

masterPATH

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Chapter 1

Class Index

1.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

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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
- void **calculate_paths_degree** (String unique_over, String path_con, String out) throws FileNotFoundException, IOException
- Map< String, List< String > > **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
- HashMap< String, Float[]> **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, List< String > > **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

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

2.1.2.2 add_experimnetal_scores_and_aggregated_pvalues_to_paths()

```
void masterPATH.CentralityManager.add_experimnetal_scores_and_aggregated_pvalues_to_paths (
    String unique_over,
    String gw_file,
    String conv_table,
    String out ) throws FileNotFoundException, IOException
```

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

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

2.1.2.3 add_hgnc_symbols_to_paths()

```
void masterPATH.CentralityManager.add_hgnc_symbols_to_paths (
    String inf,
    String outf,
    Network all,
    Map< String, String[]> hugo_by_id ) throws IOException
```

Add approved gene symbols to file with paths and centrality scores

<i>inf</i>	Input file with paths
<i>outf</i>	Output file
<i>all</i>	Network (p. 14) all
<i>hugo_by_id</i>	Map of approved gene symbols and gene IDs from DBManager (p. 9) class

2.1.2.4 calculate_centrality_scores_for_nodes()

```
void masterPATH.CentralityManager.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
```

Find nodes and calculate centrality scores

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

2.1.2.5 calculate_centrality_scores_for_paths()

```
void masterPATH.CentralityManager.calculate_centrality_scores_for_paths (
    Network all,
    String inf,
```

```
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

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

2.1.2.6 calculate_centrality_scores_for_paths_ppi()

```
void masterPATH.CentralityManager.calculate_centrality_scores_for_paths_ppi (
    Network all,
    String inf,
    String outf,
    int min_length,
    int max_length ) throws FileNotFoundException, IOException
```

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

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

2.1.2.7 calculate_paths_degree()

```
void masterPATH.CentralityManager.calculate_paths_degree (
    String unique_over,
    String path_con,
    String out ) throws FileNotFoundException, IOException
```

Add information about degree to file with paths and centrality scores

<i>unique_over</i>	File with paths
<i>path_con</i>	File with pathway connectivity
<i>out</i>	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

<i>f1</i>	File 1
<i>f2</i>	File 2

2.1.2.9 filter_paths()

```
void masterPATH.CentralityManager.filter_paths (
    String foundf,
    String outname,
    Network all,
    Map< String, String > hg,
    Map< String, String > fpl,
    int min_occ,
    String mask ) throws FileNotFoundException, IOException
```

Filter paths

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

2.1.2.10 find_unique_paths_for_list_of_pathways()

```
Map<String, IIS1> 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

<i>max_length</i>	Minimum length
<i>min_length</i>	Maximum length
<i>all_paths</i>	List of pathways to create subnetwork

2.1.2.11 find_unique_paths_for_list_of_pathways_ppi()

```
Map<String, IIS1> 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

<i>max_length</i>	Maximum length
<i>min_length</i>	Minimum length
<i>all_paths</i>	Pathways to create subnetwork

2.1.2.12 load_screening_data()

```
HashMap<String, Float[]> masterPATH.CentralityManager.load_screening_data (
    String p_file,
    String n_file ) throws IOException
```

Load experimental data

<i>p_file</i>	Experimental data
<i>n_file</i>	File for symbol conversion

2.1.2.13 return_permutation_distribution()

```
HashMap<String, List<Float> > masterPATH.CentralityManager.return_permutation_distribution (
    String p_file,
    String n_file,
    int number_of_permutations ) throws FileNotFoundException, IOException
```

Calculate empirical distribution for Fisher's statistic

<i>p_file</i>	Experimental data
<i>n_file</i>	File for symbol conversion
<i>number_of_permutations</i>	Number of permutations

2.1.2.14 return_symmetric_path()

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

Return symmetric pathway

<i>part</i>	Pathway
-------------	---------

2.1.2.15 returnPathType()

```
String masterPATH.CentralityManager.returnPathType (
    Network all,
    String s )
```

Check type of the pathway

<i>all</i>	Network (p. 14)
<i>s</i>	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 **loadHPRD** () 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()

```
void masterPATH.DBManager.loadHIPPIE (
    boolean high ) throws FileNotFoundException, IOException
```

Load HIPPIE database

<i>high</i>	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()

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

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()

