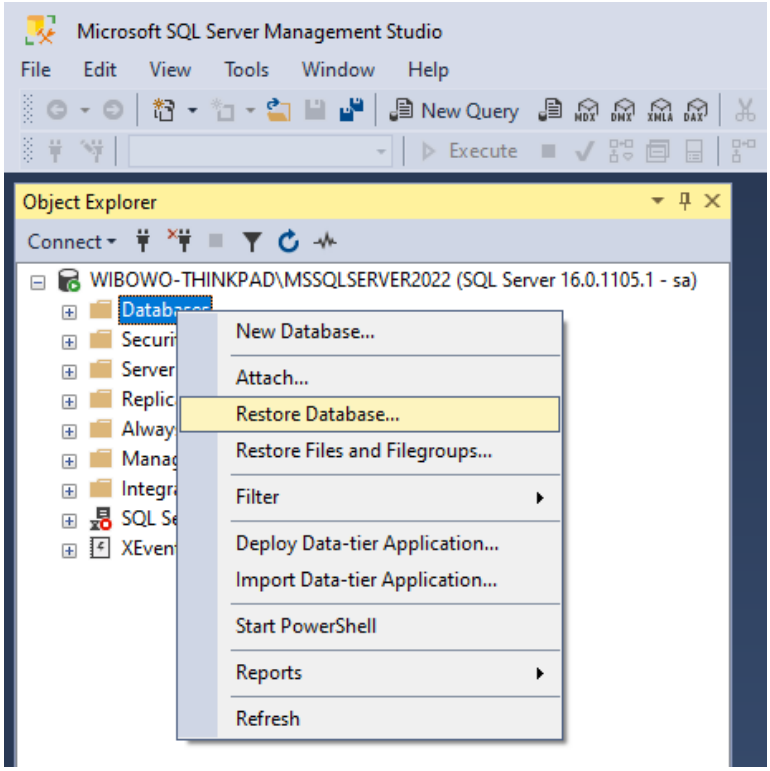
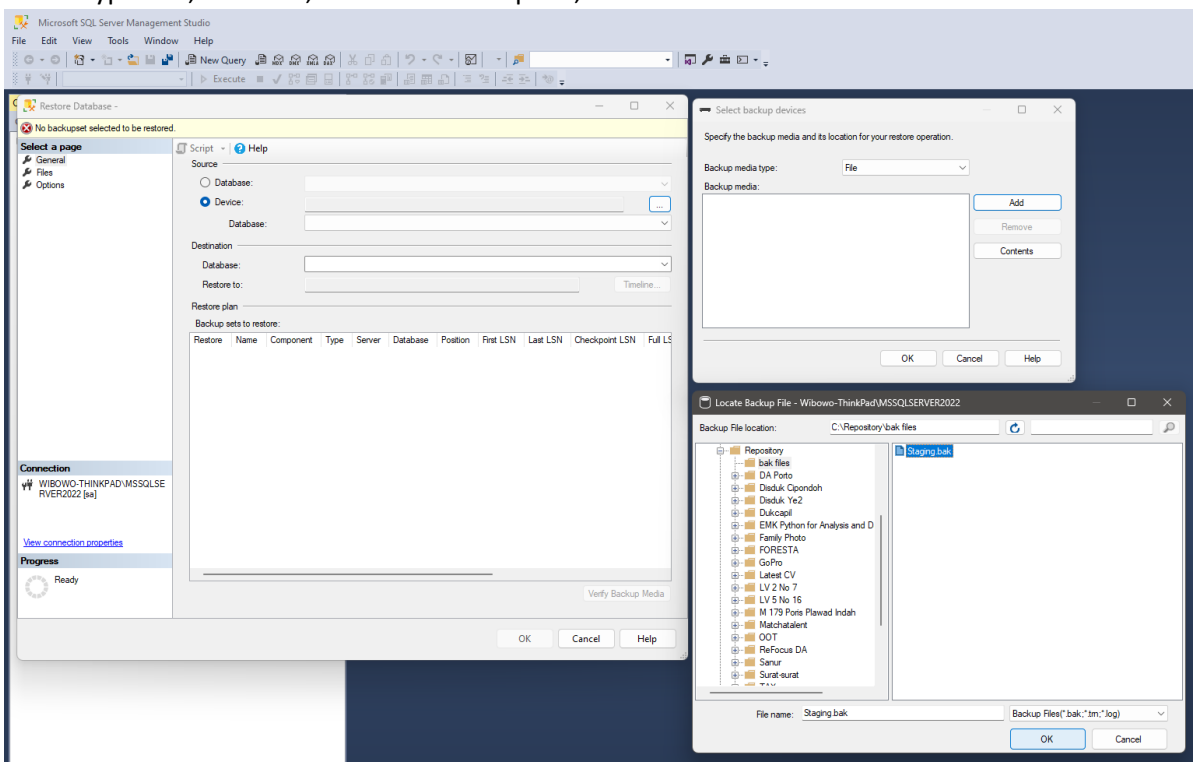
1. Import/Restore Database in Microsoft SQL Server.

1.1 Open SQL Server Management Studio and login.

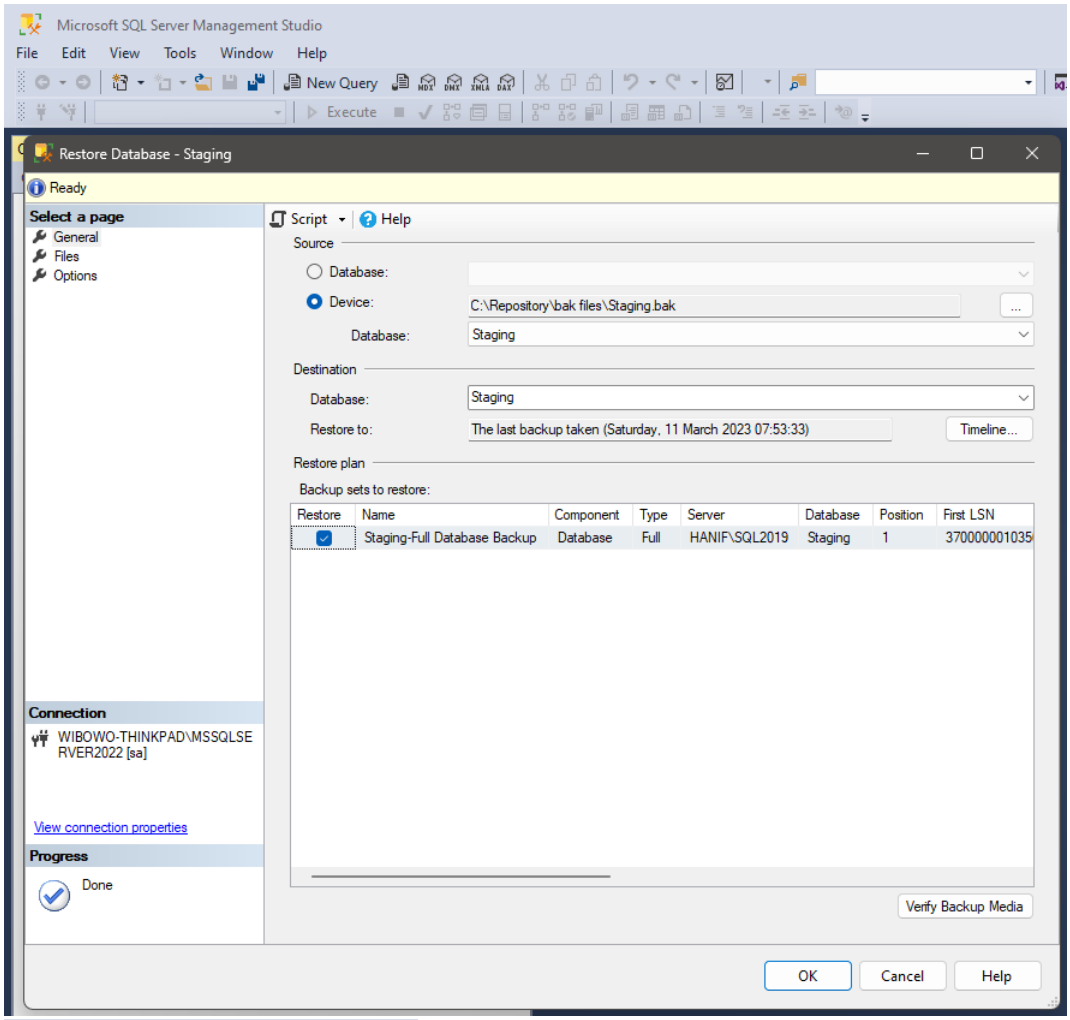
1.2 Right click on Databases folder and click Restore Database.

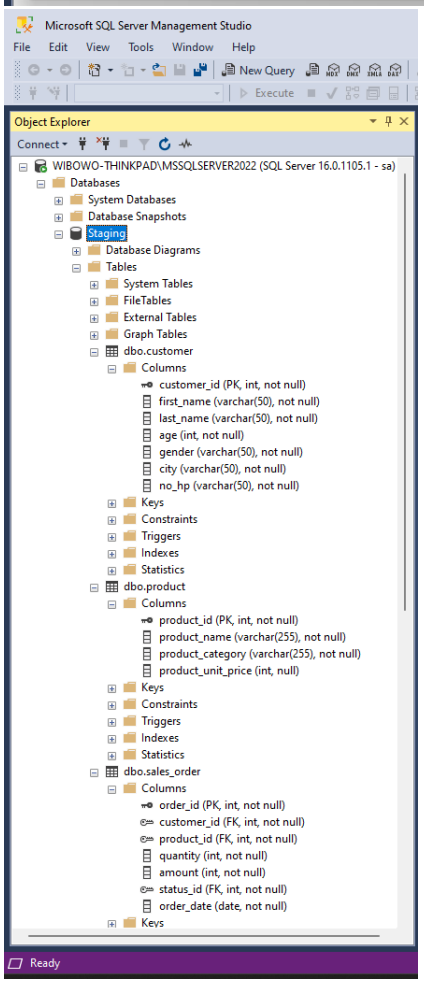


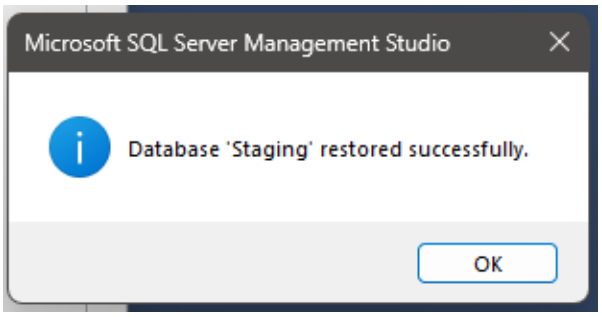
1.3 Choose Device for Source, click the ... button at the right side of the Device option, choose back up media type: file, click add, locate the backup file, click OK.



