Radial

Version 1.1.2, by Giorgio Bianchini

Description: Computes the coordinates for a radial tree.

Module type: Coordinate

Module ID: `95b61284-b870-48b9-b51c-3276f7d89df1`

This module computes coordinates for the nodes of the tree in a "radial" style. The root node of the tree is placed at the center of the tree, and branches expand from it in a way that makes sure they do not intersect with each other.

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

Parameters

Width

Control type: Number spin box

Default value: 14 $\cdot n$

Range: [0, +∞)

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

Height

Control type: Number spin box

Default value: 14 $\cdot n$

Range: [0, +∞)

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

Preserve aspect ratio

Control type: Check box

Default value: Unchecked

If this check box is checked, the tree is stretched uniformly to fill the area specified by the

Width and Height; otherwise, the aspect ratio of the tree is not preserved. This has the effect that branches with the same length may appear to have a different length in the plot.

Start angle

Control type: Slider

Default value: 0°

Range: [0°, 360°]

This parameter determines the angle for the first split in the tree. Changing it has the effect of rotating the tree.

Sweep angle

Control type: Slider

Default value: 360°

Range: [1°, 360°]

This parameter determines the angular size of the tree.

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 a393e8d573cca430fa91dcaa5846b1f4e
{
    //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

This code is based on the algorithm used by FigTree, which is available under a GPLv2 licence here.

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