



SECI 1013-03

STRUKTUR DISKRIT (DISCRETE STRUCTURE)

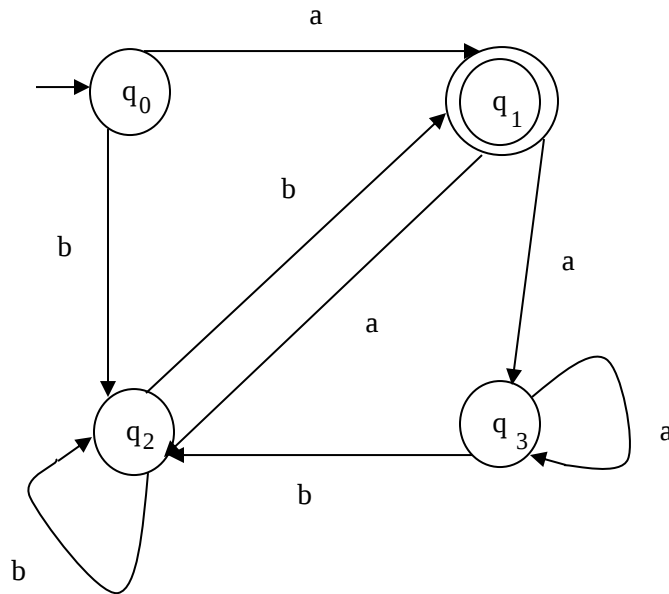
SEMESTER 1, 2020/2021

ASSIGNMENT 5

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ANSWER:

1. i)



ii) Yes, it can. Because only one correct sequence will give out the output 1/high. Which means only one password can verify the email.

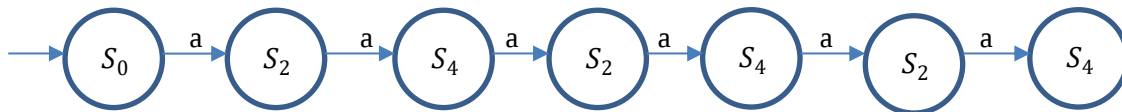
Assignment 5 Discrete Structure

2.

i.

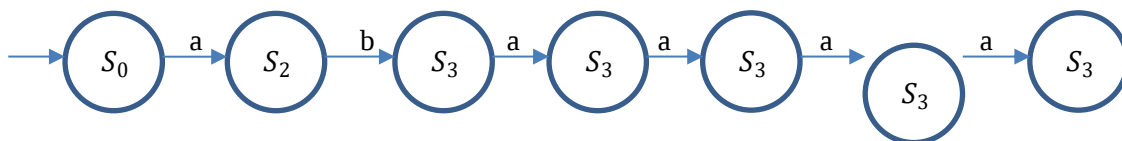
f_s	a	b
S_0	S_2	S_1
S_1	S_3	S_1
S_2	S_4	S_3
S_3	S_3	S_3
S_4	S_2	S_3

ii. (a)



Thus, it is not accepted by the DFA.

(b)

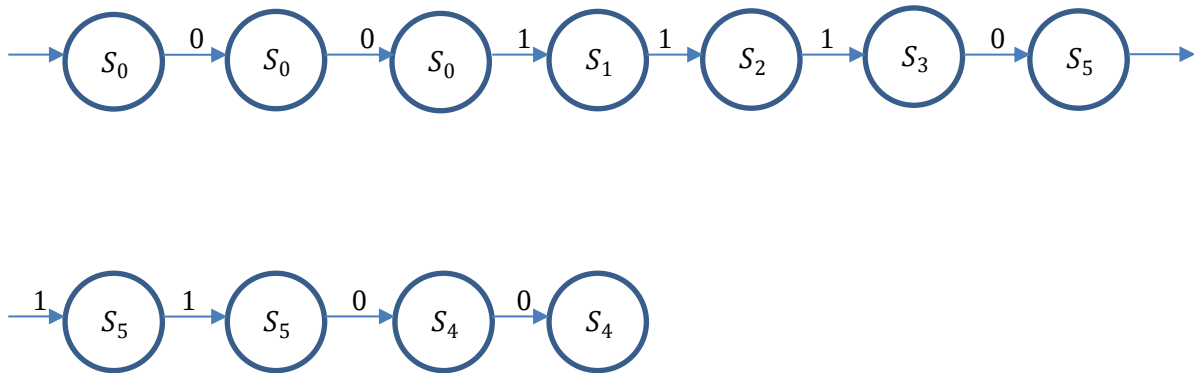


Thus, it is accepted by the DFA.

3. i.

