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masterPATH

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Chapter 1

Class Index

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2 Class Index

Chapter 2

Class Documentation

2.1 masterPATH.CentralityManager Class Reference

Public Member Functions

- void calculate_centrality_scores_for_nodes (Network all, Map< String, String[]> hugo_by_id,
 NetworkManager nutils, String f_shortest_pathways, String output_file) throws FileNotFoundException,
 IOException
- void calculate_centrality_scores_for_paths (Network all, String inf, String outf, int min_length, int max
 length) throws FileNotFoundException, IOException
- void calculate_centrality_scores_for_paths_ppi (Network all, String inf, String outf, int min_length, int max_length) throws FileNotFoundException, IOException
- void add_hgnc_symbols_to_paths (String inf, String outf, Network all, Map< String, String[]> hugo_
 by_id) throws IOException
- void add_experimental_scores_and_pvalues_to_nodes (String nodes_file, String gw_file, String conv_
 table, String out) throws FileNotFoundException, IOException
- void add_experimnetal_scores_and_aggregated_pvalues_to_paths (String unique_over, String gw_file, String conv_table, String out) throws FileNotFoundException, IOException
- Map< String, I1S1 > find_unique_paths_for_list_of_pathways_ppi (int max_length, int min_length, List
 String > all_paths) throws IOException
- void filter_paths (String foundf, String outname, Network all, Map< String, String > hg, Map< String, String > fpl, int min_occ, String mask) throws FileNotFoundException, IOException
- $\bullet \ \ \text{HashMap} < String, \ Float \ [] > \ \textbf{load_screening_data} \ \ (String \ p_file, \ String \ n_file) \ \ throws \ IOException$
- HashMap< String, List< Float >> return_permutation_distribution (String p_file, String n_file, int number_of_permutations) throws FileNotFoundException, IOException
- Map< String, I1S1 > find_unique_paths_for_list_of_pathways (int max_length, int min_length, List
 String > all_paths) throws IOException
- void compare_two_lists_of_nodes (String f1, String f2) throws FileNotFoundException, IOException
- String returnPathType (Network all, String s)

Static Public Member Functions

• static String return_symmetric_path (String part)

2.1.1 Detailed Description

CentralityManager (p. 3) class contains methods to calculate centrality scores

Author

Natalia Rubanova

2.1.2 Member Function Documentation

2.1.2.1 add_experimental_scores_and_pvalues_to_nodes()

```
void masterPATH.CentralityManager.add_experimental_scores_and_pvalues_to_nodes (
    String nodes_file,
    String gw_file,
    String conv_table,
    String out ) throws FileNotFoundException, IOException
```

Add scores and p-values from GW screen to file with nodes and centrality scores

nodes_file	File with nodes and centrality scores
gw_file	File with screening data
conv_table	Conversion table for genes ids
out	Output file

2.1.2.2 add_experimnetal_scores_and_aggregated_pvalues_to_paths()

Add aggregated p-values from GW screen to file with paths and centrality scores

nodes_file	File with nodes and centrality scores
gw_file	File with screening data
conv_table	Conversion table for genes ids
out	Output file

2.1.2.3 add_hgnc_symbols_to_paths()

Add approved gene symbols to file with paths and centrality scores

inf	Input file with paths
outf	Output file
all	Network (p. 14) all
hugo_by↔ _id	Map of approved gene symbols and gene IDs from DBManager (p. 9) class

2.1.2.4 calculate_centrality_scores_for_nodes()

Find nodes and calculate centrality scores

all	Network (p. 14)
hugo_by_id	Map with HGNC ids
nutils	Link to NetworkManager (p. 16) object
f_shortest_pathways	File with pathways
output_file	Output file

2.1.2.5 calculate_centrality_scores_for_paths()

```
String outf,
int min_length,
int max_length ) throws FileNotFoundException, IOException
```

Find short linear paths in a mixed direct/indirect subnetwork and calculate centrality scores

all	Network (p. 14)
inf	List of pathways to create subnetwork
outf	Output file
min_length	minimum length of a path
max_length	maximum length of a path

2.1.2.6 calculate_centrality_scores_for_paths_ppi()

Find short linear paths in a indirect subnetwork and calculate centrality scores

all	Network (p. 14)
inf	List of pathways to create subnetwork
outf	Output file
min_length	Minimum path length
max_length	Maximum path length

2.1.2.7 calculate_paths_degree()

Add information about degree to file with paths and centrality scores

unique_over	File with paths
path_con	File with pathway connectivity
out	Output file

2.1.2.8 compare_two_lists_of_nodes()

```
void masterPATH.CentralityManager.compare_two_lists_of_nodes ( String \ f1, String \ f2 \ ) \ throws \ FileNotFoundException, \ IOException
```

Compare two lists of nodes

f1	File 1
f2	File 2

2.1.2.9 filter_paths()

Filter paths

foundf	File with paths
outname	Output file
all	Network (p. 14)
hg	Hit genes
fpl	Final Players
min_occ	Minimum occurrence filter
mask	Mask to include only paths with miRNAs

2.1.2.10 find_unique_paths_for_list_of_pathways()

```
Map<String, I1S1> masterPATH.CentralityManager.find_unique_paths_for_list_of_pathways (
    int max_length,
    int min_length,
    List< String > all_paths ) throws IOException
```

Find all unique paths in a mixed direct/indirect subnetwork

max_length	Minimum length
min_length	Maximum length
all_paths	List of pathways to create subnetwork

2.1.2.11 find_unique_paths_for_list_of_pathways_ppi()

```
Map<String, I1S1> masterPATH.CentralityManager.find_unique_paths_for_list_of_pathways_ppi (
    int max_length,
    int min_length,
    List< String > all_paths ) throws IOException
```

Find all unique paths in a indirect subnetwork

max_length	Maximum length
min_length	Minimum length
all_paths	Pathways to create subnetwork

2.1.2.12 load_screening_data()

Load experimental data

p_file	Experimental data
n_file	File for symbol conversion

2.1.2.13 return_permutation_distribution()

```
\label{thm:mashMap} \begin{tabular}{ll} HashMap &< String, List &< Float > master PATH. Centrality Manager.return_permutation_distribution ( String p_file, String n_file, int number_of_permutations ) throws File Not Found Exception, IOException \\ \end{tabular}
```

Calculate empirical distribution for Fisher's statistic

p_file	Experimental data
n_file	File for symbol conversion
number_of_permutations	Number of permutations

2.1.2.14 return_symmetric_path()

```
static String masterPATH.CentralityManager.return_symmetric_path ( String \ part \ ) \quad [static]
```

Return symmetric pathway

part Pathway

2.1.2.15 returnPathType()

Check type of the pathway

all	Network (p. 14)
s	pathway

The documentation for this class was generated from the following file:

· CentralityManager.java

2.2 masterPATH.DBManager Class Reference

Public Member Functions

- DBManager () throws IOException
- void loadHUGO () throws FileNotFoundException, IOException
- void IoadHPRD () throws FileNotFoundException, IOException
- void loadHIPPIE (boolean high) throws FileNotFoundException, IOException

- void loadSignor () throws FileNotFoundException, IOException
- void loadSignalink () throws FileNotFoundException, IOException
- void loadtFacts () throws FileNotFoundException, IOException
- void loadKEGG () throws FileNotFoundException, IOException
- void loadTransmir () throws FileNotFoundException, IOException
- · void loadmirTarBase () throws FileNotFoundException, IOException

2.2.1 Detailed Description

DBManager (p. 9) class contains methods to load databases

Author

Natalia Rubanova

2.2.2 Constructor & Destructor Documentation

2.2.2.1 DBManager()

```
masterPATH.DBManager.DBManager ( ) throws IOException
```

Constructor

2.2.3 Member Function Documentation

2.2.3.1 loadHIPPIE()

Load HIPPIE database

high load all or only high confidence interactions

2.2.3.2 loadHPRD()

```
void masterPATH.DBManager.loadHPRD ( ) throws FileNotFoundException, IOException
```

Load HPRD database

2.2.3.3 loadHUGO()

void masterPATH.DBManager.loadHUGO () throws FileNotFoundException, IOException

Loads HGNC nomenclature

2.2.3.4 loadKEGG()

void masterPATH.DBManager.loadKEGG () throws FileNotFoundException, IOException

Load KEGG database

2.2.3.5 loadmirTarBase()

void masterPATH.DBManager.loadmirTarBase () throws FileNotFoundException, IOException

Load mitTarBase database

2.2.3.6 loadSignalink()

void masterPATH.DBManager.loadSignalink () throws FileNotFoundException, IOException

Load Signalink database

2.2.3.7 loadSignor()

void masterPATH.DBManager.loadSignor () throws FileNotFoundException, IOException

Load Signor database

2.2.3.8 loadtFacts()

void masterPATH.DBManager.loadtFacts () throws FileNotFoundException, IOException

Load tFacts database

2.2.3.9 loadTransmir()

 $\verb|void masterPATH.DBM| anager.loadTransmir () throws FileNotFoundException, IOException | Part of the content of the content$

Load TransMir database

The documentation for this class was generated from the following file:

· DBManager.java

2.3 masterPATH.FoldersPaths Class Reference

2.3.1 Detailed Description

FolderPaths class contains system paths to databases files, files with pathways, paths, nodes, etc

Author

Natalia Rubanova

The documentation for this class was generated from the following file:

· FoldersPaths.java

2.4 masterPATH.Interaction Class Reference

Public Member Functions

- Interaction (String id, List< String > other_ids, Node int1, Node int2, String type, String sourcedb, List
 String > sourcedbentry, String quality, String dir)
- String toString ()
- void print ()

2.4.1 Detailed Description

Interaction (p. 12) class describes an Interaction (p. 12) object

Author

Natalia Rubanova

2.4.2 Constructor & Destructor Documentation

2.4.2.1 Interaction()

Constructor

id	id of the interaction
other_ids	ids from the source databases
int1	first interactor
int2	second interactor
type	type of the interaction
sourcedb	source database
sourcedbentry	entry in the source database
quality	confidence parameter of the interaction
dir	direct or indirect interaction

