

Project Title

Medical Equipment Supply and Maintenance

Milestone 4

Group 8

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Warehouse Design Proposal:

Problem Definition:

Our main aim is to implement a comprehensive data solution by creating a centralized repository for all equipment related data. This will help in ensuring proactive maintenance, cost control, inventory optimization and regulate compliance. Here, we further aim to create a scheduling table which will regularize maintenance schedules for each equipment and follow the regulation. Furthermore, category/department wise segregation of equipment will ease the process of tracking and ensure the entire system is reliable.

Dimensions:

We aim to build a centralized data warehouse with constellation schema as we have two fact tables – **Supply_fact and Maintenance_Fact**. This will contain key dimensions like **Supplier dimensions** (Name, address, company, entity), **Maintenance dimensions** like **Maintenance_type, maintenance_log, maintenance_technician**, **Equipment dimensions** (equipmentID, equipment name, productcode, brand), **User Dimension** which contains everyone who have access to the medical equipments like Owner / Staff -> Supplier part of every healthcare facility/hospital. We further have **orderdetails and paymentdetails** as separate dimensions which will keep track of the purchases and the transactions. Next, along with equipment, we also have the inventory of the spare parts required to be constantly replaced or maintain a medical equipment. So, the **inventory dimension** further has item description -> product description.

Facts:

To ensure that we provide optimum maintenance and scheduling, we create a **Maintenance_fact** which have dimensions such as maintenance_log, maintenance_type, maintenance_technician, payment_details, allocation, and include the measures regarding the costs which include the maintenance cost, parts/ supply cost, technician service cost and the maintenance type cost. This ensures that we have one target table which consolidates all the details regarding the equipments, and the costs expended for each. Secondly, we emphasize on optimum Supply, for which we have **Supply_fact Table** with dimensions such as hospital, supplier, supplier_manager, orderdetails and measures will be revolving around total amount for supply, cost to company from supply, supply revenue percentage.

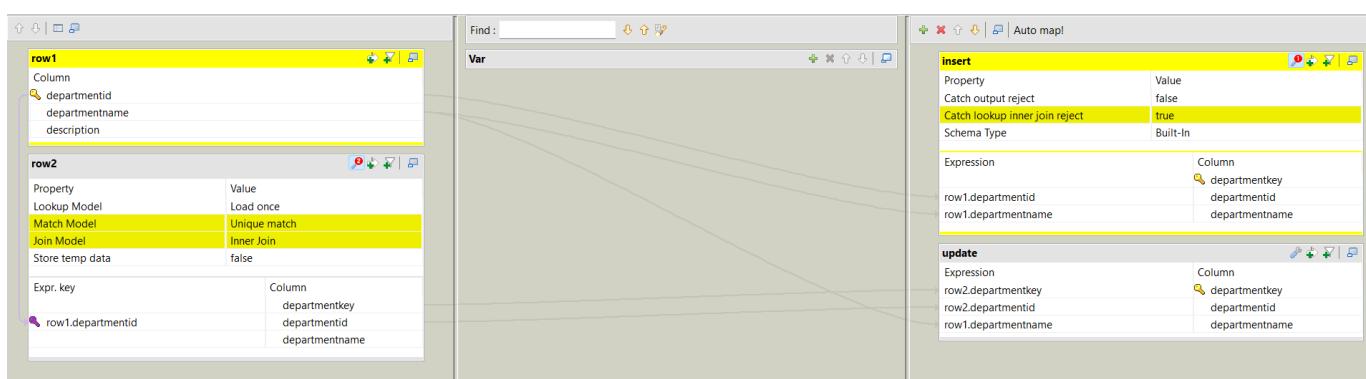
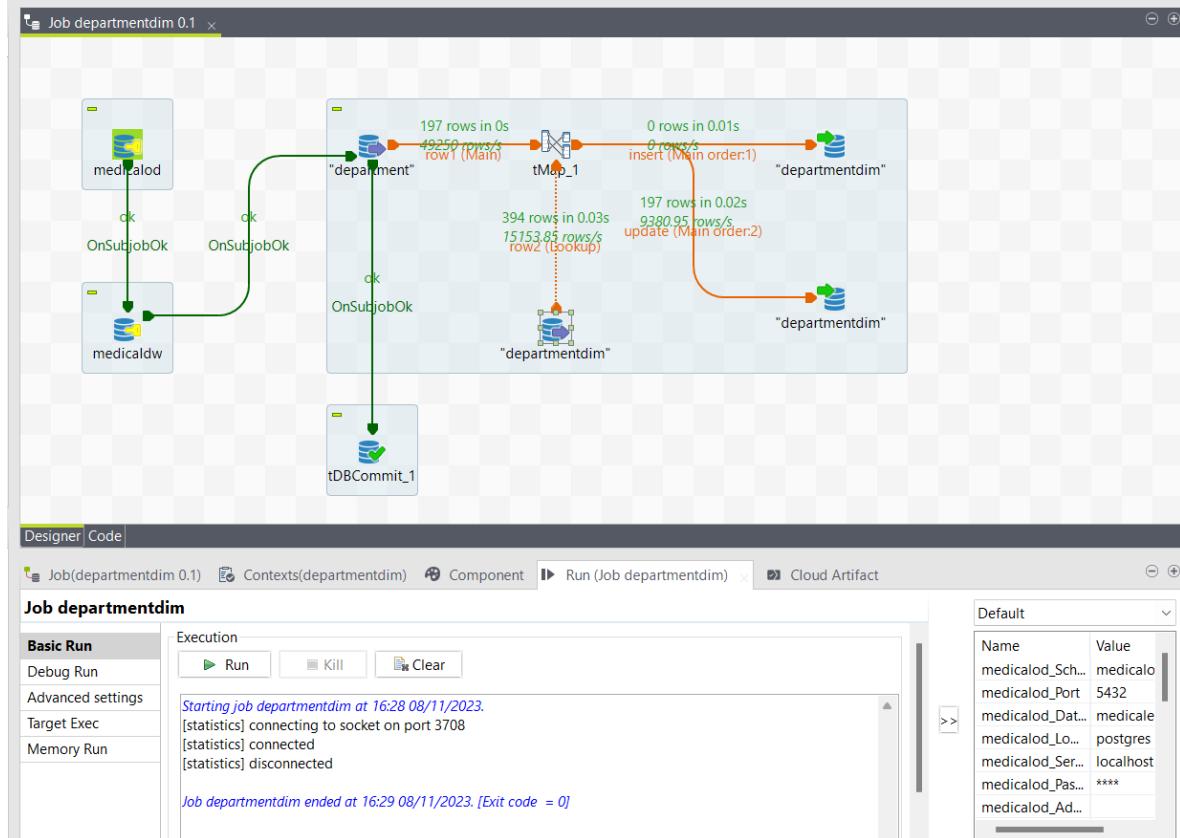
SCD:

We have implemented SCDs in supplier – Type 2, Maintenance tech – Type 3 and Maintenance log – Type 3. In supplier, we have implemented Type 2 SCD to keep track of the amount paid and owed to the suppliers. In maintenance tech, we use type 3 SCD to keep track of the supplier ID changes. In maintenance log, we use type 3 SCD to update and keep a track of the maintenance type ID.

We have further analytical queries to ensure optimum analysis and insights.

Data and Control flows implemented in Talend:

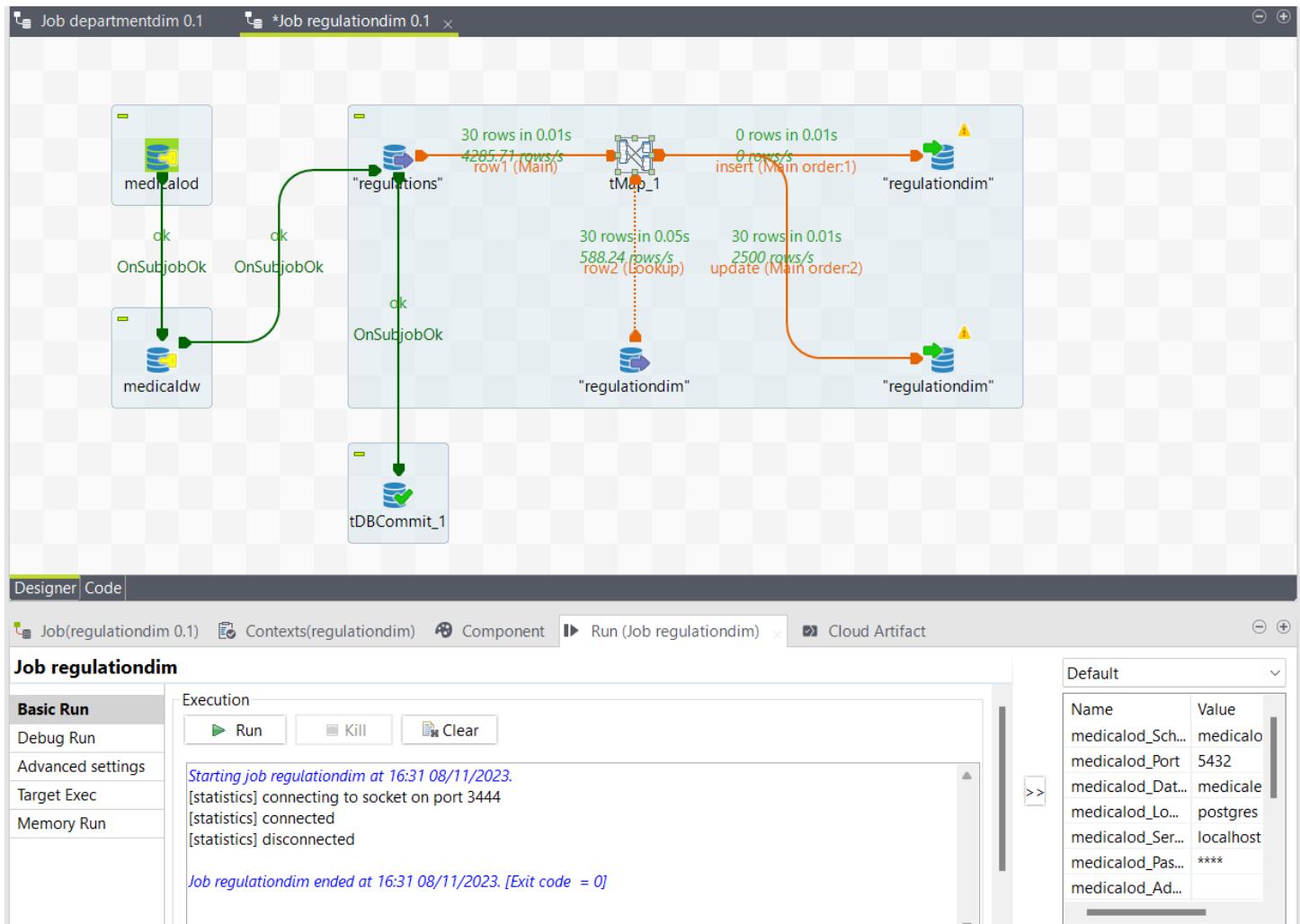
1. Department Dim



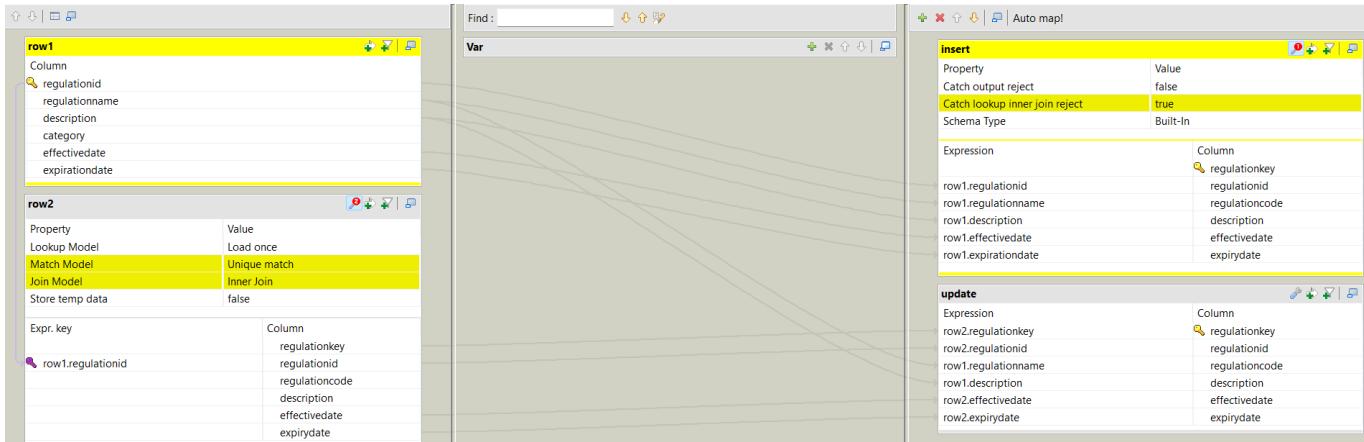
departmentdim | Enter a SQL expression to filter results (use Ctrl+Space)

	123 departmentkey	123 departmentid	ABC departmentname
1	1	1	Acupuncturist
2	2	2	Addiction Medicine
3	3	3	All Other Suppliers
4	4	4	Allergy/Immunology
5	5	5	Ambulatory Surgical Center
6	6	6	Anesthesiologist Assistants
7	7	7	Anesthesiology
8	8	8	Assisted Living Facility
9	9	9	Audiologist (billing independently)
10	10	10	Audiologist-Hearing Aid Fitter
11	11	11	Behavioral Analyst
12	12	12	Cardiac Electrophysiology
13	13	13	Cardiac Surgery
14	14	14	Cardiology
15	15	15	Case Management

