SSIS & SQL Server Project.

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Chosen model: star.

Schema:

Diagram, schematic

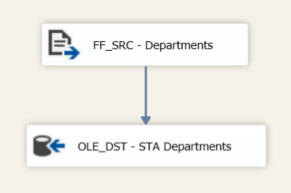
Description automatically generated

SQL scripts to create tables: in Tables\_creation.sql.

1. **STA : load source data.**

First we create STA\_project database in SQL.

Departments :

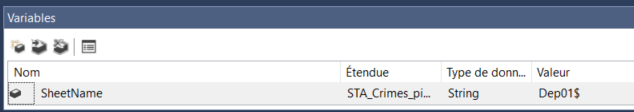


Result file:



Crimes :

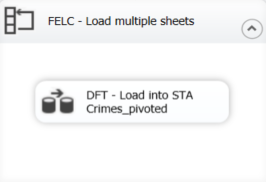
Creating variables to hold each worksheet name:



Add a loop Foreach Loop Container:

* Foreach ADO.NET Schema Rowset Enumerator
* Connection: MS Jet 4.0 OLE DB Provider
* Extended Properties “Excel 8.0”
* Variable Mapping “User::SheetName 2”

Add a data flow task within the loop.

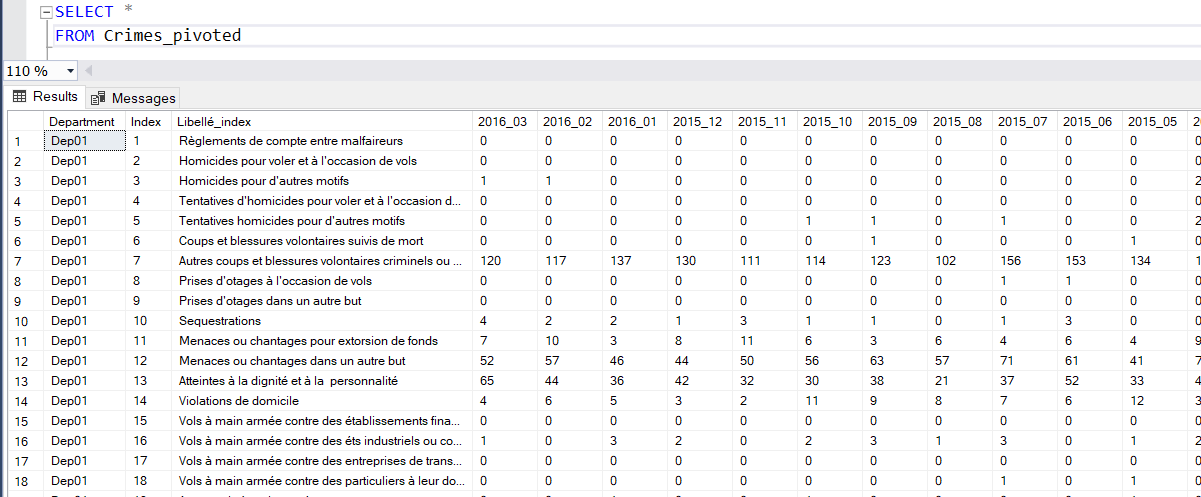


In the data flow:

* Add derived column “Department” with “(DT\_WSTR,50)(SUBSTRING(@[User::SheetName],1,LEN(@[User::SheetName]) - 1))” to transform sheets names on column.



Result table:

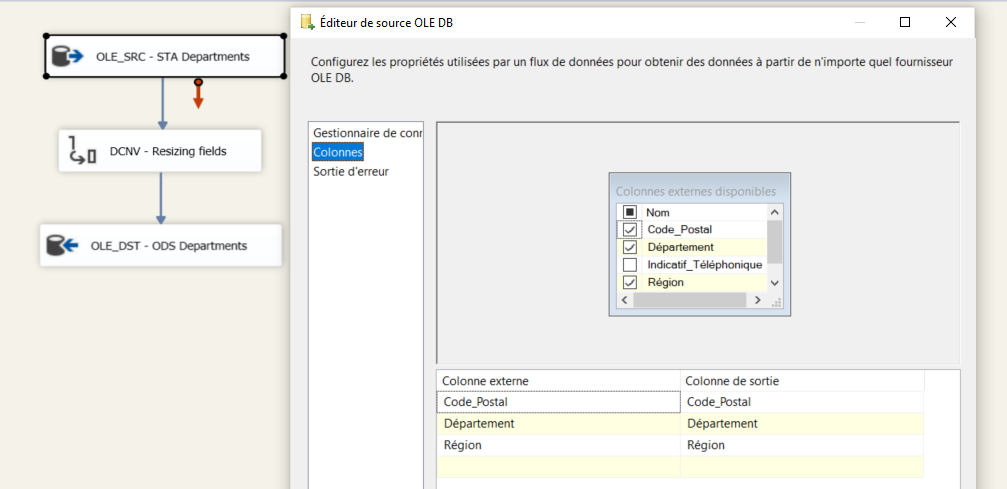


1. **ODS : transforamtions.**

Create ODS\_Project database in SQL.

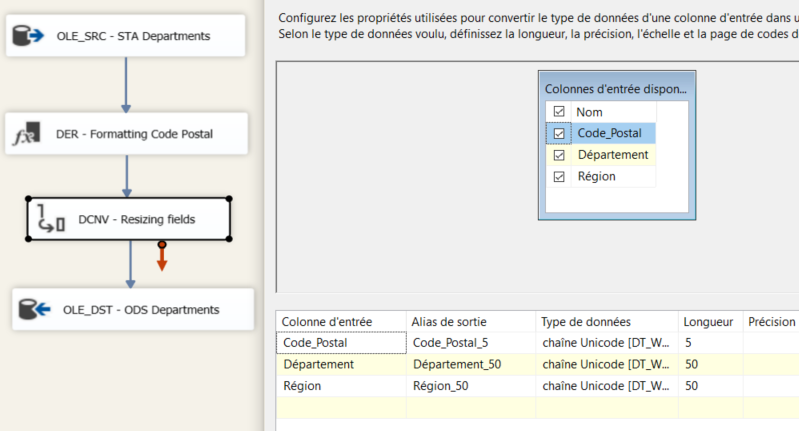
Departments :

We will not keep Phone code and Vacations zone as not related to crimes.

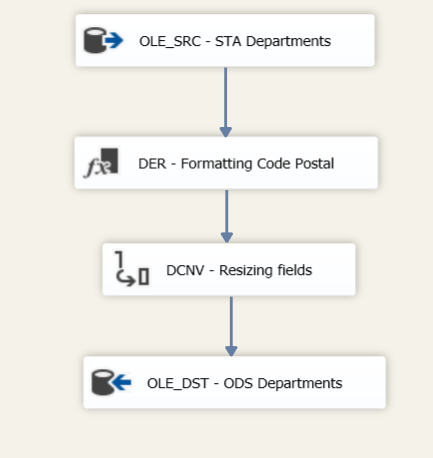


Derived column to format Department (Code\_Postal): “RIGHT("00"+[Code\_Postal]**,2**)” – to add 0 for first 9.

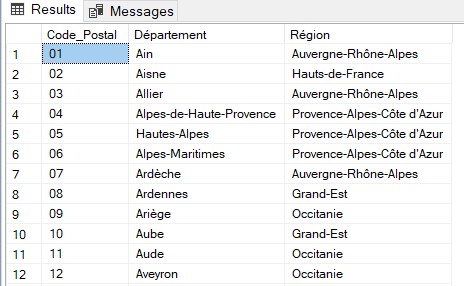
Resizing:



All transformations:



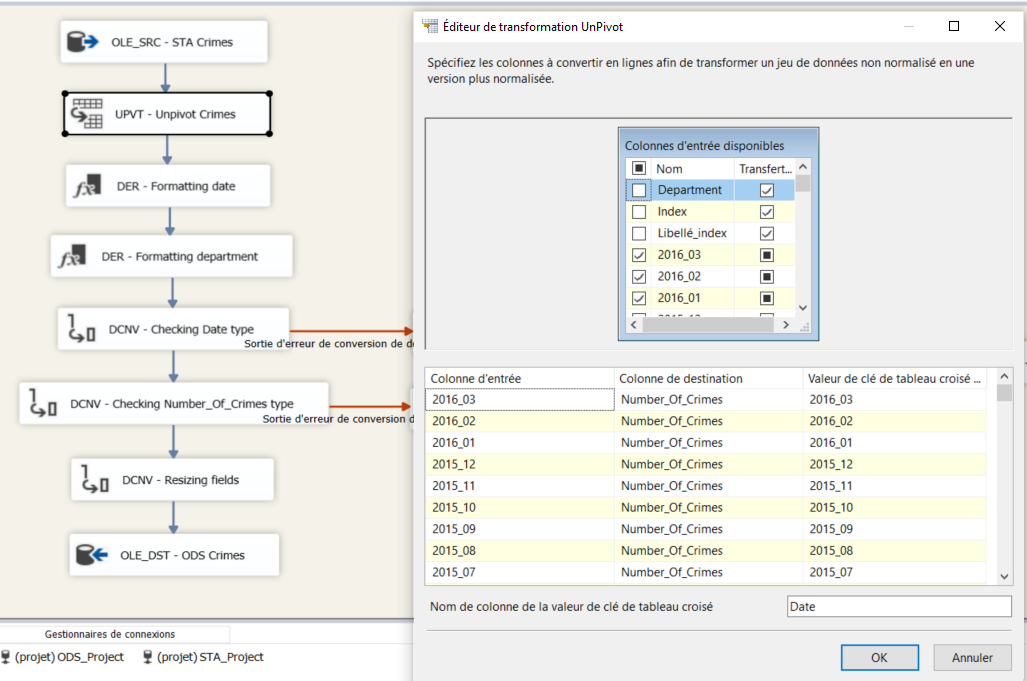
Result file:



Crimes :

Unpivot:

We want to transform all columns with dates in one.

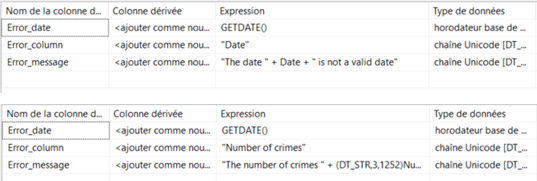


Derived column to format date: “(DT\_DATE)(SUBSTRING(Date,1,4) + "-" + SUBSTRING(Date,6,2) + "-" + "01")”;

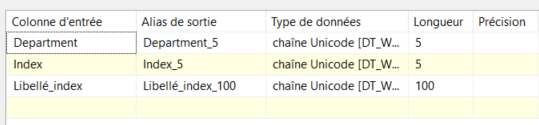
Derived column to format department: “(DT\_WSTR,50)(DT\_I8)SUBSTRING(Department,4,2)” (Delete Dep and leading 0);

Transform date in “date [DT\_DATE]” and number of crimes to “INT”.

