Varun Khadayate A016

Assignment 2

FLAT

Q1

a. FSM

$I = \{(0,0), (0,1), (1,0), (1,1)\}$

~~$S = \{Sum, Carry\}$~~ $S = \{Carry, No\ Carry\}$

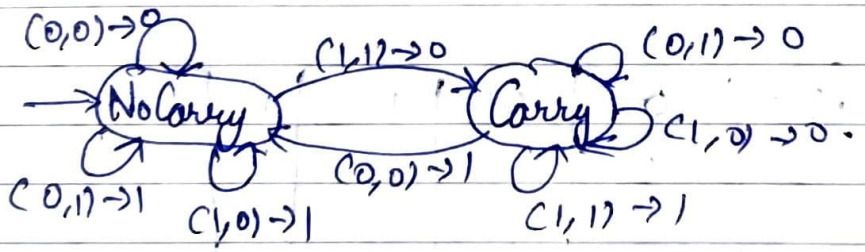
MAF: $I \times S \to O$

I \ S	Carry	No Carry
(0,0)	1	0
(0,1)	0	1
(1,0)	0	1
(1,1)	1	0

STF: $I \times S \to S$

I \ S	Carry	No Carry
(0,0)	No Carry	No Carry
(0,1)	Carry	No Carry
(1,0)	Carry	No Carry
(1,1)	Carry	Carry

T.Gr

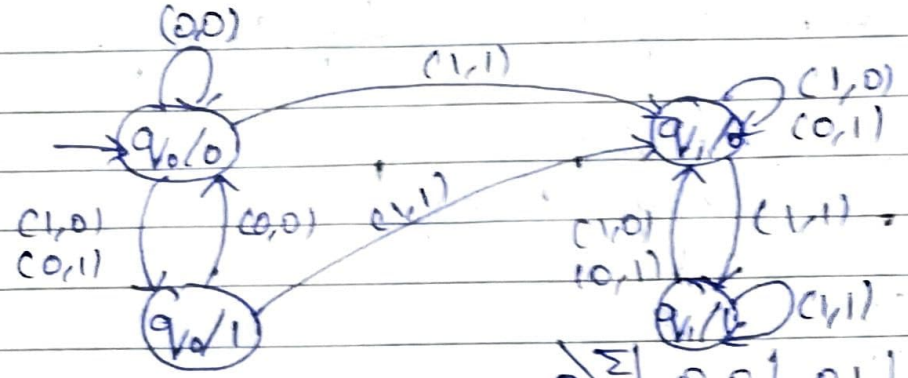


Varun K A016

T.M

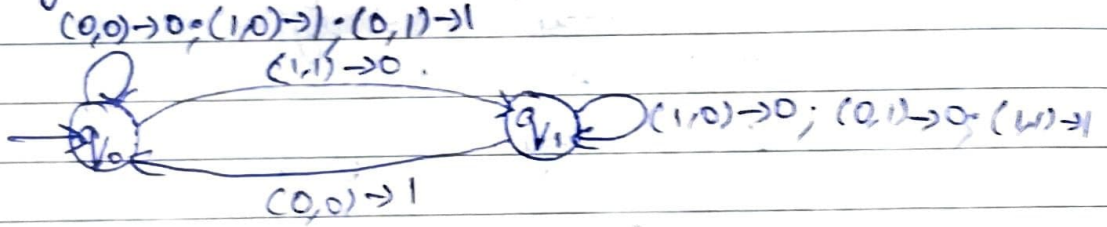
Current State \ Next State	No Carry	Carry
No Carry	(0,1)/1 V (0,0)/0 V (1,0)/1	(1,1)/0
Carry	(0,0)/1	(0,1)/0 V (1,0)/0 V (1,1)/1

b. Moore Machine



Q \ Σ	00	01	10	11
$q_0/0$	00	01	01	10
$q_0/1$	00	01	01	10
$q_1/0$	01	10	10	11
$q_1/1$	01	10	10	11

c. Mealy Machine



Q \ Σ	00	01	10	11
0	0	0	0	1
1	0	1	1	1