

DataUtilities.java

```

1  /* =====
2   * JFreeChart : a free chart library for the Java(tm) platform
3   * =====
4   *
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6   *
7   * Project Info:  http://www.jfree.org/jfreechart/index.html
8   *
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26  *
27  * -----
28  * DataUtilities.java
29  * -----
30  * (C) Copyright 2003-2013, by Object Refinery Limited and contributors.
31  *
32  * Original Author:  David Gilbert (for Object Refinery Limited);
33  * Contributor(s):   Peter Kolb (patch 2511330);
34  *
35  * Changes
36  * -----
37  * 05-Mar-2003 : Version 1 (DG);
38  * 03-Mar-2005 : Moved createNumberArray() and createNumberArray2D() methods
39  *               from the DatasetUtilities class (DG);
40  * 17-May-2005 : Added calculateColumnTotal() and calculateRowTotal()
41  *               methods (DG);
42  * 28-Jan-2009 : Added equal(double[][], double[][]) method (DG);
43  * 28-Jan-2009 : Added clone(double[][]) method (DG);
44  * 04-Feb-2009 : Added calculateColumnTotal/RowTotal variants (PK);
45  * 03-Jul-2013 : Use ParamChecks (DG);
46  *
47  */
48
49 package org.jfree.data;
50
51 import static org.junit.Assert.assertEquals;
52 import static org.junit.Assert.fail;
53
54 import java.security.InvalidParameterException;
55 import java.util.Arrays;
56 import org.jfree.chart.util.ParamChecks;
57 import org.jfree.data.general.DatasetUtilities;
58 import org.junit.Test;
59
60 /**
61  * Utility methods for use with some of the data classes (but not the datasets,
62  * see {@link DatasetUtilities}).
63  */
64 public abstract class DataUtilities {
65

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66  /**
67   * Tests two arrays for equality. To be considered equal, the arrays must
68   * have exactly the same dimensions, and the values in each array must also
69   * match (two values that are both NaN or both INF are considered equal
70   * in this test).
71   *
72   * @param a the first array (<code>null</code> permitted).
73   * @param b the second array (<code>null</code> permitted).
74   *
75   * @return A boolean.
76   *
77   * @since 1.0.13
78   */
79  public static boolean equal(double[][] a, double[][] b) {
80      4      if (a == null) {
81          19          return (b == null);
82      }
83      4      if (b == null) {
84          7          return false; // already know 'a' isn't null
85      }
86      8      if (a.length != b.length) {
87          7          return false;
88      }
89      19      for (int i = 0; i < a.length; i++) {
90          19          if (!Arrays.equals(a[i], b[i])) {
91              7              return false;
92          }
93      }
94      8      return true;
95  }
96
97  /**
98   * Returns a clone of the specified array.
99   *
100   * @param source the source array (<code>null</code> not permitted).
101   *
102   * @return A clone of the array.
103   *
104   * @since 1.0.13
105   */
106  public static double[][] clone(double[][] source) {
107      1      ParamChecks.nullNotPermitted(source, "source");
108      double[][] clone = new double[source.length][];
109      19      for (int i = 0; i < source.length; i++) {
110          9          if (source[i] != null) {
111              5              double[] row = new double[source[i].length];
112              21              System.arraycopy(source[i], 0, row, 0, source[i].length);
113              5              clone[i] = row;
114          }
115      }
116      2      return clone;
117  }
118
119  /**
120   * Returns the total of the values in one column of the supplied data
121   * table.
122   *
123   * @param data the table of values (<code>null</code> not permitted).
124   * @param column the column index (zero-based).
125   *
126   * @return The total of the values in the specified column.
127   */
128  public static double calculateColumnTotal(Values2D data, int column) {
129      4      if (data == null) {
130          1          throw new InvalidParameterException("Input data cannot be null"); // Ensures correct exception
131      }
132
133      try {
134          1          ParamChecks.nullNotPermitted(data, "data");
135          5          double total = 0.0;

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136 1         int rowCount = data.getRowCount();
137 25         for (int r = 0; r < rowCount; r++) {
138 11             Number n = data.getValue(r, column);
139 4             if (n != null) {
140 13                 total += n.doubleValue();
141             }
142         }
143 7         return total;
144     }catch(IndexOutOfBoundsException e) {
145 6         return 0;
146     }
147 }
148
149 /**
150  * Returns the total of the values in one column of the supplied data
151  * table by taking only the row numbers in the array into account.
152  *
153  * @param data the table of values (<code>null</code> not permitted).
154  * @param column the column index (zero-based).
155  * @param validRows the array with valid rows (zero-based).
156  *
157  * @return The total of the valid values in the specified column.
158  *
159  * @since 1.0.13
160  */
161 public static double calculateColumnTotal(Values2D data, int column,
162     int[] validRows) {
163 4     if (data == null) {
164 1         throw new InvalidParameterException("Input data cannot be null"); // Ensures correct exception
165     }
166
167     try {
168 1         ParamChecks.nullNotPermitted(data, "data");
169 5         double total = 0.0;
170 1         int rowCount = data.getRowCount();
171 20         for (int v = 0; v < validRows.length; v++) {
172 10             int row = validRows[v];
173 19             if (row < rowCount) {
174 11                 Number n = data.getValue(row, column);
175 4                 if (n != null) {
176 13                     total += n.doubleValue();
177                 }
178             }
179         }
180 7         return total;
181     }catch(IndexOutOfBoundsException e) {
182 6         return 0;
183     }
184 }
185
186 /**
187  * Returns the total of the values in one row of the supplied data
188  * table.
189  *
190  * @param data the table of values (<code>null</code> not permitted).
191  * @param row the row index (zero-based).
192  *
193  * @return The total of the values in the specified row.
194  */
195 public static double calculateRowTotal(Values2D data, int row) {
196 4     if (data == null) {
197 1         throw new InvalidParameterException("Input data cannot be null"); // Ensures correct exception
198     }
199
200     try {
201 1         ParamChecks.nullNotPermitted(data, "data");
202 5         double total = 0.0;
203 1         int columnCount = data.getColumnCount();
204 25         for (int c = 0; c < columnCount; c++) {
205 11             Number n = data.getValue(row, c);

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206 4         if (n != null) {
207 13             total += n.doubleValue();
208             }
209         }
210 7         return total;
211     }catch(IndexOutOfBoundsException e) {
212 6         return 0;
213     }
214 }
215
216 /**
217  * Returns the total of the values in one row of the supplied data
218  * table by taking only the column numbers in the array into account.
219  *
220  * @param data the table of values (<code>null</code> not permitted).
221  * @param row the row index (zero-based).
222  * @param validCols the array with valid cols (zero-based).
223  *
224  * @return The total of the valid values in the specified row.
225  *
226  * @since 1.0.13
227  */
228 public static double calculateRowTotal(Values2D data, int row,
229     int[] validCols) {
230 4     if (data == null) {
231 1     throw new InvalidParameterException("Input data cannot be null"); // Ensures correct exception
232     }
233
234     try {
235 1         ParamChecks.nullNotPermitted(data, "data");
236 5         double total = 0.0;
237 1         int colCount = data.getColumnCount();
238 20         for (int v = 0; v < validCols.length; v++) {
239 10             int col = validCols[v];
240 19             if (col < colCount) {
241 11                 Number n = data.getValue(row, col);
242 4                 if (n != null) {
243 13                     total += n.doubleValue();
244                 }
245             }
246         }
247 7         return total;
248     }catch(IndexOutOfBoundsException e) {
249 6         return 0;
250     }
251 }
252
253 /**
254  * Constructs an array of <code>Number</code> objects from an array of
255  * <code>double</code> primitives.
256  *
257  * @param data the data (<code>null</code> not permitted).
258  *
259  * @return An array of <code>Double</code>.
260  */
261 public static Number[] createNumberArray(double[] data) {
262 4     if (data == null) {
263 1         throw new InvalidParameterException("Input data array cannot be null");
264     }
265
266 1     ParamChecks.nullNotPermitted(data, "data");
267     Number[] result = new Number[data.length];
268 19     for (int i = 0; i < data.length; i++) {
269 16         result[i] = new Double(data[i]);
270     }
271 2     return result;
272 }
273
274 /**
275  * Constructs an array of arrays of <code>Number</code> objects from a

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276     * corresponding structure containing <code>double</code> primitives.
277     *
278     * @param data the data (<code>null</code> not permitted).
279     *
280     * @return An array of <code>Double</code>.
281     */
282     public static Number[][] createNumberArray2D(double[][] data) {
283         4 if(data == null) {
284             1 throw new InvalidParameterException("Input data array cannot be null");
285         }
286
287         1 ParamChecks.nullNotPermitted(data, "data");
288         int l1 = data.length;
289         5 Number[][] result = new Number[l1][];
290         25 for (int i = 0; i < l1; i++) {
291             11 result[i] = createNumberArray(data[i]);
292         }
293         2 return result;
294     }
295
296     /**
297     * Returns a {@link KeyedValues} instance that contains the cumulative
298     * percentage values for the data in another {@link KeyedValues} instance.
299     * <p>
300     * The percentages are values between 0.0 and 1.0 (where 1.0 = 100%).
301     *
302     * @param data the data (<code>null</code> not permitted).
303     *
304     * @return The cumulative percentages.
305     */
306     public static KeyedValues getCumulativePercentages(KeyedValues data) {
307         4 if(data == null) {
308             1 throw new InvalidParameterException("Input data cannot be null");
309         }
310
311         1 ParamChecks.nullNotPermitted(data, "data");
312         1 DefaultKeyedValues result = new DefaultKeyedValues();
313         5 double total = 0.0;
314         20 for (int i = 0; i < data.getItemCount(); i++) {
315             6 Number v = data.getValue(i);
316             4 if (v != null) {
317                 13 total = total + v.doubleValue();
318             }
319         }
320         5 double runningTotal = 0.0;
321         20 for (int i = 0; i < data.getItemCount(); i++) {
322             6 Number v = data.getValue(i);
323             4 if (v != null) {
324                 13 runningTotal = runningTotal + v.doubleValue();
325             }
326             25 result.addValue(data.getKey(i), new Double(runningTotal / total));
327         }
328         2 return result;
329     }
330
331 }

