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jminusminus

Class JClassDeclaration

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```
class JClassDeclaration
extends JAST
implements JTypeDecl
```

A class declaration has a list of modifiers, a name, a super class and a class block; it distinguishes between instance fields and static (class) fields for initialization, and it defines a type. It also introduces its own (class) context.

- [Field Summary](#)
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[compilationUnit](#), [line](#)
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Constructors
Constructor and Description

```
JClassDeclaration(int line, ArrayList<String> mods,
String name, Type superType, ArrayList<JMember> classBlock)
Construct an AST node for a class declaration given the line number, list of class
modifiers, name of the class, its super class type, and the class block.
```

- **Method Summary**

Modifier and Type	Methods	Method and Description
JAST	analyze (Context context)	Perform semantic analysis on the class and all of its members within the given context.
void	codegen (CLEmitter output)	Generate code for the class declaration.
void	declareThisType (Context context)	Declare this class in the parent (compilation unit) context.
ArrayList<JFieldDeclaration>	instanceFieldInitializations ()	The initializations for instance fields (now expressed as assignment statements).
String	name ()	Return the class name.
void	preAnalyze (Context context)	Pre-analyze the members of this declaration in the parent context.
Type	superType ()	Return the class' super class type.
Type	thisType ()	Return the type that this class declaration defines.
void	writeToStdOut (PrettyPrinter p)	Write the information pertaining to this AST to STDOUT.

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- **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**

- **JClassDeclaration**

```
public JClassDeclaration(int line,
                        ArrayList<String> mods,
                        String name,
                        Type superType,
                        ArrayList<JMember> classBlock)
```

Construct an AST node for a class declaration given the line number, list of class modifiers, name of the class, its super class type, and the class block.

Parameters:

line - line in which the class declaration occurs in the source file.

mods - class modifiers.
name - class name.
superType - super class type.
classBlock - class block.

- **Method Detail**

- **name**

`public String name()`

Return the class name.

Specified by:

`name` in interface `JTypeDecl`

Returns:

the class name.

- **superType**

`public Type superType()`

Return the class' super class type.

Specified by:

`superType` in interface `JTypeDecl`

Returns:

the super class type.

- **thisType**

`public Type thisType()`

Return the type that this class declaration defines.

Specified by:

`thisType` in interface `JTypeDecl`

Returns:

the defined type.

- **instanceFieldInitializations**

`public ArrayList<JFieldDeclaration> instanceFieldInitializations()`

The initializations for instance fields (now expressed as assignment statements).

Returns:

the field declarations having initializations.

- **declareThisType**

`public void declareThisType(Context context)`

Declare this class in the parent (compilation unit) context.

Specified by:

`declareThisType` in interface `JTypeDecl`

Parameters:

context - the parent (compilation unit) context.

- **preAnalyze**

`public void preAnalyze(Context context)`

Pre-analyze the members of this declaration in the parent context. Pre-analysis extends to the member headers (including method headers) but

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not into the bodies.

Specified by:

`preAnalyze` in interface `JTypeDecl`

Parameters:

`context` - the parent (compilation unit) context.

- **analyze**

```
public JAST analyze(Context context)
```

Perform semantic analysis on the class and all of its members within the given context. Analysis includes field initializations and the method bodies.

Specified by:

`analyze` in class `JAST`

Parameters:

`context` - the parent (compilation unit) context. Ignored here.

Returns:

the analyzed (and possibly rewritten) AST subtree.

- **codegen**

```
public void codegen(CLEmitter output)
```

Generate code for the class declaration.

Specified by:

`codegen` in class `JAST`

Parameters:

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