

**LAPORAN PRAKTIKUM  
DATA WAREHOUSE**

**JOBSHEET 3  
DATABASE ANALYTICAL**



**Oleh:  
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2341760087  
SIB 2B**

**PROGRAM STUDI D-IV SISTEM INFORMASI BISNIS  
JURUSAN TEKNOLOGI INFORMASI  
POLITEKNIK NEGERI MALANG  
2025/2026**

## A. Dimensi Waktu



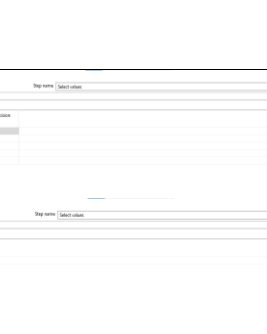
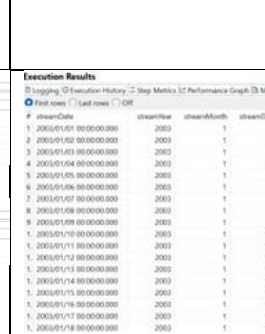

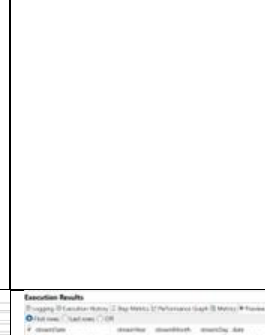
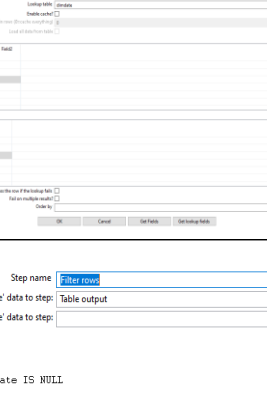
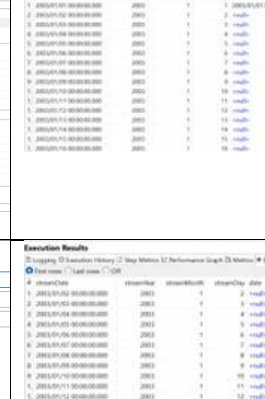
Hasil database:

	id_dimDate	date	year	month	day
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	1	2003-01-01	2003	1	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2	2003-01-02	2003	1	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	3	2003-01-03	2003	1	3
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	4	2003-01-04	2003	1	4
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	5	2003-01-05	2003	1	5
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	6	2003-01-06	2003	1	6
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	7	2003-01-07	2003	1	7
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	8	2003-01-08	2003	1	8
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	9	2003-01-09	2003	1	9
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	10	2003-01-10	2003	1	10
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	11	2003-01-11	2003	1	11
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	12	2003-01-12	2003	1	12
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13	2003-01-13	2003	1	13
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	14	2003-01-14	2003	1	14
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	15	2003-01-15	2003	1	15
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	16	2003-01-16	2003	1	16
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	17	2003-01-17	2003	1	17
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	18	2003-01-18	2003	1	18
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	19	2003-01-19	2003	1	19
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	20	2003-01-20	2003	1	20

### 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 di setiap prosesnya.

Proses Objek	SS Data Input	SS Data Output	Keterangan
Generate rows			Hasil output baris date dengan limit yang diinputkan
Add Sequences			Hasil generate rows, ditambahkan kolom increment Day yang berisi angka dari 1 jumlah baris yang ditentukan

<h1>Calculator</h1>		<h1>Execution Results</h1> 	<h1>Hasil add sequences ditambahk an kolom streamDat e, streamYea r, streamMo nth, streamDa y sebagai offset hari</h1>
<h1>Select Values</h1>		<h1>Execution Results</h1> 	<h1>Menampil kan output kolom yang dipilih saja karena kan ada yang di remove yaitu currentDat e dan increment Day</h1>
<h1>Databas e Lookup</h1>		<h1>Execution Results</h1> 	<h1>cek data apakah sudah ada didatabase</h1>
<h1>Filter Rows</h1>		<h1>Execution Results</h1> 	<h1>Menyimp an data yang belum ada di tabel, untuk menghind ari duplikasi</h1>

Hasil add sequences ditambahk an kolom streamDat e, streamYea r, streamMo nth, streamDa y sebagai offset hari
Menampil kan output kolom yang dipilih saja karena kan ada yang di remove yaitu currentDat e dan increment Day
cek data apakah sudah ada didatabase
Menyimp an data yang belum ada di tabel, untuk menghind ari duplikasi

cek data apakah sudah ada didatabase	
Menyimpan data yang belum ada di tabel, untuk menghindari duplikasi	

	Menyimpan data yang belum ada di tabel, untuk menghindari duplikasi

1. *Journal of the American Medical Association*, 1997; 278: 1039-1044.