2.4.3 Member Function Documentation

2.4.3.1 print()

```
void masterPATH.Interaction.print ( )
```

Print all information about interaction in one line

The documentation for this class was generated from the following file:

· Interaction.java

2.5 masterPATH.MasterPATH Class Reference

Static Public Member Functions

• static void main (String[] args) throws FileNotFoundException, IOException, InterruptedException

2.5.1 Detailed Description

Main class

Author

Natalia Rubanova

2.5.2 Member Function Documentation

2.5.2.1 main()

```
static void masterPATH.MasterPATH.main ( String \ [\ ] \ args \ ) \ throws \ FileNotFoundException, \ IOException, \ InterruptedException \ [static]
```

main method

args

The documentation for this class was generated from the following file:

· MasterPATH.java

2.6 masterPATH.Network Class Reference

Public Member Functions

- · Network ()
- · void loadNetworkfromfile (String nodef, String intf) throws FileNotFoundException, IOException
- void saveNetworktofile (String nodef, String intf) throws IOException
- void removeAll ()
- void loadNetwork2 (NetworkManager nutils, PathwayManager putils, CentralityManager outils, DB
 — Manager dbutils) throws IOException

2.6.1 Detailed Description

Network (p. 14) class describes an Network (p. 14) object

Author

Natalia Rubanova

2.6.2 Constructor & Destructor Documentation

```
2.6.2.1 Network()
```

```
masterPATH.Network.Network ( )
```

Constructor

2.6.3 Member Function Documentation

2.6.3.1 loadNetwork2()

Load network from databases

nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.6.3.2 loadNetworkfromfile()

```
void masterPATH.Network.loadNetworkfromfile ( String\ nodef, String\ intf\ )\ throws\ FileNotFoundException,\ IOException
```

Load network from two files *

nodef	file with information about nodes
intf	file with information about interactions

2.6.3.3 removeAll()

```
void masterPATH.Network.removeAll ( )
```

Remove all interactions and nodes from network

2.6.3.4 saveNetworktofile()

```
void masterPATH.Network.saveNetworktofile ( String\ nodef, String\ intf\ )\ throws\ IOException
```

Save all interactions and nodes in the network to the two output files

nodef	node file
intf	interaction file

The documentation for this class was generated from the following file:

Network.java

2.7 masterPATH.NetworkManager Class Reference

Classes

- · class Depth_List_of_PathUnit
- · class PathUnit
- · class PathUnitwFP

Public Member Functions

- Network merge_list_of_networks (List< Network > n)
- void build_map_of_neighbors (Network nw)
- List< PathUnit > find_pathway_BF_algorithm (Network network, List< String > n1, List< String > n2, int max, String prefix, FileWriter out) throws IOException
- List< PathUnit > find_pathway_BF_algorithm_ppi (Network network, List< String > n1, List< String > n2, int max, String prefix, BufferedWriter out) throws IOException
- void find_pathway_for_list_BF_algorithm (Network nw, Map< String, String[]> hugo, int max, String outf, String prefix) throws IOException
- void find_pathway_for_list_BF_algorithm_ppi (Network nw, Map< String, String[]> hugo, int max, String outf, String prefix) throws IOException
- void add_missing_genes_and_products (Network nw)

2.7.1 Detailed Description

NetworkManager (p. 16) class contains methods to deal with networks

Author

Natalia Rubanova

2.7.2 Member Function Documentation

```
2.7.2.1 add_missing_genes_and_products()
```

```
void masterPATH.NetworkManager.add_missing_genes_and_products ( {\bf Network}\ {\it nw}\ )
```

Add transcription information

nw Network (p. 14)

2.7.2.2 build_map_of_neighbors()

```
void masterPATH.NetworkManager.build_map_of_neighbors ( \label{eq:new_norm} \textbf{Network} \ nw \ )
```

Create links to all neighbors for every node in the network

```
nw Network (p. 14)
```

2.7.2.3 find_pathway_BF_algorithm()

Find length-bound pathways between two lists of nodes

network	
n1	List of Hit genes nodes
n2	List of Final implementers nodes
max	Maximum length
prefix	Prefix for interaction id
out	Output file

tmp_visited_nodes.containsKey(n)

2.7.2.4 find_pathway_BF_algorithm_ppi()

Find a pathway between two lists of nodes in a PPI network

```
network
```

n1	List of Hit genes nodes
n2	List of Final implementers nodes
max	Maximum length
prefix	Prefix for interaction id
out	output file

2.7.2.5 find_pathway_for_list_BF_algorithm()

Wrapper (p. 38) for finding pathways

nw	Network (p. 14)
hugo	Link to HGNC nomenclature
max	Maximum length
outf	Output file
prefix	Prefix for interaction id

2.7.2.6 find_pathway_for_list_BF_algorithm_ppi()

Wrapper (p. 38) for finding pathways in a PPI network

nw	Network (p. 14)
hugo	Link to HGNC nomenclature

max	Maximum length
outf	Output file
prefix	Prefix for interaction id

2.7.2.7 load_hitlist_and_finalimpl()

