**Lab 02 – DOCUMENTATION**

* *Language chosen:*JAVA
* Symbol Table (ST) implementation as a *HashTable*, with the corresponding operations

**HASH TABLE IMPLEMENTATION**

* Use a *Map <Integer, ArrayList<String>>*
* *Hash function:* 
  + sum of ASCII characters % n, where n - the length of the string
* *Collision resolution by chaining*:
  + each slot from the hash table contains a list, with the elements that hash to that slot
* *Operations:*
  + *add(ht, value)* => voiddescr: adds a new element into the ht, if not already contained  
    precond: ht: HashTable, value: String  
    post: ht' = ht U {value}, ht': HashTable
  + *getId(ht, value) =>* ArrayList[int]  
    descr: returns the key of the value is at and the index at which the value is in the array at the key  
    precond: ht: HashTable, value: String  
    postcond: [hash(value), ht[hash(value)].index(value)], if value is in ht; null, otherwise
  + *search(ht, key)* => ArrayList[String]  
    descr: returns the array assolciated with the key from ht

precond: ht: HashTable, key: int  
postcond: ht[hash(value)], if value is in ht; null, otherwise

* + *hash(value)* => int

descr: returns the hash value of the value

precond: value: String  
postcond: hashvalue

