

Thursday Reading Assessment: Chapter 2-8, 2-10 through 2-12

Prof. Jordan C. Hanson

February 13, 2020

1 Hexadecimal and Other Number Systems

1. Let $x_1 = FB17_{16}$, and $x_2 = 8A9D_{16}$.

(a) What is x_1 in binary?

(b) What is x_2 in decimal?

2. Imagine a stream of binary digits coming through a serial line. They are: 1001...0001...0001. If we know the bitstream is in binary coded decimal (BCD), what is the code being sent?

3. Which of the following is an *invalid* BCD code?

- A: 0001
- B: 0101
- C: 1000
- D: 1010

TABLE 2-6					
Four-bit Gray code.					
Decimal	Binary	Gray Code	Decimal	Binary	Gray Code
0	0000	0000	8	1000	1100
1	0001	0001	9	1001	1101
2	0010	0011	10	1010	1111
3	0011	0010	11	1011	1110
4	0100	0110	12	1100	1010
5	0101	0111	13	1101	1011
6	0110	0101	14	1110	1001
7	0111	0100	15	1111	1000

Figure 1: A four-bit binary gray code.

4.

5. What property of the four-bit gray code in Fig. 1 distinguishes it from straight binary counting?