Load hit genes and final implementers files

hgf	Hit genes file
fpf	Final players file
hugo	Link to the HGNC nomenclature

2.7.2.8 merge_list_of_networks()

```
Network masterPATH.NetworkManager.merge_list_of_networks ( \label{eq:list_of_network} \mbox{List} < \mbox{Network} > n \mbox{ )}
```

Merge list of networks

n List of networks	3
--------------------	---

The documentation for this class was generated from the following file:

· NetworkManager.java

2.8 masterPATH.NetworkTopology Class Reference

Public Member Functions

- void calculate_average_clustering_coefficient_ppi (Network all)
- void calculate_average_clustering_coefficient_direct (Network all)

- void calculate_number_of_connected_components_ppi (Network all)
- void calculate_number_of_connected_components_direct (Network all)
- · void calculate diameter ppi (Network all)
- void calculate_diameter_direct (Network all)
- void get_degree_distribution_ppi (Network all, String outfile) throws IOException
- void get_degree_distribution_direct (Network all, String outfile) throws IOException
- void get_subnetwork_statistics (Network all, String fname) throws FileNotFoundException, IOException

2.8.1 Detailed Description

NetworkTopology (p. 19) class contains methods to calculate network's topological properties

Author

Natalia Rubanova

2.8.2 Member Function Documentation

```
2.8.2.1 calculate_average_clustering_coefficient_direct()
```

```
void masterPATH.NetworkTopology.calculate_average_clustering_coefficient_direct ( {f Network} \ all )
```

Calculate average clustering coefficient for direct network

```
all Network (p. 14)
```

2.8.2.2 calculate_average_clustering_coefficient_ppi()

```
\label{lem:condition} \verb|void masterPATH.NetworkTopology.calculate_average_clustering_coefficient_ppi ( \\ \verb|Network| all |) |
```

Calculate average clustering coefficient for PPI network

```
all Network (p. 14)
```

```
2.8.2.3 calculate_diameter_direct()
```

```
void masterPATH.NetworkTopology.calculate_diameter_direct ( {\bf Network}~all~)
```

Calculate diameter of a direct network

```
all Network (p. 14)
```

2.8.2.4 calculate_diameter_ppi()

Calculate diameter

```
all Network (p. 14)
```

2.8.2.5 calculate_number_of_connected_components_direct()

```
void masterPATH.NetworkTopology.calculate_number_of_connected_components_direct ( {\bf Network} \ all \ )
```

Calculate number of connected components for direct network

```
all Network (p. 14)
```

2.8.2.6 calculate_number_of_connected_components_ppi()

Calculate number of connected components PPI network

```
all Network (p. 14)
```

2.8.2.7 get_degree_distribution_direct()

Build degree distribution for direct network

all	Network (p. 14)
outfile	Output file

2.8.2.8 get_degree_distribution_ppi()

Build degree distribution for PPI network

all	Network (p. 14)
outfile	Output file

2.8.2.9 get_subnetwork_statistics()

Calculate subnetwork properties

all	Network (p. 14)
fname	File with pathways to create subnetwork

The documentation for this class was generated from the following file:

NetworkTopology.java

2.9 masterPATH.Node Class Reference

Public Member Functions

- Node (String id, String type, String id_type, String db_flag, List< String[]> ids)
- String toString ()
- void print ()

2.9.1 Detailed Description

Node (p. 23) class describes a Node (p. 23) object

Author

Natalia Rubanova

2.9.2 Constructor & Destructor Documentation

2.9.2.1 Node()

Constructor

id	id of the Node (p. 23)
type	type of the Node (p. 23)
id_type	type of the id(nomenclature)
db_flag	flag of the source database
ids	ids from other nomenclatures

2.9.3 Member Function Documentation

2.9.3.1 print()

```
void masterPATH.Node.print ( )
```

Print node information in one line

The documentation for this class was generated from the following file:

· Node.java

2.10 masterPATH.PathwayManager Class Reference

Public Member Functions

- void find_the_shortest_paths (String foundf, String outname, Network all, Map< String, String > hg, Map< String, String > fpl, int d_ppi, int d_tf, int d_mirna, int d_kegg) throws FileNotFoundException, IO← Exception
- void **find_the_strongest_pathways** (String foundf, String outfile) throws IOException
- void find_miRNAs_on_pathways (String foundf, String resf, Network mirtarbase, Map< String, String > hg, Map< String, String > fpl, int length, int min, String mask) throws FileNotFoundException, IOException
- void find_miRNAs_on_paths (String foundf, String resf, Network mirtarbase, Network transmir, Map
 String, String > hg, Map
 String, String > fpl, int length, int min_occ, String mask) throws FileNotFound← Exception, IOException
- void create_cyto_for_paths (String foundf, Network all, Map< String, String > hg, Map< String, String > fpl) throws FileNotFoundException, IOException
- void create_cyto_for_pathways (String path_file, String filename, String out_dir, Network all, Map< String, String > hg, Map< String, String > fpl) throws FileNotFoundException, IOException
- · void filterPathways by length (String inf, String outf, int min, int max) throws IOException
- · void filterPathways by centrality score (String inf, String outf, int min, int max) throws IOException
- void filterPathways (String foundf, String outname, Network all, Map< String, String > hg, Map< String, String > fpl, String mask, String gene, String type) throws FileNotFoundException, IOException
- void filterPathways_2 (String foundf, String outname, Network all, Map < String, String > hg, Map < String, String > fpl, String gene, int I1, int I2, int I3, int I4) throws FileNotFoundException, IOException
- · void add connectivity to pathways (Network all, String infile, String outfile) throws IOException
- void **filter_pathways_by_connectivity** (String in, String out, String out_for_overrreps, int in_min, int in_max, int out_min, int out_max) throws FileNotFoundException, IOException
- void **compare_two_paths_files** (**Network** all, Map< String, String[]> hugo_by_id, String f1, String f2, String out) throws FileNotFoundException, IOException
- void **compare_two_nodes_files** (**Network** all, Map< String, String[]> hugo_by_id, String f1, String f2, String out) throws FileNotFoundException, IOException
- void **find_hitgenes_on_paths** (**Network** all, **NetworkManager** nutils, Map< String, String[]> hugo_by_id, String f1, String out) throws FileNotFoundException, IOException
- void add_aggregated_pvalues_to_pathways (Network all, String f_pathways, String gw_file, String conv_table, String out, Map< String, String[]> hugo_by_id, CentralityManager centralityManager) throws IOException