## Table Output

**Table output**

Step name: Table output

Connection: conn\_dw\_destination

Target schema: dw\_legendvehicle

Target table: dimdate

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

Help OK Cancel SQL

**Execution Results**

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

Last rows: 1 - 100

#	streamDate	streamYear	streamMonth	streamDay	date	year	month	day
1	2003-01-01 00:00:00:000	2003	1	1	2003-01-01 00:00:00:000	2003	1	1
2	2003-01-02 00:00:00:000	2003	1	2	2003-01-02 00:00:00:000	2003	1	2
3	2003-01-03 00:00:00:000	2003	1	3	2003-01-03 00:00:00:000	2003	1	3
4	2003-01-04 00:00:00:000	2003	1	4	2003-01-04 00:00:00:000	2003	1	4
5	2003-01-05 00:00:00:000	2003	1	5	2003-01-05 00:00:00:000	2003	1	5
6	2003-01-06 00:00:00:000	2003	1	6	2003-01-06 00:00:00:000	2003	1	6
7	2003-01-07 00:00:00:000	2003	1	7	2003-01-07 00:00:00:000	2003	1	7
8	2003-01-08 00:00:00:000	2003	1	8	2003-01-08 00:00:00:000	2003	1	8
9	2003-01-09 00:00:00:000	2003	1	9	2003-01-09 00:00:00:000	2003	1	9
10	2003-01-10 00:00:00:000	2003	1	10	2003-01-10 00:00:00:000	2003	1	10
11	2003-01-11 00:00:00:000	2003	1	11	2003-01-11 00:00:00:000	2003	1	11
12	2003-01-12 00:00:00:000	2003	1	12	2003-01-12 00:00:00:000	2003	1	12
13	2003-01-13 00:00:00:000	2003	1	13	2003-01-13 00:00:00:000	2003	1	13
14	2003-01-14 00:00:00:000	2003	1	14	2003-01-14 00:00:00:000	2003	1	14
15	2003-01-15 00:00:00:000	2003	1	15	2003-01-15 00:00:00:000	2003	1	15
16	2003-01-16 00:00:00:000	2003	1	16	2003-01-16 00:00:00:000	2003	1	16
17	2003-01-17 00:00:00:000	2003	1	17	2003-01-17 00:00:00:000	2003	1	17

Data akan keluar, data yang akan masuk dalam database

## B. Dimensi Pegawai

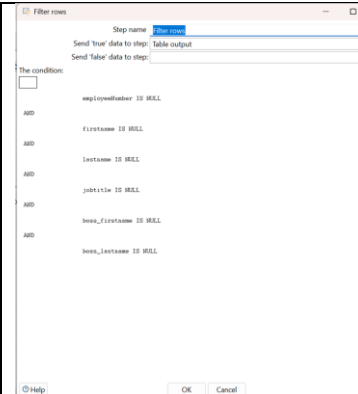
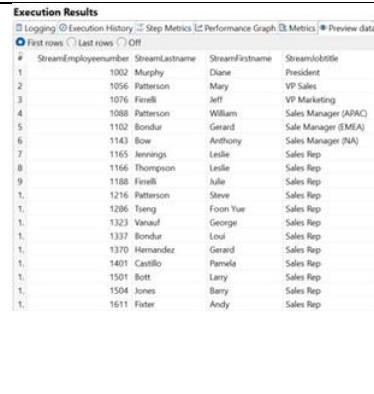
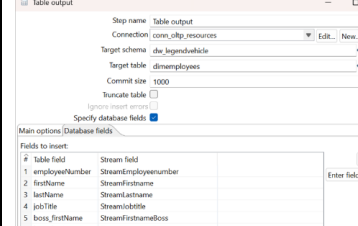

### Hasil Database

	employeeNumber	firstName	lastName	jobTitle	boss_firstName	boss_lastName	update
1	1002	Diane	Murphy	President	NULL	NULL	2025-04
2	1056	Mary	Patterson	VP Sales	Diane	Murphy	2025-04
3	1076	Jeff	Firrelli	VP Marketing	Diane	Murphy	2025-04
4	1088	William	Patterson	Sales Manager (APAC)	Mary	Patterson	2025-04
5	1102	Gerard	Bondur	Sale Manager (EMEA)	Mary	Patterson	2025-04
6	1143	Anthony	Bow	Sales Manager (NA)	Mary	Patterson	2025-04
7	1165	Leslie	Jennings	Sales Rep	Anthony	Bow	2025-04
8	1166	Leslie	Thompson	Sales Rep	Anthony	Bow	2025-04
9	1188	Julie	Firrelli	Sales Rep	Anthony	Bow	2025-04
10	1216	Steve	Patterson	Sales Rep	Anthony	Bow	2025-04
11	1286	Foon Yue	Tseng	Sales Rep	Anthony	Bow	2025-04
12	1323	George	Vanauf	Sales Rep	Anthony	Bow	2025-04
13	1337	Loui	Bondur	Sales Rep	Gerard	Bondur	2025-04
14	1370	Gerard	Hernandez	Sales Rep	Gerard	Bondur	2025-04
15	1401	Pamela	Castillo	Sales Rep	Gerard	Bondur	2025-04
16	1501	Larry	Bott	Sales Rep	Gerard	Bondur	2025-04

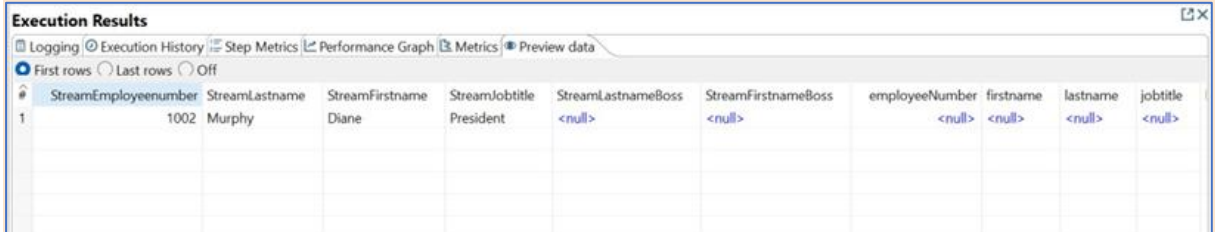
## Tugas 2

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

Proses Objek	SS Data Input	SS Data Output	Keterangan																																																																																																																																																
Table Input	<div><div>Table input</div><div><div>Step name</div><div>Table input</div></div><div><div>Connection</div><div>conn_oltp_resources</div><div>Get SQL select of</div></div><div><div>SQL</div><div><div>select * from employees where emp_id &gt; 1000</div></div></div></div>	<div><div>Execution Results</div><div><div>Logging</div><div>Execution History</div><div>Step Metrics</div><div>Performance Graph</div><div>SQL Metrics</div><div>Preview data</div></div><div><div>First rows</div><div>Last rows</div><div>Off</div></div><div><table><thead><tr><th>emp_id</th><th>emp_name</th><th>emp_email</th><th>emp_phone</th><th>emp_fax</th><th>emp_email</th><th>emp_email</th><th>emp_email</th></tr></thead><tbody><tr><td>1002</td><td>Murphy</td><td>Diane</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1056</td><td>Patterson</td><td>Mary</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1076</td><td>Firrelli</td><td>Jeff</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1088</td><td>Patterson</td><td>William</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1102</td><td>Bondur</td><td>Gerard</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1143</td><td>Bow</td><td>Anthony</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1165</td><td>Jennings</td><td>Leslie</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1166</td><td>Thompson</td><td>Leslie</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1188</td><td>Firrelli</td><td>Julie</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1216</td><td>Patterson</td><td>Steve</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1286</td><td>Tseng</td><td>Foon Yue</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1323</td><td>Vanauf</td><td>George</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1337</td><td>Bondur</td><td>Loui</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1370</td><td>Hernandez</td><td>Gerard</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1401</td><td>Castillo</td><td>Pamela</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1501</td><td>Bott</td><td>Larry</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1504</td><td>Jones</td><td>Barry</td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table></div></div>	emp_id	emp_name	emp_email	emp_phone	emp_fax	emp_email	emp_email	emp_email	1002	Murphy	Diane						1056	Patterson	Mary						1076	Firrelli	Jeff						1088	Patterson	William						1102	Bondur	Gerard						1143	Bow	Anthony						1165	Jennings	Leslie						1166	Thompson	Leslie						1188	Firrelli	Julie						1216	Patterson	Steve						1286	Tseng	Foon Yue						1323	Vanauf	George						1337	Bondur	Loui						1370	Hernandez	Gerard						1401	Castillo	Pamela						1501	Bott	Larry						1504	Jones	Barry						Menampilkan hasil data yang diambil dari tabel employees OLTP
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Select Values	<div><div>Select values</div><div><div>Step name</div><div>Select values</div></div><div><div>Select &amp; Alter (Remove) Meta data</div></div><div><div>Fields to remove:</div><div><div>Fieldname</div><div>extension</div><div>email</div><div>officeCode</div><div>reportTo</div><div>extension_1</div><div>email_1</div><div>officeCode_1</div><div>jobTitle_1</div></div></div></div>	<div><div>Execution Results</div><div><div>Logging</div><div>Execution History</div><div>Step Metrics</div><div>Performance Graph</div><div>SQL Metrics</div><div>Preview data</div></div><div><div>First rows</div><div>Last rows</div><div>Off</div></div><div><table><thead><tr><th>emp_id</th><th>emp_name</th><th>emp_email</th><th>emp_phone</th><th>emp_fax</th><th>emp_email</th><th>emp_email</th><th>emp_email</th></tr></thead><tbody><tr><td>1002</td><td>Murphy</td><td>Diane</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1056</td><td>Patterson</td><td>Mary</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1076</td><td>Firrelli</td><td>Jeff</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1088</td><td>Patterson</td><td>William</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1102</td><td>Bondur</td><td>Gerard</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1143</td><td>Bow</td><td>Anthony</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1165</td><td>Jennings</td><td>Leslie</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1166</td><td>Thompson</td><td>Leslie</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1188</td><td>Firrelli</td><td>Julie</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1216</td><td>Patterson</td><td>Steve</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1286</td><td>Tseng</td><td>Foon Yue</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1323</td><td>Vanauf</td><td>George</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1337</td><td>Bondur</td><td>Loui</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1370</td><td>Hernandez</td><td>Gerard</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1401</td><td>Castillo</td><td>Pamela</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1501</td><td>Bott</td><td>Larry</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1504</td><td>Jones</td><td>Barry</td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table></div></div>	emp_id	emp_name	emp_email	emp_phone	emp_fax	emp_email	emp_email	emp_email	1002	Murphy	Diane						1056	Patterson	Mary						1076	Firrelli	Jeff						1088	Patterson	William						1102	Bondur	Gerard						1143	Bow	Anthony						1165	Jennings	Leslie						1166	Thompson	Leslie						1188	Firrelli	Julie						1216	Patterson	Steve						1286	Tseng	Foon Yue						1323	Vanauf	George						1337	Bondur	Loui						1370	Hernandez	Gerard						1401	Castillo	Pamela						1501	Bott	Larry						1504	Jones	Barry						Memilih field yang akan digunakan dan rename nama kolomnya
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Database Lookup	<div><div>Database Lookup</div><div><div>Step name</div><div>Database Lookup</div></div><div><div>Connection</div><div>conn_oltp_resources</div><div>Table</div><div>employees</div></div><div><div>Fields to lookup:</div><div><div>emp_id</div><div>emp_name</div><div>emp_email</div><div>emp_phone</div><div>emp_fax</div><div>emp_email</div><div>emp_email</div><div>emp_email</div></div></div></div>	<div><div>Execution Results</div><div><div>Logging</div><div>Execution History</div><div>Step Metrics</div><div>Performance Graph</div><div>SQL Metrics</div><div>Preview data</div></div><div><div>First rows</div><div>Last rows</div><div>Off</div></div><div><table><thead><tr><th>emp_id</th><th>emp_name</th><th>emp_email</th><th>emp_phone</th><th>emp_fax</th><th>emp_email</th><th>emp_email</th><th>emp_email</th></tr></thead><tbody><tr><td>1002</td><td>Murphy</td><td>Diane</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1056</td><td>Patterson</td><td>Mary</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1076</td><td>Firrelli</td><td>Jeff</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1088</td><td>Patterson</td><td>William</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1102</td><td>Bondur</td><td>Gerard</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1143</td><td>Bow</td><td>Anthony</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1165</td><td>Jennings</td><td>Leslie</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1166</td><td>Thompson</td><td>Leslie</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1188</td><td>Firrelli</td><td>Julie</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1216</td><td>Patterson</td><td>Steve</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1286</td><td>Tseng</td><td>Foon Yue</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1323</td><td>Vanauf</td><td>George</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1337</td><td>Bondur</td><td>Loui</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1370</td><td>Hernandez</td><td>Gerard</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1401</td><td>Castillo</td><td>Pamela</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1501</td><td>Bott</td><td>Larry</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1504</td><td>Jones</td><td>Barry</td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table></div></div>	emp_id	emp_name	emp_email	emp_phone	emp_fax	emp_email	emp_email	emp_email	1002	Murphy	Diane						1056	Patterson	Mary						1076	Firrelli	Jeff						1088	Patterson	William						1102	Bondur	Gerard						1143	Bow	Anthony						1165	Jennings	Leslie						1166	Thompson	Leslie						1188	Firrelli	Julie						1216	Patterson	Steve						1286	Tseng	Foon Yue						1323	Vanauf	George						1337	Bondur	Loui						1370	Hernandez	Gerard						1401	Castillo	Pamela						1501	Bott	Larry						1504	Jones	Barry						Memilih field yang akan digunakan dan rename nama kolomnya
emp_id	emp_name	emp_email	emp_phone	emp_fax	emp_email	emp_email	emp_email																																																																																																																																												
1002	Murphy	Diane																																																																																																																																																	
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Filter Rows			Menyimpan data yang belum ada di table, untuk menghindari duplikasi
Table Output			Data akan dimasukkan data baru ke data OLAP

2. Jika proses itu diulangi (di run kembali) apakah data akan redundant?  
 = Ya data bisa redundant. Jika table output langsung menambahkan data tanpa validasi, maka pada saat di run kembali data yang sama akan tersimpan berulang kali.