```

Mutations

1. negated conditional → KILLED
- 80 2. removed conditional - replaced equality check with false → KILLED
3. removed conditional - replaced equality check with true → KILLED
4. not equal to equal → KILLED
- 81 1. replaced boolean return with false for org/jfree/data/DataUtilities::equal → KILLED
2. replaced boolean return with true for org/jfree/data/DataUtilities::equal → KILLED
3. Substituted 1 with 0 → KILLED
4. Substituted 0 with 1 → KILLED
5. negated conditional → KILLED
6. removed conditional - replaced equality check with false → KILLED
7. removed conditional - replaced equality check with true → KILLED
8. replaced return of integer sized value with (x == 0 ? 1 : 0) → KILLED
9. replaced return of integer sized value with (x == 0 ? 1 : 0) → KILLED

10. Substituted 0 with 1 → KILLED
 11. Substituted 1 with 0 → KILLED
 12. Substituted 1 with -1 → SURVIVED
 13. Substituted 0 with -1 → KILLED
 14. Substituted 1 with -1 → SURVIVED
 15. Substituted 1 with 2 → KILLED
 16. Substituted 0 with 1 → KILLED
 17. Substituted 1 with 0 → KILLED
 18. Substituted 0 with -1 → KILLED
 19. not equal to equal → KILLED
 1. negated conditional → KILLED
 2. removed conditional - replaced equality check with false → KILLED
 83 3. removed conditional - replaced equality check with true → KILLED
 4. not equal to equal → KILLED
 1. replaced boolean return with true for org/jfree/data/DataUtilities::equal → KILLED
 2. Substituted 0 with 1 → KILLED
 84 3. replaced return of integer sized value with (x == 0 ? 1 : 0) → KILLED
 4. Substituted 0 with 1 → KILLED
 5. Substituted 0 with -1 → KILLED
 6. Substituted 0 with 1 → KILLED
 7. Substituted 0 with -1 → KILLED
 1. negated conditional → KILLED
 2. removed conditional - replaced equality check with false → SURVIVED
 3. removed conditional - replaced equality check with true → KILLED
 86 4. equal to less than → KILLED
 5. equal to less or equal → SURVIVED
 6. equal to greater than → KILLED
 7. equal to greater or equal → SURVIVED
 8. equal to not equal → KILLED
 1. replaced boolean return with true for org/jfree/data/DataUtilities::equal → KILLED
 2. Substituted 0 with 1 → KILLED
 3. replaced return of integer sized value with (x == 0 ? 1 : 0) → KILLED
 87 4. Substituted 0 with 1 → KILLED
 5. Substituted 0 with -1 → KILLED
 6. Substituted 0 with 1 → KILLED
 7. Substituted 0 with -1 → KILLED
 1. changed conditional boundary → KILLED
 2. Substituted 0 with 1 → SURVIVED
 3. negated conditional → KILLED
 4. removed conditional - replaced comparison check with false → KILLED
 5. removed conditional - replaced comparison check with true → KILLED
 6. Negated integer local variable number 2 → KILLED
 7. Substituted 0 with 1 → SURVIVED
 8. Substituted 0 with -1 → KILLED
 9. Substituted 0 with 1 → SURVIVED
 89 10. Substituted 0 with -1 → KILLED
 11. Less than to less or equal → KILLED
 12. Less than to greater than → KILLED
 13. Less than to greater or equal → KILLED
 14. Less than to equal → KILLED
 15. Less than to not equal → SURVIVED
 16. Incremented (a++) integer local variable number 2 → KILLED
 17. Decrement (a--) integer local variable number 2 → KILLED
 18. Incremented (++a) integer local variable number 2 → KILLED
 19. Decrement (--a) integer local variable number 2 → KILLED
 1. negated conditional → KILLED
 2. removed call to java/util/Arrays::equals → KILLED
 3. removed conditional - replaced equality check with false → KILLED
 4. removed conditional - replaced equality check with true → KILLED
 5. Negated integer local variable number 2 → KILLED
 6. Negated integer local variable number 2 → KILLED
 7. not equal to less than → KILLED
 8. not equal to less or equal → KILLED
 9. not equal to greater than → SURVIVED
 90 10. not equal to greater or equal → KILLED
 11. not equal to equal → KILLED
 12. Incremented (a++) integer local variable number 2 → KILLED
 13. Incremented (a++) integer local variable number 2 → SURVIVED
 14. Decrement (a--) integer local variable number 2 → KILLED
 15. Decrement (a--) integer local variable number 2 → TIMED_OUT
 16. Incremented (++a) integer local variable number 2 → KILLED
 17. Incremented (++a) integer local variable number 2 → KILLED
 18. Decrement (--a) integer local variable number 2 → KILLED
 19. Decrement (--a) integer local variable number 2 → KILLED
 1. replaced boolean return with true for org/jfree/data/DataUtilities::equal → KILLED
 2. Substituted 0 with 1 → KILLED
 3. replaced return of integer sized value with (x == 0 ? 1 : 0) → KILLED
 91 4. Substituted 0 with 1 → KILLED
 5. Substituted 0 with -1 → KILLED
 6. Substituted 0 with 1 → KILLED
 7. Substituted 0 with -1 → KILLED
 94 1. replaced boolean return with false for org/jfree/data/DataUtilities::equal → KILLED
 2. Substituted 1 with 0 → KILLED
 3. replaced return of integer sized value with (x == 0 ? 1 : 0) → KILLED
 4. Substituted 1 with 0 → KILLED

