Rectangular

Version 1.1.2, by Giorgio Bianchini

Description: Computes the coordinates for a rectangular tree.

Module type: Coordinate

Module ID: `68e25ec6-5911-4741-8547-317597e1b792`

This module computes coordinates for the nodes of the tree in a "rectangular" style. The root node of the tree is placed at the left, and branches expand horizontally towards the right (the orientation of the tree can be changed with the Rotation parameter.

For the default value of the parameters below, let n be the number of taxa (i.e. leaves) in the tree.

Parameters

Maximum default aspect ratio

Global setting

Control type: Number spin box

Default value: 1.3

Range: [1.0, +∞)

Width

Control type: Number spin box

Default value: 20 $\cdot t$ / $\min\ l$

Range: [0, +∞)

This parameter determines the width of the area covered by the tree.

t is the total length from the root node of the tree to the farthest tip; $\min\ l$ is the minimum branch length that is > 0. If the default width cannot be computed (e.g. because the tree does not have any branch length information), the default width is equal to the default height.

The default width and height are adjusted to keep an aspect ratio below the Maximum default aspect ratio.

Height

Control type: Number spin box

Default value: 14 $\cdot n$

Range: [0, $+\infty$)

This parameter determines the height of the area covered by the tree.

The default width and height are adjusted to keep an aspect ratio between 9:16 and 16:9.

Rotation

Control type: Slider

Default value: 0°

Range: [0°, 360°]

This parameter determines the rotation of the tree coordinates.

Fixed rotations

Control type: Buttons

Buttons:

- 0°
- 90°
- 180°
- 270°

These buttons can be used to quickly set the value of the Rotation to predefined values.

Coordinate shift

Control type: Drop-down list

Default value: None

Possible values:

- None
- Relative
- Absolute

This parameter determines the kind of coordinate shift that is applied. If the value is `None`,

no coordinate shift is applied. If the value is `Relative`, the coordinates for each point are shifted by the amount specified by the selected X and Y attributes, relative to their default position. If the value is `Absolute`, the coordinates are set to the value specified by the selected X and Y attributes, regardless of their default position.

X shift

Control type: Check box

Default value: Unchecked

If this check box is checked, the X coordinates of the tree nodes are shifted. Otherwise, they are left as is.

X attribute

Control type: Attribute selector

Default value: Length

This parameter determines the attribute used to shift the X coordinate of the points.

Y shift

Control type: Check box

Default value: Unchecked

If this check box is checked, the Y coordinates of the tree nodes are shifted. Otherwise, they are left as is.

Y attribute

Control type: Attribute selector

Default value: Length

This parameter determines the attribute used to shift the Y coordinate of the points.

Custom script

Control type: Source code

Default value:

```
using PhyloTree;
using System.Collections.Generic;
using TreeViewer;
using VectSharp;

namespace a1c86af90615b48138da7103304bdb7b6
{
    //Do not change class name
    public static class CustomCoordinates
    {
        //Do not change method signature
        public static void GetCoordinates(TreeNode tree, ref
 Dictionary<string, Point> coordinates)
        {
            //TODO: change the coordinate values contained in
 the coordinates dictionary
        }
    }
}
```

This script can be used to modify the coordinate values.

Apply

Control type: Button

This button applies changes to the other parameter values and signals that the tree needs to be redrawn.

Further information

Here is an example of a tree drawn using rectangular coordinates: