

Project Name & Bug No	Tool that found this bug/warning	Class	Methodology that reported this warning	Match category	Comments
Chart -4	Infer, Spot Bugs	org.jfree.chart.plot.XYPlot	Infer:both Spot Bugs:both	Full Match	The warning says object last assigned on line 4473 could be null and is dereferenced at line 4493 and it is fixed by adding condition if it is not null
Closure-82	Infer	com.google.cript.rhino.jstype.JSType	inf_removed_warnings	Mismatch	Warning is null deferencing and code fix was different and it is pointing to different line in the code
Lang -61	Spot Bugs	org.apache.commons.lang.text.StrBuilder	sb_diffs_warnings	Mismatch	Line number and warning is different from fix they provided.As warning is that the class implements Cloneable but does not define or use clone method. But the fix is change in calculation and variable
Math-31	None of the tools identified	-	-	Domain specific	There is no warning in any tool and the changes are related to calculations
Mockito-11	Spot bugs	org.mockito.internal.creation.DelegatingMethod	sb_diffs_warnings	Partial Match	Warning is DelegatingMethod.equals(Object) checks for operand being a reflect.Method and and code is added related to

					this warning but line number is different reported by tool
Time-22	None of the tools identified	-	-	Domain specific	<p>None of the tools that we used identified /reported</p> <p>this error. This could be due to some domain specific configuration of the tool, or the bug patterns that was designed for those three tools doesn't cover this pattern.</p>
chart-24	Spot Bugs	Class": "org.jfree.chart.renderer.GrayPaintScale",	sb_removed_warnings	Partial match	Warning is Dead store to \$L3 in org.jfree.chart.renderer.GrayPaintScale.getPaint(double) and fix changed the variable name but the LOC is different
closure-45	Spot Bugs	Class": "com.google.javascript.jscomp.RemoveUnusedVars",	sb_removed_warnings	Full match	Warning says Read of unwritten field assignNode and it mention the method, line number and fix changed that code
lang-36	Infer	Class": "org.apache.commons.lang3.math.NumberUtils"	inf_diffs_warnings	full match	Warning says object `d` last assigned on line 532 could be null and is dereferenced at line 533.and code changes checks the condition if it is not null

math-78	ep	"Class": "org.apache .commons.ma th.ode.even ts.EventSta te",	ep_diffs_wa rning	Mismatch	The warning do not correspond to code change.warning was expected @Override but changes new block of code
math-66	ep,Spot Bugs	"Class": "org.apache .commons.ma th.optimiza tion.univar iate.BrentO ptimizer",	Ep-both Sb- both	Mismatch	The warning do not correspond to code change. The warning was expected @Override and code changes were addition of exception
mockito-23	None of the tools identified	-	-	Domain specific	There is no warning for this and they have added new methods to instantiate mockito core,delegate if needed

Lang-23	Spot Bugs	In Sb, by removed/fixe d warnings.	Fullmatch	org.apache.commons.lang3.text.Ex tendedMessageFormat now overrides java.text.MessageFormat.equals(O bject)
Lang-47	Spot Bugs	In Sb, by differential-b ased warnings.	Mismatch	Warning was "StrBuilder implements Cloneable but does not define or use clone method". The issue is not resolved, but some unexpected code changes are being done.
Lang-62	Error-Prone	In ep, by removed/fixe d warnings.	False Positive	The warning was "Execution may fall through from the previous case; add a `// fall through` comment before this line if it was deliberate", but it is not added in the fixed version of the same.
Math-48	Spot Bugs	In Sb, by removed/fixe d warnings.	Domain Specific	No warnings.

Math-57	Error-prone	In ep, by removed/fixed warnings.	Fullmatch	The warning was "Compound assignments from double to int hide lossy casts". The data type was converted from int to double in the fixed version.
Math-102	Error-prone	In ep, differential-based warnings.	Mismatch	The warning was "chiSquareTest implements method in ChiSquareTest; expected @Override". But, @override is not added. Some additional implementation is done.
Mockito-25	Error-prone	In ep, differential-based warnings.	Mismatch	The warning was "answer implements method in Answer; expected @Override". But, @override is not added. Some additional implementation is done.
Chart-8	Error-prone	In ep, differential-based warnings. In ep, by removed/fixed warnings.	Fullmatch	The warning was "The called constructor accepts a parameter with the same name and type as one of its caller's parameters, but it's caller doesn't pass that parameter to it. It's likely that it was intended to". And, the parameter has been added in the fixed version.
Closure-132	None of the tools identified.	-	Domain Specific	No warnings. Just some changes to the buggy version. Added conditional check.
Lang-54	None of the tools identified.	-	Near Miss	No warnings. Just some changes to the buggy version. Added conditional check.
Math-95	None of the tools identified.	-	Domain Specific	No warnings. Just some changes to the buggy version. Added conditional check.
Mockito-38	None of the tools identified.	-	Domain Specific	No warnings. Just some changes to the buggy version. Added conditional check.
Time-20	None of the tools identified.	-	False Positive	No warnings. Just some changes to the buggy version. Added conditional check.

