

closeness_w

Last Updated Monday, 03 August 2009

This function calculates closeness scores for nodes in a weighted network based on the distance_w.

This function takes two options:

- edgelist: the weighted edgelist that we are calculating closeness scores on
- directed: Logical: whether the edgelist is directed or undirected. Default is NULL, then the function detects this parameter
- dist.precomp: if you have already computed the distance matrix, you can import it here. This significantly reduces computing time for large networks.

Closeness is calculated by assigning a farness score to each node. This farness score can be calculated in a number of ways; however, the most common way is to sum the distances to all the other nodes. In tnet only this method is implemented; however, distance is defined differently (see distance_w). Farness score for each node is then transformed into closeness by inverting the score.

Example: Sample data## Load tnet

```
library(tnet)## Define sample data
```

```
sampladata <- rbind(
```

```
c(1,2,4),
```

```
c(1,3,2),
```

```
c(2,1,4),
```

```
c(2,3,4),
```

```
c(2,4,1),
```

```
c(2,5,2),
```

```
c(3,1,2),
```

```
c(3,2,4),
```

```
c(4,2,1),
```

```
c(5,2,2),
```

```
c(5,6,1),
```

```
c(6,5,1))## Run programme
```

```
closeness_w(sampladata) node closeness
```

```
1 1 0.2222222
```

```
2 2 0.2857143
```

```
3 3 0.2222222
```

```
4 4 0.1333333
```

```
5 5 0.2222222
```

```
6 6 0.1176471
```