

## JStatementExpression.java

```
1  // Copyright 2013 Bill Campbell, Swami Iyer and Bahar Akbal-Delibas
2
3  package jminusminus;
4
5  /**
6   * The AST node for an expression that appears as a statement. Only the
7   * expressions that have a side-effect are valid statement expressions.
8   */
9
10 class JStatementExpression extends JStatement {
11
12     /** The expression. */
13     JExpression expr;
14
15     /**
16      * Construct an AST node for a statement expression given its line number,
17      * and expression.
18      *
19      * @param line
20      *         line in which the expression occurs in the source file.
21      * @param expr
22      *         the expression.
23      */
24
25     public JStatementExpression(int line, JExpression expr) {
26         super(line);
27         this.expr = expr;
28     }
29
30     /**
31      * Analysis involves analyzing the encapsulated expression if indeed it is a
32      * statement expression, i.e., one with a side effect.
33      *
34      * @param context
35      *         context in which names are resolved.
36      * @return the analyzed, and possibly rewritten, AST subtree.
37      */
38
39     public JStatement analyze(Context context) {
40         if (expr.isStatementExpression) {
41             expr = expr.analyze(context);
42         }
43         return this;
44     }
45
46     /**
47      * Generating code for the statement expression involves simply generating
48      * code for the encapsulated expression.
49      *
50      * @param output
51      *         the code emitter (basically an abstraction for producing the
52      *         .class file).
53      */
54
55     public void codegen(CLEmitter output) {
56         expr.codegen(output);
57     }
58
59     /**
60      * @inheritDoc
61      */
62
63     public void writeToStdOut(PrettyPrinter p) {
64         p.printf("<JStatementExpression line=\"%d\">\n", line());
65         p.indentRight();
66         expr.writeToStdOut(p);
67     }
68 }
```

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```
67         p.indentLeft();
68         p.printf("</JStatementExpression>\n");
69     }
70
71 }
72
```

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