

16. Write a LEX specification count the number of characters, number of lines & number of words.

PROGRAM:

```
% {  
int nlines,nwords,nchars;  
% }  
%%  
\n {  
    nchars++;nlines++;  
}  
[^\n\t]+ {nwords++;nchars=nchars+yyleng;}  
. {nchars++;}  
%%  
int yywrap(void){ }  
int main()  
{  
    yylex();  
    printf("Lines=%d\nChars=%d\nWords=%d",nlines,nchars,nwords);  
    return 0;  
}
```

OUTPUT:

```
Command Prompt
"noofcharslineswords.l.txt", line 8: unrecognized rule
"noofcharslineswords.l.txt", line 8: unrecognized rule
"noofcharslineswords.l.txt", line 8: unrecognized rule
"noofcharslineswords.l.txt", line 8: unrecognized rule
"noofcharslineswords.l.txt", line 8: unrecognized rule
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"noofcharslineswords.l.txt", line 8: unrecognized rule
"noofcharslineswords.l.txt", line 8: unrecognized rule

C:\Users\bteja\Downloads\cd10>set path=C:\Program Files\GnuWin32\bin

C:\Users\bteja\Downloads\cd10>flex noofcharslineswords.l.txt

C:\Users\bteja\Downloads\cd10>set path=C:\MinGW\bin

C:\Users\bteja\Downloads\cd10>gcc lex.yy.c

C:\Users\bteja\Downloads\cd10>a.exe
bhanuteja will get good package
he will learn required skills
^Z
Lines=2
Chars=62
Words=2
C:\Users\bteja\Downloads\cd10>|
```

17. Write a LEX program to print all HTML tags in the input file.

PROGRAM:

```
%{
#include<stdio.h>

%}

%%

\[<[^>]*\> fprintf(yyout,"%s/n",yytext);

\n;

%%

int yywrap()

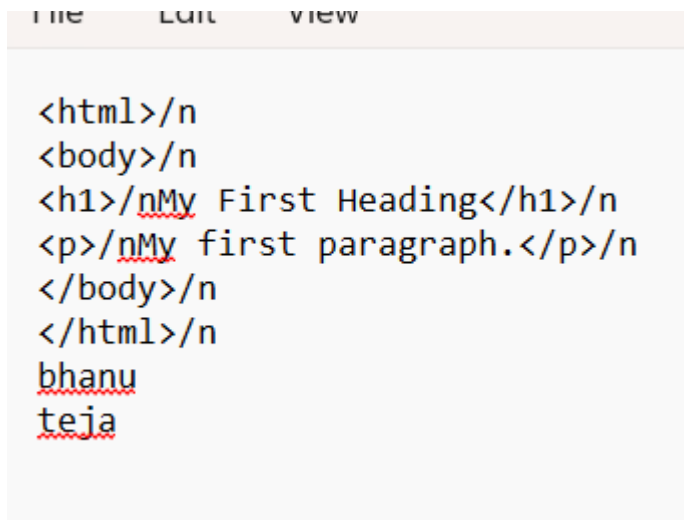
{}
```

```

int main()
{
yyin=fopen("sample.html","r");
yyout=fopen("output.txt","w");
yylex();
}

```

OUTPUT:



```

<html>/n
<body>/n
<h1>/nMy First Heading</h1>/n
<p>/nMy first paragraph.</p>/n
</body>/n
</html>/n
bhanu
teja

```

18. Write a LEX program to count the number of Macros defined and header files included in the C program

PROGRAM:

```

%{
int nmacro,nheader;

%}

%%

^#define {nmacro++;}

^#include {nheader++;}

%%

int yywrap()
{

