

The CSV Program

Usage

CSV [-option] GRAPHFILE CRIFILE DIM

Description

Used to estimate density for each vertex inside a graph and order them according to the density, order is output to CRIFILE .

Required Parameters

GRAPHFILE The name of the graph file. The format of the file please refer to section Input File Format

CRIFILE The name of the output file. Vertices are ordered according to their adjacency relations and their densities.

DIM mapping dimension.

Optional Parameters

-h, --help

Displays a short summary of the various options to the standard output.

-[i] INDEXFILE

This parameter specifies the graph has an index file, which provides mapping for each vertex to its name.

It must be followed by a valid file name.

1. Input File Format

CSV takes as input the GRAPHFILE that contains the graph edges. The detail of the format is described in the following.

Linetype | Format | Explanation

Summary	#v #e	Total number of vertices and edges inside a graph
Edges	<ID1> <ID2>	Indicate two verices are connected by an edge

<ID1> and <ID2> are non-negative intergers. They are seperated by consecutive space.

CSV optionally takes as input the INDEXFILE that provides mapping for each vertex to its name. The format is as below:

Format | Explanation

<ID> <LABEL>	The mapping between <ID> and string <LABEL>
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<ID> is non-negative intergers and <LABEL> is string of lenth less than 200 characters.

<ID> and <LABEL> pair are seperated by consecutive space.

2. Output File Formt

First line is the number of vertices

The following lines format has two variances.

When the INDEXFILE is present, each line consists of <DENSITY> <LABEL>

When there is no INDEXFILE, each line consists of <DENSITY> <ID>

3. Examples

3.1 Graph File

```
4 5
0 1
0 2
0 3
1 2
1 3
```

3.2 Index file

```
0 AA
1 AB
2 BB
3 CC
4 AD
```

3.3 Output File Example

```
4
5 AA
...
...
...
```

First line indicates how many lines follows, in this example is 4. The above line indicates that CSV discover vertex AA has density 5.

The CSVPLOT Program

Usage

CSVLOT DISPLAY GRAPHFILE CRIFILE VSTART VEND

Description

Used to display CSV algorithm's result as plot. It requires openGL and vtk(Visualization Tool Kit) dlls installed.

Required Parameters

DISPLAY set to 1 if need to display the subgraph starting from VSTART and ending at VEND, set to 0 otherwise.

GRAPHFILE input graph file name.

CRIFILE input CSV result file name.

VSTART starting vertices (optional when DISPLAY=0).

VEND ending vertices (optional when DISPLAY=0).

Cautions: For best results, please set display range (VEND-VSTART)<100.

E.g.

1. To display CSV plot for graph sm90sp11_graph.txt with crifile sm90sp11d4.cri without display any sub-graph, type

CSVLOT 0 ..\graph\sm90sp11_graph.txt ..\graph\sm90sp11d4.cri

in the command console.

2. . To display CSV plot for graph sm90sp11_graph.txt with crifile sm90sp11d4.cri and display sub-graph from 0-20 (this is the order in crifile), type

CSVPLLOT 1 ..\graph\sm90sp11_graph.txt ..\graph\sm90sp11d4.cri 0 20

in the command console.

1. Input File Format

The GRAPHFILE format is the same as CSV GRAPHFILE format, please refer to page 1 for detail. The CRIFILE format can only be the result file produced by CSV without INDEXFILE options. The reason is GRAPHFILE uses indices to represent each vertex.

2. Output File Format

There is no output file for this program.

3. How to install VTK into your system (WindowsXP)

Copy all dll files from folder “dlls” to your local “WINDOWS\system32\” folder.