

# jInfer TreeRuleDisplayer Module Description

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Target audience: developers willing to extend jInfer, looking for ways to visualize grammars.

Responsible developer:	Michal Švirec
Required tokens:	none
Provided tokens:	cz.cuni.mff.ksi.jinfer.base.interfaces.RuleDisplayer
Module dependencies:	Base JUNG
Public packages:	none

## 1 Introduction

This rule displayer uses JUNG graph implementation to draw rules as forest of trees, where each tree represents one rule of whole set. In each tree, root vertex represents left side of the rule, inner vertices represents concatenation, alternation or permutation and leafs are elements, simple data or attribute. As in basic rule displayer it creates a component with multiple tabs: each one for a new grammar to display.

## 2 Structure

The main class implementing RuleDisplayer inference interface and simultaneously registered as its service provider is TreeRuleDisplayer. Main method of this class is createDisplayer(), which looks up the component, adds a new panel to it and renders the specified grammar in it.

Main window of rule displayer may have multiple tabs in it: each contains its own RuleDisplayer responsible for rendering specified grammar using JUNG library. Each tab in rule displayer window is represented by instance of RulePanel which contains button linking to options and the main panel(canvas) with rendered rules. Canvas is made by VisualizationViewer instance with TreeLayout layout which are both classes from JUNG library. For VisualizationViewer is set GraphMouse with transforming mode allowing zooming and moving of graph in canvas. To allow user set custom appearance of rules, we set various Transformers in RenderContext of VisualizationViewer. These transformers change color, shape and size vertices in each rule tree according to properties set in options.

All the trees representing rules are created in the GraphBuilder class with method buildGraphPanel(). This method creates DelegateForrest of DelegateTrees where each tree of the forrest represents one rule. Each vertex of the tree is represented by Regexp<? extends AbstractNamedNode> and edge by RegexpInterval. While the code building tree structure is a nice recursion programming exercise, there is nothing of a special interest in it. Finally the method appends forrest into layout and visualizationViewer which were described above. All code responsible for building rule trees is contained in the cz.cuni.mff.ksi.jinfer.treeruledisplayer.logic. For more details about JUNG library please see [jun].

All graphics used by TreeRuleDisplayer is contained in the cz.cuni.mff.ksi.jinfer.treeruledisplayer.graphics package.

## 2.1 Settings

All settings provided by *TreeRuleDisplayer* are NetBeans-wide. The options panel along with all the logic is in the `cz.cuni.mff.ksi.jinfer.treeruledisplayer.options` package. Available options include setting the color of the background, horizontal and vertical distance between vertices. Also for each type of vertex is possible to set the size, the shape and the color.

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