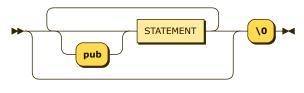
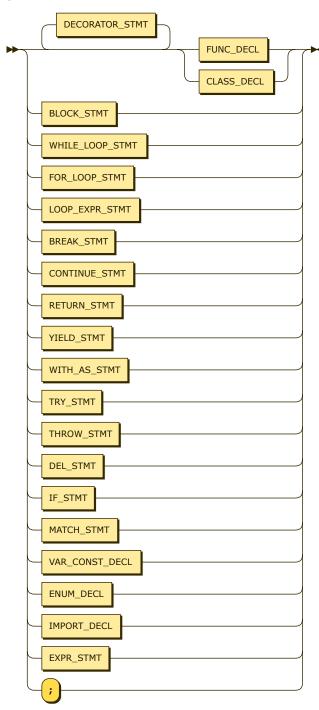
MODULE:



MODULE ::= ('pub'? STATEMENT)* '\0'

no references

STATEMENT:



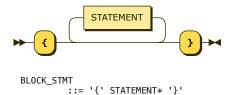
STATEMENT

::= BLOCK_STMT | WHILE_LOOP_STMT | FOR_LOOP_STMT | LOOP_EXPR_STMT

```
BREAK_STMT
CONTINUE_STMT
RETURN_STMT
YIELD_STMT
WITH_AS_STMT
TRY_STMT
THROW_STMT
DEL_STMT
IF_STMT
MATCH_STMT
VAR_CONST_DECL
ENUM_DECL
IMPORT_DECL
DECORATOR_STMT* ( FUNC_DECL | CLASS_DECL )
EXPR_STMT
```

- BLOCK STMT
- MODULE

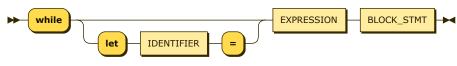
BLOCK_STMT:



referenced by:

- CATCH PART
- FINALLY PART
- FOR LOOP STMT
- FUNC DECL
- IF STMT LAMBDA_EXPR
- LOOP EXPR STMT
- MATCH ARM
- OPERATOR OVERLOAD
- **STATEMENT**
- TRY STMT
- WHILE LOOP STMT
- WITH AS STMT

WHILE_LOOP_STMT:



```
WHILE_LOOP_STMT
        ::= 'while' ( 'let' IDENTIFIER '=' )? EXPRESSION BLOCK_STMT
```

referenced by:

• STATEMENT

FOR_LOOP_STMT:



```
FOR_LOOP_STMT ::= 'for' FOR_LOOP_HEAD BLOCK_STMT
```

referenced by:

• STATEMENT

FOR_LOOP_HEAD:

```
7/30/22, 10:06 AM
```

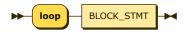
```
IDENTIFIER
                         in
                                EXPRESSION
DESTRUCT_PATTERN
```

FOR_LOOP_HEAD ::= (IDENTIFIER | DESTRUCT_PATTERN) 'in' EXPRESSION

referenced by:

- COMPACT FOR LOOP FOR LOOP STMT

LOOP_EXPR_STMT:



LOOP_EXPR_STMT ::= 'loop' BLOCK_STMT

referenced by:

- LARGE EXPR STATEMENT

BREAK_STMT:



BREAK_STMT ::= 'break' EXPRESSION? ';'

referenced by:

• STATEMENT

CONTINUE_STMT:



CONTINUE_STMT
 ::= 'continue' ';'

referenced by:

• STATEMENT

RETURN_STMT:



RETURN_STMT

::= 'return' EXPRESSION ';'

referenced by:

• STATEMENT

YIELD_STMT:



YIELD_STMT ::= 'yield' EXPRESSION ';'

referenced by:

• STATEMENT

THROW_STMT:



referenced by:

• STATEMENT

DEL_STMT:

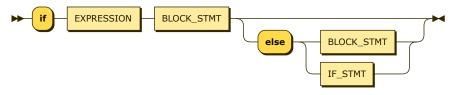


DEL_STMT ::= 'del' EXPRESSION ';'

referenced by:

• STATEMENT

IF_STMT:

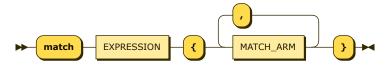


IF_STMT ::= 'if' EXPRESSION BLOCK_STMT ('else' (BLOCK_STMT | IF_STMT))?

referenced by:

- IF STMT
- STATEMENT

MATCH_STMT:

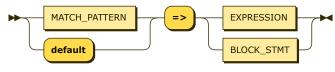


MATCH_STMT ::= 'match' EXPRESSION '{' MATCH_ARM (',' MATCH_ARM)* '}'

referenced by:

• STATEMENT

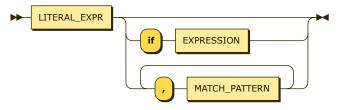
MATCH_ARM:



referenced by:

MATCH STMT

MATCH_PATTERN:

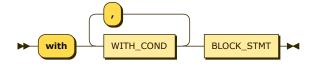


MATCH_PATTERN
::= LITERAL_EXPR ('if' EXPRESSION | (',' MATCH_PATTERN)*)

referenced by:

- MATCH ARM
- MATCH_EXPR_ARM
- MATCH_PATTERN

WITH_AS_STMT:

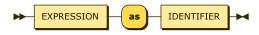


WITH_AS_STMT ::= 'with' WITH_COND (',' WITH_COND)* BLOCK_STMT

referenced by:

• STATEMENT

WITH_COND:



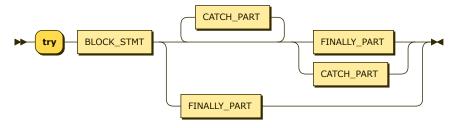
WITH_COND

::= EXPRESSION 'as' IDENTIFIER

referenced by:

• WITH AS STMT

TRY_STMT:

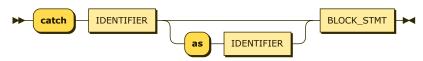


 $\label{eq:try_stmt} \textit{TRY_STMT} ::= \textit{'try'} \;\; \textit{BLOCK_STMT} \;\; (\;\; \textit{CATCH_PART*} \;\; (\;\; \textit{FINALLY_PART} \;\;) \;\; | \;\; \textit{FINALLY_PART} \;\;)$

referenced by:

• STATEMENT

CATCH_PART:

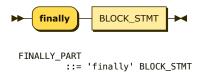


```
CATCH_PART
        ::= 'catch' IDENTIFIER ( 'as' IDENTIFIER )? BLOCK_STMT
```

referenced by:

• TRY STMT

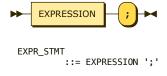
FINALLY_PART:



referenced by:

• TRY STMT

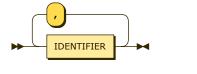
EXPR_STMT:



referenced by:

• STATEMENT

IDENTIFIER_LIST:

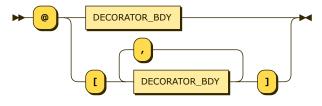


IDENTIFIER_LIST
 ::= IDENTIFIER (',' IDENTIFIER)*

referenced by:

- CLASS EXTEND
- CLASS IMPL
- DESTRUCT PATTERN
- ENUM DECL
- GRANULAR IMPORT
 PARAMETERS

DECORATOR_STMT:



referenced by:

- CLASS MEMBER
- STATEMENT

DECORATOR_BDY:

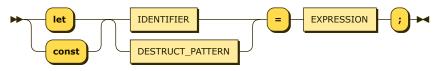


DECORATOR_BDY ::= IDENTIFIER | CALL_EXPR

referenced by:

• DECORATOR STMT

VAR_CONST_DECL:

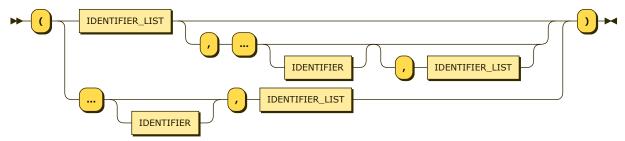


VAR_CONST_DECL ::= ('let' | 'const') (IDENTIFIER | DESTRUCT_PATTERN) '=' EXPRESSION ';'

referenced by:

- CLASS MEMBER STATEMENT

DESTRUCT_PATTERN:

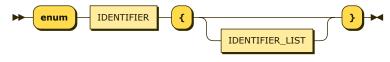


DESTRUCT_PATTERN
::= '(' (IDENTIFIER_LIST (',' '...' IDENTIFIER? (',' IDENTIFIER_LIST)?)? | '...' IDENTIFIER? ',' IDENTIFIER_LIST) ')'

referenced by:

- FOR LOOP HEAD
- VAR CONST DECL

ENUM_DECL:

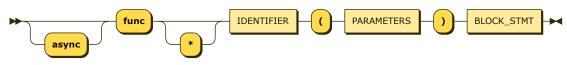


ENUM_DECL ::= 'enum' IDENTIFIER '{' IDENTIFIER_LIST? '}'

referenced by:

• STATEMENT

FUNC_DECL:



FUNC_DECL ::= 'async'? 'func' '*'? IDENTIFIER '(' PARAMETERS ')' BLOCK STMT

referenced by:

- CLASS_MEMBER
- STATEMENT

PARAMETERS:



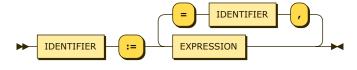
• •

::= IDENTIFIER_LIST? DEFAULT_PARAMS? REST_PARAM?

referenced by:

- FUNC DECL
- LAMBDA_EXPR
- OPERATOR OVERLOAD

DEFAULT_PARAMS:



DEFAULT_PARAMS

::= IDENTIFIER ':=' EXPRESSION (',' IDENTIFIER '=' EXPRESSION)*

referenced by:

• PARAMETERS

REST_PARAM:



REST_PARAM
 ::= '...' IDENTIFIER

referenced by:

• PARAMETERS

CLASS_DECL:



CLASS_DECL

::= 'abstract'? 'class' IDENTIFIER CLASS_EXTEND? CLASS_IMPL? CLASS_BODY

referenced by:

• STATEMENT

CLASS_EXTEND:



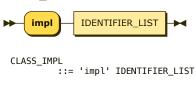
CLASS_EXTEND

::= '->' IDENTIFIER_LIST

referenced by:

• CLASS DECL

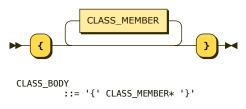
CLASS_IMPL:



referenced by:

• CLASS DECL

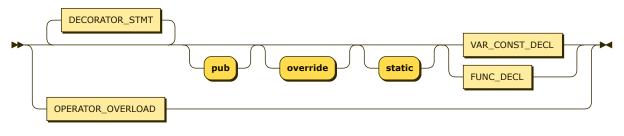
CLASS_BODY:



referenced by:

• CLASS DECL

CLASS_MEMBER:

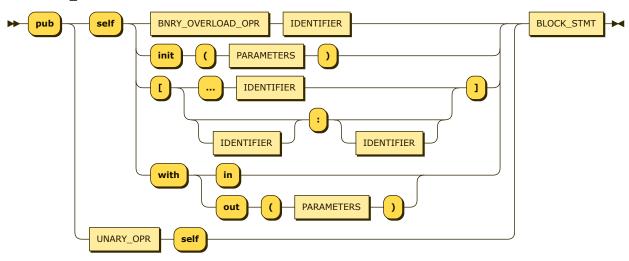


CLASS_MEMBER

referenced by:

CLASS_BODY

OPERATOR_OVERLOAD:



OPERATOR_OVERLOAD

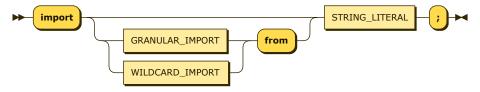
::= 'pub' ('self' (BNRY_OVERLOAD_OPR IDENTIFIER | 'init' '(' PARAMETERS ')' | '[' ('...' IDENTIFIER | IDENTIFIER? ':'

IDENTIFIER?) ']' | 'with' ('in' | 'out' '(' PARAMETERS ')')) | UNARY_OPR 'self') BLOCK_STMT

referenced by:

CLASS MEMBER

IMPORT_DECL:



