

Variables:

- Required: Starts with lower case letter
- Required: Use a case where non-first words start with upper case letters (eg. ‘numQuizzes’, ‘numberOfValues’, etc.)
- Required: Use descriptive names (exception for “standard loop variables” used in that context ('i', 'j', 'k'))
- Required: Name is not a verb (i.e. doesn’t “sound like” a function)
- Required: Consistent naming scheme (use of case, etc.)

Constants:

- Required: Name is in all upper case letters
- Required: Underscores separate individual words of identifier (eg. ‘NUMBER_OF_EXAMS’)

Functions:

- Required: Starts with lower case letter
- Required: Use a case where non-first words start with upper case letters
- Required: Use descriptive names
- Required: Name is a form of verb (i.e. “sounds like” functionality (i.e. ‘computeAverage’ as opposed to ‘average’))
- Required: Consistent naming scheme (use of case, etc.)

Curly brace placement:

- Required: Consistent placement (i.e. always on next line, indented same amount as prev line, etc.)
- Preferred: Use curly braces to enclose code in a compound statement after an “if” or a loop, even if only one statement is currently needed

Whitespace use:

- Required: No line extends past 80 characters long, for any reason
- Required: No use of tabs in source code
- Required: Indentation with consistent number of spaces through entire source code
- Required: Every “block” or “compound statement” or “chunk of code within curly braces” is indented
- Required: When a line would have extended past 80 characters and you “continue the statement” on the next line, the “continuation line” is indented in some logical way, and indented beyond the indentation of the first line of the statement.
- Required: Continuation lines are indented consistently as much as possible

Comments / Documentation:

- Required: “Header block” on every source code file – must include programmer’s name, approximate date the code was written and a brief statement about the purpose the code serves.

- Required: Inline documentation (i.e. comments) – especially to describe areas of your code that are not especially “self documenting” or “very obvious” to a reasonably knowledgeable reader of your source code

Program organization, Design:

- Required: Non-‘main’ function prototypes are specified and commented prior to the ‘main’ function.
- Required: Non-‘main’ function definitions are implemented after the ‘main’ function
- Required: Avoid use of “while (true)” (or any other loop type) loops that use “break” to stop the loop – use proper loop conditions instead
- Required: Avoid use of “break” and “continue” to alter flow of control in loops (note: break is allowed in a switch statement, but not in a loop)
- Required: Use only topics covered in class – do not use libraries, functions, concepts, keywords, datatypes, etc., that have not been discussed in class as of the time the project specifications are posted

Other things to look out for:

- “Magic numbers”: essentially any literal values in your code not bound to a variable or constant (exception for “standard values” that are obvious and clear in the code)
- “Duplicated code” – same code to perform same functionality in multiple places – even minimal amounts of duplicated code is dangerous and must be avoided when at all possible
- Overly complicated code – you should avoid writing complicated or difficult to understand code when unnecessary

Disclaimer:

- While I tried to capture most of the significant style and design type issues we will be looking for when grading your programs, this is not necessarily a complete list. You may receive deductions for other style- or design-related issues that are not listed here when they are noticed in your submissions.