```
masterPATH.Interaction.Interaction (
    String id,
    List< String > other_ids,
    Node int1,
    Node int2,
    String type,
    String sourcedb,
    List< String > sourcedbentry,
    String quality,
    String dir )
```

Constructor

<i>id</i>	id of the interaction
<i>other_ids</i>	ids from the source databases
<i>int1</i>	first interactor
<i>int2</i>	second interactor
<i>type</i>	type of the interaction
<i>sourcedb</i>	source database
<i>sourcedbentry</i>	entry in the source database
<i>quality</i>	confidence parameter of the interaction
<i>dir</i>	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

<i>args</i>	
-------------	--

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()

```
void masterPATH.Network.loadNetwork2 (
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Load network from databases

<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object
<i>outils</i>	CentralityManager (p. 3) object
<i>dbutils</i>	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 *

<i>nodef</i>	file with information about nodes
<i>intf</i>	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

<i>nodef</i>	node file
<i>intf</i>	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)
- void **load_hitlist_and_finalimpl** (String hgf, String fpf, Map< String, String[]> hugo) throws FileNotFoundException, IOException
- 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 (
    Network nw )
```

Add transcription information

<i>nw</i>	Network (p. 14)
-----------	------------------------

2.7.2.2 build_map_of_neighbors()

```
void masterPATH.NetworkManager.build_map_of_neighbors (
    Network nw )
```

Create links to all neighbors for every node in the network

<i>nw</i>	Network (p. 14)
-----------	------------------------

2.7.2.3 find_pathway_BF_algorithm()

```
List<PathUnit> masterPATH.NetworkManager.find_pathway_BF_algorithm (
    Network network,
    List< String > n1,
    List< String > n2,
    int max,
    String prefix,
    FileWriter out ) throws IOException
```

Find length-bound pathways between two lists of nodes

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

```
tmp_visited_nodes.containsKey(n)
```

2.7.2.4 find_pathway_BF_algorithm_ppi()

```
List<PathUnit> masterPATH.NetworkManager.find_pathway_BF_algorithm_ppi (
    Network network,
    List< String > n1,
    List< String > n2,
    int max,
    String prefix,
    BufferedWriter out ) throws IOException
```

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

<i>network</i>	
----------------	--

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

```
Arrays.equals(visited_nodes.get(n), visited_nodes.get(curn.current_seed)) || || path_type >= 1
```

```
Arrays.equals(visited_nodes.get(n), visited_nodes.get(curn.current_seed)) || || path_type >= 1
```

```
tmp_visited_nodes.containsKey(n)
```

2.7.2.5 find_pathway_for_list_BF_algorithm()

```
void masterPATH.NetworkManager.find_pathway_for_list_BF_algorithm (
    Network nw,
    Map< String, String[]> hugo,
    int max,
    String outf,
    String prefix ) throws IOException
```

Wrapper (p. 38) for finding pathways

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

2.7.2.6 find_pathway_for_list_BF_algorithm_ppi()

```
void masterPATH.NetworkManager.find_pathway_for_list_BF_algorithm_ppi (
    Network nw,
    Map< String, String[]> hugo,
    int max,
    String outf,
    String prefix ) throws IOException
```

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

<i>nw</i>	Network (p. 14)
<i>hugo</i>	Link to HGNC nomenclature

<i>max</i>	Maximum length
<i>outf</i>	Output file
<i>prefix</i>	Prefix for interaction id

2.7.2.7 load_hitlist_and_finalimpl()

```
void masterPATH.NetworkManager.load_hitlist_and_finalimpl (
    String hgf,
    String fpf,
    Map< String, String[]> hugo ) throws FileNotFoundException, IOException
```

Load hit genes and final implementers files

<i>hgf</i>	Hit genes file
<i>fpf</i>	Final players file
<i>hugo</i>	Link to the HGNC nomenclature

2.7.2.8 merge_list_of_networks()

```
Network masterPATH.NetworkManager.merge_list_of_networks (
    List< Network > n )
```

Merge list of networks

<i>n</i>	List of networks
----------	------------------

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 (
    Network all )
```

Calculate average clustering coefficient for direct network

<i>all</i>	Network (p. 14)
------------	------------------------

2.8.2.2 calculate_average_clustering_coefficient_ppi()

```
void masterPATH.NetworkTopology.calculate_average_clustering_coefficient_ppi (
    Network all )
```