IMPORT_DECL ::= 'import' ((GRANULAR_IMPORT | WILDCARD_IMPORT) 'from')? STRING_LITERAL ';'

referenced by:

• STATEMENT

GRANULAR_IMPORT:

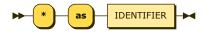


GRANULAR_IMPORT ::= '{' IDENTIFIER_LIST '}'

referenced by:

• IMPORT DECL

WILDCARD_IMPORT:



WILDCARD_IMPORT ::= '*' 'as' IDENTIFIER

referenced by:

• IMPORT DECL

EXPRESSION:



EXPRESSION

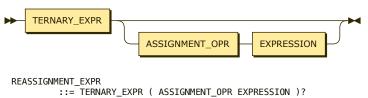
::= REASSIGNMENT_EXPR

referenced by:

- ARR TPL LIST
 ARR TPL REPEAT
- BREAK STMT
 COMPACT_ARR_TPL
- COMPACT FOR LOOP
- DEFAULT PARAMS
- DEL STMT
- EXPR ARGUMENTS
- EXPR STMT
- FOR_LOOP_HEAD
- IF_STMT
- INDEXER
- KEY VAL PAR
- LAMBDA EXPR
- LITERAL EXPR
- MATCH ARM
- MATCH_EXPR
- MATCH EXPR ARM
- MATCH PATTERN
- MATCH STMT
- NAMED ARGUMENTS
- REASSIGNMENT EXPR
- RETURN_STMT
- SINGLE SPREAD EXPR
- STRING SEQUENCE

- TERNARY EXPR
- THROW STMT
- VAR CONST DECL WHILE LOOP STMT
- WITH COND
- YIELD_STMT

REASSIGNMENT_EXPR:



referenced by:

• EXPRESSION

TERNARY_EXPR:



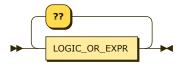
TERNARY_EXPR

::= NONE_COALESCE_EXPR ('?' EXPRESSION ':' EXPRESSION)?

referenced by:

• REASSIGNMENT EXPR

NONE_COALESCE_EXPR:

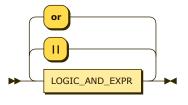


NONE_COALESCE_EXPR ::= LOGIC_OR_EXPR ('??' LOGIC_OR_EXPR)*

referenced by:

• TERNARY EXPR

LOGIC_OR_EXPR:

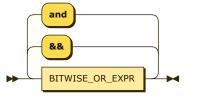


LOGIC_OR_EXPR ::= LOGIC_AND_EXPR (('||' | 'or') LOGIC_AND_EXPR)*

referenced by:

• NONE COALESCE EXPR

LOGIC_AND_EXPR:



referenced by:

• LOGIC OR EXPR

BITWISE_OR_EXPR:

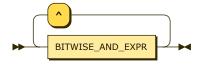


BITWISE_OR_EXPR ::= BITWISE_XOR_EXPR ('|' BITWISE_XOR_EXPR)*

referenced by:

LOGIC AND EXPR

BITWISE_XOR_EXPR:



BITWISE_XOR_EXPR ::= BITWISE_AND_EXPR ('^' BITWISE_AND_EXPR)*

referenced by:

• BITWISE OR EXPR

BITWISE_AND_EXPR:

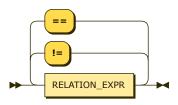


BITWISE_AND_EXPR ::= EQUALITY_EXPR ('&' EQUALITY_EXPR)*

referenced by:

• BITWISE XOR EXPR

EQUALITY_EXPR:

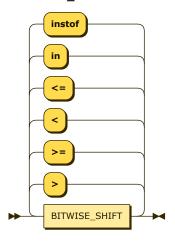


EQUALITY_EXPR
::= RELATION_EXPR (('!=' | '==') RELATION_EXPR)*

referenced by:

• BITWISE AND EXPR

RELATION_EXPR:

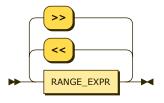


```
RELATION_EXPR
::= BITWISE_SHIFT ( ( '>' | '>=' | '<' | '<=' | 'in' | 'instof' ) BITWISE_SHIFT )*
```

referenced by:

• EQUALITY EXPR

BITWISE_SHIFT:

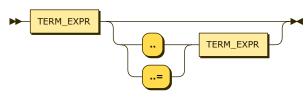


```
BITWISE_SHIFT ::= RANGE_EXPR ( ( '<<' | '>>' ) RANGE_EXPR )*
```

referenced by:

• RELATION EXPR

RANGE_EXPR:

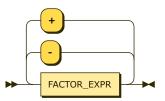


```
RANGE_EXPR
::= TERM_EXPR ( ( '..' | '..=' ) TERM_EXPR )?
```

referenced by:

• BITWISE SHIFT

TERM_EXPR:

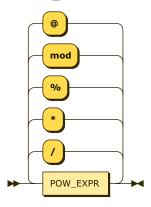


```
TERM_EXPR
::= FACTOR_EXPR ( ( '-' | '+' ) FACTOR_EXPR )*
```

referenced by:

• RANGE EXPR

FACTOR_EXPR:

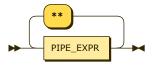


```
FACTOR_EXPR ::= POW_EXPR ( ( '/' | '*' | '%' | 'mod' | '@' ) POW_EXPR )*
```

referenced by:

• TERM EXPR

POW_EXPR:



POW_EXPR ::= PIPE_EXPR ('**' PIPE_EXPR)*

referenced by:

• FACTOR EXPR

PIPE_EXPR:



PIPE_EXPR ::= UNARY_EXPR ('|>' UNARY_EXPR)*

referenced by:

• POW EXPR

UNARY_EXPR:

```
UNARY_EXPR

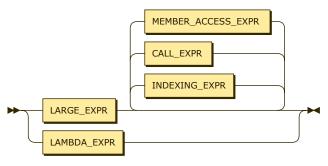
new
await

typeof

PRIMARY_EXPR
```

- PIPE EXPR
- UNARY EXPR

PRIMARY_EXPR:

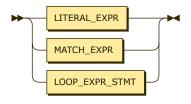


```
PRIMARY_EXPR
::= LAMBDA_EXPR
| LARGE_EXPR ( INDEXING_EXPR | CALL_EXPR | MEMBER_ACCESS_EXPR )*
```

referenced by:

• UNARY EXPR

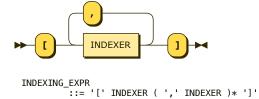
LARGE_EXPR:



referenced by:

• PRIMARY_EXPR

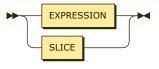
INDEXING_EXPR:



referenced by:

• PRIMARY_EXPR

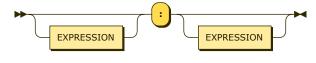
INDEXER:



referenced by:

• INDEXING EXPR

SLICE:



::= EXPRESSION? ':' EXPRESSION? SLICE

referenced by:

• INDEXER

CALL_EXPR:

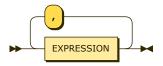


CALL_EXPR ::= '(' EXPR_ARGUMENTS? REST_ARGUMENTS? NAMED_ARGUMENTS? ')'

referenced by:

- <u>DECORATOR BDY</u> <u>PRIMARY_EXPR</u>

EXPR_ARGUMENTS:



EXPR_ARGUMENTS ::= EXPRESSION (',' EXPRESSION)*

referenced by:

• CALL EXPR

REST_ARGUMENTS:



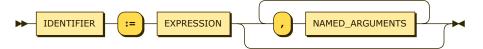
REST_ARGUMENTS

::= SINGLE_SPREAD_EXPR (',' SINGLE_SPREAD_EXPR)*

referenced by:

• CALL EXPR

NAMED_ARGUMENTS:



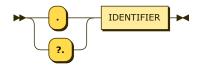
NAMED_ARGUMENTS

::= IDENTIFIER ':=' EXPRESSION (',' NAMED_ARGUMENTS)*

referenced by:

- CALL EXPR
- NAMED ARGUMENTS

MEMBER_ACCESS_EXPR:

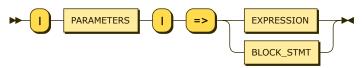


MEMBER_ACCESS_EXPR
 ::= ('.' | '?.') IDENTIFIER

referenced by:

• PRIMARY EXPR

LAMBDA_EXPR:



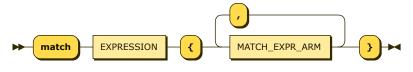
LAMBDA_EXPR

::= '|' PARAMETERS '|' '=>' (EXPRESSION | BLOCK_STMT)

referenced by:

• PRIMARY EXPR

MATCH_EXPR:



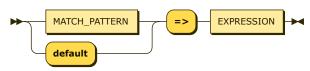
MATCH_EXPR

::= 'match' EXPRESSION '{' MATCH_EXPR_ARM (',' MATCH_EXPR_ARM)* '}'

referenced by:

• LARGE EXPR

MATCH_EXPR_ARM:



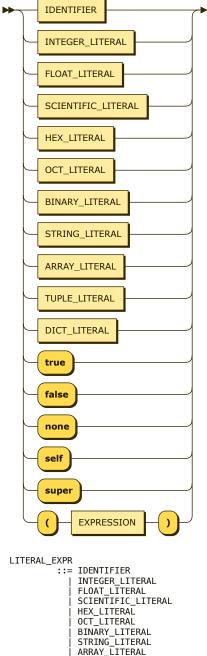
MATCH_EXPR_ARM

::= (MATCH_PATTERN | 'default') '=>' EXPRESSION

referenced by:

MATCH EXPR

LITERAL_EXPR:

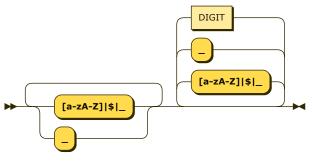


SCIENTIFIC_LITE HEX_LITERAL OCT_LITERAL BINARY_LITERAL STRING_LITERAL ARRAY_LITERAL TUPLE_LITERAL DICT_LITERAL 'true' 'falco' 'false' 'self' 'super' '(' EXPRESSION ')'

referenced by:

- LARGE EXPRMATCH_PATTERN

IDENTIFIER:

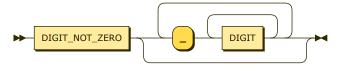


IDENTIFIER ::= ('[a-zA-Z]|\$|_' | '_')+ ('[a-zA-Z]|\$|_' | '_' | DIGIT)*

referenced by:

- CATCH PART
 CLASS DECL
- DECORATOR BDY
- **DEFAULT PARAMS**
- **DESTRUCT PATTERN**
- ENUM DECL
- FOR LOOP HEAD FUNC DECL
- IDENTIFIER LIST
- KEY VAL PAR
- LITERAL EXPR
- MEMBER ACCESS EXPR NAMED_ARGUMENTS
- OPERATOR OVERLOAD
- REST PARAM
- VAR CONST DECL
- WHILE LOOP STMT
- WILDCARD IMPORT
- WITH_COND

INTEGER_LITERAL:

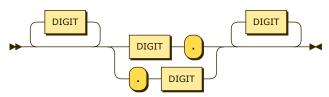


INTEGER_LITERAL ::= DIGIT_NOT_ZERO ('_' DIGIT+)*

referenced by:

- KEY_VAL_PAR
- LITERAL EXPR
- SCIENTIFIC LITERAL

FLOAT_LITERAL:

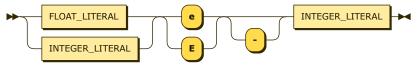


FLOAT_LITERAL ::= DIGIT* (DIGIT '.' | '.' DIGIT) DIGIT*

referenced by:

- LITERAL EXPR
- SCIENTIFIC LITERAL

SCIENTIFIC_LITERAL:

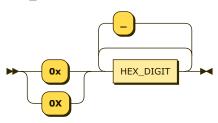


SCIENTIFIC_LITERAL ::= (FLOAT_LITERAL | INTEGER_LITERAL) ('e' | 'E') '-'? INTEGER_LITERAL

referenced by:

• LITERAL EXPR

HEX_LITERAL:

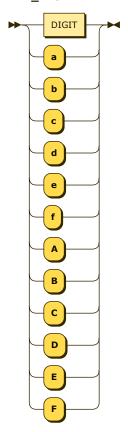


 $\label{eq:hex_literal} \begin{array}{lll} \mbox{HEX_LITERAL} & & \\ \mbox{::=} & (\ \ '0x' \ \ | \ \ '0X' \ \) \ \mbox{HEX_DIGIT} \ \ (\ \ '_'? \ \mbox{HEX_DIGIT} \ \) * \end{array}$

referenced by:

- KEY VAL PAR
- LITERAL EXPR

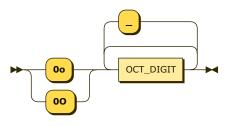
HEX_DIGIT:



HEX_DIGIT
::= DIGIT
| 'a'
| 'b'
| 'c'
| 'd'

• HEX_LITERAL

OCT_LITERAL:

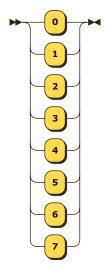


```
OCT_LITERAL ::= ( '00' | '00' ) OCT_DIGIT ( '_'? OCT_DIGIT )*
```

referenced by:

- KEY VAL PAR LITERAL EXPR

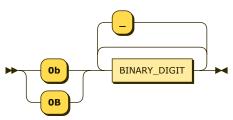
OCT_DIGIT:



referenced by:

• OCT LITERAL

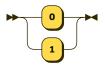
BINARY_LITERAL:



```
BINARY_LITERAL
::= ( '0b' | '0B' ) BINARY_DIGIT ( '_'? BINARY_DIGIT )*
```

- KEY VAL PAR
- LITERAL EXPR

BINARY_DIGIT:

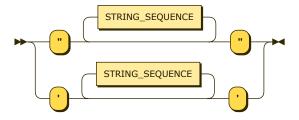


```
BINARY_DIGIT
::= '0'
| '1'
```

referenced by:

• BINARY LITERAL

STRING_LITERAL:

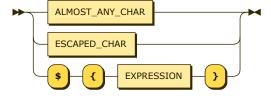


```
STRING_LITERAL
::= ''' STRING_SEQUENCE* ''''
| "'" STRING_SEQUENCE* "'"
```

referenced by:

- IMPORT DECL
- KEY VAL PAR
- LITERAL EXPR

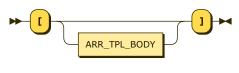
STRING_SEQUENCE:



referenced by:

• STRING LITERAL

ARRAY_LITERAL:



```
ARRAY_LITERAL
::= '[' ARR_TPL_BODY? ']'
```

LITERAL_EXPR

TUPLE_LITERAL:

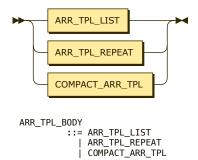


```
TUPLE_LITERAL
    ::= '(' ARR_TPL_BODY? ')'
```

referenced by:

- KEY VAL PAR
- LITERAL EXPR

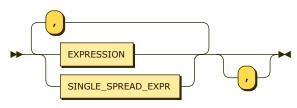
ARR_TPL_BODY:



referenced by:

- ARRAY LITERAL
- TUPLE LITERAL

ARR_TPL_LIST:

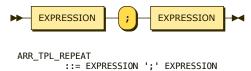


```
ARR_TPL_LIST ::= ( EXPRESSION | SINGLE_SPREAD_EXPR ) ( ',' ( EXPRESSION | SINGLE_SPREAD_EXPR ) )* ','?
```

referenced by:

ARR TPL BODY

ARR_TPL_REPEAT:



referenced by:

ARR TPL BODY

COMPACT_ARR_TPL:

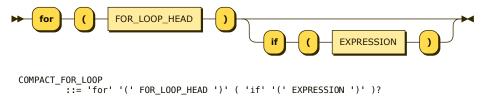
```
COMPACT_FOR_LOOP
                           EXPRESSION
                           SINGLE_SPREAD_EXPR
```

COMPACT_ARR_TPL ::= COMPACT_FOR_LOOP+ (EXPRESSION | SINGLE_SPREAD_EXPR)

referenced by:

• ARR TPL BODY

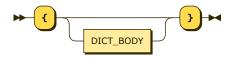
COMPACT_FOR_LOOP:



referenced by:

- <u>COMPACT ARR TPL</u> <u>COMPACT DICT</u>

DICT_LITERAL:

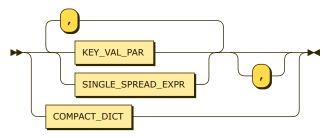


DICT_LITERAL ::= '{' DICT_BODY? '}'

referenced by:

• LITERAL EXPR

DICT_BODY:

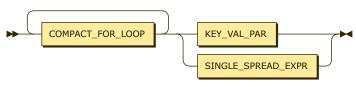


DICT_BODY (KEY_VAL_PAR | SINGLE_SPREAD_EXPR) (',' (KEY_VAL_PAR | SINGLE_SPREAD_EXPR))* ','? | COMPACT_DICT

referenced by:

• DICT LITERAL

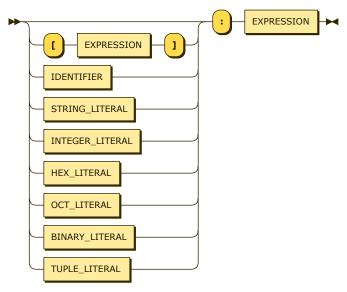
COMPACT_DICT:



COMPACT_DICT ::= COMPACT_FOR_LOOP+ (KEY_VAL_PAR | SINGLE_SPREAD_EXPR)

DICT_BODY

KEY_VAL_PAR:



KEY_VAL_PAR
::= ('[' EXPRESSION ']' | IDENTIFIER | STRING_LITERAL | INTEGER_LITERAL | HEX_LITERAL | OCT_LITERAL | BINARY_LITERAL |
TUPLE_LITERAL)? ':' EXPRESSION

referenced by:

- COMPACT DICT
- DICT BODY

SINGLE_SPREAD_EXPR:

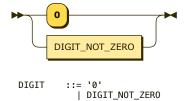


SINGLE_SPREAD_EXPR
::= '...' EXPRESSION

referenced by:

- ARR TPL LIST
- COMPACT ARR TPL
- COMPACT DICT
- DICT BODY
- REST_ARGUMENTS

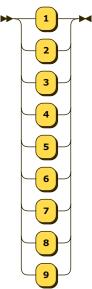
DIGIT:



referenced by:

- FLOAT LITERAL
- HEX_DIGIT
- IDENTIFIER
- INTEGER LITERAL

DIGIT_NOT_ZERO:

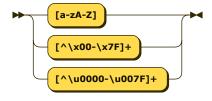


DIGIT_NOT_ZERO ::= '1' | '2' | '3' | '4' | '5' | '6' | '7' | '8' | '9'

referenced by:

- <u>DIGIT</u> <u>INTEGER LITERAL</u>

ALMOST_ANY_CHAR:

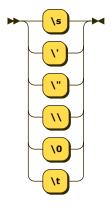


ALMOST_ANY_CHAR ::= '[a-zA-Z]' | '[^\x00-\x7F]+' | '[^\u0000-\u007F]+'

referenced by:

• STRING SEQUENCE

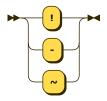
ESCAPED_CHAR:



ESCAPED_CHAR

• STRING SEQUENCE

UNARY_OPR:

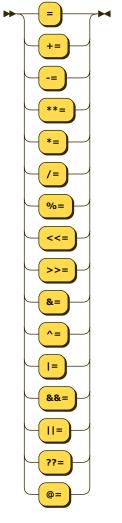


UNARY_OPR

referenced by:

- OPERATOR OVERLOAD UNARY EXPR

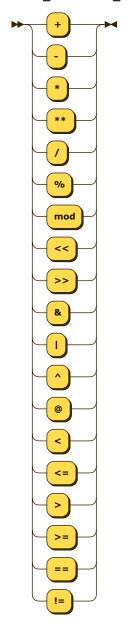
ASSIGNMENT_OPR:



ASSIGNMENT_OPR ::= '=' | '+='

• REASSIGNMENT EXPR

BNRY_OVERLOAD_OPR:



BNRY_OVERLOAD_OPR ::= '+' | '-' '*'
'**'
'/'
'%'
'mod'
'<<'
'>>>'

referenced by:

• OPERATOR OVERLOAD

... generated by <u>RR - Railroad Diagram Generator</u>