1.4 Click OK and if the process is successful, the database should be shown on the Object Explorer.

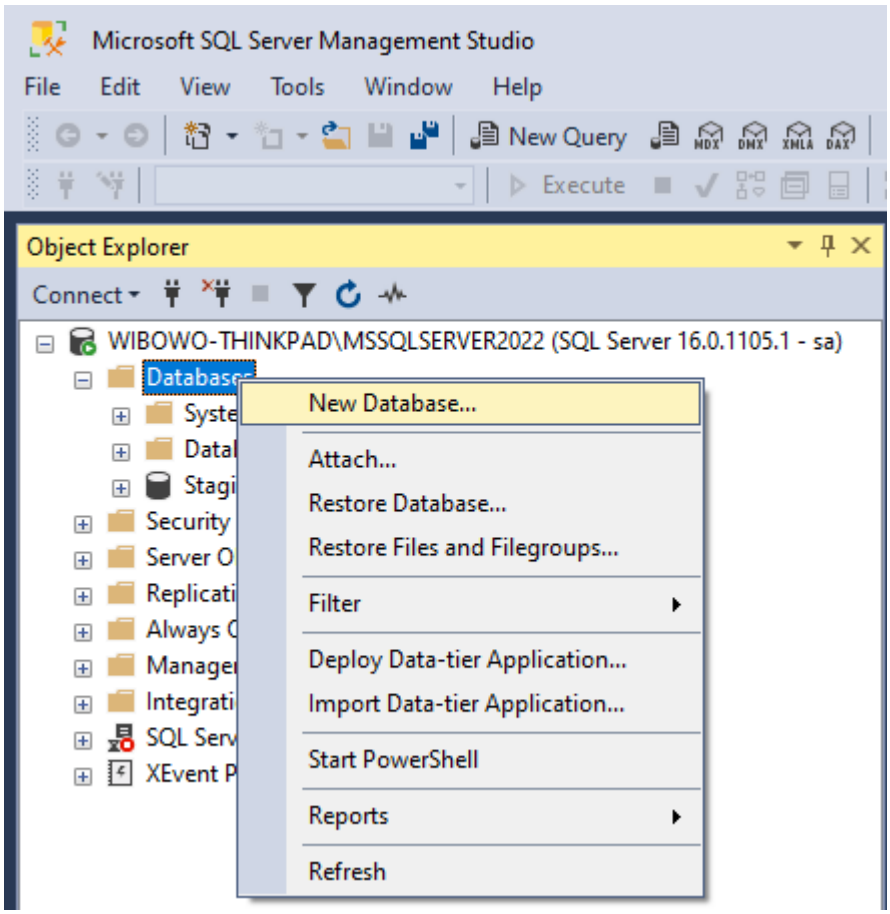




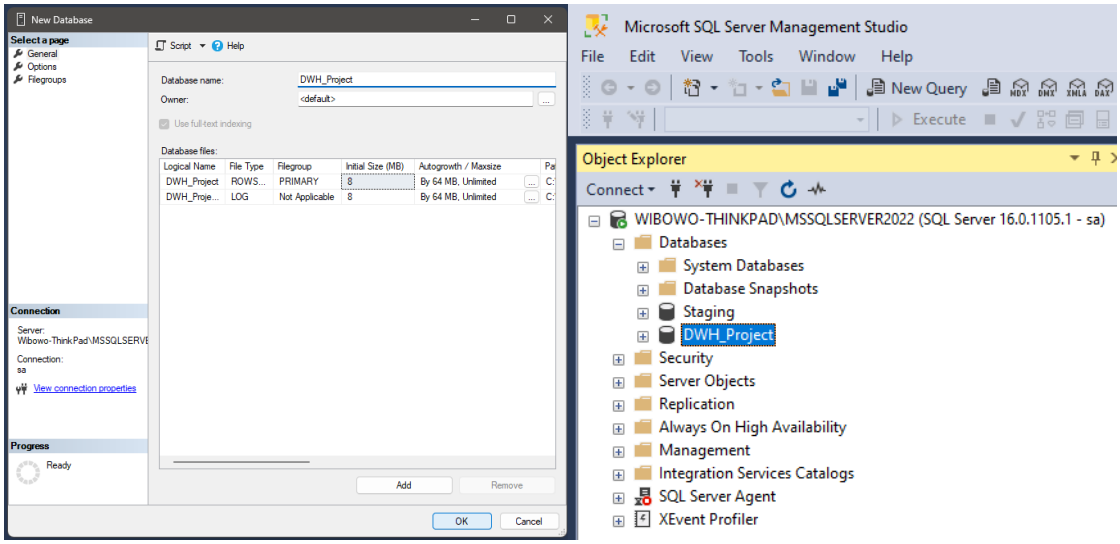


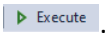
2. Creating and preparing new database as Data Warehouse for ETL process in Microsoft SQL Server.

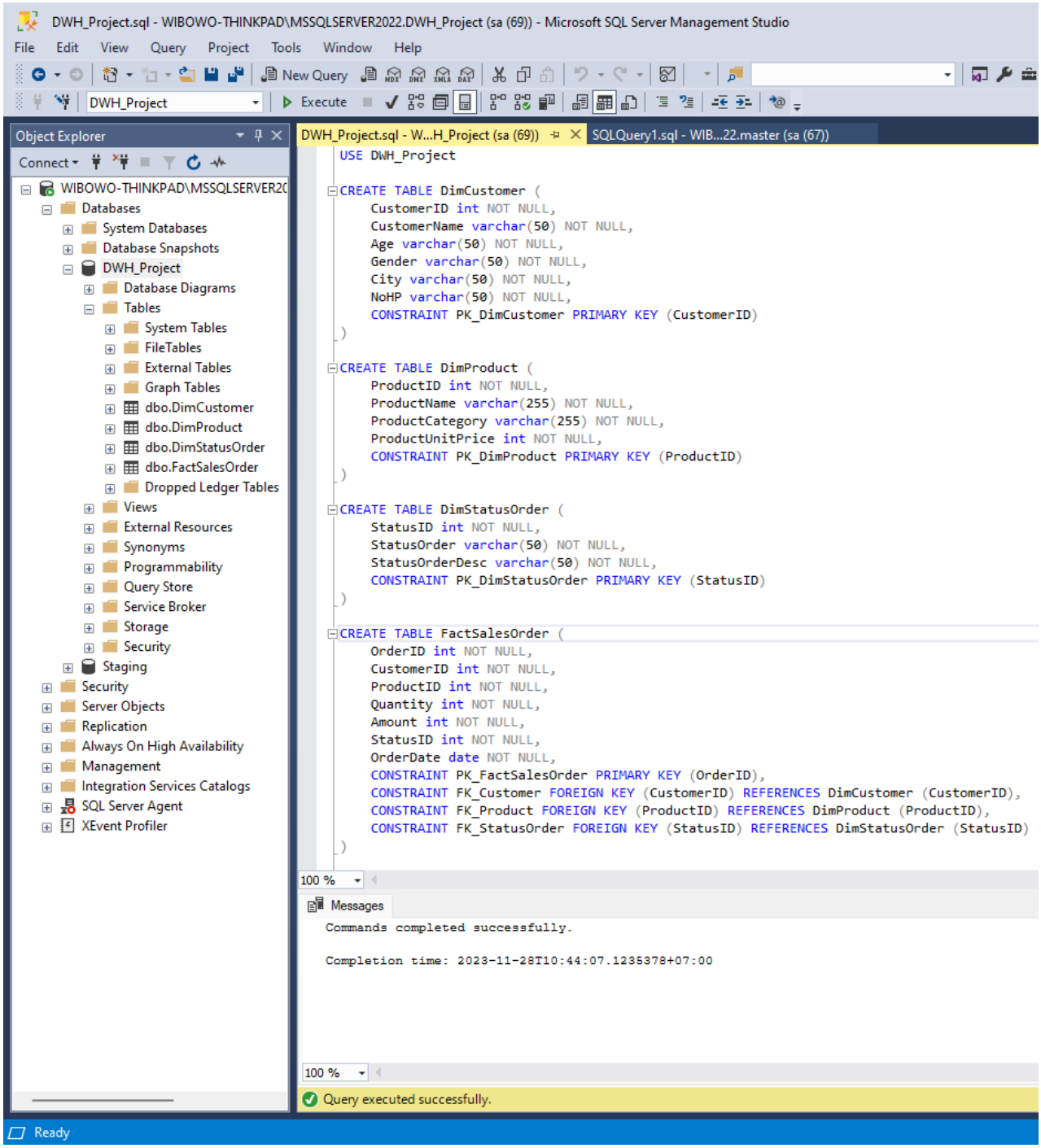
2.1 Right click on Databases folder and click New Database.



2.2 Fill the Database name and click OK, the new database should be shown on the Object Explorer.

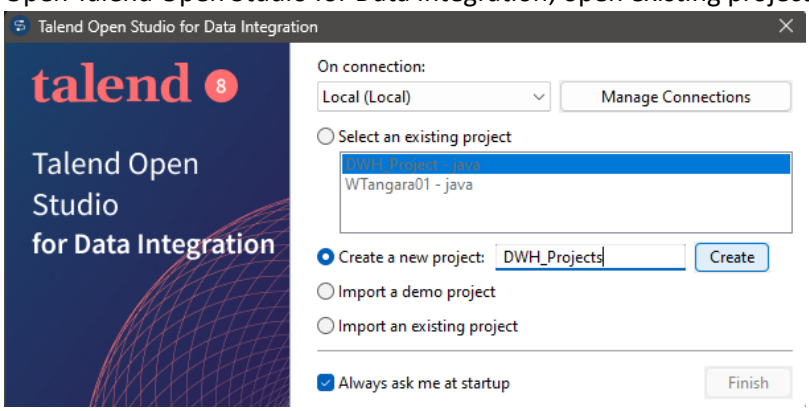


2.3 Click new query icon  , type the query shown on the image below, block the entire query and click execute icon  .

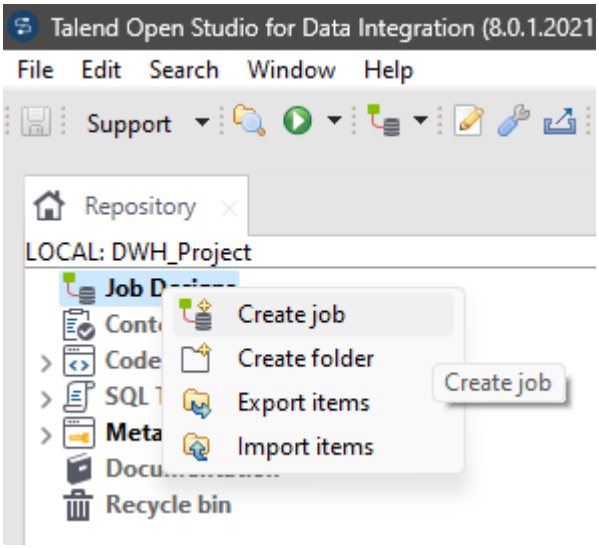


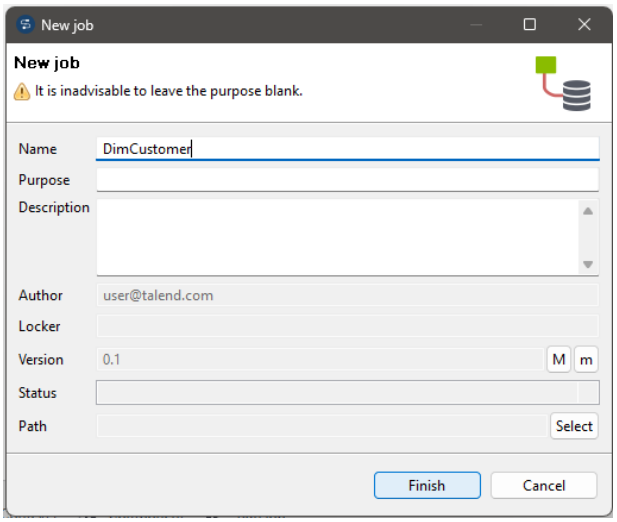
3. Conducting ETL process using Talend.

3.1 Open Talend Open Studio for Data Integration, open existing project or create a new project.

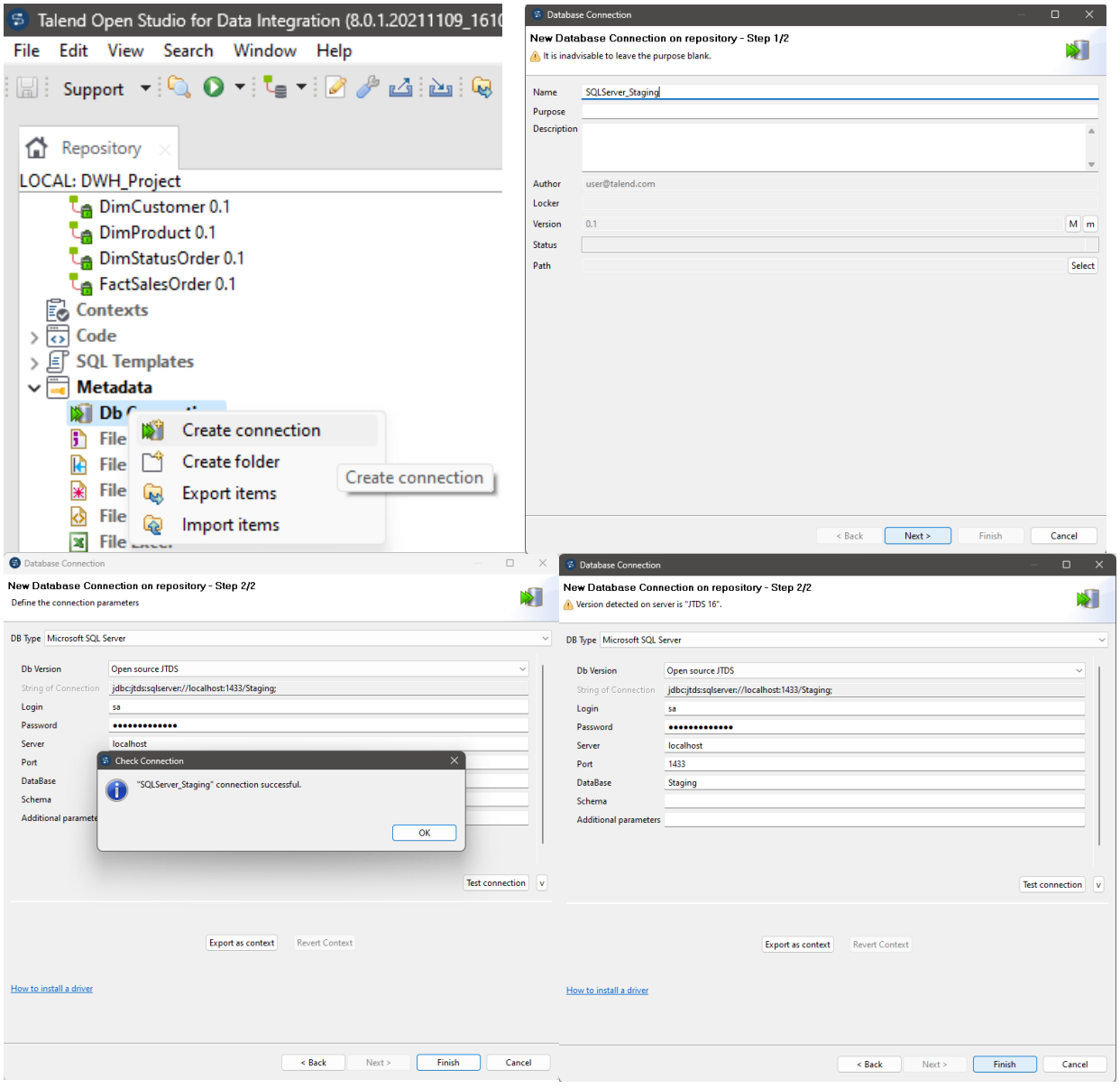


3.2 Right click on job design tree, choose create job, fill the job name and click OK, repeat this process based on how many jobs you want to conduct.

