labelsep=space,justification=centering,font=bf,singlelinecheck=off,skip=4pt,position=top

labelsep=space,justification=centering,font=bf,singlelinecheck=off,skip=4pt,position=top

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masterPATH

Contents

Chapter 1

Data Structure Index

1.1 Data Structures

Here are the data structures with brief descriptions:

Chapter 2

Data Structure Documentation

2.1 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 **add_degree_to_paths** (String unique_over, String path_con, String out) throws FileNotFound↩ Exception, 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
- 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, 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. **??**) class contains methods to calculate centrality scores

Author

Natalia Rubanova

2.1.2 Member Function Documentation

2.1.2.1 add_degree_to_paths()

```
void add_degree_to_paths (
            String unique_over,
            String path_con,
            String out ) throws FileNotFoundException, IOException  [inline]
```

Add information about degree to file with paths and centrality scores

Parameters

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

2.1.2.2 add_experimental_scores_and_pvalues_to_nodes()

```
void add_experimental_scores_and_pvalues_to_nodes (
            String nodes_file,
            String gw_file,
            String conv_table,
            String out ) throws FileNotFoundException, IOException  [inline]
```

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

Parameters

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_experimnetal_scores_and_aggregated_pvalues_to_paths()

```
void add_experimnetal_scores_and_aggregated_pvalues_to_paths (
            String unique_over,
            String gw_file,
            String conv_table,
            String out ) throws FileNotFoundException, IOException  [inline]
```

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

Parameters

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

2.1.2.4 add_hgnc_symbols_to_paths()

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

Add approved gene symbols to file with paths and centrality scores

Parameters

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

2.1.2.5 calculate_centrality_scores_for_nodes()

```
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  [inline]
```

Find nodes and calculate centrality scores

Parameters

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

2.1.2.6 calculate_centrality_scores_for_paths()

```
void calculate_centrality_scores_for_paths (
              Network all,
           String inf,
           String outf,
           int min_length,
           int max_length ) throws FileNotFoundException, IOException  [inline]
```

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

Parameters

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

2.1.2.7 calculate_centrality_scores_for_paths_ppi()

```
void calculate_centrality_scores_for_paths_ppi (
              Network all,
           String inf,
           String outf,
           int min_length,
           int max_length ) throws FileNotFoundException, IOException  [inline]
```

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

Parameters

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

2.1.2.8   compare_two_lists_of_nodes()

```
void compare_two_lists_of_nodes (
            String f1,
            String f2 ) throws FileNotFoundException, IOException  [inline]
```

Compare two lists of nodes

Parameters

f1	File 1
f2	File 2

2.1.2.9   filter_paths()

```
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  [inline]
```

Filter paths

Parameters

foundf	File with paths
outname	Output file
all	**Network** (p. **??**)
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> find_unique_paths_for_list_of_pathways (
            int max_length,
            int min_length,
            List< String > all_paths ) throws IOException  [inline]
```

Find all unique paths in a mixed direct/indirect subnetwork

Parameters

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> find_unique_paths_for_list_of_pathways_ppi (
            int max_length,
            int min_length,
            List< String > all_paths ) throws IOException  [inline]
```

Find all unique paths in a indirect subnetwork

Parameters

max_length	Maximum length
min_length	Minimum length
all_paths	Pathways to create subnetwork

2.1.2.12 load_screening_data()

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

Load experimental data

Parameters

p_file	Experimental data
n_file	File for symbol conversion

2.1.2.13 return_permutation_distribution()

```
HashMap<String, List<Float> > return_permutation_distribution (
            String p_file,
            String n_file,
            int number_of_permutations ) throws FileNotFoundException, IOexception  [inline]
```

Calculate empirical distribution for Fisher's statistic

Parameters

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 return_symmetric_path (
            String part ) [inline], [static]
```

Return symmetric pathway

Parameters

part	Pathway

2.1.2.15 returnPathType()

```
String returnPathType (
            Network all,
            String s ) [inline]
```

Check type of the pathway

Parameters

all	**Network** (p. **??**)
s	pathway

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/CentralityManager.java

2.2 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. **??**) class contains methods to load databases

Author

Natalia Rubanova

2.2.2 Constructor & Destructor Documentation

2.2.2.1 DBManager()

```
DBManager ( ) throws IOException  [inline]
```

Constructor

2.2.3 Member Function Documentation

2.2.3.1 loadHIPPIE()

```
void loadHIPPIE (
            boolean high ) throws FileNotFoundException, IOException  [inline]
```

Load HIPPIE database

Parameters

high	load all or only high confidence interactions

2.2.3.2 loadHPRD()

```
void loadHPRD ( ) throws FileNotFoundException, IOException  [inline]
```

Load HPRD database

2.2.3.3 loadHUGO()

```
void loadHUGO ( ) throws FileNotFoundException, IOException  [inline]
```

Loads HGNC nomenclature

2.2.3.4 loadKEGG()

```
void loadKEGG ( ) throws FileNotFoundException, IOException  [inline]
```

Load KEGG database

2.2.3.5 loadmirTarBase()

```
void loadmirTarBase ( ) throws FileNotFoundException, IOException  [inline]
```

Load mitTarBase database

2.2.3.6 loadSignalink()

```
void loadSignalink ( ) throws FileNotFoundException, IOException  [inline]
```

Load Signalink database

2.2.3.7 loadSignor()

```
void loadSignor ( ) throws FileNotFoundException, IOException  [inline]
```

Load Signor database

2.2.3.8 loadtFacts()

```
void loadtFacts ( ) throws FileNotFoundException, IOException  [inline]
```

Load tFacts database

2.2.3.9 loadTransmir()

```
void loadTransmir ( ) throws FileNotFoundException, IOException  [inline]
```

Load TransMir database

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/DBManager.java

2.3 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:

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/FoldersPaths.java

2.4 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. **??**) class describes an **Interaction** (p. **??**) object

Author

Natalia Rubanova

2.4.2 Constructor & Destructor Documentation

2.4.2.1 Interaction()

```
Interaction (
          String id,
          List< String > other_ids,
          Node int1,
          Node int2,
          String type,
          String sourcedb,
          List< String > sourcedbentry,
          String quality,
          String dir )  [inline]
```

Constructor

Parameters

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 print ( )  [inline]
```

Print all information about interaction in one line

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/Interaction.java

2.5 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 main (
            String [] args ) throws FileNotFoundException, IOException, InterruptedException
[inline], [static]
```

main method

Parameters

args	

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/MasterPATH.java

2.6 Network Class Reference

Public Member Functions

- **Network** ()
- void **print_interactions_to_file** (String file) throws IOException
- 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. **??**) class describes an **Network** (p. **??**) object

Author

Natalia Rubanova

2.6.2 Constructor & Destructor Documentation

2.6.2.1 Network()

```
Network ( )  [inline]
```

Constructor

2.6.3 Member Function Documentation

2.6.3.1 loadNetwork2()

```
void loadNetwork2 (
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

Load network from databases

Parameters

nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.6.3.2 loadNetworkfromfile()

```
void loadNetworkfromfile (
            String nodef,
            String intf ) throws FileNotFoundException, IOException  [inline]
```

Load network from two files ∗

Parameters

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

2.6.3.3 print_interactions_to_file()

```
void print_interactions_to_file (
            String file ) throws IOException  [inline]
```

Saves all interactions in the network to the output file

Parameters

file	output file

2.6.3.4 removeAll()

```
void removeAll ( )  [inline]
```

Remove all interactions and nodes from network

2.6.3.5 saveNetworktofile()

```
void saveNetworktofile (
            String nodef,
            String intf ) throws IOException  [inline]
```

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

Parameters

nodef	node file
intf	interaction file

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/Network.java

2.7   NetworkManager Class Reference

Data Structures

- 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 FileNotFound←
  Exception, 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. **??**) 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 add_missing_genes_and_products (
            Network nw ) [inline]
```

Add transcription information

Parameters

nw	**Network** (p. **??**)

2.7.2.2 build_map_of_neighbors()

```
void build_map_of_neighbors (
            Network nw ) [inline]
```

Create links to all neighbors for every node in the network

Parameters

nw	**Network** (p. **??**)

2.7.2.3 find_pathway_BF_algorithm()

```
List<PathUnit> find_pathway_BF_algorithm (
             Network network,
            List< String > n1,
            List< String > n2,
            int max,
            String prefix,
            FileWriter out ) throws IOException  [inline]
```

Find a pathway between two lists of nodes

Parameters

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

2.7.2.4 find_pathway_BF_algorithm_ppi()

