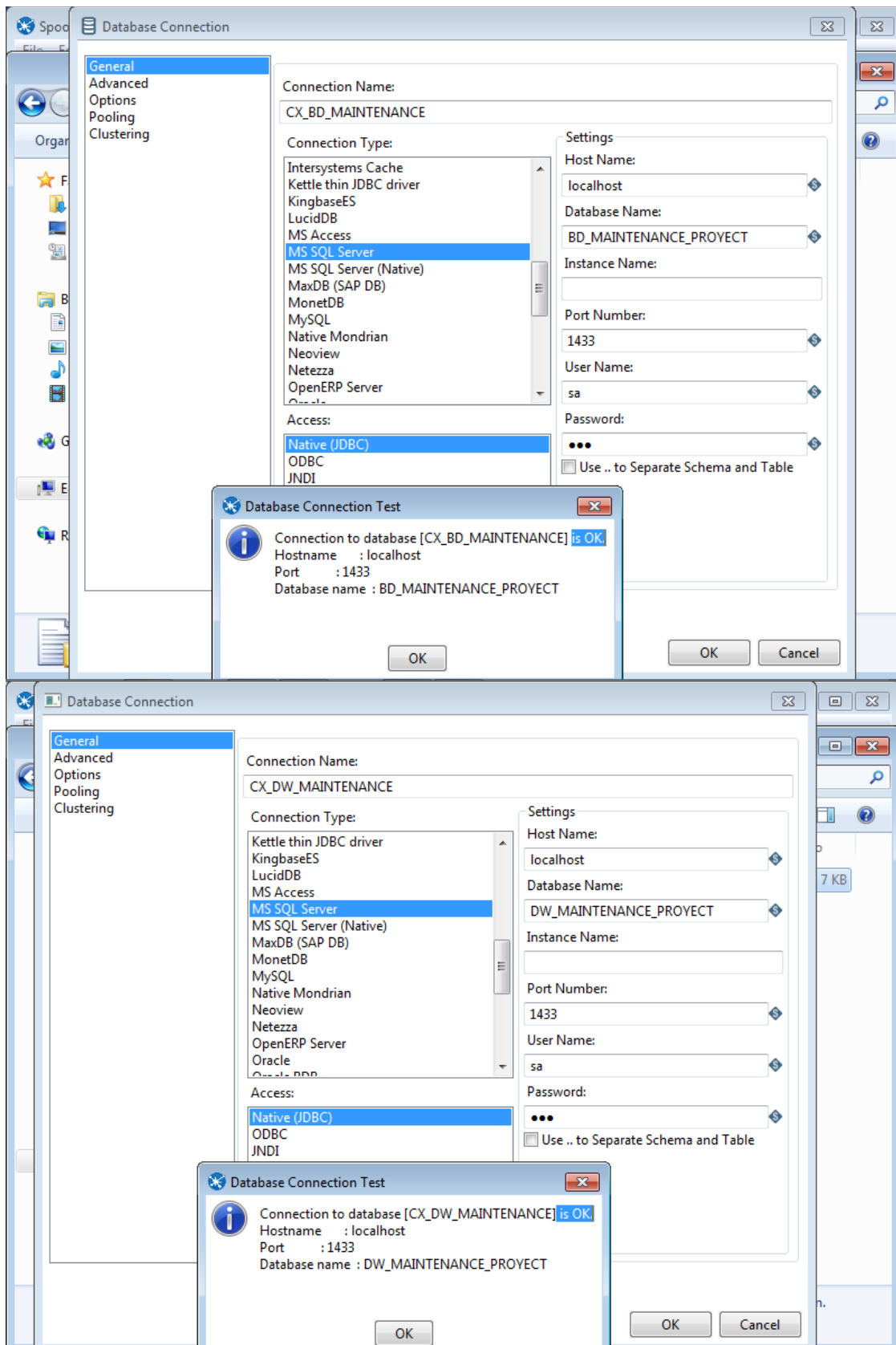