2. Regulation Dim:

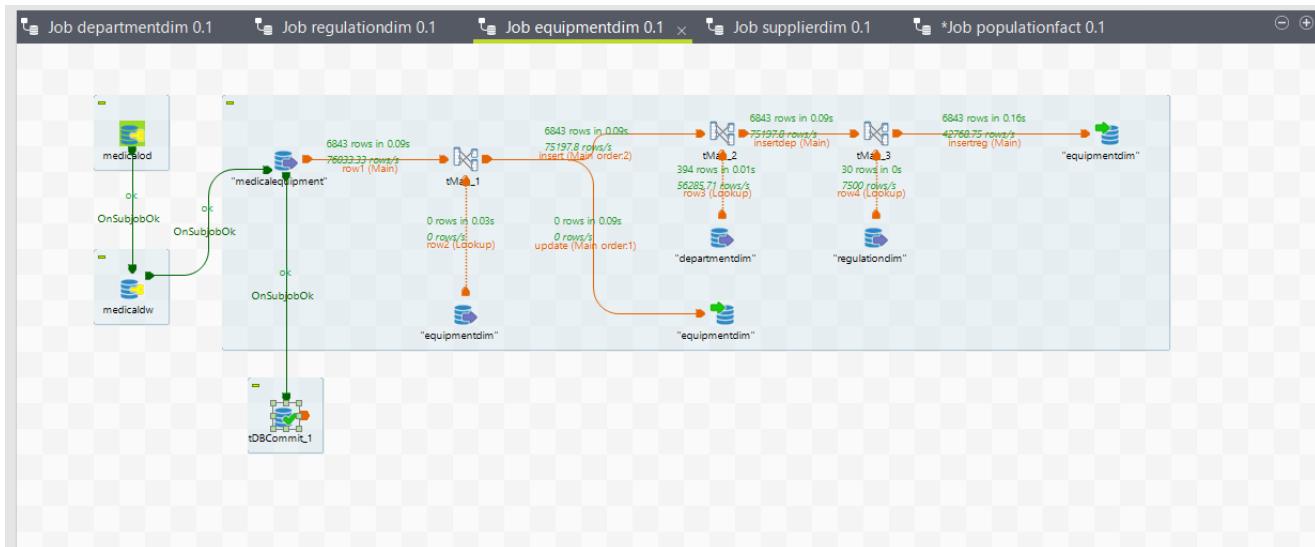


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	regulationkey	regulationid	regulationcode	description	effective date	expirydate
1	1	R001	Medical Equipment Maintenance - 2023	Standards for medical equipment maintenance in 2023	2023-01-01	2023-12-31
2	2	R002	Supply Chain Guidelines - 2023	Guidelines for medical equipment supply in 2023	2023-03-15	2023-12-31
3	3	R003	Equipment Maintenance Best Practices	Best practices for medical equipment maintenance	2021-05-10	2024-12-31
4	4	R004	Procurement Regulations - 2022	Regulations for equipment procurement in 2022	2022-02-01	2023-12-31
5	5	R005	Maintenance Reporting Standards	Standards for reporting maintenance activities	2020-12-15	2025-12-31
6	6	R006	Equipment Supply Code of Ethics	Code of ethics for medical equipment suppliers	2019-06-20	2023-12-31
7	7	R007	Equipment Inspection Guidelines	Guidelines for inspecting medical equipment	2018-03-01	2023-12-31
8	8	R008	Procurement Transparency Act	Act promoting transparency in equipment procurement	2020-08-01	2024-12-31
9	9	R009	Equipment Calibration Standards	Standards for calibrating medical equipment	2019-11-15	2025-12-31
10	10	R010	Supply Chain Sustainability Practices	Sustainability practices for equipment supply	2021-04-05	2023-12-31

3. Equipment Dim:



Designer | Code

Job equipmentdim 0.1 Job regulationdim 0.1 Job equipmentdim 0.1 x Job supplierdim 0.1 *Job populationfact 0.1

Job equipmentdim

Execution

- Run
- Kill
- Clear

Starting job equipmentdim at 17:01 08/11/2023.

[statistics] connecting to socket on port 3400
[statistics] connected
[statistics] disconnected

Default

Name	Value
medicalod_Sch...	medicalo...
medicalod_Port	5432
medicalod_Dat...	medicale...
medicalod_Lo...	postgres
medicalod_Ser...	localhost

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The screenshot shows the Talend Data Integration interface. On the left, the 'Mapping Designer' panel displays two rows of data:

- row1:** Columns equipmentid, equipmentname, equipmentcode, regulationid, departmentid, userid.
- row2:** Properties and Values. Lookup Model: Load once; Match Model: Unique match; Join Model: Inner Join; Store temp data: false. Expr. key: row1.equipmentid; Column: equipmentkey, equipmentid, equipmentname, equipmentcode, regulationkey, departmentkey.

The central area is the 'Previewer' showing the mapping logic with various nodes and connections. On the right, the 'Auto map!' panel shows update and insert statements:

```

update
Expression          Column
row2.equipmentkey   equipmentkey
row2.equipmentid    equipmentid
row2.equipmentname  equipmentname
row2.equipmentcode  equipmentcode
row2.regulationkey  regulationkey
row2.departmentkey   departmentkey

insert
Property          Value
Catch output reject false
Catch lookup inner join reject true
Schema Type        Built-In
Expression          Column
row1.equipmentid   equipmentkey
row1.equipmentname  equipmentid
row1.equipmentcode  equipmentname
row1.regulationid  equipmentcode
row1.departmentid   departmentkey

```

	123 equipmentkey	123 equipmentid	ABC equipmentname	ABC equipmentcode	123 regulationkey	123 departmentkey
1	1	1	Protector, Dental	BRW	1	1
2	2	2	Stool, Anesthesia	BRX	2	2
3	3	3	Cabinet, Table And Tray, Anesthesia	BRY	3	3
4	4	4	Analyzer, Gas, Helium, Gaseous-Phase	BSE	4	4
5	5	5	Absorber, Carbon-Dioxide	BSF	5	5
6	6	6	Algesimeter, Powered	BSI	6	6
7	7	7	Mask, Gas, Anesthetic	BSJ	7	7
8	8	8	Cuff, Tracheal Tube, Inflatable	BSK	8	8
9	9	9	Filter, Conduction, Anesthetic	BSN	9	9
10	10	10	Catheter, Conduction, Anesthetic	BSO	10	10
11	11	11	Needle, Conduction, Anesthetic (W/Wo Introducer)	BSP	11	11
12	12	12	Stylet, Tracheal Tube	BSR	12	12
13	13	13	Catheters, Suction, Tracheobronchial	BSY	13	13
14	14	14	Gas-Machine, Anesthesia	BSZ	14	14
15	15	15	Hook, Ether	BTB	15	15

4. Supplier Dim:

The screenshot shows the Talend Data Integration interface. At the top, the job tabs are: Job departmentdim 0.1, Job regulationdim 0.1, Job equipmentdim 0.1, Job supplierdim 0.1 (highlighted), and *Job populationfact 0.1.

The main area shows the job flow diagram for 'Job supplierdim 0.1'. It starts with a 'medicalod' source, followed by a 'tMap_1' component (transforming 14998 rows in 2.21s to 6799.73 rows/s, row1 (Main)). This is followed by a 'datainsert' component (inserting 6636.29 rows/s, datainsert (Main)) and a 'supplierdim' target. The process ends with a 'tDBCommit_1' component. Subjob connections are labeled 'OnSubjobOk'.

At the bottom, the 'Job supplierdim' tab is active, showing the execution history:

- Execution: Run, Kill, Clear.
- Log: Starting job supplierdim at 18:59 08/11/2023. [statistics] connecting to socket on port 4076 [statistics] connected [statistics] disconnected
- Status: Job supplierdim ended at 18:59 08/11/2023. [Exit code = 0]

The right side shows the 'Default' context variables:

Name	Value
medicalod_Sch...	medicalod
medicalod_Port	5432
medicalod_Dat...	medicale
medicalod_Lo...	postgres
medicalod_Ser...	localhost
medicalod_Pas...	****
medicalod_Ad...	

Tmap:

row1

- Column
- supplierid
- supplierlastname
- supplierfirstname
- supplierdesignation
- suppliergender
- supplierentity
- supplieraddress
- suppliercity
- supplierstate
- supplierzipcode
- supplierspecialty
- totalamount
- amountpaid
- amountowed

Var

Expression	Type	Variable
row1.supplierfirstname + " " + row1.sup...	String	suppliername

datasert

Expression	Column
row1.supplierid	supplierid
row1.suppliername	suppliername
row1.supplierdesignation	supplierdesignation
row1.suppliergender	suppliergender
row1.supplierentity	supplierentity
row1.supplieraddress	supplieraddress
row1.suppliercity	suppliercity
row1.supplierstate	supplierstate
row1.supplierzipcode	supplierzipcode
row1.supplierspecialty	supplierspecialty
row1.totalamount	totalamount
row1.amountpaid	amountpaid
row1.amountowed	amountowed

Type-2 SCD:

SCD component editor

Unused

Source keys

supplierid

Surrogate keys

name	supplierkey
creation	Table max + 1
complement	

Type 0 fields

- supplierdesignation
- supplierentity
- suppliergender
- suppliername

Type 1 fields

- supplieraddress
- suppliercity
- supplierstate
- supplierzipcode

Type 2 fields

- amountowed
- amountpaid
- totalamount

Versioning

type	name	creation	compleme...
start	validfrom	Job start time	
end	validto	NULL	
<input type="checkbox"/> versi...	scd_version		
<input checked="" type="checkbox"/> active	iscurrent		

Type 3 fields

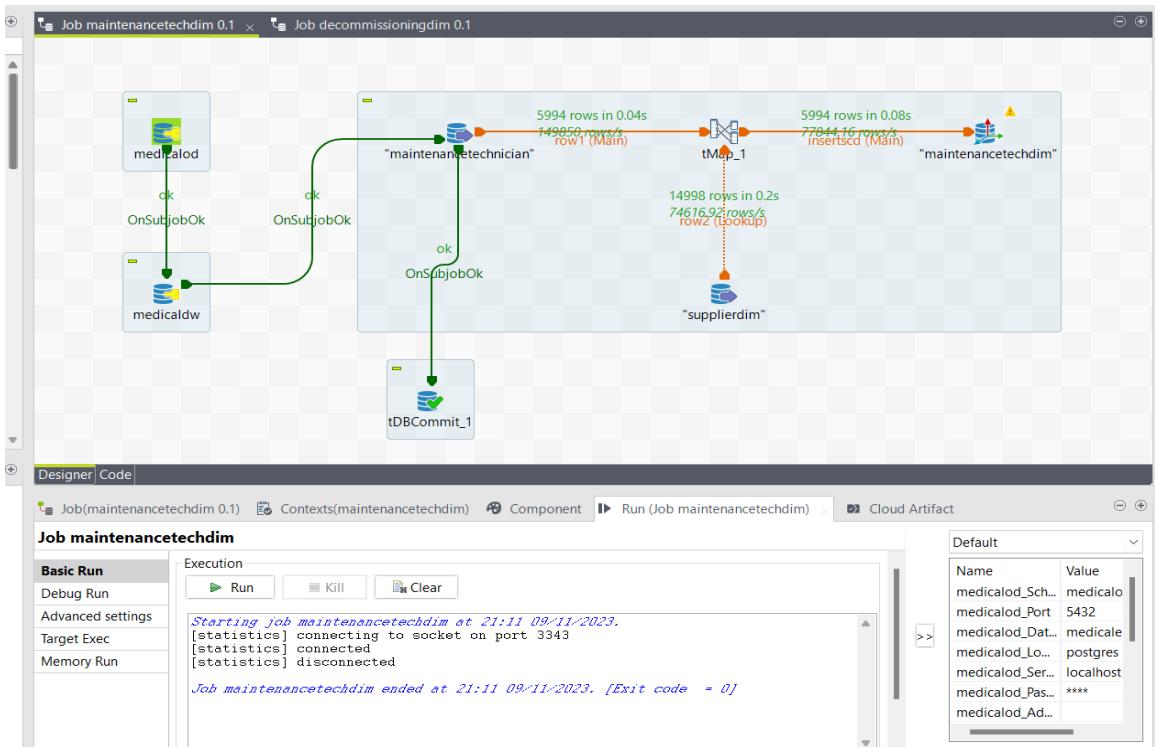
current value	previous value
---------------	----------------

OK **Cancel**

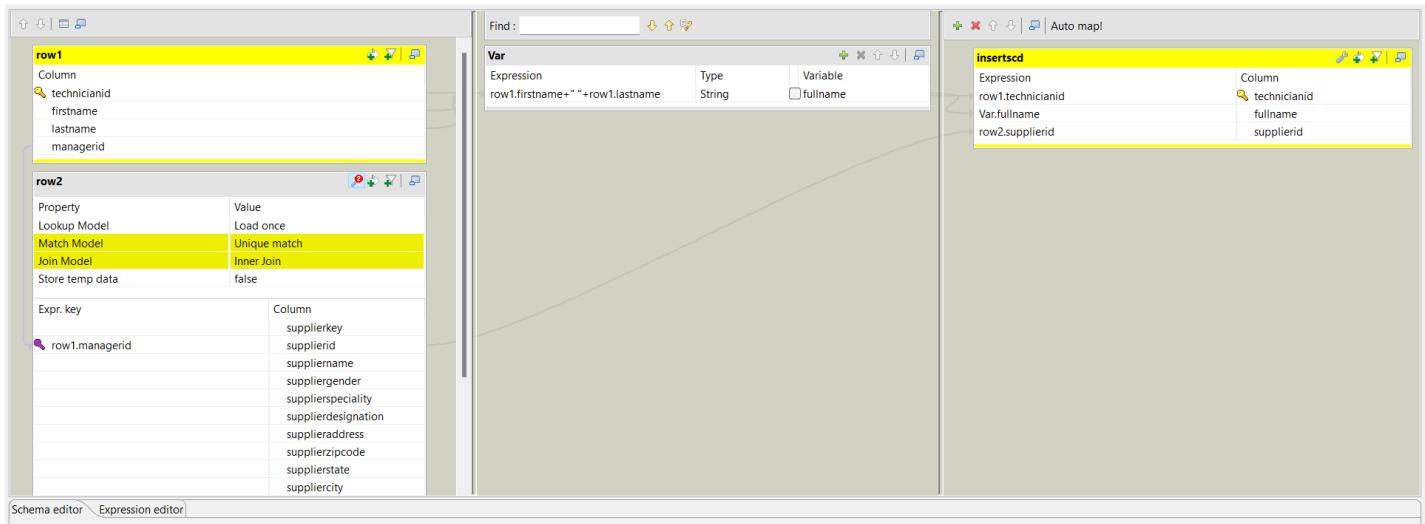
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	123_supplierkey	123_supplierid	abc_suppliername	abc_suppliergender	abc_supplierspecialty	abc_supplierdesignation	abc_supplieraddress
1	1	1	ARDALAN ENKESHAJI	M	Internal Medicine	M.D.	900 SETON DR
2	2	2	RASHID KHALIL	M	Anesthesiology	M.D.	4126 N HOLLAND SYLVANIA RD
3	3	3	DAVID GIRARDI	M	Family Practice	D.O.	456 MAGEE AVE
4	4	4	FREDERICK WEIGAND	M	Family Practice	MD	1565 SAXON BLVD STE 202
5	5	5	AMANDA SEMONCHE	F	Internal Medicine	DO	1021 PARK AVE
6	6	6	OTNIEL HERNANDEZ	M	Nurse Practitioner	DNP, FNP	4410 W 16TH AVE
7	7	7	JAIVANTI LOHANO	F	Family Practice	MD	2215 PORTLAND AVE
8	8	8	MARK STELLINGWORTH	M	Cardiology	MD	8 RICHLAND MEDICAL PARK DR
9	9	9	MICHAEL VIGGIANELLI	M	Family Practice	MD	HWY 1 CALIFORNIA MENS COLO
10	10	10	CHARLES STEVENS	M	Anesthesiology	M.D.	1665 S IMPERIAL AVE STE D
11	11	11	DAVID KANTER	M	Physical Medicine and Rehabilitation	MD	750 E ADAMS ST
12	12	12	JACLYN JONES	F	Orthopedic Surgery	D.O.	2250 DREW ST
13	13	13	LUCILLE SAHA	F	Family Practice	M.D.	1397 S LINDEN RD
14	14	14	LAKSHMI SRINIVASAN	F	Endocrinology	MD	3200 KEARNEY ST
15	15	15	PATRICIA HOPKINS	F	Internal Medicine	M.D.	500 CONGRESS ST STE 1B

