Branch extensions

Version 1.0.0, by Giorgio Bianchini

Description: Extends terminal branches.

Module type: Plotting

Module ID: `fb385719-b376-49b0-8e99-aab7cf641966`

This module can be used to "extend" the branches of the tree (e.g. to make sure that all the branches end at the same distance from the origin, despite having different lengths. The end position of the extension can be specified based on a fixed reference, or on the node's position.

Parameters

Orientation reference

Control type: Drop-down list

Default value: Branch

Possible values:

- Horizontal
- Branch

This parameter determines the direction of the branch extension. If the value is `Horizontal`, the branch extension is horizontal; if it is `Branch`, the extension follows the direction of the branch.

Branch reference

Control type: Drop-down list

Default value: Rectangular

Possible values:

- Rectangular
- Radial
- Circular

If the Orientation reference is `Branch`, this parameter determines the algorithm that is used to compute the branch direction. Ideally, this should correspond to the Coordinates module that has been used.

Start

Control type: Point

Default value: (0, 0)

The offset of the end point of the branch extension, with respect to the End anchor. The x coordinate corresponds to the reference axis (i.e. horizontal or along the branch), while the y coordinate corresponds to the direction perpendicular to this.

End anchor

Control type: Drop-down list

Default value: Node

Possible values:

- Node
- Origin

The anchor for the end point of the branch extension. This determines the point from which the offset in End is computed. If the selected value is `Node`, the anchor corresponds to the node from which the branch extension originates. If the value is `Origin`, this corresponds to the root node (if the Branch reference is `Radial` or `Circular`), or to the projection of the node along the direction of growth of the tree, onto a line that is perpendicular to this direction and passes through the root node, if the branch reference is `Rectangular`.

End

Control type: Point

Default value: (0, 0)

Auto stroke colour by node

Control type: Check box

Default value: Unchecked

If this check box is checked, the colour of each branch extension is determined algorithmically in a pseudo-random way designed to achieve an aestethically pleasing distribution of colours, while being reproducible if the same tree is rendered multiple times.

Line opacity

Control type: Slider

Default value: 100 %

Range: [0 %, 100 %]

The opacity of the colour used if the Auto stroke colour by node option is enabled.

Line colour

Control type: Colour (by node)

Default value: ■ #000000 (opacity: 100%)

Default attribute: `Color`

The colour used to draw the branch extension if the Auto stroke colour by node option is disabled. The colour can be determined based on the value of an attribute of the nodes in the tree. For nodes that do not possess the specified attribute (or that have the attribute with an invalid value), a default value is used. The default attribute used to determine the colour is `Color`.

Line weight

Control type: Number spin box (by node)

Default value: 1

Range: [0, +∞)

Default attribute: `Thickness`

The thickness of the branch extensions. This can be determined based on the value of an attribute of the nodes in the tree. For nodes that do not possess the specified attribute (or that have the attribute with an invalid value), a default value is used. The default attribute used to determine the thickness of the branches is `Thickness`.

Line cap

Control type: Drop-down list

Default value: Round

Possible values:

- Butt
- Round
- Square

The line cap to use when drawing the branch extensions.

Line dash

Control type: Line dash

Default value: ——————

- *Units on*: 0
- *Units off*: 0
- *Phase*: 0

The line dash to use when drawing the branch extensions.

Further information

You can use this module to ensure that the branches of the tree all end up at the same distance from the origin, regardless of the branch lengths, when *Rectangular* or *Circular* coordinates are used.

To do so, you should set the End anchor to `Origin`, and then set the End offset to an appropriate point along the x axis (i.e. with a high enough value for the x coordinate and 0 for the y coordinate). Experiment with different value of the x coordinate to obtain the right distance.