Calculate average clustering coefficient for PPI network

<i>all</i>	Network (p. 14)
------------	------------------------

2.8.2.3 calculate_diameter_direct()

```
void masterPATH.NetworkTopology.calculate_diameter_direct (
    Network all )
```

Calculate diameter of a direct network

<i>all</i>	Network (p. 14)
------------	------------------------

2.8.2.4 calculate_diameter_ppi()

```
void masterPATH.NetworkTopology.calculate_diameter_ppi (
    Network all )
```

Calculate diameter

<i>all</i>	Network (p. 14)
------------	------------------------

2.8.2.5 calculate_number_of_connected_components_direct()

```
void masterPATH.NetworkTopology.calculate_number_of_connected_components_direct (
    Network all )
```

Calculate number of connected components for direct network

<i>all</i>	Network (p. 14)
------------	------------------------

2.8.2.6 calculate_number_of_connected_components_ppi()

```
void masterPATH.NetworkTopology.calculate_number_of_connected_components_ppi (
    Network all )
```

Calculate number of connected components PPI network

<i>all</i>	Network (p. 14)
------------	------------------------

2.8.2.7 `get_degree_distribution_direct()`

```
void masterPATH.NetworkTopology.get_degree_distribution_direct (
    Network all,
    String outfile ) throws IOException
```

Build degree distribution for direct network

<i>all</i>	Network (p. 14)
<i>outfile</i>	Output file

2.8.2.8 `get_degree_distribution_ppi()`

```
void masterPATH.NetworkTopology.get_degree_distribution_ppi (
    Network all,
    String outfile ) throws IOException
```

Build degree distribution for PPI network

<i>all</i>	Network (p. 14)
<i>outfile</i>	Output file

2.8.2.9 `get_subnetwork_statistics()`

```
void masterPATH.NetworkTopology.get_subnetwork_statistics (
    Network all,
    String fname ) throws FileNotFoundException, IOException
```

Calculate subnetwork properties

<i>all</i>	Network (p. 14)
<i>fname</i>	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()

```
masterPATH.Node.Node (
    String id,
    String type,
    String id_type,
    String db_flag,
    List< String[]> ids )
```

Constructor

<i>id</i>	id of the Node (p. 23)
<i>type</i>	type of the Node (p. 23)
<i>id_type</i>	type of the id(nomenclature)
<i>db_flag</i>	flag of the source database
<i>ids</i>	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, IOException
- 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 FileNotFoundException, 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 l1, int l2, int l3, int l4) 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()

```
void masterPATH.PathwayManager.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
```

<i>all</i>	the value of all
<i>f_pathways</i>	the value of f_pathways
<i>gw_file</i>	the value of gw_file
<i>conv_table</i>	the value of conv_table
<i>out</i>	the value of out
<i>hugo_by_id</i>	the value of hugo_by_id
<i>centralityManager</i>	the value of centralityManager

Exceptions

<i>IOException</i>	
--------------------	--

2.10.2.2 add_connectivity_to_pathways()

```
void masterPATH.PathwayManager.add_connectivity_to_pathways (
    Network all,
    String infile,
    String outfile ) throws IOException
```

Calculate pathways connectivity

<i>all</i>	Network (p. 14)
<i>infile</i>	Input file
<i>outfile</i>	Output file

2.10.2.3 compare_two_nodes_files()

```
void masterPATH.PathwayManager.compare_two_nodes_files (
    Network all,
    Map< String, String[]> hugo_by_id,
    String f1,
    String f2,
    String out ) throws FileNotFoundException, IOException
```

Compare two files with nodes

<i>all</i>	Network (p. 14)
<i>hugo_by_id</i>	HGNC ids map
<i>f1</i>	File 1
<i>f2</i>	File 2
<i>out</i>	Output file

2.10.2.4 compare_two_paths_files()

```
void masterPATH.PathwayManager.compare_two_paths_files (
    Network all,
    Map< String, String[]> hugo_by_id,
    String f1,
    String f2,
    String out ) throws FileNotFoundException, IOException
```

Compare two files with paths

<i>all</i>	Network (p. 14)
<i>hugo_by_id</i>	Map with HGNC ids
<i>f1</i>	File1
<i>f2</i>	File 2
<i>out</i>	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

