

About the tool

Jaguar is a fault localization tool for Eclipse. The tool shows a list of definition-use associations (duas) that are more suspicious of being buggy. Jaguar uses the JUnit results to pinpoint bug candidates.

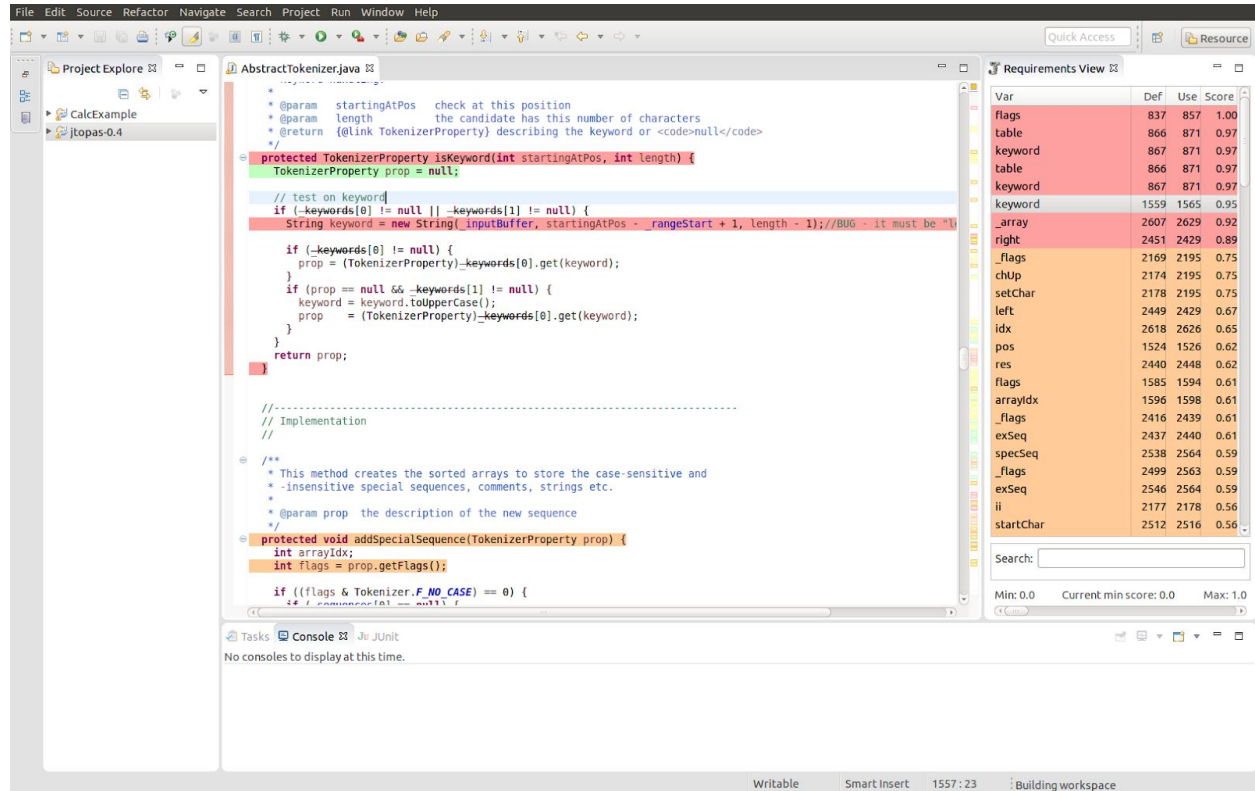


Figure 1: Eclipse's Jaguar plugin

Figure 1 shows the Jaguar plugin at the right side of Eclipse. Figure 2 shows details of the tool - Area 1 has the most suspicious duas, which are placed in descending order of score. The columns are the variable name, the line of definition, the line of use and the score, respectively. The score indicates how likely a dua is to contain the bug. The higher the score, the more suspicious it is.

The colors represent four suspiciousness score levels: red represents the most suspicious bug candidates, orange is the second suspiciousness level, yellow are the moderate bug candidates, and green the least suspicious ones.

Navigation

When you click on a dua in Jaguar, the file that contains this dua is opened in the Editor area (see Figure 1). Jaguar also provides a slider widget to filter duas that are equal or higher than the selected score (shown in Area 3). The tool also provides a text search filter, shown in Area 2, which can be used to search for specific terms in the code.

Requirements View

Var	Def	Use	Score
flags	837	857	1.00
table	866	871	0.97
keyword	867	871	0.97
table	866	871	0.97
keyword	867	871	0.97
keyword	1559	1565	0.95
_array	2607	2629	0.92
right	2451	2429	0.89
_flags	2169	2195	0.75
chUp	2174	2195	0.75
setChar	2178	2195	0.75
left	2449	2429	0.67
idx	2618	2626	0.65
pos	1524	1526	0.62
res	2440	2448	0.62
flags	1585	1594	0.61
arrayIdx	1596	1598	0.61
_flags	2416	2439	0.61
exSeq	2437	2440	0.61
specSeq	2538	2564	0.59
_flags	2499	2563	0.59
exSeq	2546	2564	0.59
ii	2177	2178	0.56
startChar	2512	2516	0.56

Search:

Min: 0.0 Current min score: 0.0 Max: 1.0

Figure 2: Jaguar view

Video

We prepared a video which shows an example of Jaguar in use. You can open the file jaguar.mp4 located on the desktop area to see the video.

Try Jaguar

On the desktop area, click on the **Try Jaguar** icon to explore the tool before starting your assigned tasks. The **jtopas** program is included as an example of use.

1. Right-click on the jtopas project
2. Select the option **Jaguar > Run Jaguar**
3. The plugin will be opened on the right side of Eclipse
4. Click on the duas to see their suspicious statements and their code.
5. The bug is in the method **AbstractTokenizer.isKeyword(int,int)** at line **1559**:
String keyword = new String(_inputBuffer,startingAtPos-_rangeStart,length-1);
The value assigned to instantiate **keyword** should be **length** instead of **length - 1**.
6. Close Eclipse and read the **instructions.pdf** file to get started on your tasks.