5. MaintenanceTechDim:



Tmap:



	123 maintenancetechkey	123 technicianid	ABC fullname	123 supplierid	123 historicalsupplierid
1		1	Calvin Johnson	1	[NULL]
2		2	Harry Cleveland	2	[NULL]
3		3	John Nixon	3	[NULL]
4		4	Franklin Jefferson	4	[NULL]
5		5	Harry Eisenhower	5	[NULL]
6		6	Grover Garfield	6	[NULL]
7		7	Benjamin Grant	7	[NULL]
8		8	Harry Hayes	8	[NULL]
9		9	Ulysses Buchanan	9	[NULL]
10		11	Richard Johnson	11	[NULL]

Type-3 SCD:

SCD component editor

The SCD component editor interface displays the following fields categorized by type:

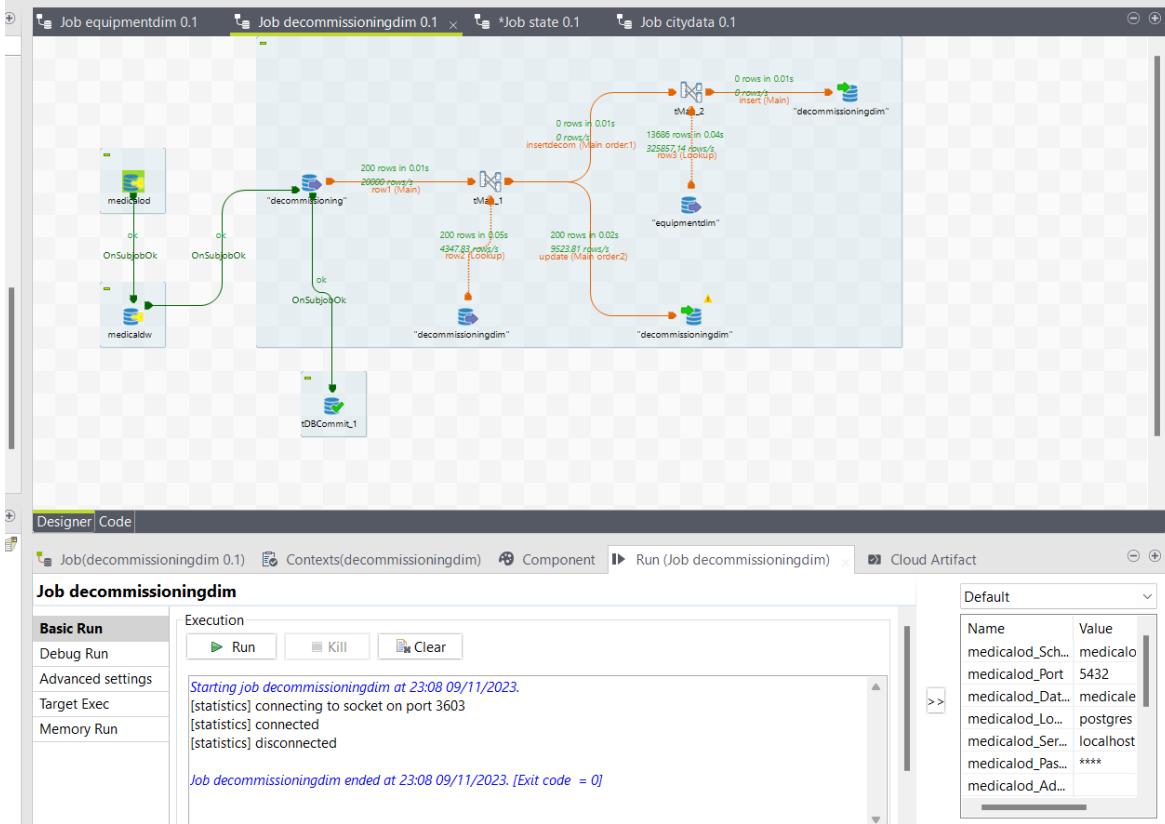
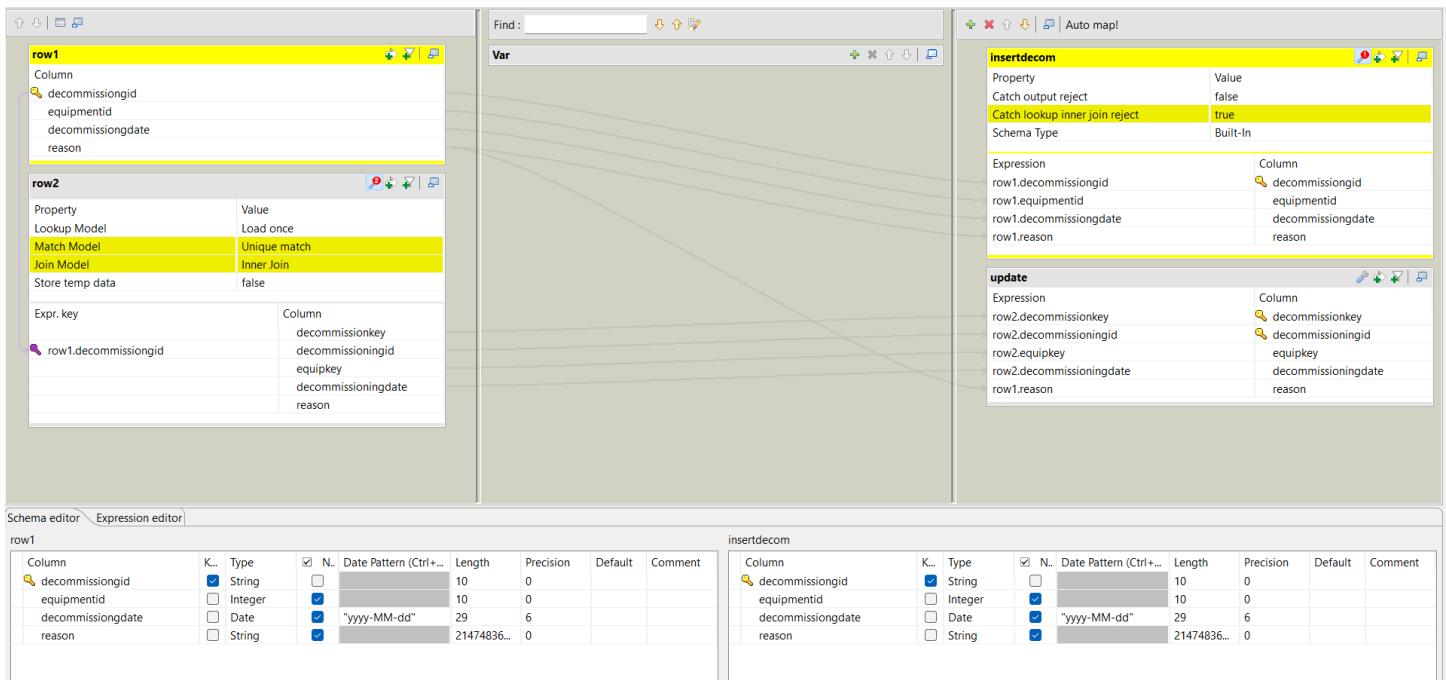
- Type 0 fields:** fullname
- Type 1 fields:** (empty)
- Type 2 fields:** (empty)
- Versioning:**

type	name	creation	comple...
start	scd_start	Job start time	
end	scd_end	NULL	
<input type="checkbox"/> versi...	scd_version		
<input type="checkbox"/> active	scd_active		
- Type 3 fields:**

current value	previous value
supplierid	historicalsupplierid

Buttons at the bottom right: OK and Cancel.

6. DecommissioningDim:


Tmap-1:


Tmap-2:

The screenshot shows the Talend Data Integration interface with three main panels:

- Left Panel:** Displays the **insertdecom** component configuration. It includes a table of columns (decommissioningid, equipmentid, decommissioningdate, reason) and a row3 section for a unique match join model.
- Middle Panel:** Shows the mapping between the **insertdecom** output and the **insert** target. The target columns are decommissioningid, equipkey, decommissioningdate, reason, and decommissionkey.
- Bottom Panel:** Contains two schema editors for the **insertdecom** and **insert** components, showing column definitions and constraints.

Data Preview:

	decommissionkey	decommissioningid	equipkey	decommissioningdate	reason
1	DC001	1	3,229	2023-11-14	Upgrade
2	DC002	2	3,627	2023-08-31	Upgrade
3	DC003	3	3,560	2023-11-10	Upgrade
4	DC004	4	5,449	2023-07-14	Safety concerns
5	DC005	5	2,238	2023-07-15	Equipment malfunction
6	DC006	6	2,851	2023-08-22	End of life
7	DC007	7	3,601	2023-11-25	End of life
8	DC008	8	1,923	2023-02-16	Upgrade
9	DC009	9	4,352	2023-03-14	End of life
10	DC010	10	999	2023-08-19	End of life
11	DC011	11	124	2023-03-13	Equipment malfunction
12	DC012	12	5,253	2023-09-24	Obsolete technology
13	DC013	13	1,902	2023-12-01	Equipment malfunction
14	DC014	14	1,893	2023-10-18	Equipment malfunction
15	DC015	15	3,562	2023-10-30	Equipment malfunction

7. State:

The screenshot shows a Talend job configuration with the following details:

- Jobs:** Job equipmentdim 0.1, Job decommissioningdim 0.1, Job state 0.1, Job citydata 0.1.
- Job Flow:**
 - Job equipmentdim 0.1 feeds into medicallod.
 - medicallod feeds into statedata.
 - statedata feeds into tMap_1.
 - tMap_1 has two outputs:
 - One output to "state" with 55 rows in 0.01s (insert (Main order:1)).
 - One output to "state" with 0 rows in 0.01s (row2 (Lookup/update (Main order:2))).
 - "state" feeds into tDBCommit_1.
- Job state 0.1:**
 - Execution tab: Basic Run, Debug Run, Advanced settings, Target Exec, Memory Run.
 - Log: Starting job state at 23:39 09/11/2023. [statistics] connecting to socket on port 3697. [statistics] connected. [statistics] disconnected.
 - Log: Job state ended at 23:39 09/11/2023. [Exit code = 0]
- Contexts:** Contexts(state), Component, Run (Job state), Cloud Artifact.
- Component View:** Shows the Default context with variables like medicallod_Sch..., medicallod_Port, medicallod_Dat..., medicallod_Lo..., medicallod_Ser..., medicallod_Pas..., and medicallod_Ad... set to their respective values.

Tmap:

The screenshot shows the Talend Data Integration interface with a Tmap component open. The left panel displays two rows of data: row1 (statekey, statename) and row2 (Property, Value). Row2 properties include: Lookup Model (Load once), Match Model (Unique match), Join Model (Inner Join), and Store temp data (false). The Expr. key is set to row1.statekey. The right panel shows the mapping configuration with an insert operation mapping row1.statekey to statekey and statename to statename. Below the Tmap is a preview table showing the following data:

	statekey	statename
1	1	AE
2	2	AK
3	3	AL
4	4	AR
5	5	AZ

8. AllocationDim:

The screenshot shows the Talend Data Integration interface with a Job allocationdim 0.1 open. The top part shows the job flow diagram with components: medicalload, medicaldw, tAllocation, tMap_1, tMap_2, tDBCommit_1, and equipmentdim. The bottom part shows the execution details for the Job allocationdim 0.1, including the basic run settings and the log output:

```

Job allocationdim 0.1
Starting job allocationdim at 18:35 15/11/2023.
[statistics] connecting to socket on port 3845
[statistics] connected
[statistics] disconnected
Job allocationdim ended at 18:35 15/11/2023. [Exit code = 0]
  
```

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The screenshot shows the Talend Data Integration interface. On the left, the Schema editor displays two rows of data:

- row1:** Contains columns allocationid, allocationdate, departmentid, returndate, and equipmentid.
- row2:** Contains properties: Lookup Model (Load once), Match Model (Unique match), Join Model (Inner Join), and Store temp data (false). It also defines an expression key: row1.allocationid, which maps to allocationkey, allocationid, allocationdate, returndate, and equipmentkey.

The right side of the interface shows the Var (Variables) and insertequip components. The Var panel contains variables for the insertequip component, including:

- Property: Value false
- Catch output reject: true
- Catch lookup inner join reject: true
- Schema Type: Built-In

The insertequip component has an Expression section mapping row1 fields to column aliases:

- row1.allocationid: allocationid
- row1.allocationdate: allocationdate
- row1.departmentid: departmentid
- row1.returndate: returndate
- row1.equipmentid: equipmentid

The update component also maps row2 fields to column aliases:

- row2.allocationkey: allocationkey
- row2.allocationid: allocationid
- row2.allocationdate: allocationdate
- row2.returndate: returndate
- row2.equipmentkey: equipmentkey

Below the schema editor is a preview table showing sample data for the allocationkey, allocationid, allocationdate, returndate, and equipmentkey columns.

