales Rep	Gerard
1	1401	Castillo	Penelope	Sales Rep	Bondur	Gerard	1401	Penelope	Castillo	Sales Rep	Gerard
1	1501	Burt	Larry	Sales Rep	Bondur	Gerard	1501	Larry	Burt	Sales Rep	Gerard
1	1504	Jones	Barry	Sales Rep	Bondur	Gerard	1504	Barry	Jones	Sales Rep	Gerard
1	1617	Foster	Andy	Sales Rep	Patterson	William	1617	Andy	Foster	Sales Rep	William
1	1612	Marsh	Peter	Sales Rep	Patterson	William	1612	Peter	Marsh	Sales Rep	William

Database  
Lookup

Database lookup

Step name Database lookup

Connection conn\_dw\_destination Edit... New... Wizard...

Lookup schema dw\_legendvehicle Browse...

Lookup table dimemployees Browse...

Enable cache? ☐

Cache size in rows (0=cache) 0

Load all data from table ☐

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

#	Table field	Comparator	Field1	Field2
1	employeeNumber	=	StreamEmployeeNumber	
2	firstName	=	StreamFirstname	
3	lastName	=	StreamLastname	
4	jobTitle	=	StreamJobtitle	

Values to return from the lookup table :

#	Field	New name	Default	Type
1	employeeNumber			Integer
2	firstName			String
3	lastName	lastname		String
4	jobTitle	jobtitle		String

Do not pass the row if the lookup fails ☐

Fail on multiple results? ☐

Order by

Mencocokkan data input berdasarkan employeeNumber, firstName, dan lastname, dan menambahkan kolom dari tabel referensi.

## Filter rows

Filter rows

Step name: **Filter rows**

Send 'true' data to step: **Table output**

Send 'false' data to step:

The condition:

☐ +

employeeNumber IS NOT NULL

AND

firstName IS NOT NULL

AND

lastName IS NOT NULL

AND

jobtitle IS NOT NULL

AND

boss\_firstname IS NOT NULL

AND

boss\_lastname IS NOT NULL

Stream preview data

Rows of step: filter rows (22 rows)

#	StreamEmployeeNumber	StreamLastname	StreamFirstname	StreamJobTitle	StreamLastnameBoss	StreamFirstnameBoss	employeeNumber	JobTitle	boss_firstname	boss_lastname
1	1056	Patterson	Mary	VP Sales	Murphy	Diane	1056	Mary	Patterson	Diane
2	1076	Fordell	Jeff	VP Marketing	Murphy	Diane	1076	Jeff	Fordell	VP Marketing
3	1088	Patterson	William	Sales Manager (SM/NC)	Patterson	Mary	1088	William	Patterson	Sales Manager (SM/NC)
4	1102	Bondur	General	Sales Manager (SM/EA)	Patterson	Mary	1102	General	Bondur	Sales Manager (SM/EA)
5	1143	Bow	Anthony	Sales Rep (NA)	Patterson	Mary	1143	Anthony	Bow	Sales Rep (NA)
6	1165	Savings	Luelle	Sales Rep	Bow	Anthony	1165	Luelle	Savings	Sales Rep
7	1166	Thompson	Luelle	Sales Rep	Bow	Anthony	1166	Luelle	Thompson	Sales Rep
8	1188	Fordell	Julie	Sales Rep	Bow	Anthony	1188	Julie	Fordell	Sales Rep
9	1216	Patterson	Steve	Sales Rep	Bow	Anthony	1216	Steve	Patterson	Sales Rep
10	1286	Tsang	Foon Yue	Sales Rep	Bow	Anthony	1286	Foon Yue	Tsang	Sales Rep
11	1323	Vanaul	George	Sales Rep	Bow	Anthony	1323	George	Vanaul	Sales Rep
12	1327	Bondur	Lou	Sales Rep	Bondur	General	1327	Lou	Bondur	Sales Rep
13	1370	Hernandez	General	Sales Rep	Bondur	General	1370	General	Hernandez	Sales Rep
14	1401	Castillo	Perdita	Sales Rep	Bondur	General	1401	Perdita	Castillo	Sales Rep
15	1501	Bott	Larry	Sales Rep	Bondur	General	1501	Larry	Bott	Sales Rep
16	1504	Jones	Barry	Sales Rep	Bondur	General	1504	Barry	Jones	Sales Rep
17	1611	Foster	Andy	Sales Rep	Patterson	William	1611	Andy	Foster	Sales Rep
18	1612	Marsh	Peter	Sales Rep	Patterson	William	1612	Peter	Marsh	Sales Rep
19	1619	King	Tom	Sales Rep	Patterson	William	1619	Tom	King	Sales Rep

Menyaring data berdasarkan kondisi IS NULL untuk beberapa kolom. Data yang memenuhi kondisi akan difilter dan tidak muncul dalam output.