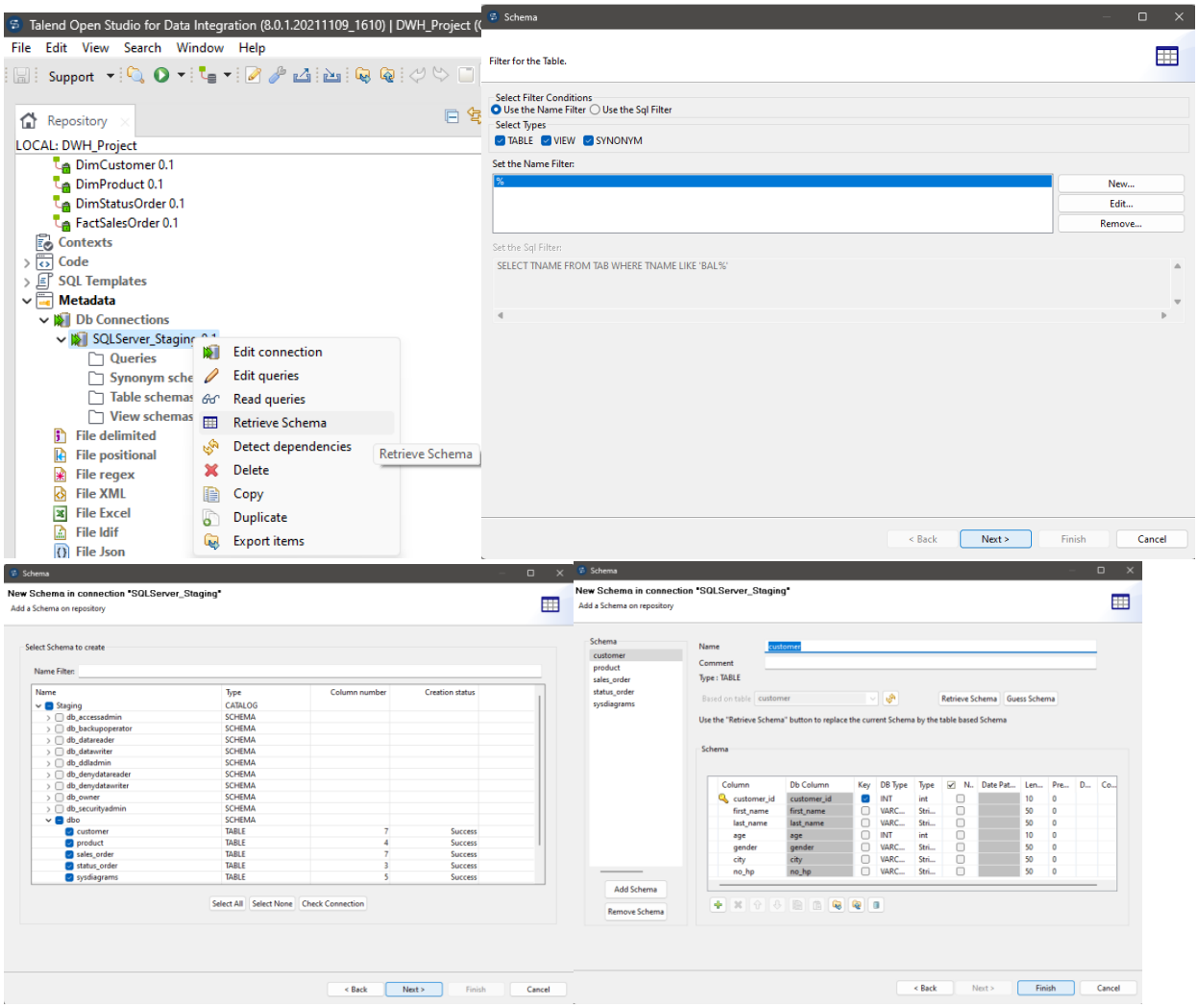




3.3 Click on Metadata tree and right click on Db Connection, click on Create connection, fill the connection name and click next, fill the field as shown on image below (dB type: Microsoft SQL server, dB version: open source JTDS, login: your MSSQLServer user name, password: your password, server: localhost, port : 1433, database: database name), click the test connection button, then click finish.

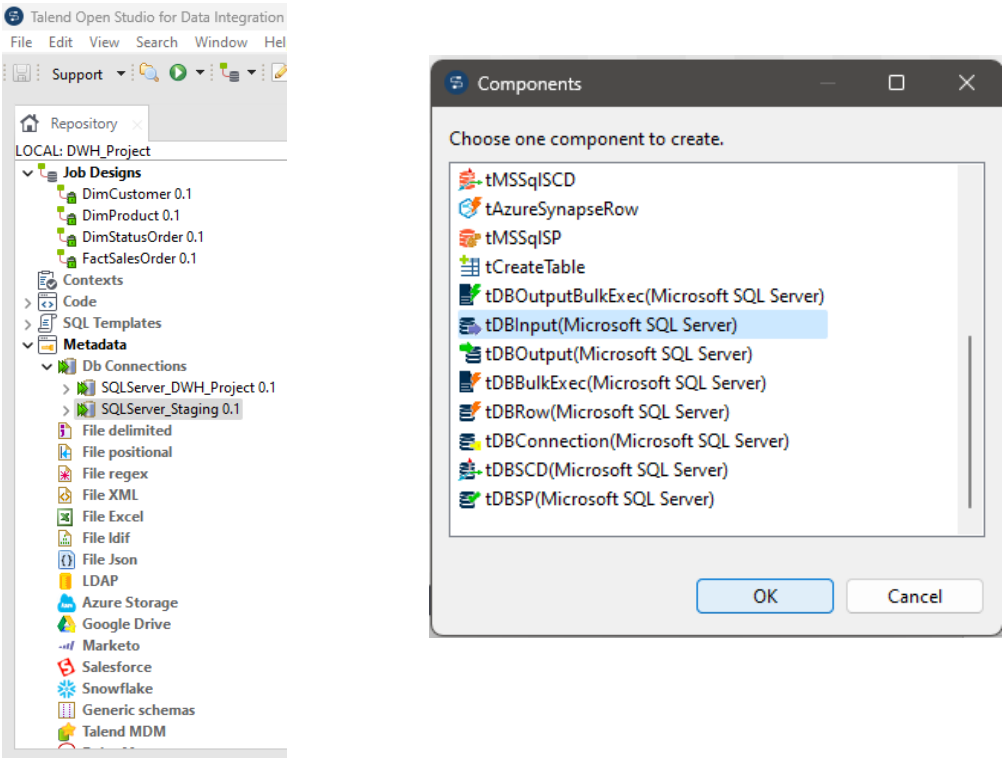


3.4 Right click on the Db connection you just made and choose retrieve schema, click next, expand the tree and check the dbo folder to retrieve the schema, click next and finish.

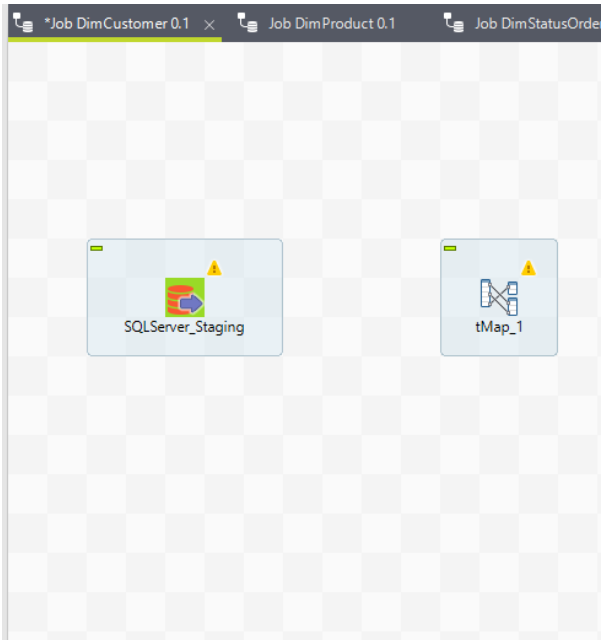


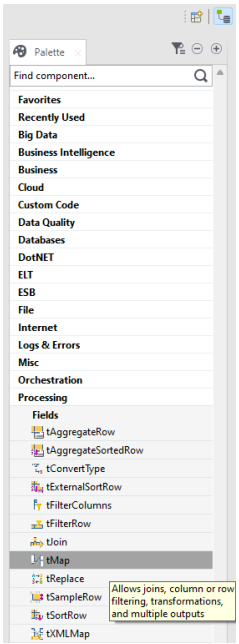
3.5 Repeat the process on step 3.3 then 3.4 for all the database connection for input and output you needed.

3.6 For the data/table that need transformation: expand metadata tree and dB connection, drag and drop the database intended for input to job design canvas, choose tDBinput(Microsoft SQL Server) on the components and click ok.

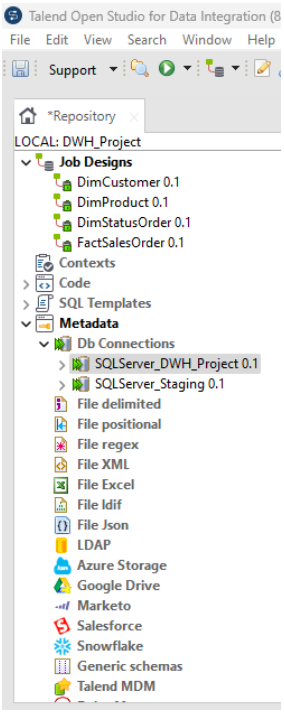


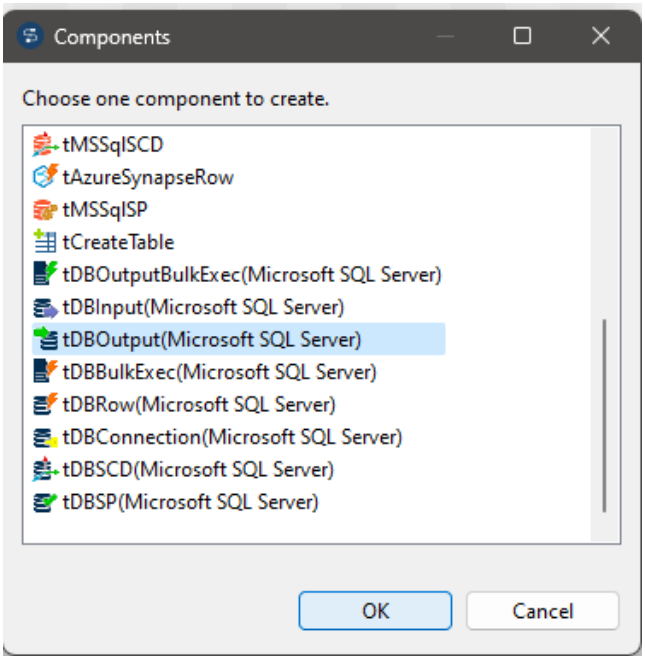
Drag and drop tmap component that you can find on the palette window under processing tab to job design canvas.



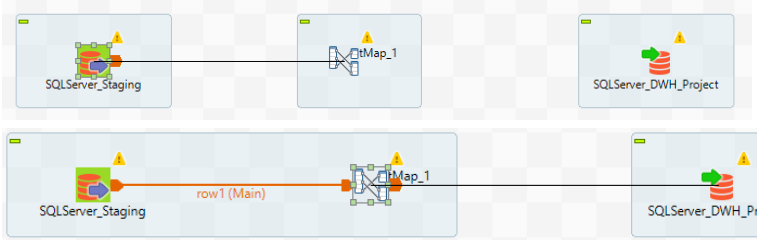


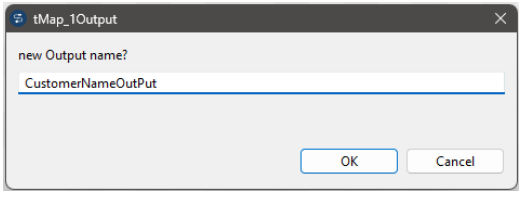
Expand metadata tree and dB connection, drag and drop the database intended for output to job design canvas, choose tDBoutput(Microsoft SQL Server) on the components and click ok.



