
graphtools Documentation

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Gautam Sisodia

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GRAPHTOOLS PACKAGE

1.1 graphtools Package

Hello peeps

1.2 gengraph Module

class `graphtools.gengraph.GenGraph`

A general graph.

count_neighbors (*vert*, *out=True*, *cond=False*, *less=True*, *cutoff=0*)

Count the number of neighbors of a vertex.

Parameters

- **vert** (*vertex*) – the vertex to count the neighbors of
- **out** (*Boolean*) – if True, count out neighbors, else in
- **cond** (*Boolean*) – if True, count the neighbors satisfying a condition on rank
- **less** (*Boolean*) – if True, count the neighbors with rank less than or equal to the cutoff, else more
- **cutoff** (*int*) – the cutoff rank for the conditional

descend (*vert*, *debug=False*)

Run one iteration of the descend algorithm.

vert: the vertex whose rank may change

descent (*num=1*, *debug=False*)

Run descend *num* times on random vertices.

get_num_arrows ()

Return the number of arrows.

get_rank (*vert*)

Return the rank of vertex *vert*.

get_vert_list ()

Return a list of vertices.

set_rank (*vert*, *newrank*)

Set the rank of vertex *vert* to *int newrank*.

1.3 dbggraph Module

class `graphtools.dbggraph.DBGraph` (*users, arrows, conn, group=None*)

Bases: `graphtools.gengraph.GenGraph`

A subclass of GenGraph for graphs stored in databases.

The vertices are stored in a table called users. The arrows are stored in a table called arrows. The vertices are identified by the value in the user_id column.

check_id (*vert*)

count_neighbors (*vert, out=True, cond=False, less=True, cutoff=0*)

Return the number of neighbors of a vertex.

vert: a vertex; count this vertex's neighbors

out: a Boolean; if True, count out neighbors, else in

cond: a Boolean; if True, count the neighbors satisfying a condition on rank

less: a Boolean; if True, count the neighbors with rank less than or equal to the cutoff, else more

cutoff: an int; the cutoff rank for the conditional

get_num_arrows ()

Return the number of arrows.

get_rank (*vert*)

Return the rank of vertex vert.

get_vert_list ()

return the list of user_ids.

reset_ranks ()

Set all ranks to zero.

set_rank (*vert, newrank*)

Set the rank of vertex vert to int newrank.

1.4 listgraph Module

class `graphtools.listgraph.ListGraph` (*arrows_list*)

Bases: `graphtools.gengraph.GenGraph`

A subclass of GenGraph for graphs given as a list of arrows.

count_neighbors (*vert, out=True, cond=False, less=True, cutoff=0*)

Return the number of neighbors of a vertex.

vert: a vertex; count this vertex's neighbors

out: a Boolean; if True, count out neighbors, else in

cond: a Boolean; if True, count the neighbors satisfying a condition on rank

less: a Boolean; if True, count the neighbors with rank less than or equal to the cutoff, else more

cutoff: an int; the cutoff rank for the conditional

get_num_arrows ()

Return the number of arrows.

get_rank (*vert*)
Return the rank of vertex *vert*.

get_vert_list ()
Return a list of vertices.

neighbors_in (*vert*)
return the list of in neighbors of vertex *vert*.

neighbors_out (*vert*)
return the list of out neighbors of vertex *vert*.

rankdict = None
The rank dictionary; keys are the vertices and values are the ranks.

set_rank (*vert*, *newrank*)
Set the rank of vertex *vert* to int *newrank*.

1.5 sagegraph Module

class graphtools.sagegraph.**SageGraph** (*dg*)
Bases: graphtools.gengraph.GenGraph

A subclass of GenGraph which wraps a Sage DiGraph object.

count_neighbors (*vert*, *out=True*, *cond=False*, *less=True*, *cutoff=0*)
Return the number of neighbors of a vertex.

vert: a vertex; count this vertex's neighbors
out: a Boolean; if True, count out neighbors, else in
cond: a Boolean; if True, count the neighbors satisfying a condition on rank
less: a Boolean; if True, count the neighbors with rank less than or equal to the cutoff, else more
cutoff: an int; the cutoff rank for the conditional

get_num_arrows ()
Return the number of arrows.

get_rank (*vert*)
Return the rank of vertex *vert*.

get_vert_list ()
Return a list of vertices.

rankdict = None
The rank dictionary; keys are the vertices and values are the ranks.

set_rank (*vert*, *newrank*)
Set the rank of vertex *vert* to int *newrank*.

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