5. Substituted 1 with -1 → SURVIVED
 6. Substituted 1 with -1 → SURVIVED
 7. Substituted 1 with 2 → KILLED
 8. Substituted 1 with 0 → KILLED
 107 1. removed call to org/jfree/chart/util/ParamChecks::nullNotPermitted → SURVIVED
 1. changed conditional boundary → KILLED
 2. Substituted 0 with 1 → KILLED
 3. negated conditional → KILLED
 4. removed conditional - replaced comparison check with false → KILLED
 5. removed conditional - replaced comparison check with true → KILLED
 6. Negated integer local variable number 2 → KILLED
 7. Substituted 0 with 1 → KILLED
 8. Substituted 0 with -1 → KILLED
 9. Substituted 0 with 1 → KILLED
 109 10. Substituted 0 with -1 → KILLED
 11. Less than to less or equal → KILLED
 12. Less than to greater than → KILLED
 13. Less than to greater or equal → KILLED
 14. Less than to equal → KILLED
 15. Less than to not equal → SURVIVED
 16. Incremented (a++) integer local variable number 2 → KILLED
 17. Decrement (a--) integer local variable number 2 → KILLED
 18. Incremented (a++) integer local variable number 2 → KILLED
 19. Decrement (a--) integer local variable number 2 → KILLED
 1. negated conditional → KILLED
 2. removed conditional - replaced equality check with false → KILLED
 3. removed conditional - replaced equality check with true → KILLED
 4. Negated integer local variable number 2 → KILLED
 110 5. equal to not equal → KILLED
 6. Incremented (a++) integer local variable number 2 → KILLED
 7. Decrement (a--) integer local variable number 2 → TIMED_OUT
 8. Incremented (a++) integer local variable number 2 → KILLED
 9. Decrement (a--) integer local variable number 2 → KILLED
 1. Negated integer local variable number 2 → KILLED
 2. Incremented (a++) integer local variable number 2 → KILLED
 3. Decrement (a--) integer local variable number 2 → KILLED
 111 4. Incremented (a++) integer local variable number 2 → KILLED
 5. Decrement (a--) integer local variable number 2 → KILLED
 1. Substituted 0 with 1 → KILLED
 2. Substituted 0 with 1 → KILLED
 3. removed call to java/lang/System::arraycopy → KILLED
 4. Negated integer local variable number 2 → KILLED
 5. Negated integer local variable number 2 → KILLED
 6. Substituted 0 with 1 → KILLED
 7. Substituted 0 with 1 → KILLED
 8. Substituted 0 with -1 → KILLED
 9. Substituted 0 with -1 → KILLED
 10. Substituted 0 with 1 → KILLED
 112 11. Substituted 0 with 1 → KILLED
 12. Substituted 0 with -1 → KILLED
 13. Substituted 0 with -1 → KILLED
 14. Incremented (a++) integer local variable number 2 → KILLED
 15. Incremented (a++) integer local variable number 2 → KILLED
 16. Decrement (a--) integer local variable number 2 → KILLED
 17. Decrement (a--) integer local variable number 2 → KILLED
 18. Incremented (a++) integer local variable number 2 → KILLED
 19. Incremented (a++) integer local variable number 2 → KILLED
 20. Decrement (a--) integer local variable number 2 → KILLED
 21. Decrement (a--) integer local variable number 2 → KILLED
 1. Negated integer local variable number 2 → KILLED
 2. Incremented (a++) integer local variable number 2 → KILLED
 113 3. Decrement (a--) integer local variable number 2 → TIMED_OUT
 4. Incremented (a++) integer local variable number 2 → KILLED
 5. Decrement (a--) integer local variable number 2 → KILLED
 1. replaced return value with null for org/jfree/data/DataUtilities::clone → KILLED
 116 2. mutated return of Object value for org/jfree/data/DataUtilities::clone to (if (x != null) null else
 throw new RuntimeException) → KILLED
 1. negated conditional → KILLED
 129 2. removed conditional - replaced equality check with false → KILLED
 3. removed conditional - replaced equality check with true → KILLED
 4. not equal to equal → KILLED
 130 1. removed call to java/security/InvalidParameterException::init → KILLED
 134 1. removed call to org/jfree/chart/util/ParamChecks::nullNotPermitted → SURVIVED
 1. Substituted 0.0 with 1.0 → KILLED
 2. Substituted 0.0 with 1.0 → KILLED
 135 3. Substituted 0.0 with -1.0 → KILLED
 4. Substituted 0.0 with 1.0 → KILLED
 5. Substituted 0.0 with -1.0 → KILLED
 136 1. removed call to org/jfree/data/Values2D::getRowCount → KILLED
 137 1. changed conditional boundary → KILLED
 2. Changed increment from 1 to -1 → KILLED
 3. Substituted 0 with 1 → KILLED
 4. negated conditional → KILLED
 5. removed conditional - replaced comparison check with false → KILLED

