Austin Smothers
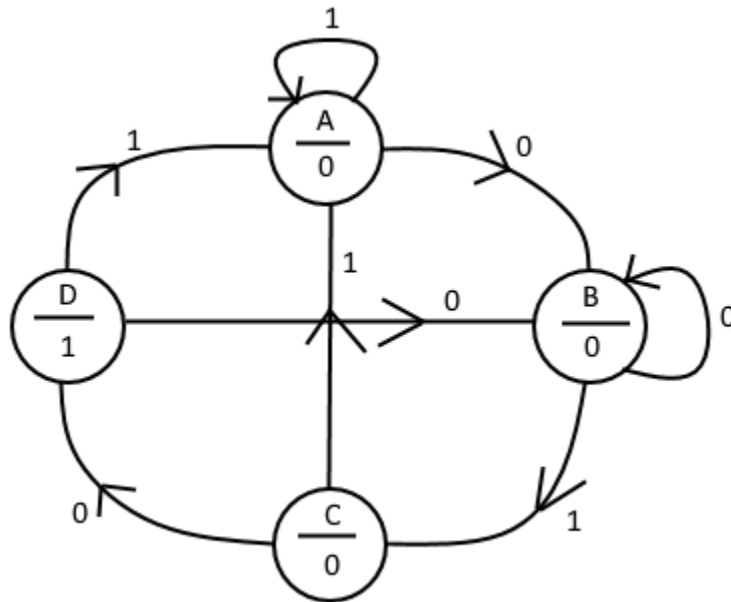
Professor Bustamante

CSC 137

July 3, 2019

Assignment 5

State Diagram:

State Assignment:
{ A = 00   C = 10}
{ B = 01   D = 11}

State Table:

Q_1	Q_0	X (input)	Q_1^+	Q_0^+	Y (output)
0	0	0	0	1	0
0	0	1	0	0	0
0	1	0	0	1	0
0	1	1	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	1	0	0	1	0
1	1	1	0	0	0

K-Map Minimization:

Q_1^+:

Q_1	Q_0 X	00	01	11	10
0		0	0	1	0
1		1	0	0	0

$Q_1^+ = (Q_1\overline{Q0X}) + (\overline{Q1}Q_0X)$

Q_0^+:

Q_1	Q_0 X	00	01	11	10
0		1	0	0	1
1		1	0	0	1

$Q_0^+ = \overline{X}$

y:

Q_1	Q_0 X	00	01	11	10
0		0	0	0	0
1		1	0	0	0

$y = Q_1\overline{Q0X}$

Circuit Diagram: