Syntax highlighting definitions for Vensim™

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# Vensim model files (.mdl)

Comment: the definitions should be created with and without underscores in keywords. For a better overview, only identifiers without an underscore are listed here.

## Stocks

|  |  |
| --- | --- |
| Identifier | INTEG ( |
| Style | **bold bright red** |

## Units

|  |  |
| --- | --- |
| Identifier | ~ unit \n  ~ |
| Style | green |

## Comments

|  |  |
| --- | --- |
| Identifier | ~ comment \n  | \n |
| Style | green |

## Math operators

|  |  |
| --- | --- |
| Identifier | + - \* / < > <= >= , ^ |
| Style | orange |

Difficulty: A “=” within a formula should be colored differently than one that separates left and right side of the equation

## Subscripts

|  |  |
| --- | --- |
| Identifier | [] |
| Style | ***bold italic*** |

Currently, this also styles the scale of lookups the same way, as this also used square brackets. This could be differentiated as the scale of lookups always has a preceding parenthesis with a carriage return in between.

## Lookups

|  |  |
| --- | --- |
| Identifier | WITH LOOKUP |
| Style | dark blue |

Currently with same Style than built-in functions. Could be made to look different.

## Built-in Functions with colons around

|  |  |
| --- | --- |
| Identifiers | :MACRO:  :END OF MACRO:  :HOLD BACKWARD:  :IMPLIES:  :INTERPOLATE:  :LOOK FORWARD:  :NA:  :RAW:  :TEST INPUT:  :THE CONDITION:  :AND:  :OR:  :NOT: |
| Style | light coral |

Could have different color than other built-in-functions?

## Built-in functions with subsequent parenthesis

|  |  |
| --- | --- |
| Identifier | ABS()  ACTIVE INITIAL()  ALLOCATE AVAILABLE()  ALLOCATE BY PRIORITY ()  ALLOC P()  ARCCOS()  ARCSIN()  ARCTAN()  COS()  COSH()  CUMULATE()  CUMULATEF()  DELAY BATCH()  DELAY CONVEYOR()  DELAY FIXED()  DELAY INFORMATION()  DELAY MATERIAL()  DELAY N()  DELAY PROFILE()  DELAY1()  DELAY3()  DELAY3I()  DELAYP()  DEMAND AT PRICE()  DEPRECIATE BY SCHEDULE()  DEPRECIATE STRAIGHTLINE()  ELMCOUNT()  EXP()  FIND ZERO()  FORECAST()  GAME()  GAMMA LN()  GET 123 CONSTANTS()  GET 123 DATA()  GET DATA AT TIME()  GET DATA BETWEEN TIMES()  GET DATA FIRST TIME()  GET DATA LAST TIME()  GET DATA TOTAL POINTS()  GET XLS CONSTANTS()  GET XLS DATA()  IF THEN ELSE()  INITIAL()  INTEGER()  INTERNAL RATE OF RETURN()  INVERT MATRIX()  LN()  LOG()  LOOKUP AREA()  LOOKUP BACKWARD()  LOOKUP EXTRAPOLATE()  LOOKUP FORWARD()  LOOKUP INVERT()  LOOKUP SLOPE()  MARKETP()  MAX()  MESSAGE()  MIN()  MODULO()  NPV()  NPVE()  NET PRESENT VALUE()  POWER()  PROD()  PULSE()  PULSE TRAIN()  QUANTUM()  QUEUE AGE AVERAGE()  QUEUE AGE IN RANGE()  QUEUE AGE OLDEST()  QUEUE ATTRIB AVERAGE()  QUEUE ATTRIB IN RANGE()  QUEUE ATTRIB MAX()  QUEUE ATTRIB MIN()  QUEUE ATTRIB QUANTITY()  QUEUE FIFO()  QUEUE FIFO ATTRIB()  RAMP()  RANDOM BETA()  RANDOM BINOMIAL()  RANDOM EXPONENTIAL()  RANDOM GAMMA()  RANDOM LOOKUP()  RANDOM NEGATIVE BINOMIAL()  RANDOM NORMAL()  RANDOM POISSON()  RANDOM TRIANGULAR()  RANDOM UNIFORM()  RANDOM WEIBULL()  RC COMPARE()  RC COMPARE CHECK()  RC DECAY()  RC DECAY CHECK()  RC GROW()  RC GROW CHECK()  RC RAMP()  RC RAMP CHECK()  RC STEP()  RC STEP CHECK()  REINITIAL()  SAMPLE IF TRUE()  SHIFT IF TRUE()  SIN()  SINH()  SINTEG()  SMOOTH()  SMOOTHI()  SMOOTH N()  SMOOTH3()  SMOOTH3I()  SQRT()  STEP()  SUM()  SUPPLY AT PRICE()  TABBED ARRAY()  TAN()  TANH()  TIME BASE()  TIME SHIFT()  TREND()  VECTOR ELM MAP()  VECTOR RANK()  VECTOR REORDER()  VECTOR SELECT()  VECTOR SORT ORDER()  VMAX()  VMIN()  WITH LOOKUP()  X IF MISSING()  XIDZ()  ZIDZ() |
| Style | dark blue |