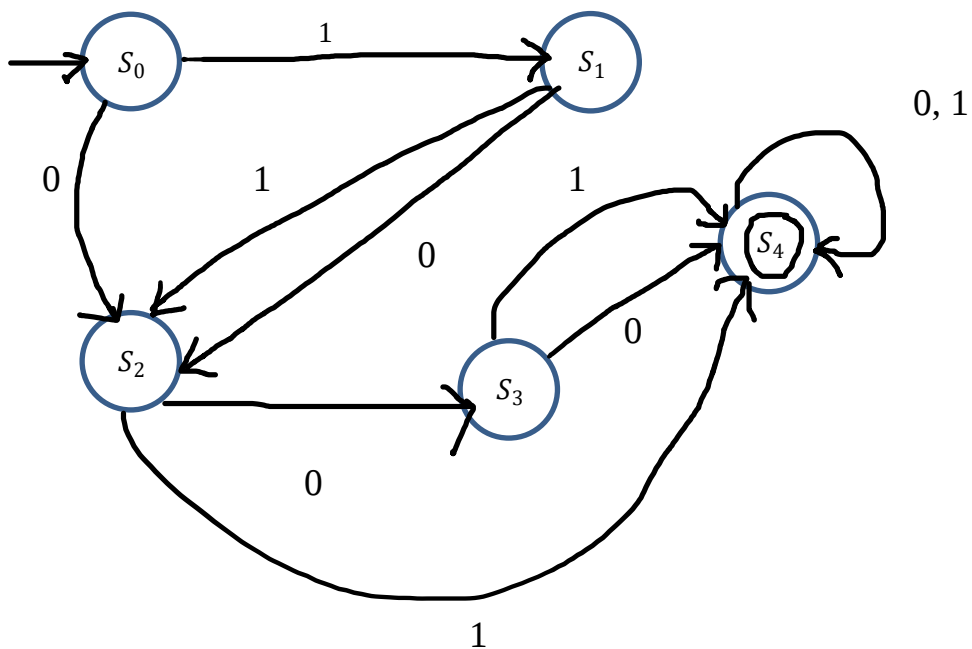
(a) $M = [\{S_0, S_1, S_2, S_3, S_4, S_5\}, \{0, 1\}, S_0, \{S_0, S_1, S_5\}]$

(b)



Thus, it is not accepted by the DFA.

ii.



4)

A = Wander

p = not enemy

1 = shoot

B = Evade

q = enemy and not vulnerable

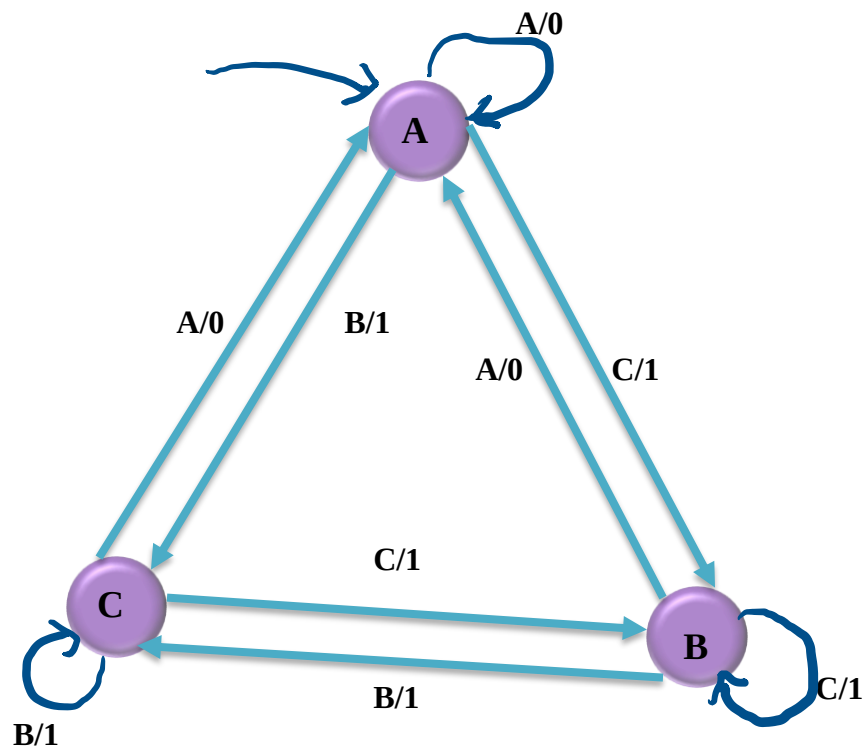
0 = don't shoot

C = Attack

r = enemy and vulnerable

$M = \{(A, B, C), (p, q, r), (1, 0), A, f_s, f_o\}$

S	f_s			f_o		
	p	q	r	p	q	r
A	A	C	B	0	1	1
B	A	C	B	0	1	1
C	A	C	B	0	1	1



5. Transition Diagram

Fs	Input									Output								
	A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H	I
S ₁	S ₂	S ₁	S ₁	S ₁	S ₁	S ₁	S ₁	S ₁	S ₁	0	0	0	0	0	0	0	0	0
S ₂	S ₂	S ₃	S ₉	S ₂	S ₂	S ₂	S ₂	S ₂	S ₂	0	0	1	0	0	0	0	0	0
S ₃	S ₃	S ₃	S ₃	S ₆	S ₄	S ₃	S ₃	S ₃	S ₃	0	0	0	0	0	0	0	0	0
S ₄	S ₄	S ₄	S ₄	S ₆	S ₅	S ₄	S ₄	S ₄	S ₄	0	0	0	0	0	0	0	0	0
S ₅	S ₅	S ₅	S ₅	S ₆	S ₉	S ₅	S ₅	S ₅	S ₅	0	0	0	0	2	0	0	0	0
S ₆	S ₆	S ₆	S ₆	S ₆	S ₆	S ₇	S ₆	S ₆	S ₆	0	0	0	0	0	0	0	0	0
S ₇	S ₇	S ₇	S ₇	S ₇	S ₇	S ₇	S ₈	S ₇	S ₇	0	0	0	0	0	0	0	0	0
S ₈	S ₈	S ₈	S ₈	S ₈	S ₈	S ₈	S ₈	S ₆	S ₉	0	0	0	0	0	0	0	0	1
S ₉	S ₉	S ₉	S ₉	S ₉	S ₉	S ₉	S ₉	S ₉	S ₉	0	0	0	0	0	0	0	0	0

