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Class : L.Y.B.TECH.  
Batch : B1  
Sub : CCL  
Aim : Write a C program to recognize strings under  
'a*', 'a*b+', 'abb'.
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Program:

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#include<stdio.h>  
#include<string.h>  
#include<stdlib.h>  
void main()  
{  
    char s[20],c;  
    int state=0,i=0;  
    printf("\n Enter a string:");  
    gets(s);  
    while(s[i]!='\0')  
    {  
        switch(state)  
        {  
            case 0: c=s[i++];  
                if(c=='a')  
                    state=1;  
                else if(c=='b')  
                    state=2;  
                else  
                    state=6;  
                break;  
            case 1: c=s[i++];  
                if(c=='a')
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        state=3;
    else if(c=='b')
        state=4;
    else
        state=6;
    break;
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case 2: c=s[i++];
    if(c=='a')
        state=6;
    else if(c=='b')
        state=2;
    else
        state=6;
    break;
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case 3: c=s[i++];
    if(c=='a')
        state=3;
    else if(c=='b')
        state=2;
    else
        state=6;
    break;
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case 4: c=s[i++];
    if(c=='a')
        state=6;
    else if(c=='b')
        state=5;
    else
        state=6;
    break;
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        case 5: c=s[i++];
                if(c=='a')
                        state=6;
                else if(c=='b')
                        state=2;
                else
                        state=6;
                break;

        case 6: printf("\n %s is not recognised.",s);
                exit(0);
        }
}

if((state==1) || (state==3))
        printf("\n %s is accepted under rule 'a*'",s);
else if((state==2) || (state==4))
        printf("\n %s is accepted under rule 'a*b+'",s);
else if(state==5)
        printf("\n %s is accepted under rule 'abb'",s);
else
        printf("\n String not accepted by automata.");
}

/*****OUTPUT*****/

G:\CCL>gcc string_regn.c
G:\CCL>a.exe
Enter a string:aaaaa
aaaaa is accepted under rule 'a*'
G:\CCL>a.exe
Enter a string:abbbbb
abbbbb is accepted under rule 'a*b+'
G:\CCL>a.exe
Enter a string:abb
abb is accepted under rule 'abb'
G:\CCL>a.exe

```

Enter a string:aba

String not accepted by automata.

G:\CCL>