Scanner

Lab 3

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Git: https://github.com/CMihai998/FLCD/tree/master/Lab3

Tokens: - class that contains all important tokens of the language:

-separators

-operators

-reserved words

Scanner: - class that uses tokens to tokenize and can recognize if a token is one of the important ones.

Program Internal Form: keeps the program internal form

Main: we read line by line, we tokenize the line and we tell the user if there is a problem on that line, everything that is ok gets added to program internal form.

Program Internal Form:

-Add(token, position) :

Input: token and position

Returns: -

-adds tupple (token, position) to internal list

Tokens:

-Initialize():

Input: -

Output: -

-initializes tokens of the application: separators, operators and reserved words

-Get_separators():

Input: -

Output: list of separators

-Get_operators():

Input: -

Output: list of operators

-Get_reserved_words():

Input: -

Output: list of reserved words

Scanner:

-Tokenize:

Input: line from file

Output: list of tokens

-Get_operator_token(line, position)

Input: line and current position on line

Output: (token, position_after_token) if token is a valid operator

(None, position), otherwise

-Is_part_of_operator(part)

Input: part – character

Output: True, if part is found in any operator

False, otherwise

-Is_operator(token):

Input: token

Output: True, if token in list of operators

False, otherwise

-Is_separator(char):

Input: char

Output: True, if char in list of separators

False, otherwise

-Is_reserved_word(token):

Input: token

Output: True, if token in list of reserved words

False, otherwise

-Is_identifier(token):

Input: token

Output: True, if token matches identifier description

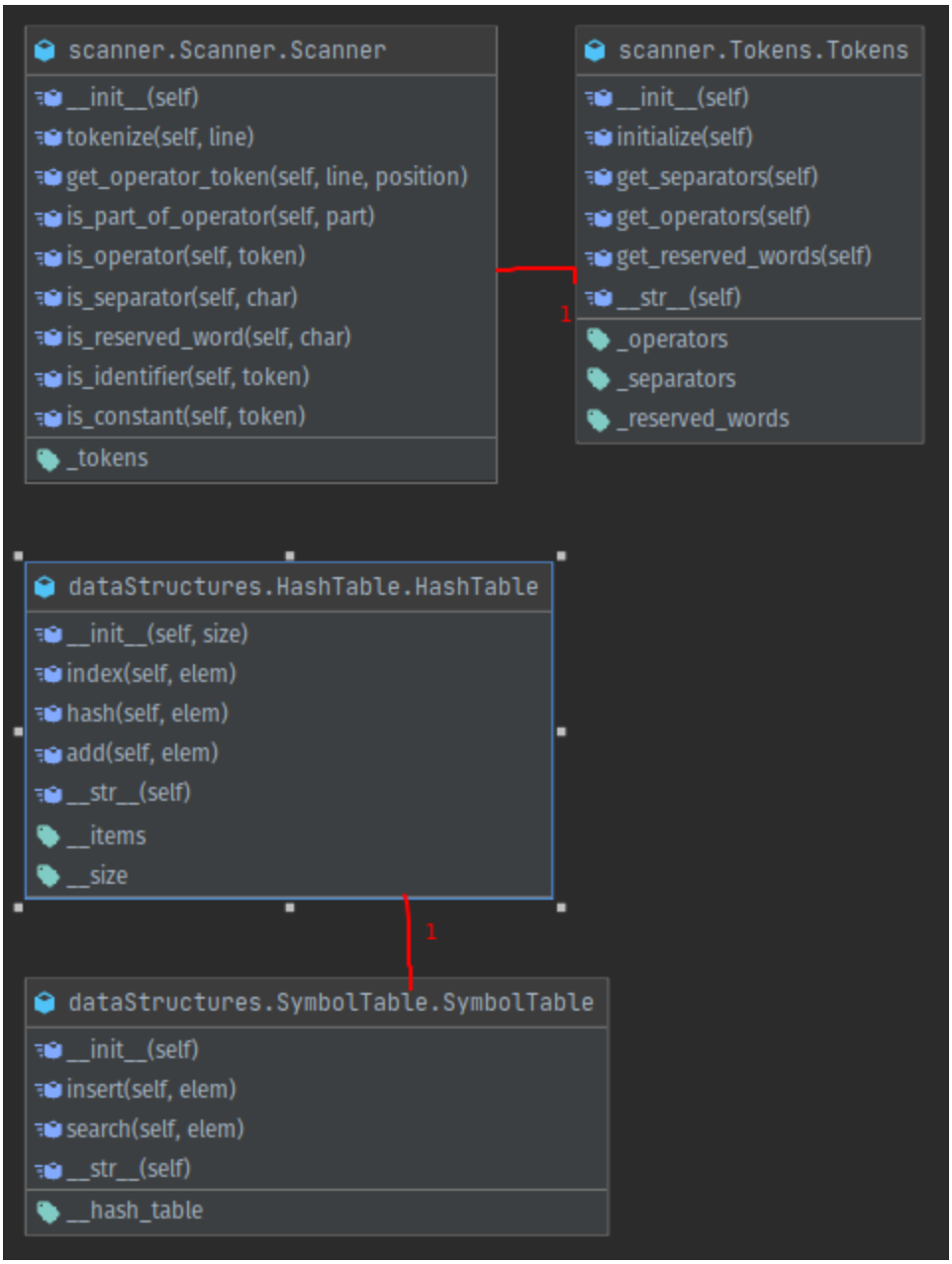
False, otherwise

-Is_constant(token):

Input: token

Output: True, if token matches constant description

False, otherwise


scanner.Scanner.Scanner
__init__(self)
tokenize(self, line)
get_operator_token(self, line, position)
is_part_of_operator(self, part)
is_operator(self, token)
is_separator(self, char)
is_reserved_word(self, char)
is_identifier(self, token)
is_constant(self, token)
_tokens
scanner.Tokens.Tokens
__init__(self)
initialize(self)
get_separators(self)
get_operators(self)
get_reserved_words(self)
__str__(self)
_operators
_separators
_reserved_words
1
dataStructures.HashTable.HashTable
__init__(self, size)
index(self, elem)
hash(self, elem)
add(self, elem)
__str__(self)
__items
__size
1
dataStructures.SymbolTable.SymbolTable
__init__(self)
insert(self, elem)
search(self, elem)
__str__(self)
__hash_table