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Computer Basics Course

Essay 13 – Binary Practice

1. Define decimal
   * Decimal refers to the base 10 number system. Meaning a number system with 10 unique digits (0,1,2,3,4,5,6,7,8,9). This the most familiar number system that we deal with.
2. Define integer
   * An integer is any whole number positive, negative or even zero.
3. Define base
   * Base is the number of unique digits a number system has. For instance the hexadecimal system has 16 unique characters that represent number so it is said to be base 16.
4. Base five number system
   * A base five number system would use 5 unique digits 0,1,2,3,4. The number 12 would be represented by 022.
5. Define binary
   * Binary is a base 2 number system using only zeros and ones to represent every number.
6. Count to 25 using binary
7. 00001
8. 00010
9. 00011
10. 00100
11. 00101
12. 00110
13. 00111
14. 01000
15. 01001
16. 01010
17. 01011
18. 01100
19. 01101
20. 01110
21. 01111
22. 10000
23. 10001
24. 10010
25. 10011
26. 10100
27. 10101
28. 10110
29. 10111
30. 11000
31. 11001
32. Translate the flowing binary numbers into decimal numbers
    * 010 = 2
    * 011001 = 25
    * 011111 = 31
    * 01011010 = 90
    * 011110101001 = 1 + 8 + 32 + 128 + 256 + 512 + 1024 = **1961**
    * 01001110101101 = 1 + 4 + 8 + 32 + 128 + 256 + 512 + 4096 = **5037**
33. Answer the following binary addition problems
    * 001 + 010 = 011
    * 0110 + 0010 = 1000
    * 0011111 + 0110110 = 1010101