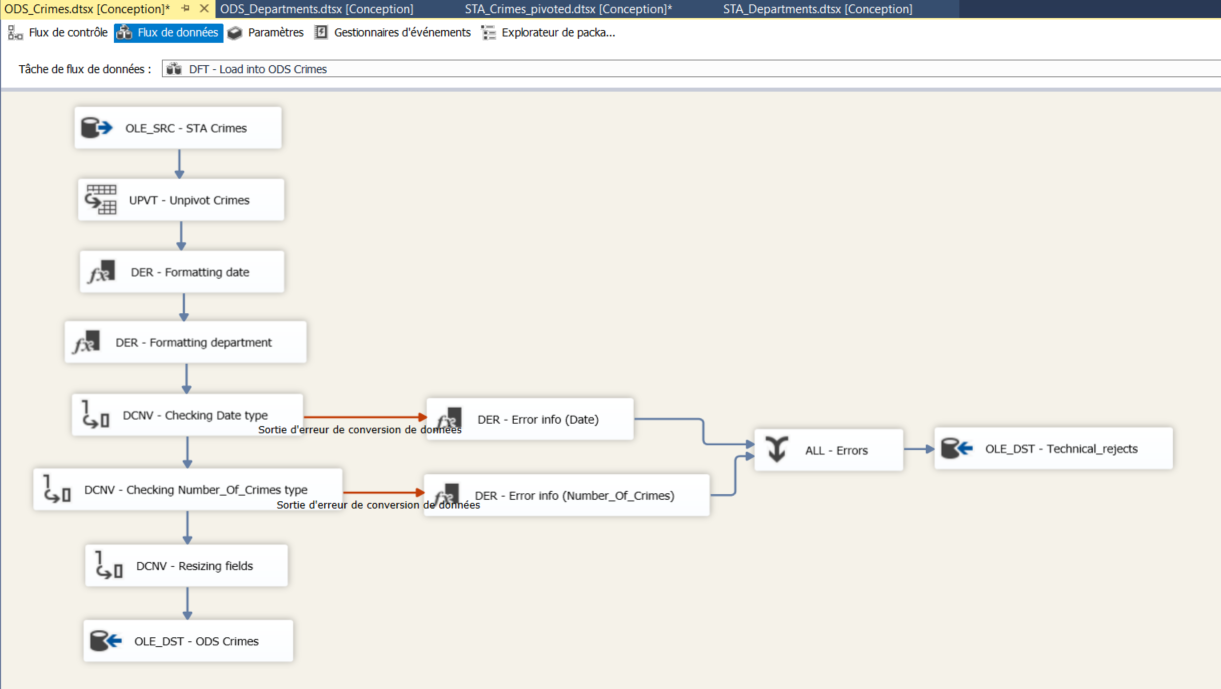
Put date errors and non-numeric crimes numbers in Technical rejects table:



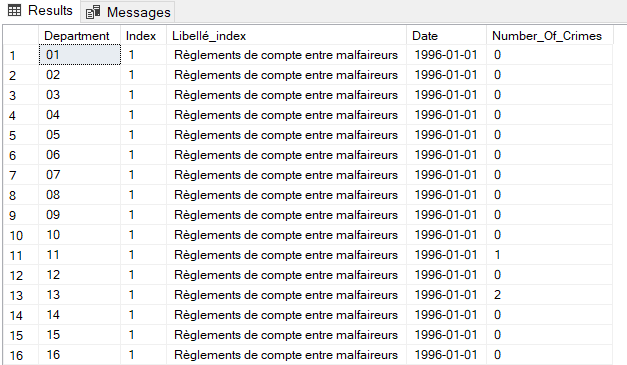
Resizing the rest fields:



All transformations:



Result file:



Technical rejects: (there were not created any).

1. **DWH**

Create DWH\_Projet database in SQL.

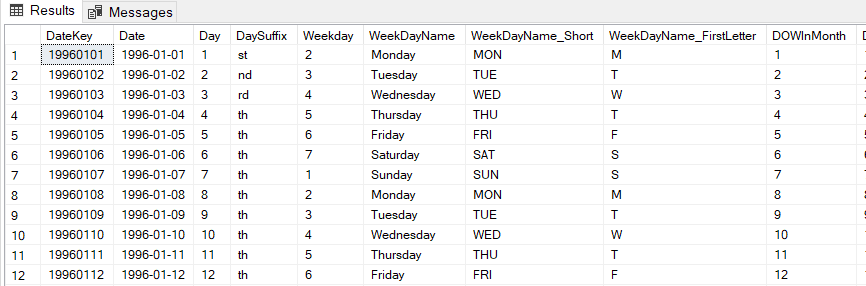
Dim tables: Date, Libellé (name of crimes), Department.

Fact table: Crimes (keys from dim tables + number of crimes)

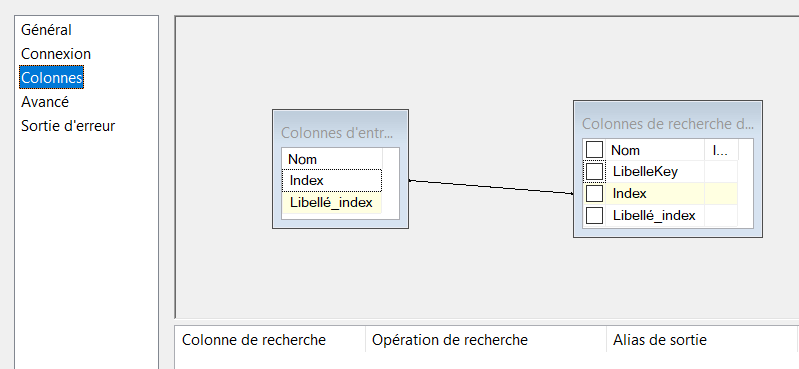
DimDate :

SQL script in SQL Script – DimDate.sql.