9. City:

The screenshot shows a Talend job named "Job citydata 0.1". The job flow diagram includes the following components and their connections:

- medicallod:** A source component connected to **cityData**.
- OnSubjobOk:** A connector between medicallod and medicaldw.
- cityData:** A component connected to tMap_1.
- tMap_1:** A mapping component with two outputs:
 - Row 1 (Main): 164000 rows/s, 4428 rows in 0.03s, 164000 rows/s, row1 (Main).
 - Row 2 (Lookup): 0 rows in 0.02s, 0 rows in 0.07s, 0 rows/s, row2 (lookup/update) (Main order:2).
- tMap_2:** A mapping component receiving data from tMap_1 and cityinsert (Main order:1).
- cityinsert (Main):** An insert component receiving data from tMap_2. It shows performance metrics: 4428 rows in 0.07s, 173.91 rows/s, and an insert count of 4428.
- tmP_2:** A temporary component connected to tMap_2.
- state:** A target component receiving data from tMap_2.
- tDBCommit_1:** A commit component at the end of the job.

The bottom part of the interface shows the "Job citydata" execution details. It includes a "Basic Run" section with options like Debug Run, Advanced settings, Target Exec, and Memory Run. The Execution tab shows the job start and end times: "Starting job citydata at 23:56 09/11/2023." and "Job citydata ended at 23:56 09/11/2023. [Exit code = 0]". The "Cloud Artifact" tab shows environment variables with values like medicallod_Sch..., medicallod_Port..., and medicallod_Ad... (with **** as a placeholder for sensitive information).

Tmap-1:

The screenshot shows the Talend Data Integration environment. At the top, there are three tabs: 'Schema editor', 'Expression editor', and 'tMap'. The 'tMap' tab is active, displaying a complex mapping configuration. On the left, the 'row1' schema is defined with columns 'cityname' and 'statename'. Below it, 'row2' properties are set with 'Lookup Model: Load once', 'Match Model: Unique match', and 'Join Model: Inner Join'. The 'Expr. key' section maps 'row1.cityname' to 'citykey', 'cityname', and 'statekey'. To the right, the 'Auto map!' panel shows two entries: 'cityinsert' and 'update'. 'cityinsert' has a 'Property' column with 'Value' 'false' and 'Catch lookup inner join reject' checked. It also lists 'row1.cityname' and 'row1.statename' under 'Expression'. 'update' has a similar structure. At the bottom, a preview table shows data from 'citykey', 'cityname', and 'statekey' columns.

Column	Type	N.	Date Pattern (Ctrl+D)	Length	Precision	Default	Comment
cityname	String	<input checked="" type="checkbox"/>		14	0		
statename	String	<input checked="" type="checkbox"/>		2	0		

Column	Type	N.	Date Pattern (Ctrl+D)	Length	Precision	Default	Comment
cityname	String	<input checked="" type="checkbox"/>		14	0		
statename	String	<input checked="" type="checkbox"/>		2	0		

	123 citykey	ABC cityname	123 statekey
1	5	NEWARK	2
2	6	DENVER	2
3	7	HASTINGS	2
4	8	LONG BEACH	2
5	12	JOHNSON CITY	2

10. MaintenanceFact :

The screenshot shows a Talend job named 'Job maintenancefact 0.1'. The job flow starts with a 'medicalload' component, followed by a 'medicaldw' component, and ends with a 'tDBCommit_1' component. A green line connects the 'medicalload' and 'medicaldw' components. From 'medicaldw', a green line leads to a 'tMap' component labeled 'tMap_1'. The 'tMap' component is connected to several database components: 'maintenancelogdim', 'maintenancetechnim', 'hospitaldim', 'maintenancetypedim', 'orderdetailsdim', and 'paymentdetailsdim'. Each of these database components has associated statistics displayed above them. The 'tMap' component is also connected to a 'maintenancefact' component. The overall flow is: medicalload → medicaldw → tMap_1 → maintenancefact.

Job maintenancefact

Basic Run

- Debug Run
- Advanced settings
- Target Exec
- Memory Run

Execution

- Run
- Kill
- Clear

Starting job maintenancefact at 16:50 15/11/2023.
[statistics] connecting to socket on port 3428
[statistics] connected
[statistics] disconnected

Job maintenancefact ended at 16:50 15/11/2023. [Exit code = 0]

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The screenshot shows the Informatica PowerCenter interface with the Mapping Editor open. On the left, the Schema editor displays two rows of columns:

- row1:** logkey, logid, equipkey, maintenancetechid, maintenancedate, maintenancetypeid, description, historicalmaintenancetypeid.
- row2:** Property Value, Lookup Model Load once, Match Model Unique match, Join Model Inner Join, Store temp data false. Expr. key Column: row1.maintenancetechid, Column: maintenancetechkey, Column: technicianid, Column: fullname, Column: supplierid, Column: historicalsupplierid.

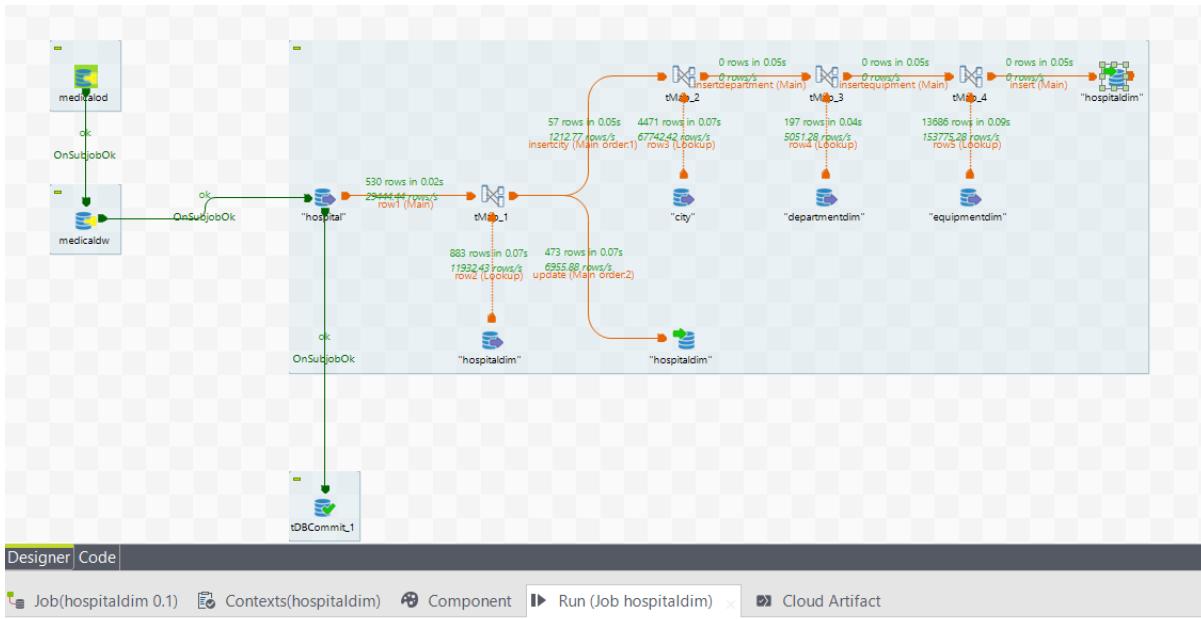
The Mapping Editor on the right shows various nodes (e.g., Insert, Join, Filter) connected by arrows, with properties like "Catch lookup inner join reject" set to true. Below the mapping, the Schema editor shows the definition for the "row1" and "row2" tables.

Column	Type	N.	Date Pattern (Ctrl+D)	Length	Precision	Default	Comment
logkey	int			10	0		
logid	Integer			10	0		
equipkey	Integer			10	0		
maintenancetechid	Integer			10	0		
maintenancedate	Date		"dd-MM-yyyy"	13	0		
maintenancetypeid	Integer			10	0		

Column	Type	N.	Date Pattern (Ctrl+D)	Length	Precision	Default	Comment
maintenancefactkey	int			10	0		
maintenancetechkey	Integer			10	0		
maintenancelogkey	Integer			10	0		
orderdetailskey	Integer			10	0		
hospitalkey	Integer			10	0		
paymentkey	Integer			10	0		

Column	Type	N.	Date Pattern (Ctrl+D)	Length	Precision	Default	Comment
maintenancetypekey	Integer			10	0		

11. HospitalDim:



The screenshot shows the Job Execution window for the "hospitaldim" job. The basic run section includes buttons for Run, Kill, and Clear. The execution log shows the following output:

```

Starting job hospitaldim at 18:41 15/11/2023.
[statistics] connecting to socket on port 3609
[statistics] connected
[statistics] disconnected
Job hospitaldim ended at 18:41 15/11/2023. [Exit code = 0]

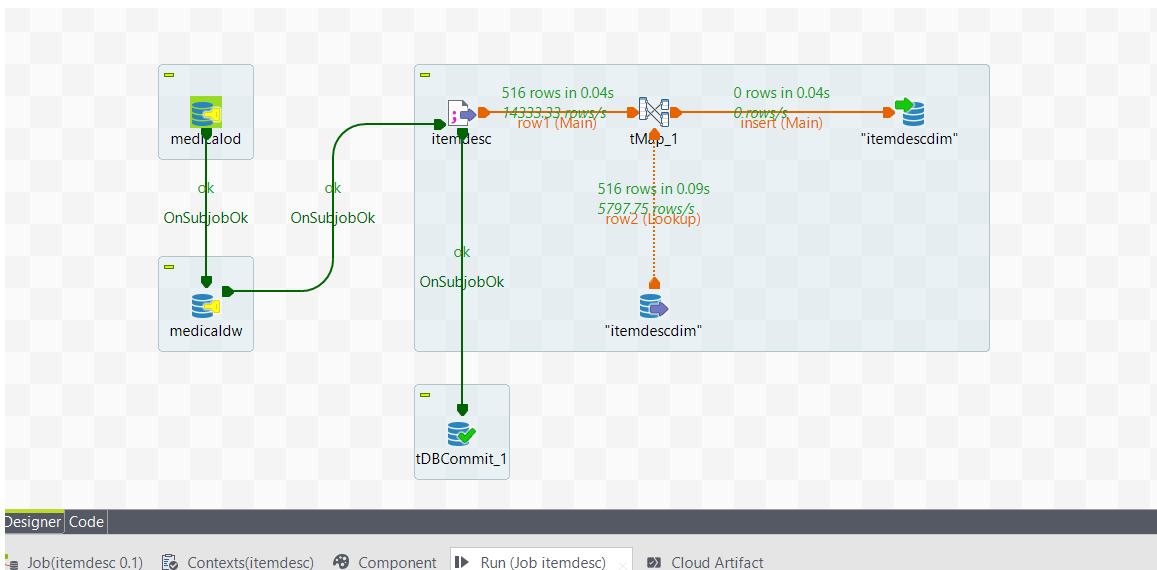
```

T-map1 :

The screenshot shows the Talend Data Integration environment with the following components:

- Row1 (Top Left):** A table showing columns for hospitalid, hospitalname, address, city, state, zipcode, phoneno, revenue, equipmentid, and departmentid.
- Var (Top Center):** A variable editor showing properties for the lookup model (Load once), match model (Unique match), and join model (Inner Join). It also shows an expression for Expr.key: row1.hospitalid and columns for hospitalkey, hospitalid, hospitalname, and address.
- Insertcity (Top Right):** A table for inserting data into a city dimension table. It includes columns for hospitalid, hospitalname, address, city, state, zipcode, phoneno, revenue, equipmentid, and departmentid. The "Catch lookup inner join reject" property is set to true.
- update (Bottom Right):** A table for updating the city dimension table. It includes columns for hospitalkey, hospitalid, hospitalname, address, and zipcode.
- Schema Editor (Bottom Left):** A table showing the schema for the hospital dimension table (ow1) with columns hospitalkey, hospitalid, hospitalname, address, zipcode, city, state, and phoneno.
- Preview (Bottom Center):** A grid showing the joined data from Row1 and the Insertcity table. The columns are hospitalkey, hospitalid, hospitalname, address, zipcode, citykey, equipkey, and depart.

12. Itemdesc:



The screenshot shows the execution results for the Job itemdesc:

- Execution:** Buttons for Run, Kill, and Clear.
- Job Log:**

```
Starting job itemdesc at 18:43 15/11/2023.
[statistics] connecting to socket on port 3757
[statistics] connected
[statistics] disconnected
Job itemdesc ended at 18:43 15/11/2023. [Exit code = 0]
```

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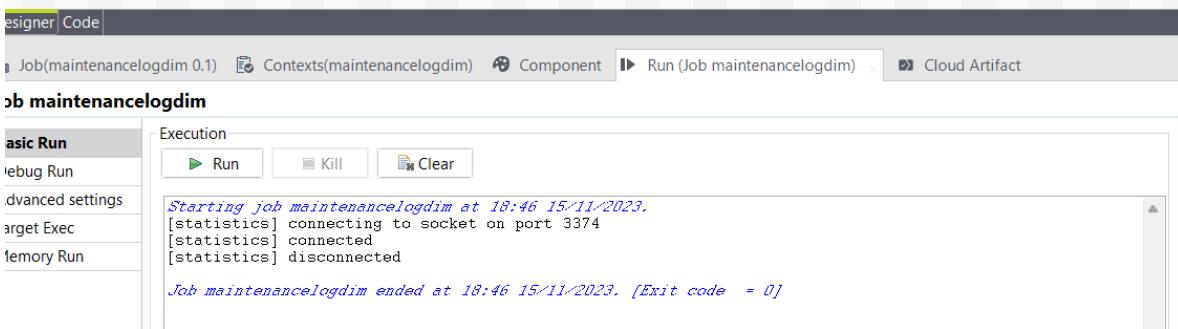
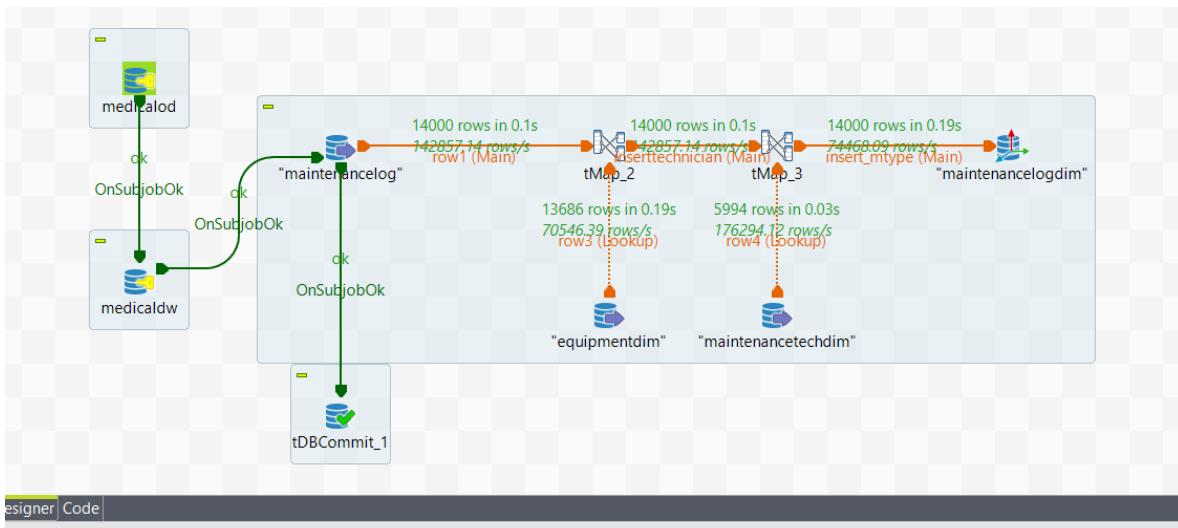
The screenshot shows the Talend Data Integration environment. On the left, the schema editor displays two rows: row1 (Columns: itemdescription, partdescription) and row2 (Properties: Lookup Model - Load once, Match Model - Unique match, Join Model - Inner Join, Store temp data - false). The expression editor below it shows the mapping: row1.itemdescription to itemkey, itemdescription, and partdescription. On the right, the Var editor shows an insert operation with properties: Catch output reject - false, Catch lookup inner join reject - true, Schema Type - Built-In. The insert table has columns: itemkey (int), itemdescription (String), and partdescription (String). Below these are the schema editor and expression editor for the target table 'ow1'.

Column	K..	Type	N..	Date Pattern (Ctrl+D)	Length	Precision	Default	Comment
itemdescription	<input type="checkbox"/>	String	<input checked="" type="checkbox"/>		53	0		
partdescription	<input type="checkbox"/>	String	<input checked="" type="checkbox"/>		52	0		

Column	K..	Type	N..	Date Pattern (Ctrl+D)	Length	Precision	Default	Comment
itemkey	<input checked="" type="checkbox"/>	int	<input type="checkbox"/>		10	0		
itemdescription	<input type="checkbox"/>	String	<input checked="" type="checkbox"/>		255	0		
partdescription	<input type="checkbox"/>	String	<input checked="" type="checkbox"/>		255	0		

123	itemkey	ABC itemdescription	partdescription
1	1	Batteries/ UPS	BATTERY LITHIUM ION
2	2	Sensors/ Detectors	SPO finger sensor mindray adult 512F
3	3	Keyboards/ Keypads/ Remotes	Foil Keyboard BBRAUN
4	4	Equipment Specific Parts	FISHER & PAYKEL ELECTRICAL ADAPTOR 900MR858
5	5	Solenoids/ Valves/ Gauges	Solenoid Valve (Chamber)
6	6	Equipment Specific Parts	EXPIRATORY CASSETTE
7	7	Diaphragms/ Pumps	Fresenius 4008S Concentrate Pump Assy Complete

13. Maintanencelogdim:



T-map1:

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row1

Column	
logid	
equipmentid	
technicianid	
maintenancedate	
maintenancetypeid	
description	

Var

Column	
--------	--

inserttechnician

Expression	Column
row1.logid	logid
row1.equipmentkey	equipkey
row1.technicianid	technicianid
row1.maintenancedate	maintenancedate
row1.maintenancetypeid	maintenancetypeid
row1.description	description

dw1

Column	K..	Type	N..	Date Pattern (Ctrl+...)	Length	Precision	Default	Comment
logid	<input checked="" type="checkbox"/>	int	<input checked="" type="checkbox"/>		10	0		nextval...
equipmentid	<input type="checkbox"/>	Integer	<input checked="" type="checkbox"/>		10	0		
technicianid	<input type="checkbox"/>	Integer	<input checked="" type="checkbox"/>		10	0		
maintenancedate	<input type="checkbox"/>	Date	<input checked="" type="checkbox"/>	"yyyy-mm-dd"	13	0		
maintenancetypeid	<input type="checkbox"/>	Integer	<input checked="" type="checkbox"/>		10	0		
description	<input type="checkbox"/>	String	<input checked="" type="checkbox"/>		21474836...	0		

inserttechnician

Column	K..	Type	N..	Date Pattern (Ctrl+...)	Length	Precision	Default	Comment
logid	<input checked="" type="checkbox"/>	int	<input checked="" type="checkbox"/>		10	0		nextval...
equipkey	<input type="checkbox"/>	Integer	<input checked="" type="checkbox"/>		10	0		
technicianid	<input type="checkbox"/>	Integer	<input checked="" type="checkbox"/>		10	0		
maintenancedate	<input type="checkbox"/>	Date	<input checked="" type="checkbox"/>	"yyyy-mm-dd"	13	0		
maintenancetypeid	<input type="checkbox"/>	Integer	<input checked="" type="checkbox"/>		10	0		
description	<input type="checkbox"/>	String	<input checked="" type="checkbox"/>		21474836...	0		

SCD Type3 :

SCD component editor

Unused

historicalmaintenancetypeid

Source keys

logid

Surrogate keys

name	logkey
creation	Table max + 1
complement	

Type 0 fields

equipkey
maintenancedate

Type 1 fields

description

Type 2 fields

Versioning

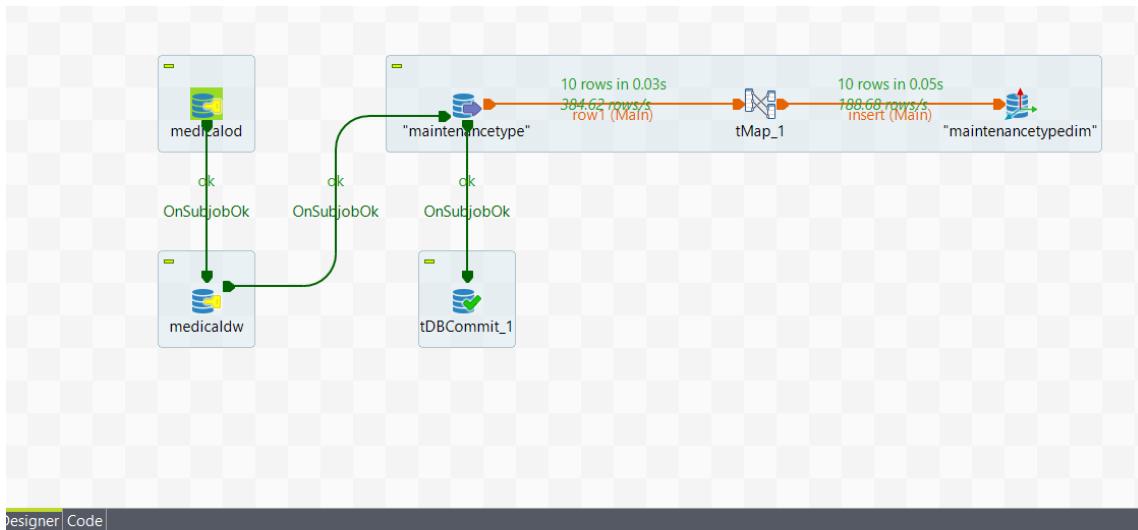
type	name	creation	compleme...
start	scd_start	Job start time	
end	scd_end	NULL	
<input type="checkbox"/> versi...	scd_version		
<input type="checkbox"/> active	scd_active		

Type 3 fields

current value	previous value
maintenancetypeid	historicalmaintenancetype...

	logkey	logid	equipkey	maintenancetechid	maintainedate	maintenancetypeid	description
1	1	1	3,248	382	2023-09-15	5	Routine inspection and cleaning
2	2	2	4,647	4,331	2023-01-23	2	Disinfection and sterilization
3	3	3	5,291	3,824	2023-11-12	9	Routine inspection and cleaning
4	4	4	101	858	2023-10-07	9	Routine inspection and cleaning
5	5	5	1,385	1,849	2023-01-26	3	Replaced worn-out components
6	6	6	2,119	3,374	2023-07-13	3	Routine inspection and cleaning
7	7	7	4,280	4,042	2023-10-28	2	Disinfection and sterilization
8	8	8	5,812	2,237	2023-08-08	7	Diagnostic tests and troubleshooting
9	9	9	3,284	475	2023-02-25	5	Safety inspection and compliance check
10	10	10	4,001	1,879	2023-05-03	6	Safety inspection and compliance check
11	11	11	2,542	2,831	2023-09-17	2	Replaced worn-out components
12	12	12	2,863	4,388	2023-06-02	2	Verified calibration accuracy
13	13	13	1,726	3,174	2023-02-23	9	Calibrated equipment for accuracy
14	14	14	5,849	2,508	2023-02-21	6	Preventive maintenance
15	15	15	4,910	3,609	2023-03-10	8	Replaced worn-out components
16	16	16	5,170	1,982	2023-11-23	4	Verified calibration accuracy
17	17	17	2,260	2,211	2023-07-15	2	Verified calibration accuracy

14. Maintanencetypedim :



Designer | Code

Job(maintenancetypedim 0.1) Contexts(maintenancetypedim) Component Run (Job maintenancetypedim) Cloud Artifact

Job maintenancetypedim

Basic Run

- Execution
 - Run
 - Kill
 - Clear
- Debug Run
- Advanced settings
- Target Exec
- Memory Run

Starting job maintenancetypedim at 18:47 15/11/2023.
[statistics] connecting to socket on port 3543
[statistics] connected
[statistics] disconnected

Job maintenancetypedim ended at 18:47 15/11/2023. [Exit code = 0]

row1

Column	Type	N.	Date Pattern (Ctrl+..)	Length	Precision	Default	Comment
maintenancetypeid	int			10	0		
maintenancename	String			255	0		
description	String			21474836..	0		
maintenancecost	Integer			10	0		

Var

Column	Type	N.	Date Pattern (Ctrl+..)	Length	Precision	Default	Comment
--------	------	----	------------------------	--------	-----------	---------	---------

insert

Column	Type	N.	Date Pattern (Ctrl+..)	Length	Precision	Default	Comment
row1.maintenancetypeid	int			10	0		
row1.maintenancename	String			255	0		
row1.description	String			21474836..	0		
row1.maintenancecost	Integer			10	0		

schema editor | Expression editor

ow1

Column	K..	Type	N..	Date Pattern (Ctrl+..)	Length	Precision	Default	Comment
maintenancetypeid	int				10	0		
maintenancename	String				255	0		
description	String				21474836..	0		
maintenancecost	Integer				10	0		

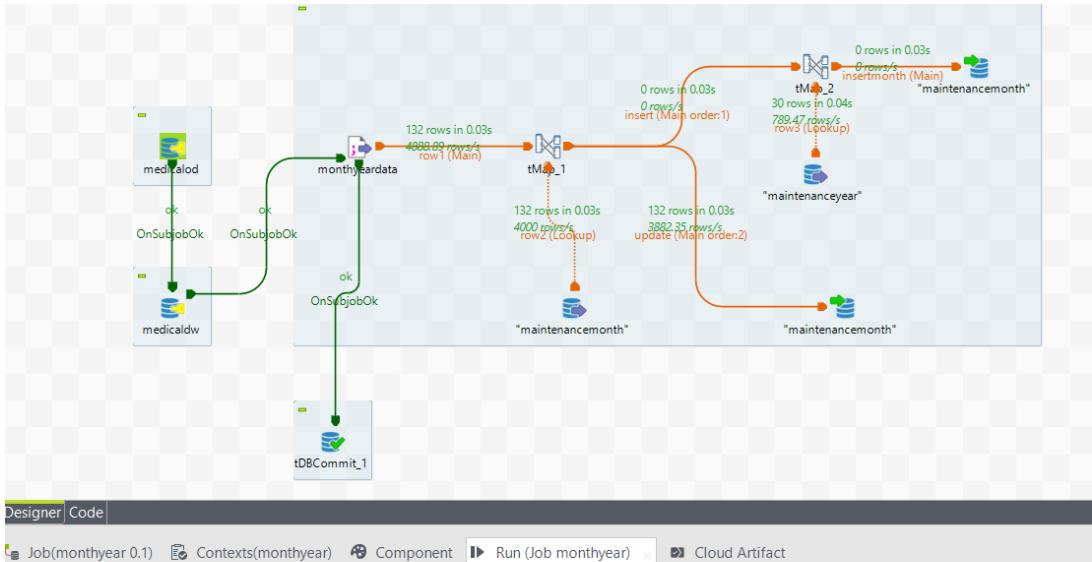
insert

Column	K..	Type	N..	Date Pattern (Ctrl+..)	Length	Precision	Default	Comment
maintenancetypeid	int				10	0		
maintenancename	String				255	0		
description	String				21474836..	0		
maintenancecost	Integer				10	0		

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123 maintenancetypekey	123 maintenancetypeid	ABC maintenancetypename	ABC description	123 maintenancecost	validfrom
1	1	Preventive Maintenance	Routine maintenance to prevent issues proactively.	500	2023-11-13
2	2	Corrective Maintenance	Repair or fix equipment when it malfunctions.	750	2023-11-13
3	3	Scheduled Maintenance	Planned maintenance based on a fixed schedule.	1,200	2023-11-13
4	4	Emergency Maintenance	Immediate maintenance for critical issues.	980	2023-11-13
5	5	Calibration	Adjusting and calibrating equipment for accuracy.	620	2023-11-13
6	6	Software Update	Updating equipment software for performance and security.	890	2023-11-13
7	7	Cleaning and Sanitization	Cleaning and sanitizing equipment regularly.	1,100	2023-11-13
8	8	Hardware Replacement	Replacing hardware components as needed.	950	2023-11-13

15. Monthyear:



Designer | Code | Job(monthyear 0.1) | Contexts(monthyear) | Component | Run (Job monthyear) | Cloud Artifact

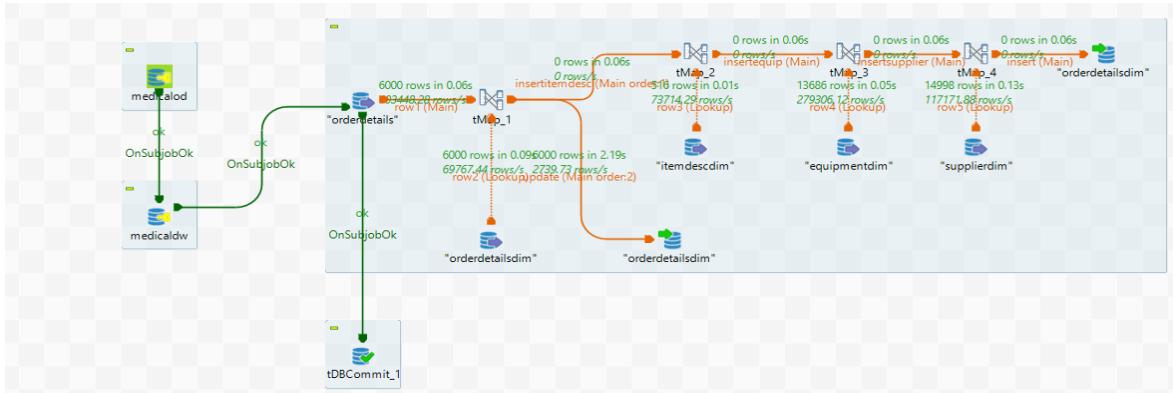
Job monthlyear

Basic Run
Debug Run
Advanced settings
Target Exec
Memory Run

Execution
Run | Kill | Clear

Starting job monthlyear at 18:52 15/11/2023.
[statistics] connecting to socket on port 3526
[statistics] connected
[statistics] disconnected
Job monthlyear ended at 18:52 15/11/2023. [Exit code = 0]

