INTERNAL USE

https://github.com/PopEmanuel/FLCD

I created a scanner for verifying the lexical correctness of my program. It uses regexPatterns to find what category each character belongs to.

I created a SymbolTable for holding the indentifiers using a custom HashTable

The hash algorithm :

private final int hashCode = 4;

private int hash(String value) { return value.hashCode() % hashCode;

}

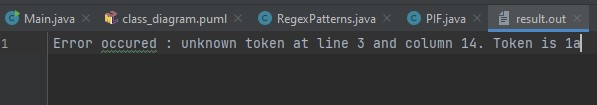
We always work with strings so we use the hashCode of the string and use the modulo with a hashCode held in the class

The way the HashTable works is when you want to add a new value, it computes the hash value of the string, verifies if it is the first one with that index and if so adds it to index 1 otherwise it searches on the index to find the value, if it doesn’t find it it will insert on the last index the value.

Getting the index of a value is easy, just searching on the index and returning the key value pair. Otherwise return (-1, -1)

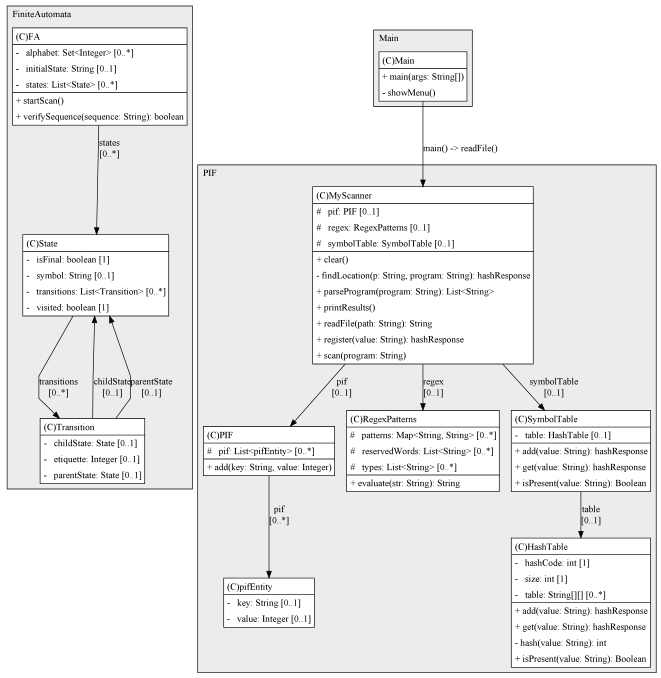
I also created a PIF using an ArrayList from java. I add pifEntities to the List, in order to keep track of each identifier.

The scanner discovers the errors and provides the line and column that it happened.



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The diagram class provides more info about the structure of the program



I created a Finite Automata using 3 classes, Transition, State and the Automata itself and the application now shows a menu with different options for it.

The structure of the FA.in file should be :

FA := initial\_state number\_of\_states {state}(number\_of\_states)  
number\_of\_transitions {transition}(number\_of\_transitions)  
  
transition := letter" "alphabet" "letter  
alphabet := number  
number\_of\_transitions := number  
number\_of\_states := number  
initial\_state := state  
state := letter" "type  
type := n f (not-final final)  
letter := a|b|c|...|z|A|B|...|Z  
  
digit = 0 | 1 |...| 9  
nonzero-digit = 1 | 2 | ... | 9  
number:=0|"-"no|no   
no:=nonzero-digit{no2}  
no2:=digit|{no2}

One example is :

P //initial state  
3 //number of states  
p n //states  
q f  
r f  
4 //number of transitions  
p 0 q //transitions  
p 1 r  
q 1 q  
q 0 r