Draw ++ Compilator

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Chapter 1

Namespace Index

1.1 Namespace List

Here is a list of all namespaces with brief descriptions:

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Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

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myast.py												 												1	18
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Chapter 3

Namespace Documentation

3.1 interpreter Namespace Reference

Functions

- run_file (file_path)
- run interactive ()
- main ()

Variables

• bool DEBUG = False

3.1.1 Function Documentation

3.1.1.1 main()

```
interpreter.main ( )
```

3.1.1.2 run_file()

3.1.1.3 run_interactive()

```
interpreter.run_interactive ( )
Interactive mode for on-the-fly drawing.
```

3.1.2 Variable Documentation

3.1.2.1 **DEBUG**

```
bool interpreter.DEBUG = False
```

3.2 lexer Namespace Reference

Functions

- t IDENTIFIER (t)
- t_NUMBER (t)
- t_STRING (t)
- t_BOOLEAN (t)
- t_newline (t)
- t_COMMENT (t)
- t_COMMENT_MULTILINE (t)
- t error (t)
- find_column (input_text, lexpos)
- init_lexer ()

Variables

- · dict keywords
- list tokens
- str t_PLUS = r'\+'
- str t_MINUS = r'-'
- str t_TIMES = $r' *'$
- str t_DIVIDE = r'/'
- str t_EQUALS = r'='
- str t LT = r'<'
- str t_GT = r'>'
- str t_LE = r'<='
- str t_GE = r'>='
- str t_EQ = r'=='
- str t_NEQ = r'!='
- $str t_AND = r'and'$
- str t OR = r'or'
- str t_NOT = r'not'
- str t_LPAREN = r'\('
- str t_RPAREN = r'\)'
- $str t_LBRACE = r'\{'}$
- str t_RBRACE = r'\}'
- str t_LBRACKET = r'\['
- str t_RBRACKET = r'\]'
- str t_COMMA = r','
- str t_SEMICOLON = r';'
- str t_COLON = r':'
- str t_ignore = '\t'

3.2.1 Function Documentation

3.2.1.1 find_column()

3.2.1.2 init_lexer()

```
lexer.init_lexer ( )
```

3.2.1.3 t_BOOLEAN()

```
lexer.t_BOOLEAN ( t )
```

3.2.1.4 t_COMMENT()

```
lexer.t_COMMENT ( t )
```

3.2.1.5 t_COMMENT_MULTILINE()

3.2.1.6 t_error()

```
lexer.t_error ( t )
```

3.2.1.7 t_IDENTIFIER()

```
lexer.t_IDENTIFIER ( t )
```

3.2.1.8 t_newline()

3.2.1.9 t_NUMBER()

```
lexer.t_NUMBER (
      t)
```

3.2.1.10 t_STRING()

```
lexer.t_STRING (
           t)
```

3.2.2 Variable Documentation

3.2.2.1 keywords

dict lexer.keywords

Initial value:

```
Initial value:

00001 = {
00002    'if': 'IF',
00003    'else': 'ELSE',
00004    'for': 'FOR',
00005    'while': 'WHILE',
00006    'draw': 'DRAW',
00007    'cursor': 'CURSOR',
00008    'move': 'MOVE',
00009    'color': 'COLOR',
00010    'animate': 'ANIMATE',
00011    'rotate': 'ROTATE',
00012    'var': 'VARIABLE',
00013    'line': 'LINE',
00014    'circle': 'CIRCLE',
00015    'square': 'SQUARE',
00016    'arc': 'ARC',
00017    'point': 'POINT',
00018 }
      00018 }
```

