



A Business User's Logistic Case: From 'Deterministic Analytics' to Colorful XLS Reports

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Advance Shipment Notification (ASN) Use Case

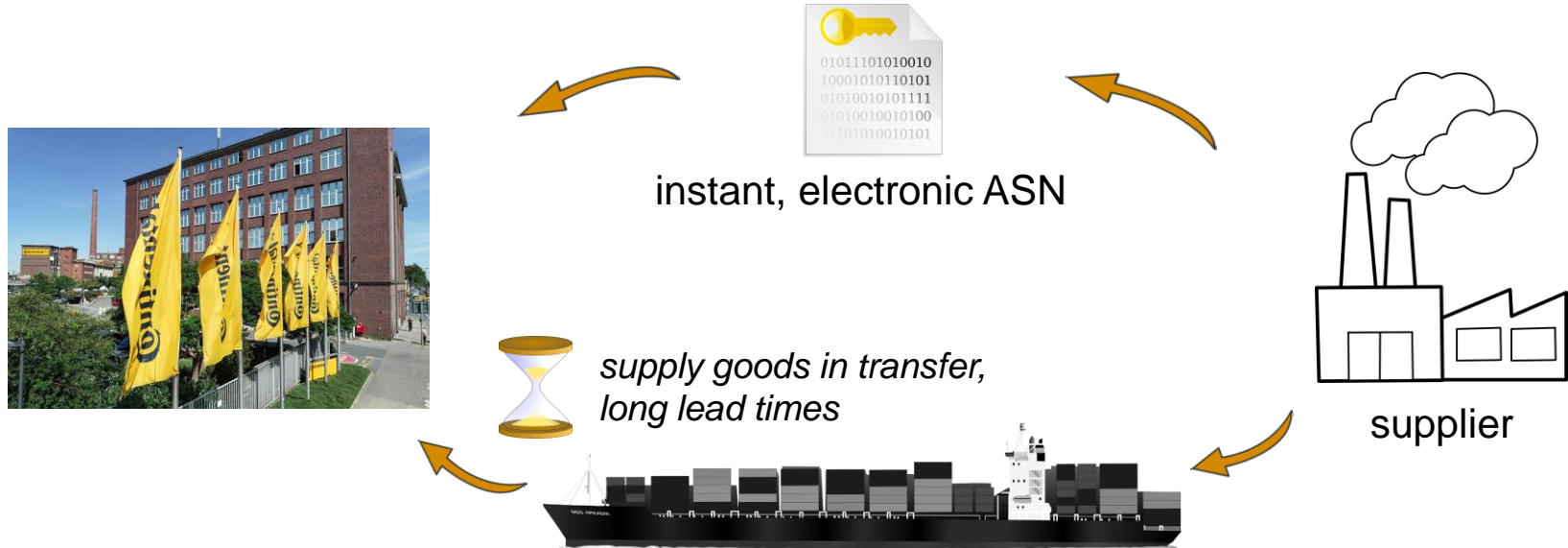


image source: pixabay.com

Advance Shipment Notification (ASN) Use Case



Movements (goods receipt):

Plant, Global Vendor, Local Vendor, Country, Doc#, monthly GR count



ASN actuals:

Plant, Local Vendor, Doc#, monthly received ASN count



ASN totals:

Month, Global Vendor, Local Vendor, Country, received total ASNs



Lead-BU mapping



Vendor mapping



Rule system according to improvement difficulty:



ASN received



If ASN available in same country:
Goods receipt -  , else 0



If ASN available in any country:
Goods receipt -  -  , else 0



Goods receipt -  -  - 

Σ

absolute / relative

image source: pixabay.com

Advance Shipment Notification (ASN) Use Case



business user

VS.



data scientist

image source: pixabay.com

Learning:

‘Analytics’ to a business user is something completely different than to a data scientist.

