

Description: This project consisted of making a program that accepts a string input on the command line which will either be an integer, octal, hexadecimal, or float. This program was designed with the intent of separating and classifying these numbers by using “tokens” and will then output each of these tokens one at a time along with the classification it was.

Algorithm: When the string is inputted through the command lines a new tokenizer object is created so that it can establish the given string with its length and the starting index of the position it keeps track of. Once the tokenizer object is created, then it goes through the getNextToken function to separate and print out the results. Although the function returned a string, my program never used it, instead reusing the same string over again to print out the token. As the function starts, each character in the string is read using a while loop and a switch statement, determining the value and ignoring spaces. If it encounters any value that isn't a valid entry, it displays an error with the hex value, incrementing the value of the index by 1. It also catches any errors such as “0x12E+12”. At the end of an iteration of the loop, the string containing the first token is erased and is rewritten with the continuing tokens. The string is freed at the end once the function ends. At the end of the function, the tokenizer structure is also freed and the program ends.