

# Recitation 2

# Big endian and Little endian

- Big endian: start from low addr
- Little endian: start from high addr

Big endian

|     | 0x100 | 0x101 | 0x102 | 0x103 |     |
|-----|-------|-------|-------|-------|-----|
| ... | 01    | 23    | 45    | 67    | ... |

Little endian

|     | 0x100 | 0x101 | 0x102 | 0x103 |     |
|-----|-------|-------|-------|-------|-----|
| ... | 67    | 45    | 23    | 01    | ... |

# Boolean Algebra

- Bit level :  $\sim$ ,  $\&$ ,  $|$ ,  $\wedge$
- Logical level:  $\&\&$ ,  $||$ ,  $!$
- Shift operations:  $\ll$ ,  $\gg$

| Operation              | Values     |            |
|------------------------|------------|------------|
| Argument x             | [01100011] | [10010101] |
| x $\ll$ 4              | [00110000] | [01010000] |
| x $\gg$ 4 (logical)    | [00000110] | [00001001] |
| x $\gg$ 4 (arithmetic) | [00000110] | [11111001] |

# Unsigned encoding

$$B2U_w(\vec{x}) \doteq \sum_{i=0}^{w-1} x_i 2^i$$