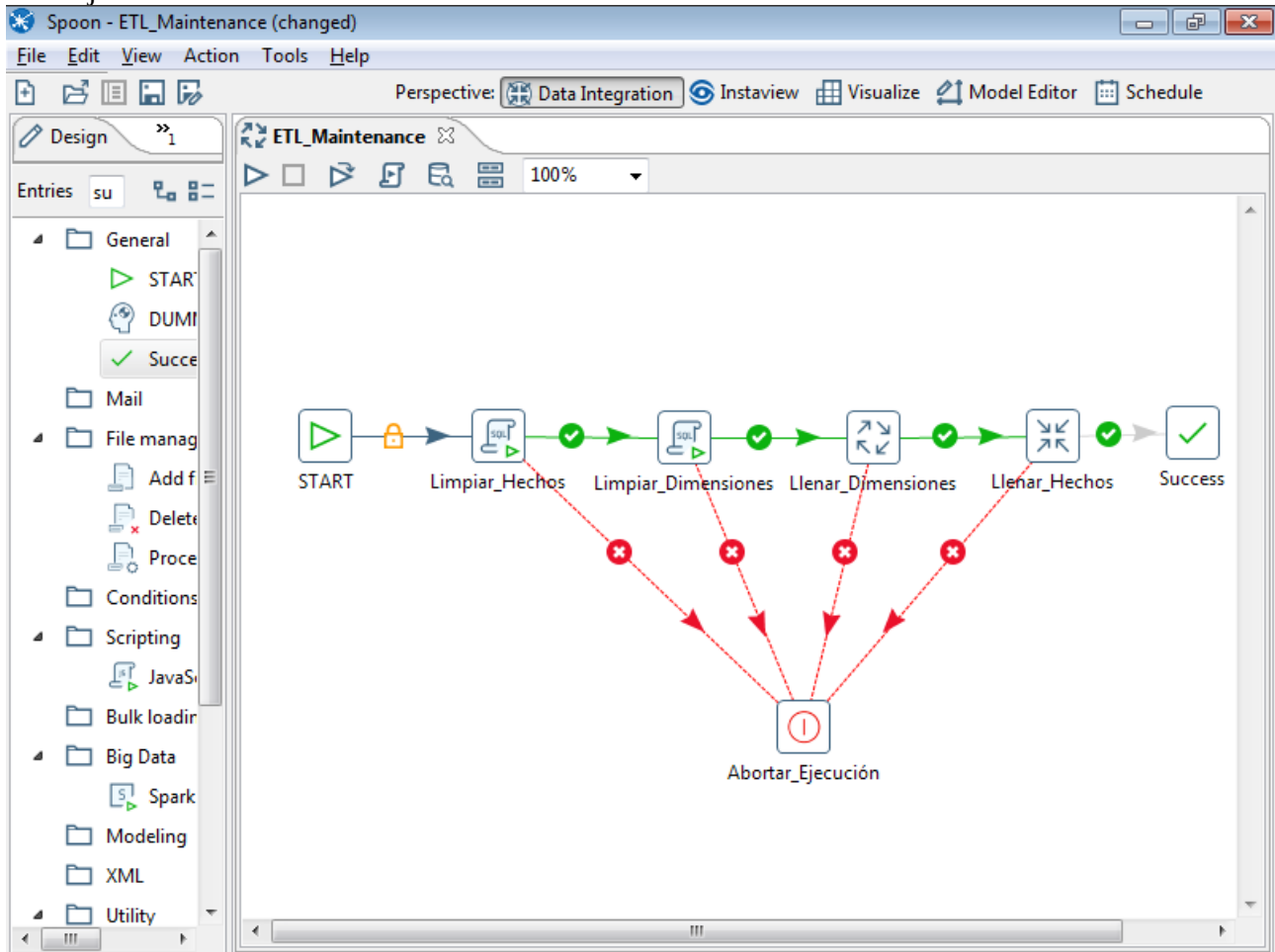