3. Tambahkan nama anda pada table employee di OLTP. jalankan kembali transformasi ini. Amati hasilnya, apa yang terjadi?  
 = Ketika menambahkan data baru pada tabel employee maka output akan menampilkan data baru tersebut yang baru saja ditambahkan pada tabel employee di OLTP

```
1 INSERT INTO employees (employeeNumber, LastName, firstName, extension, email, officeCode, reportsTo, jobTitle)
2 VALUES (7710, 'Selviana', 'Deva', 'x111', 'selvianadeva8@gmail.com', '7', '1621', 'VP marketing');
```

Hasil database

## Hasil database

id_dimEmployees	id_dimDate	amount
14	658	6066.78
14	156	14571.44
14	718	1676.14
8	717	14191.12
8	157	32641.98
8	598	33347.88
18	140	45864.03
18	715	82261.22
18	151	7565.08
18	435	44894.74
14	684	19501.82
14	586	47924.19
14	784	49523.67
17	47	50218.95
17	301	1491.38
17	674	17876.32
17	698	34638.14
7	795	101244.59
7	606	85410.87

## Tugas 3

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 di setiap prosesnya.

The image displays four screenshots of SQL Server Enterprise Manager (SEM) interfaces, arranged in a 2x2 grid. Each screenshot shows a different configuration window for a data integration task.

- Top-Left Screenshot:** The 'Table Input' configuration window. It shows a connection to 'conn\_oltp\_resources' and a SQL query: `select * from employees e left join employees e2 on e.employeeNumber = e2.employeeNumber where e2.employeeNumber is null`. The 'Get SQL select statement...' button is visible.
- Top-Right Screenshot:** The 'Table Output' configuration window. It shows a list of columns to be loaded, including 'employeeNumber', 'lastName', 'jobTitle', 'boss', 'boss\_firstName', and 'boss\_lastName'.
- Bottom-Left Screenshot:** The 'Database Lookup' configuration window. It shows a connection to 'conn\_oltp\_resources' and a table lookup table named 'dw\_employees'. The 'Lookup table' is set to 'dw\_employees'. The 'Cache size in rows' is set to 1000. The 'Load all data from table' checkbox is checked. Below the table, there is a list of fields to be loaded: 'id', 'lastName', 'jobTitle', 'boss', 'boss\_firstName', and 'boss\_lastName'.
- Bottom-Right Screenshot:** The 'Table Input' configuration window. It shows a connection to 'conn\_oltp\_resources' and a SQL query: `select * from employees e left join employees e2 on e.employeeNumber = e2.employeeNumber where e2.employeeNumber is null`. The 'Get SQL select statement...' button is visible.

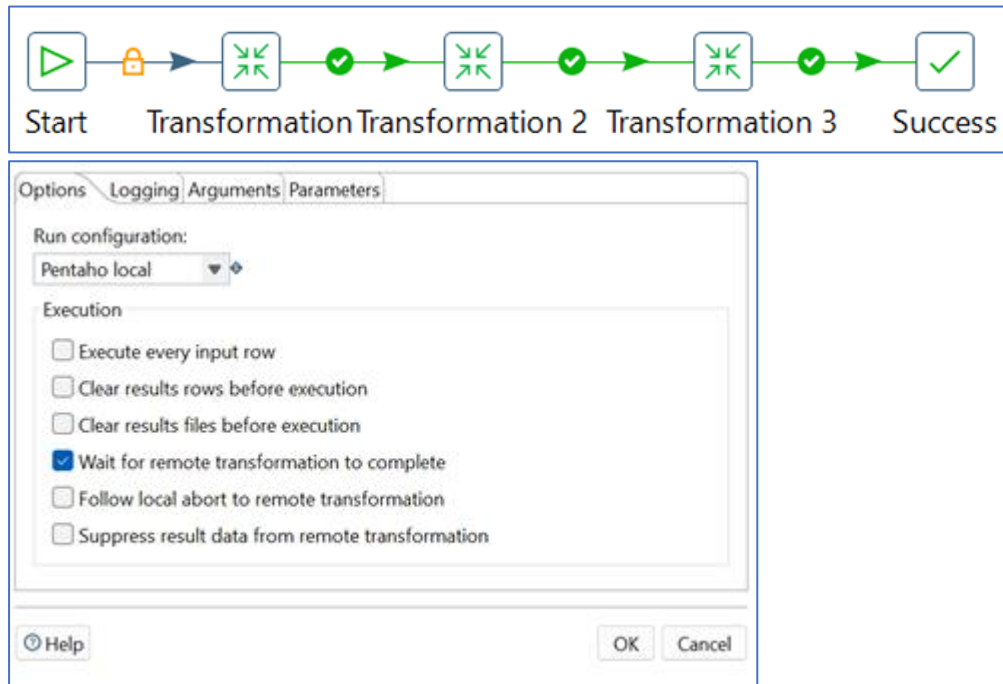






## D. JOBS

Transformation 1, 2, dan 3



## Tugas 4

1. Buka desain database dari dw\_legendvehicle pada DBMS, bandingkan design tersebut dengan desain db OLTP legendVehicle pada jobsheet 2. analisis dan ceritakan perbedaannya

OLTP legendVehicle	dw_legendvehicle
Memiliki banyak tabel dan relasi yang kompleks	Lebih sederhana dan fokus pada analisis
Mempunyai banyak tabel utama	Menggunakan star schema
Relasi antar tabel sangat kompleks	Relasi lebih simple
Cocok untuk operasional bisnis sehari-hari	Cocok untuk analisis bisnis

2. Buatlah report pertahun untuk KPI “Jumlah omset yang didapat” pada Foon Yue Tseng dan Pamela Castillo, serta gambarkan grafiknya (grafik garis).

