Ex No: 3
Date:

DEVELOP A LEXICAL ANALYZER TO RECOGNIZE TOKENS USING LEX TOOL

AIM:

To implement the program to identify C keywords, identifiers, operators, end statements like [], {} using LEX tool.

ALGORITHM

1.Define patterns for C keywords, identifiers, operators, and end statements using regular expressions. Use %option noyywrap to disable the default behavior of yywrap.

2.Utilize regular expressions to match patterns for C keywords, identifiers, operators, and end statements. Associate each pattern with an action to be executed when matched.

3.Define actions to print corresponding token categories for matched patterns.Handle special cases like function declarations, numeric literals, and processor directives separately.

4.Open the input file (sample.c in this case) for reading. Start lexical analysis using yylex() to scan the input and apply defined rules.

5.Increment a counter (n) each time a newline character is encountered. Print he total number of lines at the end of the program execution.

PROGRAM

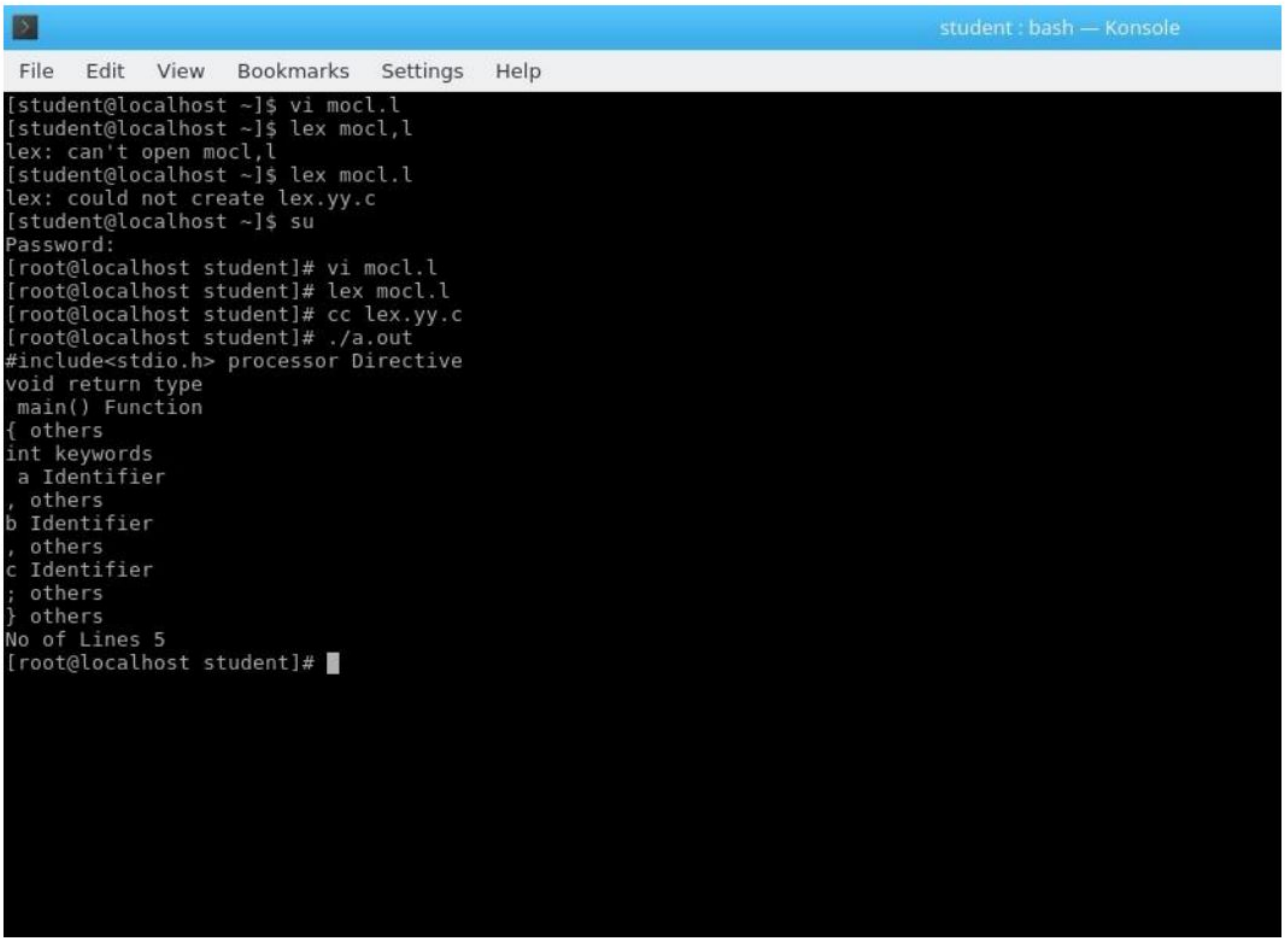
```
%option noyywrap
letter [a-zA-Z]
digit [0-9]
id [_|a-zA-Z]
AO [+|-|/|%|*]
RO  [<|>|<=|>=|==]
pp [#]
%{
int n=0;
%}

%%
"void"                          printf("%s return type\n",yytext);
{letter}*[(][)]                 printf("%s  Function\n",yytext);
"int"|"float"|"if"|"else"       printf("%s keywords\n",yytext);
"printf"                                printf("%s keywords\n",yytext);
```

```
{id}({id}|{digit})*          printf("%s Identifier\n",yytext);
{digit}{digit}*                    printf("%d Numbers\n",yytext);
{AO}                               printf("%s Arithmetic Operators\n",yytext);
{RO}                               printf("%s Relational Operators\n",yytext);
{pp}{letter}*[<]{letter}*[.]{letter}[>] printf("%s processor
                                                    Directive\n",yytext);
[\n]                               n++;
"."|","|"}"|"{"|";"          printf("%s others\n",yytext);

%%
int main(){
        yyin=fopen("sample.c","r");
        yylex();
        printf("No of Lines %d\n",n);
}
```

OUTPUT



RESULT