

EXPERTIZERS SOFTWARE: LOGIC AND FUNCTIONS



All the logic and the power of the software explained in few pages.

For controllers, a new expression, additional to spreadsheet, for professional and sustainable applications, with IT agreement for legibility and maintainability.

A very innovative software.

This document concerns all spreadsheet users.

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A NEW LOGIC

EACH INPUT LINE GENERATES N RESULT OUTPUT LINES

	A	B	C	D	E	F	G	H	I
1	Entity	Period	Product_code	Event_code	Client_code	Product_type	Country	Quantity_init	Unit_Price
2	LILLE	2008	TV50	ORDER_1	DURAND	TV	FR	5	250
3	LILLE	2008	PC35	ORDER_1	DURAND	PC	FR	3	500
4	LILLE	2008	PC35	ORDER_2	DUPONT	PC	BE	1	500

THE MAGIC BOX !

Entity	Period	Product Code	Event Code	Activity Code	Activity Name	Activity Value	Activity Cost	Activity Text
LILLE	2008	TV50	ORDER_1	GERER	frais généraux de direction	5,000	1250,000	TV50
LILLE	2008	TV50	ORDER_1	COMMANDER		5,000	1250,000	TV
LILLE	2008	TV50	ORDER_1	PRODUIRE		5,000	1250,000	DURAND
LILLE	2008	TV50	ORDER_1	LIVRER		5,000	1250,000	FR
LILLE	2008	PC35	ORDER_1	GERER	frais généraux de direction	3,000	1500,000	PC35
LILLE	2008	PC35	ORDER_1	COMMANDER		3,000	1500,000	PC
LILLE	2008	PC35	ORDER_1	PRODUIRE		3,000	1500,000	DURAND
LILLE	2008	PC35	ORDER_1	LIVRER		3,000	1500,000	FR
LILLE	2008	PC35	ORDER_2	GERER	frais généraux de direction	1,000	500,000	PC35
LILLE	2008	PC35	ORDER_2	COMMANDER		1,000	500,000	PC
LILLE	2008	PC35	ORDER_2	PRODUIRE		1,000	500,000	DUPONT
LILLE	2008	PC35	ORDER_2	LIVRER		1,000	500,000	BE

How is it possible ?



THE FIRST ELEMENTS OF THE MAGIC BOX

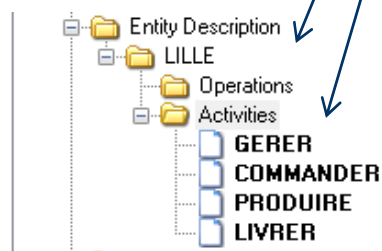
A description of the columns of the input file; it is called the event file. It can be any kind of data (past, present, future as budget)

Event file description										
Variable Code	Fixed	Variable Name	Format	Tot.Length	Decim	Batch	Quot	R.T	Col	Values to Control
entity	X		varchar	20	0F	F		0		LILLE/
period	X		varchar	10	0F	F		0		
product_code	X		varchar	20	0F	F		0		
event_code	X		varchar	30	0F	F		0		
client_code			varchar	7	0F	F		0		
product_type			varchar	5	0F	F		0		
country			varchar	3	0F	F		0		
quantity_init			numeric	16	3F	F		0		
unit_price			numeric	12	2F	F		0		

Each data input line, one after another, is going through the hierarchical structure described below.

Each result line (called activity) contains formulas which use the current data values of the input line. Activity lines are written into an output file.

So, 1 data input line generates N activity lines



Activity Code	Name	B/Q	D/X	MdRe	Where ..	Activity_Value=	Cost_Value=	Text_Value=
GERER	frais généraux de direction			N Y		activity_value = quantity_init	activity_cost = activity_value * unit_price	activity_text = product_code
COMMANDER				N Y		activity_value = quantity_init	activity_cost = activity_value * unit_price	activity_text = product_type
PRODUIRE				N Y		activity_value = quantity_init	activity_cost = activity_value * unit_price	activity_text = client_code
LIVRER				N Y		activity_value = quantity_init	activity_cost = activity_value * unit_price	activity_text = country

You can memorize activity results (value, cost) to use them in a next activity.

You can condition or cancel the writing of an activity. In addition, the activity is not written if the three calculated fields (value, cost, text) are zero or null values

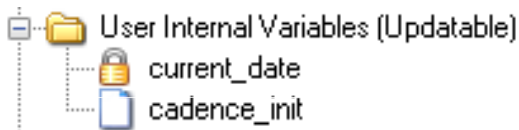


THIS LOGIC STIMULATES CREATIVITY AND OPENS FOR NEW APPLICATIONS, CREATED BY YOUR OWN, MAINTAINABLE, AND VISIBLE TO ALL OTHER.

