NAME

gv_ruby - graph manipulation in ruby

SYNOPSIS

#!/usr/bin/ruby
require 'gv'

USAGE

INTRODUCTION

gv_ruby is a dynamically loaded extension for **ruby** that provides access to the graph facilities of **graphviz.**

COMMANDS

New graphs

New empty graph

graph_handle **Gv.graph** *(name);*
graph_handle **Gv.digraph** *(name);*
graph_handle **Gv.strictgraph** *(name);*
graph_handle **Gv.strictdigraph** *(name);*

New graph from a dot-syntax string or file

graph_handle **Gv.readstring** *(string);*
graph_handle **Gv.read** *(string filename);*
graph_handle **Gv.read** *(channel);*

Add new subgraph to existing graph

graph_handle **Gv.graph** *(graph_handle, name);*

New nodes

Add new node to existing graph

node_handle **Gv.node** *(graph_handle, name);*

New edges

Add new edge between existing nodes

edge_handle **Gv.edge** *(tail_node_handle, head_node_handle);*

Add a new edge between an existing tail node, and a named head node which will be induced in the graph if it doesn't already exist

edge_handle **Gv.edge** *(tail_node_handle, head_name);*

Add a new edge between an existing head node, and a named tail node which will be induced in the graph if it doesn't already exist

edge_handle **Gv.edge** *(tail_name, head_node_handle);*

Add a new edge between named tail and head nodes which will be induced in the graph if they don't already exist

edge_handle **Gv.edge** *(graph_handle, tail_name, head_name);*

Setting attribute values

Set value of named attribute of graph/node/edge - creating attribute if necessary

string **Gv.setv** *(graph_handle, attr_name, attr_value);*
string **Gv.setv** *(node_handle, attr_name, attr_value);*
string **Gv.setv** *(edge_handle, attr_name, attr_value);*

Set value of existing attribute of graph/node/edge (using attribute handle)

string **Gv.setv** *(graph_handle, attr_handle, attr_value);*
string **Gv.setv** *(node_handle, attr_handle, attr_value);*

string **Gv.setv** *(edge_handle, attr_handle, attr_value);*

Getting attribute values

Get value of named attribute of graph/node/edge

string **Gv.getv** *(graph_handle, attr_name);*
string **Gv.getv** *(node_handle, attr_name);*
string **Gv.getv** *(edge_handle, attr_name);*

Get value of attribute of graph/node/edge (using attribute handle)

string **Gv.getv** *(graph_handle, attr_handle);*
string **Gv.getv** *(node_handle, attr_handle);*
string **Gv.getv** *(edge_handle, attr_handle);*

Obtain names from handles

string **Gv.nameof** *(graph_handle);*
string **Gv.nameof** *(node_handle);*
string **Gv.nameof** *(attr_handle);*

Find handles from names

graph_handle **Gv.findsubg** *(graph_handle, name);*
node_handle **Gv.findnode** *(graph_handle, name);*
edge_handle **Gv.findedge** *(tail_node_handle, head_node_handle);*
attribute_handle **Gv.findattr** *(graph_handle, name);*
attribute_handle **Gv.findattr** *(node_handle, name);*
attribute_handle **Gv.findattr** *(edge_handle, name);*

Misc graph navigators returning handles

node_handle **Gv.headof** *(edge_handle);*
node_handle **Gv.tailof** *(edge_handle);*
graph_handle **Gv.graphof** *(graph_handle);*
graph_handle **Gv.graphof** *(edge_handle);*
graph_handle **Gv.graphof** *(node_handle);*
graph_handle **Gv.rootof** *(graph_handle);*

Obtain handles of proto node/edge for setting default attribute values

node_handle **Gv.protonode** *(graph_handle);*
edge_handle **Gv.protoedge** *(graph_handle);*

Iterators

Iteration termination tests

bool **Gv.ok** *(graph_handle);*
bool **Gv.ok** *(node_handle);*
bool **Gv.ok** *(edge_handle);*
bool **Gv.ok** *(attr_handle);*

