

EE314 Experiment 4 Elementary Gate Networks

Nail Tosun - 2094563
Electric and Electronic Engineering Department, METU

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2) The F block must be 2x1 multiplexer. 3) 74151 is an 8x1 multiplexer so that

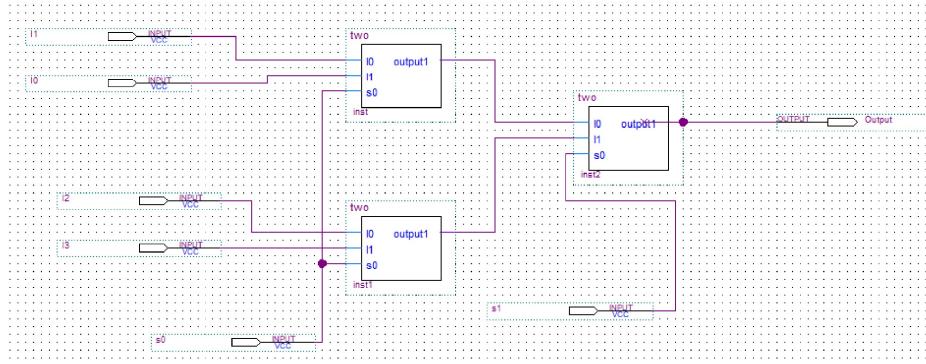


Figure 1: 16 bit Multiplexer using 74151

4)