2.10.1 Detailed Description

PathwayManager (p. 24) class contains methods to deal with pathways

Author

Natalia Rubanova

2.10.2 Member Function Documentation

2.10.2.1 add_aggregated_pvalues_to_pathways()

all	the value of all
f_pathways	the value of f_pathways
gw_file	the value of gw_file
conv_table	the value of conv_table
out	the value of out
hugo_by_id	the value of hugo_by_id
centralityManager	the value of centralityManager

Exceptions

IOException

2.10.2.2 add_connectivity_to_pathways()

Calculate pathways connectivity

all	Network (p. 14)
infile	Input file
outfile	Output file

2.10.2.3 compare_two_nodes_files()

Compare two files with nodes

all	Network (p. 14)
hugo_by⇔	HGNC ids map
_id	
f1	File 1
f2	File 2
out	Output file

2.10.2.4 compare_two_paths_files()

Compare two files with paths

all	Network (p. 14)
hugo_by⇔	Map with HGNC ids
_id	
f1	File1
f2	File 2
out	OUtput file

2.10.2.5 create_cyto_for_paths()

```
void masterPATH.PathwayManager.create_cyto_for_paths ( String\ foundf, Network\ all, Map < String, String > hg, Map < String, String > fpl ) throws FileNotFoundException, IOException
```

Create a file for Cytoscape software from the shortest paths

foundf	File with paths
all	Network (p. 14)
hg	Hit genes list
fpl	Final players list

Exceptions

FileNotFoundException	
IOException	

2.10.2.6 create_cyto_for_pathways()

Creates a file for Cytoscape software for a list of pathways by pathways ids

path_file	File with pathways
filename	File with list of pathways by id
out_dir	Output folder
all	Network (p. 14)
hg	Hit genes list
fpl	Final players list

2.10.2.7 filter_pathways_by_connectivity()

Filter pathways by connectivity

in	Input file
out	Output file
out_for_overrreps	Output file only for pathway without additional information
in_min	Minimum inward connectivity
in_max	Maximum inward connectivity
out_min	Minimum outward connectivity
out_max	Maximum outward connectivity

Exceptions

FileNotFoundException	
IOException	

2.10.2.8 filterPathways()

Filter pathways by node names \ type

foundf	Input file
outname	Output file
all	Network (p. 14)
hg	Hit genes list
fpl	Final players list
mask	Mask
gene	Node (p. 23) name
type	Node (p. 23) type

2.10.2.9 filterPathways_2()

Filter paths on condition ppi [3,4] & miRNA [6/5] or ppi [3,4] or miRNA [6/5]

foundf	File with pathways
outname	Output file
all	Network (p. 14)
hg	Hit genes
fpl	Final implementers
gene	Gene name
<i>l</i> 1	min length for ppi path
12	max length for ppi path
13	min length for miRNA path
14	max length for miRNA path

2.10.2.10 filterPathways_by_centrality_score()

```
void masterPATH.PathwayManager.filterPathways_by_centrality_score (
    String inf,
    String outf,
    int min,
    int max ) throws IOException
```

Filter pathways by length

inf	Input file
outf	Output file
min	Minimum length
max	Maximum length

2.10.2.11 filterPathways_by_length()

Filter pathways by length

inf	Input file
outf	Output file
min	Minimum length
max	Maximum length

2.10.2.12 find_hitgenes_on_paths()

Compare a file with paths with a hit list

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
hugo_by↔ _id	HGNC ids map
f1	File with paths
out	OUtput file

2.10.2.13 find_miRNAs_on_paths()

```
void masterPATH.PathwayManager.find_miRNAs_on_paths ( String\ foundf, String\ resf,
```

```
Network mirtarbase,
Network transmir,
Map< String, String > hg,
Map< String, String > fp1,
int length,
int min_occ,
String mask ) throws FileNotFoundException, IOException
```

