

Grand mère mode

@framiere
Jaxio
Programmeur/Développeur/Codeur



Plan

- Contexte projet
- Excel
- POI
- Antlr
- Google Spreadsheet
- Négatif ?
- Conclusion

A User-Centred Approach to Functions in Excel

30th June 2003

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Abstract

We describe extensions to the Excel spreadsheet that integrate user-defined functions into the spreadsheet grid, rather than treating them as a “bolt-on”. Our first objective was to bring the benefits of additional programming language features to a system that is often not recognised as a programming language. Second, in a project involving the evolution of a well-established language, compatibility with previous versions is a major issue, and maintaining this compatibility was our second objective. Third and most important, the commercial success of spreadsheets is largely due to the fact that many people find them more usable than programming languages for programming-like tasks. Thus, our third objective (with resulting constraints) was to maintain this usability advantage.

Simply making Excel more like a conventional programming language would not meet these objectives and constraints. We have therefore taken an approach to our design work that emphasises the cognitive requirements of the user as a primary design criterion. The analytic approach that we demonstrate in this project is based on recent developments in the study of programming usability, including the Cognitive Dimensions of Notations and the Attention Investment model of abstraction use. We believe that this approach is also applicable to the design and extension of other programming languages and environments.

Categories and Subject Descriptors

D.3.2 [Programming Languages]: Language classifications—*Functional languages*; D.3.3 [Programming Languages]: Language constructs and features—*Procedures, functions and subrou-*

1 Introduction

For many people, the programming language of choice is a spreadsheet. This is especially true of people who are not employed as programmers, but write programs for their own use — often defined as “end-user” programmers [Nar93]. An end-user programmer is a teacher, an engineer, a physicist, a secretary, an accountant, a manager, in fact almost anything except a trained programmer. These people use computers to get their job done, but often they are not interested in programming *per se*. End-user programmers outnumber professional programmers, and their numbers are projected to increase more rapidly; in fact, the number of end-user programmers in the U.S. alone is expected to reach 55 million by 2005, as compared to only 2.75 million professional programmers [BAB⁺00]. These facts suggest that the spreadsheet, which is a widely used and commercially successful end-user programming language, is also a particularly significant target for the broader application of programming-language design principles.

It may seem odd to describe a spreadsheet as a programming language. Indeed, one of the great merits of spreadsheets is that users need not think of themselves as doing “programming”, let alone functional programming — rather, they simply “write formulae” or “build a model”. However, one can imagine printing the cells of a spreadsheet in textual form, like this:

```
A1 = 3
A2 = A1-32
A3 = A2 * 5/9
```

and then it plainly is a (functional) program. Thought of as a programming language, though, a spreadsheet is a very strange one. In particular, it is completely *flat*: there are no functions apart from





An advanced purely-functional programming language

Objectifs



A retenir

- Ne refaites pas ce que peut faire Excel
 - Faite bosser vos utilisateurs !
 - Parlez le langage de vos utilisateurs
 - Utilisez des outils collaboratifs
-
- Créez ce langage si il n'existe pas déjà
 - ... si possible proche d'Excel qu'ils savent manipuler

CAPTAIN OBVIOUS



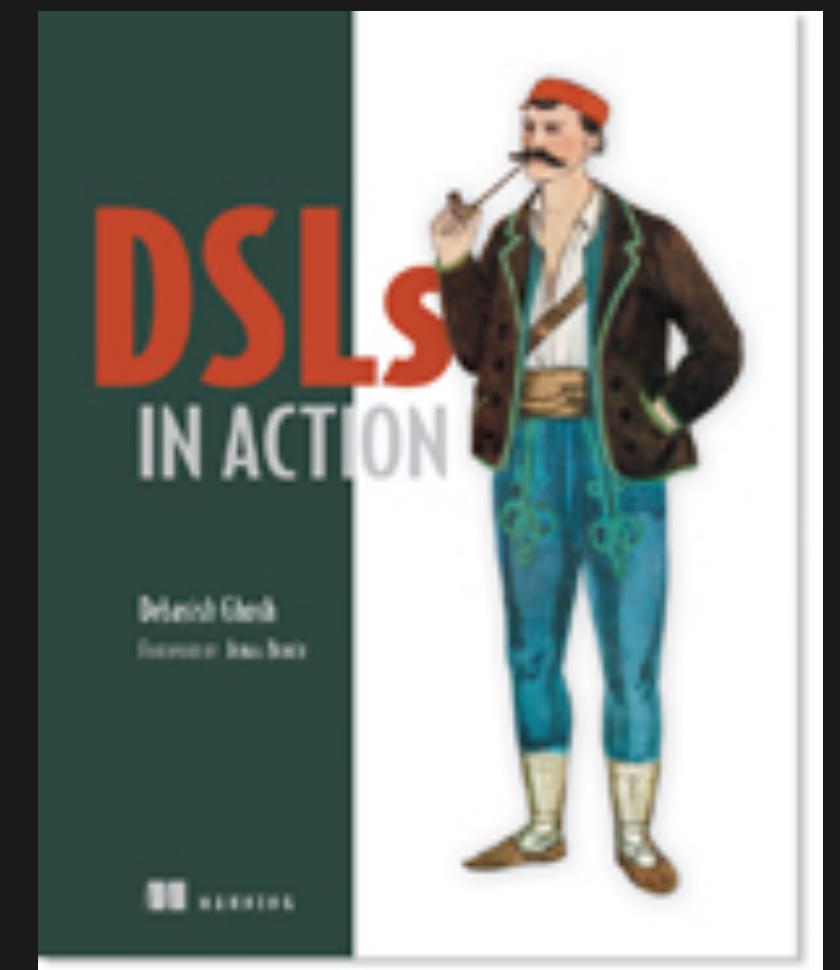
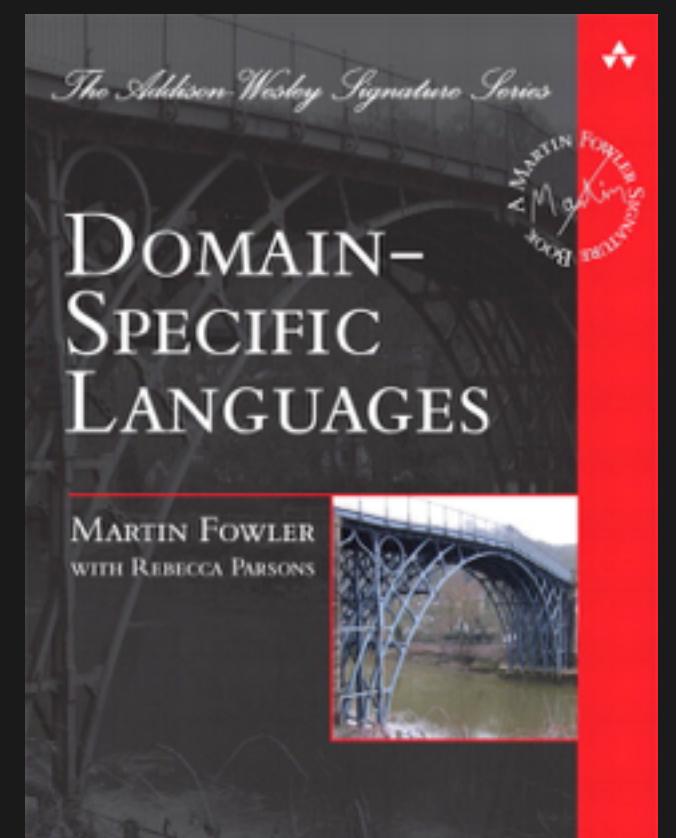
Contexte

- Migration moteur de calculs
- Création d'indicateurs financiers
- Plus de 7 000 règles
- 21 étapes
- Plusieurs équipes
- Pas de compétence technique
- **Un seul et unique modèle !**
- des milliards de résultats à calculer
- le métier perdu dans la technique

Aïe !



