

Contents

1	Package <code>logic.proof.builder.proof</code>	2
1.1	Classes	3
1.1.1	CLASS Proof	3
1.1.2	CLASS ProofStep	5

Chapter 1

Package logic.proof.builder.proof

<i>Package Contents</i>	<i>Page</i>
<hr/>	
Classes	
Proof	3
<i>Stores all data necessary to construct a proof.</i>	
ProofStep	5
<i>...no description...</i>	
RulesOfInference	??
<i>Contains methods for the rules of inference of first-order logic</i>	
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1.1 Classes

1.1.1 CLASS Proof

Stores all data necessary to construct a proof. Simple Methods are provided to manipulate the proof such as adding or deleting lines.

DECLARATION

```
public class Proof
extends java.lang.Object
```

FIELDS

- public List predicates
 - A list of all the named predicates in the proof. Used to populate the predicate list.

CONSTRUCTORS

- *Proof*

```
public Proof( )
```

 - **Usage**
 - * Default constructor. Constructs an empty proof

METHODS

- *addStepAsEndOfSubproof*

```
public ProofStep addStepAsEndOfSubproof(
logic.proof.builder.parser.SimpleNode node, java.lang.String formula )
```

 - **Usage**
 - * Adds a new proofstep that is the last line of a subproof
 - **Parameters**
 - * **node** - Root node of the sentence of the proofstep
 - * **formula** - String representation of the sentence
 - **Returns** - Returns the proofstep that has been added
- *addStepAsNewLine*

```
public ProofStep addStepAsNewLine( logic.proof.builder.parser.SimpleNode
node, java.lang.String formula )
```

 - **Usage**
 - * The default method to add a new proofstep to the proof

- * **node** - Root node of the sentence of the proofstep
 - * **formula** - String representation of the sentence
 - **Returns** - Returns the proofstep that has been added

- *addStepAsStartOfSubproof*
 - public ProofStep **addStepAsStartOfSubproof**(
logic.proof.builder.parser.SimpleNode **node**, java.lang.String **formula**)
 - **Usage**
 - * Adds a new proofstep that is the start of a subproof
 - **Parameters**
 - * **node** - Root node of the sentence of the proofstep
 - * **formula** - String representation of the sentence
 - **Returns** - Returns the proofstep that has been added

- *addVar*
 - public ProofStep **addVar**(java.lang.String **var**)
 - **Usage**
 - * Add a new proofstep which introduces a boxed variable
 - **Parameters**
 - * **var** - The name of the variable being introduced
 - **Returns** - Returns the proofstep that has been added

- *addVar*
 - public ProofStep **addVar**(java.lang.String **introducedVariable**,
logic.proof.builder.parser.SimpleNode **rootNode**, java.lang.String **formula**
)
 - **Usage**
 - * Add a new proofstep which introduces a boxed variable alongside an assumption
 - **Parameters**
 - * **introducedVariable** - The name of the variable being introduced
 - * **node** - Root node of the sentence
 - * **formula** - String representation of the sentence
 - **Returns** - Returns the proofstep that has been added

- *getCurrentLevel*
 - public int **getCurrentLevel**()
 - **Usage**
 - * Returns the number of subproofs currently open
 - **Returns** - the number of subproofs currently open

- *getLines*
 - public ArrayList **getLines**()
 - **Usage**
 - * Returns the ordered list of proofsteps
 - **Returns** - the ordered list of proofsteps

- *removeStep*
`public void removeStep()`
 - **Usage**
 - * Removes the most recent line from the proof

1.1.2 CLASS **ProofStep**

DECLARATION

```
public class ProofStep
extends java.lang.Object
```

FIELDS

- public ProofStep parent
 -
- public List subproofs
 -
- public ProofStep next
 -
- public SimpleNode node
 -
- public Integer lineNumber
 -
- public int level
 -
- public String formula
 -
- public String justification
 -
- public boolean endOfSubproof
 -
- public HashMap freeVariables
 -