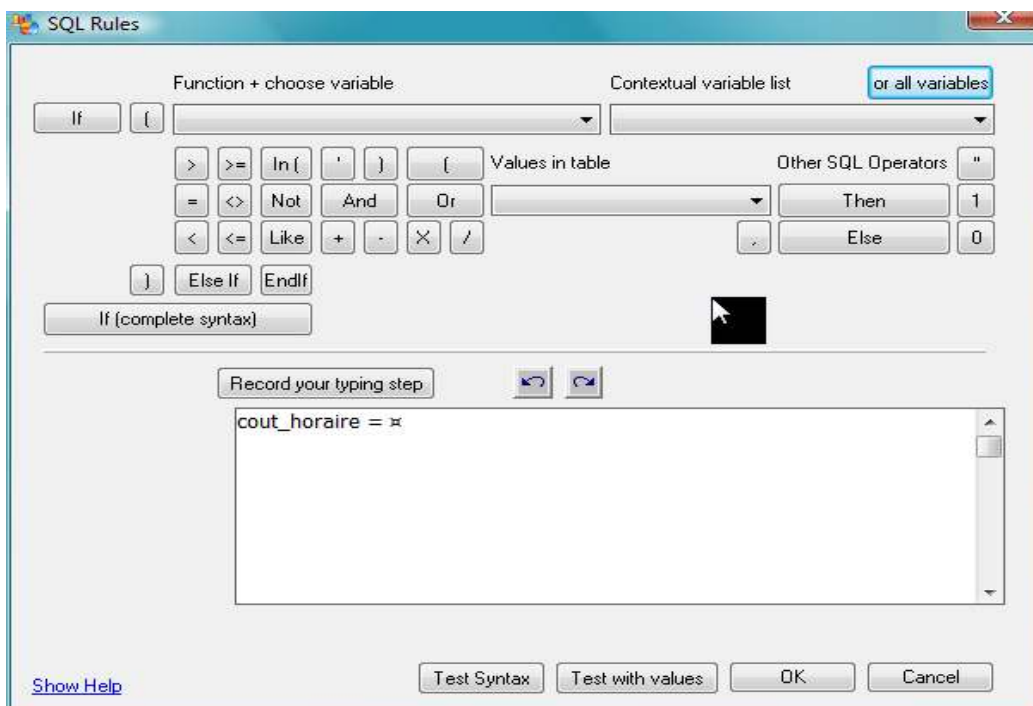
SO, THE MAGIC BOX IS MUCH MORE !

Between a data input line and its production of activity lines, many other formulas can be defined. Each formula is given a variable name (equivalent to a spreadsheet cell).

First of all, the data input line, crosses the section spelled 'User Internal variables'. Inside this section you can declare as many variables and initialization formulas as you want. Formulas are calculated in the sequential order of the variables in the section. By default, all EXPERTIZERS models contain the two variables below.

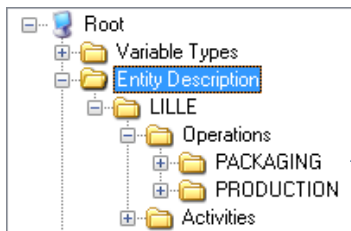


You make the formulas (synonymous as rule) either manually or by using functions (Utilities / create decode variables) or by using the tutorial available for typing any conditional rule or any calculation rule



THEN, THERE IS A HIERARCHICAL STRUCTURE REPRESENTATIVE OF THE PROCESSES OF YOUR ORGANIZATION

Immediately after its passage in the section 'User Internal variables', the current input line is presented to a hierarchy, in which according to your needs you have described the rules of generating resources (work units) and potentially cost.

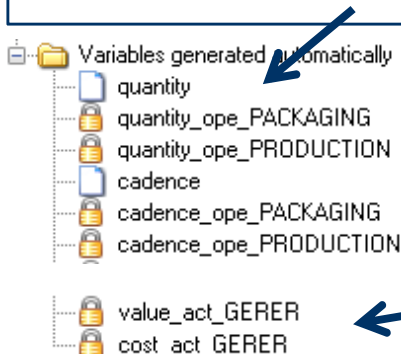


hierarchy has four levels:

1. Entity (company, plant, ...)
2. Operation (service, workshop, ...)
3. Object (machine, man, ...)
4. Object line (calculation rule)

Entity	Operation	Obj. or act.	How Many	Condition 1	Condition 2 or rule 1
LILLE	1		0		
LILLE	PACKAGING	2	0	product_type in ('PC','TV')	
LILLE	PACKAGING	PACK1250	2,00	product_type = 'PC'	
LILLE	PACKAGING	PACK1250	0		cadence = 50
LILLE	PACKAGING	PACK2370	1,00		
LILLE	PACKAGING	PACK2370	0	product_type = 'PC'	cadence = 50
LILLE	PACKAGING	PACK2370	0	product_type = 'TV'	cadence = 40
LILLE	PRODUCTION		0		
LILLE	PRODUCTION	LINES	3,00		
LILLE	PRODUCTION	LINES	0		cadence = if product_type = 'PC' then 10 else 15 endif
LILLE	PRODUCTION	LINES	0		quantity = quantity * 1.01
LILLE		GERER	0		activity_value = quantity_init

