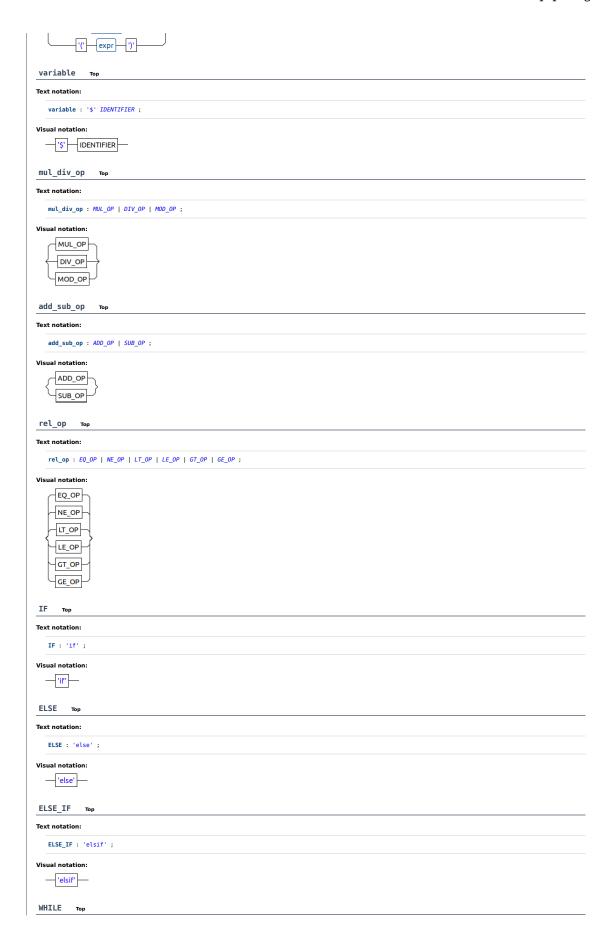
## perl

## Rules

■ stmt ■ assignment\_stmt
■ if\_stmt ■ while\_stmt
■ until\_stmt ■ expr ■ variable ■ mul\_div\_op ■ add\_sub\_op ■ rel\_op = IF ■ ELSE ■ ELSE\_IF ■ WHILE ■ UNTIL ■ sign ■ IDENTIFIER ■ INTEGER ■ REAL ■ MUL\_OP ■ DIV\_OP ■ ADD\_OP ■ SUB\_OP ■ POW\_OP ■ MOD\_OP ■ ASSIGN ■ EQ\_OP ■ EQ\_OP
■ NE\_OP
■ LT\_OP
■ LE\_OP
■ GT\_OP
■ GE\_OP

■ NEWLINE ■ WS

compound\_stmt Text notation: compound\_stmt : (stmt)+ ; stmt stmt Text notation: stmt : assignment\_stmt | if\_stmt | while\_stmt | until\_stmt ; assignment\_stmt if stmt while\_stmt until\_stmt assignment\_stmt Text notation: assignment\_stmt : variable ASSIGN expr ';' ; Visual notation: variable ASSIGN expr ';' if stmt Text notation: if\_stmt : IF '(' expr ')' '{' stmt '}' (ELSE\_IF '(' expr ')' '{' stmt '}')+ (ELSE '{' stmt '}')? ; Visual notation: | IF | '(' | expr | ')' | '{' | stmt | '}' ELSE\_IF '(' expr ELSE '{' stmt '}' stmt while\_stmt Text notation: while stmt : WHILE '(' expr ')' '{' stmt '}' ; Visual notation: until\_stmt Text notation: until\_stmt : *UNTIL* '(' expr ')' '{' stmt '}' ; Visual notation: expr expr : expr POW\_OP expr | expr mul\_div\_op expr | expr add\_sub\_op expr | expr rel\_op expr | number | variable | '(' expr ')'; Visual notation: expr POW\_OP expr expr mul\_div\_op expr expr add\_sub\_op expr expr rel\_op expr number variable



| Text notation:                    |
|-----------------------------------|
| WHILE: 'while';                   |
| Visual notation:                  |
| — 'while' —                       |
| UNTIL Top                         |
| Text notation:                    |
| UNTIL: 'until';                   |
| Visual notation:                  |
| - 'until' -                       |
|                                   |
| number τορ                        |
| Text notation:                    |
| number : sign? (INTEGER   REAL) ; |
| Visual notation:                  |
| INTEGER                           |
| Sign REAL REAL                    |
| sign <sub>Top</sub>               |
| Text notation:                    |
| sign : '+'   '-' ;                |
| Visual notation:                  |
|                                   |
|                                   |
| IDENTIFIER Top                    |
| Text notation:                    |
| IDENTIFIER: [a-zA-Z][a-zA-Z0-9]*; |
| Visual notation:                  |
|                                   |
| [a·zA·Z]                          |
| [a-zA-Z0-9]                       |
| INTEGER Top                       |
| Text notation:                    |
| INTEGER: [0-9]+;                  |
| Visual notation:                  |
|                                   |
|                                   |
| REAL TOP                          |
| Text notation:                    |
| REAL : INTEGER '.' INTEGER ;      |
| Visual notation:                  |
| - INTEGER - V INTEGER             |
| MUL OP Top                        |
| <del></del>                       |
| Text notation:  MUL_OP: '*';      |
|                                   |
| Visual notation:                  |
|                                   |
| DIV_OP Top                        |

| Text notation:             |
|----------------------------|
| DIV_OP: '/';               |
| Visual notation:           |
| — <u>''</u> —              |
|                            |
| ADD_OP Top                 |
| Text notation:             |
| ADD_OP: '+';               |
| Visual notation:           |
| — <u>₩</u> —               |
| SUB_OP Top                 |
| Text notation:             |
| SUB_OP: '-';               |
| Visual notation:           |
| <b>-</b> ♥ <b>-</b>        |
|                            |
| РОМ_ОР тор                 |
| Text notation:             |
| POW_OP : '**' ;            |
| Visual notation:           |
| - 146t                     |
| MOD_OP Top                 |
| Text notation:             |
| MOD_OP: '%';               |
| Visual notation:           |
| <u>['%']</u>               |
|                            |
| ASSIGN Top                 |
| Text notation:             |
| ASSIGN: '=';               |
| Visual notation:           |
|                            |
| EQ_0P                      |
| Text notation:             |
| EQ_OP : '==' ;             |
| Visual notation:           |
| — <u>'=='</u>              |
| NE_OP Top                  |
| NE_OP Top  Text notation:  |
| NE_OP : '!=' ;             |
|                            |
| Visual notation:  — '!=' — |
|                            |
| LT_OP Top                  |
| Text notation:             |
| LT_OP : '<' ;              |
| Visual notation:           |
| — <del>V</del> —           |
|                            |

| LE_OP Top                    |
|------------------------------|
| Text notation:               |
| LE_OP : '<=' ;               |
| Visual notation:             |
|                              |
| GT_OP тор                    |
| Text notation:               |
| GT_OP: '>';                  |
| Visual notation:             |
|                              |
| GE_OP тор                    |
| Text notation:               |
| GE_OP : '>=' ;               |
| Visual notation:             |
|                              |
| NEWLINE Top                  |
| Text notation:               |
| NEWLINE: '\r'? '\n' -> skip; |
| Visual notation:             |
| \(\frac{1}{1}\)              |
| WS Top                       |
| Text notation:               |
| WS : [ \t]+ -> skip ;        |
| Visual notation:             |
|                              |

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