Advance Shipment Notification (ASN) Use Case

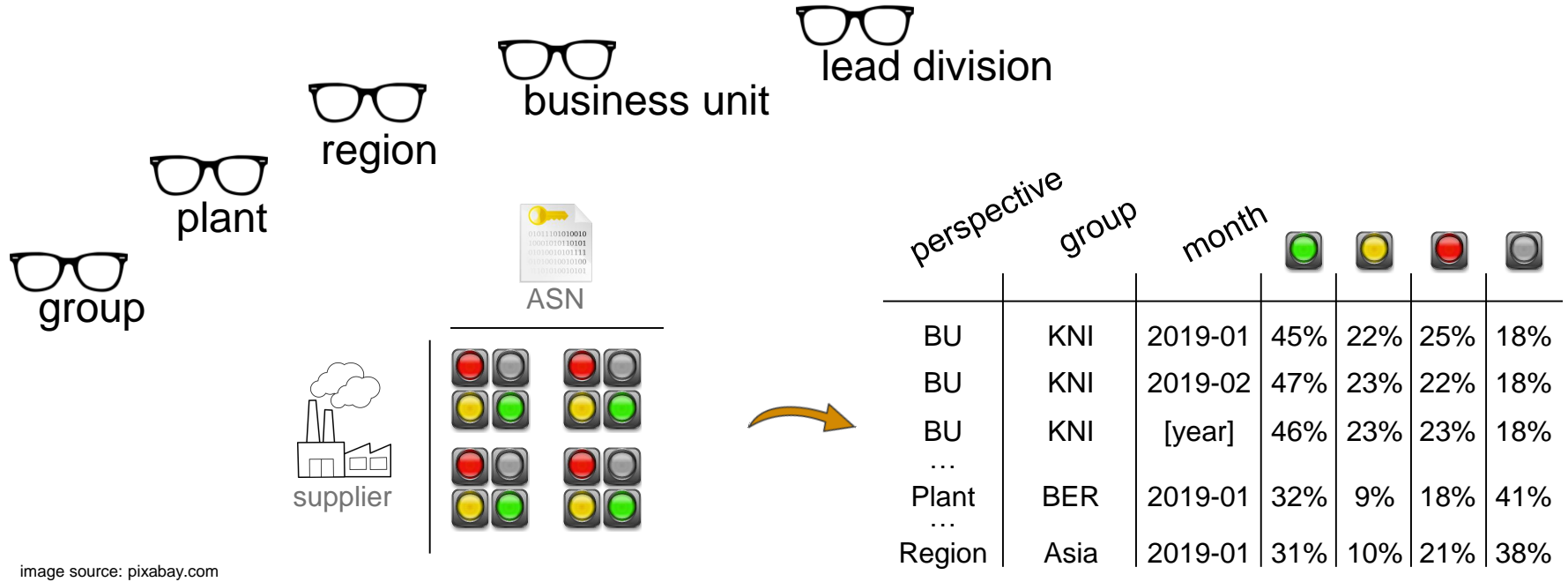
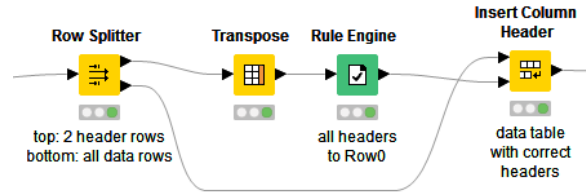


image source: pixabay.com

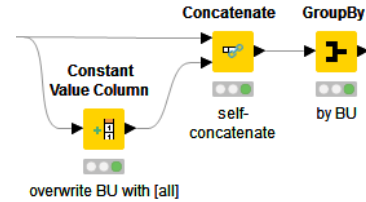
Advance Shipment Notification (ASN) Use Case



Deterministic Analytics Modelling Patterns:



Col0	Col1	Col2	Col3	Col4	Col5	Col6
FiRe Plant	Global Vend...	Vendor R/3	Vendor R/3 ...	Purchase Documen...	Calendar Year/Month	06.2017 07.2017
FiRe Plant	Global ...	Vendor ...	Vendor ...	Purcha...	06.2017	07.2017



A	5
A	2
B	4
A	5
A	2
B	4
[all]	5
[all]	2
[all]	4
A	7
B	4
[all]	11

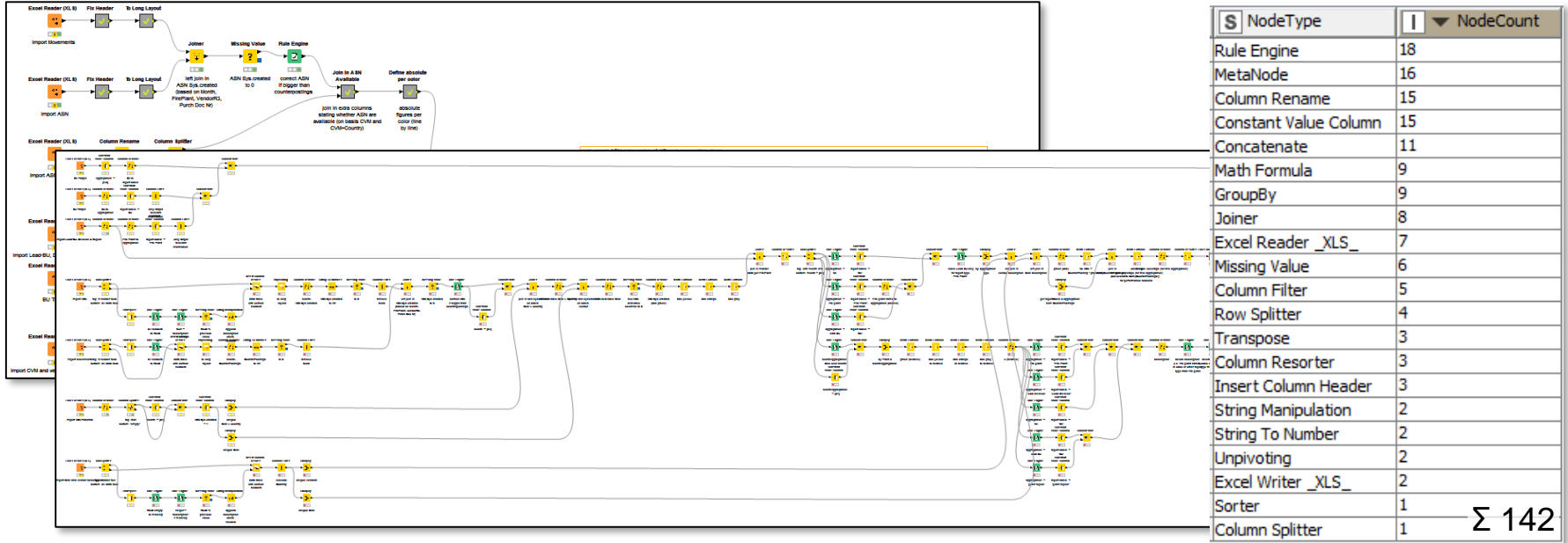
➤ Duplicate header resolution pattern

➤ Joint detail / total aggregation pattern

Learning:

When teaching KNIME, also
train patterns, not only nodes.

Advance Shipment Notification (ASN) Use Case



Learning:

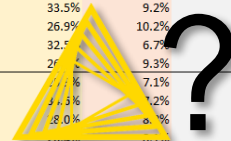
Don't try to encode complex domain logic in spreadsheets, data warehouses, or dashboards.

Advance Shipment Notification (ASN) Use Case

perspective	aggregation	MonthAggregation	goods receipt	green (abs)	green (relative)	yellow (relative)	red (relative)	grey (relative)
BU	KNI	08.2018	4705	2729	0.580021254	0.289695431	0.080721446	0.049561869
BU	KNI	09.2018	4859	2697	0.55505248	0.335980711	0.091539616	0.018033194
BU	KNI	10.2018	4797	2470	0.514905149	0.269390863	0.101591448	0.11411254
BU	KNI	11.2018	4758	2546	0.535098781	0.325228426	0.067394818	0.072277975
BU	KNI	[all]	19119	10442	0.546158272	0.269390863	0.092790845	0.09166002
BU	BER	08.2018	7456	3430	0.460032189	0.259238579	0.071417951	0.209311282
BU	BER	09.2018	7406	3592	0.485012152	0.345532995	0.071669397	0.097785456
BU	BER	10.2018	7408	3630	0.490010799	0.279543147	0.087761929	0.142684125
BU	BER	11.2018	7334	3447	0.470002727	0.264314721	0.081224337	0.184458215
BU	BER	[all]	29604	14099	0.476253209	0.325228426	0.075943975	0.122574389
Plant	54	08.2018	2820	888	0.314893617	0.264923858	0.056331202	0.363851323
Plant	54	09.2018	2880	979	0.339930556	0.305532995	0.080721446	0.273815004
Plant	54	10.2018	2964	993	0.335020243	0.310609137	0.068903493	0.285467127
Plant	54	11.2018	2890	968	0.334948097	0.275076142	0.098574099	0.291401662
Plant	54	[all]	11554	3828	0.331313831	0.280152284	0.072172288	0.316361597
Plant	72	08.2018	9150	5307	0.58	0.310609137	0.055576864	0.053813998
Plant	72	09.2018	9227	5721	0.620028178	0.285228426	0.056079756	0.038663639
Plant	72	10.2018	9123	5611	0.615038913	0.254771574	0.068400601	0.061788913
Plant	72	11.2018	9071	5669	0.624958659	0.275076142	0.067897709	0.032067489
Plant	72	[all]	36571	22308	0.609991523	0.300456853	0.062114456	0.027437168
Lead Division D	08.2018	54662	12299	0.225009915	0.325228426	0.060102889	0.38966777	
Lead Division D	09.2018	54673	13122	0.240008779	0.325228426	0.093796628	0.340966166	
Lead Division D	10.2018	54782	15887	0.290004016	0.31	0.064126022	0.335869962	
Lead Division D	11.2018	54637	14206	0.260006955	0.259238579	0.067646264	0.413108203	
Lead Division D	[all]	218754	55514	0.253773645	0.259238579	0.061611564	0.425376212	
Lead Division F	08.2018	30983	11154	0.360003873	0.320152284	0.059348552	0.260495291	
Lead Division F	09.2018	31075	13673	0.44	0.360761421	0.08047	0.118768579	
Lead Division F	10.2018	31099	12129	0.390012541	0.289695431	0.10511169	0.215180338	
Lead Division F	11.2018	31037	13191	0.42500886	0.315076142	0.103351569	0.156563428	
Lead Division F	[all]	124194	50147	0.403779571	0.299847716	0.075943975	0.220428738	

vs.

perspective	aggregation	MonthAggregation	goods receipt	green (abs)	green (relative)	yellow (relative)	red (relative)	grey (relative)
BU	KNI	08.2018	4705	2729	58.0%	29.0%	8.1%	5.0%
BU	KNI	09.2018	4859	2697	55.5%	33.5%	9.2%	1.8%
BU	KNI	10.2018	4797	2470	51.5%	26.9%	10.2%	11.4%
BU	KNI	11.2018	4758	2546	53.5%	32.5%	6.7%	7.2%
BU	KNI	[all]	19119	10442	54.6%	26.9%	9.3%	9.2%
BU	BER	08.2018	7456	3430	46.0%	27.1%	7.1%	20.9%
BU	BER	09.2018	7406	3592	48.5%	34.1%	1.2%	9.8%
BU	BER	10.2018	7408	3630	49.0%	28.0%	8.8%	14.3%
BU	BER	11.2018	7334	3447	47.0%	27.1%	8.7%	18.4%
BU	BER	[all]	29604	14099	47.6%	32.5%	7.6%	12.3%
Plant	54	08.2018	2820	888	31.5%	26.5%	5.6%	36.4%
Plant	54	09.2018	2880	979	34.0%	30.6%	8.1%	27.4%
Plant	54	10.2018	2964	993	33.5%	31.1%	6.9%	28.5%
Plant	54	11.2018	2890	968	33.5%	27.5%	9.9%	29.1%
Plant	54	[all]	11554	3828	33.1%	28.0%	7.2%	31.6%
Plant	72	08.2018	9150	5307	58.0%	31.1%	5.6%	5.4%
Plant	72	09.2018	9227	5721	62.0%	28.5%	5.6%	3.9%
Plant	72	10.2018	9123	5611	61.5%	25.5%	6.8%	6.2%
Plant	72	11.2018	9071	5669	62.5%	27.5%	6.8%	3.2%
Plant	72	[all]	36571	22308	61.0%	30.0%	6.2%	2.7%
Lead Division D	08.2018	54662	12299	22.5%	32.5%	6.0%	39.0%	
Lead Division D	09.2018	54673	13122	24.0%	32.5%	9.4%	34.1%	
Lead Division D	10.2018	54782	15887	29.0%	31.1%	6.4%	33.6%	
Lead Division D	11.2018	54637	14206	26.0%	28.0%	6.8%	41.3%	
Lead Division D	[all]	218754	55514	25.4%	25.9%	6.2%	42.5%	
Lead Division F	08.2018	30983	11154	36.0%	32.0%	5.9%	26.0%	
Lead Division F	09.2018	31075	13673	44.0%	36.1%	8.1%	11.9%	
Lead Division F	10.2018	31099	12129	39.0%	28.5%	6.5%	21.5%	
Lead Division F	11.2018	31037	13191	42.5%	31.1%	6.8%	15.7%	
Lead Division F	[all]	124194	50147	40.4%	30.0%	7.6%	22.0%	



Continental Nodes for KNIME extension!

(all data are displayed in randomized form)



