

README

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included: tokenizer.c , testcases.txt

Design Decisions:

The main function's many purposes are to check whether the correct amount of arguments are being entered into the function as well as to create/present/destroy the TokenizerT struct. After creating the TokenizerT pointer, t1, I included a while statement at line 638 which traverses the string to be read as long as the current index has not exceeded the length of the string.

While in this statement I call TKGetNextToken to parse and detect what the next acceptable token in the string is and return it. Now heading to the function TKGetNextToken, upon inspection, you can see that it is separated into five general sections.

1. whitespace check
 - Checks to see whether current index is whitespace. If so, the function will disregard this index and move forward.
2. check first type
 - will check what the type of character is at the beginning of current token
 - If it is a punctuation or other character then it will end up in punctDetect and from there take the appropriate actions.
3. alpha check
 - If first token was an alphabetic character then it will continue into here so continue traversing the string.
 - Only possible outcomes from here are either the next token is not alphanumeric or it is (in which case it will be considered a word.)
4. integer check
 - will enter here if first character is a digit
 - checks to see if first character is '0', if so then it will continue and check all possible outcomes (float, zero, hex, octal)
 - if first character is not '0', it will continue here and check possible token outcomes (float or decimal integer constant)
5. shiftright/shiftright equals check
 - only enters this section if the punctuation detected in punctDetect was either >> or << and will check whether next character is '=' in which case it will identify it as either shiftright/equals or shiftright/equals.

Once the whole string argument has been traversed and all of the tokens have been printed, the memories from token, t1->str, and t1 and freed.