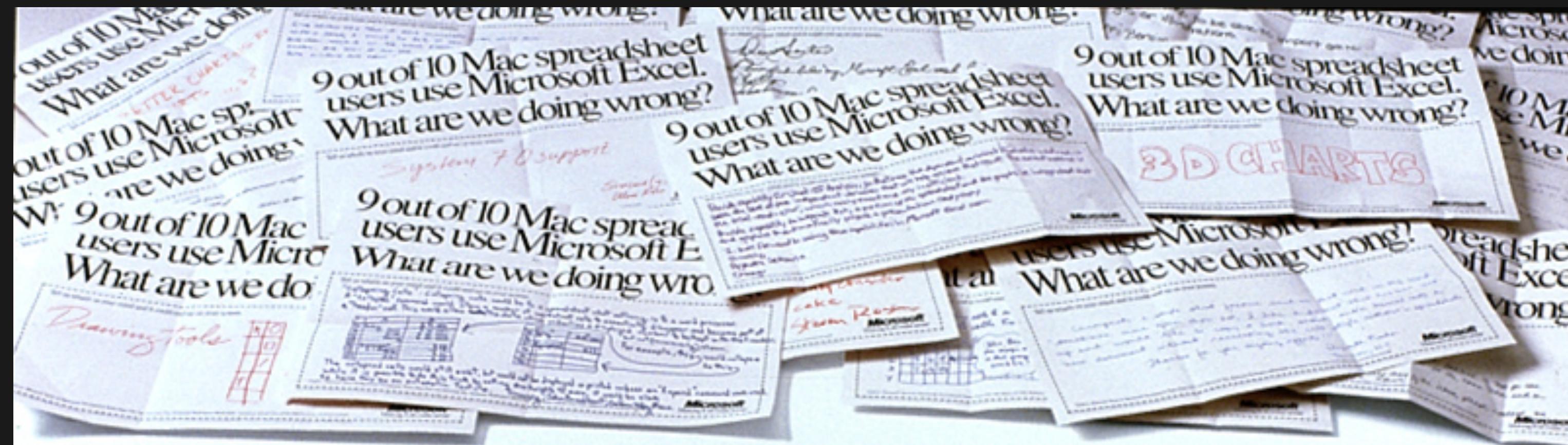
DSL !



Groovy



Leur vrai langage



New Microsoft Excel version 3.0. The result of an exhaustive correspondence course.



Betsy Mill put it all in perspective when she wrote to us, "I love [Microsoft] Excel as much as my microwave oven but no love is perfect."

Well, Betsy, get a load of this. We think new Microsoft Excel version 3.0 is the closest thing to perfection ever seen in a spreadsheet for the Mac. For one good reason.

Power made easy.

The new Toolbar, for instance, reduces common, time-consuming tasks down to one step.

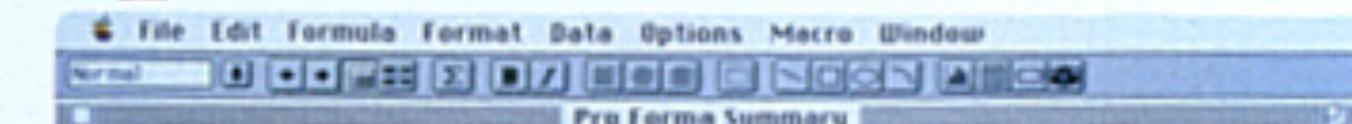
Highlight a row or column of numbers, hit the Σ button (that's Autosum),



...Poof! a single button now lets you across all chart types, 24 of which are 3-D. You can incorporate these right into your worksheet, along with text and data. And watch the outlining feature on the left—Gee-

and could — it all adds up.

Do quick, push-button formatting. Use outlining features to collapse



Take a look at the new Toolbar. In one step, you can now create 3D charts, outlining features, formatting options, drawing tools, charts of all kinds and more. Or to freeze or expand worksheets without having to create multiple files.

As for charting, we took our cue from Paul Woods, who began his letter with the salutation, "Charts, charts, charts!" Hey Paul — check out the picture and caption for the full scoop.

Did we mention that you can consolidate up to 255 worksheets at a time, regardless of format?

Or the Goal Seek feature, which lets you put in the total you want and works backwards from there to fill in the

Microsoft
Making it all make sense

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Demo POI

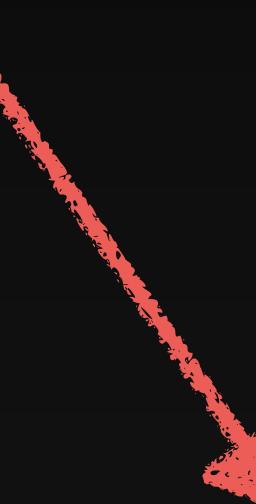




Perf									
1	2	3	4	5	6	7	8	9	
45	22.5	15	11.25	9	7.5	6.42857142857	5.625	5	
46	24.5	18	15.25	14	13.5	13.4285714285	13.625	14	
92	49	36	30.5	28	27	26.8571428571	27.25	28	
23	12.25	9	7.625	7	6.75	6.71428571428	6.8125	7	
1	2	3	4	5	6	7	8	9	
45	22.5	15	11.25	9	7.5	6.42857142857	5.625	5	
46	24.5	18	15.25	14	13.5	13.4285714285	13.625	14	
92	49	36	30.5	28	27	26.8571428571	27.25	28	
23	12.25	9	7.625	7	6.75	6.71428571428	6.8125	7	
1	2	3	4	5	6	7	8	9	
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1	2	3	4	5	6	7	8	9	
45	22.5	15	11.25	9	7.5	6.42857142857	5.625	5	
46	24.5	18	15.25	14	13.5	13.4285714285	13.625	14	
92	49	36	30.5	28	27	26.8571428571	27.25	28	
23	12.25	9	7.625	7	6.75	6.71428571428	6.8125	7	
53	15.51	9	1.052	1	0.9	0.818.6	0.8152	1	
65	46	38	3.02	58	58	58.8254582545825	51.52	58	
76	54.2	48	4.252	44	43.4	43.052	43.052	44	

```
ExcelTest.should_load_excel: [measured 1000 out of 1100 rounds, threads: 8 (all cores)]
  round: 0.00 [+ 0.00], round.block: 0.00 [+ 0.00], round.gc: 0.00 [+ 0.00], GC.calls: 1, GC.time: 0.01, time.total: 0.33, time.warmup: 0.09  time.bench: 0.25
ExcelTest.should_load_execute: [measured 1000 out of 1100 rounds, threads: 8 (all cores)]
  round: 0.01 [+ 0.00], round.block: 0.01 [+ 0.00], round.gc: 0.00 [+ 0.00], GC.calls: 6, GC.time: 0.02, time.total: 1.50, time.warmup: 0.41  time.bench: 1.09
```

Une feuille est calculée en 1ms !



```
@Test  
public void should_load_execute() {  
    FormulaEvaluator evaluator = creationHelper.createFormulaEvaluator();  
  
    Sheet perf = workbook.getSheetAt(0);  
    for (int rowId = perf.getFirstRowNum(); rowId < perf.getLastRowNum(); rowId++) {  
        Row row = perf.getRow(rowId);  
        for (int column = 0; column < row.getLastCellNum(); column++) {  
            assertThat(cell(row.getCell(column), evaluator)).isNotNull();  
        }  
    }  
  
    private String cell(Cell cell, FormulaEvaluator evaluator) {  
        switch (cell.getCellType()) {  
            case Cell.CELL_TYPE_FORMULA:  
                return evaluator.evaluate(cell).formatAsString();  
            case Cell.CELL_TYPE_NUMERIC:  
                return "" + cell.getNumericCellValue();  
            case Cell.CELL_TYPE_STRING:  
                return cell.getStringCellValue();  
            case Cell.CELL_TYPE_BOOLEAN:  
                return "" + cell.getBooleanCellValue();  
            case Cell.CELL_TYPE_BLANK:  
                return "";  
            case Cell.CELL_TYPE_ERROR:  
                return null;  
            default:  
                throw new IllegalStateException("Could not handle " + cell.getCellType());  
        }  
    }  
}
```

30 lignes !

MONDEVOIX

MONDEVOIX

Ca serait dommage de se priver non ?

#grandmere

@framiere

Ok mais mes Excel ont plein de VB dedans
...et ça piquouille quand même pas mal !

Fonctions VB

- VB ou pas VB il y a du métier à prendre en compte !
- Redéveloppez ce code en Java à la main
- Traduisez ce code legacy automatiquement en java
- Puis déclarez ces fonctions à POI

Contrat simplissime

```
private static DefaultUDFFinder registerMacros() {  
    String[] functionNames = {"RELDIFF", "PVEA", "ADJYE", "PMT", "PVFI4", "PVFI5", "PVFI6", "GPIA", "  
    FreeRefFunction[] functionImpls = {new RELDIFFMacro(), new PVEAMacro(), new ADJYEMacro(), new PMT  
        new PVFI4Macro(), new PVFI5Macro(), new PVFI6Macro(), new GPIAMacro(), new CustomRateFunc  
    return new DefaultUDFFinder(functionNames, functionImpls);  
}  
  
private static void registerFunctions() {  
    FunctionEval.registerFunction("ISERR", new ISERRQFunction());  
    FunctionEval.registerFunction("RSQ", new RSQFunction());  
}
```

Setup

accab

```
@Slf4j  
public class ADJYEMacro implements FreeRefFunction {  
  
    @Override  
    public ValueEval evaluate(ValueEval[] args, OperationEvaluationContext ec) {  
        if (args.length != 1) {  
            return ErrorEval.VALUE_INVALID;  
        }  
        try {  
            ValueEval singleValue = getSingleValue(args[0],  
                ec.getRowIndex(),  
                ec.getColumnIndex());  
            Double value = OperandResolver.coerceValueToDouble(singleValue);  
            return new NumberEval(DateUtil.getExcelDate(ADJY(DateUtil.getJavaDate(value))));  
        } catch (EvaluationException e) {  
            log.warn("Error at " + ec.getRowIndex() + " " + ec.getColumnIndex() + " ", e);  
            return e.getErrorEval();  
        }  
    }  
}
```

15 sheets de cet acabit !

Quizz



#grandmere

DEVOXXTM France

@framiere



Demo antlr

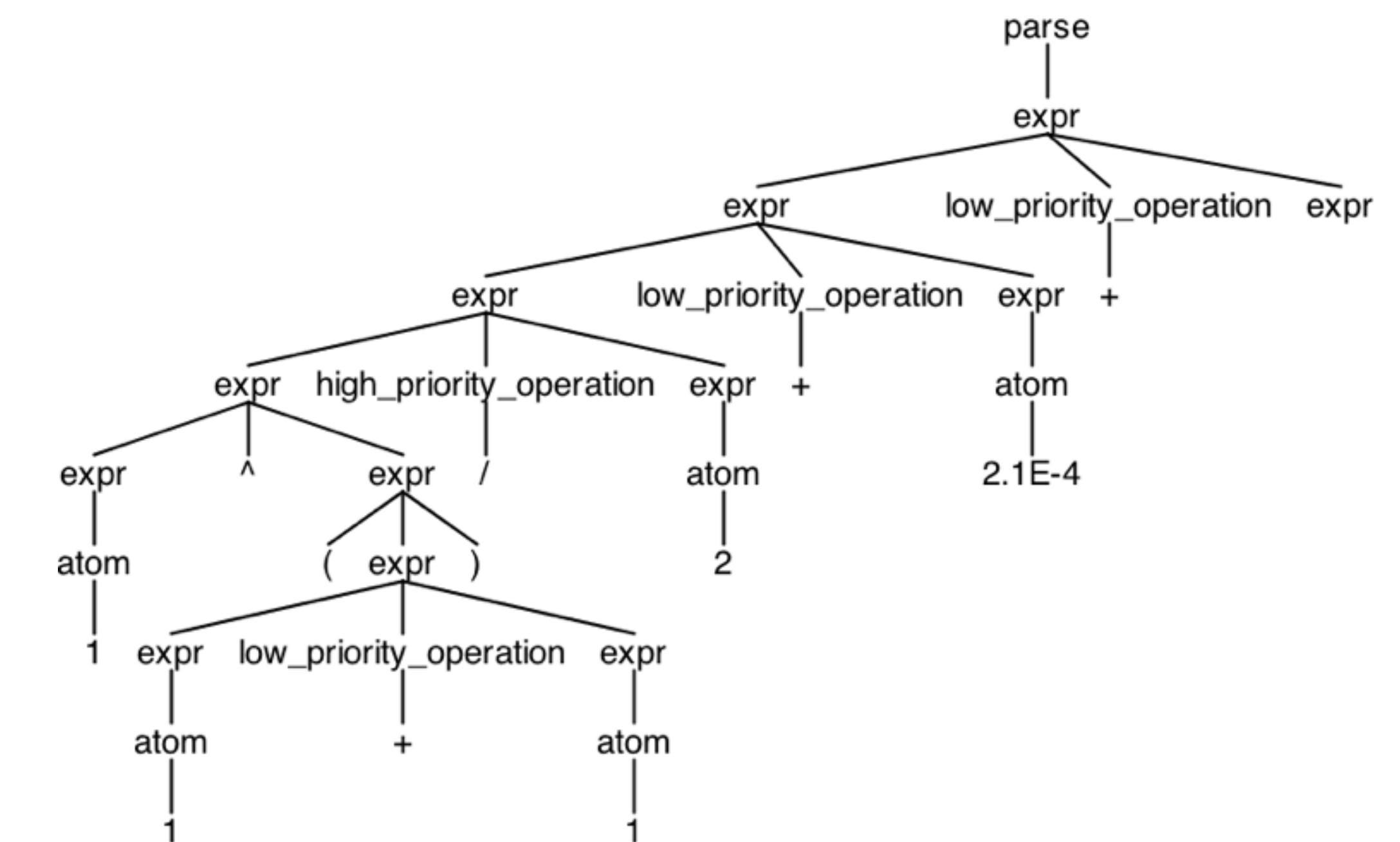


Antlr

- Grosso modo une regex qui crée un arbre avec des noeuds nommés que l'on peut visiter.
- ... et c'est tout.

