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Computer Architecture
Assignment: 1

The goal of this program was to seperate and output as many valid tokens from a given string as possible. The possible tokens were decimal, octal, hexadecimal or float tokens.My program is based on a number of "if" statements and for loops working in a particular sequence to excute the input and provide the desired output. The difficult part of the assignment was to find an efficient way to handle all the errors that arise during the execution of a particular sequence. My program tries to figure out the maximum number of valid tokens that can be formed by through a single parse over the given string. My program executes properly when the output is entered in the command line without quotes. If quotes are entered the program gives the desired output and also gives the user the white spaces in the string in hexadecimal form. The escape characters that I outputted in hexadeciaml form inludes all types of spaces and escape characters such start of line tab, vertical tab etc and also all the invalid elements in a parse that signify the end of token. If the input starts with any other character other than the a digit the code outputs an error message saying that the input begins with an invalid character. If the input is an digit followed by an 'e' or a '.' or other charachters in the fsm the output will result in mal since since these characters are not followed by another digit.My program outputs the escape character in hexadecimal form first before printing the token with the type. My program outputs the correct result for all the testcases that I have entered in the testcases.txt file. Through the program I have succesfully been able to find the maximum number of tokens in a given string input.

Algorithm:
The programs accepts an input from the user and seperates the spaces first. Then it gets sent to a helper method where the invalid characters are handled and outputted in hexadecimal form. The string is sent back to the main and further seperated to form valid string that is sent to Tkcreate. In tkcreate based on the conditions in the if statement the program sent the string to the desired function from which a boolean value is returned to check if the given string is a valid token or not and the token struct is returned to main and the type and string are outputted. Lastly all the memory created is destroyed in TKDestroy and the program ends.