Write a C program to simulate a Deterministic Finite Automata (DFA) for the given language representing strings that start with 0 and end with 1

#include <stdio.h>

#include <stdbool.h>

#include <string.h>

// DFA states

enum States {

STATE\_INITIAL,

STATE\_MIDDLE,

STATE\_ACCEPT,

STATE\_REJECT

};

// DFA transition function

enum States transition(enum States currentState, char input) {

switch(currentState) {

case STATE\_INITIAL:

if(input == '0') return STATE\_MIDDLE;

else return STATE\_REJECT;

case STATE\_MIDDLE:

if(input == '0') return STATE\_MIDDLE;

else if(input == '1') return STATE\_ACCEPT;

else return STATE\_REJECT;

default:

return STATE\_REJECT;

}

}

int main() {

char input[100];

printf("Enter a string: ");

scanf("%s", input);

enum States currentState = STATE\_INITIAL;

int inputLength = strlen(input);

for(int i = 0; i < inputLength; i++) {

currentState = transition(currentState, input[i]);

}

if(currentState == STATE\_ACCEPT) {

printf("String accepted.\n");

} else {

printf("String not accepted.\n");

}

return 0;

}