

CS 2110 HW4 K-Map

Name: Ashley Eggart GT Login: aeggart6

Follow the directions below to fill out the Truth Table and K-Map for your reduced state machine. Only your Boolean expression will be graded, however we will ask you to explain your work during your demo. You may lose full points on this section if you cannot explain how you got your answer.

Submit a **CLEAN** scan of this worksheet to Gradescope. What does clean mean? You cannot take a picture of this worksheet with your smartphone and upload that to Gradescope. You must use a scanner, ensure that the dimensions are correct, and convert the file to a PDF before submitting. Your PDF must be two pages, with this page as the first page. Publicly accessible scanners can be found in the library.

Assignment:

1. Fill out the truth table with 1's, 0's, or x's according to the DFA for the Reduced State Machine in the Homework 4 pdf. Each blank should be filled. (not graded)

s2	s1	s0	g	n2	n1	n0	A	B	C	D
0	0	0	0	0	0	1	1	1	0	0
0	0	0	1	1	0	1	1	1	0	0
0	0	1	0	0	0	1	0	0	0	1
0	0	1	1	1	0	0	0	0	0	1
0	1	0	0	0	1	1	0	0	1	1
0	1	0	1	0	0	1	0	0	1	1
0	1	1	0	0	0	0	1	1	0	1
0	1	1	1	0	1	0	1	1	0	1
1	0	0	0	0	1	0	0	1	1	0
1	0	0	1	0	1	1	0	1	1	0
1	0	1	0	1	0	0	1	0	0	1
1	0	1	1	1	0	0	1	0	0	1
1	1	0	0	x	x	x	x	x	x	x
1	1	0	1	x	x	x	x	x	x	x
1	1	1	0	x	x	x	x	x	x	x
1	1	1	1	x	x	x	x	x	x	x

2. Fill out the following K-Maps (each blank should be filled, and each group should be circled). (6 points per expression)

s_2s_1/s_0g

n2				
AB/CG	00	01	11	10
00	0	1	1	0
01	0	0	0	0
11	X	X	X	X
10	0	0	1	1
$s_2s_1'g + s_2s_0$				

n0				
AB/CG	00	01	11	10
00	1	1	0	1
01	1	1	0	0
11	X	X	X	X
10	0	1	0	0
$s_2's_0 + s_0'g + s_2's_1'g$				

B				
AB/CG	00	01	11	10
00	1	1	0	0
01	0	0	1	1
11	X	X	X	X
10	1	1	0	0
$s_1's_0' + s_1s_0$				

D				
AB/CG	00	01	11	10
00	0	0	1	1
01	1	1	1	1
11	X	X	X	X
10	0	0	1	1
$s_1 + s_0$				

s_2s_1/s_0g

n1				
AB/CG	00	01	11	10
00	0	0	0	0
01	1	0	1	0
11	X	X	X	X
10	1	1	0	0
$s_2s_0' + s_1s_0'g' + s_1s_0g$				

A				
AB/CG	00	01	11	10
00	1	1	0	0
01	0	0	1	1
11	X	X	X	X
10	0	0	1	1
$s_2's_1's_0' + s_1s_0 + s_2s_0$				

C				
AB/CG	00	01	11	10
00	0	0	0	0
01	1	1	0	0
11	X	X	X	X
10	1	1	0	0
$s_1s_0' + s_2s_0'$				