```
List<PathUnit> find_pathway_BF_algorithm_ppi (
            Network network,
```

```
            List< String > n1,
            List< String > n2,
            int max,
            String prefix,
            BufferedWriter out ) throws IOException  [inline]
```

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

Parameters

network	
n1	List of Hit genes nodes
n2	List of Final implementers nodes
max	Maximum length
prefix	Prefix for interaction id
out	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 find_pathway_for_list_BF_algorithm (
            Network nw,
            Map< String, String[]> hugo,
            int max,
            String outf,
            String prefix ) throws IOException  [inline]
```

Wrapper (p. **??**) for finding pathways

Parameters

nw	**Network** (p. **??**)
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()

```
void find_pathway_for_list_BF_algorithm_ppi (
            Network nw,
            Map< String, String[]> hugo,
            int max,
```

```
            String outf,
            String prefix ) throws IOException  [inline]
```

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

Parameters

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

2.7.2.7 load_hitlist_and_finalimpl()

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

Load hit genes and final implementers files

Parameters

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

2.7.2.8 merge_list_of_networks()

```
 Network merge_list_of_networks (
            List< Network > n ) [inline]
```

Merge list of networks

Parameters

n	List of networks

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/NetworkManager.java

2.8 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. **??**) 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 calculate_average_clustering_coefficient_direct (
          Network all ) [inline]
```

Calculate average clustering coefficient for direct network

Parameters

all	**Network** (p. **??**)

2.8.2.2 calculate_average_clustering_coefficient_ppi()

```
void calculate_average_clustering_coefficient_ppi (
          Network all ) [inline]
```

Calculate average clustering coefficient for PPI network

Parameters

all	**Network** (p. **??**)

2.8.2.3 calculate_diameter_direct()

```
void calculate_diameter_direct (
            Network all ) [inline]
```

Calculate diameter of a direct network

Parameters

all	**Network** (p. **??**)

2.8.2.4 calculate_diameter_ppi()

```
void calculate_diameter_ppi (
            Network all ) [inline]
```

Calculate diameter

Parameters

all	**Network** (p. **??**)

2.8.2.5 calculate_number_of_connected_components_direct()

```
void calculate_number_of_connected_components_direct (
            Network all ) [inline]
```

Calculate number of connected components for direct network

Parameters

all	**Network** (p. **??**)

2.8.2.6 calculate_number_of_connected_components_ppi()

```
void calculate_number_of_connected_components_ppi (
            Network all ) [inline]
```

Calculate number of connected components PPI network

Parameters

all	**Network** (p. **??**)

2.8.2.7 get_degree_distribution_direct()

```
void get_degree_distribution_direct (
            Network all,
            String outfile ) throws IOException [inline]
```

Build degree distribution for direct network

Parameters

all	**Network** (p. **??**)
outfile	Output file

2.8.2.8 get_degree_distribution_ppi()

```
void get_degree_distribution_ppi (
            Network all,
            String outfile ) throws IOException [inline]
```

Build degree distribution for PPI network

Parameters

all	**Network** (p. **??**)
outfile	Output file

2.8.2.9 get_subnetwork_statistics()

```
void get_subnetwork_statistics (
            Network all,
            String fname ) throws FileNotFoundException, IOException [inline]
```

Calculate subnetwork properties

Parameters

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

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/NetworkTopology.java

2.9 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. **??**) class describes a **Node** (p. **??**) object

Author

Natalia Rubanova

2.9.2 Constructor & Destructor Documentation

2.9.2.1 Node()

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

Constructor

Parameters

id	id of the **Node** (p. **??**)
type	type of the **Node** (p. **??**)
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 print ( ) [inline]
```

Print node information in one line

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/Node.java

2.10 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 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. **??**) 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 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  [inline]
```

Parameters

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()

```
void add_connectivity_to_pathways (
            Network all,
            String infile,
            String outfile ) throws IOException  [inline]
```

Calculate pathways connectivity

Parameters

all	**Network** (p. **??**)
infile	Input file
outfile	Output file

2.10.2.3 compare_two_nodes_files()

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

Compare two files with nodes

Parameters

all	**Network** (p. **??**)
hugo_by←_id	HGNC ids map
f1	File 1
f2	File 2
out	Output file

2.10.2.4 compare_two_paths_files()

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

Compare two files with paths

Parameters

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

2.10.2.5 create_cyto_for_paths()