Result file:



DimLibelle :



For the case if libellé did not existed or were modified:

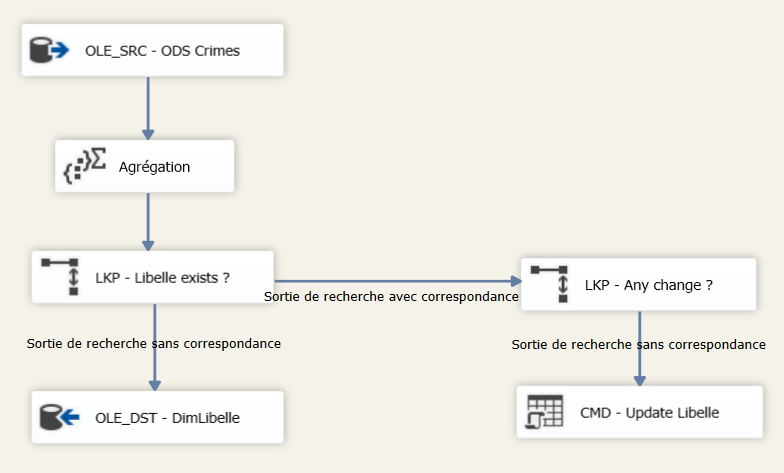
UPDATE [dbo].[DimLibelle]

SET

[Libellé\_index] = ?

WHERE [Index] = ?

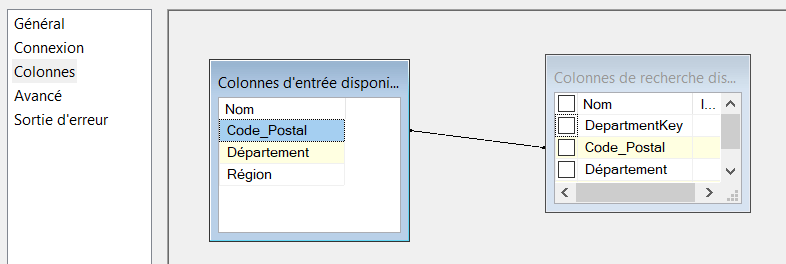
All transformations:



Result file:



DimDepartments :



For occasional modified records:

UPDATE [dbo].[DimDepartments]

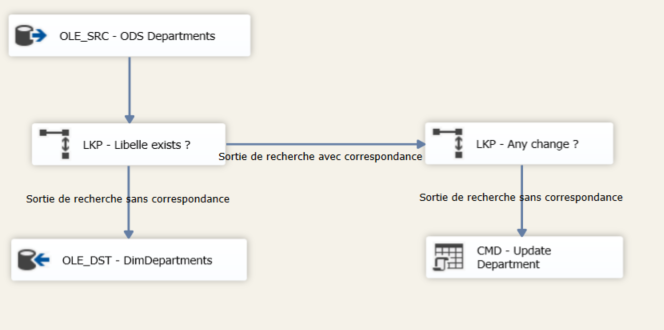
SET

[Département] = ?

[Région] = ?

WHERE [Code\_Postal] = ?