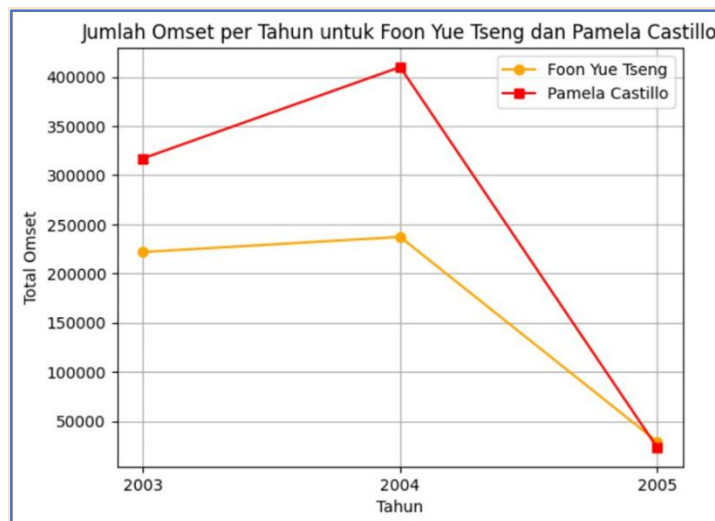
Tahun	firstName	lastName	Total_Omset
2003	Foon Yue	Tseng	221887.03
2003	Pamela	Castillo	317104.78
2004	Foon Yue	Tseng	237255.26
2004	Pamela	Castillo	409910.07
2005	Foon Yue	Tseng	29070.38
2005	Pamela	Castillo	23187.02

```

1 SELECT
2     d.year AS Tahun,
3     e.firstName,
4     e.lastName,
5     SUM(f.amount) AS Total_Omset
6 FROM dw_legendvehicle.factomset f
7 JOIN dw_legendvehicle.dimemployees e ON f.id_dimEmployees = e.id_dimEmployees
8 JOIN dw_legendvehicle.dimdate d ON f.id_dimDate = d.id_dimDate
9 WHERE (e.firstName = 'Foon Yue' AND e.lastName = 'Tseng')
10      OR (e.firstName = 'Pamela' AND e.lastName = 'Castillo')
11 GROUP BY d.year, e.firstName, e.lastName
12 ORDER BY d.year;

```

Name	2003	2004	2005
Foon Yue Tseng	221887.03	237255.26	29070.38
Pamela Castillo	317104.78	409910.07	23187.02



3. Jelaskan perbedaan query saat mendapatkan data pada nomor 2 dengan query pada saat Jobsheet 2!
  - Nomor 2 : Menggunakan skema dimensional dengan tabel fakta (factomset) dan tabel dimensi (dimDate dan dimEmployees) sehingga hanya perlu menjumlahkan (amount).
  - Jobsheet 2 : Menggunakan skema tradisional dengan tabel transaksi (orders, orderdetails). Omset dihitung dari jumlah produk  $\times$  harga satuan, yang lebih lambat karena data masih dalam bentuk transaksi mentah).
4. Simpulkan dengan bahasa sendiri, apa perbedaan OLTP dan OLAP?
  - OLTP : Digunakan untuk transaksi harian dan memiliki tabel yang kompleks.
  - OLAP : Digunakan untuk analisis data dan dirancang dalam bentuk star skema (tabel fakta dan tabel dimensi).

E. STUDI KASUS

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	id_dimProduct	int		No	None		AUTO_INCREMENT	Change  Drop  More
<input type="checkbox"/>	2	productCode	varchar(50)	utf8mb4_0900_ai_ci	Yes	NULL			Change  Drop  More
<input type="checkbox"/>	3	productName	varchar(100)	utf8mb4_0900_ai_ci	Yes	NULL			Change  Drop  More
<input type="checkbox"/>	4	productLine	varchar(50)	utf8mb4_0900_ai_ci	Yes	NULL			Change  Drop  More
<input type="checkbox"/>	5	buyPrice	decimal(10,2)		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	6	MSRP	decimal(10,2)		Yes	NULL			Change  Drop  More

Table input

Step name Table input

Connection conn\_oltp\_resources

SQL

SELECT productCode, productName, productLine, productScale, productVendor, productDescription, buyPrice, MSRP FROM products;

Get SQL select statement...

