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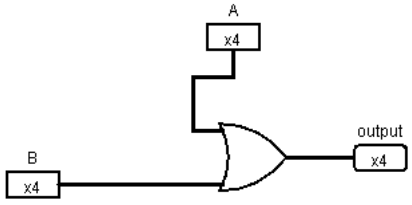
Assignment 3 - Computer Architecture
October 23, 2013

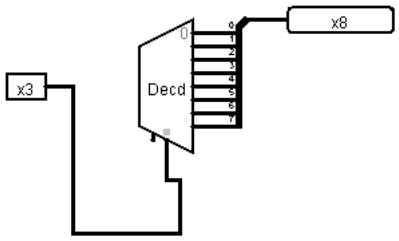
Digital Logic Chapter 3

Chapter 3

- 1)



- 4)



- 5)

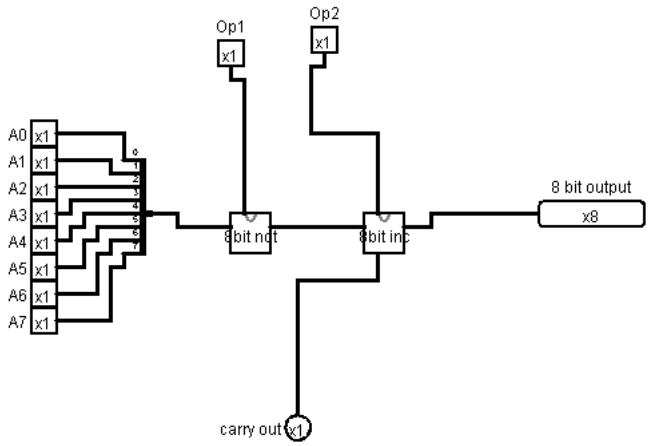
A	Out
000	00000001
001	00000010
010	00000100
011	00001000
100	00010000
101	00100000
110	01000000
111	10000000

- 6)
  $\overline{Sel}A\overline{B} + Sel\overline{A}B$
  Where A and B are 8 bit data paths and Sel is a one bit data path selector.

- 7)
  - a) 10110111

  - b) 10111000
  - c) 01001000
  - d) 01001001

- 8)



- 9) If $(Op_2 == 00)$ then K_2 If $(Op_2 == 01)$ then $K_2 + 1_2$ If $(Op_2 == 10)$ then $Inv.of K_2$ If $(Op_2 == 11)$ then $(Inv.of K_2) + 1_2$

- 10) You would need 2 bits, but only need three of the four permutations of the binary bits.

A	B	C	sel	Out
x	y	z	00	x
x	y	z	01	y
x	y	z	10	z
x	y	z	11	$undefined$

- 11) 3 select bits are needed for an 8 to 1 multiplexer. This multiplexer will contain an octal decoder.

- 12) There is no problem 12.