Chart-21	DefaultBoxAndWhiskerCategoryDataSet	Error Prone, Spot bugs	In ep, Diff based Warning and in Spot Bugs diff based warning	Mismatch	Error Prone two types of warnings Missing override in two places of code and EqualsHashCode. the changes made are totally different.
Closure-33	PrototypeObject	Error prone	Differential Based	Mismatch	An if block was added and no changes made related to the bug
Lang-16	NumberUtils	Infer	Diff based warning	Mismatch	The bug is Null_Derference and the changes made are in a different LOC and in a if condition.
Lang-56	FastDateFormat	Spot bugs	Removed / Fixed warning	Fullmatch	Transient keyword was added and a loc was added to make it serializable
Lang-59	StringBuilder	Spot bugs	Diff based warning	Mismatch	The warning category is BAD_Practice i.e. Strbuilder implements cloneable but was not defined anywhere and the change is made only in the parameter i.e strlen is changed to width .
Lang-64	ValuedEnum	Error Prone	Diff based warning	Mismatch	The warning was Missing override and there was addition of if else block and try catch throw block in the code.
Math- 50	BaseSecentSolver	Spot bugs	Diff based warning and Removed /fixed warning both by spot bugs	Mismatch	The Warning is FE_Floating_point_Equality and instead of solving the warning an if block has been removed.
Math-17	DFP	Error Prone	Diff based warning	Mismatch	The warning is missing override by ep, an if else block is added in loc

Math-83	SimplexTableau	Infer	Removed / Fixed warning	Mismatch	The warning is null_deference, the change was made in the start variable and not in the row variable, which was returned as null.
Math-91	Fraction	Spot bugs	Removed / Fixed warning	Fullmatch	The warning is Bad_Practice and the type is Co_Compareto_Incorrect_Floating that is fixed by changing the keyword
Mockito-1	Invocation Matcher	Spot bugs	Removed / Fixed warning	Fullmatch	The warning is DLS_Dead_Local_store, the throw block has been removed and variable assigned has been used.
Mockito-14	MockHandler	Error Prone	Parsed_json File	Mismatch	In this a library was imported and an if block was added but the bug was not fixed
Time-2	unsupported duration Field	Error Prone	Diff based warning	Mismatch	The warning is missing override and an if block was added.

Chart -6	Spot Bugs	org.jfree.chart.util.ShapeList	sb_removed_warnings	Domain Specific Bug	Bug was domain-specific so was not identified by any tool
Chart-17	Spot Bugs	org.jfree.data.time.TimeSeries	sb_diffs_warnings, sb_removed_warnings	Full Match	Warning correspond to the bug that was being resolved
Math -57	Error Prone	org.apache.commons.math.stat.clustering.KMeansPlusPlusClusterer	ep_removed_warnings	Full Match	Warning exactly correspond to real bug which was fixed
Closure-91	Spot bugs	com.google.javascript.jscomp.CheckGlobalThis	sb_diffs_warnings	Complete Mismatch	The warning does not correspond to the bug that was being resolved.

Mockito-17	Error Prone	org.mockito. internal.c reation.Moc kSettingsIm pl	ep_diffs_wa rnings	Complete Mis -Match	Missing @override warning does not correspond to actual bug fixed
Mockito-33	Error Prone	org.mockito. internal.i nvocation.I nvocationMa tcher	ep_diffs_wa rnings	Complete Mismatch	Missing @override warning does not correspond to actual bug fixed
Lang-51	Error Prone	org.apache. commons.lan g.BooleanUt ils	ep_diffs_wa rnings, ep_removed _warnings	Full Match	Warning correspond to the type of error being fixed
Lang-48	Error Prone	org.apache. commons.lan g.builder.E qualsBuilde r	ep_removed _warnings	Domain- Specific	Bug was domain-specific so was not identified by any tool
Lang-7	Infer	org.apache. commons.lan g3.math.Num berUtils	inf_diffs_wa rnings	Full Match	Warning corresponds to bug fix
Lang-60	Spot Bugs	org.apache. commons.lan g.text.StrB uilder	sb_diffs_wa rnings	Complete Mismatch	Cloneable warning reported does not match with the bug fix
Time-6	Error Prone	org.joda.ti me.chrono.G JChronology	ep_diffs_wa rnings	Complete Mismatch	The warning doesnot correspond to bug fixed
math-14	Spot Bugs	org.apache. commons.mat h3.optim.no nlinear.vec tor.jacobia n.AbstractL eastSquares Optimizer	Removed Warning	Domain Specific	The bug was not detected by any tool as it was domain specific

