

Princeton University
COS 217: Introduction to Programming Systems
Fall 2004 Midterm Exam Preparation

Topics

You are responsible for all material covered in lectures, precepts, assignments, and required readings.

C programming

- The program preparation process
- Memory layout
- Data types
- Operators
- Statements
- Function declarations and definitions
- Pointers
- Arrays
- Command-line arguments
- Constants
- Text files
- Structures
- Dynamic memory management
- Void pointers
- Function pointers
- Variable declarations and definitions
- Variable scope, linkage, and duration
- Macros and their dangers
- The assert macro

Programming style

- Modularity, interfaces, implementations
- Multi-file programs using header files
- Opaque pointers
- Abstract data types
- Testing strategies
- Profiling and instrumentation
- Robust programming, error handling strategies

Applications

- “De-commenting” and lexical analysis via finite state automata
- String manipulation
- Symbol tables and hash tables

Tools: The UNIX/GNU programming environment
UNIX, bash, xemacs, gcc, gdb

Readings

As specified by the course "Schedule" Web page...

Required:

C Programming (King): 1-19, 21, 22

The Practice of Programming (Kernighan & Pike): 1, 2, 4, 5, 6

Recommended:

Programming with GNU Software (Loukides & Oram): 1, 2, 3, 4, 6

Copyright © 2004 by Robert M. Dondero, Jr.