

Github Link:

<https://github.com/cs-ubbcluj-ro/lab-work-computer-science-2024-raisesdan/tree/main/1-Mini-Language-And-Scanner/Lab%202>

Documentation:

Node

- Attributes:
 - `key`: The key for the element.
 - `value`: The value associated with the key.
 - `next`: Points to the next node in case of collisions.

HashTable

- Attributes:
 - `capacity`: Initial size of the hash table (starts at 2).
 - `number_of_elements`: Number of elements currently in the hash table.
 - `elements_list`: List to store the elements (initialized to `None`).
- Methods:
 - `__init__()`: Initializes the hash table with a small capacity and an empty list of elements.
 - `hash(value)`: Computes the hash of a key (based on modulo operation).
 - `add(key, value)`: Adds a key-value pair to the hash table, with resizing and rehashing if necessary.
 - `get(key)`: Retrieves the value associated with a key.
 - `pop(key)`: Removes the key-value pair from the hash table and returns the value.
 - `resize_and_rehash()`: Doubles the capacity and rehashes the elements when the load factor exceeds a threshold.

SymbolTableConstants

- Attributes:
 - `symboltable`: An instance of `HashTable` to store constants.
- Methods:
 - `add_constant(identifier, value)`: Adds a constant identifier and its value to the symbol table.
 - `get_constant(identifier)`: Retrieves the value of a constant identifier.

- `delete_constant(identifier)`: Removes a constant from the symbol table and returns its value.

SymbolTableIdentifiers

- Attributes:
 - `symboltable`: An instance of `HashTable` to store identifiers.
- Methods:
 - `add_identifier(identifier, value)`: Adds an identifier and its value to the symbol table.
 - `get_identifier_value(identifier)`: Retrieves the value of an identifier.
 - `delete_identifier(identifier)`: Removes an identifier from the symbol table and returns its value.