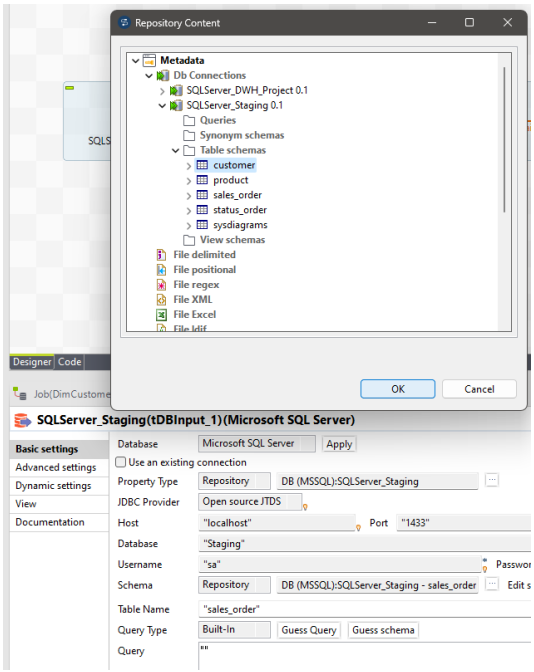


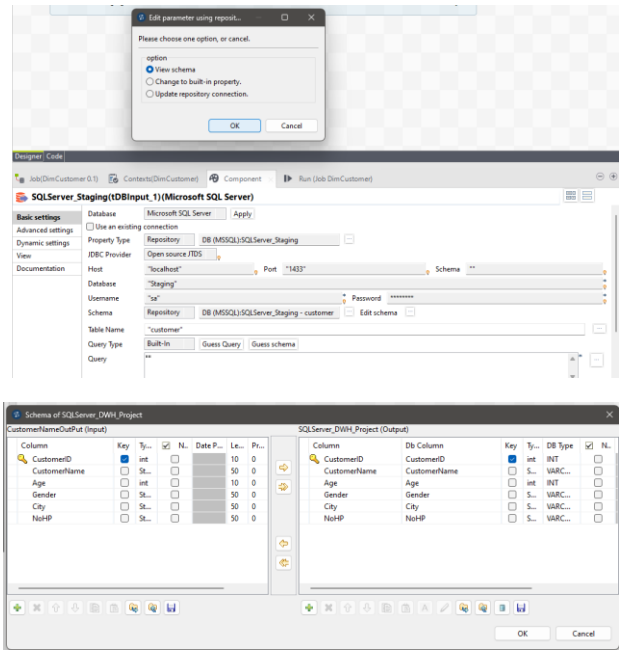
Click on the input icon on the design canvas, drag and the yellow orange to tmap, do the same process from tmap to the output icon to complete the pipeline, name the output, click ok.

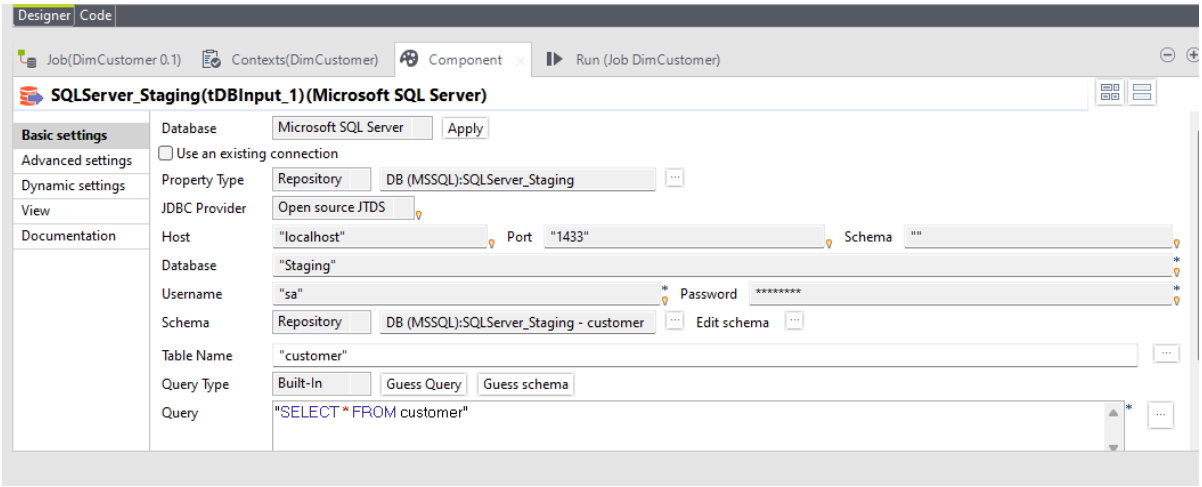




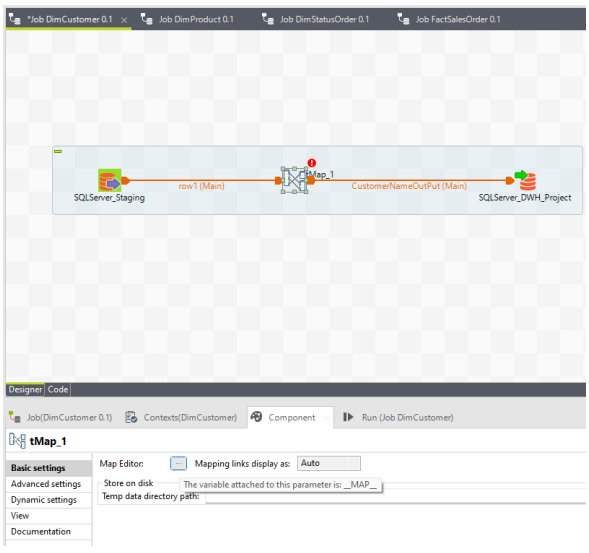
Click on the input icon, click on component tab below, change the Schema from Built-in to Repository, click [...] icon on the left side of the edit schema text, choose the correct table on the repository content then click ok, click [...] icon on the right side of the edit schema text, choose view schema, check the schema and click ok when done, enter query SELECT * FROM (table name) on the query section.

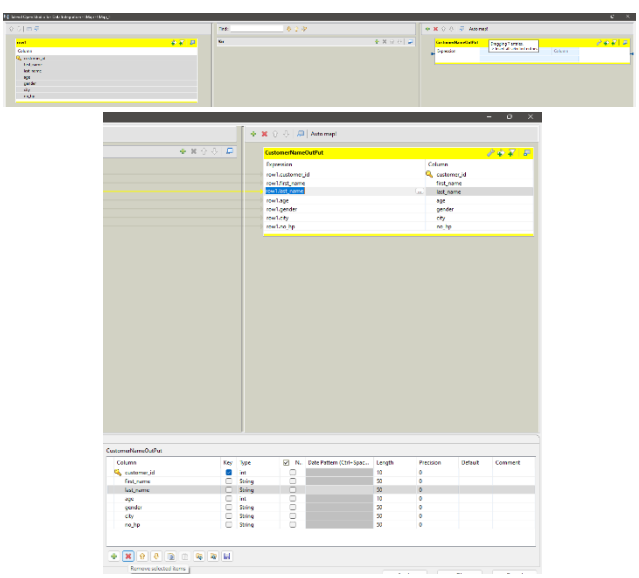




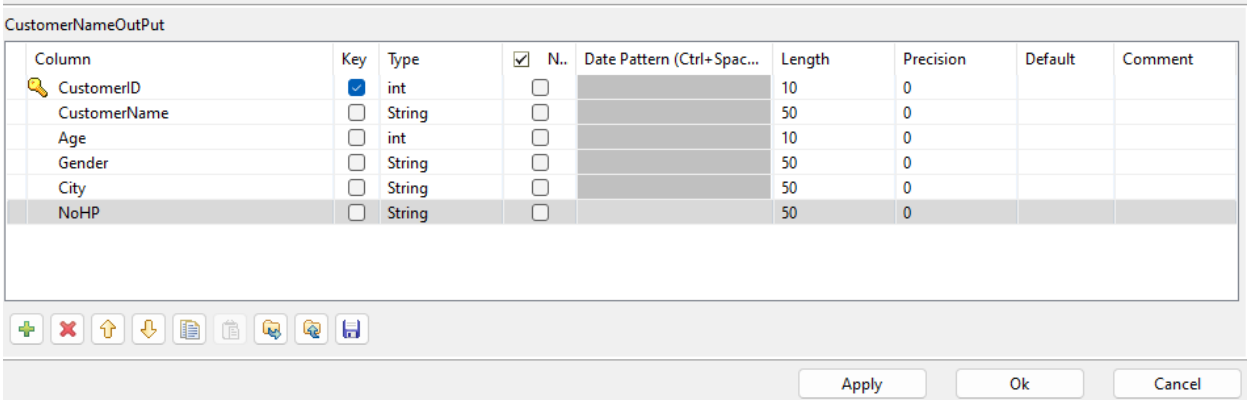


Click on the tmap icon, click on the component tab below, click map editor [...], block all column in input area and drag them to output area, click the column you want to delete on the output area then click [x] icon below to delete it.

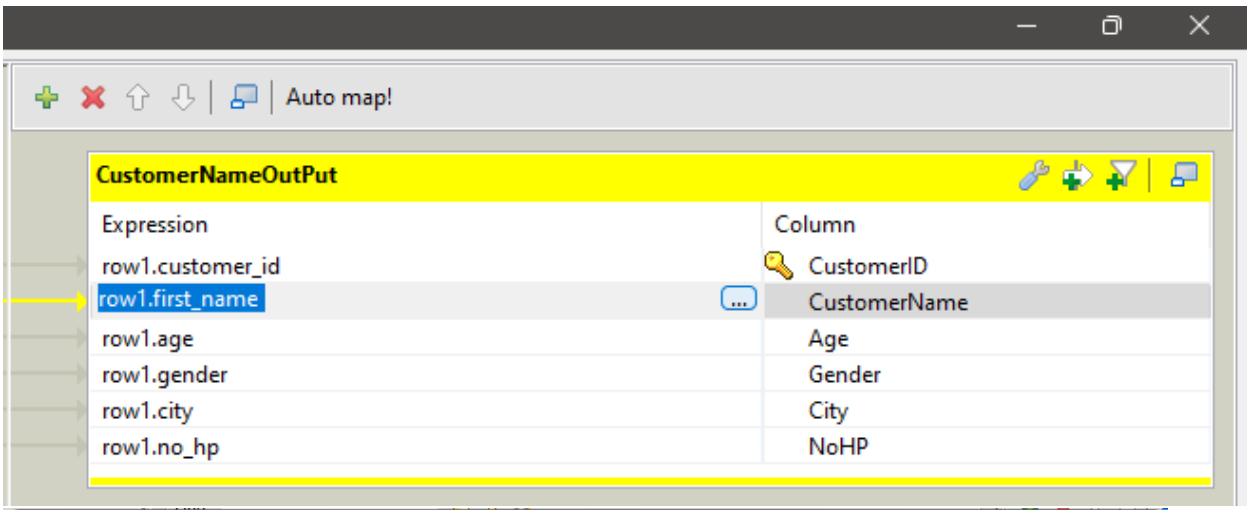


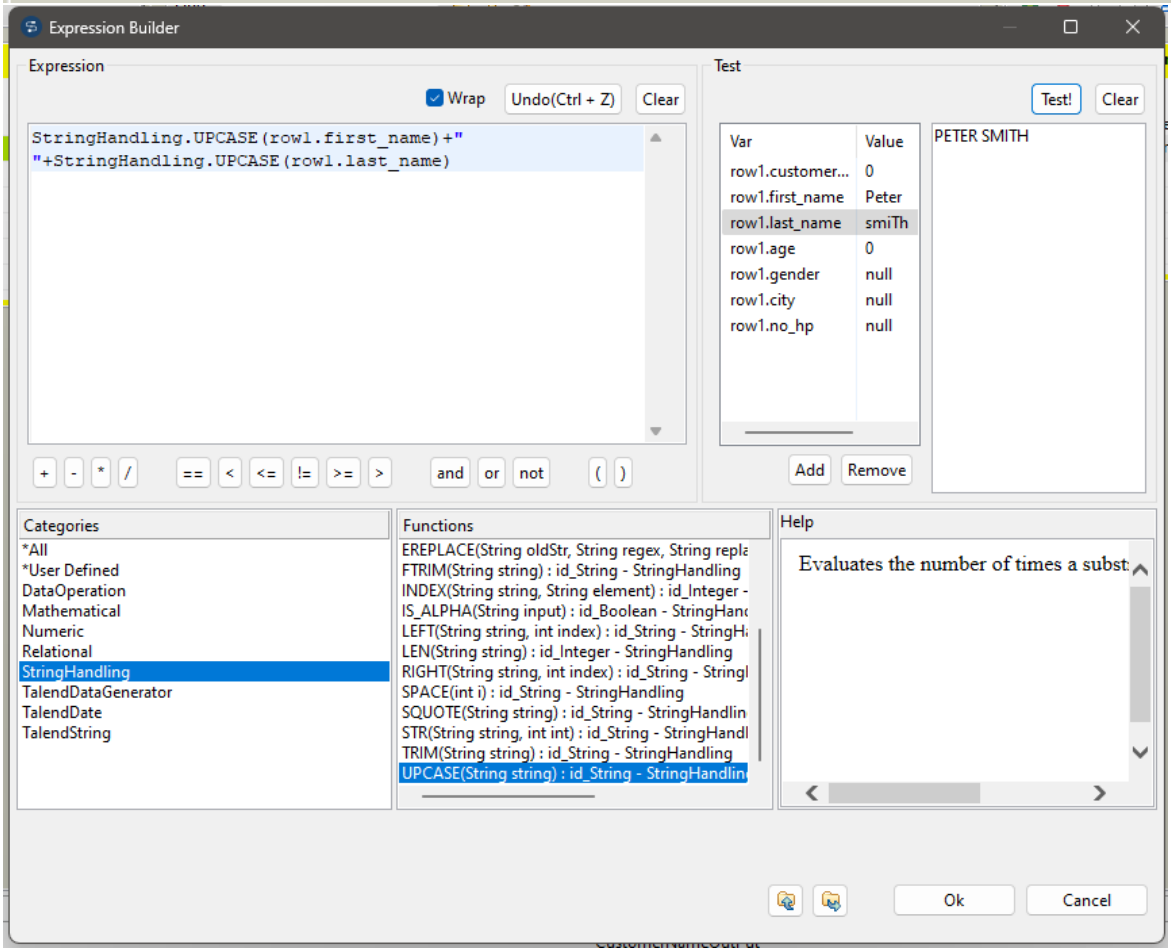


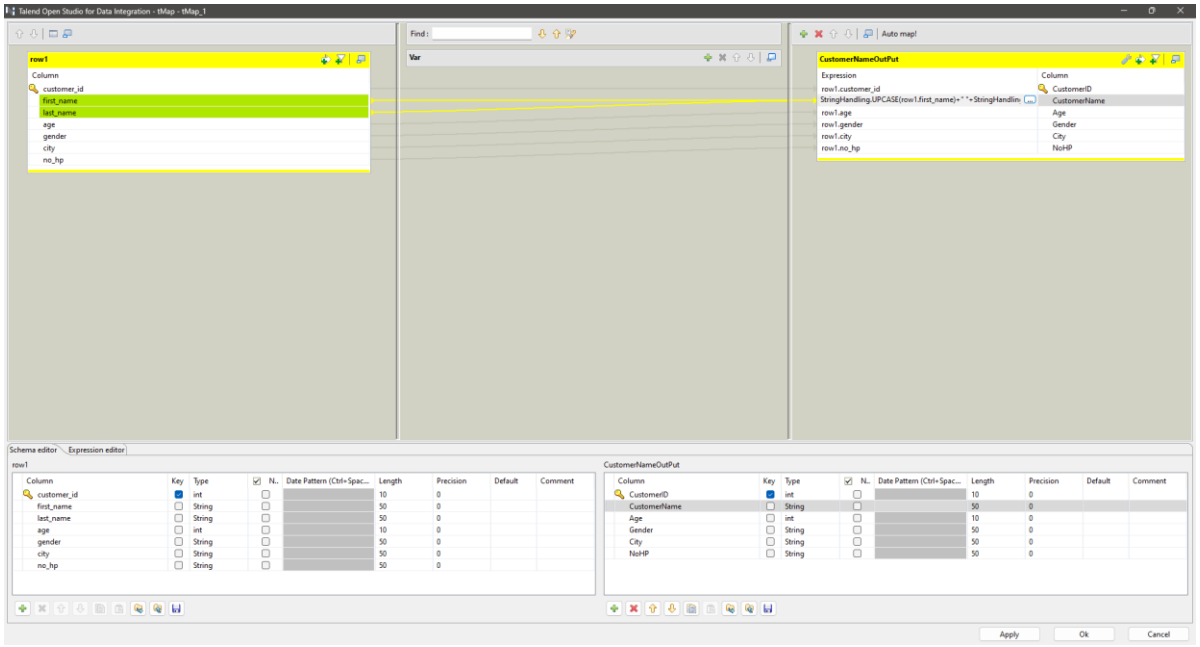
Modify the column name on the output table accordingly.



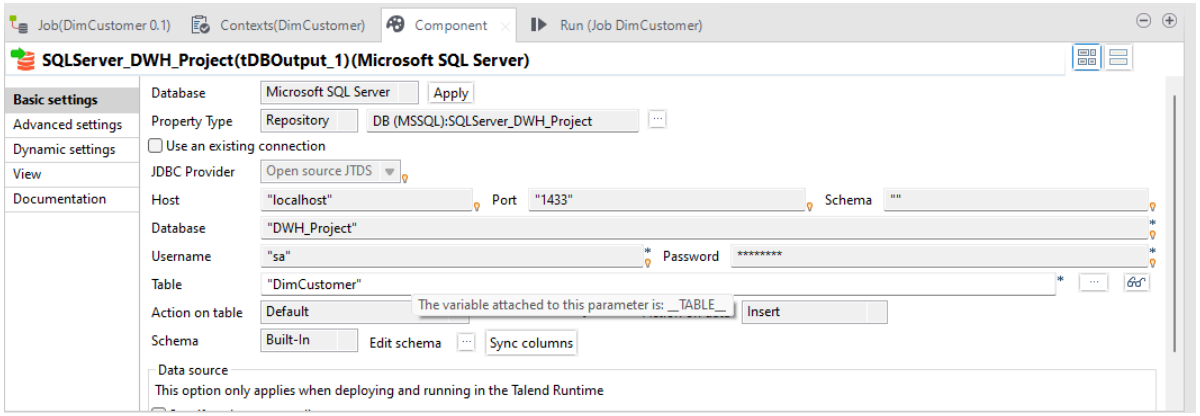
Click on the column you want to transform, click ... icon, choose the transformation category and function needed and drag and drop it to expression window, set the function accordingly, you can also test the output by enter the value on the test area and click test, click ok when done, click apply then ok on the schema editor.



