

**NAME**

**cluster** - find clusters in a graph and augment the graph with this information.

**SYNOPSIS**

**cluster** [-v?] [ -C*k* ] [ -c*k* ] [ -o *outfile* ] [ *files* ]

**DESCRIPTION**

**cluster** takes as input a graph in DOT format, finds node clusters and augments the graph with this information. The clusters are specified by the "cluster" attribute attached to nodes; cluster values are non-negative integers. **cluster** attempts to maximize the modularity of the clustering. If the edge attribute "weight" is defined, this will be used in computing the clustering.

**OPTIONS**

The following options are supported:

-C*k* specifies a targeted number of clusters that should be generated. The specified number *k* is only a suggestion and may not be realisable. If *k* == 0, the default, the number of clusters that approximately optimizes the modularity is returned.

-c*k* specifies clustering method. If *k* == 0, the default, modularity clustering will be used. If *k* == 1 modularity quality will be used.

-o*outfile*

Specifies that output should go into the file *outfile*. By default, *stdout* is used.

-v Verbose mode.

-? Prints the usage and exits.

**EXAMPLES**

Applying **cluster** to the following graph,

```
graph {
  1--2 [weight=10.]
  2--3 [weight=1]
  3--4 [weight=10.]
  4--5 [weight=10]
  5--6 [weight=10]
  3--6 [weight=0.1]
  4--6 [weight=10.]
```

```
}
```

gives

```
graph {  
    node [cluster="-1"];  
    1 [cluster=1];  
    2 [cluster=1];  
    3 [cluster=2];  
    4 [cluster=2];  
    5 [cluster=2];  
    6 [cluster=2];  
    1 -- 2 [weight="10."];  
    2 -- 3 [weight=1];  
    3 -- 4 [weight="10."];  
    4 -- 5 [weight=10];  
    5 -- 6 [weight=10];  
    3 -- 6 [weight="0.1"];  
    4 -- 6 [weight="10."];  
}
```

## AUTHOR

Yifan Hu <yifanhu@yahoo.com>

## SEE ALSO

gvmap(1)

Blondel, V.D., Guillaume, J.L., Lambiotte, R., Lefebvre, E.: Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment* (2008), P10008.