Find and rank miRNAs inside paths

foundf	Common paths file
resf	Output file
mirtarbase	Link to mirTarBAse network
transmir	Link to transMir network
hg	Hit genes list
fpl	Final players List
length	Maximum length
min_occ	Minimum occurrence
mask	Mask

2.10.2.14 find_miRNAs_on_pathways()

Find and rank miRNAs inside pathways

foundf	File with common paths
resf	Output file
mirtarbase	Link to mirTarBase network
hg	Hit genes list
fpl	Final implementer list
length	Maximum length
min	
mask	

2.10.2.15 find_the_shortest_paths()

```
void masterPATH.PathwayManager.find_the_shortest_paths (
    String foundf,
    String outname,
    Network all,
    Map< String, String > hg,
    Map< String, String > fpl,
    int d_ppi,
    int d_tf,
    int d_mirna,
    int d_kegg ) throws FileNotFoundException, IOException
```

Find the shortest pathways

foundf	Input file
outname	Output file
all	Network (p. 14)
hg	Hit genes list
fpl	Final players list
d_ppi	Length gap for protein-protein interactions
d_tf	Length gap for transcriptional interactions
d_mirna	Length gap for miRNA-mRNA interactions
d_kegg	Length gap for metabolic interactions

2.10.2.16 find_the_strongest_pathways()

Find the strongest pathways

foundf	Input file	
outname	Output file	

The documentation for this class was generated from the following file:

• PathwayManager.java

2.11 masterPATH.RandomManager Class Reference

Public Member Functions

- void permute_phenotype_label (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, String folder, String prefix, int count, List< String > hit
 — list, Map< String, String[]> hugo_by_id, String fplayers) throws IOException
- void calculate_p_values_phenotype_label_permutation (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, String random_paths_file, String ovrreps_paths_file, String hitlists_file, int hitlist_length, int position_of_overreps_count, Map< String, String[]> hugo by id) throws IOException
- void calculate_p_values_paths_random_networks (Network all, NetworkManager nutils, Pathway
 Manager putils, CentralityManager outils, DBManager dbutils, String random_paths_file, String ovrreps
 _paths_file, String hitlists_file, int hitlist_length, int position_of_overreps_count, Map< String, String[]> hugo_by_id) throws IOException
- void calculate_p_values_phenotype_label_permutation_ppi (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, String random_paths_file, String ovrreps_paths_file, String hitlists_file, int hitlist_length, int position_of_overreps_count, Map< String, String[]> hugo by id) throws IOException
- Network create_random_network (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils)
- void calculate_p_values_nodes_random_networks (Network all, NetworkManager nutils, Pathway
 — Manager putils, CentralityManager outils, DBManager dbutils, String file_name_random, int count, String hubs_file, String overreps_file) throws IOException
- void calculate_p_values_nodes_random_networks_ppi (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, String file_name_random, int count, String hubs_file, String overreps_file) throws IOException

2.11.1 Detailed Description

RandomManager (p. 32) contains methods to calculate p-values

Author

Natalia Rubanova

2.11.2 Member Function Documentation

2.11.2.1 calculate_p_values_nodes_random_networks()

Calculate p-values for nodes on random network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object
file_name_random	Name for file to store information about pathways built on the random network
count	Number of shuffling steps
hubs_file	File with nodes and centrality scores
overreps_file	File with paths and centrality scores

2.11.2.2 calculate_p_values_nodes_random_networks_ppi()

Calculate p-values on for nodes random ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object
file_name_random	File name to store information about pathways built on the random network
count	Number of shuffling steps
hubs_file	File with nodes and centrality scores
overreps_file	File with paths and centrality scores

2.11.2.3 calculate_p_values_paths_random_networks()

```
PathwayManager putils,
  CentralityManager outils,
  DBManager dbutils,
String random_paths_file,
String ovrreps_paths_file,
String hitlists_file,
int hitlist_length,
int position_of_overreps_count,
Map< String, String[]> hugo_by_id) throws IOException
```

all	
nutils	
putils	
outils	
dbutils	
random_paths_file	
ovrreps_paths_file	
hitlists_file	
hitlist_length	
position_of_overreps_count	
hugo_by_id	

Exceptions

IOException

2.11.2.4 calculate_p_values_phenotype_label_permutation()

Calculate p-values for paths for shuffled phenotype label

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object

outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object
random_paths_file	File name for pathways from shuffled hit genes
ovrreps_paths_file	File with paths
hitlists_file	File with hit genes
hitlist_length	Length of hit list
position_of_overreps_count	Position of the centrality count in the paths file
hugo_by_id	HGNC ids map

2.11.2.5 calculate_p_values_phenotype_label_permutation_nodes()

Calculate p-values for nodes for shuffled phenotype label

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object
random_paths_file	File name for pathways from shuffled hit genes
ovrreps_paths_file	File with nodes
hitlists_file	File with hit genes
hitlist_length	Length of hit list
hugo_by_id	HGNC ids map

2.11.2.6 calculate_p_values_phenotype_label_permutation_ppi()

```
\label{lem:calculate_pvalues_phenotype_label_permutation_ppi ( \\ \textbf{Network} \ all, \\
```

```
NetworkManager nutils,
PathwayManager putils,
CentralityManager outils,
DBManager dbutils,
String random_paths_file,
String ovrreps_paths_file,
String hitlists_file,
int hitlist_length,
int position_of_overreps_count,
Map< String, String[]> hugo_by_id ) throws IOException
```

