

CS274: 4/6/21

Lab 7

Three inputs (unsigned binary) to the square of the input (unsigned binary)

	A	B	C	$\overbrace{S_5 S_4 S_3 S_2 S_1 S_0}^S$					
				S_5	S_4	S_3	S_2	S_1	S_0
0)	0	0	0	0	0	0	0	0	0 (0)
1)	0	0	1	0	0	0	0	0	1 (1)
2)	0	1	0	0	0	0	1	0	0 (4)
3)	0	1	1	0	0	1	0	0	1 (5)
4)	1	0	0	0	1	0	0	0	0 (16)
5)	1	0	1	0	1	1	0	0	1 (25)
6)	1	1	0	1	0	0	1	0	0 (36)
7)	1	1	1	1	1	0	0	1	1 (49)

K-maps

$S_5 = AB$

	$\overline{A}\overline{B}$ 00	$\overline{A}B$ 01	$A\overline{B}$ 11	AB 10
0			1	
1			1	

$S_2 = \overline{B}C$

	00	01	11	10
0		1	1	
1				

$S_4 = \overline{A}B + AC$

	00	01	11	10
0				1
1			1	1

$S_1 = 0$

	00	01	11	10
0				
1				

$S_3 = \overline{A}BC + A\overline{B}C$
 $C(\overline{A}B + A\overline{B})$
 $C(A \oplus B)$

	00	01	11	10
0				
1		1		1

$S_0 = C$

	00	01	11	10
0				
1	1	1	1	1