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jminusminus

Class JReturnStatement

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```
class JReturnStatement
extends JStatement
```

The AST node for a return-statement. If the enclosing method is non-void, then there is a value to return, so we keep track of the expression denoting that value and its type.

- **Field Summary**
- **Fields inherited from class [jminusminus.JAST](#)**
- **Constructor Summary**

Constructors

Constructor and Description

```
JReturnStatement(int line, JExpression expr)
```

Construct an AST node for a return-statement given its line number, and the expression that is returned.

- **Method Summary**

Methods

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<code>JStatement</code>	<code>analyze</code> (<code>Context</code> context) Analysis distinguishes between our being in a constructor or in a regular method in checking return types.
<code>void</code>	<code>codegen</code> (<code>CLEmitter</code> output) Generate code for the return statement.
<code>void</code>	<code>writeToStdOut</code> (<code>PrettyPrinter</code> p) Write the information pertaining to this AST to STDOUT.

- **Methods inherited from class `jminusminus.JAST`**

`line`, `partialCodegen`

- **Methods inherited from class `java.lang.Object`**

`clone`, `equals`, `finalize`, `getClass`, `hashCode`, `notify`, `notifyAll`, `toString`, `wait`, `wait`, `wait`

- **Constructor Detail**

- **`JReturnStatement`**

```
publicJReturnStatement(intline,
                        JExpressionexpr)
```

Construct an AST node of a return-statement, given its line number, and the expression that is returned.

Parameters:

`line` - line in which the return-statement appears in the source file.
`expr` - the returned expression.

- **Method Detail**

- **`analyze`**

```
publicJStatementanalyze(Contextcontext)
```

Analysis distinguishes between our being in a constructor or in a regular method in checking return types. In the case of a return expression, analyze it and check types. Determine the (possibly void) return type.

Specified by:

`analyze` in class `JAST`

Parameters:

`context` - context in which names are resolved.

Returns:

the analyzed (and possibly rewritten) AST subtree.

- **`codegen`**

```
publicvoidcodegen(CLEmitteroutput)
```

Generate code for the return statement. In the case of void method types, generate a simple (void) return. In the case of a return expression, generate code to load that onto the stack and then generate the appropriate return instruction.

Specified by:

`codegen` in class `JAST`

Parameters:

`output` - the code emitter (basically an abstraction for producing

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the .class file).

- **writeToStdOut**

```
public void writeToStdOut(PrettyPrinter p)
```

Description copied from class: JAST

Write the information pertaining to this AST to STDOUT.

Specified by:

`writeToStdOut` in class `JAST`

Parameters:

p - for pretty printing with indentation.

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