Calculate p-values for paths for shuffled phenotype label for ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object
random_paths_file	File name for pathways from shuffled hit genes
ovrreps_paths_file	File with paths
hitlists_file	File with hit genes
hitlist_length	Length of hit list
position_of_overreps_count	Position of the centrality count in the paths file
hugo_by_id	HGNC ids map

2.11.2.7 create_random_network()

Create random network with the same degree distribution

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.11.2.8 permute_phenotype_label()

```
void masterPATH.RandomManager.permute_phenotype_label (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    String folder,
    String prefix,
    int count,
    List< String > hit_list,
    Map< String, String[]> hugo_by_id,
    String fplayers ) throws IOException
```

Permute phenotype label

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object
folder	Folder to store information about pathways
prefix	Prefix for pathways ids
count	Number of shuffling steps
hit_list	Hit List
hugo_by←	HGNC ids map
_id	
fplayers	Final implementers

The documentation for this class was generated from the following file:

· RandomManager.java

2.12 masterPATH.Wrapper Class Reference

Public Member Functions

- Network ogg1_add_connections (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, Map< String, String[]> hugo) throws IOException
- void ogg1_part1_ppi (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void ogg1_part2_ppi (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void ogg1_random_ppi (Network all, NetworkManager nutils, PathwayManager putils, Centrality
 — Manager outils, DBManager dbutils, RandomManager rand) throws IOException
- void ogg1_part4_ppi (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException

- void ogg1_random2_ppi (Network all, NetworkManager nutils, PathwayManager putils, Centrality
 — Manager outils, DBManager dbutils, RandomManager rand) throws IOException
- void ogg1_part1 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void ogg1_part2 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void ogg1_part3 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void ogg1_part4 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void ogg1_random (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, RandomManager rand) throws IOException
- void arp_part1_ppi (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void arp_part2_ppi (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void arp_random_ppi (Network all, NetworkManager nutils, PathwayManager putils, Centrality
 — Manager outils, DBManager dbutils, RandomManager rand) throws IOException
- Network arp_add_connections (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, Map< String, String[]> hugo, String hitlist) throws IO← Exception
- void arp_part1_LIMCH1 (Network all, NetworkManager nutils, PathwayManager putils, Centrality
 — Manager outils, DBManager dbutils) throws IOException
- void arp_part1 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void arp_part2 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void arp_random (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, RandomManager rand) throws IOException
- void arp_part3 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void arp_filter (Network all) throws FileNotFoundException, IOException
- void adenocarcinoma_part1 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void adenocarcinoma_part2 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void adenocarcinoma_random (Network all, NetworkManager nutils, PathwayManager putils,
 CentralityManager outils, DBManager dbutils, RandomManager rand) throws IOException
- void adenocarcinoma_part1_ppi (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void adenocarcinoma_part2_ppi (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void adenocarcinoma_random_ppi (Network all, NetworkManager nutils, PathwayManager putils,
 CentralityManager outils, DBManager dbutils, RandomManager rand) throws IOException
- void mirna63Sys_part1 (Network all, NetworkManager nutils, PathwayManager putils, Centrality
 — Manager outils, DBManager dbutils) throws IOException
- void mirna63Sys_part2 (Network all, NetworkManager nutils, PathwayManager putils, Centrality
 — Manager outils, DBManager dbutils) throws IOException
- void mirna63Sys_random (Network all, NetworkManager nutils, PathwayManager putils, Centrality
 — Manager outils, DBManager dbutils, RandomManager rand) throws IOException
- void mirna63Sys_part3 (Network all, NetworkManager nutils, PathwayManager putils, Centrality
 — Manager outils, DBManager dbutils) throws IOException
- void case2_part1 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void case2_part2 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException

void case2_part3 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException

- void case2_part4 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- void case2_random (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, RandomManager rand) throws IOException
- void case2_random2 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils, RandomManager rand) throws IOException

Static Public Member Functions

- static void mirna63Sys_part3_3 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- static void mirna63Sys_part4 (Network all, NetworkManager nutils, PathwayManager putils, CentralityManager outils, DBManager dbutils) throws IOException
- static void case2_part2_2 (Network all, NetworkManager nutils, PathwayManager putils, Centrality
 — Manager outils, DBManager dbutils) throws IOException

2.12.1 Detailed Description

Wrapper (p. 38) class contains wrappers implementing the whole pipeline

Author

Natalia Rubanova

2.12.2 Member Function Documentation

2.12.2.1 adenocarcinoma_part1()

Part 1 of pipeline for adenocarcinoma screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.2 adenocarcinoma_part1_ppi()

Part 1 of pipeline for adenocarcinoma screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.3 adenocarcinoma_part2()

Part 2 of pipeline for adenocarcinoma screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.4 adenocarcinoma_part2_ppi()

```
NetworkManager nutils,
PathwayManager putils,
CentralityManager outils,
DBManager dbutils ) throws IOException
```