XLS Formatter Nodes explained

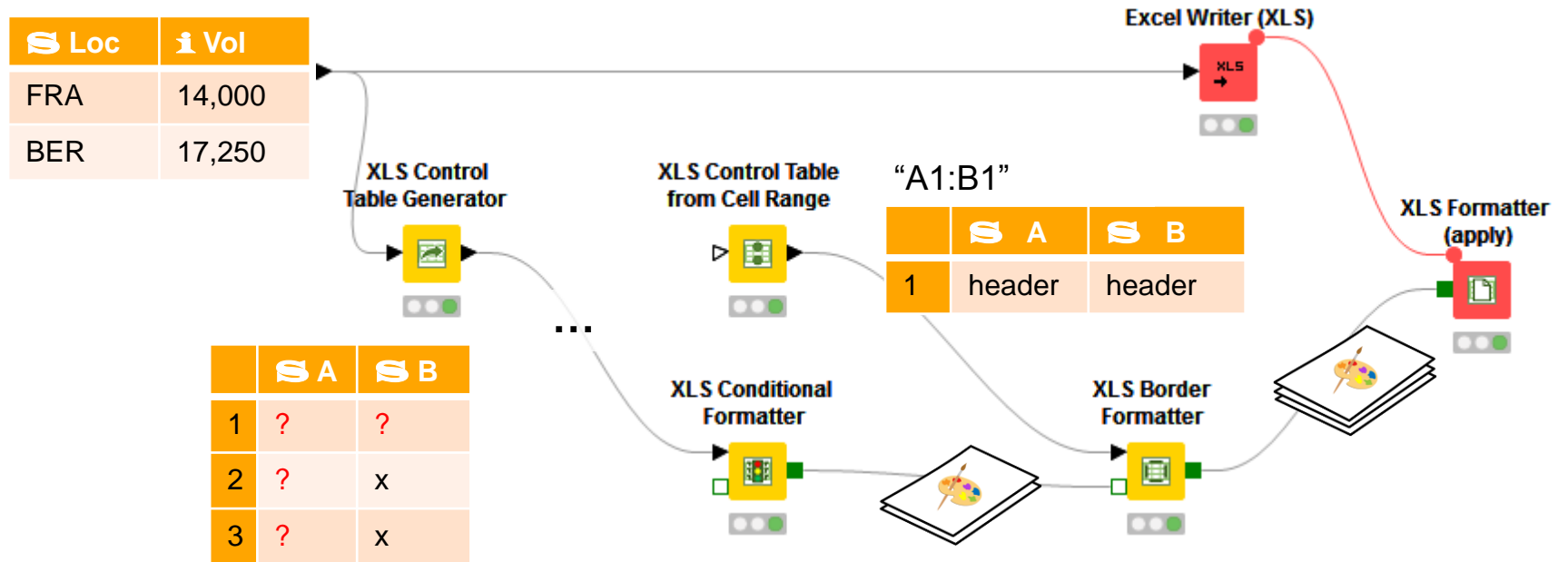
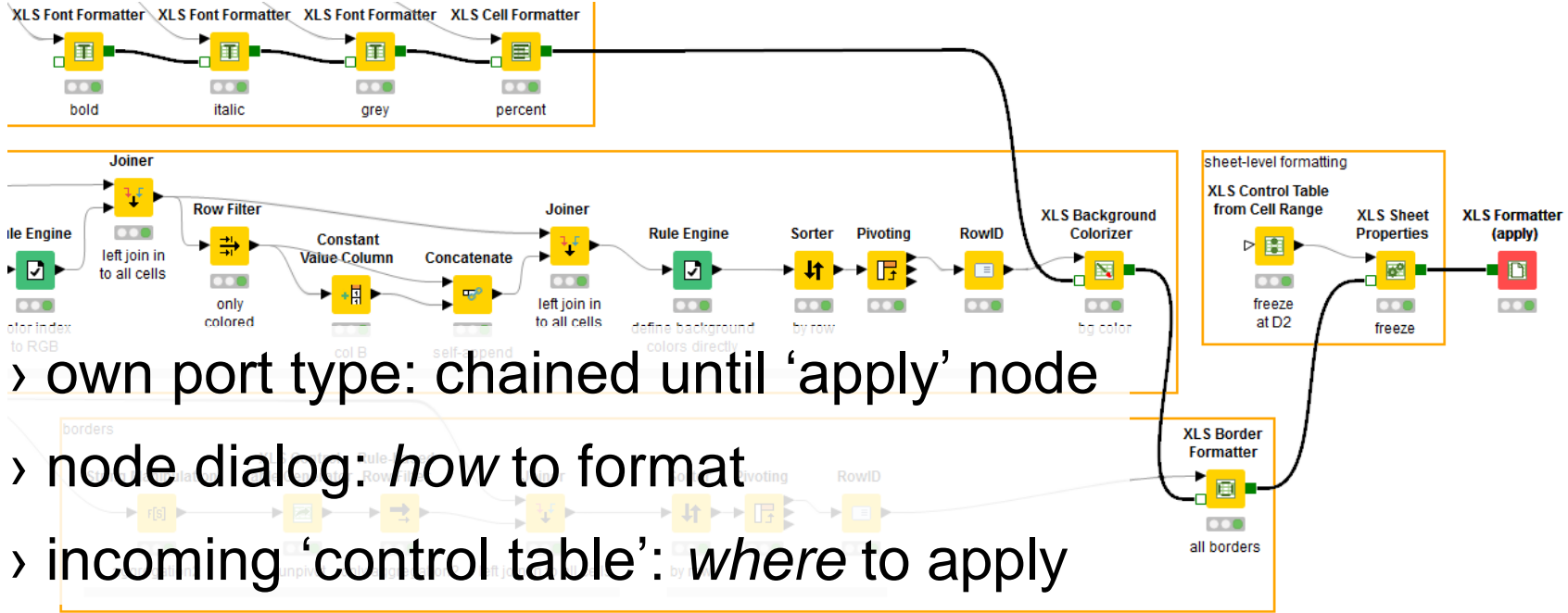