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

Exceptions

<i>FileNotFoundException</i>	
<i>IOException</i>	

2.10.2.6 create_cyto_for_pathways()

```
void masterPATH.PathwayManager.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
```

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

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

2.10.2.7 filter_pathways_by_connectivity()

```
void masterPATH.PathwayManager.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
```

Filter pathways by connectivity

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

Exceptions

<i>FileNotFoundException</i>	
<i>IOException</i>	

2.10.2.8 filterPathways()

```
void masterPATH.PathwayManager.filterPathways (
    String foundf,
    String outname,
    Network all,
    Map< String, String > hg,
    Map< String, String > fpl,
    String mask,
    String gene,
    String type ) throws FileNotFoundException, IOException
```

Filter pathways by node names \ type

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

2.10.2.9 filterPathways_2()

```
void masterPATH.PathwayManager.filterPathways_2 (
    String foundf,
    String outname,
    Network all,
    Map< String, String > hg,
    Map< String, String > fpl,
    String gene,
    int l1,
    int l2,
    int l3,
    int l4 ) throws FileNotFoundException, IOException
```

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

<i>foundf</i>	File with pathways
<i>outname</i>	Output file
<i>all</i>	Network (p. 14)
<i>hg</i>	Hit genes
<i>fpl</i>	Final implementers
<i>gene</i>	Gene name
<i>l1</i>	min length for ppi path
<i>l2</i>	max length for ppi path
<i>l3</i>	min length for miRNA path
<i>l4</i>	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

<i>inf</i>	Input file
<i>outf</i>	Output file
<i>min</i>	Minimum length
<i>max</i>	Maximum length

2.10.2.11 filterPathways_by_length()

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

Filter pathways by length

<i>inf</i>	Input file
<i>outf</i>	Output file
<i>min</i>	Minimum length
<i>max</i>	Maximum length

2.10.2.12 find_hitgenes_on_paths()

```
void masterPATH.PathwayManager.find_hitgenes_on_paths (
    Network all,
    NetworkManager nutils,
    Map< String, String[]> hugo_by_id,
    String f1,
    String out ) throws FileNotFoundException, IOException
```

Compare a file with paths with a hit list

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>hugo_by_id</i>	HGNC ids map
<i>f1</i>	File with paths
<i>out</i>	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 > fpl,
    int length,
    int min_occ,
    String mask ) throws FileNotFoundException, IOException

```

Find and rank miRNAs inside paths

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

2.10.2.14 find_miRNAs_on_pathways()

```

void masterPATH.PathwayManager.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

```

Find and rank miRNAs inside pathways

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

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

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

2.10.2.16 find_the_strongest_pathways()

```
void masterPATH.PathwayManager.find_the_strongest_pathways (
    String foundf,
    String outfile ) throws IOException
```

Find the strongest pathways

<i>foundf</i>	Input file
<i>outname</i>	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 overreps_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_nodes** (**Network** all, **NetworkManager** nutils, **PathwayManager** putils, **CentralityManager** outils, **DBManager** dbutils, String random_paths_file, String overreps_paths_file, String hitlists_file, int hitlist_length, Map< String, String[]> hugo_by_id) throws IO←Exception
- void **calculate_p_values_paths_random_networks** (**Network** all, **NetworkManager** nutils, **Pathway**←**Manager** putils, **CentralityManager** outils, **DBManager** dbutils, String random_paths_file, String overreps←_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 overreps_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()

```
void masterPATH.RandomManager.calculate_p_values_nodes_random_networks (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    String file_name_random,
    int count,
    String hubs_file,
    String overreps_file ) throws IOException
```

Calculate p-values for nodes on random network

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

2.11.2.2 calculate_p_values_nodes_random_networks_ppi()

```
void masterPATH.RandomManager.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
```

Calculate p-values on for nodes random ppi network

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

2.11.2.3 calculate_p_values_paths_random_networks()

```
void masterPATH.RandomManager.calculate_p_values_paths_random_networks (
    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

```

<i>all</i>	
<i>nutils</i>	
<i>putils</i>	
<i>outils</i>	
<i>dbutils</i>	
<i>random_paths_file</i>	
<i>ovrreps_paths_file</i>	
<i>hitlists_file</i>	
<i>hitlist_length</i>	
<i>position_of_overreps_count</i>	
<i>hugo_by_id</i>	

Exceptions

<i>IOException</i>	
--------------------	--

2.11.2.4 calculate_p_values_phenotype_label_permutation()