16. Orderdetailsdim :



Designer | Code | Job(orderdetailsdim 0.1) | Contexts(orderdetailsdim) | Component | Run (Job orderdetailsdim) | Cloud Artifact

Job orderdetailsdim

Basic Run
Debug Run
Advanced settings
Target Exec
Memory Run

Execution
Run | Kill | Clear

Starting job orderdetailsdim at 18:54 15/11/2023.
[statistics] connecting to socket on port 3373
[statistics] connected
[statistics] disconnected
Job orderdetailsdim ended at 18:54 15/11/2023. [Exit code = 0]

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t-map1:

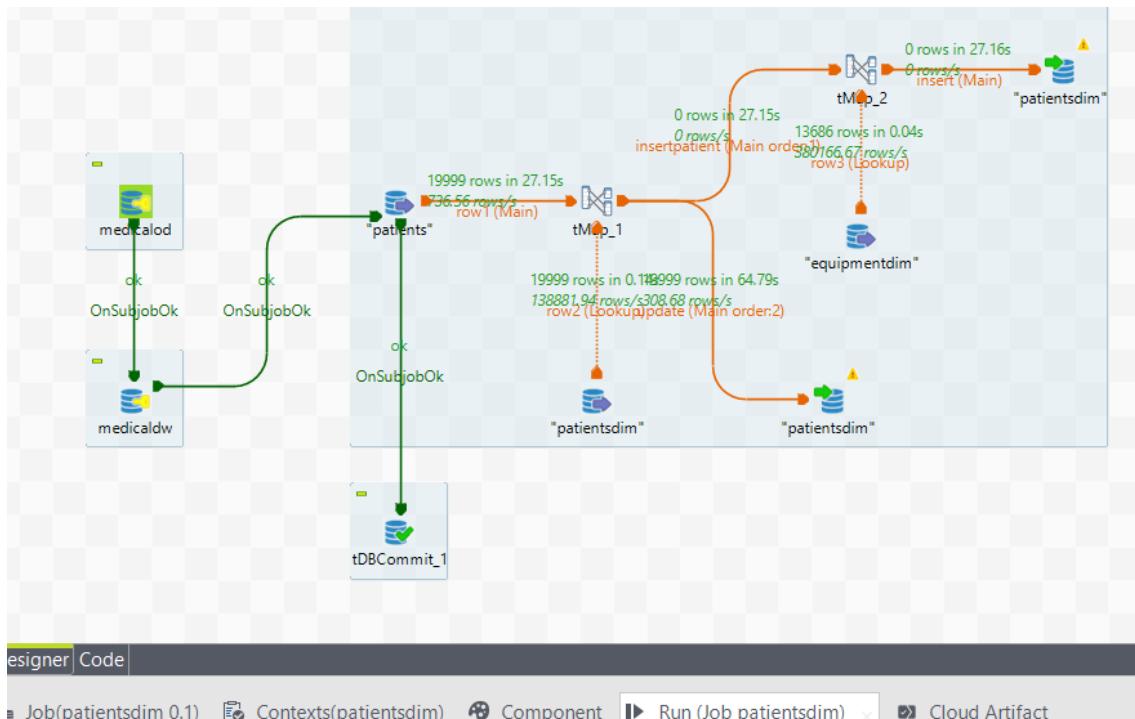
The screenshot shows the Talend t-map1 interface with four main components:

- row1**: A table component showing columns: orderid, ordername, description, itemcode, itemdescription, partdescription, supplierid, equipmentid, totalcost, quantity.
- Var**: A variable component showing various variables and their values.
- insertitemdesc**: A table component showing columns: orderid, ordername, description, itemcode, supplierid, equipmentid, totalcost, quantity, itemdescription, partdescription.
- update**: A table component showing columns: orderdetailskey, orderid, ordername, description, itemcode.

Connections are visible between the components, indicating data flow from row1 to insertitemdesc and then to update. The Var component is also connected to the flow.

	123 orderdetailskey	123 orderid	noc ordername	noc description	noc itemcode	123 itemkey
1	224	224	Oximeter	Description for Oximeter	BP0025	50
2	348	347	Gas, Helium	Description for Gas, Helium	BP0004	51
3	2,322	2,319	Oximeter	Description for Oximeter	BP0004	51
4	3,150	3,150	Pneumotachometer	Description for Pneumotachometer	BP0006	51
5	4,103	4,103	Oximeter	Description for Oximeter	BP0004	51
6	4,134	4,134	Oximeter, Ear	Description for Oximeter, Ear	BP0025	50
7	4,541	4,539	Laryngoscope Kit	Description for Laryngoscope Kit	BP0007	40
8	2,038	2,036	Conserver, Oxygen	Description for Conserver, Oxygen	BP0004	51
9	1	1	Monitor, Carbon-Dioxide, Cutaneous	Description for Monitor, Carbon-Dioxide, Cutaneous	BP0018	41
10	2	2	Analyzer, Gas, Carbon-Monoxide, Gaseous-Phase	Description for Analyzer, Gas, Carbon-Monoxide, Gaseous-Phase	BP0025	50
11	3	3	Oximeter	Description for Oximeter	BP0005	51
12	4	4	Flowmeter, Calibration, Gas	Description for Flowmeter, Calibration, Gas	BP0001	50
13	5	5	Mask, Oxygen, Non-Rebreathing	Description for Mask, Oxygen, Non-Rebreathing	BP0025	50
14	6	6	Non-Bronchoscopic Bronchoalveolar Lavage Catheter	Description for Non-Bronchoscopic Bronchoalveolar Lavage	BP0025	50
15	7	7	Monitor, Oxygen, Cutaneous, For Uses Other Than For Infant	Description for Monitor, Oxygen, Cutaneous, For Uses Other Than For Infant	BP0003	50
16	8	8	Medevac Use Oxygen Generator	Description for Medevac Use Oxygen Generator	BP0001	50
17	9	9	Acid-Vanilmandelic-Electrophoretic Separation	Description for Acid-Vanilmandelic-Electrophoretic Separation	BP0011	50

17. Patientdim:



Job patientsdim

Basic Run
Debug Run
Advanced settings
Target Exec
Memory Run

Execution

Run Kill Clear

Starting job patientsdim at 18:57 15/11/2023.
[statistics] connecting to socket on port 3370
[statistics] connected
[statistics] disconnected

Job patientsdim ended at 18:58 15/11/2023. [Exit code = 0]

row1

Column	patientid	gender	agecategory	description	paymentamount	procedure	equipmentid
patientid							
gender							
agecategory							
description							
paymentamount							
procedure							
equipmentid							

row2

Property	Value
Lookup Model	Load once
Match Model	Unique match
Join Model	Inner Join
Store temp data	false

Expr. key

Column	patientkey	patientid	gender	agecategory	description	paymentamount	procedure
row1.patientid							

Var

Insertpatient

Property	Value
Catch output reject	false
Catch lookup inner join reject	true
Schema Type	Built-In

Expression

Column	patientid	gender	agecategory	description	paymentamount	procedure	equipmentid
row1.patientid							
row1.gender							
row1.agecategory							
row1.description							
row1.paymentamount							
row1.procedure							
row1.equipmentid							

update

Column	patientkey	patientid	gender	agecategory	description	paymentamount	procedure	euikey
row2.patientkey								
row2.patientid								
row2.gender								
row2.agecategory								
row2.description								
row2.paymentamount								
row2.procedure								
row2.euikey								

hw1

Column	Type	N.	Date Pattern (Ctrl+D)	Length	Precision	Default	Comment
patientid	int			10	0	nextval...	
gender	String			10	0		
agecategory	String			255	0		
description	String			21474836...	0		
paymentamount	Integer			10	0		
procedure	Integer			10	0		

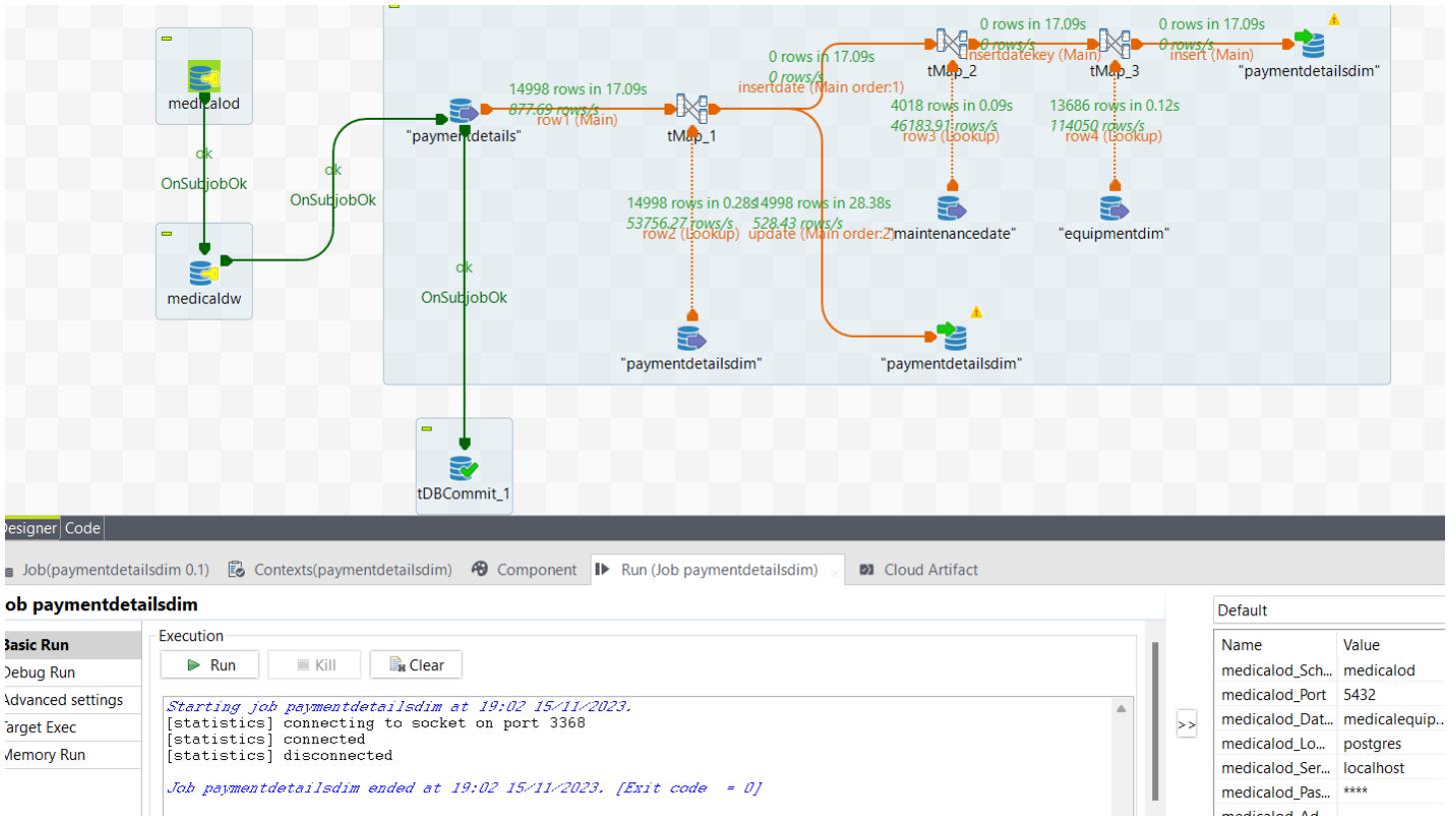
insertpatient

Column	Type	N.	Date Pattern (Ctrl+D)	Length	Precision	Default	Comment
patientid	int			10	0		
gender	String			10	0		
agecategory	String			255	0		
description	String			21474836...	0		
paymentamount	Integer			10	0		
procedure	Integer			10	0		

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	<code>patientkey</code>	<code>patientid</code>	<code>gender</code>	<code>agecategory</code>	<code>description</code>	<code>paymentamount</code>	<code>procedure</code>	<code>eu</code>
1	191	191	Male	Under 25 years old	Standard wheelchair	40	6	
2	1,112	1,110	Male	Between 55-65 years old	Outflare wedge	40	2	
3	1,245	1,244	Male	Between 35-45 years old	Standard wheelchair	30	9	
4	1,888	1,887	Male	Under 25 years old	Standard wheelchair	30	5	
5	1,594	1,592	Male	Between 25-35 years old	Iv pole	[NULL]	1	
6	1,889	1,888	Male	Between 35-45 years old	Standard wheelchair	40	1	
7	1,890	1,889	Male	Under 25 years old	Lightweight wheelchair	80	3	

