NAME

mm2gv − Matrix Market-DOT converters

SYNOPSIS

mm2gv [**−cluv?**] [**-U***i*] [**-o***outfile*] [*file*]

DESCRIPTION

mm2gv converts a sparse matrix of the Matrix Market format to a graph in the GV (formerly DOT) format. If the matrix *M* is not square, the graph is considered bipartite and the matrix is viewed as a bipartite graph adjacency matrix, with the rows and columns of the matrix specifying the two sets of vertices. Equivalently, the matrix is converted into a symmetric square matrix

$$\begin{matrix} 0 & M \\ M^T & 0 \end{matrix}$$

a block matrix with square blocks of 0's in the upper left and lower right, the upper right block being *M* and the lower left block being the transpose of *M*. This matrix is then viewed as the adjacency matrix of the graph.

For a square matrix, **mm2gv** uses it directly as an adjacency matrix if its pattern of non-zero entries is symmetric; otherwise, it will treat it as a bipartite graph as with the case of non-square matrices. This behavior can be modified by the **-U** flag.

OPTIONS

The following options are supported:

−c This flag causes **mm2gv** to assign colors to the edges. The matrix element is scaled to the range [0,1] depending on where it lies between the minimum and maximum set matrix values. This scaled value is used as the *"wt"* attribute of the corresponding edge. In addition, this scalar value is mapped to an RGB value, which is stored as the edge *"color"*.

−l If set, **mm2gv** attaches a label to the graph indicating the base name of the input file, and the number of nodes and edges.

−u If specified, the graph is assumed to be undirected. By default, the graph generated is directed.

−v This flag causes **mm2gv** to store the matrix values as the *"len"* attribute of the corresponding edge.

−U*bflag*
Specifies how square matrices are handled. If *bflag* is 0, a square matrix will always be treated as an adjacency matrix. If *bflag* is 1 (the default), a square matrix with a symmetric pattern of non-zero entries will be used as an adjacency matrix; otherwise, it will be used a bipartite graph. If *bflag* is 2, a symmetric matrix will be used as an adjacency matrix; otherwise, it will be used a bipartite graph. If *bflag* is 3, any input matrix will be treated like a bipartite graph.

−o*outfile*
Prints output to the file *outfile*. If not given, **mm2gv** uses stdout.

OPERANDS

The following operand is supported:

file Name of the file in MatrixMarket format. If no *file* operand is specified, the standard input will be used.

RETURN CODES

Return **0** if there were no problems during conversion; and non-zero if any error occurred.

AUTHORS

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ADDITIONAL INFO

See http://math.nist.gov/MatrixMarket/ for description of the format and http://www.cise.ufl.edu/research/sparse/matrices/ for a large collection of sparse matrices in this format.