Implementing Comparison

How are signed and unsigned comparison implemented?

- Let’s look at 0110 (6) and 1010 (–6 or 10) in 4-bit representation
- If this is a signed comparison, subtraction result is positive (12)
- If unsigned, subtraction result is negative (–4)
- Potential problem: 12 overflows 4-bit signed representation
- What to do? Extend to 5-bit representation, check “new” MSB

  ➢ Signed comparison? Sign extend
  ➢ Unsigned comparison? Zero extend

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\begin{align*}
00110 & \quad 00110 \\
-11010 & \quad -01010 \\
01100 & \quad 11100
\end{align*}
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