```

void masterPATH.RandomManager.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

```

Calculate p-values for paths for shuffled phenotype label

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object

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

2.11.2.5 calculate_p_values_phenotype_label_permutation_nodes()

```
void masterPATH.RandomManager.calculate_p_values_phenotype_label_permutation_nodes (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    String random_paths_file,
    String ovrreps_paths_file,
    String hitlists_file,
    int hitlist_length,
    Map< String, String[]> hugo_by_id ) throws IOException
```

Calculate p-values for nodes for shuffled phenotype label

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

2.11.2.6 calculate_p_values_phenotype_label_permutation_ppi()

```
void masterPATH.RandomManager.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

```

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

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

2.11.2.7 create_random_network()

```

Network masterPATH.RandomManager.create_random_network (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils )

```

Create random network with the same degree distribution

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object
<i>outils</i>	CentralityManager (p. 3) object
<i>dbutils</i>	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

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object
<i>outils</i>	CentralityManager (p. 3) object
<i>dbutils</i>	DBManager (p. 9) object
<i>folder</i>	Folder to store information about pathways
<i>prefix</i>	Prefix for pathways ids
<i>count</i>	Number of shuffling steps
<i>hit_list</i>	Hit List
<i>hugo_by↔ _id</i>	HGNC ids map
<i>fplayers</i>	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, **CentralityManager** 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, **CentralityManager** 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 IOException
- void **arp_part1_LIMCH1** (**Network** all, **NetworkManager** nutils, **PathwayManager** putils, **CentralityManager** 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, **CentralityManager** outils, **DBManager** dbutils) throws IOException
- void **mirna63Sys_part2** (**Network** all, **NetworkManager** nutils, **PathwayManager** putils, **CentralityManager** outils, **DBManager** dbutils) throws IOException
- void **mirna63Sys_random** (**Network** all, **NetworkManager** nutils, **PathwayManager** putils, **CentralityManager** outils, **DBManager** dbutils, **RandomManager** rand) throws IOException
- void **mirna63Sys_part3** (**Network** all, **NetworkManager** nutils, **PathwayManager** putils, **CentralityManager** 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, **CentralityManager** outils, **DBManager** dbutils) throws IOException

2.12.1 Detailed Description

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

Author

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2.12.2 Member Function Documentation

2.12.2.1 adenocarcinoma_part1()

```
void masterPATH.Wrapper.adenocarcinoma_part1 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 1 of pipeline for adenocarcinoma screen in mixed network

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

2.12.2.2 adenocarcinoma_part1_ppi()

```
void masterPATH.Wrapper.adenocarcinoma_part1_ppi (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 1 of pipeline for adenocarcinoma screen in ppi network

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

2.12.2.3 adenocarcinoma_part2()

```
void masterPATH.Wrapper.adenocarcinoma_part2 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 2 of pipeline for adenocarcinoma screen in mixed network

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

2.12.2.4 adenocarcinoma_part2_ppi()

```
void masterPATH.Wrapper.adenocarcinoma_part2_ppi (
    Network all,
```

```

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

```

Part 2 of pipeline for adenocarcinoma screen in ppi network

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object
<i>outils</i>	CentralityManager (p. 3) object
<i>dbutils</i>	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

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

2.12.2.6 adenocarcinoma_random_ppi()

```

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

```

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

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

2.12.2.7 arp_add_connections()

```
Network masterPATH.Wrapper.arp_add_connections (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    Map< String, String[]> hugo,
    String hitlist ) throws IOException
```

Add low confident interactions for LIMCH1 protein

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

2.12.2.8 arp_filter()

```
void masterPATH.Wrapper.arp_filter (
    Network all ) throws FileNotFoundException, IOException
```

Filter pathways for arp2/3 screen in mixed network

<i>all</i>	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

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

2.12.2.10 arp_part1_LIMCH1()

```
void masterPATH.Wrapper.arp_part1_LIMCH1 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

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

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

2.12.2.11 arp_part1_ppi()

```
void masterPATH.Wrapper.arp_part1_ppi (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

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

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object
<i>outils</i>	CentralityManager (p. 3) object
<i>dbutils</i>	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