The input line crosses or skip levels depending on the conditions. The rules apply to the calculation variables of type `_init` (here `quantity_init`, `cadence_init`) which come in 'quantity' and 'cadence'. At the end of each operation the calculated values are averaged and stored in variables structured like `variable_ope_OPERATION` to be used in the activity lines.



NB1: For a proper calculation of losses in production (quantity), operations must be presented in reverse order of the cycle (as here in the hierarchy PACKAGING before PRODUCTION).

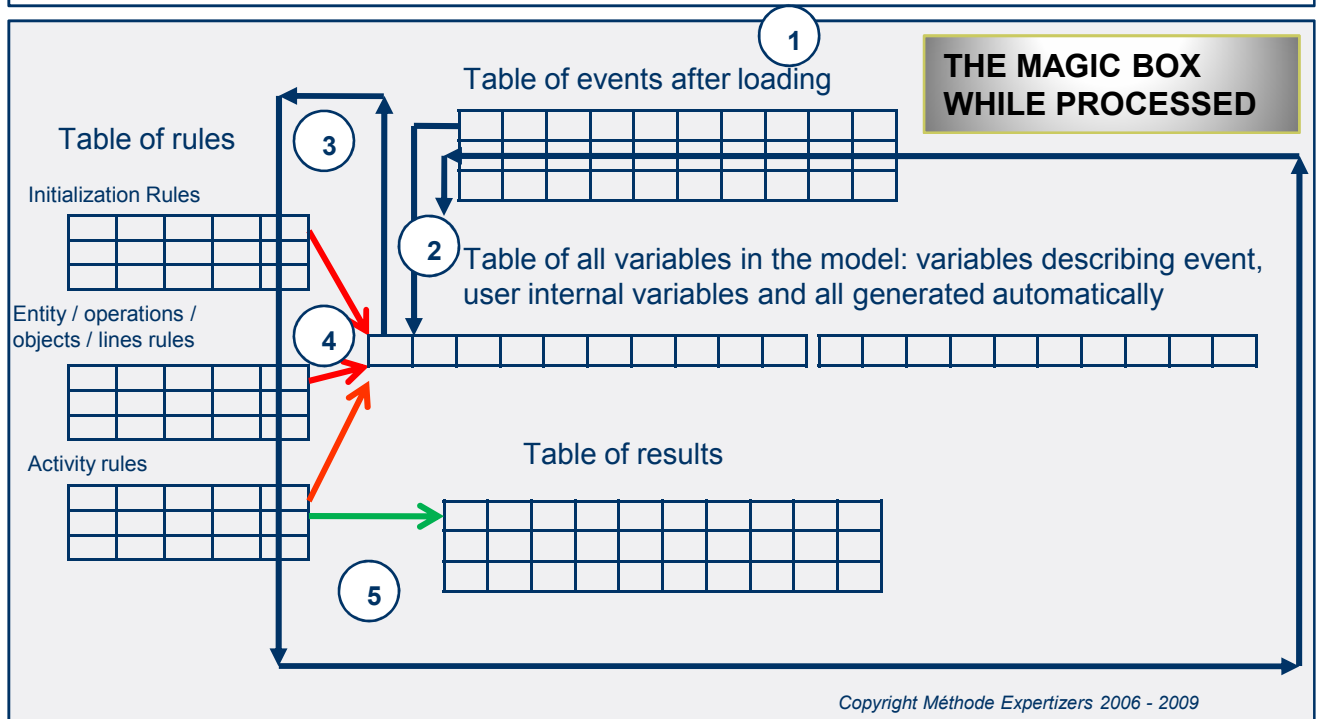
NB2: Any activity declared with the option 'memorize' also generates two variables in this section.

For example GERER if memorize option would be Yes.



PHYSICAL STRUCTURE OF THE MAGIC BOX EXPERTIZERS

The magic box is a file as flexible as a spreadsheet file. Therefore, it is copied by the commands copy / paste from Windows Explorer. We will use the term **MODEL instead of the file**. Models have extension ex1, ex2, or EX3, depending on the rights granted. Their internal structure is a database composed of tables. The database is called SQL Anywhere®, Sybase® Print. No administration is required.



1. Before processing, events are loaded in the model.
2. During processing, loop reading each line of event. The contents of the current line is loaded in the event part of the table composed of a single line and which contains all the variables of the model.
3. The table of rules (conditions and calculations) is scanned as it moves through the sequence of lines of rules as shown in the tree.
4. Each line rule → is applied on the table of all the variables of the model. Depending on conditions, the lines are shunted or give rise to enforcement of the rules of calculation (see details on next page).
5. The calculated results of each activity are written → in a result table. Basis of all analysis.



IN FACT, THE STACK OF THE RULES IS A REAL PROGRAM IN ITS MOST PURE FORM AND MORE READABLE (CORIG * METHODOLOGY)

Processing of the current line

Variables declared in 'User internal variables' section						Calculation rule
Current_date						Current_date = today()
Cadence_init						
Transport_price						transport_price = if period < '2006/01/01' Then 100.25 else 108 endif
Lev.1 Entity	Lev.2 Operation	Lev.3 Object	lev.4 Line	Entry condition	KO	
LILLE				entity = " ou entity = 'LILLE'		
	PACKAGING			Product_type in ('PC','TV')		
		PACK1250		Product_type ='PC'		
			1			Cadence = 50
		PACK2370				
			1	Product_type = 'PC'		Cadence = 50
			2	Product_type ='TV'		Cadence = 40
	PRODUCTION					
		LINES				
			1			Cadence = if product_type = 'PC' then 10 else 15 endif
			2			Quantity = quantity * 1.01
	Lev. Activity					
	GERER (MANAGE)					Activity_value = ... activity_cost = ... activity_text = ... + writing
	COMMANDER (ORDER)					Activity_value = ... activity_cost = ... activity_text = ... + writing
	PRODUIRE (PRODUCE)			Product_type in ('PC','TV')		Activity_value = ... activity_cost = ... activity_text = ... + writing
	LIVRER (DELIVER)					Activity_value = ... activity_cost = ... activity_text = ... + writing
PARIS				entity = " ou entity = 'PARIS'		

(*) CORIG: Method that filters all information flows in a series of conditions and proceed sequentially on these conditions to the processing of each line of the stream.

loop to the next line to process



EXPERTIZERS HAS MANY OTHER FUNCTIONS,

TO BE DISCOVERED INSIDE MODELS (EUROTOP_1, EUROTOP_2, EXAMPLE) ON THE SITE WITH RELATED DOCUMENTATION

Control of data input	Compulsary, optional, or according to a list of values.
The variables of type <i>sum_name</i>	total data on all the input file lines (for example: sum quantity_init by client_code).
DECODE function	Create new data from the contents of a variable
Distribution function of accounting data	Automatically generates the distribution of pseudo activities (SEC_ and SAV_ types) that are positioned in front of each receiving activity. The results of pseudo activities accumulate on the receiving activity and writing of pseudo activities is not done.
The cum_cost variable	Combines the values of previous activities which have been written. It is therefore up to the next activity Example: activity TAX_VALUE_ADDED = cum_cost * 19.6
Activities of type ERROR_nom	define rules of consistency between variable values inside the same input line. The rules giving a result different from 0, generate a list of errors.
Other....	<p>Quotations and managing a catalog of canvas.</p> <p>Incorporation of costs by an external file (see EUROTOP case).</p> <p>Activities associated with a file annex materials / accessories.</p> <p>Automatic and secure models of director positions to users (to enter quotes for example).</p> <p>Benchmarking between different entities of the same model.</p> <p>Production results for nowcast either in software (charts) or external (txt and xls formats) to any storage environment and operating infocenter.</p>

**Return to this document as many times as necessary.
Understanding EXPERTIZERS logic is key to accelerate your learning cases.**



IN SUMMARY, HERE ARE SOME KEYWORDS AND DEFINITIONS FOR DEFINING THE MAGIC BOX OF EXPERTIZERS

- EXPERTIZERS is a method in itself
- A simple logic for all
- Its software, the magic box, is the practical representation
- Openness, accessibility, transparency
- Quick learning, even by your own
- Teaching methodologies of cost
- Applicable on any other area that the spreadsheet does not do well
- New tool of expression and creativity of the client
- Clarity, legibility are shared among stakeholders, your employees, but also project management information systems
- Flexibility, applicability of the most simple to the complicated
- Structuring, modeling processes of any organization
- Traceability, security, maintainability, durability, easy transmissibility
- Operational stand-alone or shared
- Operational mode prototyping or production, integrated in the information system
- Its physical structure equates to the office tools
- Positioned so, it becomes accessible to the greatest number for the realization of strategic applications
- Less than five minutes to use on your Windows PC
- A very good choice, a time of crisis or not
- ...

But it's obviously up to you to be assured



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- DB.SOFTART.SERVICES
Didier RICHE
Software Publisher
+33 (0)6.63.92.20.60
+33 (0)1.47.34.40.23

