# CSE 341 :

## PROGRAMMING LANGUAGES:

## HOMEWORK 2:

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# PART 1: (YACC)

```
serdil@Serdil:/mnt/c/Users/serdi/Desktop/Yacc_Interpreter$ make
lex gpp_lexer.l && yacc -d gpp_interpreter.y &&  gcc -o output y.tab.c && ./output
In file included from gpp_interpreter.y:150:
gpp_lexer.l:63:1: warning: return type defaults to ‘int’ [-Wimplicit-int]
   63 |     return 1;
      | ^   ~~
gpp_interpreter.y:152:1: warning: return type defaults to ‘int’ [-Wimplicit-int]
  152 | yyerror(char *s){
      | ^~~~~~
;;helloworld.g++

(+ 10 10)
SYNTAX OK.
Result = 20

(list 1 2 123)
SYNTAX OK.
Result = ( 1 2 123 )

(set a 20)
SYNTAX OK.
Result = 20

(set b 10)
SYNTAX OK.
Result = 10

(+ a b)
SYNTAX OK.
Result = 30

(equal 5 6)
SYNTAX OK.
Result = 0

(equal 5 5)
SYNTAX OK.
Result = 1
```

-In this part, I tried the commands that can be tried by running the program with the “make” command and took screenshots.

```
(disp (** 5 3))
Print: 125
SYNTAX OK.
Result = 125

(less 8 12)
SYNTAX OK.
Result = 1

(less 13 5)
SYNTAX OK.
Result = 0

(* 3 4)
SYNTAX OK.
Result = 12

(not (and true true))
SYNTAX OK.
Result = 0

(not (or false false))
SYNTAX OK.
Result = 1

(disp '(2 3 4 5))
Print: ( 2 3 4 5 )
SYNTAX OK.
Result = ( 2 3 4 5 )

(set a (append 3 (list 1 2 34 4)))
syntax errorerrorerrorSYNTAX OK.
Result = 3
SYNTAX OK.
Result = ( 1 2 34 4 )
```


```
(* 6 8)
(** 5 3)
(/ 30 2)
(6 77 8)
(6 8 15)
(+ (* 2 6) (/ 28 7))
(and (or false false) true)
(or (not false) (and true true))
(not (and true true))
(not (or false false))
(set a 6)
(if true '(1 22 43))
(if false '(1 22 43))
(if true '(1 22 43) (list 22 4 46))
(if false '(1 22 43) (list 22 4 46))
(equal 6 7)
(equal 5 5)
(disp (** 3 4))
(disp '(2 3 4 5))
(equal  (or true true) (and false false) )
(equal (/ 42 2) (/ (+ 18 3) (- 6 5)))
```

```
(less 4 7)

(less 13 6)

(concat '(33 44 1) (list 21 65 32))

(append 90 '(1 23 123))

(append (list 71 1 3) '(6 8 10))

(if (and true false) (list 5 6) (list 5 66 70))
```

# PART 2: (INTERPRETER LISP)

```
serdil@Serdil:/mnt/c/Users/serdi/Desktop/Lisp_Interpreter$ make
clisp gpp_interpreter.lisp
-       *****************
-        use this format for execute g++ example.g++
-----> g++ example.g++
201

53

48

125

15


SYNTAX_ERROR Expression not recognized


SYNTAX_ERROR Expression not recognized

16

false

true

false

true

6

(1 22 43)

false

(1 22 43)

(22 4 46)
```

In this part, you can run the program with the make command. After the program runs, you can write “g++ example.g++” and take the lines in the file as input and print them automatically to the terminal, or you can test the program yourself.

```
false

true


SYNTAX_ERROR Expression not recognized


SYNTAX_ERROR Expression not recognized

false

true

true

false

(33 44 1 21 65 32)

(1 23 123 . 90)

(71 1 3 6 8 10)

(5 66 70)
----->
```

```
-----> (list 1 2 123)
(1 2 123)
-----> (equal 5 5)
true
-----> (equal 5 6)
false
-----> (less 6 7

SYNTAX_ERROR Expression not recognized
-----> (less 6 7)
true
-----> (less 7 6 )
false
-----> (+ 20 309

SYNTAX_ERROR Expression not recognized
-----> (+ 20 30)
50
-----> (disp (** 5 3))

SYNTAX_ERROR Expression not recognized
-----> (disp '(6 7 2 9))

SYNTAX_ERROR Expression not recognized
-----> (not (and true true))
false
-----> (not (or false false))
true
----->
```