image source: pixabay.com

XLS Formatter Nodes explained

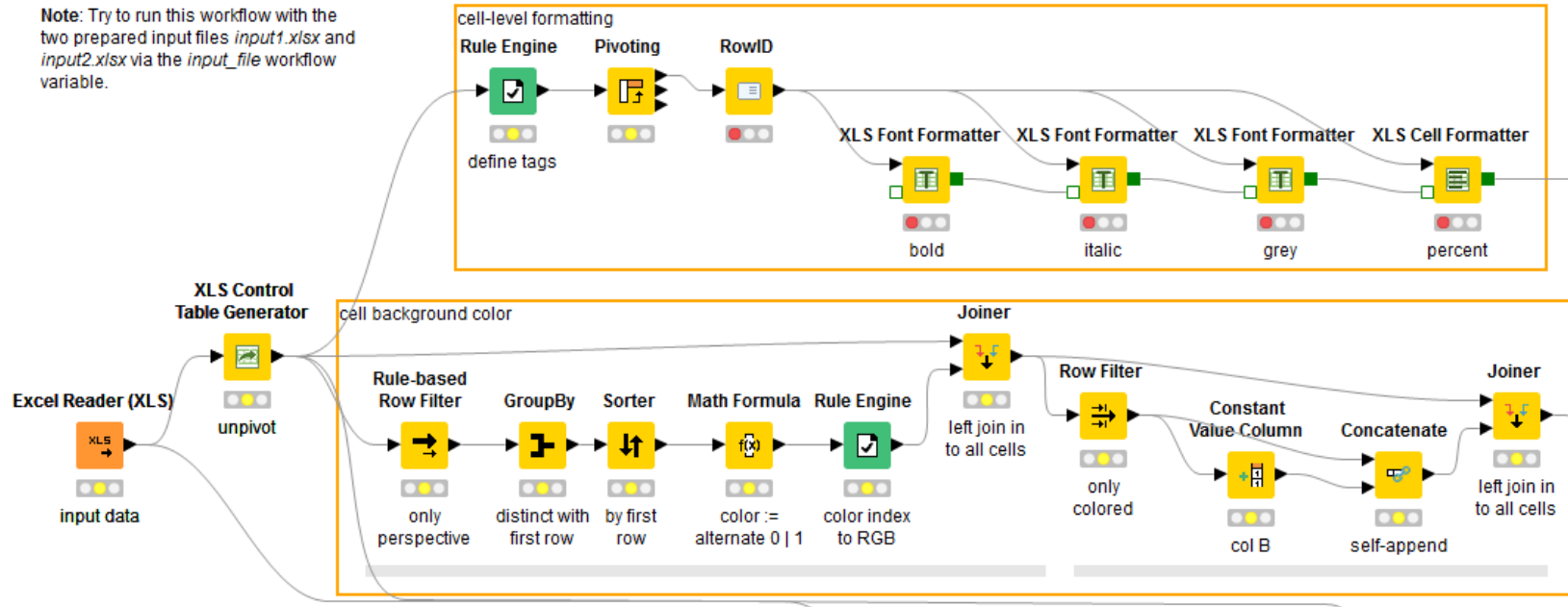


Live Demo:

Continental Nodes for KNIME Community Extension

Continental Nodes for KNIME Demo

Note: Try to run this workflow with the two prepared input files *input1.xlsx* and *input2.xlsx* via the *input_file* workflow variable.



Continental Nodes for KNIME Demo

S	S	S	I	I
perspe...	aggreg...	MonthA...	goods r...	green (...)
BU	KNI	08.2018	4705	2729
BU	KNI	09.2018	4859	2697
BU	KNI	10.2018	4797	2470

Dialog - 0:2 - XLS Control Table Generator (unpivot)

File

Options | Flow Variables | Job Manager Selection | Memory Policy

Shift Rows Option

write column header to first row

Result Table Structure Options

unpivot result table (for easier post-processing and re-pivoting)

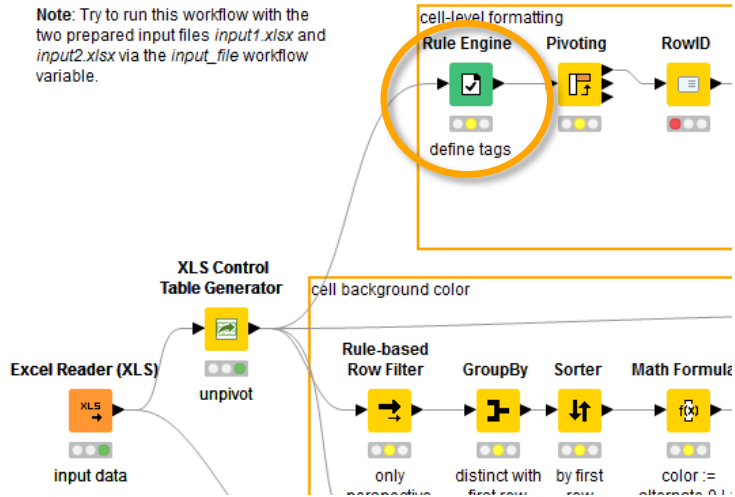
add more header columns

OK Apply Cancel ?

S	S	S	I	S	I	S	S
Cell	Column	Column (comparable)	Column (number)	Column name	Row	RowID	Value
A1	A	00A	1	perspective	1	?	perspective
B1	B	00B	2	aggregation	1	?	aggregation
C1	C	00C	3	MonthAggregation	1	?	MonthAggregation
D1	D	00D	4	goods receipt	1	?	goods receipt
E1	E	00E	5	green (abs)	1	?	green (abs)
F1	F	00F	6	green (relative)	1	?	green (relative)
G1	G	00G	7	yellow (relative)	1	?	yellow (relative)
H1	H	00H	8	red (relative)	1	?	red (relative)
I1	I	00I	9	grey (relative)	1	?	grey (relative)
A2	A	00A	1	perspective	2	Row0	BU
B2	B	00B	2	aggregation	2	Row0	KNI
C2	C	00C	3	MonthAggregation	2	Row0	08.2018
D2	D	00D	4	goods receipt	2	Row0	4705
E2	E	00E	5	green (abs)	2	Row0	2729
F2	F	00F	6	green (relative)	2	Row0	0.580021254
G2	G	00G	7	yellow (relative)	2	Row0	0.289695431
H2	H	00H	8	red (relative)	2	Row0	0.080721446
I2	I	00I	9	grey (relative)	2	Row0	0.049561869
A3	A	00A	1	perspective	3	Row1	BU
B3	B	00B	2	aggregation	3	Row1	KNI
C3	C	00C	3	MonthAggregation	3	Row1	09.2018

Continental Nodes for KNIME Demo

Note: Try to run this workflow with the two prepared input files *input1.xlsx* and *input2.xlsx* via the *input_file* workflow variable.