Chart -23	org.jfree.chart.renderer.category.MinMaxCategoryRenderer	Error-Prone Spot Bugs	In ep, by differential-based warnings. In Sb, by removed/fixed warnings.	Mismatch Near misses	Warning was Missing override but in the fixed code they have added LOC that doesn't address this warning. No warning by Spot Bugs. But it has similar implementation of bug in its tool (ES, EQ, HE) but was unable to catch this warning.
Closure-49	com.google.javascript.jscomp.MakeDeclaredNamesUnique	Spot Bugs	In Sb, by differential-based warnings.	Mismatch	Two warnings were reported on two different methods "missing default statements inside switch case" but the LOC changed or added where inside case. Not for default.
Lang-1	org.apache.commons.lang3.math.NumberUtils	Infer	In infer, by differential based warnings.	Mismatch	The warning was null deference for an object d. But the developer didn't address this error, instead he made changes to some other part of the code. He is using the null object for this condition check in if statement. It is not just a warning but an error itself . It has got high severity and he needs to address it.
Lang-3	org.apache.commons.lang3.math.NumberUtils	Spot Bugs	In Spot Bugs, by the removed or fixed warnings.	Full Match	The warning was DLS dead local store and the lines of code were added to address this exception in try block.
Lang -10	-	None of the tools identified	-	Domain Specific	None of the tools that we used identified /reported this error. This could be due to some domain specific

					configuration of the tool, or the bug patterns that was designed for those three tools doesn't cover this pattern. Moreover, the code changes are for handling the whitespace, this won't be a real bug or error.
Lang-58	org.apache.commons.lang.math.NumberUtils	Spot Bugs	In Spot Bugs, by differential warnings.	False positive	The warning was missing default case in switch condition check. But both the buggy and fixed version of code already has default case in them which throws exception. The only code changes that were made was few more condition added inside one case. It is not even warning but was falsely reported as warning or bug.
Math - 6	<p>org.apache.commons.math3.optim.nonlinear.scalar.noderiv.PowellOptimizer</p> <p>org.apache.commons.math3.optim.nonlinear.scalar.gradient.NonLinearConjugateGradientOptimizer</p> <p>org.apache.commons.math3.optim.nonlinear.scalar.noderiv.SimplexOptimizer</p> <p>org.apache.commons.math3.optim.nonlinear.vector.jacobian.GaussNewtonOptimizer</p> <p>org.apache.commons.math3.optim.nonlinear.scalar.noderiv.CMAESOptimizer</p>	Infer	In Infer, by removed warnings.	<p>No Warning by the Infer tool</p> <p>But it is False positive.</p>	The variable used for iteration in while loop in all this classes were removed, and it is replaced with a method call. This may or may not be done intentionally. This can probably lead to error.

	org.apache.commons.math3. optim.BaseOptimizer				
	org.apache.commons.math3. optim.nonlinear.vector. jacobian.Levenberg MarquardtOptimizer				
Math - 51	org.apache.commons. math.analysis.solvers. BaseSecantSolver	Spot Bugs	In Spot Bugs, by removed or fixed warnings	No Warning by the Spot Bug tool. But it is Domain Specific.	In the fixed version of the code they have added a new case inside the switch condition and, they have added statements under default which was empty before. None of the tool identified this error or warning, but the developer has somehow made changes which could be unintentionally fixed.
Math-77	org.apache.commons. math.linear.OpenMap RealVector	Error-Prone	In ep, by differential based warnings In ep, by removed/fixed warnings.	Mismatch	The warning was missing override, but the developer has removed that entire method instead of adding override annotation.
Math-10 3	org.apache.commons. math.distribution.Normal DistributionImpl	Error-prone	In ep, by differential based warnings.	Mismatch	T The warning was missing override, but the code changes were for addressing exception.
Mockito- 29	org.mockito.internal. matchers.Same	None of the tools identified	-	Domain Specific	In the buggy version a conditional check is used inside a method call and that is been changed in fixed version of the code. This may or

					<p>may not be an error. This could be probably done unintentionally. None of the Tool identified this due to some specific cases.</p>
Mockito -36	org.mockito.internal.invocation.Invocation	Error- Prone	In ep, by differential based warnings.	Mismatch	<p>The warning was missing override on toString method, but the changes were made on another part of the code.</p>
Time – 3	org.joda.time.Mutable DateTime	Error-prone	In ep, by differential based warnings	Mismatch	<p>The warnings that were reported were missing override, but none of the code changes were addressing that warning.</p>