Select values

Step name Select values

Select & Alter Remove Meta-data

Fields :

#	Fieldname	Rename to	Length	Precision
1	productCode	streamProductCode		
2	productName	streamProductName		
3	productLine	streamProductLine		
4	productScale			
5	productVendor			
6	productDescription			
7	buyPrice	streamBuyPrice		
8	MSRP	streamMSRP		

Get fields to select

Edit Mapping

Select values

Step name Select values

Select & Alter Remove Meta-data

Fields to remove :

#	Fieldname
1	productScale
2	productVendor
3	productDescription

Database lookup

Step name: Database lookup

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

Lookup schema: dw\_legendvehicle Browse...

Lookup table: dimproduct 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	productCode	=	streamProductCode	
2	productName	=	streamProductName	
3	productLine	=	streamProductLine	
4	buyPrice	=	streamBuyPrice	

Values to return from the lookup table:

#	Field	New name	Default	Type
1	productCode			Integer
2	productName			String
3	productLine			String
4	buyPrice			String

Do not pass the row if the lookup fails ☐

Fail on multiple results? ☐

Order by:

Help OK Cancel Get Fields Get lookup fields

The condition:

productCode IS NULL

AND

productName IS NULL

AND

productLine IS NULL

AND

buyPrice IS NULL

AND

MSRP IS NULL

Table output

Step name: **Table output**

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

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

Target table: **dimproduct** [Browse...]

Commit size: **1000**

Truncate table: ☐

Ignore insert errors: ☐

Specify database fields: ☒

Main options Database fields

Fields to insert:

#	Table field	Stream field
1	productC...	streamProd...
2	productN...	streamProd...
3	productLine	streamProd...
4	buyPrice	streamBuyP...
5	MSRP	streamMSRP

[Get fields]

[Enter field mapping]

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

Tabel dimproducts data pegawai database OLTP

		id_dimProduct	productCode	productName	productLine	buyPrice	MSRP
<input type="checkbox"/>	Edit Copy Delete	1	S10_1678	1969 Harley Davidson Ultimate Chopper	Motorcycles	48.81	95.70
<input type="checkbox"/>	Edit Copy Delete	2	S10_1949	1952 Alpine Renault 1300	Classic Cars	98.58	214.30
<input type="checkbox"/>	Edit Copy Delete	3	S10_2016	1996 Moto Guzzi 1100i	Motorcycles	68.99	118.94
<input type="checkbox"/>	Edit Copy Delete	4	S10_4698	2003 Harley-Davidson Eagle Drag Bike	Motorcycles	91.02	193.66
<input type="checkbox"/>	Edit Copy Delete	5	S10_4757	1972 Alfa Romeo GTA	Classic Cars	85.68	136.00
<input type="checkbox"/>	Edit Copy Delete	6	S10_4962	1962 Lancia Delta 16V	Classic Cars	103.42	147.74
<input type="checkbox"/>	Edit Copy Delete	7	S12_1099	1968 Ford Mustang	Classic Cars	95.34	194.57
<input type="checkbox"/>	Edit Copy Delete	8	S12_1108	2001 Ferrari Enzo	Classic Cars	95.59	207.80
<input type="checkbox"/>	Edit Copy Delete	9	S12_1666	1958 Setra Bus	Trucks and Buses	77.90	136.67
<input type="checkbox"/>	Edit Copy Delete	10	S12_2823	2002 Suzuki XREO	Motorcycles	66.27	150.62
<input type="checkbox"/>	Edit Copy Delete	11	S12_3148	1969 Corvair Monza	Classic Cars	89.14	151.08
<input type="checkbox"/>	Edit Copy Delete	12	S12_3380	1968 Dodge Charger	Classic Cars	75.16	117.44
<input type="checkbox"/>	Edit Copy Delete	13	S12_3891	1969 Ford Falcon	Classic Cars	83.05	173.02
<input type="checkbox"/>	Edit Copy Delete	14	S12_3990	1970 Plymouth Hemi Cuda	Classic Cars	31.92	79.80
<input type="checkbox"/>	Edit Copy Delete	15	S12_4473	1957 Chevy Pickup	Trucks and Buses	55.70	118.50
<input type="checkbox"/>	Edit Copy Delete	16	S12_4675	1969 Dodge Charger	Classic Cars	58.73	115.16
<input type="checkbox"/>	Edit Copy Delete	17	S18_1097	1940 Ford Pickup Truck	Trucks and Buses	58.33	116.67
<input type="checkbox"/>	Edit Copy Delete	18	S18_1129	1993 Mazda RX-7	Classic Cars	83.51	141.54
<input type="checkbox"/>	Edit Copy Delete	19	S18_1342	1937 Lincoln Berline	Vintage Cars	60.62	102.74
<input type="checkbox"/>	Edit Copy Delete	20	S18_1367	1936 Mercedes-Benz 500K Special Roadster	Vintage Cars	24.26	53.91

Tabel factSales database OLAP

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	<b>id_factSales</b>			int	No	None	AUTO_INCREMENT	Change  Drop  More
<input type="checkbox"/>	2	<b>id_dimProduct</b>			int	Yes	NULL		Change  Drop  More
<input type="checkbox"/>	3	<b>id_dimEmployees</b>			int	Yes	NULL		Change  Drop  More
<input type="checkbox"/>	4	<b>id_dimDate</b>			int	Yes	NULL		Change  Drop  More
<input type="checkbox"/>	5	<b>quantityOrdered</b>			int	Yes	NULL		Change  Drop  More
<input type="checkbox"/>	6	<b>priceEach</b>			decimal(10,2)	Yes	NULL		Change  Drop  More
<input type="checkbox"/>	7	<b>totalAmount</b>			decimal(10,2)	Yes	NULL		Change  Drop  More

Table input

Step name **Table input**

Connection **conn\_oltp\_resources** Edit... New... Wizard...

