

## CSE 341 Programming Languages Documentation

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### **Lex Part:**

The provided code is a Flex file defining lexical patterns for a simple programming language. It recognizes keywords, operators, values (including floats), identifiers, comments, and file names. Each pattern triggers an action to return a specific token type, with recognized text stored in `yyval`. The tokens include keywords (true, false), operators (+, -), and identifiers. The code serves as a lexer for a language processing system, possibly part of a compiler or interpreter for a specialized language, with support for comments, file names, and error handling for unrecognized symbols.

### **Yacc Part:**

Grammar rules are defined here.

Uses tokens generated from lex file.

It decides what to do with tokens and their values based on the grammar rules.

I deleted 3 input taking function call rule.

I used AST technique to produce nested expressions and functions.

VALUEF IDENTIFIER OP\_PLUS OP\_MINUS OP\_DIV OP\_MULT OP\_OP OP\_CP EXIT  
COMMENT KW\_DEF are defined in my grammar. Rest is does no operation.

To run my yacc part, you can in console

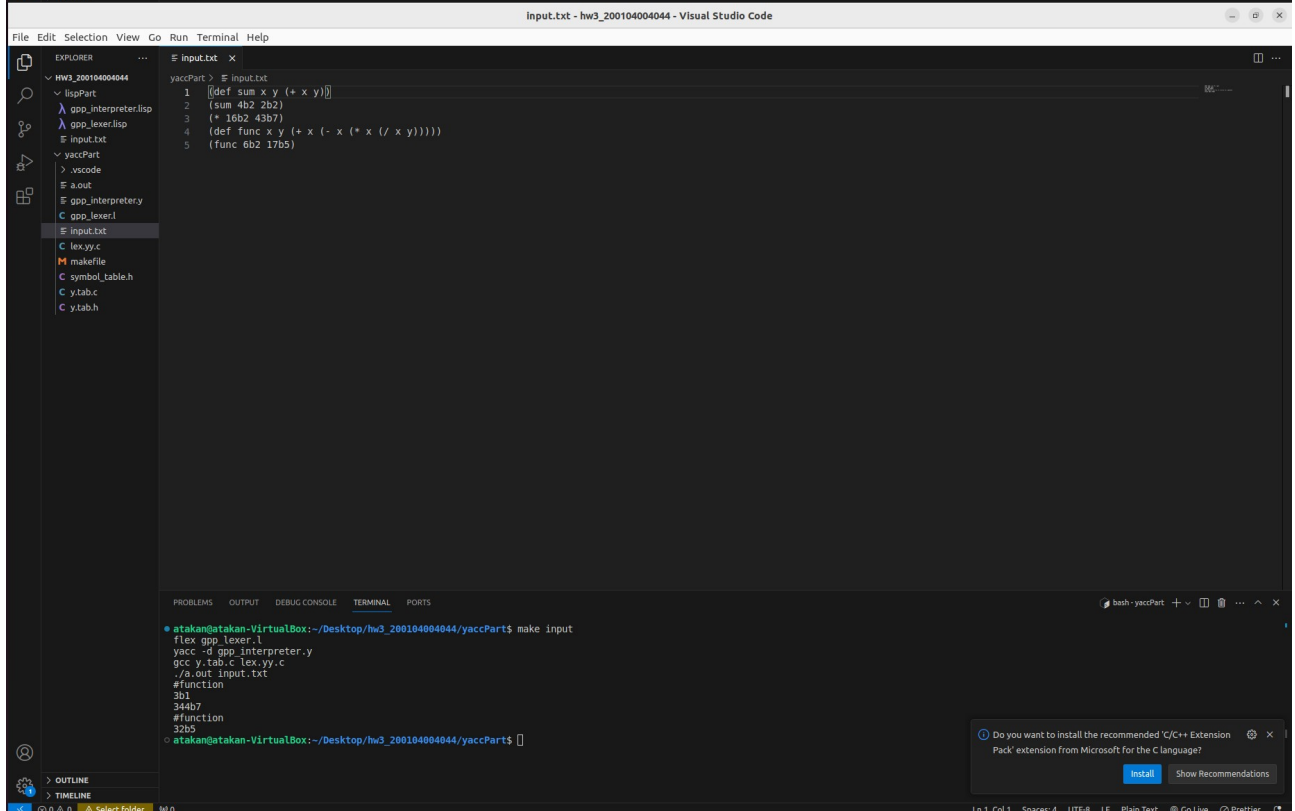
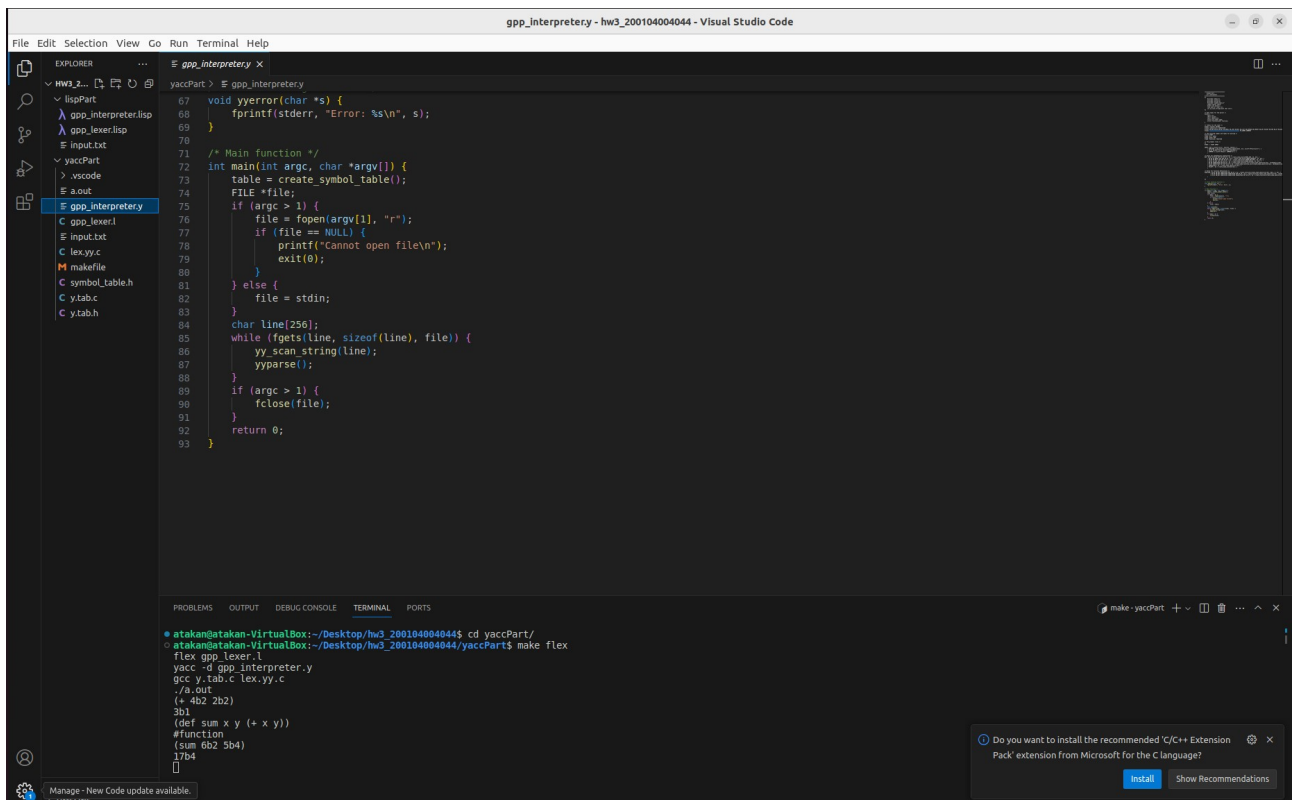
make flex