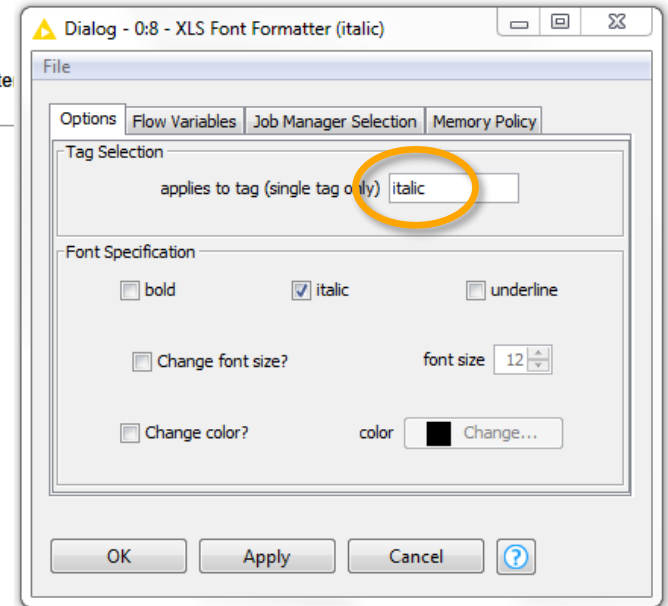
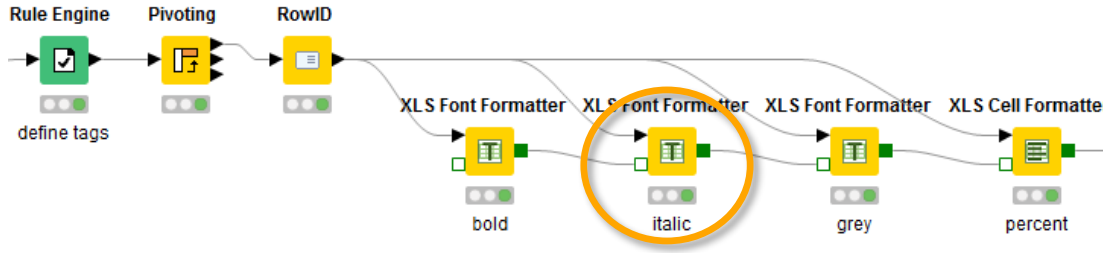
Expression

```

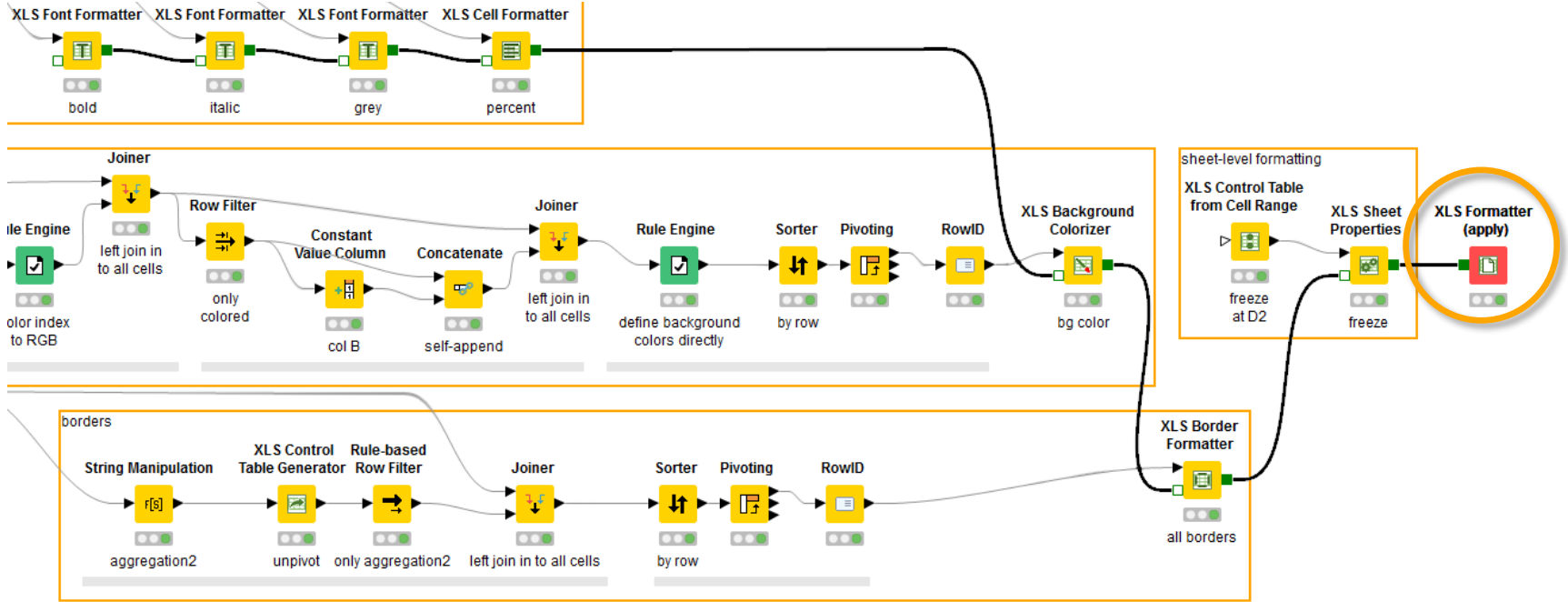
$ 1 $Row$ = 1 => "bold"
$ 2 $Column$ = "C" AND $Value$ = "[all]" => "italic"
$ 3 $Column name$ = "goods receipt" => "grey"
$ 4 $Column name$ LIKE "*(relative)" => "percent"
    
```

