

Code Review Checklist - Java

(From users.csc.calpoly.edu/~jdalbey/.../CodeReviewChecklistJava.doc.

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1. Specification / Design

- Is the functionality described in the specification fully implemented by the code?
- Is there any excess functionality in the code but not described in the specification?

2. Initialization and Declarations

- Are all local and global variables initialized before use?
- Are variables and class members of the correct type and appropriate mode
- Are variables declared in the proper scope?
- Is a constructor called when a new object is desired?
- Are all needed import statements included?

3. Method Calls

- Are parameters presented in the correct order?
- Are parameters of the proper type for the method being called?
- Is the correct method being called, or should it be a different method with a similar name?
- Are method return values used properly? Cast to the needed type?

4. Arrays

- Are there any off-by-one errors in array indexing?
- Can array indexes ever go out-of-bounds?
- Is a constructor called when a new array item is desired?

5. Object Comparison

- Are all objects (including Strings) compared with "equals" and not "=="?

6. Output Format

- Are there any spelling or grammatical errors in displayed output?
- Is the output formatted correctly in terms of line stepping and spacing?

7. Computation, Comparisons and Assignments

- Check order of computation/evaluation, operator precedence and parenthesizing
- Can the denominator of a division ever be zero?
- Is integer arithmetic, especially division, ever used inappropriately, causing unexpected truncation/rounding?
- Check each condition to be sure the proper relational and logical operators are used.
- If the test is an error-check, can the error condition actually be legitimate in some cases?
- Does the code rely on any implicit type conversions?

8. Exceptions

- Are all relevant exceptions caught?
- Is the appropriate action taken for each catch block?

9. Flow of Control

- In a switch statement is every case terminated by break or return?
- Do all switch statements have a default branch?
- Check that nested if statements don't have "dangling else" problems.
- Are all loops correctly formed, with the appropriate initialization, increment and termination expressions?
- Are open-close parentheses and brace pairs properly situated and matched?

10. Files

- Are all files properly declared and opened?
- Are all files closed properly, even in the case of an error?
- Are EOF conditions detected and handled correctly?
- Are all file exceptions caught?