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Computer Architecture Lab Logic (Week 7)

1. Draw the circuit for Exclusive OR by using AND, OR and NOT logic gate. Exclusive OR Equation = A’B + AB’

2. Draw the circuit which is capable to compare the equality of two 4-bit numbers. If equal output one, else zero.

- A = A3A2A1A0
- B = B3B2B1B0
- Hint: A0 = B0, A1 = B1, A2 = B2, A3 = B3

3. Draw the circuit which is capable to perform the addition of two 4-bit numbers. Hint: We have two 4-bits number:

- numA = A3A2A1A0
- numB = B3B2B1B0
- Result = R3R2R1R0

4. Draw the circuit which is capable of performing the subtraction of two 4-bit numbers. Hint: We have two 4-bits number

- numA = A3A2A1A0
- numB = B3B2B1B0
- Result = R3R2R1R0

5. Draw the circuit which is capable to increase the 4-bit number by 1. Like ex3, N + 0001.

Hint: We have two 4-bits number

- A = A3A2A1A0
- B = 0001
- R = A + B

6. Draw the circuit which is capable to decrease the 4-bit number by 1. Like ex4, N - 0001. Hint: We have two 4-bits number

- A = A3A2A1A0
- B = 0001
- R = A - B

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Thanks