Some newer functions of the more recent versions of Vensim may be missing here. Built-in function itself only, not parenthesis nor its content. Ideally, parenthesis would also be colored.

## Parenthesis (content of built-in functions, and Stock functions)

|  |  |
| --- | --- |
| Identifier | (,) |
| Style | *italic* |

Improvement potential: differentiate between built-in functions and stock functions

## Groups

|  |  |
| --- | --- |
| Identifier | \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  .Grouptitle  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*~ |
| Style | **bold** |

Note that the subsequent comment gets colored green because of the identifier there being the same as for equation comments

## Sketch Information

|  |  |
| --- | --- |
| Identifier | \\\---/// |
| Style | grey |

The sketch information is always ending the mdl file, so anything following the identifier can be included.

## Not yet implemented: Left side of equation

|  |  |
| --- | --- |
| Identifier | \n  Variable name = |
| Style | not yet implemented |

## Not yet implemented: Numbers

|  |  |
| --- | --- |
| Identifier | 1,2,3,4,5,6,7,8,9,0 |
| Style | not yet implemented |

(Without the commas, incl. Decimal separator”.” E.g. 3.45)

## Not yet implemented: Vector function subscript identifier

|  |  |
| --- | --- |
| Identifier | ! |
| Style | not yet implemented |

Extra Emphasis could be helpful for this, e.g. yellow background.

## Not yet implemented: Vector mapping

|  |  |
| --- | --- |
| Identifier | -> |
| Style | not yet implemented |

Maybe give another color to this mapping arrow?

Difficulty: How to prevent it from being colored as if it was a “minus” and a “greater than”?

## Not yet implemented: Undefined function

|  |  |
| --- | --- |
| Identifier | A FUNCTION OF() |
| Style | not yet implemented |

E.g.: Red and bold with black background?

## Not yet implemented: Built-in Variables

|  |  |
| --- | --- |
| Identifier | Time  Time Step  Initial Time  Final Time  SAVEPER |
| Style | not yet implemented |

.Other variables that should have a special color?

## Not yet implemented: Variable names with special characters in them

|  |  |
| --- | --- |
| Identifier | “” |
| Style | not yet implemented |

Vensim uses these, when Umlauts or other special characters primarily in languages other than English are used. Maybe the “” should have a different color?

First and foremost, special characters should be avoided in any form of computer aided data processing!

