20. Write a LEX program which adds line numbers to the given C program file and display the same in the standard output.

    Input Source Program: (sample.c)

    #define PI 3.14

    #include<stdio.h>

    #include<conio.h>

    void main()

    {

    int a,b,c = 30;

    printf("hello");

    }

```
%{

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

#define MAX_LINES 1000

char lines[MAX_LINES][256];

int lineCount = 0;

%}


%%


\n     { strncpy(lines[lineCount++], yytext, sizeof(lines[0])); }

.      { strncpy(lines[lineCount++], yytext, sizeof(lines[0])); }
```

```c
%%

int main() {

    printf("Enter your C program (Ctrl+D to end):\n");


    yylex();


    printf("\nC Program with Line Numbers:\n");

    for (int i = 0; i < lineCount; i++) {

        printf("%d: %s", i + 1, lines[i]);

    }


    return 0;

}


int yywrap() {

    return 1;

}
```

```
Microsoft Windows [Version 10.0.22621.3007]
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C:\Users\91936>set path=%path%;C:\Program Files\CodeBlocks\MinGW\bin;C:\Program Files\GnuWin32\bin;

C:\Users\91936>d:

D:\>flex 20.l

D:\>gcc lex.yy.c

D:\>a.exe
Enter your C program (Ctrl+D to end):
#define PI 3.14
#include<stdio.h>
#include<conio.h>
    void main()
{
int a,b,c = 30;
printf("hello");
}
^D
^Z

C Program with Line Numbers:
1: #2: d3: e4: f5: i6: n7: e8:  9: P10: I11:  12: 313: .14: 115: 416:  17:  18:  19:
20: #21: i22: n23: c24: l25: u26: d27: e28: <29: s30: t31: d32: i33: o34: .35: h36: >37:  38:
39: #40: i41: n42: c43: l44: u45: d46: e47: <48: c49: o50: n51: i52: o53: .54: h55: >56:
57:  58:  59:  60: v61: o62: i63: d64:  65: m66: a67: i68: n69: (70: )71:
72: {73:
74: i75: n76: t77:  78: a79: ,80: b81: ,82: c83:  84: =85:  86: 387: 088: ;89:
90: p91: r92: i93: n94: t95: f96: (97: "98: h99: e100: l101: l102: o103: "104: )105: ;106:
107: }108:
109: 110:

D:\>
```