Ceng 255
Midterm Topics

1. Basic Structure of Computers (Chapter 1)
    a. Functional Units
    b. Basic Operations
    c. Simple Bus Structures
    d. Performance
        i. Basic Performance Equation
    e. CISC vs. RISC
2. Machine Instructions and Programs (Chapter 2)
    a. Number Representation
    b. Addition & Subtraction of Signed Numbers
        i. Overflow
    c. Memory
        i. Byte-addressable
        ii. Big-endian vs. Little-endian
        iii. Word Alignment
    d. Instructions
        i. Basic Instruction Types
        ii. Instruction Execution
        iii. Branching
        iv. Condition Codes
    e. Addressing Modes
        i. Pointers
    f. Dynamic array allocation in C (Note: See class Matrix notes)
        i. Array pointer
        ii. 2D arrays (Matrix)
            1. Array of pointers
        iii. Matrix traversal by row or column
    g. Assembly language
        i. Assembler directives