# Package 'biclique'

April 29, 2017

**Title** An R package to compute bicliques

**Version** 1.0.0

**Encoding** UTF-8

**Description** This package is used to enumerate bicliques in the bipartite graph.

**URL** https://github.com/YupingLu/biclique

**BugReports** https://github.com/YupingLu/biclique/issues

**Depends** R (>= 3.1)

**Imports** graphics,
   utils

**License** GPL (>= 2)

**RoxygenNote** 5.0.1

## R topics documented:

---

bi.clique                     *Biclique enumeration*

---

## Description

This function will compute the bicliques and output the statistics of these bicliques. If you want to get bicliques above a threshold, you can change the values of lleast and rleast. The input file should be tab delimited with number of vertices and edges at the head of the input file. If your input file does not have these values, you can use function bi.format to add these values to it. This package supports edgelist and binary matrix file format. Two versions of algorithms are implemented in this function, you can choose either one to get bicliques.

1

## Usage

```
bi.clique(filename, lleast = 1, rleast = 1, version = 1, filetype = 0,
  envir = .GlobalEnv$.bienv)
```

## Arguments

| | |
|---|---|
| filename | Input file name |
| lleast | Least number of left partite <default = 1> |
| rleast | Least number of right partite <default = 1> |
| version | Algorithm version <default = 1> [1|2] |
| filetype | Input file format <default = 0>. 0-edge list, 1-binary matrix. |
| envir | biclique environment |

## Examples

```
## Not run:
bicliques = bi.clique("example1.el")
bicliques = bi.clique("example1.el", 3, 2)
bicliques = bi.clique("example4.bmat")

## End(Not run)
```

---

bi.degree                          *Get the degree list*

---

## Description

This function will output the degree of each vertex.

## Usage

```
bi.degree(filename, filetype = 0)
```

## Arguments

| | |
|---|---|
| filename | Input file name |
| filetype | Input file format <default = 0>. 0-edge list, 1-binary matrix. |

## Examples

```
## Not run:
degreelist = bi.degree("example1.el")
degreelist = bi.degree("example4.bmat", 1)
#get the vertex degree
degreelist$u1

## End(Not run)
```

---

`bi.format`                    *Add number of vertices and edges to the input file*

---

### Description

This funtion will calculate the number of vertices and edges and add them to the head of the input file. For edge list file, three entries will be added. And they are: the number of left vertices, the number of right vertices and the number of edges. For binary matrix file, two entries will be added. And they are: the number of left vertices and the number of right vertices. The original input file will be changed. If your input file already have those entries, pleast don't run this command. Otherwise, you'll get error results after running bi.clique. Please also note that no comment characters are allowed in the input file.

### Usage

```
bi.format(filename, filetype = 0)
```

### Arguments

filename        Input file name

filetype        Input file format <default = 0>. 0-edge list, 1-binary matrix.

### Examples

```
## Not run:
bi.format("example2.el")
bi.format("example5.bmat", 1)

## End(Not run)
```

---

`bi.print`                    *Print the bicliques*

---

### Description

You can pass results from function bi.clique to this function to visualize the bicliques.

### Usage

```
bi.print(envir = .GlobalEnv$.bienv)
```

### Arguments

envir           biclique environment

## Examples

```
## Not run:
bi.print()

## End(Not run)
```

---

biclique                    *An R package to compute bicliques*

---

## Description

biclique package.

## Author(s)

Yuping Lu, Charles Phillips, Michael Langston

# Index