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