```
void create_cyto_for_paths (
            String foundf,
             Network all,
            Map< String, String > hg,
            Map< String, String > fpl ) throws FileNotFoundException, IOException  [inline]
```

Create a file for Cytoscape software from the shortest paths

Parameters

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

Exceptions

FileNotFoundException	
IOException	

2.10.2.6 create_cyto_for_pathways()

```
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  [inline]
```

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

Parameters

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

2.10.2.7 filter_pathways_by_connectivity()

```
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  [inline]
```

Filter pathways by connectivity

Parameters

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()

```
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  [inline]
```

Filter pathways by node names \ type

Parameters

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

2.10.2.9 filterPathways_2()

```
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  [inline]
```

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

Parameters

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

2.10.2.10 filterPathways_by_centrality_score()

```
void filterPathways_by_centrality_score (
            String inf,
            String outf,
            int min,
            int max ) throws IOException  [inline]
```

Filter pathways by length

Parameters

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

2.10.2.11 filterPathways_by_length()

```
void filterPathways_by_length (
            String inf,
            String outf,
            int min,
            int max ) throws IOException  [inline]
```

Filter pathways by length

Parameters

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

2.10.2.12 find_hitgenes_on_paths()

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

Compare a file with paths with a hit list

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
hugo_by←↩ _id	HGNC ids map
f1	File with paths
out	OUtput file

2.10.2.13 find_miRNAs_on_paths()

```
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  [inline]
```

Find and rank miRNAs inside paths

Parameters

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()

```
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  [inline]
```

Find and rank miRNAs inside pathways

Parameters

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 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  [inline]
```

Find the shortest pathways

Parameters

foundf	Input file
outname	Output file
all	**Network** (p. **??**)
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()

```
void find_the_strongest_pathways (
            String foundf,
            String outfile ) throws IOException  [inline]
```

Find the strongest pathways

Parameters

foundf	Input file
outname	Output file

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/PathwayManager.java

2.11 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_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 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 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** nu←tils, **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. **??**) 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 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  [inline]
```

Calculate p-values for nodes on random network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) 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()

```
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  [inline]
```

Calculate p-values on for nodes random ppi network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) 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()

```
void 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  [inline]
```

Parameters

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()

```
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  [inline]
```

Calculate p-values for paths for shuffled phenotype label

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object

Parameters

outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) 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()

```
void 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  [inline]
```

Calculate p-values for nodes for shuffled phenotype label

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) 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()

```
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  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) 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()

```
 Network create_random_network (
        Network all,
        NetworkManager nutils,
        PathwayManager putils,
        CentralityManager outils,
        DBManager dbutils )  [inline]
```

Create random network with the same degree distribution

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.11.2.8 permute_phenotype_label()

```
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  [inline]
```

Permute phenotype label

Parameters

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

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/RandomManager.java

2.12 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. **??**) class contains wrappers implementing the whole pipeline

Author

Natalia Rubanova

2.12.2 Member Function Documentation

2.12.2.1 adenocarcinoma_part1()

```
void adenocarcinoma_part1 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

Part 1 of pipeline for adenocarcinoma screen in mixed network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.2 adenocarcinoma_part1_ppi()

```
void adenocarcinoma_part1_ppi (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

Part 1 of pipeline for adenocarcinoma screen in ppi network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.3 adenocarcinoma_part2()

```
void adenocarcinoma_part2 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

Part 2 of pipeline for adenocarcinoma screen in mixed network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.4 adenocarcinoma_part2_ppi()

```
void adenocarcinoma_part2_ppi (
            Network all,
```

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

Part 2 of pipeline for adenocarcinoma screen in ppi network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.5   adenocarcinoma_random()

```
void adenocarcinoma_random (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils,
            RandomManager rand ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.6   adenocarcinoma_random_ppi()

```
void adenocarcinoma_random_ppi (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils,
            RandomManager rand ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)	
nutils	**NetworkManager** (p. **??**) object	
putils	**PathwayManager** (p. **??**) object	
outils	**CentralityManager** (p. **??**) object	
dbutils	**DBManager** (p. **??**) object	

2.12.2.7 arp_add_connections()

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

Add low confident interactions for LIMCH1 protein

Parameters

all	**Network** (p. **??**)	
nutils	**NetworkManager** (p. **??**) object	
putils	**PathwayManager** (p. **??**) object	
outils	**CentralityManager** (p. **??**) object	
dbutils	**DBManager** (p. **??**) object	

2.12.2.8 arp_filter()

