Write a C program to implement a DFA accepting strings made of {a,b,c} having 'abc' as a substring. (USE TRANSITION TABLE INSTEAD OF IF-ELSE)

ALGORITHM

Input: A string with characters 'a', 'b' and 'c'
Output: Whether the given string is valid or not.

Data structures: Array

Step 1: Initialize a character array and input the string.
Step 2: Declare two integer variables, state and i.
Step 3: Initialize a transition array, transition[4][3]={1,0,0,1,2,0,1,0,3,3,3,3}
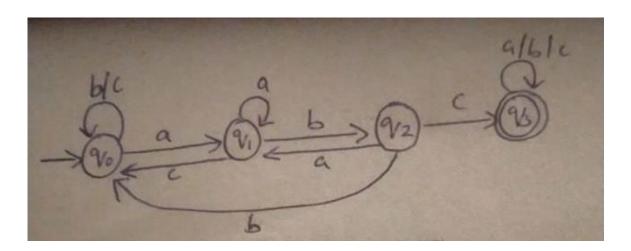Step 4: while input[i]!='\0', do
    4.1: if input are not a,b and c then set state=-1,break.
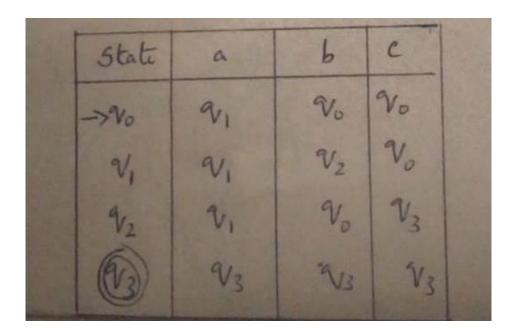   4.2: state=transition[state][(input[i]-'a')].
    4.3: increment i.
Step 4: if state is equal to final state print valid string else print invalid string.

DFA

Transition Table

State	a	b	c
→q_0	q_1	q_0	q_0
q_1	q_1	q_2	q_0
q_2	q_1	q_0	q_3
ⓠ$_3$	q_3	q_3	q_3

OUTPUT

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PS D:\Coding\c\Albert Augustine> cd "d:\Coding\c\Albert Augustine\" ; i
le }
Enter the string :
ababca
VALID STRING
PS D:\Coding\c\Albert Augustine> cd "d:\Coding\c\Albert Augustine\" ; i
le }
Enter the string :
abbcab
INVALID STRING!
PS D:\Coding\c\Albert Augustine> cd "d:\Coding\c\Albert Augustine\" ; i
le }
Enter the string :
abc
VALID STRING
```