Iterate over subgraphs of a graph

graph_handle **Gv.firstsubg** *(graph_handle);*
graph_handle **Gv.nextsubg** *(graph_handle, subgraph_handle);*

Iterate over supergraphs of a graph (obscure and rarely useful)

graph_handle **Gv.firstsupg** *(graph_handle);*
graph_handle **Gv.nextsupg** *(graph_handle, subgraph_handle);*

Iterate over edges of a graph

edge_handle **Gv.firstedge** *(graph_handle);*
edge_handle **Gv.nextedge** *(graph_handle, edge_handle);*

Iterate over outedges of a graph

edge_handle **Gv.firstout** *(graph_handle);*
edge_handle **Gv.nextout** *(graph_handle, edge_handle);*

Iterate over edges of a node
edge_handle **Gv.firstedge** *(node_handle);*
edge_handle **Gv.nextedge** *(node_handle, edge_handle);*

Iterate over out-edges of a node
edge_handle **Gv.firstout** *(node_handle);*
edge_handle **Gv.nextout** *(node_handle, edge_handle);*

Iterate over head nodes reachable from out-edges of a node
node_handle **Gv.firsthead** *(node_handle);*
node_handle **Gv.nexthead** *(node_handle, head_node_handle);*

Iterate over in-edges of a graph
edge_handle **Gv.firstin** *(graph_handle);*
edge_handle **Gv.nextin** *(node_handle, edge_handle);*

Iterate over in-edges of a node
edge_handle **Gv.firstin** *(node_handle);*
edge_handle **Gv.nextin** *(graph_handle, edge_handle);*

Iterate over tail nodes reachable from in-edges of a node
node_handle **Gv.firsttail** *(node_handle);*
node_handle **Gv.nexttail** *(node_handle, tail_node_handle);*

Iterate over nodes of a graph
node_handle **Gv.firstnode** *(graph_handle);*
node_handle **Gv.nextnode** *(graph_handle, node_handle);*

Iterate over nodes of an edge
node_handle **Gv.firstnode** *(edge_handle);*
node_handle **Gv.nextnode** *(edge_handle, node_handle);*

Iterate over attributes of a graph
attribute_handle **Gv.firstattr** *(graph_handle);*
attribute_handle **Gv.nextattr** *(graph_handle, attr_handle);*

Iterate over attributes of an edge
attribute_handle **Gv.firstattr** *(edge_handle);*
attribute_handle **Gv.nextattr** *(edge_handle, attr_handle);*

Iterate over attributes of a node
attribute_handle **Gv.firstattr** *(node_handle);*
attribute_handle **Gv.nextattr** *(node_handle, attr_handle);*

Remove graph objects
bool **Gv.rm** *(graph_handle);*
bool **Gv.rm** *(node_handle);*
bool **Gv.rm** *(edge_handle);*

Layout

Annotate a graph with layout attributes and values using a specific layout engine
bool **Gv.layout** *(graph_handle, string engine);*

Render

Render a layout into attributes of the graph
bool **Gv.render** *(graph_handle);*

Render a layout to stdout
bool **Gv.render** *(graph_handle, string format);*

Render to an open file
bool **Gv.render** *(graph_handle, string format, channel fout);*

Render a layout to an unopened file by name
bool **Gv.render** *(graph_handle, string format, string filename);*

Render to a string result
string **Gv.renderresult** *(graph_handle ing, string format);*
Gv.renderresult *(graph_handle, string format, string outdata);*

Render to an open channel
bool **Gv.renderchannel** *(graph_handle, string format, string channelname);*

Render a layout to a malloc'ed string, to be free'd by the caller

(deprecated - too easy to leak memory)

(still needed for "eval [gv::renderdata $G tk]")
string **Gv.renderdata** *(graph_handle, string format);*

Writing graph back to file
bool **Gv.write** *(graph_handle, string filename);*
bool **Gv.write** *(graph_handle, channel);*

Graph transformation tools
bool **Gv.tred** *(graph_handle);*

KEYWORDS

graph, dot, neato, fdp, circo, twopi, ruby.