

CMPSCI 201 – Spring 2004
Review and Study Guide for Midterm 2
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It is nearly impossible to create a second exam in a computer science class which does not draw upon material from the first, so this exam is “cumulative” in that sense. You should review all of the topics from the first midterm review sheet. In addition, here is a list of the new topics we have covered since that first exam, and I expect to focus mostly on those.

Subroutines review (Procedures and Functions)

- Return address management
- Allocation of Local Variables
- Transparency
- Stack-Frame management
- Recursion
- Parameter Passing Types
 - Call-by-Value
 - Call-by-Return
 - Call-by-Value-Return
 - Call-by-Reference
- Parameter Passing Mechanisms
 - Registers
 - Memory
 - Stack

Combinatorial Circuits

- AND / OR / NAND / NOR / XOR / NOT
- Half and Full adders
- Ripple-carry adder/subtractors
- 1-of-2^N address decoders & selectors
- Relay circuits

Sequential Circuits

- Flip-Flops (Set-Reset, D, T, etc.)
- Counters & Shift Registers
- Static & Dynamic Memory (bits & arrays)
- Serial Adders
- Relay circuits

Array approaches

- Use of Base Registers
- Simple Array Indexing/Referencing
- Pre-Indexing with Write-back (push)
- Post-Indexing (pop)
- SP versus IP register usage
- 1D versus 2D arrays
- Non Zero-Based Indexes
- Mapping Functions

NEW READING:

Don't kill yourselves on these chapters; scan and focus on the topics we have addressed in class.

Computer Organization:

- Chapter 5 (The Memory System)
- Chapter 6 (Arithmetic)

Representing, Storing, and Retrieving Information:

- Chapter 5 (Electrical and Electronic Devices)
- Chapter 6 (Integer Representations)
- Chapter 7 (Real Number Representations)
- Chapter 19 (Computer Languages)