6. removed conditional - replaced comparison check with true → KILLED
 7. Negated integer local variable number 5 → KILLED
 8. Negated integer local variable number 4 → KILLED
 9. Substituted 0 with 1 → KILLED
 10. Substituted 0 with -1 → KILLED
 11. Substituted 0 with 1 → KILLED
 12. Substituted 0 with -1 → KILLED
 13. Less than to less or equal → KILLED
 14. Less than to greater than → KILLED
 15. Less than to greater or equal → KILLED
 16. Less than to equal → KILLED
 17. Less than to not equal → SURVIVED
 18. Incremented (a++) integer local variable number 5 → KILLED
 19. Incremented (a++) integer local variable number 4 → KILLED
 20. Decrementd (a--) integer local variable number 5 → KILLED
 21. Decrementd (a--) integer local variable number 4 → KILLED
 22. Incremented (a++) integer local variable number 5 → KILLED
 23. Incremented (a++) integer local variable number 4 → KILLED
 24. Decrementd (a--) integer local variable number 5 → KILLED
 25. Decrementd (a--) integer local variable number 4 → KILLED
 1. removed call to org/jfree/data/Values2D::getValue → KILLED
 2. Negated integer local variable number 5 → KILLED
 3. Negated integer local variable number 1 → KILLED
 4. Incremented (a++) integer local variable number 5 → KILLED
 5. Incremented (a++) integer local variable number 1 → KILLED
 138 6. Decrementd (a--) integer local variable number 5 → TIMED_OUT
 7. Decrementd (a--) integer local variable number 1 → KILLED
 8. Incremented (a++) integer local variable number 5 → KILLED
 9. Incremented (a++) integer local variable number 1 → KILLED
 10. Decrementd (a--) integer local variable number 5 → KILLED
 11. Decrementd (a--) integer local variable number 1 → KILLED
 1. negated conditional → KILLED
 139 2. removed conditional - replaced equality check with false → KILLED
 3. removed conditional - replaced equality check with true → SURVIVED
 4. equal to not equal → KILLED
 1. Replaced double addition with subtraction → KILLED
 2. removed call to java/lang/Number::doubleValue → KILLED
 3. Negated double local variable number 2 → KILLED
 4. Replaced double operation with first member → KILLED
 5. Replaced double operation by second member → KILLED
 6. Replaced double addition with subtraction → KILLED
 140 7. Replaced double addition with multiplication → KILLED
 8. Replaced double addition with division → KILLED
 9. Replaced double addition with modulus → KILLED
 10. Incremented (a++) double local variable number 2 → SURVIVED
 11. Decrementd (a--) double local variable number 2 → SURVIVED
 12. Incremented (a++) double local variable number 2 → KILLED
 13. Decrementd (a--) double local variable number 2 → KILLED
 1. replaced double return with 0.0d for org/jfree/data/DataUtilities::calculateColumnTotal → KILLED
 2. replaced return of double value with -(x + 1) for org/jfree/data/DataUtilities::calculateColumnTotal → KILLED
 3. Negated double local variable number 2 → KILLED
 143 4. Incremented (a++) double local variable number 2 → SURVIVED
 5. Decrementd (a--) double local variable number 2 → SURVIVED
 6. Incremented (a++) double local variable number 2 → KILLED
 7. Decrementd (a--) double local variable number 2 → KILLED
 1. Substituted 0.0 with 1.0 → KILLED
 2. replaced return of double value with -(x + 1) for org/jfree/data/DataUtilities::calculateColumnTotal → KILLED
 145 3. Substituted 0.0 with 1.0 → KILLED
 4. Substituted 0.0 with -1.0 → KILLED
 5. Substituted 0.0 with 1.0 → KILLED
 6. Substituted 0.0 with -1.0 → KILLED
 1. negated conditional → KILLED
 163 2. removed conditional - replaced equality check with false → SURVIVED
 3. removed conditional - replaced equality check with true → KILLED
 4. not equal to equal → KILLED
 164 1. removed call to java/security/InvalidParameterException::<init> → NO_COVERAGE
 168 1. removed call to org/jfree/chart/util/ParamChecks::nullNotPermitted → SURVIVED
 1. Substituted 0.0 with 1.0 → KILLED
 2. Substituted 0.0 with 1.0 → KILLED
 169 3. Substituted 0.0 with -1.0 → KILLED
 4. Substituted 0.0 with 1.0 → KILLED
 5. Substituted 0.0 with -1.0 → KILLED
 170 1. removed call to org/jfree/data/Values2D::getRowCount → KILLED
 171 1. changed conditional boundary → KILLED
 2. Changed increment from 1 to -1 → KILLED
 3. Substituted 0 with 1 → KILLED
 4. negated conditional → KILLED
 5. removed conditional - replaced comparison check with false → KILLED
 6. removed conditional - replaced comparison check with true → KILLED
 7. Negated integer local variable number 6 → KILLED
 8. Substituted 0 with 1 → KILLED
 9. Substituted 0 with -1 → KILLED

10. Substituted 0 with 1 → KILLED
 11. Substituted 0 with -1 → KILLED
 12. Less than to less or equal → KILLED
 13. Less than to greater than → KILLED
 14. Less than to greater or equal → KILLED
 15. Less than to equal → KILLED
 16. Less than to not equal → SURVIVED
 17. Incremented (++) integer local variable number 6 → KILLED
 18. Decrementd (a--) integer local variable number 6 → KILLED
 19. Incremented (++a) integer local variable number 6 → KILLED
 20. Decrementd (--a) integer local variable number 6 → KILLED
 1. Negated integer local variable number 6 → KILLED
 2. Negated integer array field → KILLED
 3. Incremented (++) integer local variable number 6 → KILLED
 4. Incremented (++) integer array field → SURVIVED
 172 5. Decrementd (a--) integer local variable number 6 → TIMED_OUT
 6. Decrementd (a--) integer array field → SURVIVED
 7. Incremented (++a) integer local variable number 6 → KILLED
 8. Incremented (++a) integer array field → KILLED
 9. Decrementd (--a) integer local variable number 6 → KILLED
 10. Decrementd (--a) integer array field → KILLED
 1. changed conditional boundary → SURVIVED
 2. negated conditional → KILLED
 3. removed conditional - replaced comparison check with false → KILLED
 4. removed conditional - replaced comparison check with true → SURVIVED
 5. Negated integer local variable number 7 → SURVIVED
 6. Negated integer local variable number 5 → KILLED
 7. greater or equal to less than → KILLED
 8. greater or equal to less or equal → KILLED
 9. greater or equal to greater than → SURVIVED
 173 10. greater or equal to equal → SURVIVED
 11. greater or equal to not equal → KILLED
 12. Incremented (++) integer local variable number 7 → KILLED
 13. Incremented (++) integer local variable number 5 → SURVIVED
 14. Decrementd (a--) integer local variable number 7 → KILLED
 15. Decrementd (a--) integer local variable number 5 → KILLED
 16. Incremented (++a) integer local variable number 7 → KILLED
 17. Incremented (++a) integer local variable number 5 → SURVIVED
 18. Decrementd (--a) integer local variable number 7 → KILLED
 19. Decrementd (--a) integer local variable number 5 → KILLED
 1. removed call to org/jfree/data/Values2D::getValue → KILLED
 2. Negated integer local variable number 7 → KILLED
 3. Negated integer local variable number 1 → KILLED
 4. Incremented (++) integer local variable number 7 → SURVIVED
 174 5. Incremented (++) integer local variable number 1 → KILLED
 6. Decrementd (a--) integer local variable number 7 → SURVIVED
 7. Decrementd (a--) integer local variable number 1 → KILLED
 8. Incremented (++a) integer local variable number 7 → KILLED
 9. Incremented (++a) integer local variable number 1 → KILLED
 10. Decrementd (--a) integer local variable number 7 → KILLED
 11. Decrementd (--a) integer local variable number 1 → KILLED
 1. negated conditional → KILLED
 175 2. removed conditional - replaced equality check with false → KILLED
 3. removed conditional - replaced equality check with true → SURVIVED
 4. equal to not equal → KILLED
 1. Replaced double addition with subtraction → KILLED
 2. removed call to java/lang/Number::doubleValue → KILLED
 3. Negated double local variable number 3 → KILLED
 4. Replaced double operation with first member → KILLED
 5. Replaced double operation by second member → KILLED
 6. Replaced double addition with subtraction → KILLED
 176 7. Replaced double addition with multiplication → KILLED
 8. Replaced double addition with division → KILLED
 9. Replaced double addition with modulus → KILLED
 10. Incremented (++) double local variable number 3 → SURVIVED
 11. Decrementd (a--) double local variable number 3 → SURVIVED
 12. Incremented (++a) double local variable number 3 → KILLED
 13. Decrementd (--a) double local variable number 3 → KILLED
 1. replaced double return with 0.0d for org/jfree/data/DataUtilities::calculateColumnTotal → KILLED
 2. replaced return of double value with -(x + 1) for org/jfree/data/DataUtilities::calculateColumnTotal → KILLED
 3. Negated double local variable number 3 → KILLED
 180 4. Incremented (++) double local variable number 3 → SURVIVED
 5. Decrementd (a--) double local variable number 3 → SURVIVED
 6. Incremented (++a) double local variable number 3 → KILLED
 7. Decrementd (--a) double local variable number 3 → KILLED
 1. Substituted 0.0 with 1.0 → NO_COVERAGE
 2. replaced return of double value with -(x + 1) for org/jfree/data/DataUtilities::calculateColumnTotal → NO_COVERAGE
 182 3. Substituted 0.0 with 1.0 → NO_COVERAGE
 4. Substituted 0.0 with -1.0 → NO_COVERAGE
 5. Substituted 0.0 with 1.0 → NO_COVERAGE
 6. Substituted 0.0 with -1.0 → NO_COVERAGE
 196 1. negated conditional → KILLED
 2. removed conditional - replaced equality check with false → KILLED

