Exp. No. 26

Implement Lexical Analyzer using FLEX (Fast Lexical Analyzer). The program should separate the tokens in the given C program and display with appropriate caption.

Program: (token.l)

```
digit [0-9]
letter [A-Za-z]
%{
int count_id,count_key;
%}
%%
(stdio.h|conio.h) { printf("%s is a standard library\n",yytext); }
(include|void|main|printf|int) { printf("%s is a keyword\n",yytext); count_key++; }
{letter}({letter}|{digit})*  { printf("%s is a identifier\n", yytext); count_id++; }
{digit}+  { printf("%s is a number\n", yytext); }
\"(\\.|[^"\\])*\"  { printf("%s is a string literal\n", yytext); }
.|\n {  }
%%
int yywrap(void) {
return 1;
}
int main(int argc, char *argv[]) {
yyin = fopen(argv[1], "r");
yylex();
printf("number of identifiers = %d\n", count_id);
printf("number of keywords = %d\n", count_key);
fclose(yyin);
}
```

Input Source Program: (sample.c)

```
#include<stdio.h>

void main()
{
int a,b,c = 30;

printf("hello");
}
```

OUTPUT:

```
Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Deepak>d:

D:\>cd Slots

D:\Slots>cd Compiler Design

D:\Slots\Compiler Design>flex Ex11keyIdy.l

D:\Slots\Compiler Design>gcc lex.yy.c

D:\Slots\Compiler Design>a.exe Ex11keyIdy.c
include is a keyword
stdio.h is a standard library
void is a keyword
main is a keyword
int is a keyword
a is a identifier
b is a identifier
c is a identifier
30 is a number
printf is a keyword
"hello" is a string literal
number of identifiers = 3
number of keywords = 5

D:\Slots\Compiler Design>
```