18. PaymentDetailsdim:

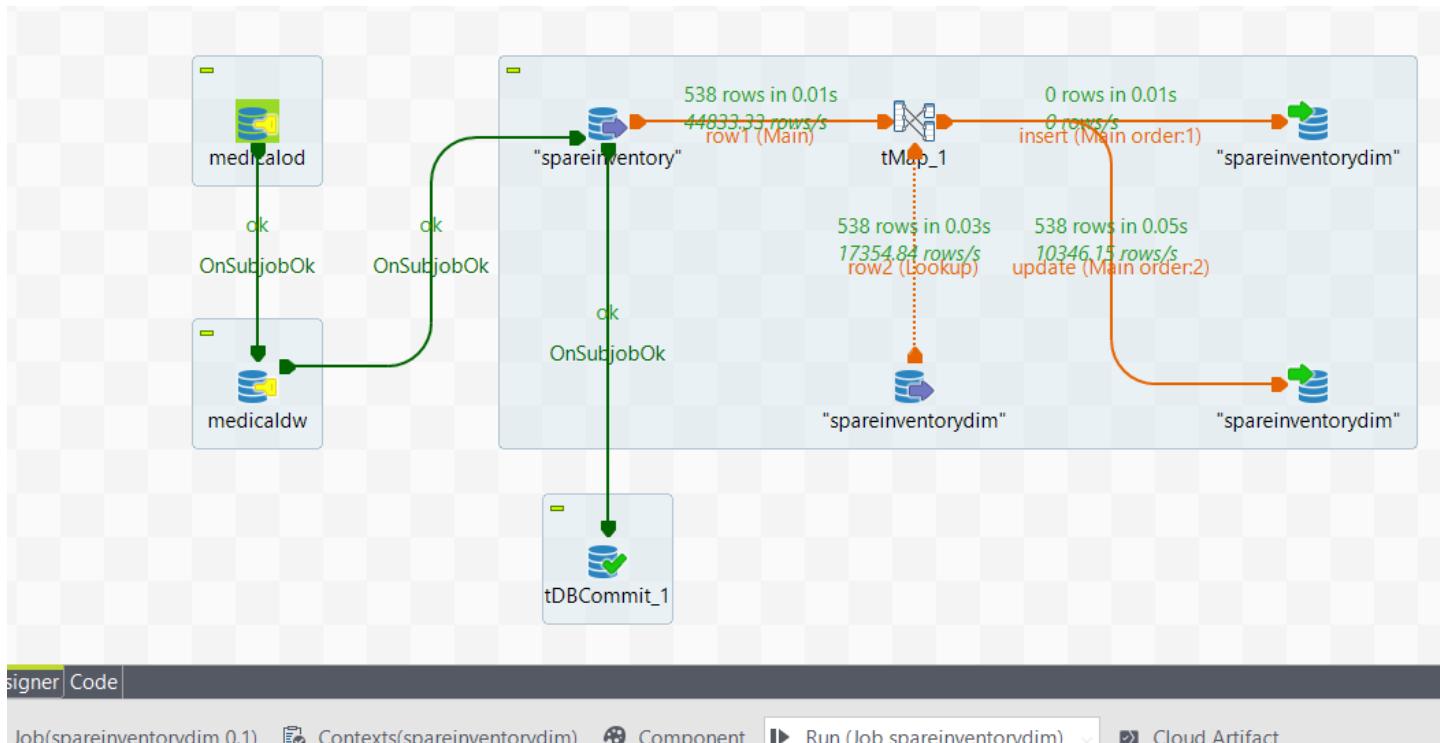


Job configuration details:

- Basic Run:** Starting job paymentdetailsdim at 19:02 15/11/2023. [statistics] connecting to socket on port 3368 [statistics] connected [statistics] disconnected Job paymentdetailsdim ended at 19:02 15/11/2023. [Exit code = 0]
- Execution:** Run, Kill, Clear
- Variables:**
 - Var: Expression: Math.round((row1.amount == null ? 0 : ...), 2) Type: float Variable: updatedamount
- insertdate:**
 - Property: Value: false
 - Catch lookup reject: true
 - Catch inner join reject: true
 - Schema Type: Built-In
 - Expression: row1.paymentid, row1.supplierid, row1.equipmentid, row1.amount, row1.purchasedate, row1.invoiceno, row1.logid, Var.updatedamount
 - Value: 5
- update:**
 - Property: Value: false
 - Catch lookup reject: true
 - Catch inner join reject: true
 - Schema Type: Built-In
 - Expression: row2.paymentkey, row2.paymentid, row2.supplierid, row2.equipmentid, row2.amount

	123 paymentkey	123 paymentid	123 supplierid	123 equipkey	123 lodid	123 amount	123 discount	123 updatedamount	⌚ purchasedate	abc paymentde
1	7,508	7,508	7,508	2,631	1,507	[NULL]	5	0	2023-05-28	[NULL]
2	1	1	1	1,900	1	18,894.849609375	5	17,950	2023-06-12	[NULL]
3	2	2	2	3,616	2	2,831.0400390625	5	2,689	2023-06-16	[NULL]
4	3	3	3	5,192	3	14,667.990234375	5	13,935	2023-03-03	[NULL]
5	4	4	4	2,801	4	93,940.703125	5	89,244	2023-10-01	[NULL]
6	5	5	5	2,952	5	18,335.55078125	5	17,419	2023-02-05	[NULL]
7	6	6	6	5,596	6	3,948.6398925781	5	3,751	2023-10-11	[NULL]
8	7	7	7	3,434	7	56,000.96875	5	53,201	2023-06-01	[NULL]
9	8	8	8	3,367	8	9,062.5302734375	5	8,609	2023-08-25	[NULL]
10	9	9	9	4,341	9	6,507.8500976562	5	6,182	2023-10-24	[NULL]
11	10	10	10	5,494	10	301,050.59375	5	285,998	2023-06-25	[NULL]
12	11	11	11	2,080	11	120,359.2265625	5	114,341	2023-02-04	[NULL]
13	12	12	12	4,404	12	51,484.69921875	5	48,910	2023-04-06	[NULL]
14	13	13	13	1,256	13	10,400.7001953125	5	9,881	2023-04-27	[NULL]

19. SpareinventoryDim:



Job(spareinventorydim 0.1) Contexts(spareinventorydim) Component Run (Job spareinventorydim) Cloud Artifact

b spareinventorydim

sic Run

-
-
-
-

Execution

```
Starting job spareinventorydim at 19:05 15/11/2023.
[statistics] connecting to socket on port 3818
[statistics] connected
[statistics] disconnected

Job spareinventorydim ended at 19:05 15/11/2023. [Exit code = 0]
```

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row1

Column	itemcode
Column	itemdescription
Column	partdescription
isexpirydaterequired	
minprice	
maxprice	
brand	
status	
expiryagemonths	
currentstock	
supplierid	

row2

Property	Value
Lookup Model	Load once
Match Model	Unique match
Join Model	Inner Join
Store temp data	false
Expr. key	Column
row1.itemcode + row1.itemdescription + ...	inventorykey
	uniquevalue
	minprice

Var

Expression	row1.itemcode + row1.itemdescription ...	Type	String	Variable	uniquevalue
------------	------------------------------------------	------	--------	----------	-------------

Insert

Property	Value
Catch output reject	false
Catch lookup inner join reject	true
Schema Type	Built-In
Expression	Column
Var.uniquevalue	inventorykey
row1.minprice	uniquevalue
row1.maxprice	minprice
row1.brand	brand
row1.expiryagemonths	expiryagemonths
row1.currentstock	currentstock

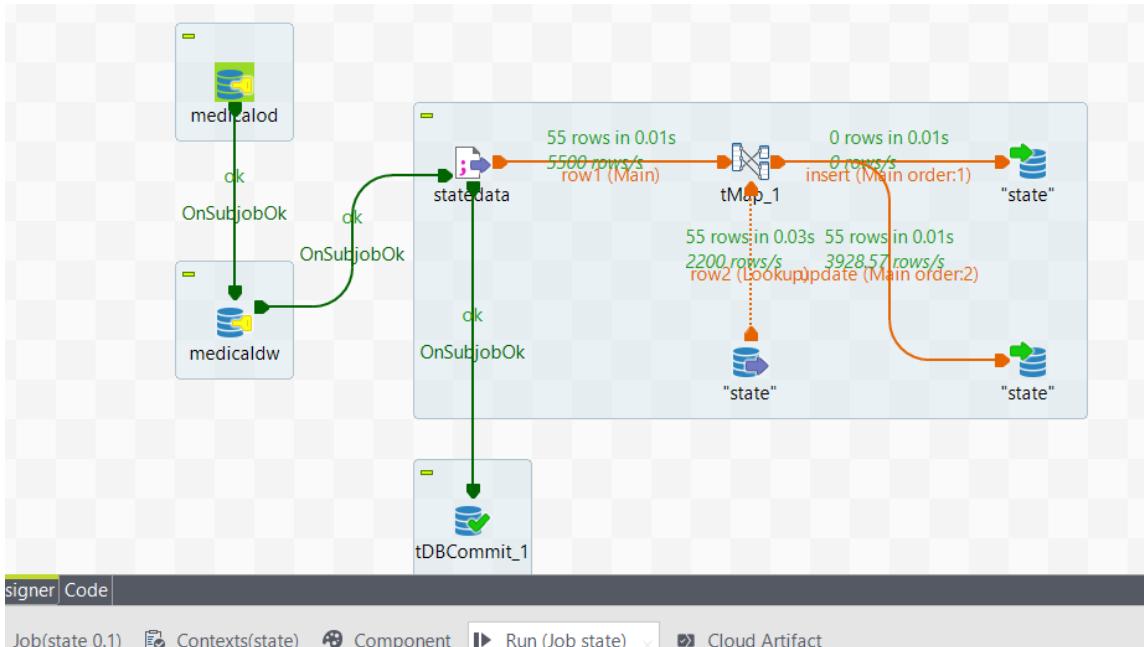
update

Property	Value
Column	inventorykey
row2.uniquevalue	uniquevalue
row1.minprice	minprice
row1.maxprice	maxprice
row1.brand	brand
row1.expiryagemonths	expiryagemonths
row1.currentstock	currentstock

Table Data:

	123 inventorykey	abc uniquevalue	123 minprice	123 maxprice	abc brand	123 expiryagemonths	123 currentstock
1	0	BP0003Bulbs/ LampsHalogen Lamp158	1,571	2,000		[NULL]	3
2	0	BP0003Bulbs/ LampsBulb 2.5V232	175	201	Keeler	0	0
3	0	BP0018Motors/ Micromotors/ Carbon brushesFlow motor1	500	800	Common	0	0
4	0	BP0025Sensors/ DetectorsO2 Sensor OOM2022	280	380	Common	0	0
5	0	BP0005Casing/ Covers/ Brackets/ Latches/ Part HoldersDoor 22MM Bu	800	826	Fresenius	0	3
6	0	BP0001Batteries/ UPSBattery Pack Fot Tec 7731K4	650	1,400	Nihon Kohden	0	2
7	0	BP0025Sensors/ DetectorsDATEX OHMEDA Spo2 FINGER SENSOR Tru	385	393		0	10
8	0	BP0025Sensors/ DetectorsFLOW TRANDUCER GE6	450	790	Ge	0	1
9	0	BP0003Bulbs/ LampsBulb 12v 30w7	127	130	Haag-Streit	0	24

20. State :



signer | Code

Job(state 0.1) Contexts(state) Component Run (Job state) Cloud Artifact

b state

asic Run
bug Run
anced settings
get Exec
emory Run

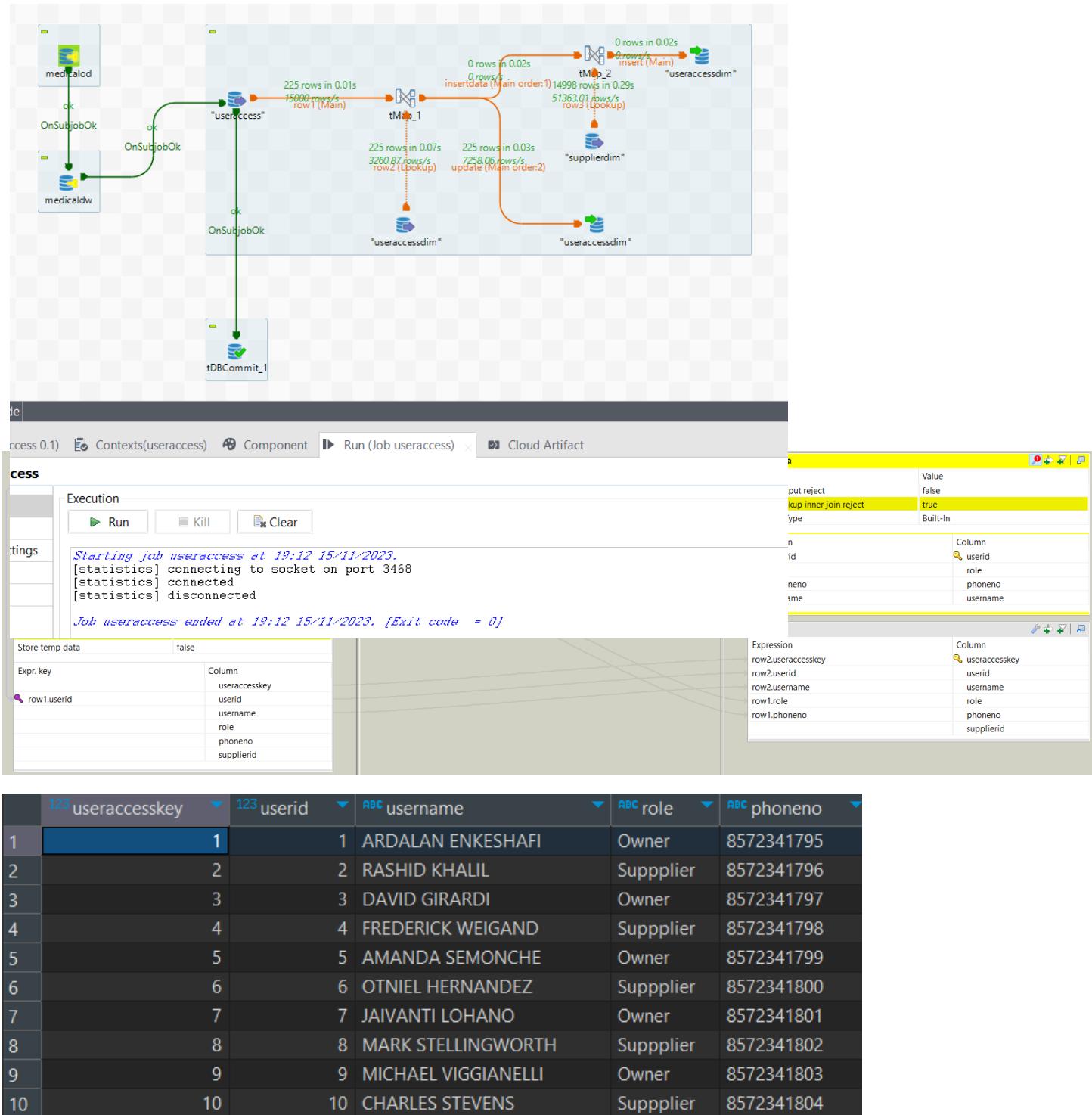
Execution

Run Kill Clear

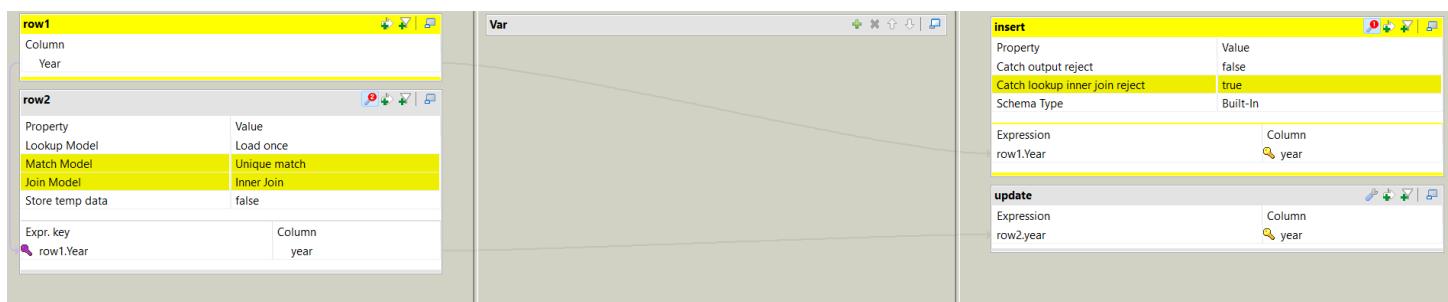
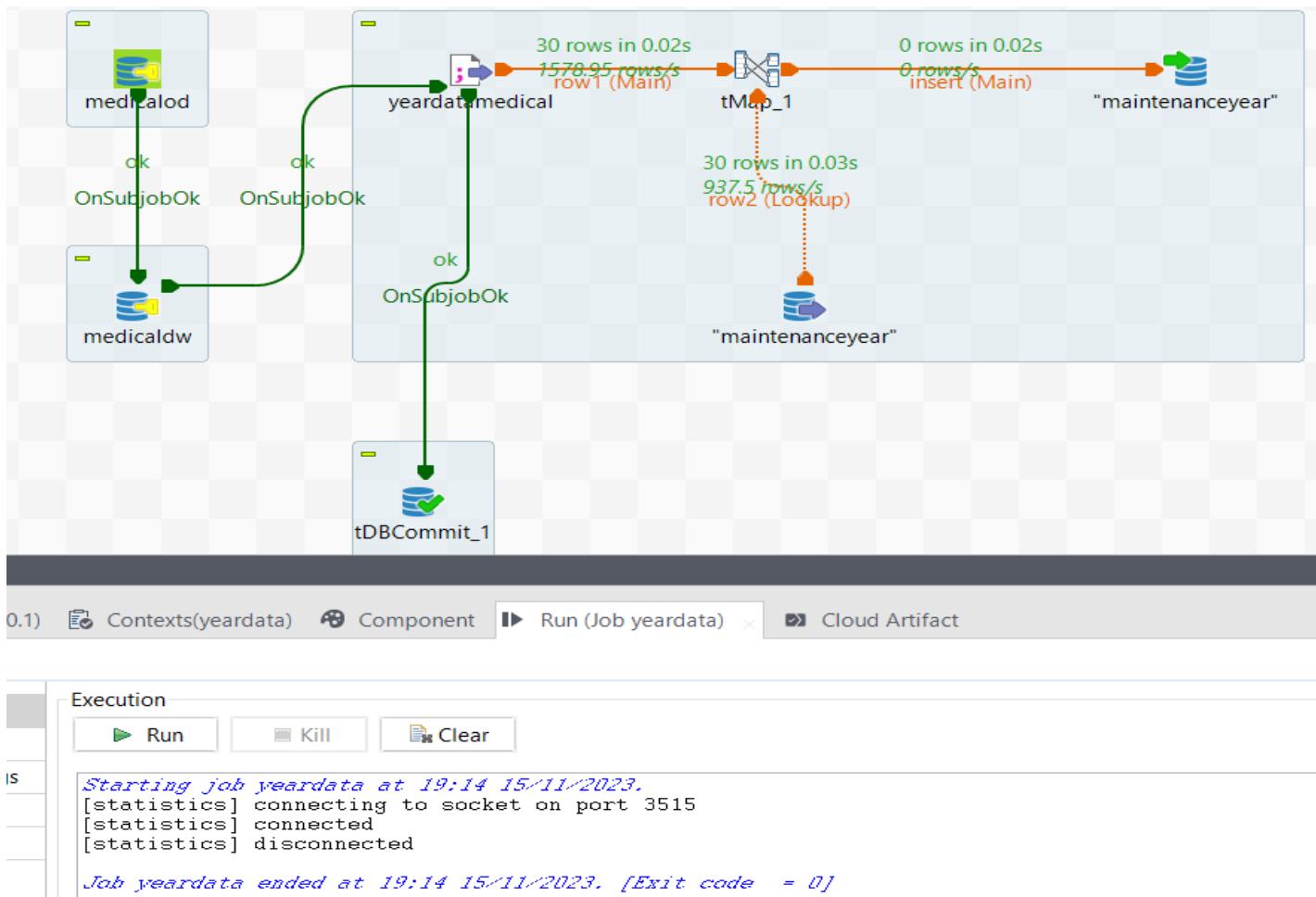
Starting job state at 19:10 15/11/2023.
[statistics] connecting to socket on port 3630
[statistics] connected
[statistics] disconnected

Job state ended at 19:10 15/11/2023. [Exit code = 0]

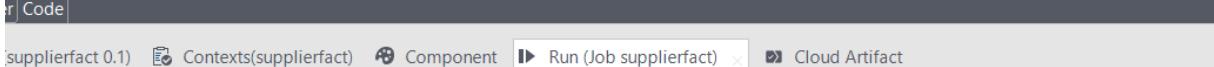
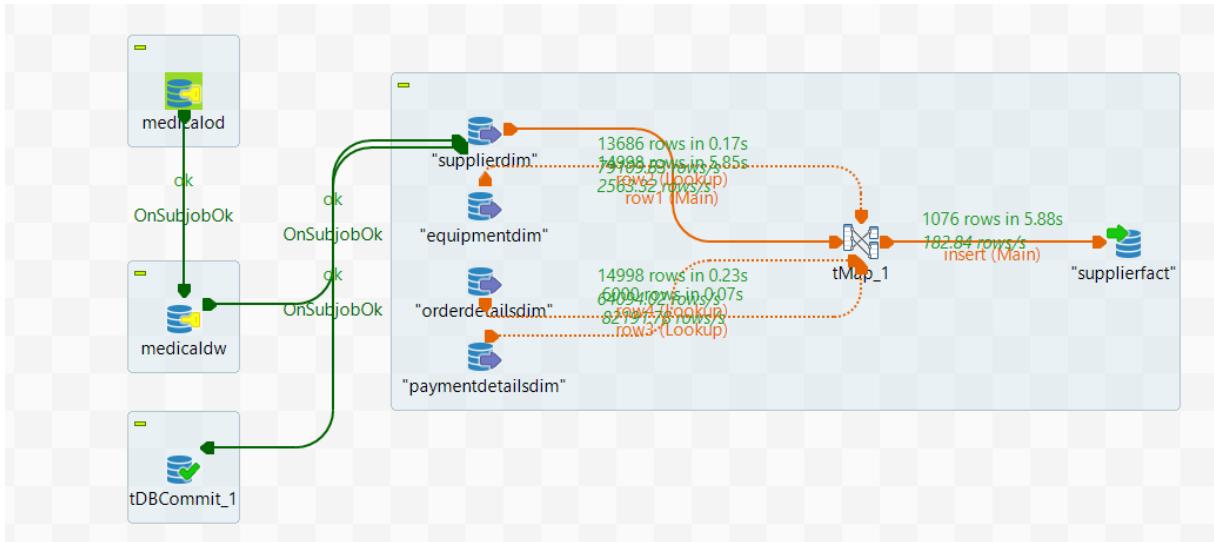
21. Useraccess:



22. Yeardata:



23. SupplierFACT:



Supplierfact

Execution

- Run
- Stop
- Cancel
- Clear

Starting job supplierfact at 19:15 15/11/2023.
[statistics] connecting to socket on port 3630
[statistics] connected
[statistics] disconnected

Job supplierfact ended at 19:15 15/11/2023. [Exit code = 0]

row1

Column	supplierkey	supplierid	suppliername	suppliergender	supplierspecialty	supplierdesignation	supplieraddress	supplierzipcode	supplierstate	suppliercity	supplierty	supplierentity	totalamount	amountpaid	amountowed	validfrom	validto	iscurrent
Expr. key																		

row2

Expr. key	Column	equipmentkey	environmental

Var

Insert

Property	Value
Catch output reject	false
Catch lookup inner join reject	false
Schema Type	Built-In
Expression	Column

row2.equipmentkey
row1.supplierkey
row3.orderdetailskey
row4.paymentkey
row1.totalamount
row3.totalcost
row1.amountpaid
(row1.amountpaid != null && row1.totalamount != null) ? (row1.amountpaid / row1.totalamount) * 100 : 0

	123 supplierfactkey	123 equipkey	123 supplierkey	123 orderdetailskey	123 paymentkey	123 totalsupplyamount	123 totalsupplycost	123 amountpaid	123 supplier
1	738448	1,900	1	5,922	1	18,894,849,609,375	1,524,726,5625	11,850,370,117,1875	62
2	738449	1,900	1	5,922	1	18,894,849,609,375	1,524,726,5625	11,850,370,117,1875	62
3	738450	3,616	2	5,923	2	2,831,040,039,0625	3,561,640,380,8594	1,581,739,990,2344	55
4	738451	3,616	2	5,923	2	2,831,040,039,0625	3,561,640,380,8594	1,581,739,990,2344	55
5	738452	5,192	3	5,924	3	14,667,990,234,375	2,519,426,513,6719	6,828,850,097,6562	40
6	738453	5,192	3	5,924	3	14,667,990,234,375	2,519,426,513,6719	6,828,850,097,6562	40
7	738454	2,801	4	5,925	4	93,940,703,125	3,027,724,121,0938	52,868,320,3125	56
8	738455	2,801	4	5,925	4	93,940,703,125	3,027,724,121,0938	52,868,320,3125	56
9	738456	2,952	5	5,926	5	18,335,550,78125	2,630,599,853,156	10,021,309,570,3125	54
10	738457	2,952	5	5,926	5	18,335,550,78125	2,630,599,853,156	10,021,309,570,3125	54
11	738458	5,596	6	5,927	6	3,948,639,892,5781	4,686,276,855,4688	2,090,320,068,3594	52
12	738459	5,596	6	5,927	6	3,948,639,892,5781	4,686,276,855,4688	2,090,320,068,3594	52
13	738460	3,434	7	5,928	7	56,000,96875	753,423,828,125	26,327,150,390,625	47
14	738461	3,434	7	5,928	7	56,000,96875	753,423,828,125	26,327,150,390,625	47
15	738462	3,367	8	5,929	8	9,062,530,273,4375	207,137,222,29	5,941,930,175,7812	65
16	738463	3,367	8	5,929	8	9,062,530,273,4375	207,137,222,29	5,941,930,175,7812	65
17	738464	4,341	9	5,930	9	6,507,850,097,6562	2,357,435,302,7344	2,458,580,078,125	37

Analytical Queries:

1. Top 3 paid maintenance Technicians:

```
/* to find the technicians who are highest paid */

select m.fullname, m3.description, sum(m3.maintenancecost) as amount
from medicaldw.maintenancetechdim m inner join
medicaldw.maintenancelogdim m2 on m.maintenancetechkey = m2.maintenancetechid
inner join medicaldw.maintenancetypedim m3 on m.maintenancetechkey = m3.maintenancetypekey
group by m.fullname , m3.description
order by amount desc limit 3
```

maintenancetechdim(+) 1 ×

select m.fullname, m3.description, sum(m3.mainte | Enter a SQL expression to filter results (use Ctrl+Space)

	fullname	description	amount
1	Harry Hayes	Replacing hardware components as needed.	4,750
2	Calvin Coolidge	Upgrading equipment for improved functionality.	2,880
3	Ulysses Buchanan	Regular inspections to identify potential issues.	2,700

2. List user access levels and the access they have.

```
/*2. List user access levels and the access they have. */
select u.username, u.role
from medicaldw.useraccessdim u
inner join medicaldw.supplierdim s
on u.userid = s.supplierid
```

useraccessdim 1 ×

select username, u.role from medicaldw.useracc | Enter a SQL expression to filter results (use Ctrl+Space)

	username	role
89	ZANA CORREA	Owner
90	RAYMOND BARROWS	Supplier
91	WILLAIM GRABENSTEIN	Owner
92	MARY OSTASZEWSKI	Supplier
93	TIFFANY BERRY	Owner
94	MICHAEL OSLEBER	Supplier
95	FRANK HUX	Owner
96	ERIK RATCHFORD	Supplier
97	TREAH HAGGERTY	Owner
98	EMILY BYRNE	Supplier

3. Total maintenance cost to the healthcare/hospitals:

The screenshot shows a data warehousing tool interface. On the left, there's a sidebar with icons for 'Grid' (selected), 'Text', and 'SQL'. The main area has a dark background with a light gray header bar. The header bar contains a small icon, the text '/* 3. Total maintanence cost */', and a search bar with the placeholder 'Enter a SQL expression to filter results (use Ctrl+Space)'. Below the header is a table with the following data:

	equipmentname	maintenancetypename	sum
1	1-Nitroso-2-Naphthol (Fluorometric), Free Tyrosine	Calibration	2,480
2	11-Dehydro Thromboxane B2 Kit, Urinary	Scheduled Maintenance	2,400
3	2,4-Dinitrofluorobenzene (Spectroscopic), Nitrogen (Amino-Nitrogen)	Emergency Maintenance	1,960
4	2,4-Dinitrophenylhydrazine, Lactate Dehydrogenase	Hardware Replacement	1,900
5	2,4-Dinitrophenylhydrazine, Lactate Dehydrogenase	Software Update	1,780
6	25-Oh-Vitamin D Mass Spectrometry Test System	Software Update	1,780
7	5-Amp-Phosphate Release (Colorimetric Test), 5'-Nucleotidase	Hardware Replacement	1,900
8	A Chemical Vapor Sterilization Multivariable Chemical Indicator	Cleaning and Sanitization	2,200
9	A Chemical Vapor Sterilization Multivariable Chemical Indicator	Preventive Maintenance	2,000
10	Aberrometer, Ophthalmic	Corrective Maintenance	1,500
11	Aberrometer, Ophthalmic	Emergency Maintenance	1,960
12	Aberrometer, Ophthalmic	Scheduled Maintenance	2,400
13	Ablation System, High Intensity Focused Ultrasound (Hifu), Mr-Guided	Corrective Maintenance	1,500