

HW3 PART2 REPORT

“gppinterpreter” function takes a file name as a input optionally.

If you give file name string to the function, it reads, tokenize and parse the string inside the file. If not it evaluates inputs from the terminal.



DONE:

- Correct tokenization of the given input
- Shift reduce parsing algorithm implemented. (LR parsing)
- Syntax analysis works for some expressions

```
(+ 5 3)
("OP_OP")
("OP_OP")
("OP_OP" "KW_IF")
("OP_OP" "KW_IF")
("OP_OP" "KW_IF" "KW_TRUE")
("OP_OP" "KW_IF" "EXPB")
("OP_OP" "KW_IF" "EXPB" "OP_OP")
("OP_OP" "KW_IF" "EXPB" "OP_OP")
("OP_OP" "KW_IF" "EXPB" "OP_OP" "KW_LIST")
("OP_OP" "KW_IF" "EXPB" "OP_OP" "KW_LIST")
("OP_OP" "KW_IF" "EXPB" "OP_OP" "KW_LIST" "OP_CP")
("OP_OP" "KW_IF" "EXPB" "EXPLISTI")
("OP_OP" "KW_IF" "EXPB" "EXPLISTI" "OP_CP")
("START")
("Syntax OK" )
```

NOT IMPLEMENTED YET:

- There are ambiguities for some expressions. It converts “IDENTIFIER” to “EXPI” before seeing the bigger handle that gives the definition of “KW_SET” or “KW_DEFFUN”. So it becomes a wrong syntax.

```
(set a 5)
("OP_OP")
("OP_OP")
("OP_OP" "KW_SET")
("OP_OP" "KW_SET")
("OP_OP" "KW_SET" "IDENTIFIER")
("OP_OP" "KW_SET" "EXPI")
("OP_OP" "KW_SET" "EXPI" "VALUE")
("OP_OP" "KW_SET" "EXPI" "EXPI")
("OP_OP" "KW_SET" "EXPI" "EXPI" "OP_CP")
("OP_OP" "KW_SET" "EXPI" "EXPI" "OP_CP")
("Syntax Error!" )
```

```
(deffun a (x y) (list))
("OP_OP")
("OP_OP")
("OP_OP" "KW_DEFFUN")
("OP_OP" "KW_DEFFUN")
("OP_OP" "KW_DEFFUN" "IDENTIFIER")
("OP_OP" "KW_DEFFUN" "EXPI")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "IDENTIFIER")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "IDENTIFIER")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI" "OP_CP")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI" "OP_CP")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI" "OP_CP" "OP_OP")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI" "OP_CP" "OP_OP" "KW_LIST")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI" "OP_CP" "OP_OP" "KW_LIST")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI" "OP_CP" "OP_OP" "KW_LIST")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI" "OP_CP" "EXPLISTI")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI" "OP_CP" "EXPLISTI" "OP_CP")
("OP_OP" "KW_DEFFUN" "EXPI" "OP_OP" "EXPI" "EXPI" "OP_CP" "EXPLISTI" "OP_CP")
("Syntax Error!" )
```

- Assignment, function definition and if-else structure are not implemented yet. Just syntax analysis works.