

Write a C program to implement a DFA accepting binary strings such that every '00' is immediately followed by 1.(USE TRANSITION TABLE INSTEAD OF IF-ELSE)

### ALGORITHM

**Input:** A string with characters '0' and '1'

**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][2] = {1,0,2,0,-1,3,1,3}

Step 4: while input[i]!='\0', do

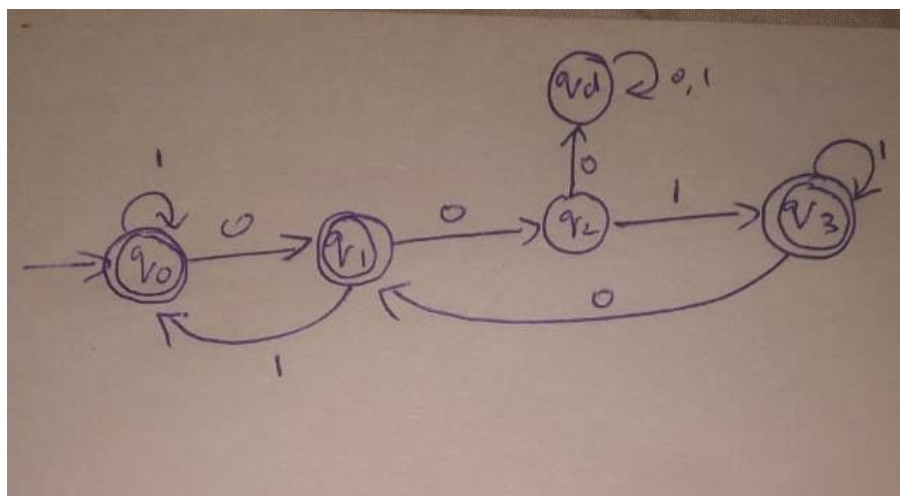
4.1: if input are not 0 or 1 then set state=-1,break.

4.2: state=transition[state][(input[i]-'0')].

4.3: increment i.

Step 4: if state is equal to final state print valid string else print invalid string.

### DFA



### Transition Table

state	0	1
$\rightarrow q_0$	$q_1$	$q_0$
$q_1$	$q_2$	$q_0$
$q_2$	$q_d$	$q_3$
$q_3$	$q_1$	$q_3$

## OUTPUT

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PS D:\Coding\c\Albert Augustine> cd "d:\Coding\c\Albert Augustine\"
Enter the String
1001001

Valid String
PS D:\Coding\c\Albert Augustine> cd "d:\Coding\c\Albert Augustine\"
Enter the String
10000

Invalid String
PS D:\Coding\c\Albert Augustine> cd "d:\Coding\c\Albert Augustine\"
Enter the String
001

Valid String

```