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Coercing scalability of six-variables out of two in the free student demo of Meth8/VŁ4

We assume the method and apparatus of Meth8/VŁ4 with Tautology as the designated proof value, **F** as contradiction, N as truthity (non-contingency), and C as falsity (contingency). The 16-valued truth table is row-major and horizontal, or repeating fragments of 128-tables, sometimes with table counts, for more variables. (See ersatz-systems.com.)

LET ~ Not, ¬ ; + Or, ∨, ∪, ⊔ , | ; - Not Or; & And, ∧, ∩, ⊓, ·, ∘ , ⊗ ; \ Not And, ↑ ;
> Imply, greater than, →, ⇒ , ↦, ≻, ⊃, ⇸ ; < Not Imply, less than, ∈, ≺, ⊂, ⊬, ⊭, ←, ≲ ;
= Equivalent, ≡, :=, ⇔, ↔, ≙, ≈, ≃ ; @ Not Equivalent, ≠, ⊕ ;
% possibility, for one or some, ∃, ∃!, ◊, M ; # necessity, for every or all, ∀, □, L ;
(z=z) T as tautology, ⊤, ordinal 3 ; (z@z) **F** as contradiction, Ø, Null, ⊥ , zero ;
(%z>#z) N as non-contingency, Δ, ordinal 1 ; (%z<#z) C as contingency, ∇, ordinal 2 ;
~(y < x) (x ≤ y), (x ⊆ y), (x ⊑ y); ~(x < y) (x ≥ y); (A=B) (A~B).
Notes: for clarity, we usually distribute quantifiers onto each designated variable; and for ordinal arithmetic, the result is implied.

In the free student demo that supports 2-variables, using the prime and double-prime designation increases the number from 2-variables to 6-variables with 16-valued truth tables. The coercion uses the ordinal numbers of 1 as (%p>#p) or (%q>#q) and 2 as (%p<#p) or (%q<#q) as scalars to overload p and q.

p:	p=(p=p) ;	**F**T**F**T **F**T**F**T **F**T**F**T **F**T**F**T
q:	q=(q=q) ;	**FF**TT **FF**TT **FF**TT **FF**TT
p':	p&(%p>#p) ;	**F**N**F**N **F**N**F**N **F**N**F**N **F**N**F**N
q':	q&(%q>#q) ;	**FF**NN **FF**NN **FF**NN **FF**NN
p'':	p&(%p<#p) ;	**F**C**F**C **F**C**F**C **F**C**F**C **F**C**F**C
q'':	q&(%q<#q) ;	**FF**CC **FF**CC **FF**CC **FF**CC

This scalability technique expands a product version of n-variables to an over-capacity of n*3-variables. For example, this effectively overloads the 4-variables of the standard edition into 12-variables, and the 11-variables of the extended version into 33-variables. (Similarly, the 20- and 22-variable editions expand to 60- and 66-variables, while still fitting on a 4.7 GB CD-ROM.)

The advantage is that truth table size is unchanged from the initial respective size of 2-, 4-, or 11-variables. This also serves to minimize the overall number of 16-valued truth tables as horizontal rows in the larger, many-variabled truth tables.

Scalability in user practice may involve much more typing of input scripts because variable names expand from 1-character for 1-variable into potentially 9-characters for each of n-variables.

However, what is avoided by contrast to the other proof assistants is their building of enormous trees to search for counter-examples as dictated by intuitionistic logic systems using the lambda calculus.

Hence Meth8/VŁ4 can perform magnitudes faster than other assistants. This advance is due to logic table lookup technology (LT^2), pronounced LT-squared.