Design a lexical Analyzer to find the number of whitespaces and newline characters using C.

Program:

#include <stdio.h>

int main()

{

char str[100];//input string with size 100

int words=0,newline=0,characters=0; // counter variables

scanf("%[^~]",&str);//scanf formatting

for(int i=0;str[i]!='\0';i++)

{

if(str[i] == ' ')

{

words++;

}

else if(str[i] == '\n')

{

newline++;

words++;//since with every next line new words start. corner case 1

}

else if(str[i] != ' ' && str[i] != '\n'){

characters++;

}

}

if(characters > 0)//Corner case 2,3.

{

words++;

newline++;

}

printf("Total number of words : %d\n",words);

printf("Total number of lines : %d\n",newline);

printf("Total number of characters : %d\n",characters);

return 0;

}

Output:

void main()

{

int a;

int b;

a = b + c;

c = d \* e;

}

Total number of words : 18

Total number of lines : 7