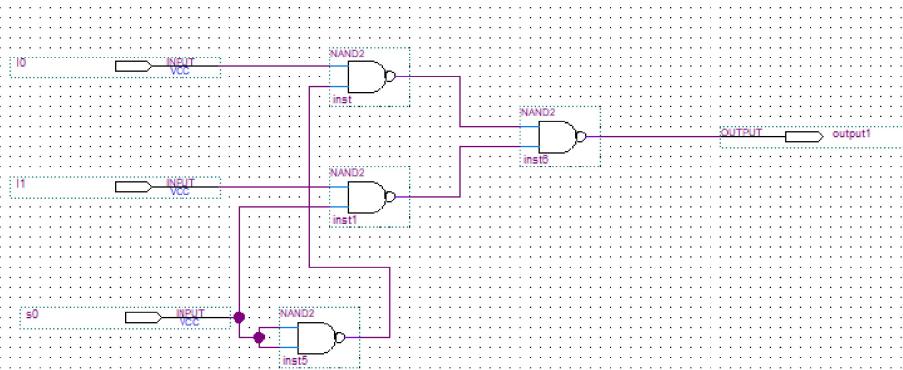


Figure 2: 2x1 Multiplexer with NAND gates

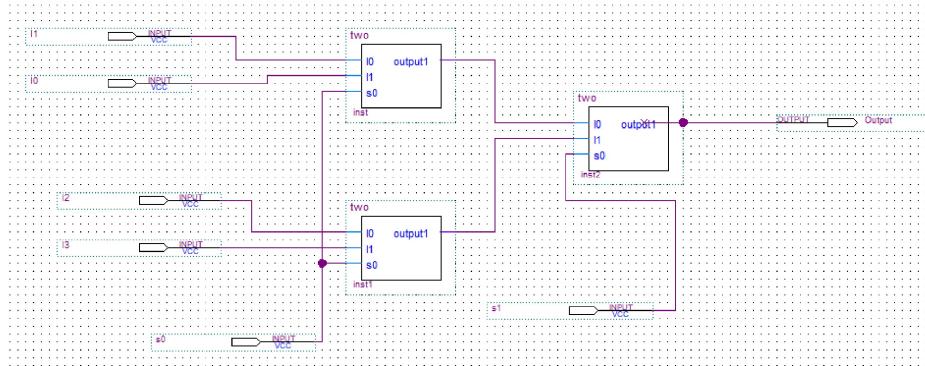


Figure 3: 4x1 Multiplexer using 2x1 Multiplexer

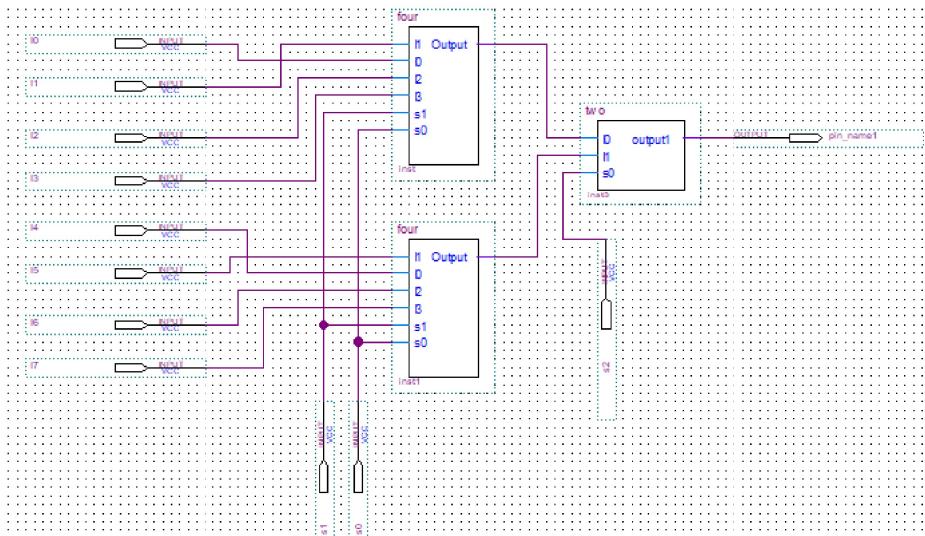


Figure 4: 8x1 Multiplexer using 4x1 Multiplexer

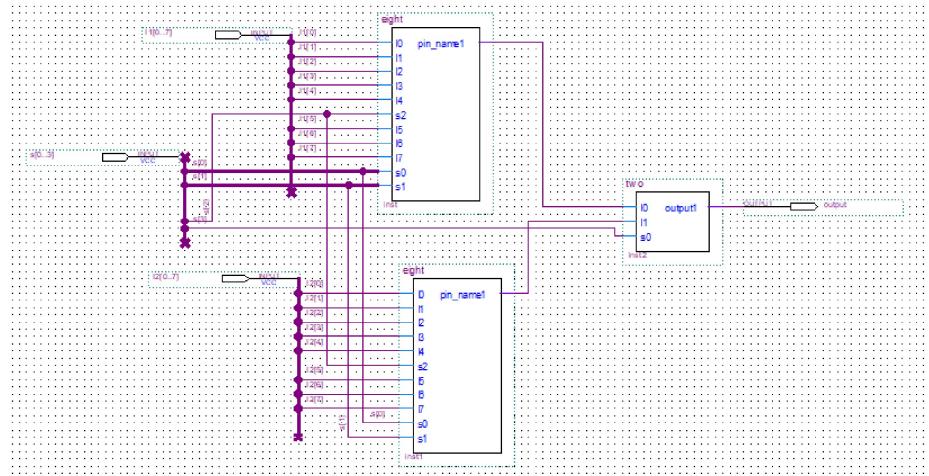


Figure 5: 16x1 Multiplexer using 8x1 Multiplexer

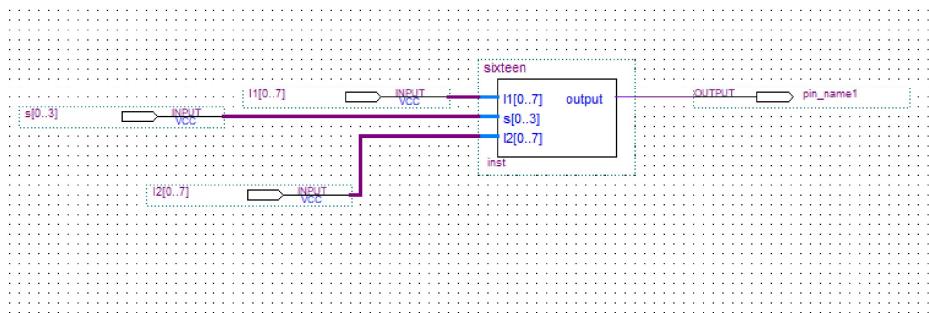


Figure 6: 16x1 Multiplexer

5)

