

CSCI 2271: Computer Systems

Exam 1 Information Sheet

The exam will be on Wednesday, February 24, in class. It will cover the material of classes 1-12, quizzes 1-4, and homework assignments 1-4. I consider the following topics to be most important:

Input and Output in C

- The functions *getchar*, *scanf*, and *printf*.

Strings

- How strings are implemented using an array of chars.
- The functions *fgets*, *sscanf*, *strlen*, *strcpy*, *strcat*, and *strcmp*.

Pointers

- The addressof operator *&* and the dereference operator ***.
- Pointer arithmetic.
- The parameter passing mechanism of "pass by value", and its consequences.
- Using a pointer as a parameter or return value of a function.

Arrays

- An array as a single chunk of memory.
- The correspondence between arrays and pointers.

The Runtime Stack

- Stack frames.
- Local variable allocation and alignment.
- The use of the base register to refer to local variables and parameters.
- The need to save two pointers with each stack frame, namely the base pointer of the previous function and the return address of the previous function.

You are allowed to bring a crib sheet to the exam. The sheet can be 1 piece of 8.5x11 paper with anything written on it you like. I suggest things that you don't want to memorize.

You will have 50 minutes to do the exam, which doesn't leave much time for dithering. Be prepared!