Formal Languages and Compiler Design

Second laboratory – Documentation

Symbol Table Implementation

Link to Git: https://github.com/albcristi/formal-languages-and-compiler-design

Data structure chosen for implementing the Symbol Table: Hash Table

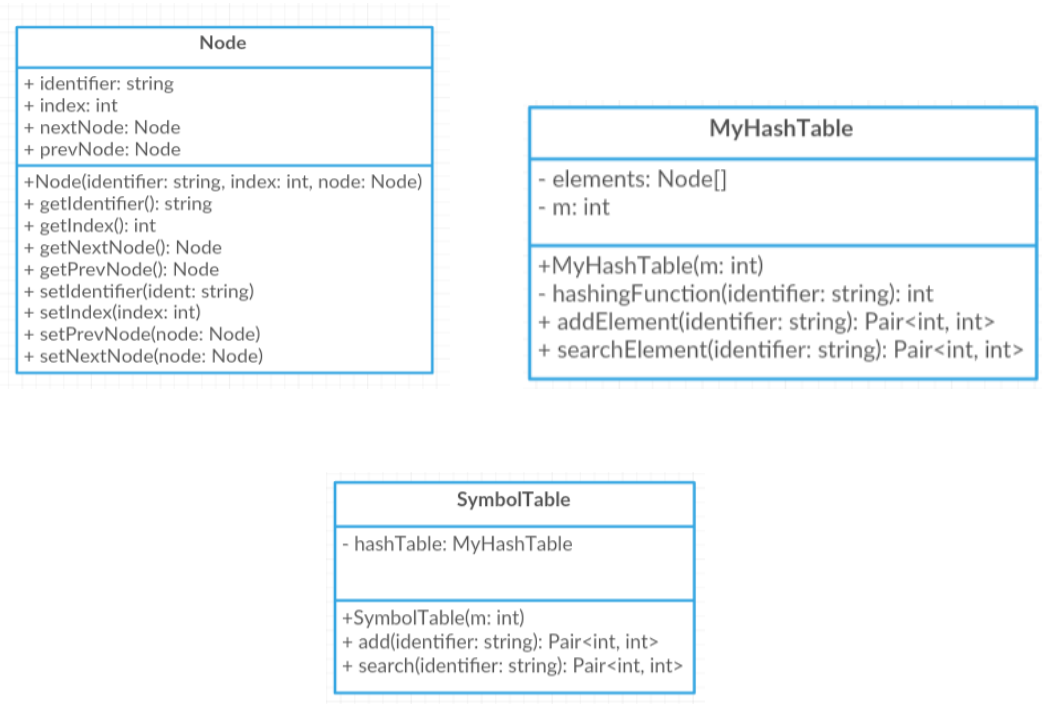
About the Hash Table:

- m size of the table with m a prime number
- hashing function: sum of the ASCII characters of the key modulo m
- collision solution: we store a linked list at each position of the hash table, so that we can add a new node when we have a collision.
- each node contains the identifier that is stored in the linked list, the previous and the next node. The index is the position of that node in the linked list
- the search method will return the position a pair containing <hashing value of identifier, index of corresponding node> if the element is found in the hash table or the pair <-1,-1> otherwise
- the add method adds a new element in the hash table and returns a pair representing the following: <hash value of the added element, position in the linked list of the newly created node>

About the Symbol Table:

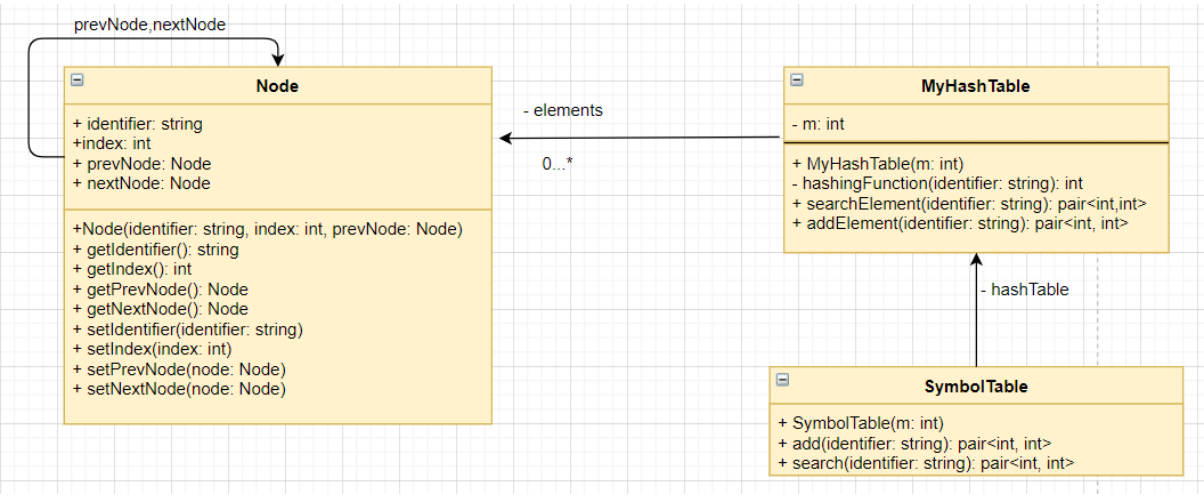
- stores data using a hash table
- supports two methods: ***search*** and ***add*** that take as argument a string value

Implemented Classes



Alb Dan-Cristian
Group 931

Class Diagram



Alb Dan-Cristian
Group 931