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1  #include<stdio.h>
2  #include<string.h>
3  #include<stdlib.h>
4  void main()
5  {
6      char s[20],c;
7      int state=0,i=0;
8      printf("Kindly enter a string:");
9      scanf("%s",s);
10     while(s[i]!='\0')
11     {
12         switch(state)
13         {
14             case 0: c=s[i++];
15                     if(c=='a')
16                         state=1;
17                     else if(c=='b')
18                         state=2;
19                     else
20                         state=6;
21                     break;
22             case 1: c=s[i++];
23                     if(c=='a')
24                         state=3;
25                     else if(c=='b')
26                         state=4;
27                     else
28                         state=6;
29                     break;
30             case 2: c=s[i++];
31                     if(c=='a')
32                         state=6;
33                     else if(c=='b')
34                         state=2;
35                     else
36                         state=6;
37                     break;
38             case 3: c=s[i++];
39                     if(c=='a')
40                         state=3;
41                     else if(c=='b')
42                         state=2;
43                     else
44                         state=6;
45                     break;
46             case 4: c=s[i++];
47                     if(c=='a')
48                         state=6;
49                     else if(c=='b')
50                         state=5;
51                     else
52                         state=6;
53                     break;
54             case 5: c=s[i++];
55                     if(c=='a')
56                         state=6;
57                     else if(c=='b')
58                         state=2;
59                     else
60                         state=6;
61                     break;
62             case 6: printf("\n %s is not recognised.\n",s);
63                     exit(0);
64             }
65         }
66     if(state==1)
67         printf("\n %s is accepted under rule 'a'\n",s);
68     else if((state==2)||(state==4))
69         printf("\n %s is accepted under rule 'a*b+'\n",s);
70     else if(state==5)
71         printf("\n %s is accepted under rule 'abb'\n",s);
72 }

```