# Vensim Graph Definition file (.vgd)

|  |  |
| --- | --- |
| Identifier | :GRAPH |
| Style | **text bold black, background bright green until EOL** |

|  |  |
| --- | --- |
| Identifier | :DATASET |
| Style | dark grey until EOL |

|  |  |
| --- | --- |
| Identifier | :VAR |
| Style | bright turquoise until EOL |

# Vensim Change Input files (.cin)

## Comment

|  |  |
| --- | --- |
| Identifier | : |
| Style | green |

## Values, parentheses around numbers

|  |  |
| --- | --- |
| Identifier | ()  <numbers> |
| Style | bright red |

## Subscripts

|  |  |
| --- | --- |
| Identifier | [] |
| Style | ***bold italic*** |

## Auxiliary variables with lookup

|  |  |
| --- | --- |
| Identifier | #variable\_name# |
| Style | dark blue |

# Vensim Command files (.cmd)

## Load new, unload old model

|  |  |
| --- | --- |
| Identifier | SPECIAL>LOADMODEL| |
| Style | **text bold white with background in light coral** |

Idea: This is typically the beginning of a new part of a script since a new model is loaded and the previous model is unloaded by this command. Hence the background. The combination of colors is purposefully supposed to look distinct.

## Load and unload runs

|  |  |
| --- | --- |
| Identifiers | SPECIAL>CLEARRUNS|  SPECIAL>LOADRUN| |
| Style | bright purple |

## Comment

|  |  |
| --- | --- |
| Identifier | {} |
| Style | green |

## File export

|  |  |
| --- | --- |
| Identifiers | FILE>MDL2VMF|  FILE>VCD2VCF|  FILE>VGF2VGF|  FILE>VMG2MDL|  MENU>DAT2VDF|  MENU>SENS2TAB|  MENU>TAB2VDF|  MENU>VDF2CSV|  MENU>VDF2DAT|  MENU>VDF2DLIST|  MENU>VDF2TAB|  MENU>VDF2WK1|  MENU>VDF2XLS|  MENU>WK12VDF|  MENU>XLS2VDF| |
| Style | text dark blue |

## Simulation settings manually or from cin files

|  |  |
| --- | --- |
| Identifier | SIMULATE>READCIN| |
| Style | **text bold orange** |

READCIN is bold because it overwrites previously loaded cin files.

|  |  |
| --- | --- |
| Identifier | SIMULATE>ADDCIN| |
| Style | text orange |

|  |  |
| --- | --- |
| Identifier | SIMULATE>SETVAL| |
| Style | text orange |

## Set run name and start

|  |  |
| --- | --- |
| Identifier | SIMULATE>RUNNAME|  MENU>RUN|  MENU>RUN1|  MENU>RUN\_OPTIMIZE|  MENU>RUN\_SENSITIVITY| |
| Style | **bold bright red** |

## Quit/Exit Vensim

|  |  |
| --- | --- |
| Identifier | MENU>EXIT |
| Style | **text bold bright green, background dark red** |

As this completely exits the software it should be distinct.

## Not yet implemented: other commands

|  |  |
| --- | --- |
| Identifier | FILE>COPY|  FILE>CREATE|  FILE>DELETE|  FILE>RENAME|  FILE>ENCRYPT|  FILE>DECRYPT|  SETTING>EXTERNALFUNCTION|  SETTING>SHOWWARNING|  SIMULATE>ADDDATA|  SIMULATE>BASED|  SIMULATE>CHGFILE|  SIMULATE>DATA|  SIMULATE>KALMAN|  SIMULATE>MINMEN|  SIMULATE>OPTPARM|  SIMULATE>PAYOFF|  SIMULATE>READRUNCHG|  SIMULATE>RESUME|  SIMULATE>SAVELIST|  SIMULATE>SENSITIVITY|  SIMULATE>SENSSAVELIST|  SIMULATE>WRITECIN|  SPECIAL>LOADTOOLSET|  SPECIAL>NOINTERACTION|  SPECIAL>READCSTOM|  SPECIAL>READINI|  TIMEAXIS>RESET|  TIMEAXIS>SPECIALTIME|  TIMEAXIS>STARTTIME|  TIMEAXIS>STOPTIME| |
| Style | not yet implemented |