

Lab2

Github -> <https://github.com/cs-ubbcluj-ro/lab-work-computer-science-2024-Gulin7>

HASHTABLE

CLASS NODE

- ➔ Key – key associated with a value
- ➔ Value – value associated to a key
- ➔ Next – reference to the next Node object in a linked list

Class HASHTABLE

- ➔ Size – current maximum size of the hash table
- ➔ Count - total count of elements currently stored in the hash table
- ➔ List – list used to store the elements inside of the hash table (array of Nodes)
- ➔ __init__ - initialize hash table with size=2, count=0, and 2 None elements
- ➔ Hash(value) - % size if integer, **DJB2 by Daniel J. Bernstein** for strings
- ➔ Insert(key, value) – insert a key-value pair into the hashtable
 - Resize and rehash if there are more elements than the capacity (load factor ≥ 2)
 - Computes the hash for the key and inserts a new Node into the appropriate position of the linked list at given index
- ➔ Get(key) – retrieves the value associated with a given key
- ➔ resizeAndRehash – called in insert if load factor ≥ 2
 - doubles the size, creates a copy of all the old elems, resets the count and list and then insert all the previous elements using the insert method
- ➔