Tutorial

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Questions? <u>CS1 Discussion Forum</u>

Unsigned binary arithmetic

- Perform the following unsigned additions.

  - $1001_2 + 0101_2$

  - $10101_2 + 1011_2 + 101_2$

  - $11010011_2 + 10110011_2$ assuming an 8-bit system.

- Perform the following unsigned subtractions.

  - 11010_2 - 11101_2

  - 11101_2 - 11010_2

  - 110100011_2 - 110101_2

- Perform the following unsigned multiplications.

  - $1101011101_2 \times 110_2$

  - $10001_2 \times 11101_2$

  - $11011_2 \times 11011_2$

- Perform the following unsigned divisions.

  - $101101_2 \div 101_2$

  - $11111101_2 \div 1011_2$

  - $10001_2 \div 101_2$

Signed binary arithmetic

- Perform the following signed additions, assuming a 7-bit system.

  - $1000101_2 + 1110010_2$

  - $1110010_2 + 0100101_2$

  - $0111010_2 + 0100110_2$

- Perform the following signed subtractions, assuming a 7-bit system.

  - $0101010_2 - 1010101_2$

  - $1110111_2 - 0010001_2$

- $0010101_2 - 0110011_2$

- Perform the following signed multiplications and division.

  - $01101_2 \times 11001_2$

  - $01010101011_2 \times 00000000011_2$

  - $11111_2 \div 00101_2$

One's complement additions

- Perform the following one's complement additions, assuming a 5-bit system.

  - $00101_2 + 10011_2$

  - $01101_2 + 10110_2$

  - $11000_2 + 10111_2$

  - $01101_2 + 00100_2$

Two's complement additions

- Perform the following two's complement additions, assuming a 5-bit system.

  - $00101_2 + 10011_2$

  - $01101_2 + 10110_2$

  - $11000_2 + 11111_2$

  - $01101_2 + 00100_2$