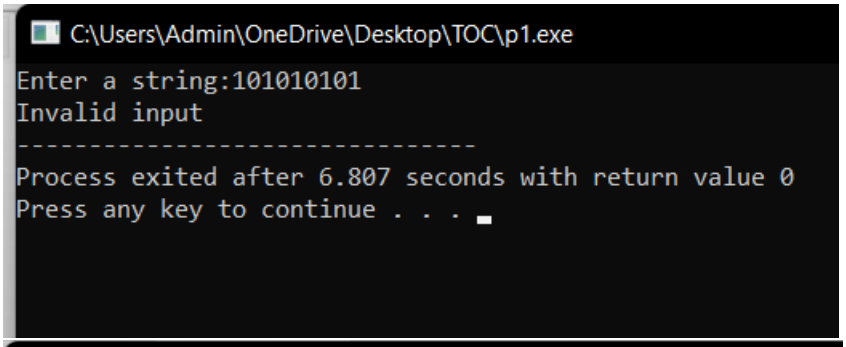
Write a C program to simulate a Deterministic Finite Automata (DFA) for the given language

Program:

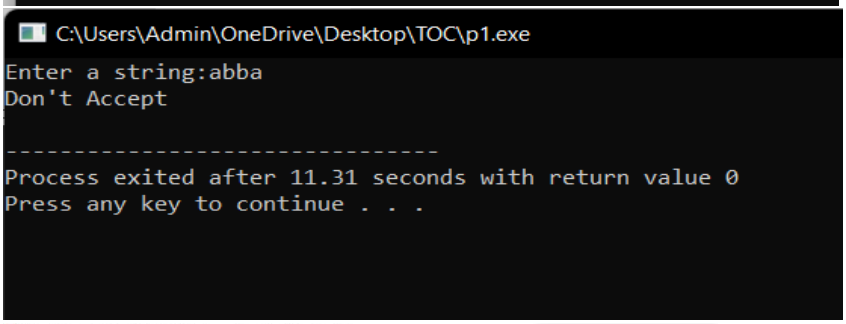
```
#include<stdio.h>
#include<string.h>
#define max 20
int main()
{
int trans_table[4][2]={{1,3},{1,2},{1,2},{3,3}};
int final_state=2,i;
int present_state=0;
int next_state=0;
int invalid=0;
char input_string[max];
printf("Enter a string:");
scanf("%s",input_string);
int l=strlen(input_string);
for(i=0;i<l;i++)
{
if(input_string[i]=='a')
next_state=trans_table[present_state][0];
else if(input_string[i]=='b')
next_state=trans_table[present_state][1];
else
invalid=l;
present_state=next_state;
}
if(invalid==l)
{
printf("Invalid input");
```

```
}
else if(present_state==final_state)
printf("Accept\n");
else
printf("Don't Accept\n");
}
```

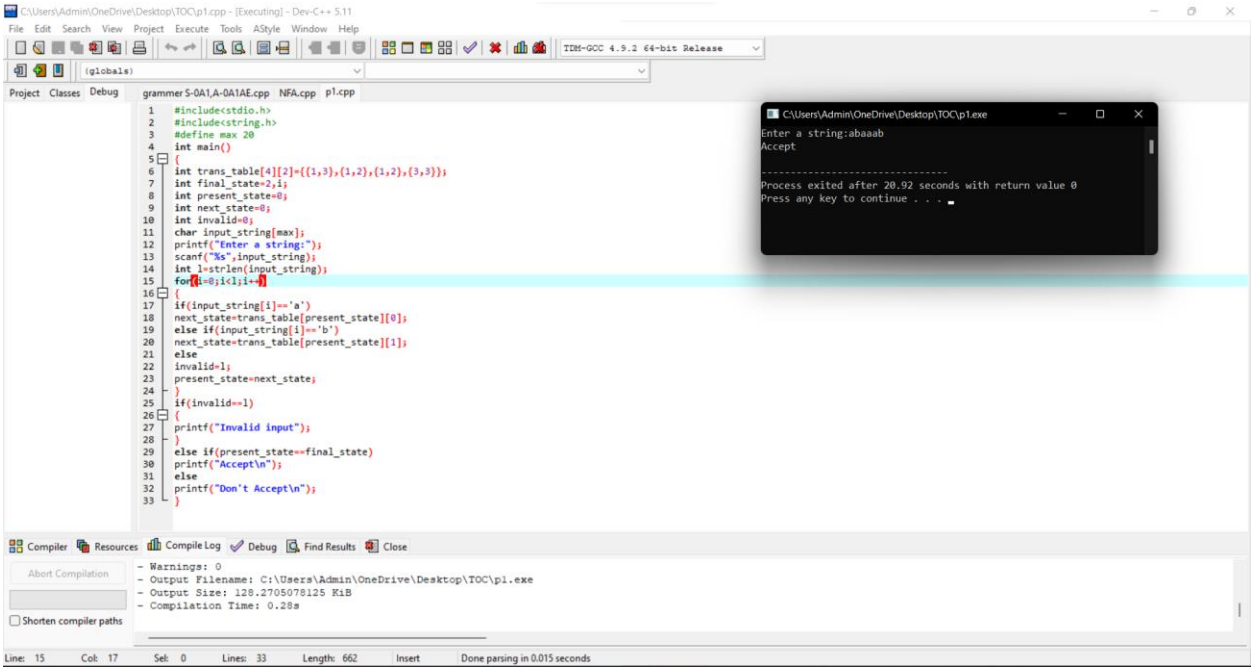
OUTPUT


C:\Users\Admin\OneDrive\Desktop\TOC\p1.exe
Enter a string:101010101
Invalid input

Process exited after 6.807 seconds with return value 0
Press any key to continue . . .


C:\Users\Admin\OneDrive\Desktop\TOC\p1.exe
Enter a string:abba
Don't Accept

Process exited after 11.31 seconds with return value 0
Press any key to continue . . .


C:\Users\Admin\OneDrive\Desktop\TOC\p1.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
grammer S-0A1,A-0A1AE.cpp NFA.cpp p1.cpp
#include<stdio.h>
#include<string.h>
#define max 20
int main()
{
int trans_table[4][2]={{1,3},{1,2},{1,2},{3,3}};
int final_state=2,i;
int present_state=0;
int next_state=0;
int invalid=0;
char input_string[max];
printf("Enter a string:");
scanf("%s",input_string);
int l=strlen(input_string);
for(i=0;i<l;i++)
{
if(input_string[i]=='a')
next_state=trans_table[present_state][0];
else if(input_string[i]=='b')
next_state=trans_table[present_state][1];
else
invalid=1;
present_state=next_state;
}
if(invalid==1)
{
printf("Invalid input");
}
else if(present_state==final_state)
printf("Accept\n");
else
printf("Don't Accept\n");
}
C:\Users\Admin\OneDrive\Desktop\TOC\p1.exe
Enter a string:abaaab
Accept

Process exited after 20.92 seconds with return value 0
Press any key to continue . . .
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
- Warnings: 0
- Output Filename: C:\Users\Admin\OneDrive\Desktop\TOC\p1.exe
- Output Size: 128.2705078125 KiB
- Compilation Time: 0.28s
Line: 15 Col: 17 Sel: 0 Lines: 33 Length: 662 Insert Done parsing in 0.015 seconds