@author edgar.benedetto@unah.hn N.Cuenta 20171033802  
@date 12/04/2021  
@description Proyecto BD II Sección 1400 I PAC 2021  
@name\_file Proceso ETL.odt  
@version 1.0

1- Crear las conexiones con las bases de datos OLTP y OLAP.



2- Creación del flujo de datos principal asignado un nombre descriptivo a cada uno de los procesos del flujo de datos.



3- Definir las consultas SQL para limpiar las tablas de dimensiones y la tabla de Hechos

Execute SQL Script ...

Job entry name:

Connection:

SQL from file: ☐

SQL filename:

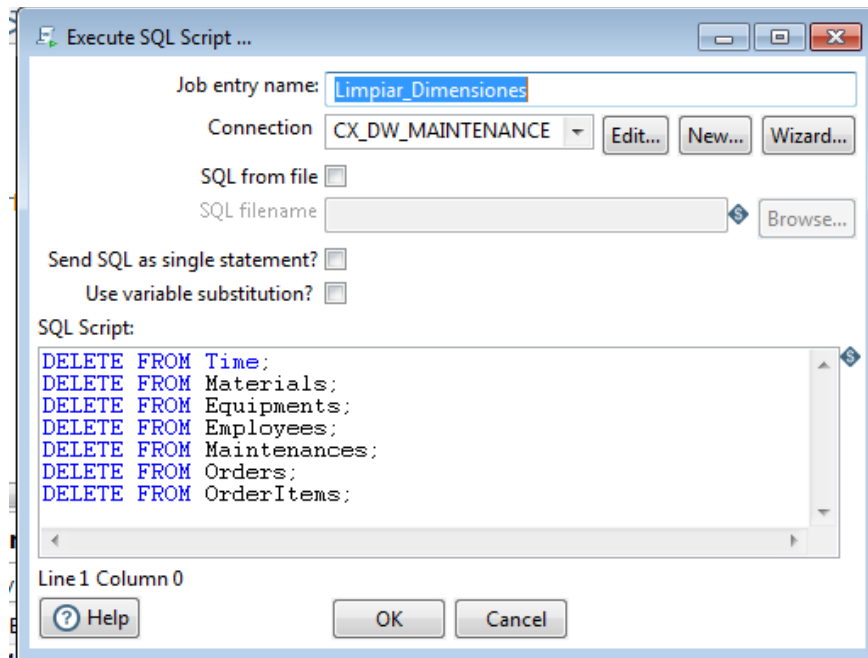
Send SQL as single statement? ☐

Use variable substitution? ☐

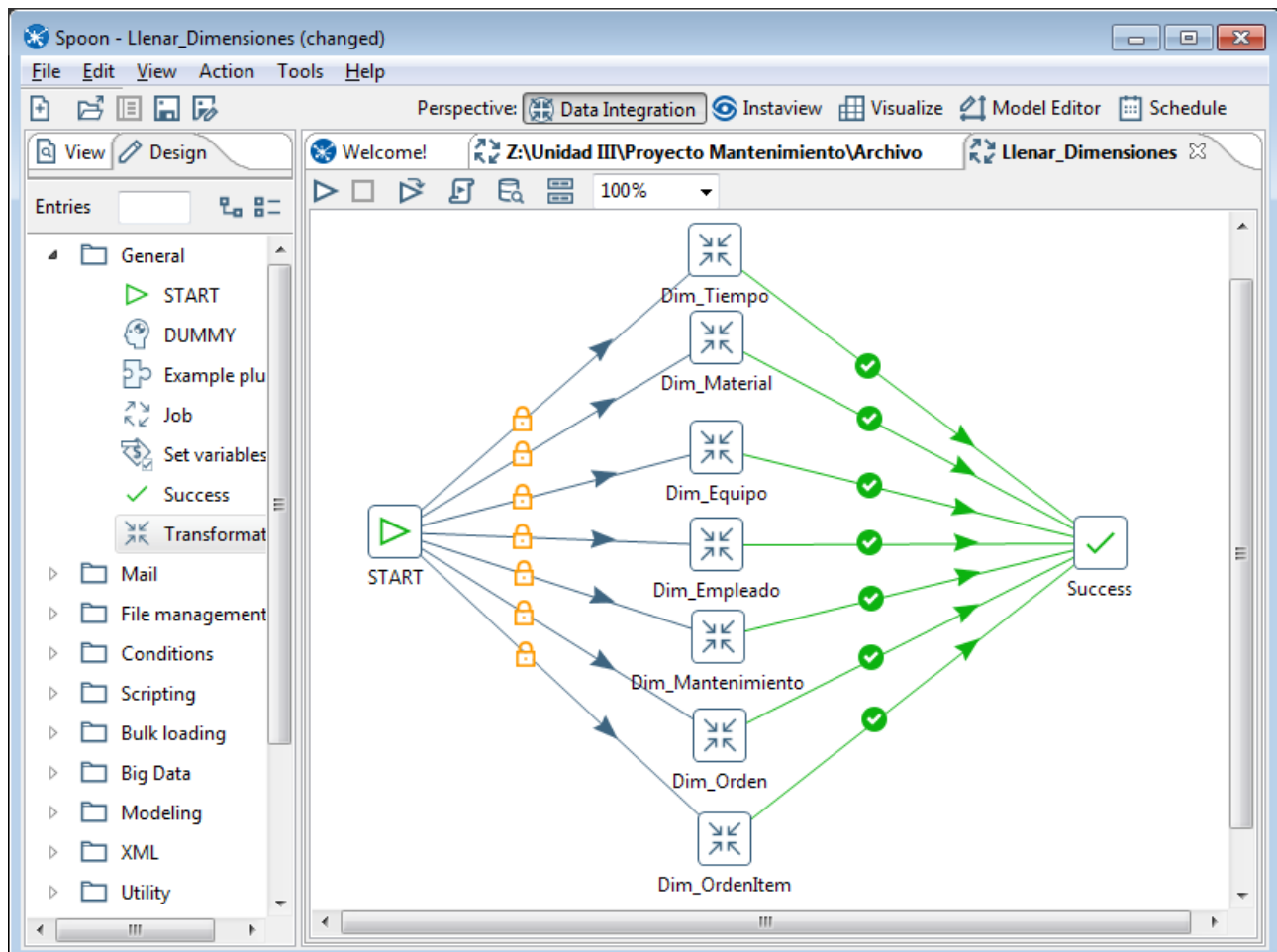
SQL Script:

```
DELETE FROM FactMaintenances;
```

Line 1 Column 0



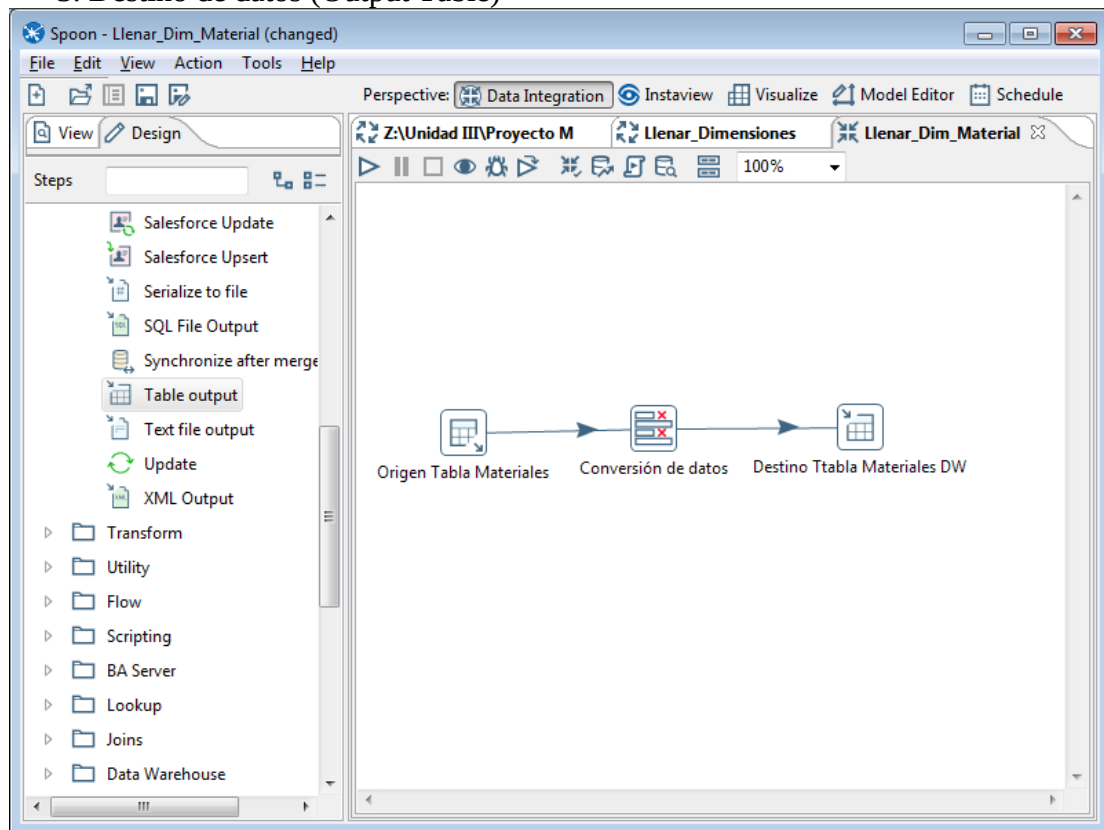
#### 4- Creación del flujo de datos de la carga en las dimensiones.



5- Definir el origen, la transformación y el destino de los datos para cada una de las dimensiones.

a) Dimensión Material:

1. Origen de datos (Input Table)
2. Conversión de datos (Select Values)
3. Destino de datos (Output Table)



The first screenshot shows the 'Table input' configuration window for the 'Origen Tabla Materiales' step. The 'SQL' field contains the following query:

```
SELECT
MaterialID,
MaterialCod
FROM dbp.Materials;
```

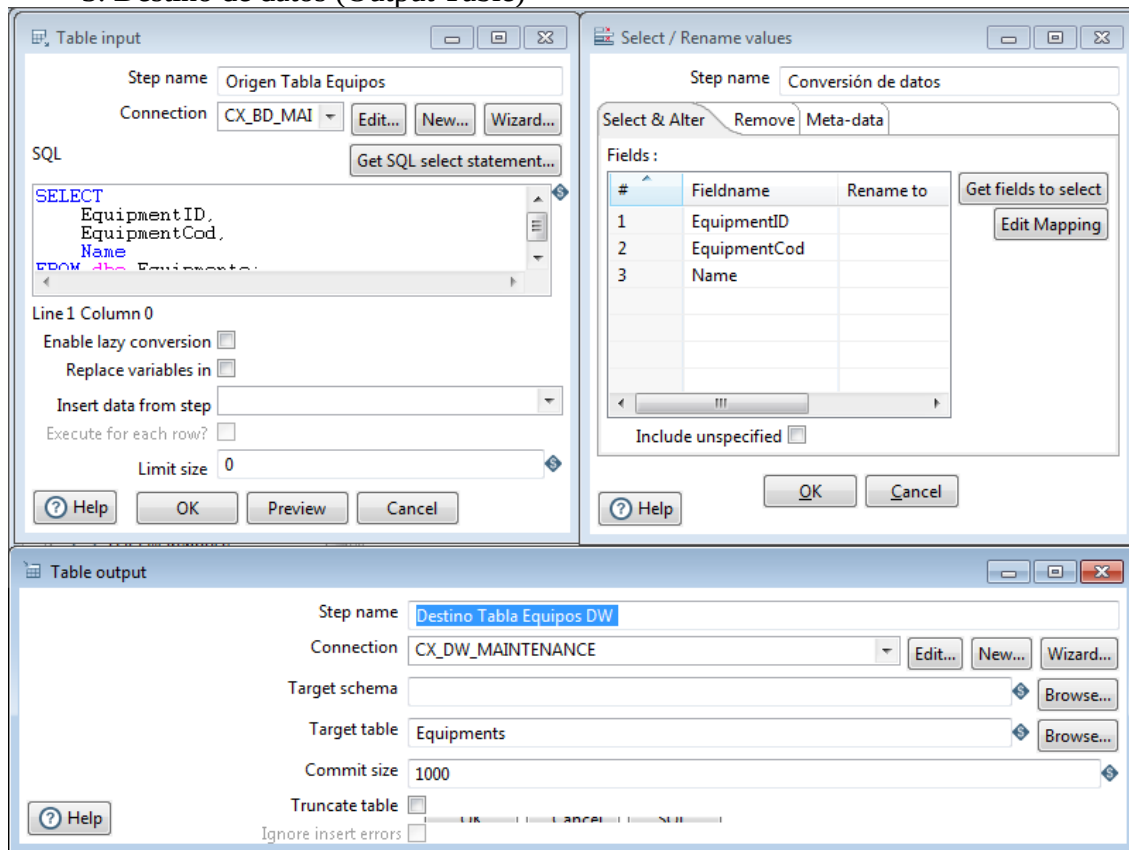
The second screenshot shows the 'Select / Rename values' configuration window for the 'Conversión de datos' step. The 'Fields' table is as follows:

| # | Fieldname   | Rename to | Length |
|---|-------------|-----------|--------|
| 1 | MaterialID  |           |        |
| 2 | MaterialCod |           |        |

The third screenshot shows the 'Table output' configuration window for the 'Destino Ttabla Materiales DW' step. The 'Target schema' is 'CX\_DW\_MAINTENANCE' and the 'Target table' is 'Materials'. The 'Commit size' is set to 1000.

a)Dimensión Equipo:

1. Origen de datos (Input Table)
2. Conversión de datos (Select Values)
3. Destino de datos (Output Table)



a)Dimensión Empleado:

1. Origen de datos (Input Table)
2. Concatenar Nombre y Apellido (Concat Fields)
3. Conversión de datos (Select Values)
4. Destino de datos (Output Table)

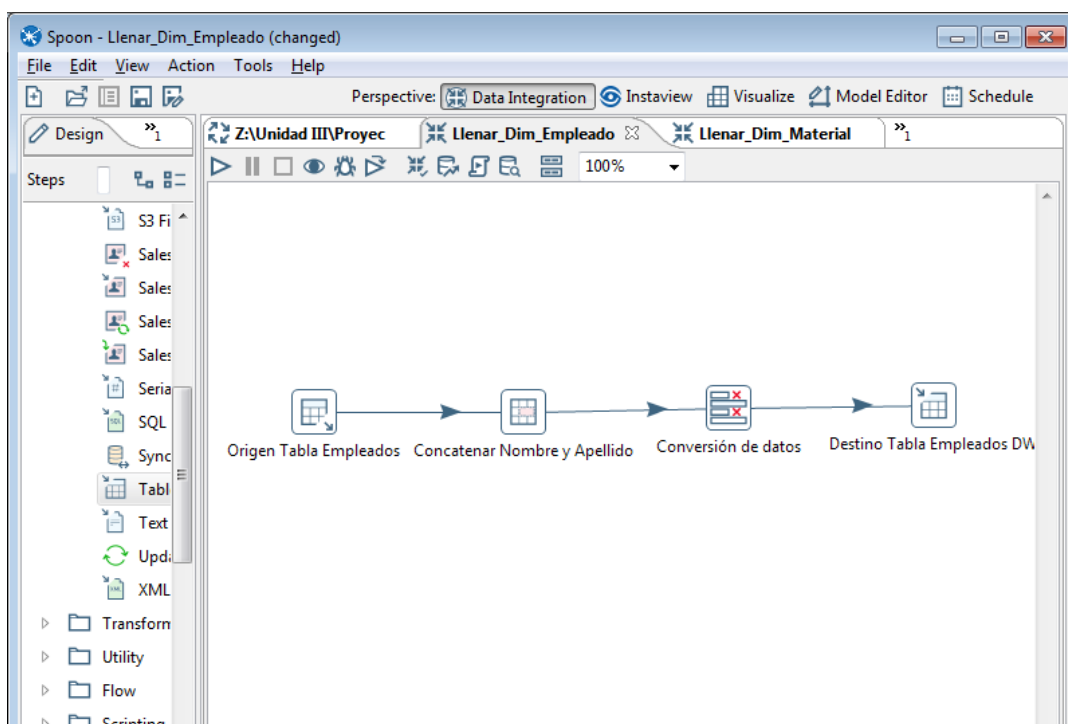


Table input

Step name

Origen Tabla Empleados

Connection

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

SQL

Get SQL select statement...