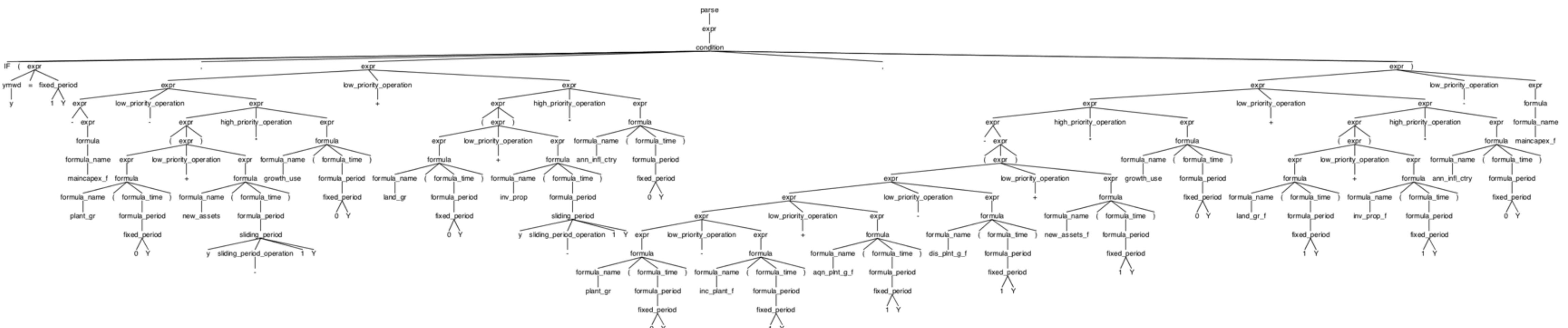
```
1^(1+1)/2+2.1E-4  
      +  
  
expr  
: <assoc=right> expr '^' expr  
| '(' expr ')'  
| '-' expr  
| '+' expr  
expr high_priority_operation expr  
expr low_priority_operation expr  
atom  
;  
  
high_priority_operation  
: '*'  
| '/'  
;
```

```
# exponentExpr  
# subExpr  
# unaryMinusExpr  
# unaryPlusExpr  
# highPriorityOperationExpr  
# lowPriorityOperationExpr  
# atomExpr
```



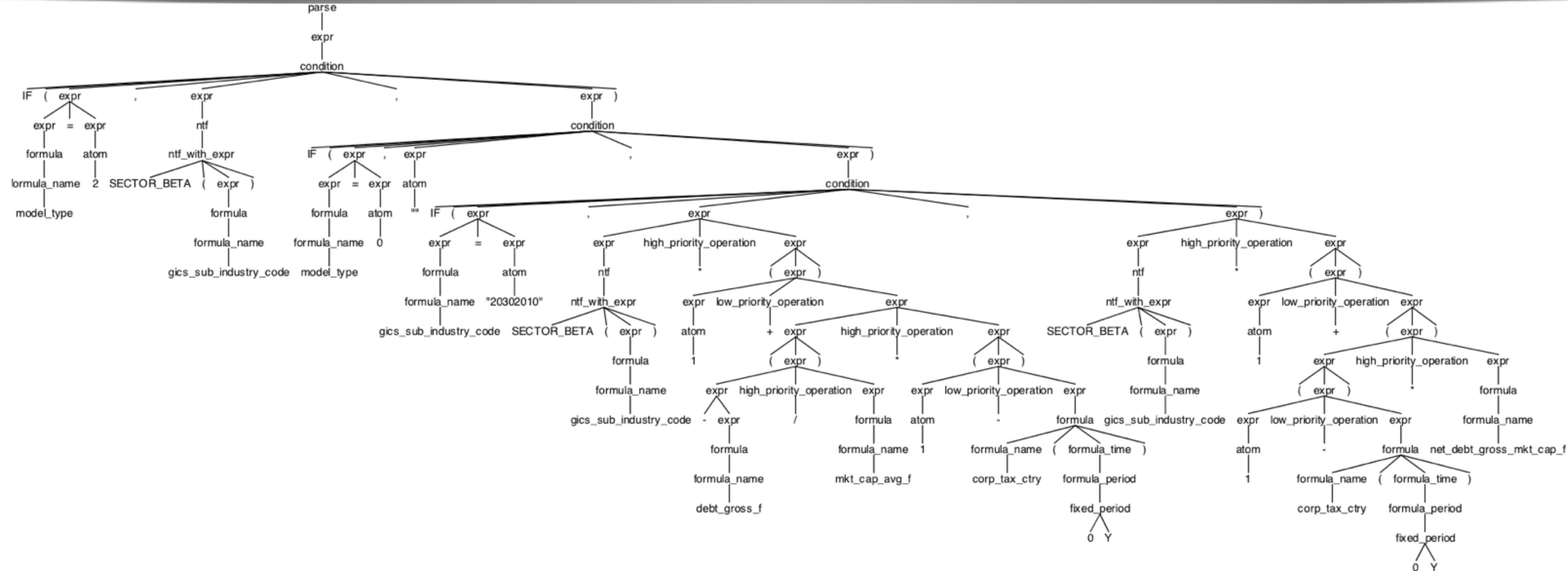
1 des 7000 règles

```
IF( y=1Y, - maincapex_f - ( plant_gr(0Y) + new_assets(y-1Y) ) *  
growth_use(0Y) + (land_gr(0Y) + inv_prop(y-1Y) ) *  
ann_infl_ctry(0Y), - ( plant_gr(0Y) - inc_plant_f(1Y) +  
aqn_plnt_g_f(1Y) - dis_plnt_g_f(1Y) + new_assets_f(1Y) ) *  
growth_use(0Y) + (land_gr_f(1Y) + inv_prop_f(1Y) ) *  
ann_infl_ctry(0Y) - maincapex_f)
```

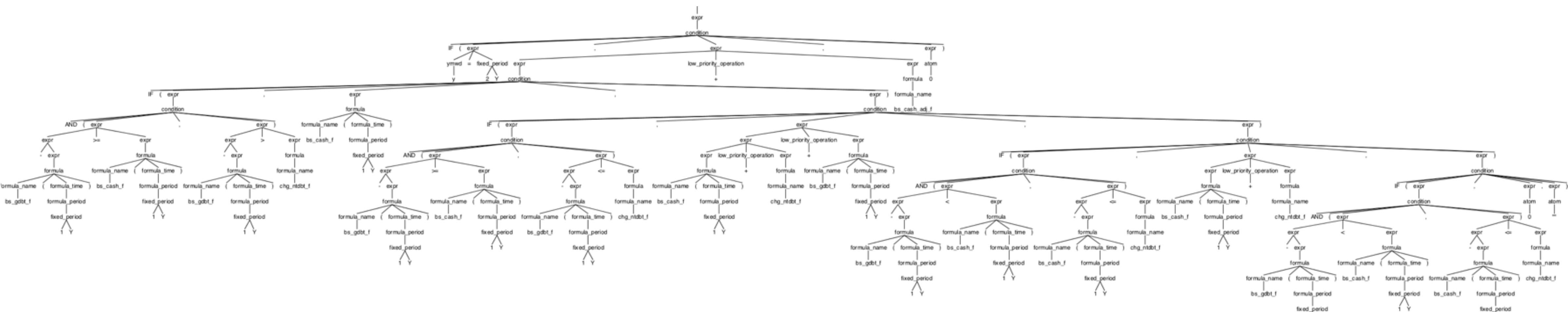


1 des 7000 règles

```
IF( model_type = 2 , SECTOR_BETA( gics_sub_industry_code ) , IF( model_type = 0 , "", IF(gics_sub_industry_code = "20302010" , SECTOR_BETA( gics_sub_industry_code ) * ( 1 + ( - debt_gross_f / mkt_cap_avg_f ) * (1- corp_tax_ctry(0Y) ) ) , SECTOR_BETA( gics_sub_industry_code ) * ( 1+ ( (1-corp_tax_ctry(0Y) ) * net_debt_gross_mkt_cap_f ) ) ) ) )
```



1 des 7000 règles



Google spreadsheet



FRAMIERE

DEVOXX

Enter a new world !

