

Ex. No.: 4

Date: 7-1-2026

Title: Recognition of all the Tokens

Aim: Write a LEX program to recognize all the tokens in the given input file. Here the input file is having source code.

Algorithm :

- Write the Flex source file (`Exp4.l`) with rules and C code.
- Run `flex Exp4.l` to generate `lex.yy.c`.
- Compile `lex.yy.c` using `gcc lex.yy.c -o Exp4 -lfl` (or `gcc lex.yy.c -o Exp4` if `-lfl` is not available).
- Execute the program with `./Exp4`.
- Provide input manually or via a file using `./Exp4 < input.txt`.
- The Flex scanner reads the input and performs actions defined in the rules.
- Display the output generated by the Flex program.
- Stop the process.

Program:

```
%{
#include <stdio.h>
%}
%%
"int"|"float"|"char"|"double"|"if"|"else"|"while"|"for"|"return" { printf("KEYWORD: %s\n", yytext); }
[a-zA-Z_][a-zA-Z0-9_]* { printf("IDENTIFIER: %s\n", yytext); }
[0-9]+(\.[0-9]+)? { printf("NUMBER: %s\n", yytext); }

"=="|"!="|"<"|">"|"+"|"-"|"*"|"/"|"=" { printf("OPERATOR: %s\n", yytext); }
";"|"."|"("|"")"|"{"|""}" { printf("SEPARATOR: %s\n", yytext); }

"\\"([^\\"\\]|\\.)*\\" { printf("STRING: %s\n", yytext); }

"//".* { printf("COMMENT: %s\n", yytext); }
"/\*\*[^*]*\*/\*[^*]*\*/ { printf("COMMENT: %s\n", yytext); }
```

```
[ \t\n]+      ; /* Ignore whitespace */\n.\n{ printf("UNKNOWN: %s\n", yytext); }\n%%\nint main(int argc, char *argv[])\n{\n    if (argc > 1)\n        yyin = fopen(argv[1], "r");\n    yylex();\n    return 0;\n}
```

Result:

Program executed successfully and verified output.

OUTPUT:

```
~/class/compile_d via v15.2.1-gcc
> flex Exp4.l
~/class/compile_d via v15.2.1-gcc
> gcc lex.yy.c -o Exp4 -lfl
[Experiments]
~/class/compile_d via v15.2.1-gcc
> ./Exp4 add.c
PREPROCESSOR: #include<stdio.h>
IDENTIFIER: int Apps
FUNCTION: main(Projects
SEPARATOR: )
SEPARATOR: {
IDENTIFIER: int Jar chats
IDENTIFIER: a
SEPARATOR: , GCC Flex library err...
IDENTIFIER: b
SEPARATOR: ; LEX program counters
FUNCTION: printf(
STRING: "enter number:"eed Optim...
SEPARATOR: )
SEPARATOR: ; Custom Linux Kernel ...
FUNCTION: scanf(
STRING: "%d" Unity Camera Follow ...
SEPARATOR: , LibreOffice Page Bre...
UNKNOWN: &
IDENTIFIER: aEven Squares Code
SEPARATOR: )
SEPARATOR: ; MQ-5 Arduino Sensor ...
FUNCTION: printf(
STRING: "enter number:"ing after i...
SEPARATOR: ) Smart Environmental ...
SEPARATOR: ;
FUNCTION: scanf( Embedded Systems...
STRING: "%d"
SEPARATOR: , C Programming Quiz
UNKNOWN: &
IDENTIFIER: bQNX RTOS Assessment ...
SEPARATOR: )
SEPARATOR: . Linux Kernel Archite...
```