CURAN, CYRUS REX BSCPE-4

785618

CPE 412 Structure of Programming Languages

B.

L = {W ϵ(a,b)\*|W has both ba & ab as substring }

L = ϵ\*ba ϵ\* ϵ\*ab ϵ\* + ϵ\*ab ϵ\* ϵ\*ba ϵ\*

DFA:

b a

a a

b b

q1 q3 b a q6

q5 a,b

a b

q0 a a b a q8

b b

q2 q4 q7

|  |  |  |
| --- | --- | --- |
|  | a | b |
| q0 | q2 | q1 |
| q1 | q3 | q1 |
| q2 | q2 | q4 |
| q3 | q6 | q5 |
| q4 | q5 | q7 |
| q5 | q6 | q7 |
| q6 | q6 | q8 |
| q7 | q8 | q7 |
| q8 | q8 | q8 |

Q= q0, q1, q2, q3, q4, q5, q6, q7, q8

ϵ = (a,b)

Initial State= {q0}

Final State = {q8}

#include<iostream>

#include<cstring>

using namespace std;

int main(){

char str[100];

int i,cnt=0,cnt1=0;

cout<<"Enter a String: ";

cin>>str;

for(i=0;i<strlen(str);i++){

if(str[i]=='b' && str[i+1]=='a'){

cnt++;

}

if(str[i]=='a' && str[i+1]=='b'){

cnt1++;

}

}

if(cnt>0&&cnt1>0){

cout<<"Substring ";

}

if(cnt==0||cnt1==0){

cout<<"Not Substring ";

}

return 0;

}