

Ex. No.: 4	Date: 7-1-2026
<b>Title:</b> Recognition of all the Tokens	
<p><b>Aim:</b> Write a LEX program to recognize all the tokens in the given input file. Here the input file is having source code.</p>	
<p><b>Algorithm :</b></p> <ul style="list-style-type: none"> <li>• Write the Flex source file (Exp4 . l) with rules and C code.</li> <li>• Run <code>flex Exp4 . l</code> to generate <code>lex.yy.c</code>.</li> <li>• Compile <code>lex.yy.c</code> using <code>gcc lex.yy.c -o Exp4 -lfl</code> (or <code>gcc lex.yy.c -o Exp4</code> if <code>-lfl</code> is not available).</li> <li>• Execute the program with <code>./Exp4</code>.</li> <li>• Provide input manually or via a file using <code>./Exp4 &lt; input.txt</code>.</li> <li>• The Flex scanner reads the input and performs actions defined in the rules.</li> <li>• Display the output generated by the Flex program.</li> <li>• Stop the process.</li> </ul>	
<p><b>Program:</b></p> <pre>%{ #include &lt;stdio.h&gt; %} %% "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); }  "==" "!=" "&lt;=" "&gt;=" "+"  "-" "*" " / "  "=" { 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); }</pre>	

```
[ \t\n]+      ; /* Ignore whitespace */

.            { printf("UNKNOWN: %s\n", yytext); }
%%

int main(int argc, char *argv[])
{
    if (argc > 1)
        yyin = fopen(argv[1], "r");
    yylex();
    return 0;
}
```

**Result:**

Program executed successfully and verified output.

**OUTPUT:**

```
~/class/compile_d via G v15.2.1-gcc
> flex Exp4.l

~/class/compile_d via G v15.2.1-gcc
> gcc lex.yy.c -o Exp4 -lfl

~/class/compile_d via G v15.2.1-gcc
> ./Exp4 add.c
PREPROCESSOR: #include<stdio.h>
IDENTIFIER: int
FUNCTION: main(
SEPARATOR: )
SEPARATOR: {
IDENTIFIER: int
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:"g after 1...
SEPARATOR: )
SEPARATOR: ; Smart Environmental ...
FUNCTION: scanf( Embedded Systems...
STRING: "%d"
SEPARATOR: , C Programming Quiz ...
UNKNOWN: &
IDENTIFIER: bQNX RTOS Assessment ...
SEPARATOR: )
SEPARATOR: . Linux Kernel Archite...
```