Tuesday Reading Assessment: Chapter 2,3

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1 Bit Parity, Error Checking (ch. 2)

1. Observe Fig. 1 below, depicting the 4-bit BCD code. Observe how the parity bit causes *even* parity (even number of 1's), or *odd* parity (odd number of 1's). Circle all the following 4-bit BCD code words below that have a *single-bit* error, assuming the parity bit is even:

   - 100110010
   - 011101010
   - 10111111010001010

TABLE 2–8

The BCD code with parity bits.

Even Parity		Odd Parity	
P	**BCD**	**P**	**BCD**
0	0000	1	0000
1	0001	0	0001
1	0010	0	0010
0	0011	1	0011
1	0100	0	0100
0	0101	1	0101
0	0110	1	0110
1	0111	0	0111
1	1000	0	1000
0	1001	1	1001

Figure 1: Three basic logic operations.

2. Same question, but the parity bit is *odd*:

   - 11110110
   - 00110001
   - 01010101010101010

2 Basic Logic Gates (ch. 3)

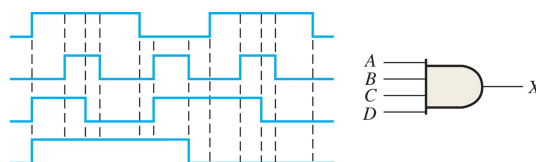1. Draw the proper timing diagram for the 4-input AND gate below. *Hint: what should the truth table be for the 4-input AND?*

Figure 2: Three basic logic operations.