

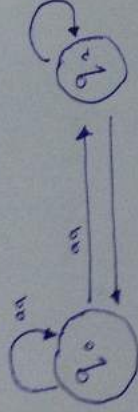
COMPIER CONSTRUCTION

Q1

Build an FA accepting the language  $L$  of strings defined over  $\Sigma = \{a, b\}$  having quadruple  $a$ 's triple  $b$ 's

Answer

FA which has quadruple  $a$ 's or triple  $b$ 's



COMPIER CONSTRUCTION

Q1

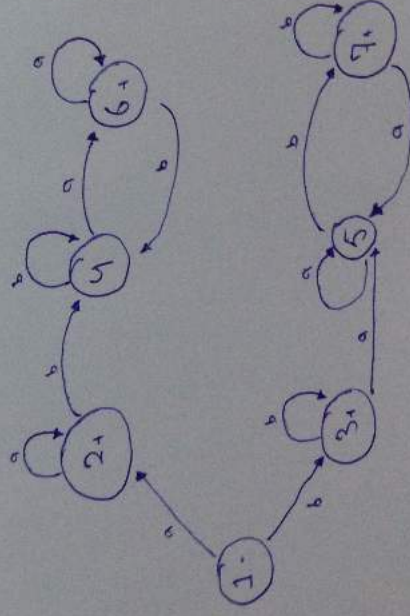
Build an FA accepting the language  $L$  of strings defined  $\Sigma = \{a, b\}$ , beginning with & ending in same letters.

Answer-

The language "L" may be expressed by the following Regular expression

$$(a|b)^* a (a|b)^* a | (a|b)^* b (a|b)^* b$$

This language  $L$  may be accepted by the following



COMPILE CONSTRUCTION

Q4:

Distinguish between Moore and Mealy machine and convert the following Mealy Machine to moose in Fig 1.

MOORE

- i) O/P depends only on the Present state
- ii) Since the O/P change is synchronous with the ~~enabling~~ clock edge O/Ps change synchronously with this clock edge.
- iii) A counter is a Moore Machine.

MEALY

- i) O/Ps depend on the present state and present I/Ps
- ii) The O/P change asynchronously with the enabling clock edge
- iii) A counter is not a Mealy Machine.

COMPILE CONSTRUCTION

Q3:

Construct regular expression defining each of the following language over the alphabet  $\Sigma = \{a, b\}$ .

- i) All words having at least three a & two b.

$$((a+b)(a+b))^*$$

- ii) All word having even length

$$(a+b)^*(aaa)^*(bb)^*(a+b)^*$$

- iii) All word having atleast double 'a' or triple 'b'

$$(a+b)^*(aaa)^*(a+b)^* + (a+b)^*$$

- iv) All words having start with double a or quadruple 'b'

$$aa(a+b)^* + bbbb(a+b)^*$$

NAME: MOEEZ AHMAD  
ID: 14435

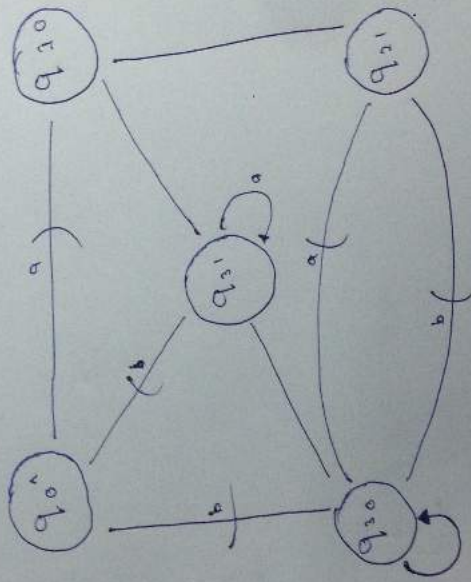
COMPIER CONSTRUCTION

Q4:

Distinguish between Moore and Maly machine and convert the following Mealy Machine to moore in Fig 3.

Moeez Ahmad  
ID: 14435

Q4 part (c)



NAME: MOEEZ AHMAD  
ID: 14435

COMPIER CONSTRUCTION

Q4:

Distinguish between Moore and Maly machine and convert the following Mealy Machine to moore in Fig 3.

NAME: MOEEZ AHMAD  
ID: 14435

State	O/P	state	Q/P
q <sub>0</sub>	0	q <sub>1</sub>	0
q <sub>1</sub>	1	q <sub>2</sub>	1
q <sub>2</sub>	0	q <sub>3</sub>	0
q <sub>3</sub>	1	q <sub>0</sub>	1

q<sub>3</sub> ←<sup>0</sup><sub>1</sub>

Moore transition Table

Moore	a	b	O/P <sub>s</sub>
q <sub>0</sub>	q <sub>10</sub>	q <sub>30</sub>	-
q <sub>1</sub>	q <sub>21</sub>	q <sub>31</sub>	-
q <sub>2</sub>	q <sub>30</sub>	q <sub>30</sub>	0
q <sub>3</sub>	q <sub>31</sub>	q <sub>31</sub>	1

COMPILER CONSTRUCTIONQ6.

Draw transition table for the digram given Figure 2.(-)  
is the starting state and (1) is the ending  
state

States	a	b
1-	2	6
2	3+	x
3+	x	4
4	x	5+
5+	x	x
6	10	7
7+	Y	8
8	9+	Y
9+	Y	Y
10	Y	11+
11+	Y	Y
x	x	x
y	Y	Y