3. removed conditional - replaced equality check with true → KILLED
4. not equal to equal → KILLED

[197](#) 1. removed call to java/security/InvalidParameterException::<init> → KILLED

[201](#) 1. removed call to org/jfree/chart/util/ParamChecks::nullNotPermitted → SURVIVED

1. Substituted 0.0 with 1.0 → KILLED
2. Substituted 0.0 with 1.0 → KILLED

[202](#) 3. Substituted 0.0 with -1.0 → KILLED
4. Substituted 0.0 with 1.0 → KILLED
5. Substituted 0.0 with -1.0 → KILLED

[203](#) 1. removed call to org/jfree/data/Values2D::getColumnCount → KILLED
1. changed conditional boundary → KILLED
2. Changed increment from 1 to -1 → KILLED
3. Substituted 0 with 1 → KILLED
4. negated conditional → KILLED
5. removed conditional - replaced comparison check with false → KILLED
6. removed conditional - replaced comparison check with true → KILLED
7. Negated integer local variable number 5 → KILLED
8. Negated integer local variable number 4 → KILLED
9. Substituted 0 with 1 → KILLED
10. Substituted 0 with -1 → KILLED
11. Substituted 0 with 1 → KILLED
12. Substituted 0 with -1 → KILLED

[204](#) 13. Less than to less or equal → KILLED
14. Less than to greater than → KILLED
15. Less than to greater or equal → KILLED
16. Less than to equal → KILLED
17. Less than to not equal → SURVIVED
18. Incremented (++) integer local variable number 5 → KILLED
19. Incremented (++) integer local variable number 4 → KILLED
20. Decrementd (a--) integer local variable number 5 → KILLED
21. Decrementd (a--) integer local variable number 4 → KILLED
22. Incremented (++a) integer local variable number 5 → KILLED
23. Incremented (++a) integer local variable number 4 → KILLED
24. Decrementd (--a) integer local variable number 5 → KILLED
25. Decrementd (--a) integer local variable number 4 → KILLED

1. removed call to org/jfree/data/Values2D::getValue → KILLED
2. Negated integer local variable number 1 → KILLED
3. Negated integer local variable number 5 → KILLED
4. Incremented (++) integer local variable number 1 → KILLED
5. Incremented (++) integer local variable number 5 → KILLED

[205](#) 6. Decrementd (a--) integer local variable number 1 → KILLED
7. Decrementd (a--) integer local variable number 5 → TIMED_OUT
8. Incremented (++a) integer local variable number 1 → KILLED
9. Incremented (++a) integer local variable number 5 → KILLED
10. Decrementd (--a) integer local variable number 1 → KILLED
11. Decrementd (--a) integer local variable number 5 → KILLED

1. negated conditional → KILLED

[206](#) 2. removed conditional - replaced equality check with false → KILLED
3. removed conditional - replaced equality check with true → SURVIVED
4. equal to not equal → KILLED

1. Replaced double addition with subtraction → KILLED
2. removed call to java/lang/Number::doubleValue → KILLED
3. Negated double local variable number 2 → KILLED
4. Replaced double operation with first member → KILLED
5. Replaced double operation by second member → KILLED
6. Replaced double addition with subtraction → KILLED

[207](#) 7. Replaced double addition with multiplication → KILLED
8. Replaced double addition with division → KILLED
9. Replaced double addition with modulus → KILLED
10. Incremented (++) double local variable number 2 → SURVIVED
11. Decrementd (a--) double local variable number 2 → SURVIVED
12. Incremented (++a) double local variable number 2 → KILLED
13. Decrementd (--a) double local variable number 2 → KILLED

1. replaced double return with 0.0d for org/jfree/data/DataUtilities::calculateRowTotal → KILLED
2. replaced return of double value with -(x + 1) for org/jfree/data/DataUtilities::calculateRowTotal → KILLED

[210](#) 3. Negated double local variable number 2 → KILLED
4. Incremented (++) double local variable number 2 → SURVIVED
5. Decrementd (a--) double local variable number 2 → SURVIVED
6. Incremented (++a) double local variable number 2 → KILLED
7. Decrementd (--a) double local variable number 2 → KILLED

1. Substituted 0.0 with 1.0 → KILLED
2. replaced return of double value with -(x + 1) for org/jfree/data/DataUtilities::calculateRowTotal → KILLED

[212](#) 3. Substituted 0.0 with 1.0 → KILLED
4. Substituted 0.0 with -1.0 → KILLED
5. Substituted 0.0 with 1.0 → KILLED
6. Substituted 0.0 with -1.0 → KILLED

1. negated conditional → KILLED

[230](#) 2. removed conditional - replaced equality check with false → SURVIVED
3. removed conditional - replaced equality check with true → KILLED
4. not equal to equal → KILLED

[231](#) 1. removed call to java/security/InvalidParameterException::<init> → NO_COVERAGE

[235](#) 1. removed call to org/jfree/chart/util/ParamChecks::nullNotPermitted → SURVIVED

