

# Java Code Review Check List

Project:		Note:	
Checked By:			

I - DEVIATION OBJECTIVE					
#	I.1 – DEVIATION	Yes	No	NA	PASS
1.	Does the code correctly implement the design?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Does the code implement more than the design?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Is every parameter of every method passing mechanism (value or reference) appropriate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Does every method return the correct value at every method return point?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
II – OMISSION OBJECTIVE					
#	II.1 –OMISSION	Yes	No	NA	PASS
5.	Does the code completely implement the design?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III - DEFECT OBJECTIVE					
#	III.1 – Variable and Constant Declaration	Yes	No	NA	PASS
6.	Are descriptive variable and constant names used in accord with naming conventions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Is every variable correctly typed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Is every variable properly initialized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Are all for-loop control variables declared in the loop header?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Are there variables that should be constants?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Are there attributes that should be local variables?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Do all attributes have appropriate access modifiers (private, protected, public)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.2 – Method Definition	Yes	No	NA	PASS
13.	Are descriptive method names used in accord with naming conventions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	Do all methods have appropriate access modifiers (private, protected, public)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	Is every method parameter value checked before being used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.3 – Class Definition	Yes	No	NA	PASS
16.	Does each class have an appropriate constructor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	Do any subclasses have common members that should be in the superclass?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.4 – Data Reference	Yes	No	NA	PASS
18.	For every array reference: Is each subscript value within the defined bounds?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	For every object or array reference: Is the value certain to be non-null?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.5 – Computation/Numeric	Yes	No	NA	PASS
20.	Are there any computations with mixed data types?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.	Is overflow or underflow possible during a computation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.	Are parentheses used to avoid ambiguity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.	Are divisors tested for zero or noise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.6 – Comparison/Relational	Yes	No	NA	PASS
24.	For every boolean test: Is the correct condition checked?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.	Are the comparison operators correct?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26.	Is each boolean expression correct?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27.	Are there improper and unnoticed side-effects of a comparison?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28.	Has an "&" inadvertently been interchanged with a "&&" or a " " for a "  "?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.	Is every three-way branch (less,equal,greater) covered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.7 – Control Flow	Yes	No	NA	PASS
30.	Will all loops terminate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Java Code Review Checklist – Short version – Based on a TMA Code Review Check List

31.	When there are multiple exits from a loop, is each exit necessary and handled properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.	Does each switch statement have a default case?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33.	Are missing switch case break statements correct and marked with a comment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34.	Can any nested if statements be converted into a switch statement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35.	Are null bodied control structures correct and marked with braces or comments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36.	Does every method terminate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37.	Are all exceptions handled appropriately?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38.	Do named break statements send control to the right place?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.8 – Input/Output	Yes	No	NA	PASS
39.	Have all files been opened before use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40.	Have all files been closed after use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41.	Is buffered data flushed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42.	Are files checked for existence before attempting to access them?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.9 – Module Interface	Yes	No	NA	PASS
43.	Are the number, order, types, and values of parameters in every method call in agreement with the called method's declaration?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44.	Do the values in units agree (e.g., inches versus yards)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.10 – Comment	Yes	No	NA	PASS
45.	Does every method, class, and file have an appropriate header comment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46.	Does every attribute, variable or constant declaration have a comment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47.	Is the underlying behavior of each method and class expressed in plain language?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48.	Is the header comment for each method and class consistent with the behavior of the method or class?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49.	Are all comments consistent with the code?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50.	Do the comments help in understanding the code?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51.	Are there enough comments in the code?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52.	Are there too many comments in the code?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.11 – Storage Usage	Yes	No	NA	PASS
53.	Are arrays large enough?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	III.12 – Performance	Yes	No	NA	PASS
54.	Can the cost of recomputing a value be reduced by computing it once and storing the results?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55.	Is every result that is computed and stored actually used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56.	Can a computation be moved outside a loop?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57.	Are there tests within a loop that do not need to be done?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>V – AMBIGUITY OBJECTIVE</b>					
#	V.1 – Variable and Constant Declaration	Yes	No	NA	PASS
58.	Are there variables with confusingly similar names?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59.	Are all variables properly defined with meaningful, consistent, and clear names?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>VI – REDUNDANCE OBJECTIVE</b>					
#	VI.1 – Variables	Yes	No	NA	PASS
60.	Are there any redundant or unused variables or attributes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61.	Could any non-local variables be made local?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	VI.2 – Method Definition	Yes	No	NA	PASS
62.	Are there any uncalled or unneeded methods?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#	VI.3 – Performance	Yes	No	NA	PASS
63.	Can any code be replaced by calls to external reusable objects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64.	Are there any blocks of repeated code that could be condensed into a single method?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>