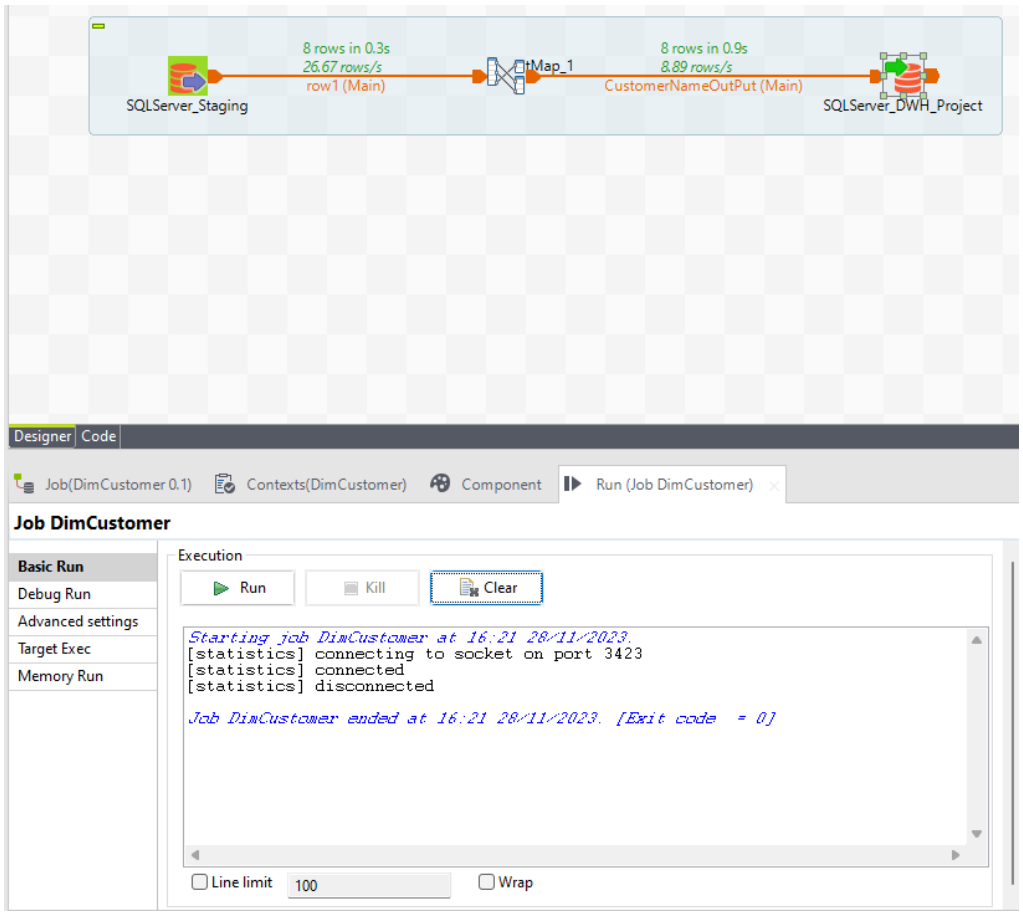




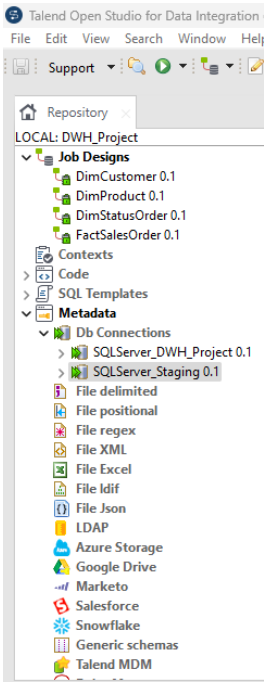
Click on the output icon, click on the component tab below, enter the table name accordingly.

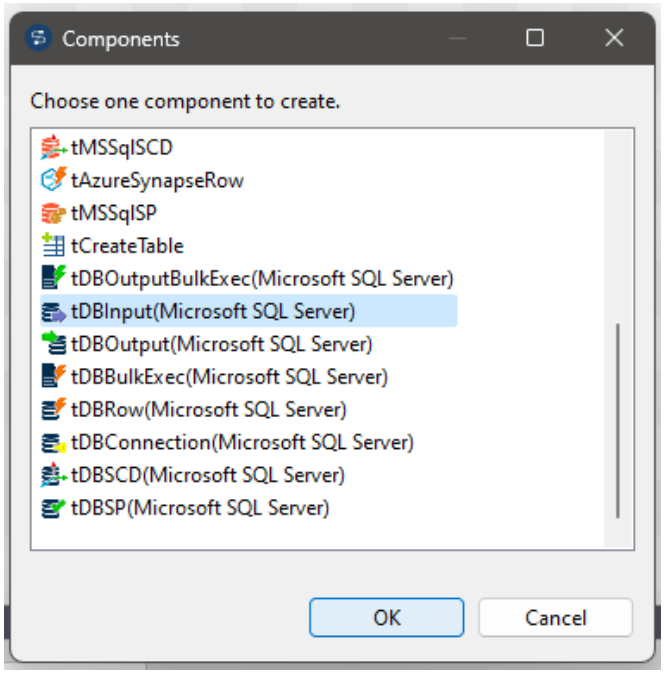


Click on the run tab, click run.

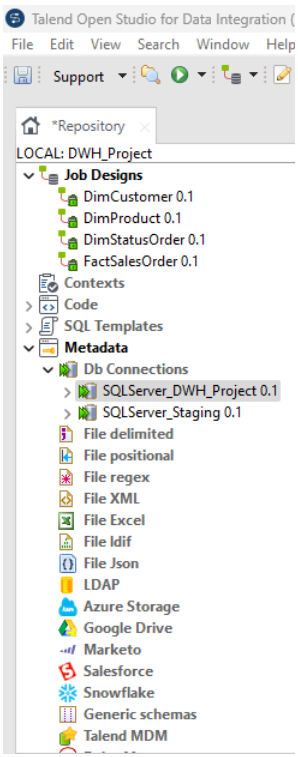


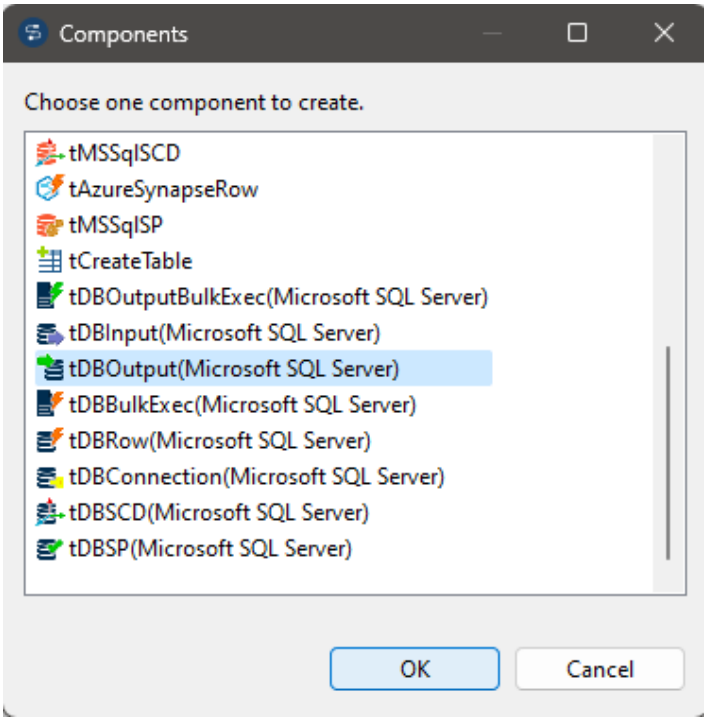
3.7 For the data/table that don't need transformation: expand metadata tree and dB connection, drag and drop the database intended for input to job design canvas, choose tDBinput(Microsoft SQL Server) on the components and click ok.





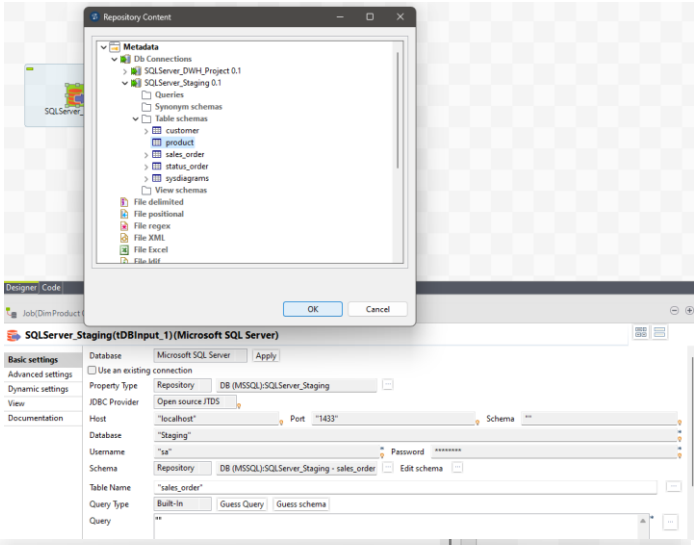
do the same process from tmap to the output icon to complete the pipeline, name the output, click ok.