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

2.12.2.13 arp_part2_ppi()

```
void masterPATH.Wrapper.arp_part2_ppi (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

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

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object
<i>outils</i>	CentralityManager (p. 3) object
<i>dbutils</i>	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

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object
<i>outils</i>	CentralityManager (p. 3) object
<i>dbutils</i>	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

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

2.12.2.16 arp_random_ppi()

```
void masterPATH.Wrapper.arp_random_ppi (
    Network all,
```

```

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

```

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

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object
<i>outils</i>	CentralityManager (p. 3) object
<i>dbutils</i>	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

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

2.12.2.18 case2_part2()

```

void masterPATH.Wrapper.case2_part2 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException

```

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

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

2.12.2.19 case2_part2_2()

```
static void masterPATH.Wrapper.case2_part2_2 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException [static]
```

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

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

2.12.2.20 case2_part3()

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

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

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

2.12.2.21 case2_part4()

```
void masterPATH.Wrapper.case2_part4 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

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

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

2.12.2.22 case2_random()

```
void masterPATH.Wrapper.case2_random (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    RandomManager rand ) throws IOException
```

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

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

2.12.2.23 case2_random2()

```
void masterPATH.Wrapper.case2_random2 (
    Network all,
```

```

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

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

2.12.2.24 mirna63Sys_part1()

```

void masterPATH.Wrapper.mirna63Sys_part1 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException

```

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

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

2.12.2.25 mirna63Sys_part2()

```

void masterPATH.Wrapper.mirna63Sys_part2 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException

```

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

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

2.12.2.26 mirna63Sys_part3()

```
void masterPATH.Wrapper.mirna63Sys_part3 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

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

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

2.12.2.27 mirna63Sys_part3_3()

```
static void masterPATH.Wrapper.mirna63Sys_part3_3 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException [static]
```

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

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

2.12.2.28 mirna63Sys_part4()

```
static void masterPATH.Wrapper.mirna63Sys_part4 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException [static]
```

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

<i>all</i>	Network (p. 14)
<i>nutils</i>	NetworkManager (p. 16) object
<i>putils</i>	PathwayManager (p. 24) object
<i>outils</i>	CentralityManager (p. 3) object
<i>dbutils</i>	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

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

2.12.2.30 ogg1_add_connections()

```
Network masterPATH.Wrapper.ogg1_add_connections (
    Network all,
```

```

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

```

Add low confident connections for OGG1 protein

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

2.12.2.31 ogg1_part1()

```

void masterPATH.Wrapper.ogg1_part1 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException

```

Part 1 of pipeline for DNA repair screen in mixed network

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

2.12.2.32 ogg1_part1_ppi()

```

void masterPATH.Wrapper.ogg1_part1_ppi (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException

```

Part 1 of pipeline for DNA repair screen in ppi network

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

2.12.2.33 ogg1_part2()

```
void masterPATH.Wrapper.ogg1_part2 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 2 of pipeline for DNA repair screen in mixed network

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

2.12.2.34 ogg1_part2_ppi()

```
void masterPATH.Wrapper.ogg1_part2_ppi (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 2 of pipeline for DNA repair screen in ppi network

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

2.12.2.35 ogg1_part3()

```
void masterPATH.Wrapper.ogg1_part3 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 3 of pipeline for DNA repair screen in mixed network

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

2.12.2.36 ogg1_part4()

```
void masterPATH.Wrapper.ogg1_part4 (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils ) throws IOException
```

Part 4 of pipeline for DNA repair screen in mixed network

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

2.12.2.37 ogg1_part4_ppi()

```
void masterPATH.Wrapper.ogg1_part4_ppi (
    Network all,
```



```

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

```

Part 4 of pipeline for DNA repair screen in ppi network

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

2.12.2.38 ogg1_random()

```

void masterPATH.Wrapper.ogg1_random (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    RandomManager rand ) throws IOException

```

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

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

2.12.2.39 ogg1_random2_ppi()

```

void masterPATH.Wrapper.ogg1_random2_ppi (
    Network all,
    NetworkManager nutils,
    PathwayManager putils,
    CentralityManager outils,
    DBManager dbutils,
    RandomManager rand ) throws IOException

```

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

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

2.12.2.40 ogg1_random_ppi()

```
void masterPATH.Wrapper.ogg1_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

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

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