Part 2 of pipeline for adenocarcinoma screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.5 adenocarcinoma_random()

```
void masterPATH.Wrapper.adenocarcinoma_random (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    RandomManager rand ) throws IOException
```

Part 'p-values' of pipeline for adenocarcinoma screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.6 adenocarcinoma_random_ppi()

Part 'p-values' of pipeline for adenocarcinoma screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.7 arp_add_connections()

Add low confident interactions for LIMCH1 protein

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.8 arp_filter()

Filter pathways for arp2/3 screen in mixed network

all	Network (p. 14)	
-----	-----------------	--

2.12.2.9 arp_part1()

```
void masterPATH.Wrapper.arp_part1 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 1 of pipeline for arp2/3 screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.10 arp_part1_LIMCH1()

Part 1 of pipeline for arp2/3 screen in mixed network Hit list only LMCH1 gene

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.11 arp_part1_ppi()

2.12 masterPATH.Wrapper Class Reference 45 Part 1 of pipeline for arp2/3 screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.12 arp_part2()

```
void masterPATH.Wrapper.arp_part2 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 2 of pipeline for arp2/3 screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.13 arp_part2_ppi()

Part 2 of pipeline for arp2/3 screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.14 arp_part3()

```
void masterPATH.Wrapper.arp_part3 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 3 of pipeline for arp2/3 screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.15 arp_random()

```
void masterPATH.Wrapper.arp_random (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    RandomManager rand ) throws IOException
```

Part 'p-values' of pipeline for arp2/3 screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.16 arp_random_ppi()

```
NetworkManager nutils,
PathwayManager putils,
CentralityManager outils,
DBManager dbutils,
RandomManager rand ) throws IOException
```

Part 'p-values' of pipeline for arp2/3 screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.17 case2_part1()

```
void masterPATH.Wrapper.case2_part1 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 1 of pipeline for transcriptome profiling muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.18 case2_part2()

Part 2 of pipeline for transcriptome profiling muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.19 case2_part2_2()

Part 2 + filter of pipeline for transcriptome profiling muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.20 case2_part3()

Part 3 of pipeline for transcriptome profiling muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.21 case2_part4()

Part 4 of pipeline for transcriptome profiling muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.22 case2_random()

Part 'p-values' of pipeline for transcriptome profiling muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.23 case2_random2()

```
NetworkManager nutils,
PathwayManager putils,
CentralityManager outils,
DBManager dbutils,
RandomManager rand ) throws IOException
```

Part 'p-values on random networks' of pipeline for transcriptome profiling muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.24 mirna63Sys_part1()

Part 1 of pipeline for miRNA muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.25 mirna63Sys_part2()

Part 2 of pipeline for miRNA muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.26 mirna63Sys_part3()

Part 3 of pipeline for miRNA muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.27 mirna63Sys_part3_3()

Part 3 + filter of pipeline for miRNA muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.28 mirna63Sys_part4()

Part 4 of pipeline for miRNA muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.29 mirna63Sys_random()

```
void masterPATH.Wrapper.mirna63Sys_random (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    RandomManager rand ) throws IOException
```

Part 'p-values' of pipeline for miRNA muscle differentiation screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

```
2.12.2.30 ogg1_add_connections()
```

```
NetworkManager nutils,
PathwayManager putils,
CentralityManager outils,
DBManager dbutils,
Map< String, String[]> hugo ) throws IOException
```

Add low confident connections for OGG1 protein

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object
hugo	HGNC ids map

2.12.2.31 ogg1_part1()

```
void masterPATH.Wrapper.oggl_part1 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 1 of pipeline for DNA repair screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.32 ogg1_part1_ppi()

Part 1 of pipeline for DNA repair screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.33 ogg1_part2()

Part 2 of pipeline for DNA repair screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.34 ogg1_part2_ppi()

Part 2 of pipeline for DNA repair screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.35 ogg1_part3()

Part 3 of pipeline for DNA repair screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.36 ogg1_part4()

```
void masterPATH.Wrapper.oggl_part4 (
          Network all,
          NetworkManager nutils,
          PathwayManager putils,
          CentralityManager outils,
          DBManager dbutils ) throws IOException
```

Part 4 of pipeline for DNA repair screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.37 ogg1_part4_ppi()

```
NetworkManager nutils,
PathwayManager putils,
CentralityManager outils,
DBManager dbutils ) throws IOException
```

Part 4 of pipeline for DNA repair screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.38 ogg1_random()

Part 'p-values' of pipeline for DNA repair screen in mixed network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.39 ogg1_random2_ppi()

Part 'random network' of pipeline for DNA repair screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

2.12.2.40 ogg1_random_ppi()

```
void masterPATH.Wrapper.oggl_random_ppi (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    RandomManager rand ) throws IOException
```

Part 'pvalues' of pipeline for DNA repair screen in ppi network

all	Network (p. 14)
nutils	NetworkManager (p. 16) object
putils	PathwayManager (p. 24) object
outils	CentralityManager (p. 3) object
dbutils	DBManager (p. 9) object

The documentation for this class was generated from the following file:

• Wrapper.java

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