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

PROGRAM

#include <stdio.h>

#include <string.h>

#define STATES 2

#define ALPHABET 2

int transition[STATES][ALPHABET] = {

{0, 1},

{1, 0}

};

int initialState = 0;

int acceptingStates[] = {0};

int isAccepted(char \*input) {

int currentState = initialState;

int len = strlen(input);

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

int symbol = input[i] - '0';

currentState = transition[currentState][symbol];

}

for (int i = 0; i < sizeof(acceptingStates) / sizeof(acceptingStates[0]); i++) {

if (currentState == acceptingStates[i]) {

return 1;

}

}

return 0;

}

int main() {

char input[100];

printf("Enter the input string (0s and 1s only): ");

scanf("%s", input);

if (isAccepted(input)) {

printf("Accepted\n");

} else {

printf("Not Accepted\n");

}

return 0;

}

OUTPUT