- 236 1. Substituted 0.0 with 1.0 → KILLED
 2. Substituted 0.0 with 1.0 → KILLED
 3. Substituted 0.0 with -1.0 → KILLED
 4. Substituted 0.0 with 1.0 → KILLED
 5. Substituted 0.0 with -1.0 → KILLED
- 237 1. removed call to org/jfree/data/Values2D::getColumnCount → KILLED
 2. changed conditional boundary → KILLED
 3. Changed increment from 1 to -1 → KILLED
 4. Substituted 0 with 1 → KILLED
 5. negated conditional → KILLED
 6. removed conditional - replaced comparison check with false → KILLED
 7. removed conditional - replaced comparison check with true → KILLED
 8. Negated integer local variable number 6 → KILLED
 9. Substituted 0 with 1 → KILLED
 10. Substituted 0 with -1 → KILLED
 238 11. Substituted 0 with 1 → KILLED
 12. Substituted 0 with -1 → KILLED
 13. Less than to less or equal → KILLED
 14. Less than to greater than → KILLED
 15. Less than to greater or equal → KILLED
 16. Less than to equal → KILLED
 17. Less than to not equal → SURVIVED
 18. Incremented (a++) integer local variable number 6 → KILLED
 19. Decrementd (a--) integer local variable number 6 → KILLED
 20. Incremented (++a) integer local variable number 6 → KILLED
 21. Decrementd (--a) integer local variable number 6 → KILLED
 22. Negated integer local variable number 6 → KILLED
 23. Negated integer array field → KILLED
 24. Incremented (a++) integer local variable number 6 → KILLED
 25. Incremented (a++) integer array field → SURVIVED
 239 26. Decrementd (a--) integer local variable number 6 → TIMED_OUT
 27. Decrementd (a--) integer array field → SURVIVED
 28. Incremented (++a) integer local variable number 6 → KILLED
 29. Incremented (++a) integer array field → KILLED
 30. Decrementd (--a) integer local variable number 6 → KILLED
 31. Decrementd (--a) integer array field → KILLED
 32. changed conditional boundary → SURVIVED
 33. negated conditional → KILLED
 34. removed conditional - replaced comparison check with false → KILLED
 35. removed conditional - replaced comparison check with true → SURVIVED
 36. Negated integer local variable number 7 → SURVIVED
 37. Negated integer local variable number 5 → KILLED
 38. greater or equal to less than → KILLED
 39. greater or equal to less or equal → KILLED
 40. greater or equal to greater than → SURVIVED
 240 41. greater or equal to equal → SURVIVED
 42. greater or equal to not equal → KILLED
 43. Incremented (a++) integer local variable number 7 → KILLED
 44. Incremented (a++) integer local variable number 5 → SURVIVED
 45. Decrementd (a--) integer local variable number 7 → KILLED
 46. Decrementd (a--) integer local variable number 5 → KILLED
 47. Incremented (++a) integer local variable number 7 → KILLED
 48. Incremented (++a) integer local variable number 5 → SURVIVED
 49. Decrementd (--a) integer local variable number 7 → KILLED
 50. Decrementd (--a) integer local variable number 5 → KILLED
 51. removed call to org/jfree/data/Values2D::getValue → KILLED
 52. Negated integer local variable number 1 → KILLED
 53. Negated integer local variable number 7 → KILLED
 241 54. Incremented (a++) integer local variable number 1 → KILLED
 55. Incremented (a++) integer local variable number 7 → SURVIVED
 56. Decrementd (a--) integer local variable number 1 → KILLED
 57. Decrementd (a--) integer local variable number 7 → SURVIVED
 58. Incremented (++a) integer local variable number 1 → KILLED
 59. Incremented (++a) integer local variable number 7 → KILLED
 60. Decrementd (--a) integer local variable number 1 → KILLED
 61. Decrementd (--a) integer local variable number 7 → KILLED
 242 62. negated conditional → KILLED
 63. removed conditional - replaced equality check with false → KILLED
 64. removed conditional - replaced equality check with true → SURVIVED
 65. equal to not equal → KILLED
 66. Replaced double addition with subtraction → KILLED
 67. removed call to java/lang/Number::doubleValue → KILLED
 68. Negated double local variable number 3 → KILLED
 69. Replaced double operation with first member → KILLED
 70. Replaced double operation by second member → KILLED
 71. Replaced double addition with subtraction → KILLED
 243 72. Replaced double addition with multiplication → KILLED
 73. Replaced double addition with division → KILLED
 74. Replaced double addition with modulus → KILLED
 75. Incremented (a++) double local variable number 3 → SURVIVED
 76. Decrementd (a--) double local variable number 3 → SURVIVED
 77. Incremented (++a) double local variable number 3 → KILLED
 78. Decrementd (--a) double local variable number 3 → KILLED
 247 79. replaced double return with 0.0d for org/jfree/data/DataUtilities::calculateRowTotal → KILLED

2. replaced return of double value with $-(x + 1)$ for org/jfree/data/DataUtilities::calculateRowTotal → KILLED

3. Negated double local variable number 3 → KILLED

4. Incremented (a++) double local variable number 3 → SURVIVED

5. Decrementd (a--) double local variable number 3 → SURVIVED

6. Incremented (++) double local variable number 3 → KILLED

7. Decrementd (--a) double local variable number 3 → KILLED

1. Substituted 0.0 with 1.0 → NO_COVERAGE

2. replaced return of double value with $-(x + 1)$ for org/jfree/data/DataUtilities::calculateRowTotal → NO_COVERAGE

[249](#) 3. Substituted 0.0 with 1.0 → NO_COVERAGE

4. Substituted 0.0 with -1.0 → NO_COVERAGE

5. Substituted 0.0 with 1.0 → NO_COVERAGE

6. Substituted 0.0 with -1.0 → NO_COVERAGE

1. negated conditional → KILLED

[262](#) 2. removed conditional - replaced equality check with false → KILLED

3. removed conditional - replaced equality check with true → KILLED

4. not equal to equal → KILLED

[263](#) 1. removed call to java/security/InvalidParameterException::<init> → KILLED

[266](#) 1. removed call to org/jfree/chart/util/ParamChecks::nullNotPermitted → SURVIVED

1. changed conditional boundary → KILLED

2. Substituted 0 with 1 → KILLED

3. negated conditional → KILLED

4. removed conditional - replaced comparison check with false → KILLED

5. removed conditional - replaced comparison check with true → KILLED

6. Negated integer local variable number 2 → KILLED

7. Substituted 0 with 1 → KILLED

8. Substituted 0 with -1 → KILLED

9. Substituted 0 with 1 → KILLED

[268](#) 10. Substituted 0 with -1 → KILLED

11. Less than to less or equal → KILLED

12. Less than to greater than → KILLED

13. Less than to greater or equal → KILLED

14. Less than to equal → KILLED

15. Less than to not equal → SURVIVED

16. Incremented (a++) integer local variable number 2 → KILLED

17. Decrementd (a--) integer local variable number 2 → KILLED

18. Incremented (++) integer local variable number 2 → KILLED

19. Decrementd (--a) integer local variable number 2 → KILLED

1. removed call to java/lang/Double::<init> → KILLED

2. Negated integer local variable number 2 → KILLED

3. Negated integer local variable number 2 → KILLED

4. Negated double array field → KILLED

5. Incremented (a++) integer local variable number 2 → KILLED

6. Incremented (a++) integer local variable number 2 → KILLED

7. Incremented (a++) double array field → KILLED

[269](#) 8. Decrementd (a--) integer local variable number 2 → KILLED

9. Decrementd (a--) integer local variable number 2 → TIMED_OUT

10. Decrementd (a--) double array field → KILLED

11. Incremented (++) integer local variable number 2 → KILLED

12. Incremented (++) integer local variable number 2 → KILLED

13. Incremented (++) double array field → SURVIVED

14. Decrementd (--a) integer local variable number 2 → KILLED

15. Decrementd (--a) integer local variable number 2 → KILLED

16. Decrementd (--a) double array field → SURVIVED

1. replaced return value with null for org/jfree/data/DataUtilities::createNumberArray → KILLED

