

Simple Interpreter v1.0

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BSCS-2B

REG#1190

Software Documentation

This software can be cloned from the github repo as:

\$ git clone https://github.com/IbrarYunus/Advanced_Programming.git

Or via web :

https://github.com/IbrarYunus/Advanced_Programming/tree/master/IbrarYunus_Lab2%5Bv1%5D

The project file consists of two parts:

The interpreter

- Contains a FileParser function to Parse lines from the file and send them line by line to the Lexer
- Lexer, tokenizes the line into a string array and sends each word, one at a time to the Checker function
- Checker function has all of the interpreter logic
 - Checks if a word is a keyword
 - For LET, it sets the LET flag
 - For print, it sets the DISP flag
 - Checks if a word is a variable
 - if LET flag was set, assigns it to a value
 - if DISP flag was set, then displays it
 - Checks if a word is a value
 - If number, then stores it in a class, with “values” equal to the and “types” set to it's type
 - Checks if a word is an operator
 - If it is an operator, other than '=', then uses the duplicate line from the Parser to create an arithmetic string (e.g. “4 + 7 / 8”) and sends it to the expression handling function.

The Unit Tester

- Checks the expression handling function
- Reads the file containing the code, and after displaying all the debug information, checks for final values of variables A and B.

ERROR HANDLING SCREENSHOTS

File:

```
LET A = 67 ;  
LET B = "NG" ;  
print B  
A = 1 + 1 + A ;  
print A ;
```

Console Output:

```
DEBUG INFO  
LET A = 67 ;  
LET is a key word  
A is a variable  
= is a operator  
67 is a number  
LET = 0  
  
LET B = "NG" ;  
LET is a key word  
B is a variable  
= is a operator  
"NG" is a string  
LET = 0
```

```
print B
```

```
syntax error at line: 3
```

File:

```
1 LET A = 67 ;  
2 LET B = "NG" ;  
3 print B ;  
4 8 = C ;  
5 print A ;
```

Console:

```
"NG" is a string  
LET = 0
```

```
print B ;  
print is a key word  
Display Mode  
B is a variable  
"NG"  
LET = 0
```

```
8 = C ;
```

```
syntax error at line: 4
```