cs2010 Midterm 1 Study Guide Fall 2018 --

Intro   High Level Language , Low Level Language, Source Code, Executable, Compilation, Debug, Syntax/Runtime Errors
C++

- data types, byte size; variable declaration, operators (assignment, arithmetic, comparison, logic, ++/--)
- iostream: cin >> variable; cout << "hello world\n" << endl;
- Control Structures (if; if, else; if, else if, else; switch; while; do while; for)
    o   Nested statements / nested loops
    o   Loops: accumulator variables (running totals), sentinel values
- #defined constants, global variables, variable scope, type casting
- Libraries: iostream, fstream, cmath, iomanip, cstdlib
    o   fstream: fileI/O (reading from file; writing to file)
- Functions: function prototypes, function calls, function definitions
    o   pass by value, pass by &reference; tracing function calls; overloaded functions;

Boolean Expressions
- && || !   (true / false)
- Input validation w/ loops

Multiple Choice
- Which statement assigns the value of 1 to variable 'a'?
    a) *int a = 1.1;* b) *a += 1*;   c) *a++*;   d) *a = abs(-1);*
- Which function call matches the function prototype *foo,* for the following function call? cout << foo(1,2);
    a) *void foo(int, int);* b) *int foo(int, int);* c) *bool foo(int, char);*   d) *int foo(int);*

Concept Questions
- What would happen and why?   *while(true) { . . . }*
- What would happen and why?   *do{ . . . }while(x = 1);*
- Can two or more variables have the same variable name? Why?
- What is the main difference between a while and a do while?
- Which functions causes a program to terminate? Which statement causes a function to terminate?

Function Prototypes / Function Definitions
- Write the function prototype and definition for the function *sum* that accepts two integer arguments by value and returns the sum of the two arguments added together.
- Write the function prototype and definition for the void function *getInteger* that accepts one integer argument by reference, prompts the user for an integer value, and assigns that value to the passed argument.
- Write the function prototype and definition for the void function *displayAverage* that will accept a double argument and integer argument by value. The double value is the actual *average* to display and the integer argument is the number of *decimal points* the average will be displayed with.
- Write the function prototype and definition for the function *power* that will accept two integer arguments by value and will return the *base^{exponent}*. The first argument is the *base* and the second is the *exponent*. Validate that the arguments are not negative, otherwise return *-1*.

Lecture notes, lab and homework assignments, quizzes, and solutions can be useful for study material!