SELECT

EmployeeID,

FirstName,

LastName,

Salary

FROM dbo.Employees;

Line1 Column0

Enable lazy

Replace

Insert data

Execute for

Limit size

Help

Preview

Cancel

Concat Fields

Step name

Concatenar Nombre y Ap

Target Field

WholeName

Length of

0

Separator

Insert TAB

Enclosure

Fields

Advanced

#

Name

Type

1

FirstName

String

2

LastName

String

Get Fields

Minimal width

Help

OK

Cancel

Select / Rename values

Step name

Conversión de datos

Select & Alter

Remove

Meta-data

Fields :

#

Fieldname

1

EmployeeID

2

WholeName

3

Salary

Get fields to select

Edit Mapping

Include

Include

Help

OK

Cancel

Table output

Step name

Destino Tabla Empleados DW

Connection

CX\_DW\_MAINTENANCE

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

Target schema

Browse...

Target table

Employees

Browse...

Commit size

1000

Truncate table

Ignore insert errors

Help

#### a)Dimensión Mantenimiento:

1. Origen de datos (Input Table)
2. Conversión de datos (Select Values)
3. Destino de datos (Output Table)

Table input

Step name

Origen Tabla Mantenimientos

Connection

CX\_BD\_I

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

SQL

Get SQL select statement...

SELECT

MaintenanceID,

MaintenanceType,

WorkedHours

FROM dbo.Maintenances;

Line1 Column0

Enable lazy

Replace variables in

Insert data from step

Execute for each row?

Limit size

Help

OK

Preview

Cancel

Select / Rename values

Step name

Conversión de datos

Select & Alter

Remove

Meta-data

Fields :

#

Fieldname

Rename to

1

MaintenanceID

2

MaintenanceType

3

WorkedHours

Get fields to select

Edit Mapping

Include unspecified

Include unspecified

Help

OK

Cancel

Table output

Step name

Destino Tabla Mantenimientos DW

Connection

CX\_DW\_MAINTENANCE

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

Target schema

Browse...

Target table

Maintenances

Browse...

Commit size

1000

Truncate table

Help

a)Dimensión Ordenes:

1. Origen de datos (Input Table)
2. Conversión de datos (Select Values)
3. Destino de datos (Output Table)

The image shows three SSIS configuration windows for the 'Dimensión Ordenes' dimension:

- Table input:** Step name 'Origen Tabla Ordenes', Connection 'CX\_BD\_MA'. SQL query: `SELECT OrderID, OrderCod, TransactionType, AccountDate FROM dbo.Orders;`
- Select / Rename values:** Step name 'Conversión de datos'. Fields table:
 

| # | Fieldname       | Rename to |
|---|-----------------|-----------|
| 1 | OrderID         |           |
| 2 | OrderCod        |           |
| 3 | TransactionType |           |
| 4 | AccountDate     |           |
- Table output:** Step name 'Destino Tabla Ordenes DW', Connection 'CX\_DW\_MAINTENANCE', Target schema 'Orders', Target table 'Orders', Commit size '1000'.

a)Dimensión Orden Items:

1. Origen de datos (Input Table)
2. Conversión de datos (Select Values)
3. Destino de datos (Output Table)

The image shows three SSIS configuration windows for the 'Dimensión Orden Items' dimension:

- Table input:** Step name 'Origen Tabla Orden Items', Connection 'CX\_BD\_MA'. SQL query: `SELECT OrderItemID, AmountLemp, AmountDoll, AmountAdd FROM dbo.OrderItems;`
- Select / Rename values:** Step name 'Conversión de datos'. Fields table:
 

| # | Fieldname   | Rename to | Len |
|---|-------------|-----------|-----|
| 1 | OrderItemID |           |     |
| 2 | AmountLemp  |           |     |
| 3 | AmountDoll  |           |     |
| 4 | AmountAdd   |           |     |
- Table output:** Step name 'Destino Tabla Orden Items DW', Connection 'CX\_DW\_MAINTENANCE', Target schema 'OrderItems', Target table 'OrderItems', Commit size '1000'.

