

# Branches

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*Version 1.1.0, by Giorgio Bianchini*

**Description:** Plots tree branches as lines.

**Module type:** Plotting

**Module ID:** 7c767b07-71be-48b2-8753-b27f3e973570

This module is used to draw the branches of the tree. It can draw branches for the different Coordinates modules, based on the value of the [Shape](#) parameter.

## Parameters

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### Root branch

**Control type:** Check box

**Default value:** Checked

If this check box is checked, a branch is drawn starting from the root node of the tree. Otherwise, the root node has no branch going into it. This can be useful to highlight whether a tree is rooted or unrooted.

### Shape

**Control type:** Slider

**Default value:** 0.00

**Range:** [ 0.00, 2.00 ]

This parameter determines the shape of the branches. A value of  corresponds to branches computed assuming *Rectangular* coordinates; a value of  to *Radial* coordinates and a value of  to *Circular* coordinates. Intermediate values interpolate between these styles. Use the [Fixed shapes](#) buttons to quickly switch between the three styles.

### Fixed shapes

**Control type:** Buttons

**Buttons:**

- Rectangular

- Radial
- Circular

These buttons set the value of the [Shape](#) parameter to the predefined values corresponding to the three branch styles.

## Auto elbow

**Control type:** Check box

**Default value:** Checked

If the [Shape](#) is between  and , the elbow corresponds to the point where the branch coming from the parent node turns to head towards the child node. If this check box is checked, the position of the elbow is computed automatically for each branch, based on the position of the parent node and the child node. Otherwise, it is determined by the [Elbow position](#) parameter.

## Elbow position

**Control type:** Slider

**Default value:** 0.50

**Range:** [ 0.00, 1.00 ]

This parameter determines the position of the elbow if the [Auto elbow](#) option is disabled. A value of  places the elbows closer to the parent nodes; a value of  places the elbows closer to the child nodes.

## Rounding

**Control type:** Slider

**Default value:** 0.00

**Range:** [ 0.00, 1.00 ]

This parameter determines the amount of rounding to apply to the angles of the branches. A value of  produces sharp angles, while a value of  produces completely rounded angles.

## Auto colour by node

**Control type:** Check box

**Default value:** Unchecked

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

## Opacity

**Control type:** Slider


**Default value:** 100 %

**Range:** [ 0 %, 100 % ]

This parameter determines the opacity of the colour used if the [Auto colour by node](#) option is enabled.

## Colour

**Control type:** Colour (by node)

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

**Default attribute:** `Color`

This parameter determines the colour used to draw each branch (if the [Auto 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,  $+\infty$  )

**Default attribute:** `Thickness`

This parameter determines the thickness of the lines used to draw the branches. This can be 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 line weight 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 branches.

## Further information

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For optimal results, the value of the [Shape](#) parameter should correspond to the Coordinates module used. However, if *Rectangular* coordinates are being used, a Shape value between `0` and `1` can be used, together with the [Rounding](#) parameter, to produce interesting results.