Name : Shourya Shrivastava

Roll no.: 0157CS181151

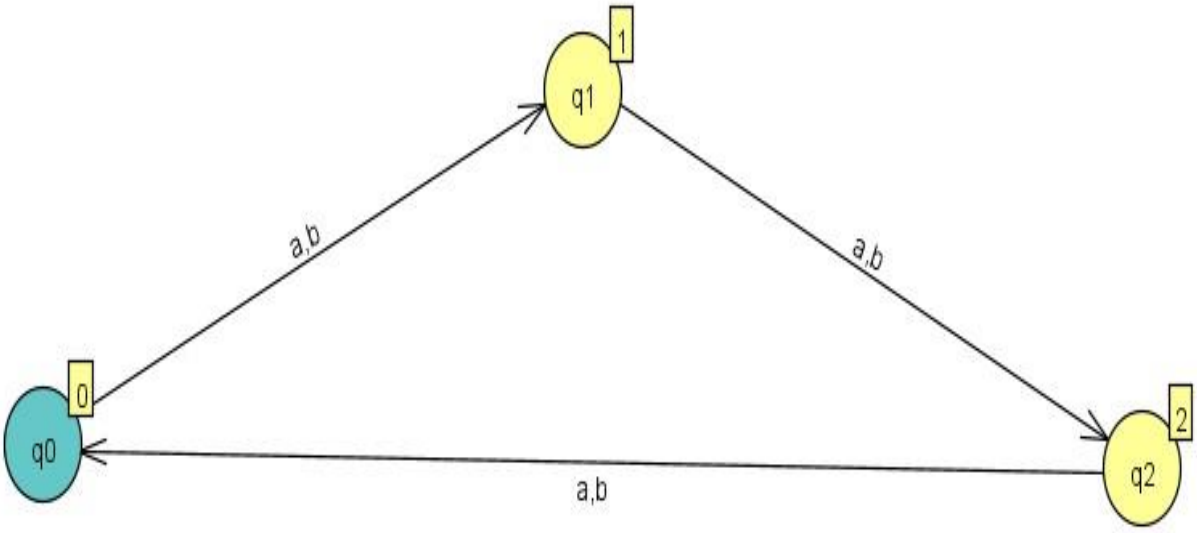
Q1. Design a Moorey machine and mealy machine for mod 3 over the string a & b

Solution :

Mod of 3 means the remainder comes out to be {0,1,2} as an output when the binary number is divided by 3.

Σ **={a,b}**

o/p= {0,1,2}



State	transition		o/p (λ)
	a	b	
q0	q1	q1	0
q1	q2	q2	1
q2	q0	q0	2

Equivalent equation of mealy machine is the output of moorey machine λ o/p of mealy λ' o/p for q0 :

λ'(q0,a)= λ(δ (q0,a)

= λ(q1)

=1

λ'(q0,b)= λ(δ (q0,b)

= λ(q1)

=1

o/p for q1:

λ'(q1,a)= λ(δ (q1,a)

= λ(q2)

=2

λ'(q1,b)= λ(δ (q1,b)

= λ(q2)

=2

o/p for q2:

λ'(q2,a)= λ(δ (q2,a)

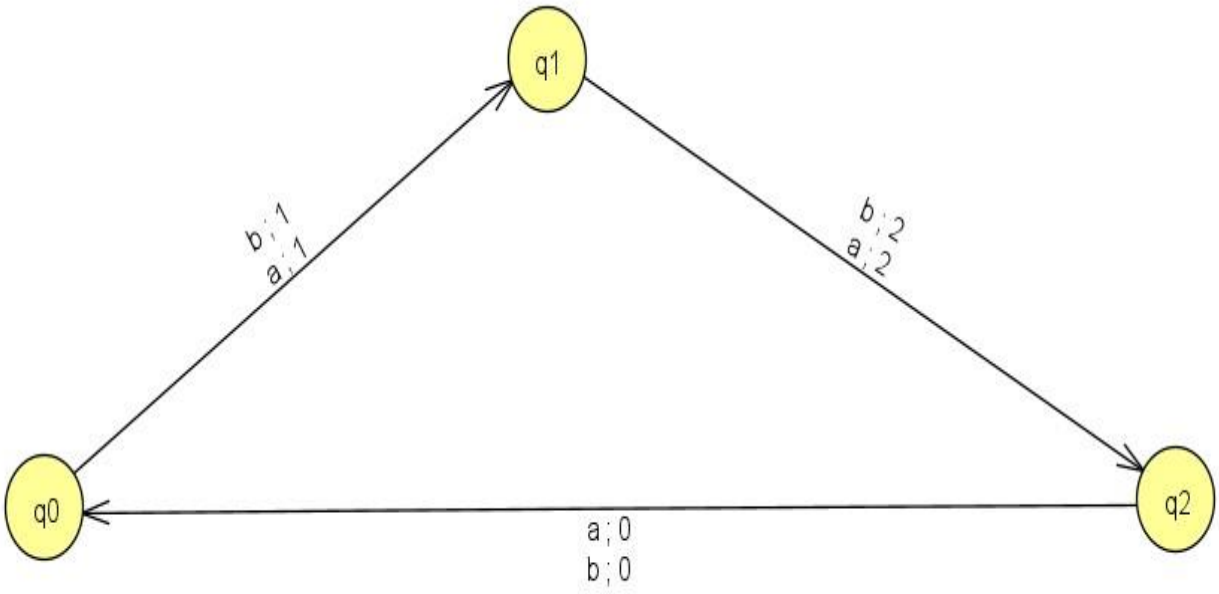
= λ(q0)

=0

λ'(q2,b)= λ(δ (q2,b)

= λ(q0)

=0


q1
b ; 1
a ; 1
b ; 2
a ; 2
q0
q2
a ; 0
b ; 0