#### a) Dimensión Tiempo:

1. Origen de datos (Input Table)
2. Conversión de datos (Select Values)
3. Destino de datos (Output Table)

The image displays three screenshots of the SQL Server Data Tools (SSDT) interface, illustrating the configuration of a dimension table for Time.

**Table input:** The 'Step name' is 'Origen Tabla Tiempo'. The 'Connection' is 'CX\_BD\_MAIN'. The SQL query is as follows:

```
SELECT
    CONVERT(DATE, AccountDate) TimeID,
    DATEPART(YEAR, AccountDate) Year,
    DATEPART(MONTH, AccountDate) Month,
    DATEPART(WEEK, AccountDate) Week,
    DATEPART(QUARTER, AccountDate) Trimester,
    DATENAME(WEEKDAY, AccountDate) DayOfWeek
FROM Orders
GROUP BY Orders.AccountDate
```

**Select / Rename values:** The 'Step name' is 'Conversión de datos'. The 'Fields' table is as follows:

| # | Fieldname | Rename to |
|---|-----------|-----------|
| 1 | TimeID    |           |
| 2 | Year      |           |
| 3 | Month     |           |
| 4 | Week      |           |
| 5 | Trimester |           |
| 6 | DayOfWeek |           |

**Table output:** The 'Step name' is 'Destino Tabla Tiempo DW'. The 'Connection' is 'CX\_DW\_MAINTENANCE'. The 'Target schema' is empty, and the 'Target table' is 'Time'.

#### 5-Transformación encargada de llenar la tabla de Hechos

1. Origen de datos (Input Table)
2. Conversión de datos (Select Values)
3. Destino de datos (Output Table)

The image displays a screenshot of the SQL Server Data Tools (SSDT) interface, showing the configuration of a fact table transformation.

**Table input:** The 'Step name' is 'Origen Tabla Hechos'. The 'Connection' is 'CX\_BD\_MAINTENANCE'. The SQL query is as follows:

```
SELECT
    CONVERT(DATE, dbo.Orders.AccountDate) TimeID,
    dbo.Materials.MaterialID,
    dbo.Equipments.EquipmentID,
    dbo.Employees.EmployeeID,
    dbo.Maintenances.MaintenanceID,
    dbo.Orders.OrderID,
    dbo.OrderItems.OrderItemID,
    (SELECT SUM(dbo.OrderItems.AmountLemp) FROM dbo.OrderItems) TotalAmountLemp,
    (SELECT SUM(dbo.OrderItems.AmountDoll) FROM dbo.OrderItems) TotalAmountDoll,
    (SELECT SUM(CASE WHEN dbo.Maintenances.MaintenanceType = 'PREVENTIVO' THEN dbo.Maintenanc
    (SELECT SUM(CASE WHEN dbo.Maintenances.MaintenanceType = 'CORRECTIVO' THEN dbo.Maintenanc
    (SELECT COUNT(CASE WHEN dbo.Maintenances.MaintenanceType = 'PREVENTIVO' THEN dbo.Maintena
    (SELECT COUNT(CASE WHEN dbo.Maintenances.MaintenanceType = 'CORRECTIVO' THEN dbo.Maintena
    (SELECT COUNT(dbo.Materials.MaterialID) FROM dbo.Materials) TotalMaterials,
    (SELECT COUNT(CASE WHEN dbo.Maintenances.MaintenanceType = 'PREVENTIVO' THEN dbo.Maintena
    (SELECT COUNT(CASE WHEN dbo.Maintenances.MaintenanceType = 'CORRECTIVO' THEN dbo.Maintena
    (SELECT SUM(dbo.Employees.Salary) FROM dbo.Employees) TotalSalary
FROM dbo.OrderItems
INNER JOIN dbo.Materials ON dbo.OrderItems.MaterialID= dbo.Materials.MaterialID
INNER JOIN dbo.Orders ON dbo.OrderItems.OrderID = dbo.Orders.OrderID
INNER JOIN dbo.Employees ON dbo.Orders.EmployeeID = dbo.Employees.EmployeeID
```

**Table output:** The 'Step name' is 'Destino Tabla Hechos'. The 'Connection' is 'CX\_DW\_MAINTENANCE'. The 'Target schema' is empty, and the 'Target table' is 'Fact'.