to get input line by line from user in console

make input

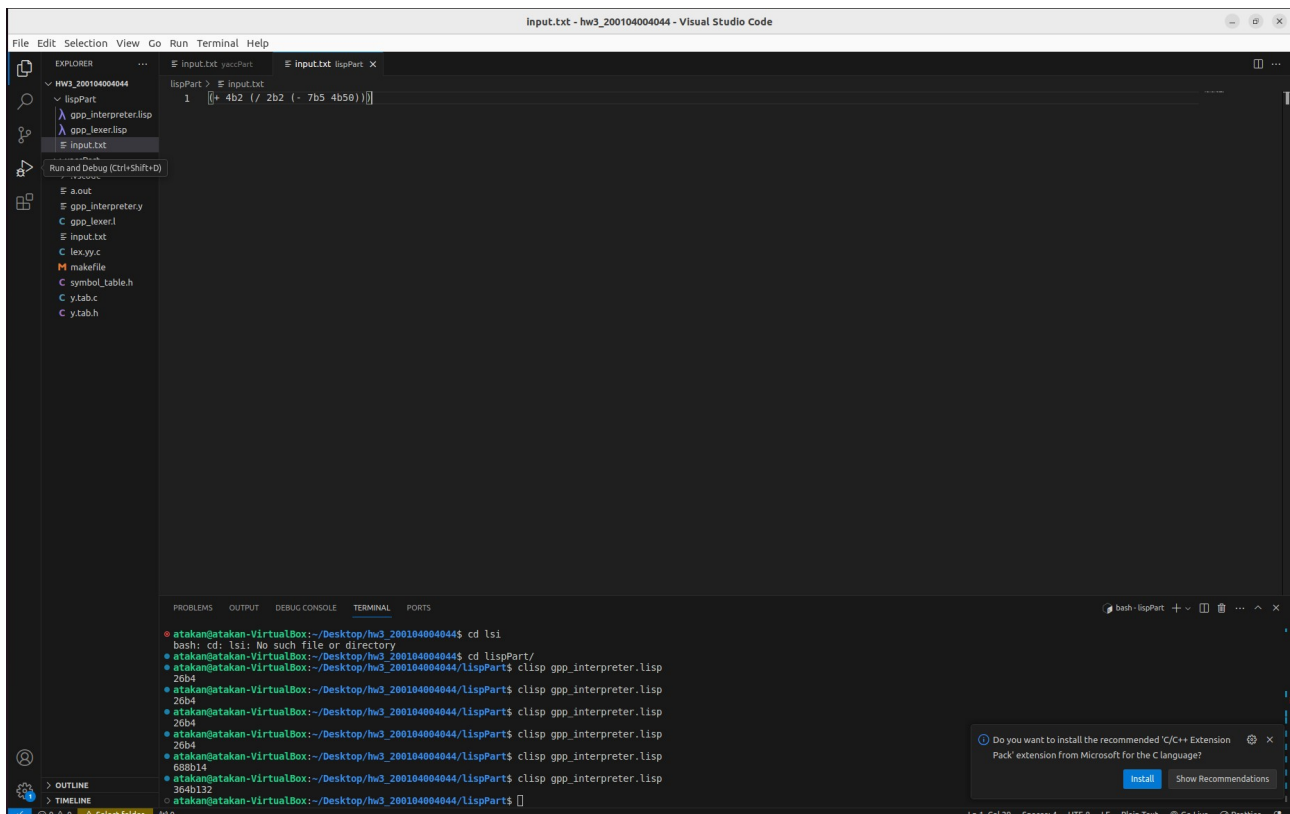
to run file that named "input.txt" write this

It accepts 4b2 values



## Lisp part:

In lisp part, It accepts 4b2 values not f. My lisp part only does expressions. It don't have user defined functions. You can enter nested expressions with VALUEF values. It only accepts input from "input.txt" file. It gets its tokens from lexer.lisp file. Exports it to interpreter. In interpreter I divide it and evaluate them recursively. It only accepts one line input. To run the code: "clisp gpp\_interpreter.lisp" enter this code in lispPart file.



```
File Edit Selection View Go Run Terminal Help
EXPLORE
  hw3_200104004044
    lispPart
      gpp_interpreter.lisp
      gpp_lexer.lisp
      input.txt
  Run and Debug (Ctrl+Shift+D)
    Run and Debug
      F a.out
      F gpp_interpreter.y
      C gpp_lexer.l
      F input.txt
      C lex.yy.c
      M makefile
      C symbol_table.h
      C y.tab.c
      C y.tab.h

lispPart > F input.txt
1 [(+ 4b2 (/ 2b2 (- 7b5 4b50)))]

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
  atakan@atakan-VirtualBox:~/Desktop/hw3_200104004044$ cd lsi
  bash: cd: lsi: No such file or directory
  atakan@atakan-VirtualBox:~/Desktop/hw3_200104004044$ cd lispPart/
  atakan@atakan-VirtualBox:~/Desktop/hw3_200104004044/lispPart$ clisp gpp_interpreter.lisp
  26b4
  atakan@atakan-VirtualBox:~/Desktop/hw3_200104004044/lispPart$ clisp gpp_interpreter.lisp
  26b4
  atakan@atakan-VirtualBox:~/Desktop/hw3_200104004044/lispPart$ clisp gpp_interpreter.lisp
  26b4
  atakan@atakan-VirtualBox:~/Desktop/hw3_200104004044/lispPart$ clisp gpp_interpreter.lisp
  688b14
  atakan@atakan-VirtualBox:~/Desktop/hw3_200104004044/lispPart$ clisp gpp_interpreter.lisp
  364b132
  atakan@atakan-VirtualBox:~/Desktop/hw3_200104004044/lispPart$

Do you want to install the recommended C/C++ Extension Pack extension from Microsoft for the C language?
[Install] [Show Recommendations]
```