```

```
return 1;

}

int main()

{

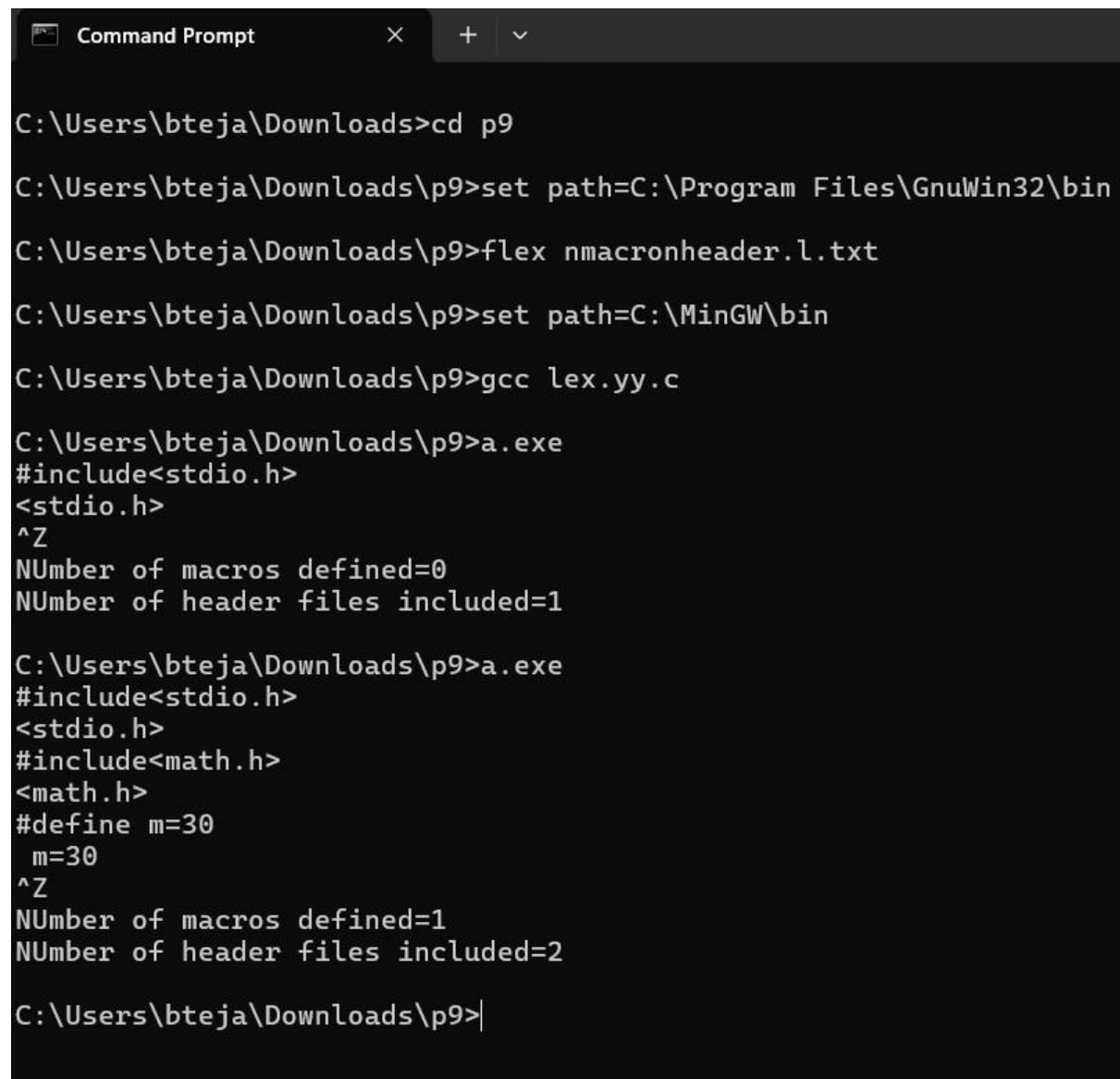
yylex();

printf("NUmber of macros defined=%d\n",nmacro);

printf("NUmber of header files included=%d\n",nheader);

}
```

OUTPUT:



```
Command Prompt

C:\Users\bteja\Downloads>cd p9
C:\Users\bteja\Downloads\p9>set path=C:\Program Files\GnuWin32\bin
C:\Users\bteja\Downloads\p9>flex nmacronheader.l.txt
C:\Users\bteja\Downloads\p9>set path=C:\MinGW\bin
C:\Users\bteja\Downloads\p9>gcc lex.yy.c
C:\Users\bteja\Downloads\p9>a.exe
#include<stdio.h>
<stdio.h>
^Z
NUmber of macros defined=0
NUmber of header files included=1
C:\Users\bteja\Downloads\p9>a.exe
#include<stdio.h>
<stdio.h>
#include<math.h>
<math.h>
#define m=30
  m=30
^Z
NUmber of macros defined=1
NUmber of header files included=2
C:\Users\bteja\Downloads\p9>|
```

19. Write a lex program to find whether given input is keyword or identifier?

PROGRAM:

```
%{  
  
%}  
  
%%  
  
if|else|while|int|switch|for|char|double|float|break|continue {printf("it is a keyword");}  
  
[a-zA-Z][a-zA-Z0-9]+ {printf("\n%s is identifier",yytext);}  
  
%%  
  
int yywrap(){}  
  
int main()  
  
{  
  
while(yylex());  
  
}
```

OUTPUT:

```
C:\Users\bteja>cd downloads  
C:\Users\bteja\Downloads>cd p10  
C:\Users\bteja\Downloads\p10>set path=C:\Program Files\GnuWin32\bin  
C:\Users\bteja\Downloads\p10>flex idkey.l.txt  
C:\Users\bteja\Downloads\p10>set path=C:\MinGW\bin  
C:\Users\bteja\Downloads\p10>gcc lex.yy.c  
C:\Users\bteja\Downloads\p10>a.exe  
if  
it is a keyword  
abd  
  
abd is identifier
```

20. Write a lex program for relational operators and words?

PROGRAM:

```
% {  
#include <stdio.h>  
#include <ctype.h>  
% }  
%%  
[A-Za-z]+    { printf("Word: %s\n", yytext); }  
"=="        { printf("Relational Operator: %s\n", yytext); }  
"!="        { printf("Relational Operator: %s\n", yytext); }  
"<="        { printf("Relational Operator: %s\n", yytext); }  
">="        { printf("Relational Operator: %s\n", yytext); }  
"<"         { printf("Relational Operator: %s\n", yytext); }  
">"         { printf("Relational Operator: %s\n", yytext); }  
[ \t\n]+    { /* ignore whitespace */ }  
.  
            { /* ignore other characters */ }  
%%  
int yywrap() {  
    return 1;  
}  
int main() {  
    yylex();  
    return 0;  
}
```

OUTPUT:

```
C:\Users\bteja\Downloads\p15>set path=C:\Program Files\GnuWin32\bin
C:\Users\bteja\Downloads\p15>flex wordrelop.l.txt
C:\Users\bteja\Downloads\p15>set path=C:\MinGW\bin
C:\Users\bteja\Downloads\p15>gcc lex.yy.c
C:\Users\bteja\Downloads\p15>a.exe
bhanu
Word: bhanu
==
Relational Operator: ==
<=
Relational Operator: <=
>=
Relational Operator: >=
teja
Word: teja
```