#grandmere

@framiere

Flow des discussions

David Senouf 20:44 30 mars

Texte sélectionné :
tot_cap_bk
Geoff: please rename this as _bank if possible

Répondre • Fermer la discussion

David Senouf 06:56 28 mars

Texte sélectionné :
wra_f(1Y) * f_wts(1Y) + wra_f(2Y) * f_wts(2Y)
Not consistent w/ the rest (other td_wts equivalent)

Répondre • Fermer la discussion

Veena Anand 11:22 27 mars

Texte sélectionné :
AVERAGE(bad_debt_pct;3Y)
Changed from the way legacy calculates bad debt smoothing adjustment is not calculated as it assumes in the forcedas bad_debt_pct is LRA which last 10 years have changed drastically

Google Inc.	Google	USD	US	on the can
Exxon Mobil Corporation	Is this company still in Gics sector 41030 ?			
Berkshire Hathaway Inc.				
Microsoft Corporation				

Commentaire

Commenter

Discussion

(ppe_gross - ppe_net <0), 0, ppe_gross - ppe_net)
_amr(y-1Y) / ppe_gross(y-1Y) * ppe_gross
p_avno(y-1Y) / sales(y-1Y) * sales
p_tot(y-1Y) / sales(y-1Y) * sales
_inc_rep / wt_av_sh_dil
inc rep / wt av sh bsc

Geoff ...nt 18:09 5 f... Fermer la discussion

NB certain items are plugged at the SP stage, eg ave/end SII. this is so we are able to look back then forward.
INFO Also, gross ppe is plugged first at the SP stage, then here (see main ppe_gross comment below)

Chat

(1) Florent Ramière

Définir les règles de notification

Je souhaite être informé à l'adresse framiere@gmail.com lorsque...

- Des modifications sont apportées.
- Un utilisateur envoie un formulaire.

Je souhaite être informé par...

- E-mail (résumé quotidien)
- E-mail (immédiatement)

Enregistrer

Annuler

Notifications

30 mars, 18:02

Geoff Ruby
James Wood

Restaurer cette révision

Revert

Historique

30 mars, 19:05

Geoff Ruby
David Senouf
James Wood
GUS Quest

30 mars, 19:04

Geoff Ruby
David Senouf
James Wood
GUS Quest

30 mars, 18:51

Geoff Ruby
David Senouf
James Wood
GUS Quest

30 mars, 18:48

Geoff Ruby
David Senouf
James Wood
GUS Quest

30 mars, 18:48

Geoff Ruby
David Senouf
James Wood
GUS Quest

30 mars, 18:17

Geoff Ruby
David Senouf
James Wood
GUS Quest

30 mars, 18:12

Geoff Ruby
David Senouf
James Wood
GUS Quest

30 mars, 18:10

Geoff Ruby
David Senouf
James Wood

30 mars, 18:02

Geoff Ruby
James Wood

30 mars, 18:02

Geoff Ruby
James Wood

30 mars, 18:02

Geoff Ruby

Afficher les modifications

Afficher moins de détails

Utilisateurs

Saisir des noms ou des adresses e-mail...

Modification ▾

Partagé avec David Senouf, Geoff Ruby, 5 autres personnes et 4 groupes.

Qui a accès



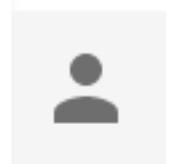
Florent Ramière (vous)
framiere@gmail.com

Propriétaire



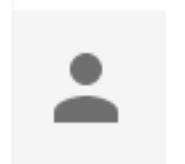
David Senouf

Commentaire ▾



Geoff Ruby
gruby@canaccordquest.com

Lecture ▾



Mark Burpitt
mburpitt@canaccordquest.com

Modification ▾

Inviter des utilisateurs :

Saisissez des noms ou des adresses e-mail...

Le retour du kickban !



Google script

Ca piquouille le retour

- Vous vous rappelez du slide précédent ?

Ok mais mes Excel ont plein de VB dedans
...et ça piquouille quand même pas mal !
- Vous pouvez réaliser vous même votre legacy en javascript !
- ... ou alors mettez votre complexité métier derrières des api rest
- ... que vous partagez avec les feuilles excel executables !

Les points négatifs

Dur dur

- Ca va tanguer !
- Découvrir le langage adéquat est difficile
- Le temps de support est très important
- Les excel utilisateur c'est vraiment le bazar
- Les visiteurs antlr ca se fait en TDD (pour une fois)
- Le reporting d'erreurs google scripts est moi si
- Google excel download downtime (pas cool, mais rare)

Résumé

Créez vos langages

C'est tout bête

Utilisez Excel

Vite fait bien fait !

Utilisez Google sheet

On peut bosser en équipe !

Accompagnez le business

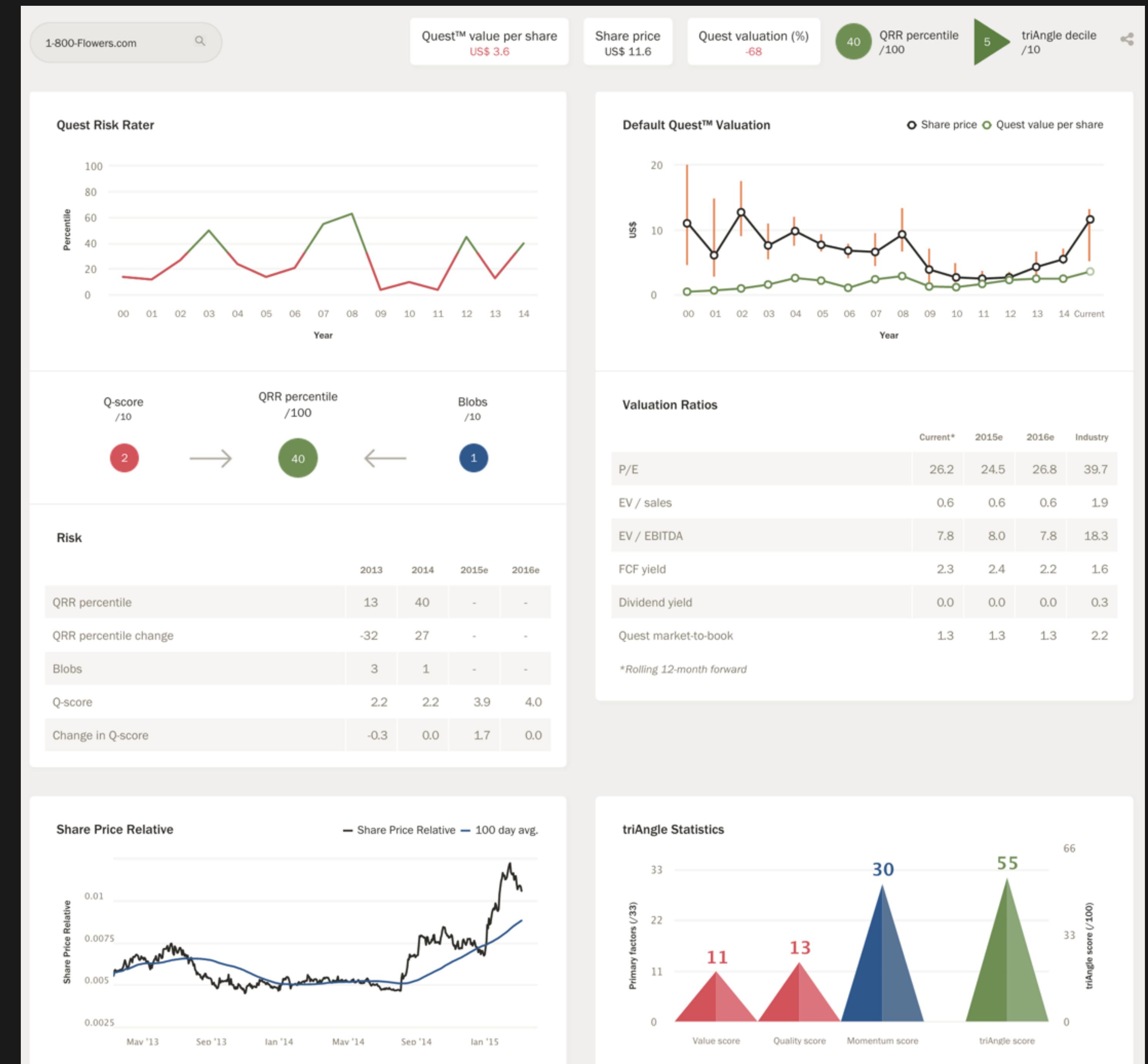
Plutôt que le coder...

