

## Midterm Topics

### CSE 333 16au

There is nothing about C++ on the midterm.

- Scope and Lifetime
  - Global vs. local
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- Declaration vs. definition
- Type checking
- Pointers
  - call by value vs. call by reference
  - return by value
- Arrays
  - C strings
- The preprocessor
  - #include, #define, #ifndef
  - The purpose of .h files
    - .h files vs. libraries
- Linking
- Portability of code
  - C standard library
    - basic string functions (strcpy, strcmp)  
(You do not need to memorize details, like the spelling of the function names or the order of the arguments. You can “make those up” when answering. What you make up has to be very similar to what actually exists, though. In general, a detail that could be resolved by having access to a machine for 30 seconds or so isn’t important to grading.)
- Memory management
  - static data; heap data; stack data; text
  - malloc/free
  - basic use of valgrind
- Function pointers
- Generics in C
  - void\* vs. customized code generation (at compile time)
  - callbacks
- structs
- Files
  - buffered vs. unbuffered I/O
    - performance implications
  - purpose of open
  - unlink
- Object-oriented programming style in C
  - “classes”

- “inheritance”
- dynamic dispatch / vtables
- jansson / gtk+ reference counting
- Projects 1-3