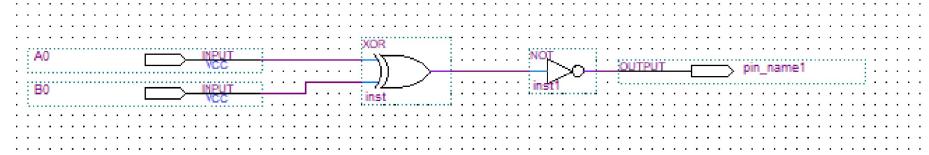


Figure 7: Equivalence circuit using NAND

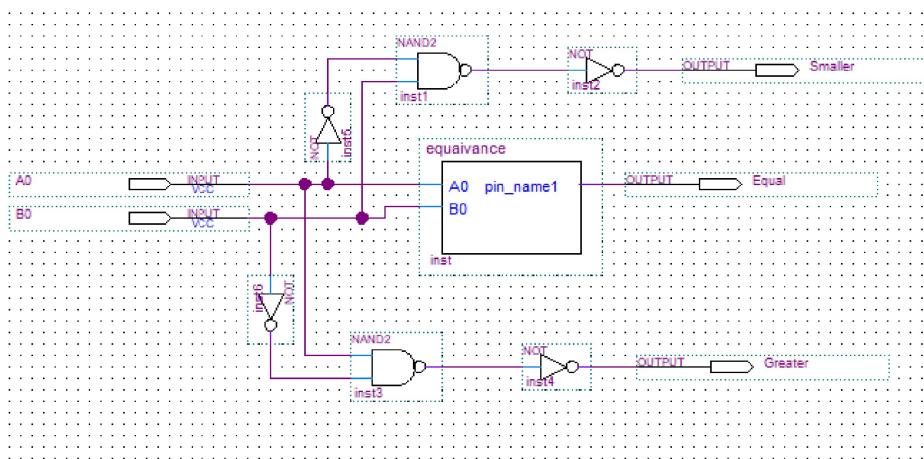


Figure 8: 1 bit comparator

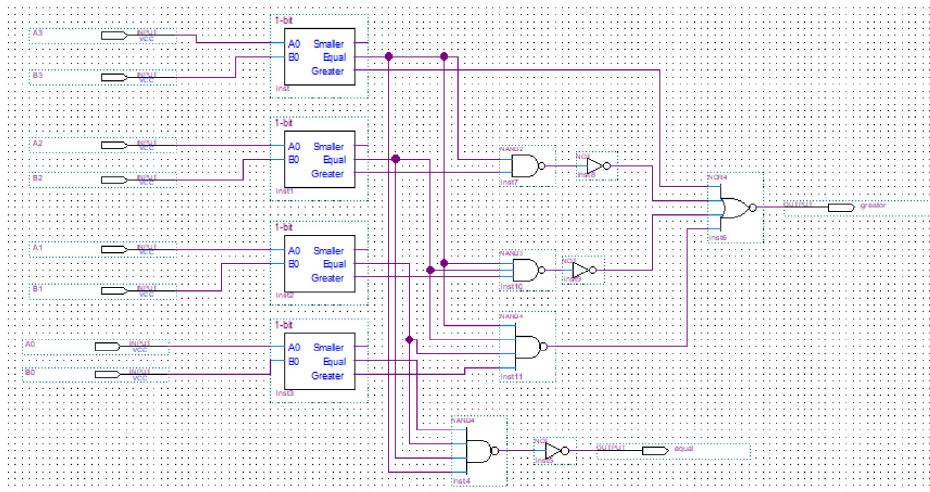


Figure 9: 4 bit comparator

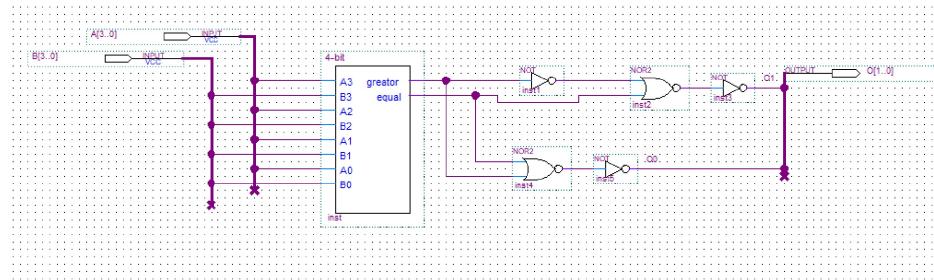


Figure 10: 4 bit comparator

6)

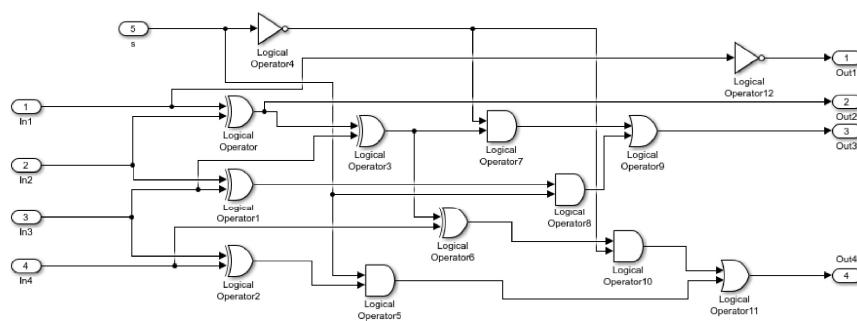


Figure 11: gray code to binary and binary to gray code converter