Q/A

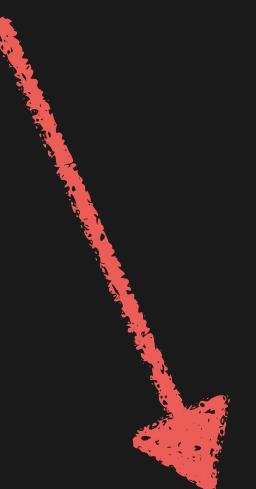
Transformé en javascript

As reported by the company. Calculate total if no separate separately.															BlackPearl Resources Inc.						
P&L	Balance sheet	Cashflow	Forecasts	Forecast history	Securities	Events	Reference data	Static data	BlackPearl Resources Inc.							No change	Debug	Import report	Company overrides		
															All overrides						
Data Items			2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000				
Sales ?			206.973	178.433	159.000	133.912	106.069	68.696	138.344	95.832	3.799	0.009	0.000	0.000	0.000	1.238	0.21				
Operating profit (ex associates) ?			36.131	8.415	1.682	7.945	-3.257	-51.126	-76.155	-63.284	-10.868	-0.501	-0.181	-0.932	-2.672	0.752	0.13				
Pretax Profit ?			36.175	10.254	1.901	13.564	-0.086	-55.300	-75.313	-235.593	-10.549	0.365	0.287	-0.424	-2.972	0.077	0.40				
Taxation ?			9.350	3.805	1.856	-5.347	0.000	-7.985	3.549	-13.650	-1.596	0.000	-0.004	0.010	-0.549	0.022	0.00				
Profit after tax (D) ? ➡			26.825	6.449	0.045	18.911	-0.086	-47.315	-78.862	-221.943	-8.953	0.365	0.291	-0.434	-2.423	0.055	0.40				
Minority/non-controlling/hybrid interest ? ⌚			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00				
Discon ops & Extraordinary items ?			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00				
Balance sheet UNLESS PREFS ARE PRIMARY ? ⌚			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00				
web ? ⌚			26.825	6.449	0.045	18.911	-0.086	-47.315	-78.862	-221.943	-8.953	0.365	⚠ 0.292	-0.434	-2.423	0.055	0.40				
Imbalance ? ➡			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.00				
DETAIL																					
Turnover (AFTER excise duty & VAT) ?			206.973	178.433	159.000	133.912	106.069	68.696	138.344	95.832	3.799	0.009	0.000	0.000	0.000	1.238	0.21				
Cost of goods sold ?			88.183	81.787	68.504	50.568	39.558	32.927	53.571	51.561	0.847	0.000	0.000	0.023	0.000	0.000	0.00				
Gross profit ?			96.292	96.646	90.496	83.344	66.511	35.448	84.773	43.417	2.205	0.000	0.000	-0.023	0.148	0.000	-0.02				
Other operating income ?			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.148	0.000	0.00				

Produit des pages web



	'1wk'(0D)	'{1,3,6}mth'(0D)	'{1,3,5,10,15}yr'(0D)
label:pr_abs	pr_abs_1W_curr	pr_abs_{1,3,6}M_curr	pr_abs_{12M,3Y,5Y,10Y,15Y}_curr
label:pr_rel	pr_rel_1W_curr	pr_rel_{1,3,6}M_curr	pr_rel_{12M,3Y,5Y,10Y,15Y}_curr
label:pr_abs_agg	level0:pr_abs_1W_curr_agg	level0:pr_abs_{1,3,6}M_curr_agg	level0:pr_abs_{12M,3Y,5Y,10Y,15Y}_curr_agg
label:pr_abs_agg	level3:pr_abs_1W_curr_agg	level3:pr_abs_{1,3,6}M_curr_agg	level3:pr_abs_{12M,3Y,5Y,10Y,15Y}_curr_agg



Formulas							Version #201504070002 Updated 07-04-2015 10:23AM ▾				
Show 10		entries						Search: <input type="text"/>			
▲ #	Name	Description	Formula	Forecast Initial Value	Condition	Iteration Range	Type	Model Specific			
161	cap_op_lse_trnover_f	Leased assets divided sales	<code>neg_cap_op_lse_f / sales_f</code>		<code>y>=1Y</code>	(1Y,2Y)	Number	INDUSTRIAL			
164	cap_trnover_f	Sales divided by the total gross capital employed in the business. This measures the efficiency of utilisation of invested funds. (forecast).	<code>sales_f / total_cap_f</code>		<code>y>=1Y</code>	(1Y,2Y)	Number	INDUSTRIAL			
168	cap_x_gdwl_f	Total capital employed ex. goodwill (forecast)	<code>total_cap_f - (c_goodwill_f - repl_gdwl_f + gdwl_net_f)</code>	<code>cap_x_gdwl(0Y)</code>	<code>y>=1Y</code>	(1Y,2Y)	Currency	INDUSTRIAL			
319	cfroc_f	Inflation-adjusted after-tax economic return on all forms of capital.	<code>IF (net_income_f = "", "", IF (RATE (asset_life_r_f , gross_cash_f , - total_cap_f , w_c_rlse_f) = "", "", RATE (asset_life_r_f , gross_cash_f , - total_cap_f , w_c_rlse_f)))</code>	<code>cfroc(0Y)</code>	<code>y>=1Y</code>	(1Y,2Y)	Number	INDUSTRIAL			
438	debt_equivs_neg_f	Forecast pensions, capitalised operating leases and preference shares (negative for charts)	<code>- debt_equivs_f</code>		<code>y>=1Y</code>	(1Y,2Y)	Currency	INDUSTRIAL			
442	debt_gross_w	Quest Gross Debt (Weighted forecast)	<code>SUMPRODUCT (debt_gross_f , f_wts ; (1Y , 2Y))</code>		<code>y=1Y</code>	1Y	Currency	INDUSTRIAL			
477	depr_assets_tot_f	Forecast total physical and non physical depreciating assets	<code>total_cap_f - w_c_rlse_f</code>		<code>y>=1Y</code>	(1Y,2Y)	Currency	INDUSTRIAL			
743	evl_ebitdar_f	Enterprise value plus capitalised operating leases divided by ebitda plus rental expense. This a variation on the more traditional EV/ebitda ratio	<code>evl_net_f / ebitdar_f</code>		<code>y>=1Y</code>	(1Y,2Y)	Number	INDUSTRIAL			
745	evl_ebitdar_high_f	(EVL high for year divided by current ebitdar for year (forecast period) (for Charting)	<code>IF (ebitdar_f > 0 , evl_net_high_f / ebitdar_f , evl_net_low_f / ebitdar_f)</code>		<code>y>=1Y</code>	(1Y,2Y)	Number	INDUSTRIAL			

var_wt_dev		by Name	Formula name, eg. acq_flag
Type	-9Y<=y<=0Y		
ALL	(-9Y,0Y)		
Sheet	var_wt_dev		
FORMULA 81 on row: 1812	R		
Description	Number		
Used to calculate the variance as intermediate step.	N		
Formula	N		
<code>var_weight * deviation / 100</code>	858		
	(-9Y,0Y)		
	p1		
	UNKNOWN		
	UNMODIFIED		
	DRVH		
	N		
Additional values	S4S D.I. (Y/N)		
Condition	FORMAT (Display Only)		
Iteration_range	Input By (GR, GS, KM, SM, VA)		
Legacy_field_name	Last Modified By (GR, GS, KM, SM, VA)		
Type	Legacy Type		
Value_type	Format (Display Only)		
Annualise	Dependency Input Range		
CHARTING D.I. (Y/N)	Data Item ID (Legacy)		
Data Item ID (Legacy)	Input By (GR, GS, KM, SM, VA)		
Dependency Input Range	Last Modified By (GR, GS, KM, SM, VA)		
Format (Display Only)	Legacy Type		
Input By (GR, GS, KM, SM, VA)	S4S D.I. (Y/N)		
Last Modified By (GR, GS, KM, SM, VA)			
Legacy Type			
S4S D.I. (Y/N)			

Values			
Show 10 entries			Search:
Date	Iteration	Value	
2014-12-31	0Y	0.05114823416180406	Status: OK Iteration range: (-9Y,0Y)
2013-12-31	-1Y	0.07088466712741057	Status Date Iteration Results Logs
2012-12-31	-2Y	0.06092235475240343	INFO 2014-12-31 0Y RESULT: 0.051148 Formula var_weight: cached Y y=0 : 2014-12-31=0.181818181818182
2011-12-31	-3Y	0	Formula deviation: cached Y y=0 : 2014-12-31=28.131528788992235
2010-12-31	-4Y	0	INFO 2013-12-31 -1Y RESULT: 0.070885 Formula var_weight: cached Y y=-1 : 2013-12-31=0.16363636363636364
2009-12-31	-5Y	0	Formula deviation: cached Y y=-1 : 2013-12-31=43.318407688973124
2008-12-31	-6Y	0	INFO 2012-12-31 -2Y RESULT: 0.060922 Formula var_weight: cached Y y=-2 : 2012-12-31=0.14545454545454545
2007-12-31	-7Y	0	Formula deviation: cached Y y=-2 : 2012-12-31=41.88411889227736
2006-12-31	-8Y	0.006337194106486198	INFO 2011-12-31 -3Y RESULT: 0.000000 Formula var_weight: cached Y y=-3 : 2011-12-31=0.12727272727272726
2005-12-31	-9Y	0.0003306005263796803	Formula deviation: cached Y y=-3 : 2011-12-31=0.0
Showing 1 to 10 of 10 entries			
			INFO 2010-12-31 -4Y RESULT: 0.000000 Formula var_weight: cached Y y=-4 : 2010-12-31=0.10909090909090909
			Formula deviation: cached Y y=-4 : 2010-12-31=0.0
			INFO 2009-12-31 -5Y RESULT: 0.000000 Formula var_weight: cached Y y=-5 : 2009-12-31=0.09090909090909091
			Formula deviation: cached Y y=-5 : 2009-12-31=0.0
			INFO 2008-12-31 -6Y RESULT: 0.000000 Formula var_weight: cached Y y=-6 : 2008-12-31=0.07272727272727272
			Formula deviation: cached Y y=-6 : 2008-12-31=0.0
			INFO 2007-12-31 -7Y RESULT: 0.000000 Formula var_weight: cached Y y=-7 : 2007-12-31=0.05454545454545454
			Formula deviation: cached Y y=-7 : 2007-12-31=0.0
			INFO 2006-12-31 -8Y RESULT: 0.006337 Formula var_weight: cached Y y=-8 : 2006-12-31=0.03636363636363636
			Formula deviation: cached Y y=-8 : 2006-12-31=17.427283792837045
			INFO 2005-12-31 -9Y RESULT: 0.000331 Formula var_weight: cached Y y=-9 : 2005-12-31=0.01818181818181818
			Formula deviation: cached Y y=-9 : 2005-12-31=1.8183028950882418

Du contexte !

Encore du contexte !

Uses	
81	var_wt_dev
80	var_weight
79	year_score_sum
78	year_score
77	deviation
76	equity
75	entity
74	fi_alg
73	grw_fade_yrs_mod1
72	cfroa_fade_yrs
71	ea_alg life_cycle_stage
70	cyclical fade_condition_3
69	cyc_condition_7
68	cyc_condition_6 fade_condition_1
67	cyc_cfroa_spread_neg_count
66	cyc_cfroa_spread_chg cyc_condition_5
65	cfroa_spread cyc_wacc_10Y_avg
64	wacc_a_tax
63	wacc_a_tax_int_f
62	wacc_a_tax4_f
61	debt_a_tax_r_f
60	corp_debt_r_f
59	corp_prem_f
58	credit_score_f eqty_a_tax_f
57	cost_eqty_f cyc_condition_3 cyc_condition_4 q_score_f weight_d4_f
56	cyc_condition_1 cyc_condition_2 leveraged_beta_f qscr_cfroa_stb_scr_f weight_e4_f
55	cyc_downtrend_1 cyc_downtrend_2 cyc_uptrend_1 cyc_uptrend_2 fade_condition_2 leveraged_beta_calculated_f qscr_cfroa_scr_f qscr_cfroa_stb_scr_int_f weight_d_f
54	cfroa_stb_f cyc_cfroa_5Y_avg_f cyc_cfroa_avg_2_0_f cyc_cfroa_stb_10Y_f leverage_mkt_f net_debt_gross_mkt_cap_f qscr_cfroa_scr_int_f
53	cfroa_f net_debt_gross_f
52	cap_x_gdwl_f net_debt_gross_int_f
51	debt_gross_f total_cap_f
50	cap_op_lse_f
49	debt_a_tax_n_f
48	corp_debt_n_f
47	corp_prem_dummy_f
46	credit_score_dummy_f
45	q_score_dummy_f



