

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++;
}
    }
}

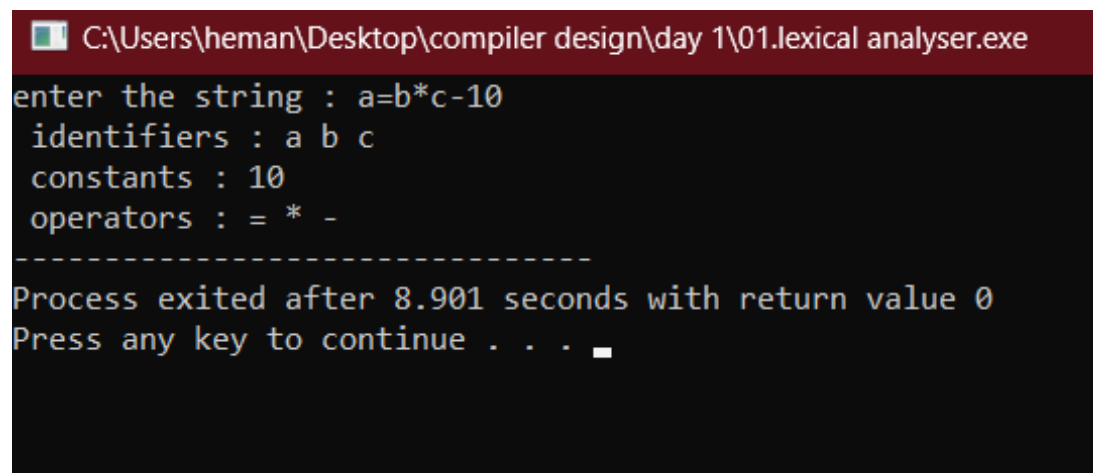
```

```

    }
    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



The screenshot shows a Windows command prompt window with the title bar "C:\Users\heman\Desktop\compiler design\day 1\01.lexical analyser.exe". The program prompts the user to "enter the string : a=b*c-10". It then displays the results of its analysis: "identifiers : a b c", "constants : 10", and "operators : = * -". A dashed line separates this output from the final status message: "Process exited after 8.901 seconds with return value 0". The prompt "Press any key to continue . . ." is shown at the bottom, with a single character input visible.

```

C:\Users\heman\Desktop\compiler design\day 1\01.lexical analyser.exe
enter the string : a=b*c-10
identifiers : a b c
constants : 10
operators : = * -
-----
Process exited after 8.901 seconds with return value 0
Press any key to continue . . .

```