[271](#) 2. mutated return of Object value for org/jfree/data/DataUtilities::createNumberArray to (if (x != null) null else throw new RuntimeException) → KILLED

1. negated conditional → KILLED

[283](#) 2. removed conditional - replaced equality check with false → KILLED

3. removed conditional - replaced equality check with true → KILLED

4. not equal to equal → KILLED

[284](#) 1. removed call to java/security/InvalidParameterException::<init> → KILLED

[287](#) 1. removed call to org/jfree/chart/util/ParamChecks::nullNotPermitted → SURVIVED

1. Negated integer local variable number 1 → KILLED

2. Incremented (a++) integer local variable number 1 → KILLED

[289](#) 3. Decrementd (a--) integer local variable number 1 → KILLED

4. Incremented (++) integer local variable number 1 → KILLED

5. Decrementd (--a) integer local variable number 1 → KILLED

[290](#) 1. changed conditional boundary → KILLED

2. Changed increment from 1 to -1 → KILLED

3. Substituted 0 with 1 → KILLED

4. negated conditional → KILLED

5. removed conditional - replaced comparison check with false → KILLED

6. removed conditional - replaced comparison check with true → KILLED

7. Negated integer local variable number 3 → KILLED

8. Negated integer local variable number 1 → KILLED

9. Substituted 0 with 1 → KILLED

10. Substituted 0 with -1 → KILLED

11. Substituted 0 with 1 → KILLED

12. Substituted 0 with -1 → KILLED

13. Less than to less or equal → KILLED

14. Less than to greater than → KILLED

15. Less than to greater or equal → KILLED

16. Less than to equal → KILLED
 17. Less than to not equal → SURVIVED
 18. Incremented (a++) integer local variable number 3 → KILLED
 19. Incremented (a++) integer local variable number 1 → KILLED
 20. Decrementd (a--) integer local variable number 3 → KILLED
 21. Decrementd (a--) integer local variable number 1 → KILLED
 22. Incremented (++a) integer local variable number 3 → KILLED
 23. Incremented (++a) integer local variable number 1 → KILLED
 24. Decrementd (--a) integer local variable number 3 → KILLED
 25. Decrementd (--a) integer local variable number 1 → KILLED
 1. removed call to org/jfree/data/DataUtilities::createNumberArray → KILLED
 2. Negated integer local variable number 3 → KILLED
 3. Negated integer local variable number 3 → KILLED
 4. Incremented (a++) integer local variable number 3 → KILLED
 5. Incremented (a++) integer local variable number 3 → KILLED
 291 6. Decrementd (a--) integer local variable number 3 → KILLED
 7. Decrementd (a--) integer local variable number 3 → TIMED_OUT
 8. Incremented (++a) integer local variable number 3 → KILLED
 9. Incremented (++a) integer local variable number 3 → KILLED
 10. Decrementd (--a) integer local variable number 3 → KILLED
 11. Decrementd (--a) integer local variable number 3 → KILLED
 293 1. replaced return value with null for org/jfree/data/DataUtilities::createNumberArray2D → KILLED
 2. mutated return of Object value for org/jfree/data/DataUtilities::createNumberArray2D to (if (x != null)
 null else throw new RuntimeException) → KILLED
 1. negated conditional → KILLED
 307 2. removed conditional - replaced equality check with false → KILLED
 3. removed conditional - replaced equality check with true → KILLED
 4. not equal to equal → KILLED
 308 1. removed call to java/security/InvalidParameterException::<init> → KILLED
 311 1. removed call to org/jfree/chart/util/ParamChecks::nullNotPermitted → SURVIVED
 312 1. removed call to org/jfree/data/DefaultKeyedValues::<init> → KILLED
 1. Substituted 0.0 with 1.0 → KILLED
 2. Substituted 0.0 with 1.0 → KILLED
 313 3. Substituted 0.0 with -1.0 → KILLED
 4. Substituted 0.0 with 1.0 → KILLED
 5. Substituted 0.0 with -1.0 → KILLED
 1. changed conditional boundary → KILLED
 2. Substituted 0 with 1 → KILLED
 3. negated conditional → KILLED
 4. removed call to org/jfree/data/KeyedValues::getItemCount → KILLED
 5. removed conditional - replaced comparison check with false → KILLED
 6. removed conditional - replaced comparison check with true → KILLED
 7. Negated integer local variable number 4 → KILLED
 8. Substituted 0 with 1 → KILLED
 9. Substituted 0 with -1 → KILLED
 314 10. Substituted 0 with 1 → KILLED
 11. Substituted 0 with -1 → KILLED
 12. Less than to less or equal → KILLED
 13. Less than to greater than → KILLED
 14. Less than to greater or equal → KILLED
 15. Less than to equal → KILLED
 16. Less than to not equal → SURVIVED
 17. Incremented (a++) integer local variable number 4 → KILLED
 18. Decrementd (a--) integer local variable number 4 → KILLED
 19. Incremented (++a) integer local variable number 4 → KILLED
 20. Decrementd (--a) integer local variable number 4 → KILLED
 1. removed call to org/jfree/data/KeyedValues::getValue → KILLED
 2. Negated integer local variable number 4 → KILLED
 315 3. Incremented (a++) integer local variable number 4 → KILLED
 4. Decrementd (a--) integer local variable number 4 → TIMED_OUT
 5. Incremented (++a) integer local variable number 4 → KILLED
 6. Decrementd (--a) integer local variable number 4 → KILLED
 1. negated conditional → KILLED
 316 2. removed conditional - replaced equality check with false → KILLED
 3. removed conditional - replaced equality check with true → SURVIVED
 4. equal to not equal → KILLED
 1. Replaced double addition with subtraction → KILLED
 2. removed call to java/lang/Number::doubleValue → KILLED
 3. Negated double local variable number 2 → KILLED
 4. Replaced double operation with first member → KILLED
 5. Replaced double operation by second member → KILLED
 6. Replaced double addition with subtraction → KILLED
 317 7. Replaced double addition with multiplication → KILLED
 8. Replaced double addition with division → KILLED
 9. Replaced double addition with modulus → KILLED
 10. Incremented (a++) double local variable number 2 → SURVIVED
 11. Decrementd (a--) double local variable number 2 → SURVIVED
 12. Incremented (++a) double local variable number 2 → KILLED
 13. Decrementd (--a) double local variable number 2 → KILLED
 1. Substituted 0.0 with 1.0 → KILLED
 2. Substituted 0.0 with 1.0 → KILLED
 320 3. Substituted 0.0 with -1.0 → KILLED
 4. Substituted 0.0 with 1.0 → KILLED
 5. Substituted 0.0 with -1.0 → KILLED

