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Assignment 1

The program tokenizes a string input and neglects white spaces and escape characters. Also, it reports any malformed inputs in the string input. When an input is entered, the program checks the stream and tokizes it depending on the rules provided, and sends every case to the correct state method. See the state methods below.

IMPORTANT: the program reports some wrong outputs when the token is malformed inside of (isFloat, isFloat2, isFloat3) methods.

- Include statements:
    o #include <stdio.h>
        ▪ Standard library.
    o #include <stdlib.h>
        ▪ Included this to use malloc.
    o #include <string.h>
        ▪ Included this to use size_t, strcpy, etc.
    o #include <ctype.h>
        ▪ Included this to use isdigit, isxdigit, etc.
- The tokenizer struct:
    o char* input;
        ▪ The inpuit string that is in main method argument.
    o char* currToken;
        ▪ The current token is saved here, after TKGetNextToken is called in the main method and assigned to it.
    o int escape;
        ▪ An indicator if the current token ended already. 0 if token is ended, 1 if token is not complete by rules.
    o size_t strLength;
        ▪ length of token
    o int pos;
        ▪ position of pointer in string (where we are so far in the process of getting the token)
- isOctal:
    o Checks if the current token is an OCTAL, and reports back to TKGetNextToken.
- isZero:
    o Checks if the current token is a ZERO, and reports back to TKGetNextToken.
- isHex:
    o Checks if the next token in TKGetNextToken is a HEX.
- isFloat:
    o Checks if the next token in TKGetNextToken is a FLOAT (beginning as octal).
- isFloat2:

- o Checks if the next token in TKGetNextToken is a FLOAT (beginning as decimal, with a dot included).
- isFloat3:
    - o Checks if the next token in TKGetNextToken is a FLOAT (beginning as decimal, with NO dot included).
- TKGetNextToken:
    - o Determines the beginning of a token and sends the input to the proper method of the above. If whitespace, skip it and add null pointer. Do the same if escape character.
- Main method:
    - o Gets the next token in the while loop until the pointer of tok's position reaches the value of the input's length.