SQL Get SQL select statement...

```

SELECT
  o.orderDate,
  p.productCode,
  e.employeeNumber,
  od.quantityOrdered,
  od.priceEach
FROM
  orders o
JOIN
  orderdetails od ON o.orderNumber = od.orderNumber
JOIN
  products p ON od.productCode = p.productCode
JOIN
  customers c ON o.customerNumber = c.customerNumber
JOIN
  employees e ON c.salesRepEmployeeNumber = e.employeeNumber

```

Database lookup

Step name **Database lookup**

Connection **conn\_oltp\_resources** 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	=	orderDate	
2				

Values to return from the lookup table :

#	Field	New name	Default	Type
1	id_dimDate			None

Do not pass the row if the lookup fails ☐

Fail on multiple results? ☐

Order by

Help OK Cancel Get Fields Get lookup fields

Database lookup

Step name Database lookup 2

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

Lookup schema dw\_legendvehicle Browse...

Lookup table dimproduct 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	productCode	=	productCode	

Values to return from the lookup table :

#	Field	New name	Default	Type
1	id_dimProduct			None

Do not pass the row if the lookup fails

Fail on multiple results?

Order by

Help OK Cancel Get Fields Get lookup fields

Database lookup

Step name Database lookup 3

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	=	employeeNumber	

Values to return from the lookup table :

#	Field	New name	Default	Type
1	id_dimEmployees			None

Do not pass the row if the lookup fails

Fail on multiple results?

Order by

Help OK Cancel Get Fields Get lookup fields





Table output

Step name: **Table output**

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

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

Target table: **factsales** [Browse...]

Commit size: **1000**

Truncate table: ☐

Ignore insert errors: ☐

Specify database fields: ☒

Main options | Database fields

Fields to insert:

#	Table field	Stream field
1	id_dimDate	id_dimDate
2	id_dimEm...	id_dimEmpl...
3	id_dimPro...	id_dimProd...
4	priceEach	priceEach
5	quantityO...	quantityOrd...
6	totalAmo...	totalAmount

[Get fields] [Enter field mapping]

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

## Hasil Tabel factSales

		id_factSales	id_dimProduct	id_dimEmployees	id_dimDate	quantityOrdered	priceEach	totalAmount
<input type="checkbox"/>	Edit Copy Delete	1	23	10	6	30	136.00	4080.00
<input type="checkbox"/>	Edit Copy Delete	2	27	10	6	50	55.09	2754.50
<input type="checkbox"/>	Edit Copy Delete	3	50	10	6	22	75.46	1680.12
<input type="checkbox"/>	Edit Copy Delete	4	80	10	6	49	35.29	1729.21
<input type="checkbox"/>	Edit Copy Delete	5	29	17	9	25	108.06	2701.50
<input type="checkbox"/>	Edit Copy Delete	6	33	17	9	26	167.06	4343.56
<input type="checkbox"/>	Edit Copy Delete	7	61	17	9	45	32.53	1463.85
<input type="checkbox"/>	Edit Copy Delete	8	64	17	9	46	44.35	2040.10
<input type="checkbox"/>	Edit Copy Delete	9	19	11	10	39	95.55	3726.45
<input type="checkbox"/>	Edit Copy Delete	10	20	11	10	41	43.13	1768.33
<input type="checkbox"/>	Edit Copy Delete	11	2	17	29	26	214.30	5571.80
<input type="checkbox"/>	Edit Copy Delete	12	6	17	29	42	119.67	5026.14
<input type="checkbox"/>	Edit Copy Delete	13	9	17	29	27	121.64	3284.28
<input type="checkbox"/>	Edit Copy Delete	14	17	17	29	35	94.50	3307.50
<input type="checkbox"/>	Edit Copy Delete	15	30	17	29	22	58.34	1283.48
<input type="checkbox"/>	Edit Copy Delete	16	35	17	29	27	92.19	2489.13
<input type="checkbox"/>	Edit Copy Delete	17	36	17	29	35	61.84	2164.40
<input type="checkbox"/>	Edit Copy Delete	18	38	17	29	25	86.92	2173.00
<input type="checkbox"/>	Edit Copy Delete	19	44	17	29	46	86.31	3970.26
<input type="checkbox"/>	Edit Copy Delete	20	52	17	29	36	98.07	3530.52