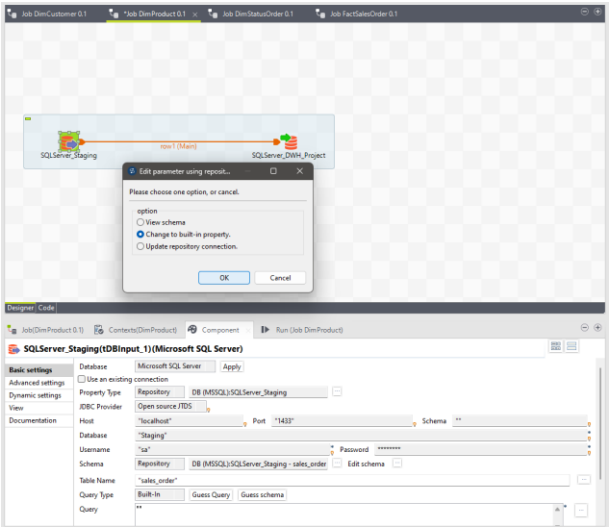


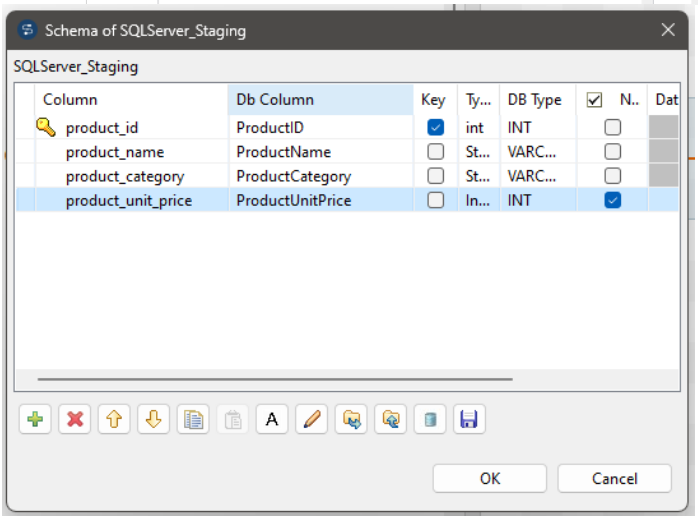


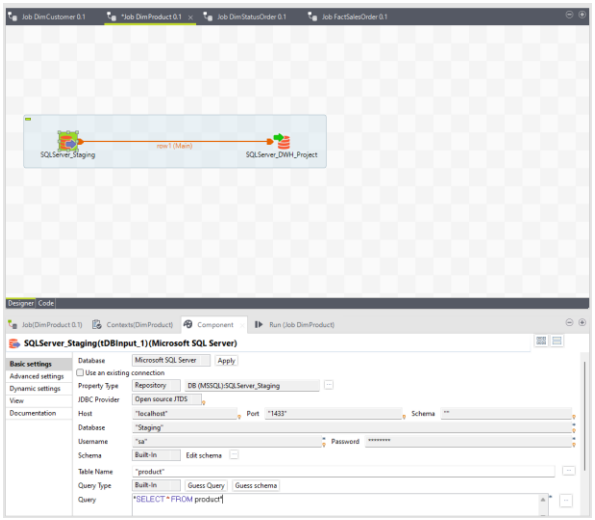
Click on the input icon on the design canvas, drag and the yellow orange to output icon to complete the pipeline.

Click on the input icon, click on component tab below, change the Schema from Built-in to Repository, click [...] icon on the left side of the edit schema text, choose the correct table on the repository content then click ok, click [...] icon on the right side of the edit schema text, choose change to built-in property, change the db column name accordingly to the output table, click ok when done, enter query SELECT * FROM (table name) on the query section.

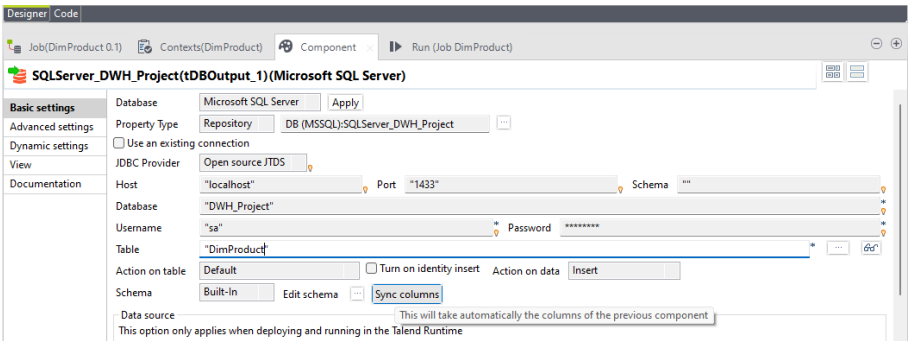


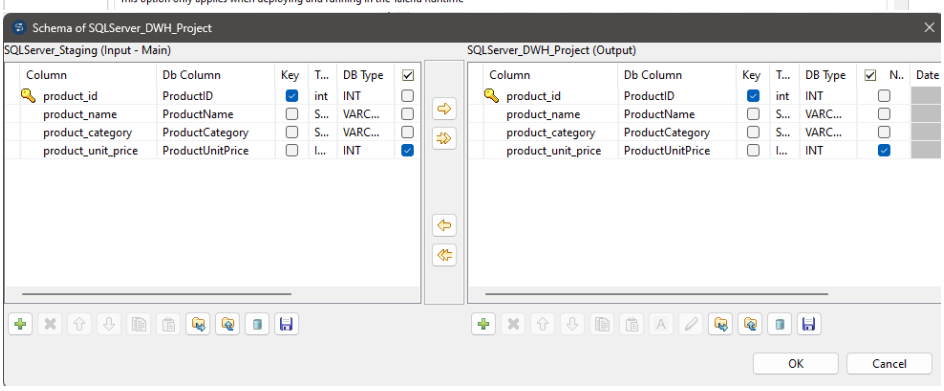




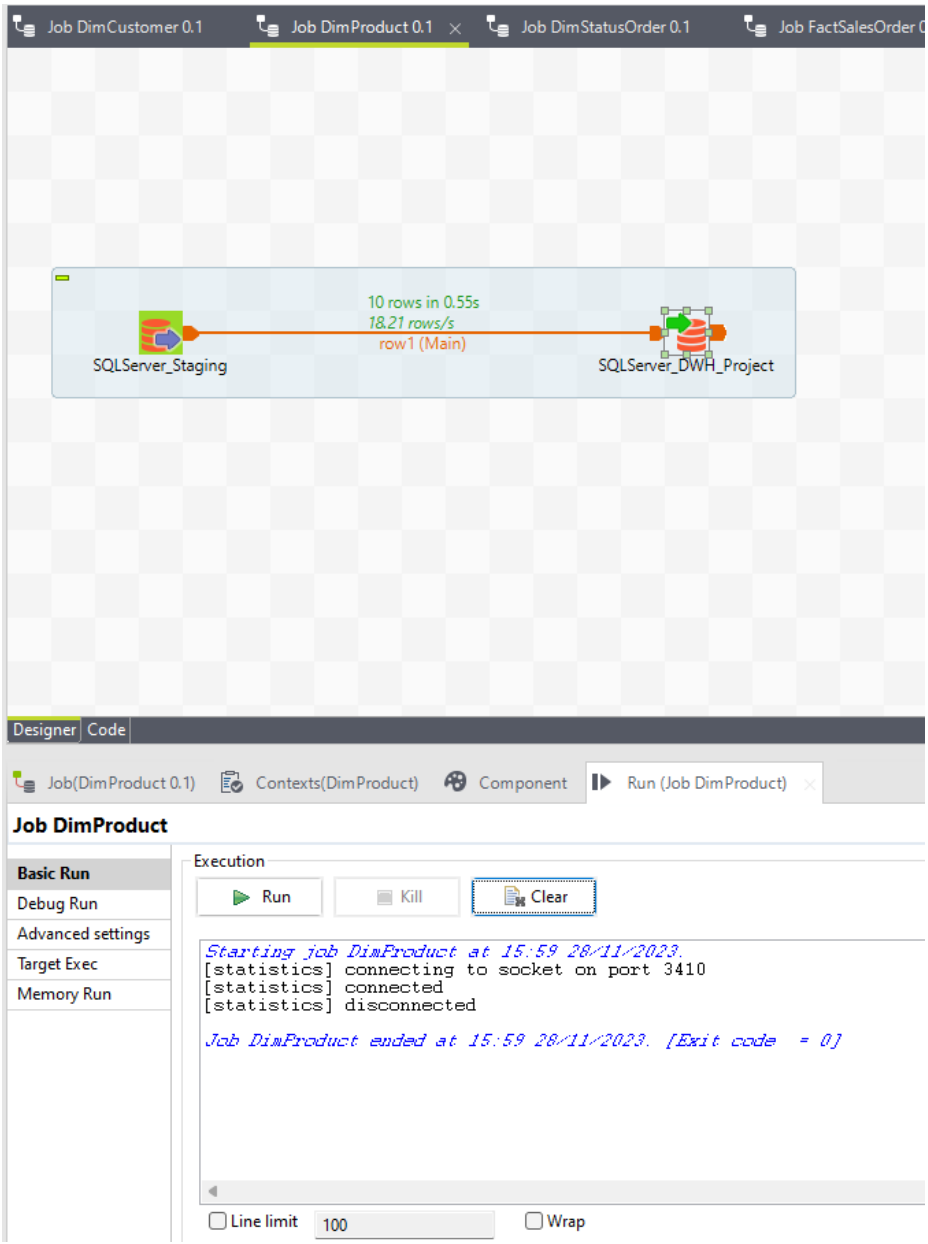


Click on the output icon, click on the component tab below, enter the table name accordingly, click sync column, click edit schema and check the column name, click ok when done.





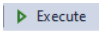
Click on the run tab, click run.



3.8 Repeat the process on step 3.6 and/or step 3.7 if needed.

4. Make and run Store Procedure on Microsoft SQL Server.

4.1 Open Microsoft SQL Server and connect to the database, click new query icon 

, type the query shown on the image below, block the entire query and click execute icon 

.

```
CREATE PROCEDURE summary_order_status
(@StatusID int) AS
BEGIN
    SELECT  fs.OrderID,
            dc.CustomerName,
            dp.ProductName,
            fs.Quantity,
            ds.StatusOrder
    FROM    FactSalesOrder fs
    INNER JOIN  DimCustomer dc
    ON  fs.CustomerID = dc.CustomerID
    INNER JOIN  DimProduct dp
    ON  fs.ProductID = dp.ProductID
    INNER JOIN DimStatusOrder ds
    ON fs.StatusID = ds.StatusID
    WHERE   ds.StatusID = @StatusID
END
```

4.2 To check and run the store procedure, type the query shown on the image below, block the entire query and click execute icon Execute.

```
SELECT * FROM DimStatusOrder

EXEC summary_order_status @StatusID = 1
```

100 %

Results Messages

	StatusID	StatusOrder	StatusOrderDesc
1	1	Awaiting Payment	Menunggu Pembayaran
2	2	Awaiting Shipment	Menunggu Pengiriman
3	3	Shipped	Sedang Dikirim
4	4	Completed	Pesanan sampai tujuan
5	5	Cancelled	Pesanan dibatalkan oleh customer

	OrderID	CustomerName	ProductName	Quantity	StatusOrder
1	1303	BUDI SANTOSO	Macbook Air 2020 13 inch	1	Awaiting Payment
2	1310	LIA RAHMAWATI	Kipas Angin Cosmos	2	Awaiting Payment

Query executed successfully.