All transformations:

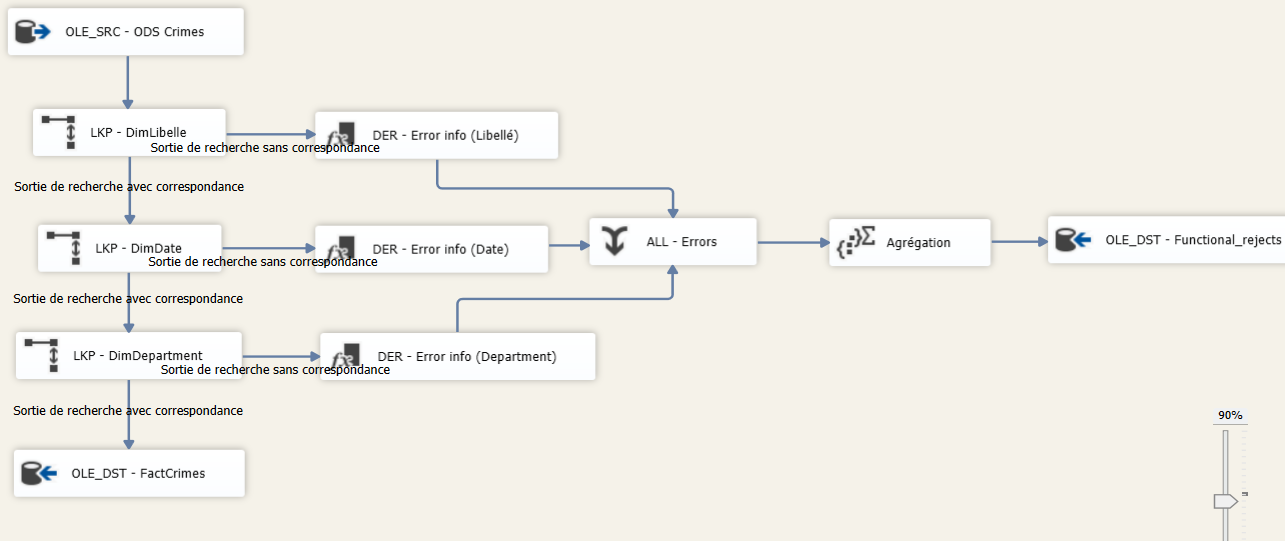


Result file:

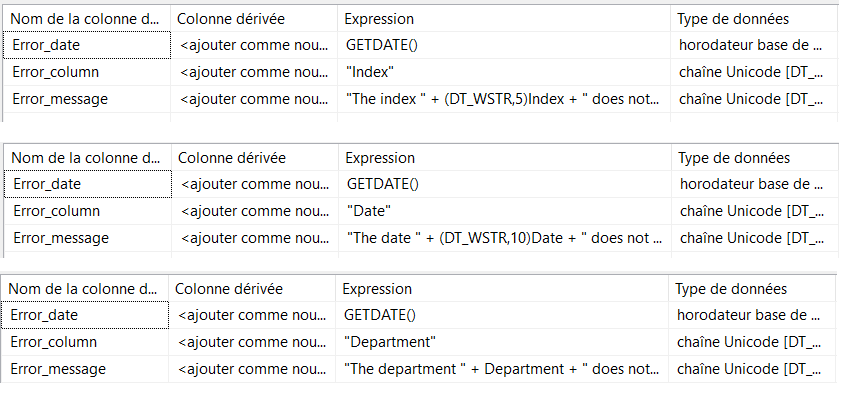


FactCrimes :

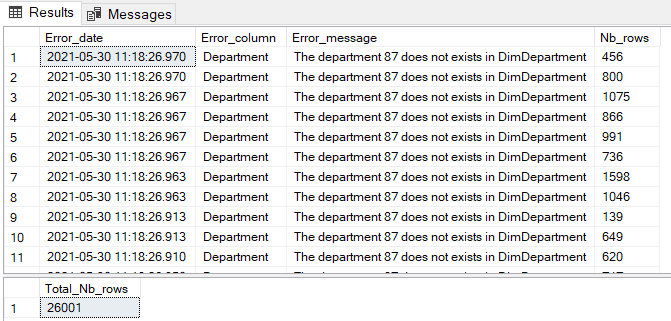
All transformations:

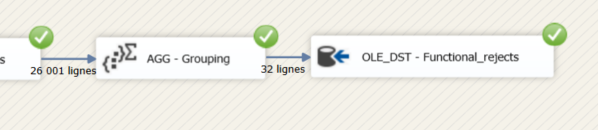


Functional rejects:



Some rows rejected, 1 department was in Crimes and not in Departments source:





Result file:

