

<https://github.com/danielgabor99/FLCD/tree/master/Lab4>

| ST |
|--|
| integer(size) list<string> *(table) |
| insertValue() alreadyExists() insertelem() showST() ST() |

My ST is represented by a hash table with chaining. The hash table is an array of linked lists, each index has its own linked list.

void insertItem(string value):

Inserts a non existent element in the st
Pre: the element to be inserted
Post: the st with the inserted item

bool alreadyexists(string value):

Boolean that returns if a element is present already in the st
Pre: the element to be inserted
Post: true or false

int hashFun(string value):

The hash function that returns the index in st of the value
Pre: the value
Post: the index in the st

void showST():

The print of the st
Pre:
Post: the st

```
0
1 --> ehll --> lleh
2 --> hello
3 --> ehl
4
5
6
7 --> a
```

For the scanner I made all the operations in main():

```
if(find(tokenArray.begin(),tokenArray.end(),(*it)[0])!=tokenArray.end())
{
```

//if exists in token.txt

Pre:the actual token and the array from the token.txt

Post:inserts into pif all the tokens that exists in token.txt

ELSE

//if does not exist in token.txt

Pre:the actual token and the array from the token.txt

Post:inserts into pif and in the ST with the value from the Hash, if it is a constant, with a value 0;

For the lexicals erros I used regex((?<!,)\b([\d\.]*)\b(?:!,))

```
p1 - Notepad
File Edit Format View Help
a -> 0
b -> 1
n -> 100
if i smaller a go
loop i->0; i smaller 100; i->i plus 1 go
    next->a plus b
    a->b
    b->next
close
print a
```

| pif - Notepad | | |
|---------------|------|--------|
| File | Edit | Format |
| a | | 7 |
| -> | | -1 |
| 0 | | 0 |
| b | | 8 |
| -> | | -1 |
| 1 | | 0 |
| n | | 0 |
| -> | | -1 |
| 100 | | 0 |
| if | | -1 |
| i | | 5 |
| smaller | | -1 |
| a | | 7 |
| go | | -1 |
| loop | | -1 |
| i | | 5 |
| -> | | -1 |
| 0 | | 0 |
| ; | | -1 |
| i | | 5 |
| smaller | | -1 |
| 100 | | 0 |
| ; | | -1 |
| i | | 5 |
| -> | | -1 |
| i | | 5 |
| plus | | 2 |
| 1 | | 0 |
| -> | | -1 |

```
p2 - Notepad
File Edit Format View Help
a->0
2i
01
int a[1, 3, 5, 7, 9]
loop i->0;i smaller
    if a
        a->2
close
```

```
2i error on line 2
01 error on line 3
PS C:\Users\danig\Desktop\An 3\FLCD\
```