Row ID	S_00A	S_00B	S_00C	S_00D	S_00E	S_00F	S_00G	S_00H	S_00I
1	bold	bold	bold	bold	bold	bold	bold	bold	bold
2	?	?	?	grey	?	percent	percent	percent	percent
3	?	?	?	grey	?	percent	percent	percent	percent
4	?	?	?	grey	?	percent	percent	percent	percent
5	?	?	?	grey	?	percent	percent	percent	percent
6	?	?	italic	grey	?	percent	percent	percent	percent
7	?	?	?	grey	?	percent	percent	percent	percent
8	?	?	?	grey	?	percent	percent	percent	percent
9	?	?	?	grey	?	percent	percent	percent	percent
10	?	?	?	grey	?	percent	percent	percent	percent
11	?	?	italic	grey	?	percent	percent	percent	percent
12	?	?	?	grey	?	percent	percent	percent	percent

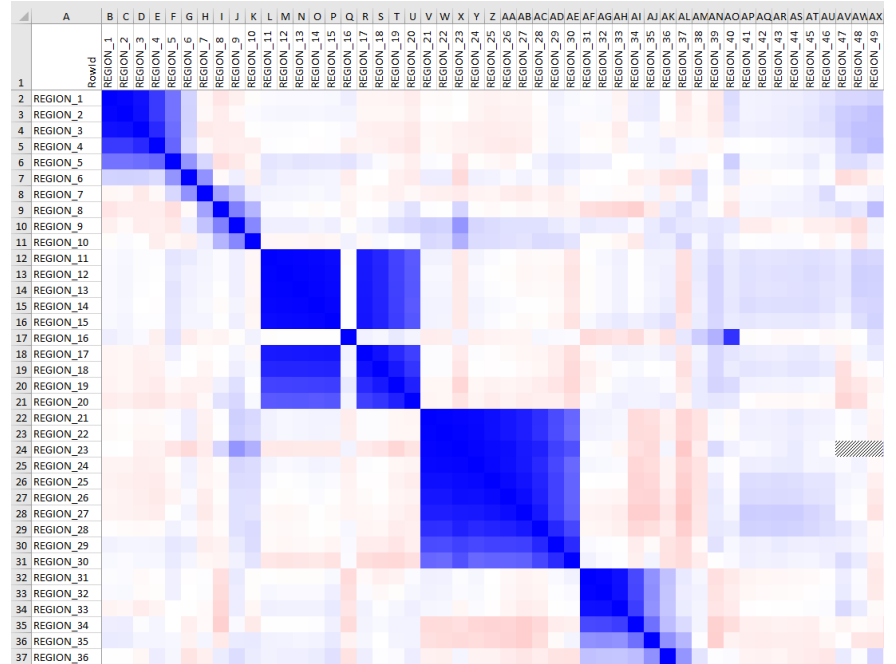
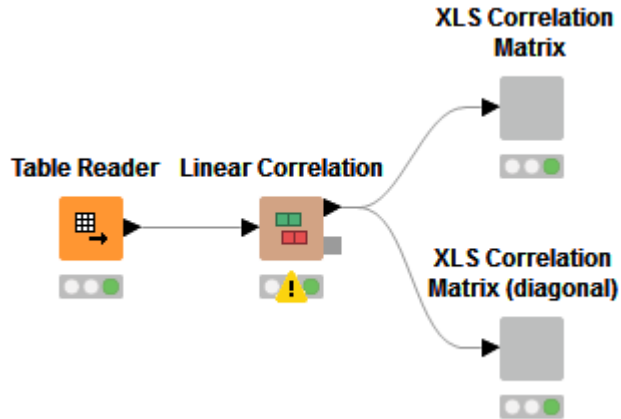
Continental Nodes for KNIME Demo



Continental Nodes for KNIME Demo



Continental Nodes for KNIME Demo



Dr. Arne Beckhaus

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Division Chassis & Safety