## Table Output

Table output

Step name: **table output**

Connection: **conn\_dw\_destination**

Target schema: **dw\_legendvehicle**

Target table: **dimemployees**

Commit size: **1000**

Truncate table: ☐

Ignore insert errors: ☐

Specify database fields: ☒

Main options: Database fields

Fields to insert:

#	Table field	Stream field
1	employee...	StreamEmpl...
2	firstName	StreamFirsn...
3	lastName	StreamLastn...
4	jobTitle	StreamJobti...
5	boss_first...	StreamFirsn...
6	boss_last...	StreamLastn...

Get fields

Enter field mapping

Stream preview data

Rows of step: Table output (22 rows)

#	StreamEmployeeNumber	StreamLastname	StreamFirstname	StreamJobTitle	StreamLastnameBoss	employeeNumber	JobTitle	boss_firstname	boss_lastname
1	1056	Patterson	Mary	VP Sales	Murphy	Diane	1056	Mary	Patterson
2	1076	Fordell	Jeff	VP Marketing	Murphy	Diane	1076	Jeff	Fordell
3	1088	Patterson	William	Sales Manager (SM/NC)	Patterson	Mary	1088	William	Patterson
4	1102	Bondur	General	Sales Manager (SM/EA)	Patterson	Mary	1102	General	Bondur
5	1143	Bow	Anthony	Sales Rep (NA)	Patterson	Mary	1143	Anthony	Bow
6	1165	Savings	Luelle	Sales Rep	Bow	Anthony	1165	Luelle	Savings
7	1166	Thompson	Luelle	Sales Rep	Bow	Anthony	1166	Luelle	Thompson
8	1188	Fordell	Julie	Sales Rep	Bow	Anthony	1188	Julie	Fordell
9	1216	Patterson	Steve	Sales Rep	Bow	Anthony	1216	Steve	Patterson
10	1286	Tsang	Foon Yue	Sales Rep	Bow	Anthony	1286	Foon Yue	Tsang
11	1323	Vanaul	George	Sales Rep	Bow	Anthony	1323	George	Vanaul
12	1327	Bondur	Lou	Sales Rep	Bondur	General	1327	Lou	Bondur
13	1370	Hernandez	General	Sales Rep	Bondur	General	1370	General	Hernandez
14	1401	Castillo	Perdita	Sales Rep	Bondur	General	1401	Perdita	Castillo
15	1501	Bott	Larry	Sales Rep	Bondur	General	1501	Larry	Bott
16	1504	Jones	Barry	Sales Rep	Bondur	General	1504	Barry	Jones
17	1611	Foster	Andy	Sales Rep	Patterson	William	1611	Andy	Foster
18	1612	Marsh	Peter	Sales Rep	Patterson	William	1612	Peter	Marsh
19	1619	King	Tom	Sales Rep	Patterson	William	1619	Tom	King

Table Output memasukkan data hasil filter ke dalam tabel dimemployees di database dw\_legendvehicle.

2. Jika proses itu di ulangi ( di run kembali ) apakah data akan redudant?

= Jika proses di ulangi, tidak akan ada redudansi data karena terdapat proses yang mencegah terjadinya duplikasi yaitu Database Lookup yang mengecek data yang sudah ada sebelum dimasukkan dan filter rows yang menyaring data supaya tidak terjadi duplikasi.

3. Tambahkan nama anda pada table employee di OLTP. jalankan kembali transformasi ini. Amati hasilnya, apa yang terjadi?

=

✔ 1 row inserted.  
Inserted row id: 288 (Query took 0.0307 seconds.)

```
INSERT INTO dw_legendvehicle.dimemployees (employeeNumber, lastName, firstName, jobTitle, reportsTo) VALUES (2326, 'Wirawan', 'Maharani', 'Business Woman', NULL);
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	285	1621	Mami	Nishi	Sales Rep	Mary	Patterson	2025-03-23 22:45:24	NULL
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	286	1625	Yoshimi	Kato	Sales Rep	Mami	Nishi	2025-03-23 22:45:24	NULL
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	287	1702	Martin	Gerard	Sales Rep	Gerard	Bondur	2025-03-23 22:45:24	NULL
<input type="checkbox"/>	<a href="#">Edit</a>	<a href="#">Copy</a>	<a href="#">Delete</a>	288	2326	Maharani	Wirawan	Business Woman	NULL	NULL	2025-03-24 12:06:40	NULL