ITERATION RANGE (I.R.)	Condition	Description	{} = single elements () = range	NTF	NTF Syntax & Arguments				
C	C	Constant (dataset without date)							
d	d<=0D	Daily Historical							
w	w<=0W	Weekly Historical							
m	m<=0M	Monthly Historical							
y	y<=0Y	Yearly Historical							
0D	d=0D	Last available daily value							
0Y	y=0Y	Last available yearly value							
1W	w=1W	w=1W							
1M	m=1M	m=1M							
1Y	y=1Y	y=1Y							
1Q	q=1Q	q=1Q							
(1Y,2Y)	1Y<=y<=2Y	1Y<=y<=2Y							
{y} (same as "y")	y<=0Y	y<=0Y							
{y,1Y,2Y}	y<=2Y	y<=2Y							
(-1Y,0Y)	-1Y<=y<=0Y	-1Y<=y<=0Y							
(-2Y,0Y)	-2Y<=y<=0Y	-2Y<=y<=0Y							
(-nY,0Y)	-nY<=y<=0Y	-nY<=y<=0Y							
{-nM,0D}	-nM<=m<=0D	-nM<=m<=0D							
{-nD,0D}	-nD<=d<=0D	-nD<=d<=0D							
Iteration Range Notation	Meaning	Inclusions	Bracket Type						
(a,b)	Interval Range from "a" to "b" inclusive	all items between a and b inclusive	Bracket						
{a}	Individual Item "a"	Only item "a"	Curly Bracket						
{a,b}	Individual Items "a" & "b"	Only items "a" and "b"	Curly Bracket						
{a,b,c}	Individual Items "a", "b" & "c"	Only items "a", "b" & "c"	Curly Bracket						
Label Years (New)	Condition	S4S Label	Data Item Type	Data Item Year / Day	Year Notation	Years (Legacy)			
2Y	y=2Y	FY2	X_f	2Y	X_f(2Y)	FY2	AVERAGE	AVERAGE(X;nZ)	
1Y	y=1Y	FY1	X_f	1Y	X_f(1Y)	FY1	AVERAGE	AVERAGE(X)	
+12m	y = wfY (April 30th of 2Y)	+12m	X_w, misc	1Y	X_w(1Y), misc(1Y)	+12m	AVERAGE	AVERAGE(X; (start_date, end_date))	
Current	d=0D	Current	X, X_w, X_avg, misc	0D	X(0D)	Current	AVERAGE	AVERAGE(X; (start_date, end_date))	
0Y	y=0Y	FY0	X	0Y	X(0Y)	FY-1	AVERAGE	AVERAGE(X; nZ)	
-1Y	y=-1Y	FY-1	X	-1Y	X(-1Y)	FY-2	AVERAGE	CAGR(X; (start_date, end_date))	
(-nY,0Y) (n>=1)	-nY<=y<=0Y (n>=1)	FY-n, FY(-n+1), ..., FY-1, FY0	X	-nY, -(n-1)Y, ..., -1Y, 0Y	X(-nY, -(n-1)Y, ..., -1Y, 0Y)	FY-n, FY(-n+1), ..., FY-1, FY0	CAGR	CAGR(X; 1Y)	
(-2Y,0Y)=(-2Y,-1Y,0Y)	-2Y<=y<=0Y	FY-2, FY-1, FY0	X	-2Y, -1Y, 0Y	X(-2Y, -1Y, 0Y)	FY-2, FY-1, FY0	CAGR	CAGR(X; nY)	
X	Historical D.I.	y	ebit	IF(AND(prelim_flag >= 1, y = 0Y), adj_op_tot + amr_gdw + amr_acq_intan, adj_op_tot + amr_gdw + IF(eps_flag(1Y) = 1, amr_acq_intan, 0))	X_agg	ebit_agg	RELDIFF(X, Y)	CAGR_AGG	CAGR_AGG(X; W; nY)
X_p	Prelim D.I.	1Y	ebit_p	N/A	N/A	N/A	CAGR	CAGR(X; 1Y)	
X_f	Forecast D.I.	(1Y,2Y)	ebit_f	norm_op_pft_f	N/A	N/A	CAGR	CAGR(X; nY)	
X_w	Weighted Forecast D.I.	1Y	ebit_w	ebit_f(1Y) * f_wts(1Y) + ebit_f(2Y) * f_wts(2Y) = SUMPRODUCT(ebit_f, f_wts; (1Y,2Y))	X_w_agg	ebit_w_agg	CAGR_PCT	CFROA()	
	"Time Delayed" Weighted						CFROA_5YEAR_AVERAGE	CFROA_5YEAR_AVERAGE(CFROA_delay, CFROA_fade, CFROA_avg, grw_delay, grw_fade, grw_avg)	
							CFROC_5YEAR_AVERAGE	CFROC_5YEAR_AVERAGE(CFROC_delay, CFROC_fade, CFROC_avg, grw_delay, grw_fade, grw_avg)	
							ZERO_DAY	ZERO_DAY()	
							CONDITIONALAVG	CONDITIONALAVG()	

De la doc ...

108 fonctions

#	Run	Date	By	Duration	VEDoc	S&P	Logs	Historical	Success	Website	Jump	Status	Actions
201504070029	Petroleum Geo-Services ASA	07-04-2015 15:24PM	Geoff Ruby	22.20 s	201504070018				1		🔗	OK	Run Again
201504070028	UK	07-04-2015 15:21PM	Graham Simpson	1.401 min	201504070017				742		🔗	OK	Run Again
201504070027	UK	07-04-2015 14:56PM	Graham Simpson	1.637 min	201504070016				742		🔗	OK	Run Again
201504070026	Wowow Inc.	07-04-2015 14:46PM	Geoff Ruby	29.42 s	201504070015	⌚			1		🔗	OK	Run Again
201504070025	Wowow Inc.	07-04-2015 14:44PM	Geoff Ruby	35.71 s	201504070014	⌚			1		🔗	OK	Run Again
201504070024	UK	07-04-2015 14:39PM	Graham Simpson	1.548 min	201504070013				742		🔗	OK	Run Again
201504070023	National Research Corp.	07-04-2015 14:26PM	Geoff Ruby	20.90 s	201504070012				1		🔗	OK	Run Again
201504070022	Henkel AG & Co. KGaA	07-04-2015 14:18PM	Geoff Ruby	22.50 s	201504070011				1		🔗	OK	Run Again
201504070021	UK	07-04-2015 14:14PM	Graham Simpson	1.422 min	201504070010				742		🔗	OK	Run Again
201504070020	UK	07-04-2015 14:04PM	Graham Simpson	1.242 min	201504070009				742				

Business in control !

QUEST SCENARIO

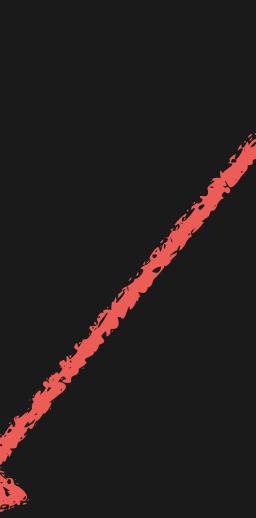
	Auto Infill	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Sales £ (m)	<input checked="" type="radio"/> <input type="radio"/>	4,959.0	5,069.0	4,874.0	<input type="text"/>									
Sales growth %	<input type="radio"/>			2.2		-3.8								
EBITDA £ (m)	<input checked="" type="radio"/> <input type="radio"/>	909.0	895.0	839.0	<input type="text"/>									
EBITDA margin %	<input type="radio"/>		18.3	17.7	17.2									
Other cash in/out £ (m)	<input type="radio"/>		0	0	0	<input type="text"/>								
Normalised tax rate %	<input type="radio"/>		24.9	17.5	15.1	<input type="text"/>								
DPS (p)	<input checked="" type="radio"/> <input type="radio"/>	45.0	48.0	51.0	<input type="text"/>									
DPS growth %	<input type="radio"/>			6.7	6.3									
Capex £ (m)	<input checked="" type="radio"/> <input type="radio"/>	-147	-152	-171	<input type="text"/>									
Capex / sales %	<input type="radio"/>		3.0	3.0	3.5									
Working Cap £ (m)	<input checked="" type="radio"/> <input type="radio"/>	-536.0	-489.0	-329.0	<input type="text"/>									
Working Cap / sales %	<input type="radio"/>		-10.8	-9.6	-6.8									

Additional Parameters

Your	Quest	Delay (yrs)	Your	Quest	Fade (yrs)	Your	Quest	Average (%)	Your	Quest	
Cost of capital (%)	<input type="text"/>	4.86	CFROA	<input type="text"/>	0	CFROA	<input type="text"/>	15	CFROA	<input type="text"/>	4.86
Real growth (%)	<input type="text"/>	6.17	Growth	<input type="text"/>	0	Growth	<input type="text"/>	15	Growth	<input type="text"/>	1.80

Reset **Results**

POI à l'ouvrage



Annexes

Références

- <http://www.antlr.org/>
- <http://poi.apache.org/>
- <http://eclipse.org/Xtext/>
- <http://labs.carrotsearch.com/junit-benchmarks.html>
- Le code : <https://github.com/framiere/devoxx-grand-mere/>