Develop a lexical Analyzer to identify identifiers, constants, operators using C program.

Program:

#include<stdio.h>

#include<ctype.h>

#include<string.h>

int main()

{

int i,ic=0,m,cc=0,oc=0,j;

char b[30],operators[30],identifiers[30],constants[30];

printf("enter the string : ");

scanf("%[^\n]s",&b);

for(i=0;i<strlen(b);i++)

{

if(isspace(b[i]))

{

continue;

}

else if(isalpha(b[i]))

{

identifiers[ic] =b[i];

ic++;

}

else if(isdigit(b[i]))

{

m=(b[i]-'0');

i=i+1;

while(isdigit(b[i]))

{

m=m\*10 + (b[i]-'0');

i++;

}

i=i-1;

constants[cc]=m;

cc++;

}

else

{

if(b[i]=='\*')

{

operators[oc]='\*';

oc++;

}

else if(b[i]=='-')

{

operators[oc]='-';

oc++;

}

else if(b[i]=='+')

{

operators[oc]='+';

oc++;

}

else if(b[i]=='=')

{

operators[oc]='=';

oc++;

}

}

}

printf(" identifiers : ");

for(j=0;j<ic;j++)

{

printf("%c ",identifiers[j]);

}

printf("\n constants : ");

for(j=0;j<cc;j++)

{

printf("%d ",constants[j]);

}

printf("\n operators : ");

for(j=0;j<oc;j++)

{

printf("%c ",operators[j]);

}

}

Output:

enter the string : a = b + c \* e + 100

identifiers : a b c e

constants : 100

operators : = + \* +