3.2.2.2 t_AND

```
str lexer.t_AND = r'and'
```

3.2.2.3 t_COLON

```
str lexer.t_COLON = r':'
```

3.2.2.4 t_COMMA

```
str lexer.t_COMMA = r','
```

3.2.2.5 t_DIVIDE

```
str lexer.t_DIVIDE = r'/'
```

3.2.2.6 t_EQ

```
str lexer.t_EQ = r'=='
```

3.2.2.7 t_EQUALS

```
str lexer.t_EQUALS = r'='
```

3.2.2.8 t_GE

```
str lexer.t_GE = r'>='
```

3.2.2.9 t_GT

```
str lexer.t_GT = r'>'
```

3.2.2.10 t_ignore

```
str lexer.t_ignore = ' \t'
```

3.2.2.11 t_LBRACE

```
str lexer.t_LBRACE = r'\{'
```

3.2.2.12 t_LBRACKET

```
str lexer.t_LBRACKET = r'\['
```

3.2.2.13 t_LE

```
str lexer.t_LE = r' \le r'
```

3.2.2.14 t_LPAREN

```
str lexer.t_LPAREN = r'\('
```

3.2.2.15 t_LT

```
str lexer.t_LT = r'<'
```

3.2.2.16 t_MINUS

```
str lexer.t_MINUS = r'-'
```

3.2.2.17 t_NEQ

```
str lexer.t_NEQ = r'!='
```

3.2.2.18 t_NOT

```
str lexer.t_NOT = r'not'
```

3.2.2.19 t_OR

```
str lexer.t_OR = r'or'
```

3.2.2.20 t_PLUS

```
str lexer.t_PLUS = r'\+'
```

3.2.2.21 t_RBRACE

```
str lexer.t_RBRACE = r'\}'
```

3.2.2.22 t_RBRACKET

```
str lexer.t_RBRACKET = r'\]'
```

3.2.2.23 t_RPAREN

```
str lexer.t_RPAREN = r'\)'
```

3.2.2.24 t_SEMICOLON

```
str lexer.t_SEMICOLON = r';'
```

3.2.2.25 t_TIMES

```
str lexer.t_TIMES = r'\*'
```

3.2.2.26 tokens

```
list lexer.tokens
```

Initial value:

```
Initial value.

00001 = [
00002 'IDENTIFIER', 'NUMBER', 'STRING', 'BOOLEAN',
00003 'PLUS', 'MINUS', 'TIMES', 'DIVIDE', 'EQUALS',
00004 'LT', 'GT', 'LE', 'GE', 'EQ', 'NEQ', 'AND', 'OR', 'NOT',
00005 'LPAREN', 'RPAREN', 'LBRACE', 'RBRACE', 'LBRACKET', 'RBRACKET',
00006 'COMMA', 'SEMICOLON', 'COLON',
11st ('Paywords.values())
```

3.3 myast Namespace Reference

Functions

- print_error (error)
- condition_to_c (condition)
- resolve_value_and_find_variable (ast, value, current_position=None)
- translate_node_to_c (ast, node, newline, tabulation, semicolon, current_position=None)
- translate_ast_to_c (ast)
- execute_ast (ast, debug)

3.3.1 Function Documentation

3.3.1.1 condition_to_c()

```
myast.condition_to_c (
             condition )
```

3.3.1.2 execute ast()

```
myast.execute_ast (
             ast,
              debug )
Exécute l'AST généré par le parser.
```

3.3.1.3 print_error()

```
myast.print_error (
             error )
```

3.3.1.4 resolve_value_and_find_variable()

```
myast.resolve_value_and_find_variable (
              ast,
              value,
              current_position = None )
Resolve the type and value of a variable or literal.
- Ensures the variable is initialized before the current position.
- Handles literals, variables, operations, and nested AST structures.
3.3.1.5 translate_ast_to_c()
myast.translate_ast_to_c (
              ast )
Traduire l'AST en code C.
3.3.1.6 translate node to c()
myast.translate_node_to_c (
              ast,
              node,
              newline,
              tabulation,
              semicolon,
              current_position = None )
```

3.4 parser Namespace Reference

Functions

• p_programme (p)

Traduire une node en code C.

- p_instruction (p)
- p_dessin (p)
- p_forme (p)
- p_parametres (p)
- p_arg (p)
- p_expression_arithmetic (p)
- p_expression_arithmetic_atomic (p)
- p_deplacement (p)
- p_rotation (p)
- p_couleur (p)
- p_assignation (p)
- p_modification (p)
- p_valeur (p)
- p_bloc (p)
- p_conditionnelle (p)
- p_expression_logique (p)
- p_operateur_comparaison (p)
- p_boucle (p)
- p_error (p)
- init_parser ()

3.4.1 Function Documentation

3.4.1.1 init_parser()

3.4.1.3 p_assignation()

```
parser.p_assignation ( p \ ) assignation : VARIABLE IDENTIFIER EQUALS arg
```

| expression_arithmetic

3.4.1.4 p_bloc()

```
parser.p_bloc ( p \ ) \\ bloc : LBRACE programme RBRACE
```

3.4.1.5 p_boucle()

```
parser.p_boucle ( p \ ) boucle : WHILE LPAREN expression_logique RPAREN bloc  | \  \, \text{FOR LPAREN assignation SEMICOLON expression_logique SEMICOLON modification RPAREN bloc}
```

3.4.1.6 p_conditionnelle()

3.4.1.7 p_couleur()

