CS140 Final Exam Study Guide: SPRING 2016

Errors and compiling: You should know the different types of errors that can occur, and when they occur: syntax error, logic error, runtime error, divide by zero.

Variables: You should know the terms local variable, scope, reference variable, and static variable. You should know how to declare each of these and how to use them in a program or in a function.

Arithmetic operations: You must know the order of operations and be able to evaluate expressions given the values of the variables involved, as well as the operators +=, etc. You should know the difference between using ++n and n++.

Boolean expressions: You should be able to evaluate Boolean expressions using relational operators and && and ||. You must be able to write a block of code using if-else, switch, or the conditional operator. You may be asked to convert one form to another.

Arrays: You should know how to declare and use an array. You should know how to declare an array with initial values, and how a partially initialized array is handled. You should know how to pass an array to a function and process its elements. You should know how to check for a "subscript out of bounds error" by determining the last legal subscript in an array. You must know how the selection and bubble sorts work.

Loops: You should know the three types of loops and be able to determine which loop to use in various circumstances. You should know the minimum number of executions for each type of loop. You should know the terms endless loop, iterate, repetition, sentinel value, and nested loop. You may be asked to convert one type to another. You may be asked to write a code segment for any of the types of loops getting input from the keyboard.

Functions: You should know the difference between a function definition and a function prototype and where they appear in a program. You should know the terms void function, reference vs. value parameters, local variables and static variables, default arguments for function parameters, and overloaded functions.

General knowledge: You should be able to step through a program and show the output. The program may include loops, arrays, arithmetic operations, Boolean expressions, function calls (with both value and reference parameters), or any of the other skills noted above. You are expected to be able to write functions and code segments that use any of the above skills.