321	<ol style="list-style-type: none"> 1. changed conditional boundary → KILLED 2. Substituted 0 with 1 → KILLED 3. negated conditional → KILLED 4. removed call to org/jfree/data/KeyedValues::getItemCount → KILLED 5. removed conditional - replaced comparison check with false → KILLED 6. removed conditional - replaced comparison check with true → KILLED 7. Negated integer local variable number 8 → KILLED 8. Substituted 0 with 1 → KILLED 9. Substituted 0 with -1 → KILLED 10. Substituted 0 with 1 → KILLED 11. Substituted 0 with -1 → KILLED 12. Less than to less or equal → KILLED 13. Less than to greater than → KILLED 14. Less than to greater or equal → KILLED 15. Less than to equal → KILLED 16. Less than to not equal → SURVIVED 17. Incremented (a++) integer local variable number 8 → KILLED 18. Decrementd (a--) integer local variable number 8 → KILLED 19. Incremented (++) integer local variable number 8 → KILLED 20. Decrementd (--a) integer local variable number 8 → KILLED
322	<ol style="list-style-type: none"> 1. removed call to org/jfree/data/KeyedValues::getValue → KILLED 2. Negated integer local variable number 8 → KILLED 3. Incremented (a++) integer local variable number 8 → KILLED 4. Decrementd (a--) integer local variable number 8 → KILLED 5. Incremented (++) integer local variable number 8 → KILLED 6. Decrementd (--a) integer local variable number 8 → KILLED
323	<ol style="list-style-type: none"> 1. negated conditional → KILLED 2. removed conditional - replaced equality check with false → KILLED 3. removed conditional - replaced equality check with true → SURVIVED 4. equal to not equal → KILLED
324	<ol style="list-style-type: none"> 1. Replaced double addition with subtraction → KILLED 2. removed call to java/lang/Number::doubleValue → KILLED 3. Negated double local variable number 6 → KILLED 4. Replaced double operation with first member → KILLED 5. Replaced double operation by second member → KILLED 6. Replaced double addition with subtraction → KILLED 7. Replaced double addition with multiplication → KILLED 8. Replaced double addition with division → KILLED 9. Replaced double addition with modulus → KILLED 10. Incremented (a++) double local variable number 6 → SURVIVED 11. Decrementd (a--) double local variable number 6 → SURVIVED 12. Incremented (++) double local variable number 6 → KILLED 13. Decrementd (--a) double local variable number 6 → KILLED
326	<ol style="list-style-type: none"> 1. removed call to java/lang/Double::<init> → KILLED 2. Replaced double division with multiplication → KILLED 3. removed call to org/jfree/data/KeyedValues::getKey → KILLED 4. removed call to org/jfree/data/DefaultKeyedValues::addValue → KILLED 5. Negated integer local variable number 8 → KILLED 6. Negated double local variable number 6 → KILLED 7. Negated double local variable number 2 → KILLED 8. Replaced double operation with first member → KILLED 9. Replaced double operation by second member → KILLED 10. Replaced double division with multiplication → KILLED 11. Replaced double division with modulus → KILLED 12. Replaced double division with addition → KILLED 13. Replaced double division with subtraction → KILLED 14. Incremented (a++) integer local variable number 8 → KILLED 15. Incremented (a++) double local variable number 6 → KILLED 16. Incremented (a++) double local variable number 2 → KILLED 17. Decrementd (a--) integer local variable number 8 → TIMED_OUT 18. Decrementd (a--) double local variable number 6 → KILLED 19. Decrementd (a--) double local variable number 2 → KILLED 20. Incremented (++) integer local variable number 8 → KILLED 21. Incremented (++) double local variable number 6 → KILLED 22. Incremented (++) double local variable number 2 → KILLED 23. Decrementd (--a) integer local variable number 8 → KILLED 24. Decrementd (--a) double local variable number 6 → KILLED 25. Decrementd (--a) double local variable number 2 → KILLED
328	<ol style="list-style-type: none"> 1. replaced return value with null for org/jfree/data/DataUtilities::getCumulativePercentages → KILLED 2. mutated return of Object value for org/jfree/data/DataUtilities::getCumulativePercentages to (if (x != null) null else throw new RuntimeException) → KILLED

Active mutators

- ABS_MUTATOR
- AOD_1_MUTATOR
- AOD_2_MUTATOR
- AOR_1_MUTATOR
- AOR_2_MUTATOR
- AOR_3_MUTATOR
- AOR_4_MUTATOR
- ARGUMENT_PROPAGATION_MUTATOR
- BOOLEAN_FALSE_RETURN
- BOOLEAN_TRUE_RETURN
- CONDITIONALS_BOUNDARY_MUTATOR

- CONSTRUCTOR_CALL_MUTATOR
- CRCR_1_MUTATOR
- CRCR_2_MUTATOR
- CRCR_3_MUTATOR
- CRCR_4_MUTATOR
- CRCR_5_MUTATOR
- CRCR_6_MUTATOR
- EMPTY_RETURN_VALUES
- EXPERIMENTAL_BIGINTEGER_MUTATOR
- EXPERIMENTAL_MEMBER_VARIABLE_MUTATOR
- EXPERIMENTAL_REMOVE_SWITCH_MUTATOR_[0-99]
- EXPERIMENTAL_SWITCH_MUTATOR
- INCREMENTS_MUTATOR
- INLINE_CONSTANT_MUTATOR
- INVERT_NEGS_MUTATOR
- MATH_MUTATOR
- NAKED_RECEIVER
- NEGATE_CONDITIONALS_MUTATOR
- NON_VOID_METHOD_CALL_MUTATOR
- NULL_RETURN_VALUES
- OBBN_1_MUTATOR
- OBBN_2_MUTATOR
- OBBN_3_MUTATOR
- PRIMITIVE_RETURN_VALS_MUTATOR
- REMOVE_CONDITIONALS_EQUAL_ELSE_MUTATOR
- REMOVE_CONDITIONALS_EQUAL_IF_MUTATOR
- REMOVE_CONDITIONALS_ORDER_ELSE_MUTATOR
- REMOVE_CONDITIONALS_ORDER_IF_MUTATOR
- REMOVE_INCREMENTS_MUTATOR
- RETURN_VALS_MUTATOR
- ROR_1_MUTATOR
- ROR_2_MUTATOR
- ROR_3_MUTATOR
- ROR_4_MUTATOR
- ROR_5_MUTATOR
- UOI_1_MUTATOR
- UOI_2_MUTATOR
- UOI_3_MUTATOR
- UOI_4_MUTATOR
- VOID_METHOD_CALL_MUTATOR

Tests examined

- org.jfree.data.DataUtilitiesTest (74 ms)

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