3.4.1.8 p_deplacement()

```
parser.p_deplacement ( p \ ) deplacement : MOVE LPAREN arg COMMA arg RPAREN
```

3.4.1.9 p_dessin()

```
parser.p_dessin ( p \ ) \\ dessin : DRAW forme LPAREN parametres RPAREN
```

3.4.1.10 p_error()

3.4.1.11 p_expression_arithmetic()

3.4.1.12 p_expression_arithmetic_atomic()

```
parser.p_expression_arithmetic_atomic ( p \ ) expression_arithmetic : LPAREN expression_arithmetic RPAREN  | \  \, \text{NUMBER} \\ | \  \, \text{IDENTIFIER}
```

3.4.1.13 p_expression_logique()

3.4.1.14 p_forme()

3.4.1.15 p_instruction()

3.4.1.16 p_modification()

```
parser.p_modification ( p \ ) \\ modification : IDENTIFIER EQUALS arg
```

3.4.1.17 p_operateur_comparaison()

3.4.1.18 p_parametres()

```
parser.p_parametres ( p \ ) parametres : parametres COMMA arg \mid \  \  \,   arg
```

3.4.1.19 p_programme()

```
parser.p_programme ( p \ ) programme : instruction \\ | programme instruction
```

3.4.1.20 p_rotation()

```
parser.p_rotation ( p \ ) \\ rotation : ROTATE LPAREN arg RPAREN
```

3.4.1.21 p_valeur()

parser.p_valeur (

Chapter 4

File Documentation

4.1 interpreter.py File Reference

Namespaces

· namespace interpreter

Functions

- interpreter.run_file (file_path)
- interpreter.run_interactive ()
- interpreter.main ()

Variables

• bool interpreter.DEBUG = False

4.2 lexer.py File Reference

Namespaces

• namespace lexer

Functions

- lexer.t_IDENTIFIER (t)
- lexer.t_NUMBER (t)
- lexer.t_STRING (t)
- lexer.t_BOOLEAN (t)
- lexer.t_newline (t)
- lexer.t_COMMENT (t)
- lexer.t_COMMENT_MULTILINE (t)
- lexer.t_error (t)
- lexer.find_column (input_text, lexpos)
- lexer.init_lexer ()

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Variables

```
· dict lexer.keywords
· list lexer.tokens
• str lexer.t_PLUS = r'\+'
• str lexer.t MINUS = r'-'
• str lexer.t TIMES = r'\*'
• str lexer.t_DIVIDE = r'/'
• str lexer.t EQUALS = r'='
• str lexer.t_LT = r'<'
• str lexer.t GT = r'>'
• str lexer.t LE = r'<='
• str lexer.t_GE = r'>='
• str lexer.t_EQ = r'=='
• str lexer.t_NEQ = r'!='
• str lexer.t_AND = r'and'
• str lexer.t OR = r'or'
str lexer.t_NOT = r'not'
• str lexer.t_LPAREN = r'\('
• str lexer.t_RPAREN = r'\)'
• str lexer.t_LBRACE = r'\{'
• str lexer.t RBRACE = r'\}'
• str lexer.t_LBRACKET = r'\['
• str lexer.t_RBRACKET = r'\]'
• str lexer.t_COMMA = r','
• str lexer.t_SEMICOLON = r';'
• str lexer.t COLON = r':'
• str lexer.t_ignore = ' \t'
```

4.3 myast.py File Reference

Namespaces

· namespace myast

Functions

```
myast.print_error (error)
```

- myast.condition_to_c (condition)
- myast.resolve value and find variable (ast, value, current position=None)
- myast.translate_node_to_c (ast, node, newline, tabulation, semicolon, current_position=None)
- myast.translate_ast_to_c (ast)
- myast.execute_ast (ast, debug)

4.4 parser.py File Reference

Namespaces

namespace parser

Functions

- parser.p_programme (p)
- parser.p_instruction (p)
- parser.p_dessin (p)
- parser.p_forme (p)
- parser.p_parametres (p)
- parser.p_arg (p)
- parser.p_expression_arithmetic (p)
- parser.p_expression_arithmetic_atomic (p)
- parser.p_deplacement (p)
- parser.p_rotation (p)
- parser.p_couleur (p)
- parser.p_assignation (p)
- parser.p_modification (p)
- parser.p_valeur (p)
- parser.p_bloc (p)
- parser.p_conditionnelle (p)
- parser.p_expression_logique (p)
- parser.p_operateur_comparaison (p)
- parser.p_boucle (p)
- parser.p_error (p)
- parser.init_parser ()

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