```
void arp_filter (
            Network all ) throws FileNotFoundException, IOException  [inline]
```

Filter pathways for arp2/3 screen in mixed network

Parameters

all	**Network** (p. **??**)

2.12.2.9 arp_part1()

```
void arp_part1 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.10 arp_part1_LIMCH1()

```
void arp_part1_LIMCH1 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.11 arp_part1_ppi()

```
void arp_part1_ppi (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.12   arp_part2()

```
void arp_part2 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.13   arp_part2_ppi()

```
void arp_part2_ppi (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.14 arp_part3()

```
void arp_part3 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.15 arp_random()

```
void arp_random (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils,
            RandomManager rand ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.16 arp_random_ppi()

```
void arp_random_ppi (
            Network all,
```

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

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.17 case2_part1()

```
void case2_part1 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.18 case2_part2()

```
void case2_part2 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.19 case2_part2_2()

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

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.20 case2_part3()

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

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.21 case2_part4()

```
void case2_part4 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.22 case2_random()

```
void case2_random (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils,
            RandomManager rand ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.23 case2_random2()

```
void case2_random2 (
            Network all,
```

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

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.24 mirna63Sys_part1()

```
void mirna63Sys_part1 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.25 mirna63Sys_part2()

```
void mirna63Sys_part2 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.26 mirna63Sys_part3()

```
void mirna63Sys_part3 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.27 mirna63Sys_part3_3()

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

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.28 mirna63Sys_part4()

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

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.29 mirna63Sys_random()

```
void mirna63Sys_random (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils,
            RandomManager rand ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.30 ogg1_add_connections()

```
Network ogg1_add_connections (
            Network all,
```

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

Add low confident connections for OGG1 protein

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object
hugo	HGNC ids map

2.12.2.31 ogg1_part1()

```
void ogg1_part1 (
                Network all,
                NetworkManager nutils,
                PathwayManager putils,
                CentralityManager outils,
                DBManager dbutils ) throws IOException  [inline]
```

Part 1 of pipeline for DNA repair screen in mixed network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.32 ogg1_part1_ppi()

```
void ogg1_part1_ppi (
                Network all,
                NetworkManager nutils,
                PathwayManager putils,
                CentralityManager outils,
                DBManager dbutils ) throws IOException  [inline]
```

Part 1 of pipeline for DNA repair screen in ppi network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.33 ogg1_part2()

```
void ogg1_part2 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

Part 2 of pipeline for DNA repair screen in mixed network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.34 ogg1_part2_ppi()

```
void ogg1_part2_ppi (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

Part 2 of pipeline for DNA repair screen in ppi network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.35 ogg1_part3()

```
void ogg1_part3 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

Part 3 of pipeline for DNA repair screen in mixed network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.36 ogg1_part4()

```
void ogg1_part4 (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils ) throws IOException  [inline]
```

Part 4 of pipeline for DNA repair screen in mixed network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.37 ogg1_part4_ppi()

```
void ogg1_part4_ppi (
            Network all,
```

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

Part 4 of pipeline for DNA repair screen in ppi network

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.38 ogg1_random()

```
void ogg1_random (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils,
            RandomManager rand ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.39 ogg1_random2_ppi()

```
void ogg1_random2_ppi (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils,
            RandomManager rand ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

2.12.2.40 ogg1_random_ppi()

```
void ogg1_random_ppi (
            Network all,
            NetworkManager nutils,
            PathwayManager putils,
            CentralityManager outils,
            DBManager dbutils,
            RandomManager rand ) throws IOException  [inline]
```

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

Parameters

all	**Network** (p. **??**)
nutils	**NetworkManager** (p. **??**) object
putils	**PathwayManager** (p. **??**) object
outils	**CentralityManager** (p. **??**) object
dbutils	**DBManager** (p. **??**) object

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

- F:/Dropbox/_/Programms/CODE/masterPath/src/masterPATH/Wrapper.java